NOTICE TO BIDDERS

NOTICE IS HEREBY GIVEN, that the Undersigned, on behalf of the Essex County Board of Supervisors, will accept sealed bids at the Office of the Purchasing Agent until 2:00 P.M. on September 15, 2017 for a *General Contractor* for the Nutrition Building.

The bids shall be opened publicly and read aloud on September 15, 2017 at 2:00 P.M. at the Office of the Purchasing Agent, 7551 Court Street, Elizabethtown, New York 12932.

Please contact the Purchasing Office at (518) 873-3330 for additional information concerning the bidding. Plans, specifications, standard proposals and drawings for the proposed work may be obtained at the above address or on the County's website at: <u>https://www.co.essex.ny.us/bidders/publicbids.aspx</u>.

All bids submitted in response to this notice shall be marked "SEALED BID – GENERAL CONTRACTOR - NUTRITION BUILDING" clearly on the outside of the envelope.

Dated: August 21, 2017

Linda M. Wolf, CPA Purchasing Agent Essex County Government Center 7551 Court Street – PO Box 217 Elizabethtown, New York 12932 (518) 873-3332

INSTRUCTIONS TO BIDDERS

A pre-bid conference shall be held on Friday, September 8, 2017 at 10:00 AM at DPW, 8053 US Route 9, Elizabethtown, NY 12932. All contractors who plan to submit a bid are urged to attend.

Minority and Women-Owned Business Enterprises (M/WBE) and Section 3 businesses are strongly encouraged to participate in this federally funded project. Essex County, the recipient of the CDBG funds, is an equal opportunity employer.

Please note Appendix G regarding Clarifications and Questions and Answers.

Each proposal must be accompanied by either a Certified Check payable to Essex County Treasurer in the amount of five percent (5%) of amount of the bid or a Bid Bond, in a form acceptable to the Essex County Attorney.

A labor and material Payment Bond and a Performance Bond in the form contained in the Contract documents will be required of the successful Bidder.

Attention of the bidders is particularly called to the requirements as to the conditions of employment to be observed and minimum wage rates under the Contract (Federal Davis Bacon and State).

All bids shall be submitted on the bid sheets included in the package, and no other forms shall be accepted.

Essex County reserves the right to reject any and all bids not considered to be in the best interest of Essex County, and to waive any technical or formal defect in the bids which is considered by Essex County to be merely irregular, immaterial, or unsubstantial.

In addition to bid sheets, the bidder shall submit executed non-collusion bid certificates signed by the bidder or one of its officers as required by the General Municipal Law Sec. 103d. The bidder shall also submit an executed certificate of compliance with the Iran Divestment Act signed by the bidder or one of its officers as required by the General Municipal Law Sec. 103g.

A Contract awarded pursuant to this notice shall be subject to the provisions of Sections 103-1, 103-b, 103-d and 103-g of the General Municipal Law.

Essex County affirmatively states that in regard to any contract entered into pursuant to these instructions, without regard to race, color, sex, religion, age, national origin, disability, sexual preference or Vietnam Era veteran status, disadvantaged and minority or women-owned business enterprises will be afforded equal opportunity to submit bids in response hereto.

The contract shall be completed within 180 after Notice to Proceed.

Addenda will be posted on the Essex County Website, interested vendors are urged to check before submitting their bid.

Each bidder will need to complete, sign, have notarized and return the following documents with their Bid:

- 1) Vendor Responsibility Questionnaire
- 2) Certification of Compliance With Iran Divestment Act
- 3) Non-Collusive Bidding Certification

PROJECT SCHEDULE

CONTRACT DESCRIPTION:	Nutrition Building - GC
NOTICE TO BIDDERS:	August 21, 2017
	-
PRE-BID MEETING AT DPW OFFICE:	September 8, 2017 at 10:00 am
BID OPENING DATE:	September 15, 2017 at 2:00 pm
ESTIMATED START DATE:	Immediately after award
SUBSTANTIAL COMPLETION:	180 days after Notice to Proceed

SECTION 00 0110 TABLE OF CONTENTS PROCUREMENT AND CONTRACTING

REQUIREMENTS

DIVISION 00 and 01-- PROCUREMENT AND CONTRACTING REQUIREMENTS

Notice to Bidders Instructions to Bidders Project Schedule

- 00 0110 Table of Contents
- 00 0115 List of Drawing Sheets Index to Bid Forms
- 00 4100 Bid Form (General Construction) Change Order
- 01 1000 Summary
- 01 3216 Construction Progress Schedule
- 01 3300 Submittal Procedures
 - Sample Contractors Letterhead
- 01 5000 Temporary Facilities and Controls
- 01 7000 Execution and Closeout Requirements

SPECIFICATIONS

DIVISION 03 -- CONCRETE

03 3000 - Cast-in-Place Concrete

DIVISION 04 -- MASONRY

04 7200 - Cast Stone Masonry

DIVISION 05 -- METALS

05 4000 - Cold-Formed Metal Framing 05 4400 - Cold-Formed Metal Trusses

DIVISION 06 -- WOOD, PLASTICS, AND COMPOSITES

06 1000 - Rough Carpentry

DIVISION 07 -- THERMAL AND MOISTURE PROTECTION

07 2100 - Thermal Insulation

- 07 2119 Foamed-In-Place Insulation
- 07 2126 Blown Insulation
- 07 2500 Weather Barriers
- 07 4113 Metal Roof Panels
- 07 4213 Metal Wall Panels
- 07 4623 Wood Siding
- 07 6200 Sheet Metal Flashing and Trim
- 07 7200 Roof Accessories
- 07 8400 Firestopping
- 07 9200 Joint Sealants

DIVISION 08 -- OPENINGS

08 1113 - Hollow Metal Doors and Frames

- 08 1416 Flush Wood Doors
- 08 3100 Attic Access Doors and Ladders
- 08 5313 Vinyl Windows
- 08 7100 Door Hardware
- 08 8000 Glazing

DIVISION 09 -- FINISHES

09 2116 - Gypsum Board Assemblies

09 7733 - Glass Fiber Reinforced Plastic Panels

09 9113 - Exterior Painting

- 09 9123 Interior Painting
- 09 9600 High-Performance Coatings

DIVISION 10 -- SPECIALTIES

- 10 1400 Signage
- 10 2800 Toilet, Bath, and Laundry Accessories
- 10 4400 Fire Protection Specialties

DIVISION 12 -- FURNISHINGS

12 9300 - Site Furnishings

DIVISION 22 -- PLUMBING

22 0719 - Plumbing Piping Insulation

- 22 1005 Plumbing Piping
- 22 1006 Plumbing Piping Specialties
- 22 4000 Plumbing Fixtures

DIVISION 23 -- HEATING, VENTILATING, AND AIR-CONDITIONING (HVAC)

- 23 0713 Duct Insulation
- 23 0719 HVAC Piping Insulation
- 23 1126 Facility Liquefied-Petroleum Gas Piping
- 23 2113 Hydronic Piping
- 23 2114 Hydronic Specialties
- 23 2123 Hydronic Pumps
- 23 2300 Refrigerant Piping
- 23 3100 HVAC Ducts and Casings
- 23 3423 HVAC Power Ventilators
- 23 3700 Air Outlets and Inlets
- 23 5216 Condensing Boilers
- 23 8127 Small Split-System Heating and Cooling

DIVISION 26 -- ELECTRICAL

- 26 0519 Low-Voltage Electrical Power Conductors and Cables
- 26 0526 Grounding and Bonding for Electrical Systems
- 26 0529 Hangers and Supports for Electrical Systems
- 26 0534 Conduit
- 26 0537 Boxes
- 26 0553 Identification for Electrical Systems
- 26 2416 Panelboards
- 26 2726 Wiring Devices
- 26 3600 Transfer Switches
- 26 5100 Interior Lighting
- 26 5600 Exterior Lighting

DIVISION 27 -- COMMUNICATIONS

27 1005 - Structured Cabling for Voice and Data - Inside-Plant

DIVISION 28 -- ELECTRONIC SAFETY AND SECURITY

28 3100 - Fire Detection and Alarm

DIVISION 31 -- EARTHWORK

- 31 1000 Site Clearing
- 31 2200 Grading
- 31 2316 Excavation
- 31 2323 Fill
- 31 3700 Riprap

DIVISION 32 -- EXTERIOR IMPROVEMENTS

- 32 1123 Aggregate Base Courses
- 32 1216 Asphalt Paving
- 32 1313 Concrete Paving
- 32 1723.13 Painted Pavement Markings
- 32 9219 Seeding
- 32 9300 Plants

DIVISION 33 -- UTILITIES

- 33 0513 Manholes and Structures
- 33 1116 Site Water Utility Distribution Piping
- 33 1300 Disinfecting of Water Utility Distribution
- 33 3111 Site Sanitary Utility Sewerage Piping
- 33 3600 Utility Septic Tanks
- 33 4111 Site Storm Utility Drainage Piping
- 33 5111 Site Natural-Gas Distribution

APPENDICIES

- A In-Floor Radiant Heating System Design, generated by LoopCAD.
- B Kitchen Equipment Cut-Sheets
- C Insurance Requirements Public Works Contractors
- D Standard Clauses for Essex County Contracts
- E General Specifications for Procurement Contracts
- F Clarifications and Questions and Answers

Davis Bacon Prevailing Wage Schedule

NYS Prevailing Wage Schedule

Office of Community Renewal (OCR) Chapter 4 Exhibit 4-1 Contract Provisions and Exhibit 4-2 Section 3 Rider

Office of Community Renewal (OCR) Chapter 5 General Provisions

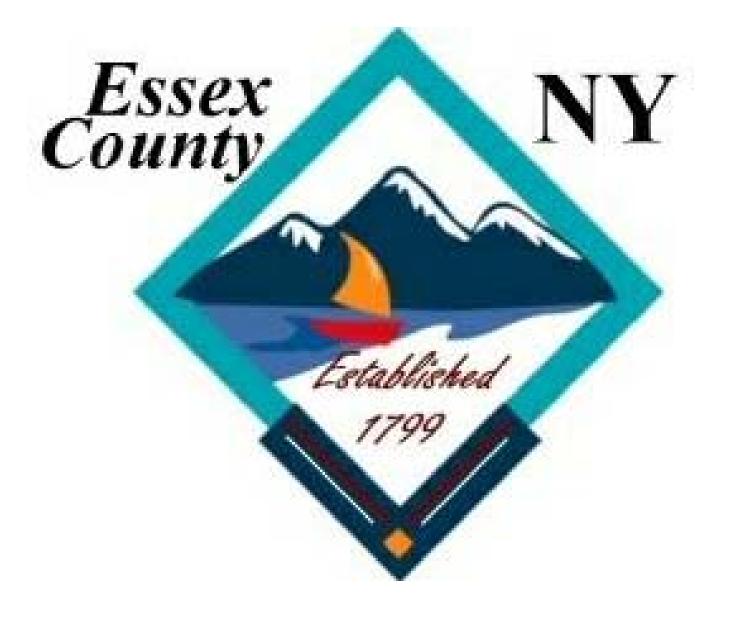
END OF TABLE OF CONTENTS

SECTION 00 0115

LIST OF DRAWING SHEETS

- T001 TITLE SHEET
- G001 GENERAL NOTES & DETAILS
- C101 SITE PLAN
- C102 GRADING & PROFILES
- C103 LIGHTING & EROSION CONTROL PLANS
- C501 SITE DETAILS
- C502 SITE DETAILS
- LS001 LIFE SAFETY
- S101 FOUNDATION PLAN
- S102 STRUCTURAL FLOOR PLAN
- S103 STRUCTURAL FRAMING
- S121 ROOF FRAMING
- A101 FIRST FLOOR PLAN
- A111 REFLECTED CEILING PLAN
- A121 ROOF PLAN
- A201 EXTERIOR ELEVATIONS
- A202 EXTERIOR ELEVATIONS
- A203 INTERIOR ELEVATIONS
- A301 BUILDING SECTIONS
- A302 BUILDING SECTIONS
- A311 WALL SECTIONS
- A401 ELARGED FLOOR PLAN & INT. ELEV
- A501 DETAILS
- A601 SCHEDULES
- Q101 EQUIPMENT PLAN
- P101 PLUMBING PLAN
- P501 PLUMBING SCHEMATICS & SCHEDULES
- M101 IN-FLOOR HEATING SYSTEM
- M111 HVAC PLAN & SCHEDULES
- E101 ELECTRICAL POWER PLAN
- E111 ELECTRICAL LIGHTING PLAN
- E501 ELECTRICAL SCHEMATICS & DETAILS
- E600 ELECTRICAL PANEL SCHEDULE

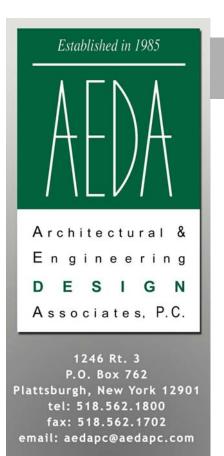
END OF LIST OF DRAWINGS



ALTERNATES

SITE WORK & CONCRETE CONSTRUCTION ALTERNATE #1 (DEDUCT)

- LUMP SUM PRICE TO DELETE THE SPLIT RAIL FENCE FROM THE BASE BID.
- ALTERNATE #2A (DEDUCT) LUMP SUM PRICE TO DELETE THE GRAVEL SUBBASE MATERIAL ONLY UNDER ASPHALT PAVING FROM THE BASE BID, COUNTY TO SUPPLY THE MATERIAL
- ALTERNATE #2B (DEDUCT) LUMP SUM PRICE TO DELETE THE GRAVEL SUBBASE MATERIAL ONLY UNDER ASPHALT PAVING FROM THE BASE BID, COUNTY TO INSTALL MATERIAL.
- ALTERNATE #3 (DEDUCT) LUMP SUM PRICE TO DELETE THE ASPHALT PAVING FROM THE BASE BID.
- ALTERNATE #4 (DEDUCT) LUMP SUM PRICE TO DELETE THE PAVEMENT LINE STRIPING FROM THE BASE BID.
- ELECTRICAL CONSTRUCTION PACKAGE
- ALTERNATE #5 (DEDUCT) LUMP SUM PRICE TO DELETE THE GENERATOR TRANSFER SWITCH FROM THE BASE BID.
- SITE WORK & CONCRETE CONSTRUCTION ALTERNATE #6 (DEDUCT)
 - LUMP SUM PRICE TO INSTALL BATT INSULATION IN THE EXTERIOR WALLS IN LIEU OF SPRAY FOAM-IN-PLACE INSULATION.



SHEET LIST

Sheet Number - Sheet Number Sheet Name 1. TITLE SHEET 6. ARCHITECTURAL T001 TITLE SHEET A101 FLOOR PLAN 2. GENERAL A111 G001 GENERAL NOTES & DETAILS ROOF PLAN A121 3. CIVIL A201 A202 C101 SITE PLAN C102 GRADING PLAN & PROFILES A203 C103 A301 LIGHTING & EROSION CONTROL PLANS C501 A302 SITE DETAILS C502 SITE DETAILS A311 4. CODE COMPLIANCE A401 A501 DETAILS LS001 LIFE SAFETY A601 5. STRUCTURAL SCHEDULES S101 FOUNDATION PLAN 7. EQUIPMENT S102 STRUCTURAL FLOOR PLAN Q101 S103 STRUCTURAL FRAMING S121 ROOF FRAMING

ESSEX COUNTY NUTRITION **PROGRAM - PROPOSED FACILITY**

WESTPORT, NEW YORK 12993



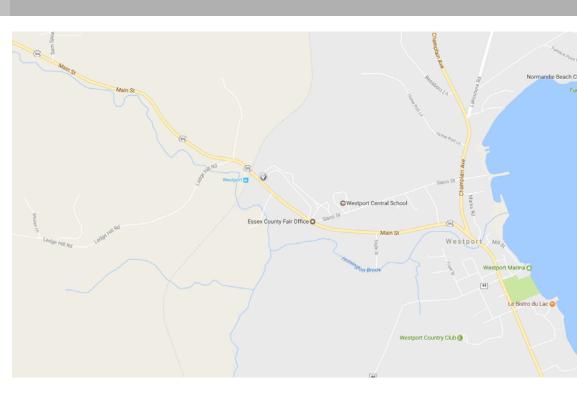
Sheet Name

REFLECTED CEILING PLAN EXTERIOR ELEVATIONS EXTERIOR ELEVATIONS INTERIOR ELEVATIONS BUILDING SECTIONS BUILDING SECTIONS WALL SECTIONS ENLARGED FLOOR PLAN & INT. ELEV.

KITCHEN EQUIPMENT PLAN

- Sheet Number	Sheet Name
8. PLUMBING	
P101	PLUMBING
P501	PLUMBING SCHEMATICS & SCHEDULES
9. MECHANICAL	
M101	IN-FLOOR HEATING SYSTEM
M111	HVAC PLAN & SCHEDULES
10. ELECTRICAL	
E101	ELECTRICAL POWER PLAN
E111	ELECTRICAL LIGHTING PLAN
E501	ELECTRICAL SCHEMATICS & DETAILS
E600	ELECTRICAL PANEL SCHEDULE

LOCATION MAP



 \mathbf{n}

SITE PLAN



UNAUTHORIZED ALTERATIONS AND/OR ADDITIONS TO THIS DRAWING BEARING A LICENSED ARCHITECT'S OR ENGINEER'S SEAL IS A VIOLATION OF SECTION 7209, SUBDIVISION 2, OF THE NEW YORK STATE EDUCATION LAW. ONLY COPIES FROM THE ORIGINAL OF THIS DRAWING BEARING THE ORIGINAL ARCHITECT'S OR ENGINEER'S SEAL AND SIGNATURE SHALL BE CONSIDERED VALID TRUE COPIES.

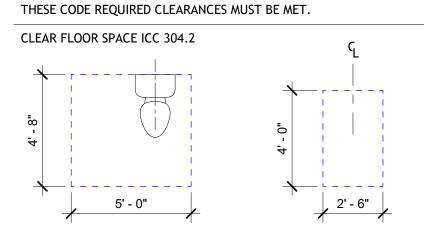


PROJECT NO.	17010
DATE	06-12-17
DRAWN BY	JRH
CHECKED BY	SEC

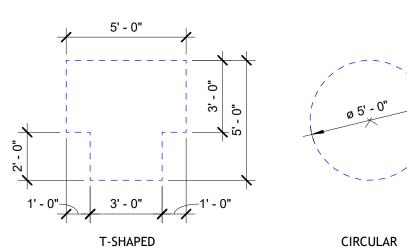
T001

TITLE SHEET

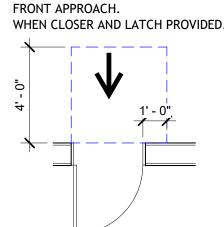
ACCESSIBILITY LEGEND



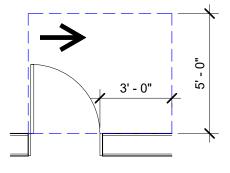
TURNING SPACE (ICC 304.2)

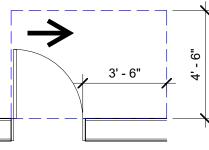


MANEUVERING AT MANUAL SWINGING DOOR (ICC 404.2.3.2)

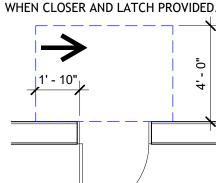


SIDE / HINGE APPROACH, PULL SIDE

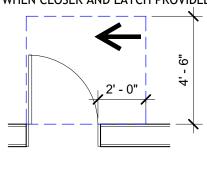


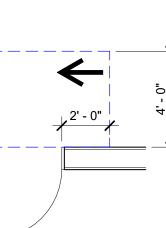


SIDE / HINGE APPROACH, PUSH SIDE



SIDE / LATCH APPROACH, PULL & PUSH WHEN CLOSER AND LATCH PROVIDED.





SIGNAGE REQUIREMENTS

A. SIGN SHALL BE INSTALLED ON WALL ADJACENT TO THE LATCH SIDE OF THE DOOR OR TO THE RIGHT SIDE OF DOUBLE DOORS. WHERE THERE IS NO WALL SPACE ON THE LATCH SIDE OF A SINGLE DOOR OR TO THE RIGHT SIDE OF DOUBLE DOORS, SIGNS SHOULD BE ON THE NEAREST ADJACENT WALL. CHARACTER MOUNTING HEIGHT SHALL BE 48" ABOVE FINISHED FLOOR MAXIMUM. SIGNS CONTAINING TACTLIE CHARACTERS SHALL HAVE AN 18" X 18" MINIMUM SPACE ON THE GROUND, CENTERED ON THE SIGN, CLEAR OF THE DOOR SWING

B. TACTILE CHARACTERS SHALL BE SANS SERIF AND SHALL BE ACCOMPANIED BY GRADE II BRAILLE. TACTILE CHARACTERS SHALL BE RAISED 1/32" MINUMUM ABOVE THEIR BACKGROUND. CHARACTERS SHALL BE 3/5" MINIMUM AND 2" MAXIMUM.

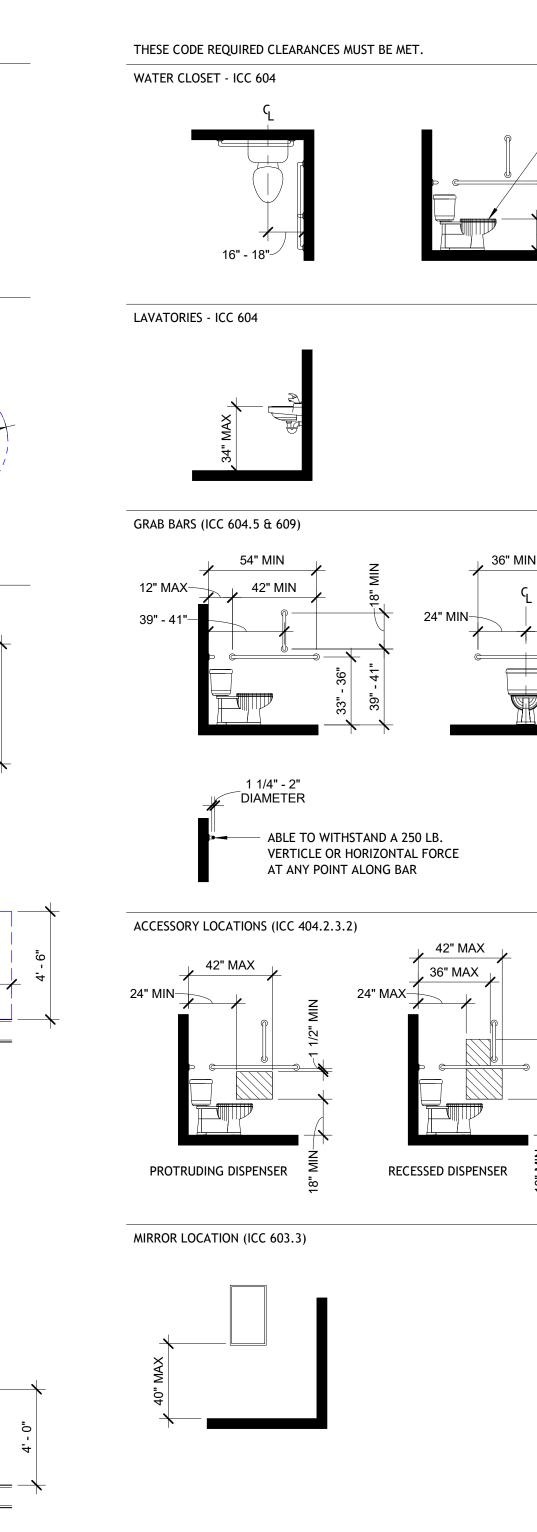
C. PICTOGRAMS SHALL HAVE A HEIGHT OF 6". CHARACTERS OR BRAILLE SHALL NOT BE IN THE SAME PICTOGRAM FIELD. WHERE TEXT DESCRIPTORS FOR PICTOGRAMS ARE REQUIRED, THEY SHALL BE DIRECTLY BELOW OR ADJACENT TO THE PICTOGRAM.

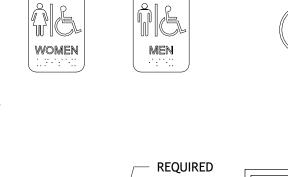
D. CHARACTERS AND THEIR BACKGROUNDS SHALL HAVE A NON-GLARE FINISH. CHARACTERS SHALL CONTRAST WITH THEIR BACKGROUNDS.

E. LOCATIONS REQUIRING SIGNAGE:

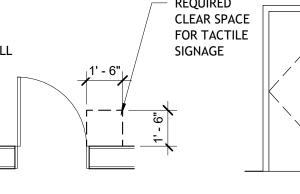
- TRUSS IDENTIFICATION SIGNAGE; AT EXTERIOR ENTRANCE DOORS - ACCESSIBLE WOMEN'S & MEN'S TOILET ROOMS
- ACCESSIBLE PARKING WHEN > 5 SPACES ARE PROVIDED - SIGNAGE AS NOTED IN THE CONTRACT DOCUMENTS

EQUIPMENT LOCATIONS LEGEND





TOILET ROOM IDENTIFACTION



SIGNAGE LOCATIONS

WALL TYPE 1 - TOP

EXTEND TO 10'-0" ABOVE F.F. FROM 3'-0" ABOVE F.F.

GENERAL NOTES

- CONTRACTOR SHALL VERIFY ALL EXT'G CONDITIONS AND DIMENSIONS 1. AND REPORT DISCREPANCIES TO OWNER/ENG'R BEFORE PROCEEDING W/ THE WORK. CONTRACTORS SHALL FIELD VERIFY ALL EXT'G CONDITIONS. PRIOR TO ANY CONSTRUCTION OR ORDER OF CUSTOM MATERIALS. MAJOR INCONSISTENCIES IN PLANS MUST BE REPORTED TO THE OWNER AND ARCHITECT.
- WHILE EVERY ATTEMPT HAS BEEN MADE IN THE PREPARATION OF THESE PLANS TO AVOID MISTAKES, THE MAKER CANNOT GUARANTEE AGAINST HUMAN ERROR. THE CONTRACTOR ON THE JOB MUST CHECK ALL DIMENSIONS & DETAILS AND BE RESPONSIBLE FOR SAME.
- EXTERIOR DIMENSIONS ARE TO FACE OF STUDS. INTERIOR DIMENSIONS ARE ALSO TO FACE OF STUDS. CONFORM TO ALL DIMENSIONS INDICATED IN PREFERENCE TO SCALED
- DIMENSIONS FROM THE BLUEPRINT. SEAL ALL PENETRATIONS THRU EXTERIOR, INTERIOR, FDN., FLOOR & FIRE RATED WALL/FLOOR & CEILING ASSEMBLIES AS REQ'D W/ APPROVED
- MATERIALS. CONFORM TO U.L. STANDARDS FOR FIRE RATED ASSEMBLIES.

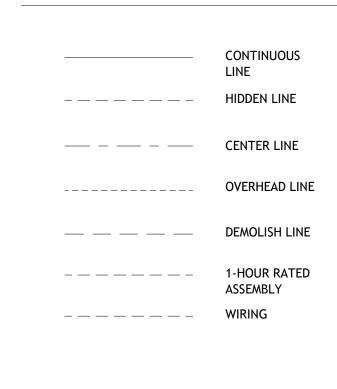
ABBREVIATIONS

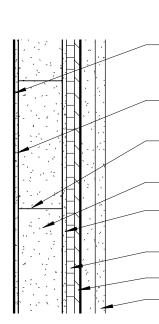
Ð	AT	MTL.	METAL
<i>‡</i>	POUND	NO.	NUMBER
LUM.	ALUMINUM	0.C.	ON CENTER
3D.	BOARD	OSB	ORIENTATED STR
BM	BENCH MARK	PERF.	PERFORATED
CHNL.	CHANNEL	PLUMB.	PLUMBING
CMU	CONCRETE MASONRY UNIT	PLT	PLATE
COL.	COLUMN	PLW	PLYWOOD
CONC.	CONCRETE	P.T.	PRESSURE TREAT
CONT.	CONTINUOUS	PTD.	PAINTED
ELEC.	ELECTRICAL	POLY	POLYETHYLENE
ELEV.	ELEVATION	PSF	POUNDS PER SQU
E.W.	EACH WAY	PSI	POUNDS PER SQU
EXT.	EXTERIOR	PVC	POLYVINYL CHLC
DN	FOUNDATION	RDG	RIDGE
TG.	FOOTING	STD	STUD
GWB	GYPSUM WALL BOARD	T&G	TONGUE AND GR
HD.	HEAD	TYP.	TYPICAL
HNGR.	HANGER	W/	WITH
HORZ.	HORIZONTAL	WD	WOOD
CF	INSULATE CONCRETE FORM	W/0	WITHOUT
NSUL.	INSULATION	WWM	WELDED WIRE M
IST.	JOIST	VERT.	VERTICAL
۸ISC.	MISCELLANEOUS		

MATERIALS LEGEND

GRADE	
EARTHWORK FILL	
CONCRETE	
BRICK	
STONE	
CONCRETE MASONRY UNIT	
TILE (CERAMIC OR QUARRY)	
PLASTER, SAND, GYPSUM BOARD, PARTICLE BOARD	

LINE TYPES





SEAT HEIGHT

12" MIN

FIBERGLASS REINFORCED PANELS SEE FINISH SCHEDULE - SHEET A601

- 1/2" GYPSUM WALL BOARD TAPED, PRIMED AND PAINTED
- 20 GAUGE, 5 1/2" METAL STUDS WITH 2" FLANGE @ 16" O.C. WITH FOAM SILL SEAL AT BOTTOM OF STUDS. CLOSED CELL SPRAY-IN INSULATION R-33
- 1/2" EXTERIOR GRADE GYPSUM SHEATHING WALL
- BOARD **1**" RIGID INSULATION
- HORIZONTAL LAPPED SIDING
- PRECAST CONCRETE WATER TABLE BELOW

FIBERGLASS REINFORCED PANELS

SEE FINISH SCHEDULE - SHEET A601

20 GAUGE, 5 1/2" METAL STUDS WITH 2" FLANGE @ 16" O.C.

WITH FOAM SILL SEAL AT BOTTOM OF STUDS.

1/2" EXTERIOR GRADE GYPSUM SHEATHING WALL

CLOSED CELL SPRAY-IN INSULATION R-33

1/2" GYPSUM WALL BOARD

BOARD

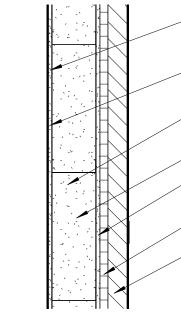
1" RIGID INSULATION

- STONE VENEER

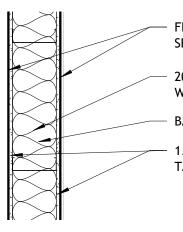
TAPED, PRIMED AND PAINTED

WALL TYPE 1 - BASE

EXTEND TO 3'-0" ABOVE F.F. FROM F.F.



WALL TYPE 2 INTERIOR WALL



 FIBERGLASS REINFORCED PANELS SEE FINISH SCHEDULE - SHEET A601
 20 GAUGE, 5 1/2" METAL STUDS WITH 2" FLANGE @ 16" O.C. W/ FOAM SILL SEAL @ BTM OF STUDS
 BATT INSULATION
 1/2" MOISTURE RESISTANT, GYPSUM WALL BOARD TAPED, PRIMED AND PAINTED

WALL TYPE 3 INTERIOR WALL

EXTEND TO 10'-0" ABOVE F.F. FROM F.F.

EXTEND TO 10'-0" ABOVE F.F.

FROM F.F.

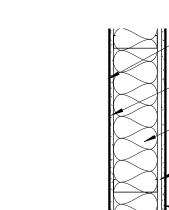
EXTEND TO 10'-0" ABOVE F.F.

FROM F.F.

FIBERGLASS REINFORCED PANELS SEE FINISH SCHEDULE - SHEET A601 20 GAUGE, 3-5/8" METAL STUDS @ 16" O.C. W/ FOAM SILL SEAL @ BTM OF STUDS BATT INSULATION

- 1/2" MOISTURE RESISTANT, GYPSUM WALL BOARD TAPED, PRIMED AND PAINTED

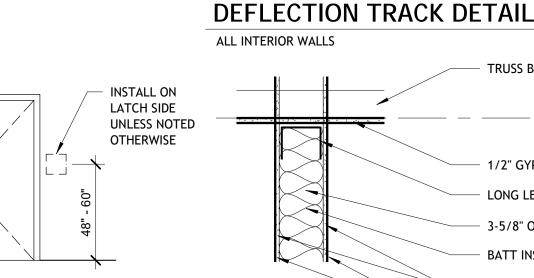
WALL TYPE 4 1 HR RATED WALL - BASED ON UL - U423

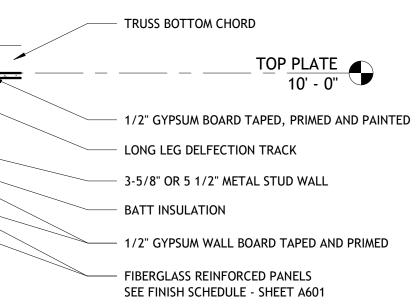


FIBERGLASS REINFORCED PANELS SEE FINISH SCHEDULE - SHEET A601 1/2", MOISTURE RESISTANT, FIRE RATED, GYPSUM WALL BOARD TAPED, PRIMED AND PAINTED 20 GAUGE, 5 1/2" METAL STUDS WITH 2" FLANGE @ 16" O.C. W/ FOAM SILL SEAL @ BTM OF STUDS 1/2" FIRE RATED - PRESSURE TREATED PLYWOOD SHEATHING TO SUPPORT EQUIPMENT IN MECHANICAL ROOM 1/2", MOISTURE RESISTANT, FIRE RATED, GYPSUM

WALL BOARD TAPED, PRIMED AND PAINTED

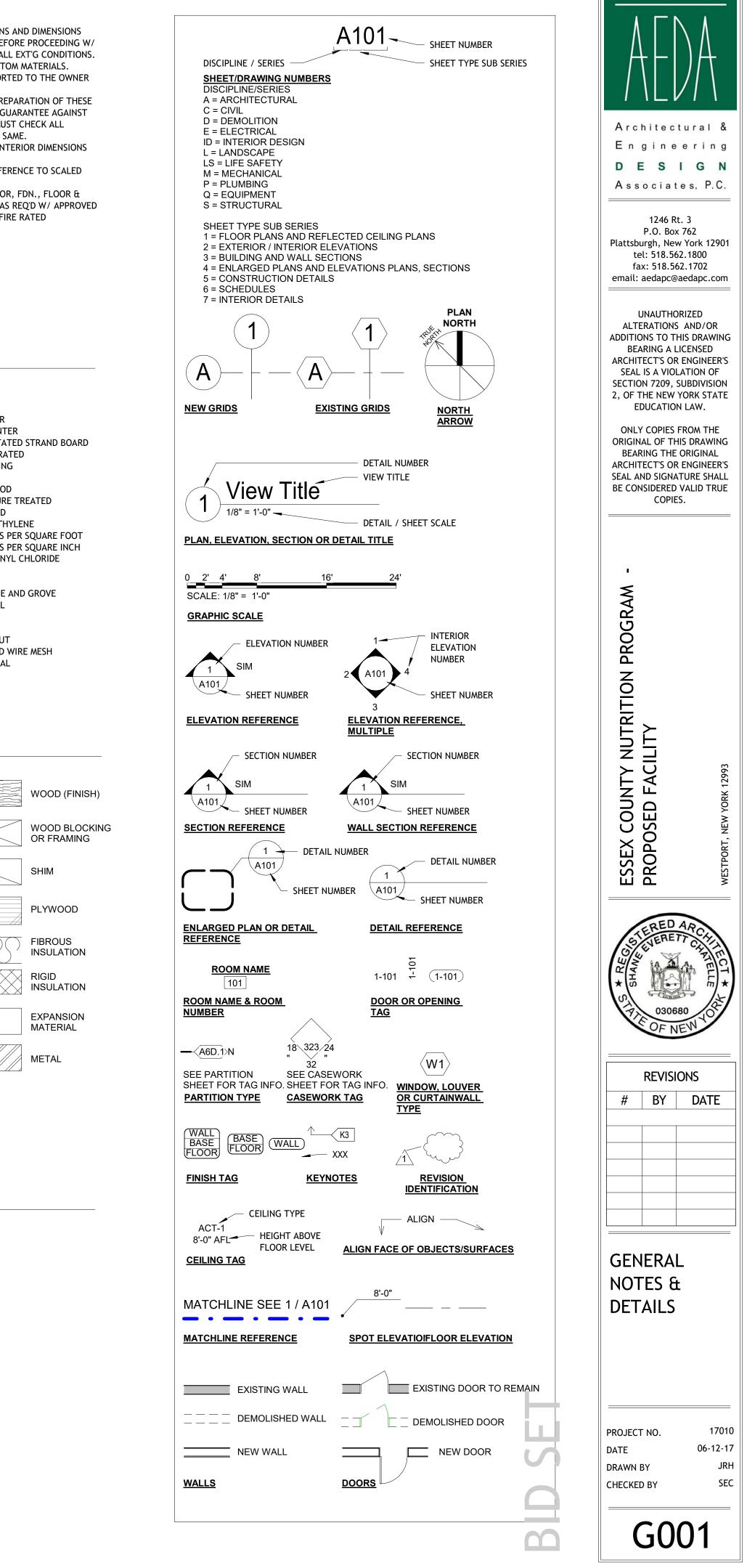
TRUSS IDENTIFICATION SIGN





DRAWING SYMBOL LEGEND

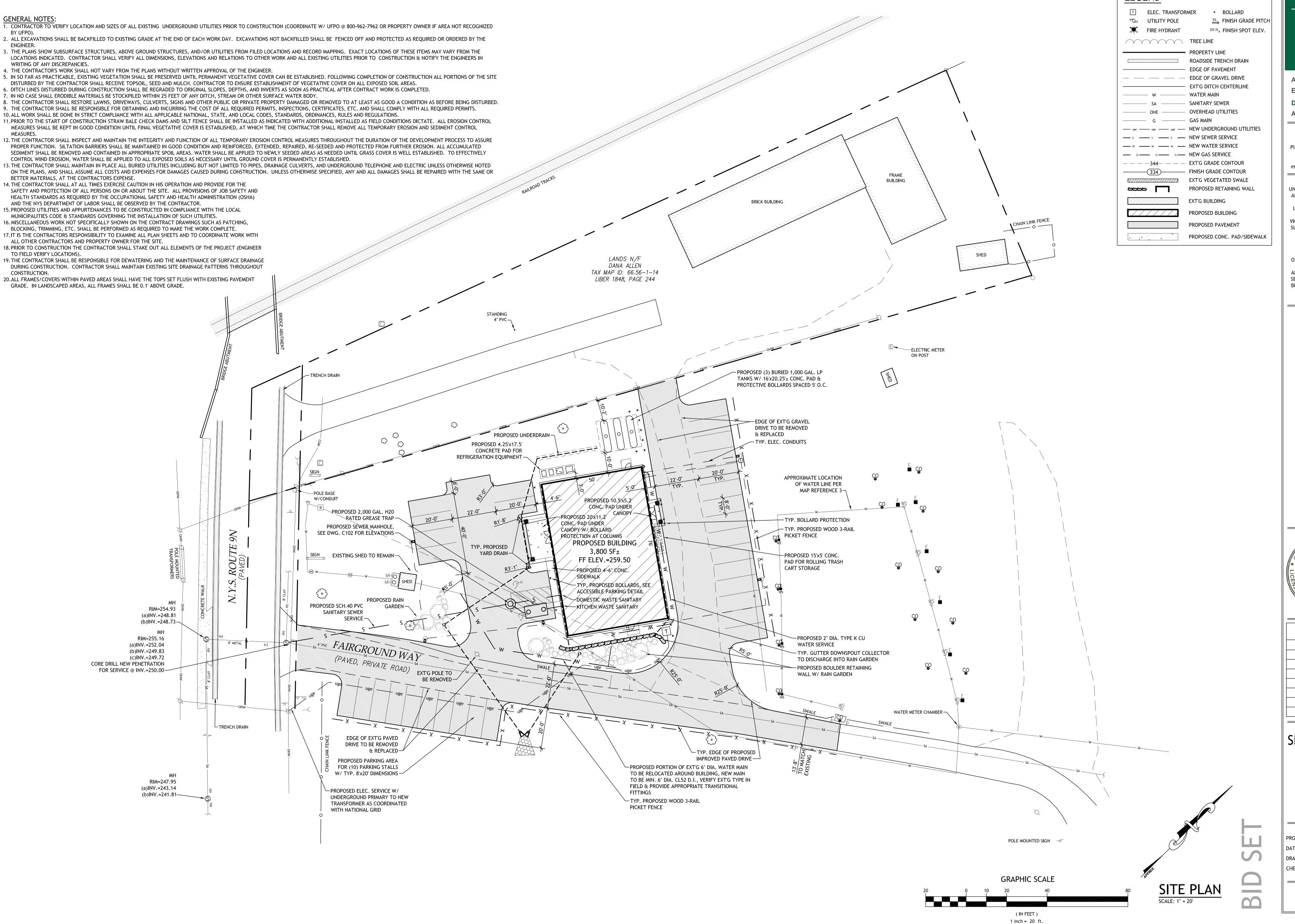
Established in 1985



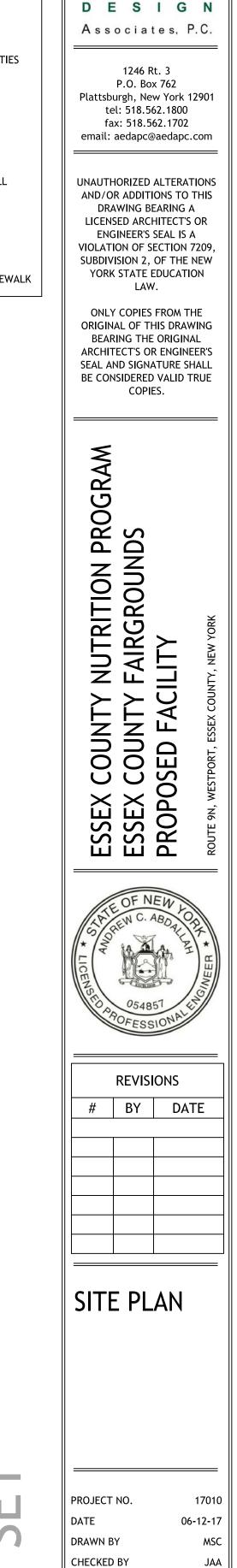
GENERAL NOTES:

1. CONTRACTOR TO VERIFY LOCATION AND SIZES OF ALL EXISTING UNDERGROUND UTILITIES PRIOR TO CONSTRUCTION (COORDINATE W/ UFPO @ 800-962-7962 OR PROPERTY OWNER IF AREA NOT RECOGNIZED BY UFPO).

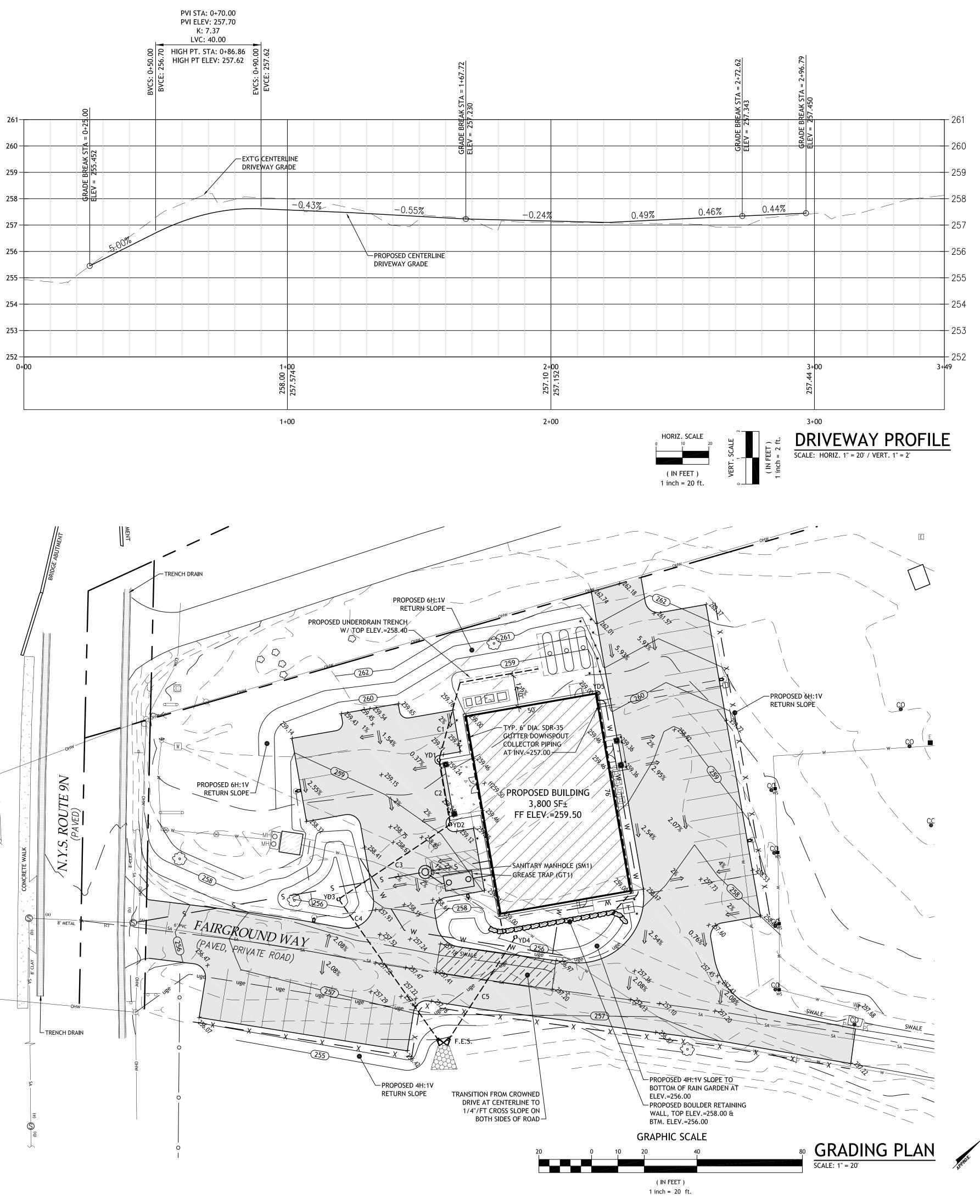
- 2. ALL EXCAVATIONS SHALL BE BACKFILLED TO EXISTING GRADE AT THE END OF EACH WORK DAY. EXCAVATIONS NOT BACKFILLED SHALL BE FENCED OFF AND PROTECTED AS REQUIRED OR ORDERED BY THE ENGINEER.
- 3. THE PLANS SHOW SUBSURFACE STRUCTURES, ABOVE GROUND STRUCTURES, AND/OR UTILITIES FROM FILED LOCATIONS AND RECORD MAPPING. EXACT LOCATIONS OF THESE ITEMS MAY VARY FROM THE LOCATIONS INDICATED. CONTRACTOR SHALL VERIFY ALL DIMENSIONS, ELEVATIONS AND RELATIONS TO OTHER WORK AND ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION & NOTIFY THE ENGINEERS IN WRITING OF ANY DISCREPANCIES.
- 4. THE CONTRACTOR'S WORK SHALL NOT VARY FROM THE PLANS WITHOUT WRITTEN APPROVAL OF THE ENGINEER.
- 5. IN SO FAR AS PRACTICABLE, EXISTING VEGETATION SHALL BE PRESERVED UNTIL PERMANENT VEGETATIVE COVER CAN BE ESTABLISHED. FOLLOWING COMPLETION OF CONSTRUCTION ALL PORTIONS OF THE SITE DISTURBED BY THE CONTRACTOR SHALL RECEIVE TOPSOIL, SEED AND MULCH. CONTRACTOR TO ENSURE ESTABLISHMENT OF VEGETATIVE COVER ON ALL EXPOSED SOIL AREAS. 6. DITCH LINES DISTURBED DURING CONSTRUCTION SHALL BE REGRADED TO ORIGINAL SLOPES, DEPTHS, AND INVERTS AS SOON AS PRACTICAL AFTER CONTRACT WORK IS COMPLETED.
- 7. IN NO CASE SHALL ERODIBLE MATERIALS BE STOCKPILED WITHIN 25 FEET OF ANY DITCH, STREAM OR OTHER SURFACE WATER BODY.
- 9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING AND INCURRING THE COST OF ALL REQUIRED PERMITS, INSPECTIONS, CERTIFICATES, ETC. AND SHALL COMPLY WITH ALL REQUIRED PERMITS.
- 10. ALL WORK SHALL BE DONE IN STRICT COMPLIANCE WITH ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES, STANDARDS, ORDINANCES, RULES AND REGULATIONS. 11. PRIOR TO THE START OF CONSTRUCTION STRAW BALE CHECK DAMS AND SILT FENCE SHALL BE INSTALLED AS INDICATED WITH ADDITIONAL INSTALLED AS FIELD CONDITIONS DICTATE. ALL EROSION CONTROL MEASURES SHALL BE KEPT IN GOOD CONDITION UNTIL FINAL VEGETATIVE COVER IS ESTABLISHED, AT WHICH TIME THE CONTRACTOR SHALL REMOVE ALL TEMPORARY EROSION AND SEDIMENT CONTROL
- MEASURES. 12. THE CONTRACTOR SHALL INSPECT AND MAINTAIN THE INTEGRITY AND FUNCTION OF ALL TEMPORARY EROSION CONTROL MEASURES THROUGHOUT THE DURATION OF THE DEVELOPMENT PROCESS TO ASSURE PROPER FUNCTION. SILTATION BARRIERS SHALL BE MAINTAINED IN GOOD CONDITION AND REINFORCED, EXTENDED, RE-SEEDED AND PROTECTED FROM FURTHER EROSION. ALL ACCUMULATED SEDIMENT SHALL BE REMOVED AND CONTAINED IN APPROPRIATE SPOIL AREAS. WATER SHALL BE APPLIED TO NEWLY SEEDED AREAS AS NEEDED UNTIL GRASS COVER IS WELL ESTABLISHED. TO EFFECTIVELY
- CONTROL WIND EROSION, WATER SHALL BE APPLIED TO ALL EXPOSED SOILS AS NECESSARY UNTIL GROUND COVER IS PERMANENTLY ESTABLISHED. 13. THE CONTRACTOR SHALL MAINTAIN IN PLACE ALL BURIED UTILITIES INCLUDING BUT NOT LIMITED TO PIPES, DRAINAGE CULVERTS, AND UNDERGROUND TELEPHONE AND ELECTRIC UNLESS OTHERWISE NOTED
- BETTER MATERIALS, AT THE CONTRACTORS EXPENSE. 14. THE CONTRACTOR SHALL AT ALL TIMES EXERCISE CAUTION IN HIS OPERATION AND PROVIDE FOR THE SAFETY AND PROTECTION OF ALL PERSONS ON OR ABOUT THE SITE. ALL PROVISIONS OF JOB SAFETY AND
- HEALTH STANDARDS AS REQUIRED BY THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) AND THE NYS DEPARTMENT OF LABOR SHALL BE OBSERVED BY THE CONTRACTOR.
- 15. PROPOSED UTILITIES AND APPURTENANCES TO BE CONSTRUCTED IN COMPLIANCE WITH THE LOCAL
- 16. MISCELLANEOUS WORK NOT SPECIFICALLY SHOWN ON THE CONTRACT DRAWINGS SUCH AS PATCHING,
- BLOCKING, TRIMMING, ETC. SHALL BE PERFORMED AS REQUIRED TO MAKE THE WORK COMPLETE. 17. IT IS THE CONTRACTORS RESPONSIBILITY TO EXAMINE ALL PLAN SHEETS AND TO COORDINATE WORK WITH
- ALL OTHER CONTRACTORS AND PROPERTY OWNER FOR THE SITE. 18. PRIOR TO CONSTRUCTION THE CONTRACTOR SHALL STAKE OUT ALL ELEMENTS OF THE PROJECT (ENGINEER
- TO FIELD VERIFY LOCATIONS). 19. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DEWATERING AND THE MAINTENANCE OF SURFACE DRAINAGE DURING CONSTRUCTION. CONTRACTOR SHALL MAINTAIN EXISTING SITE DRAINAGE PATTERNS THROUGHOUT
- CONSTRUCTION. 20.ALL FRAMES/COVERS WITHIN PAVED AREAS SHALL HAVE THE TOPS SET FLUSH WITH EXISTING PAVEMENT GRADE. IN LANDSCAPED AREAS, ALL FRAMES SHALL BE 0.1' ABOVE GRADE.

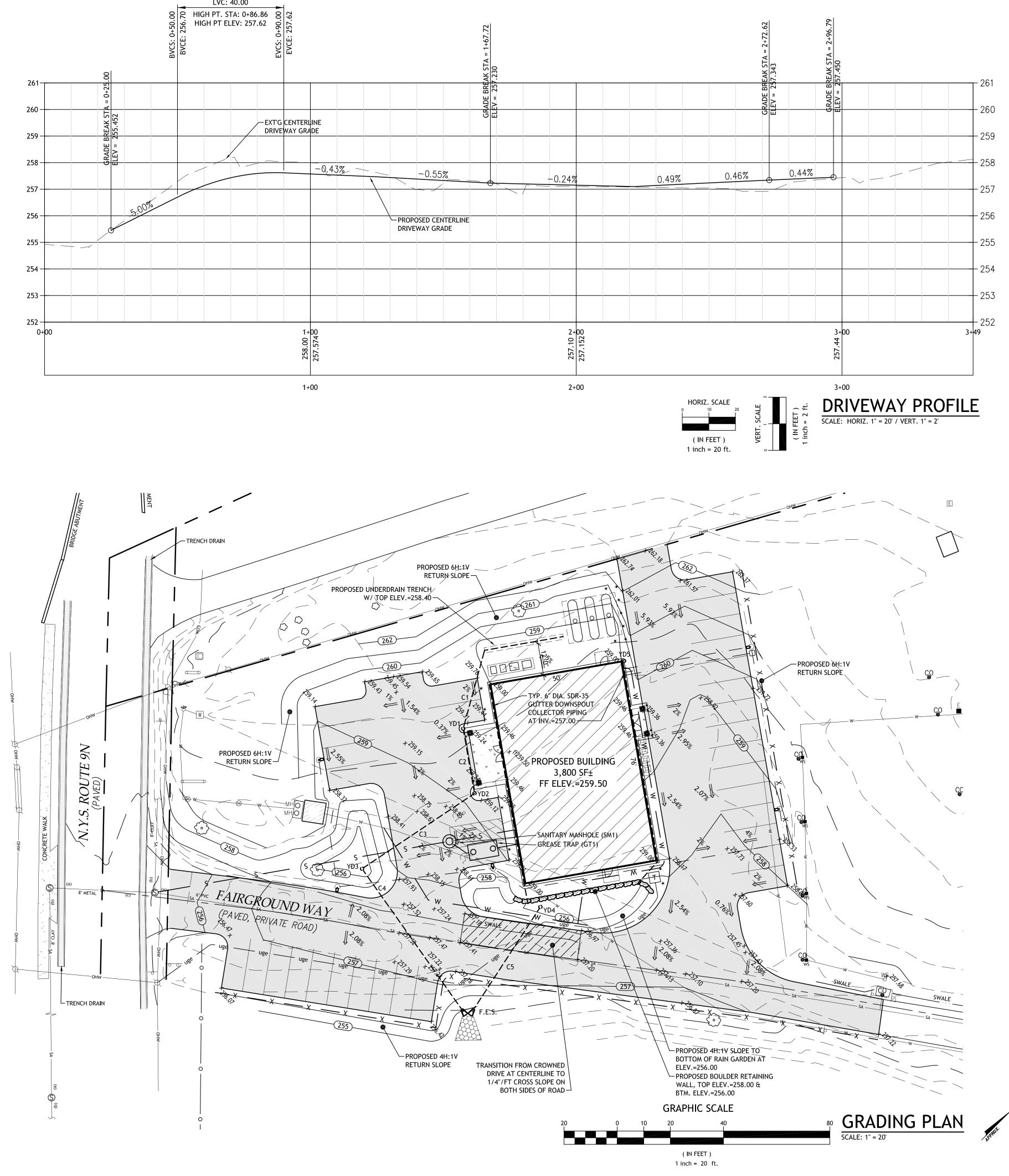


LEGEND			Established in 1985
	MER • BOLLARD	3	
് UTILITY POLE	5% FINISH GRADE PITCH		
FIRE HYDRANT	^{259.76} FINISH SPOT ELEV.		$\Lambda \mid I \setminus \Lambda$
$\frown \frown $	TREE LINE		$A \vdash DA$
	PROPERTY LINE		
	ROADSIDE TRENCH DRAIN		
	EDGE OF PAVEMENT		
	EDGE OF GRAVEL DRIVE		Architectural &
	EXT'G DITCH CENTERLINE		
w	WATER MAIN		Engineering
SA	SANITARY SEWER		DESIGN
OHE	OVERHEAD UTILITIES		Associates, P.C.
G	GAS MAIN		// 3 3 0 0 1 4 (0 3, 1 1 0.
uge uge uge	NEW UNDERGROUND UTILITIES		
<u> </u>	NEW SEWER SERVICE		1246 Rt. 3 P.O. Box 762
<u> </u>	NEW WATER SERVICE		Plattsburgh, New York 12901
G G G	NEW GAS SERVICE		tel: 518.562.1800
344	EXT'G GRADE CONTOUR		fax: 518.562.1702
(334)	FINISH GRADE CONTOUR		email: aedapc@aedapc.com
	EXT'G VEGETATED SWALE		
	PROPOSED RETAINING WALL		INAUTHORIZED ALTERATIONS
	EXT'G BUILDING		AND/OR ADDITIONS TO THIS DRAWING BEARING A
	PROPOSED BUILDING		LICENSED ARCHITECT'S OR ENGINEER'S SEAL IS A
	PROPOSED PAVEMENT	11	VIOLATION OF SECTION 7209, SUBDIVISION 2, OF THE NEW
A constraints of the second	PROPOSED CONC. PAD/SIDEWALK		YORK STATE EDUCATION LAW.



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LEGEND	
T ELEC. TRANSFOR	MER • BOLLARD
വ UTILITY POLE	5% FINISH GRADE PITCH
🐺 🛛 FIRE HYDRANT	^{259.76} ^x FINISH SPOT ELEV.
$\frown \frown $	TREE LINE
	PROPERTY LINE
	ROADSIDE TRENCH DRAIN
	EDGE OF PAVEMENT
	EDGE OF GRAVEL DRIVE
	EXT'G DITCH CENTERLINE
W	WATER MAIN
SA	SANITARY SEWER
OHE	OVERHEAD UTILITIES
U U	GAS MAIN
uge uge uge uge	NEW UNDERGROUND UTILITIES
<u> </u>	NEW SEWER SERVICE
	NEW WATER SERVICE
	NEW GAS SERVICE
311	EXT'G GRADE CONTOUR
(334)	FINISH GRADE CONTOUR
	EXT'G VEGETATED SWALE
	PROPOSED RETAINING WALL
	EXT'G BUILDING
	PROPOSED BUILDING
	PROPOSED PAVEMENT
4 4 4	PROPOSED CONC. PAD/SIDEWALK

SANITARY SEWER STRUCTURE SCHEDULE

SANITART SEWER STRUCTURE SCHEDULE							
		INLET PIPING				OUTLET PI	PING
D	RIM	DIA.	INV.	RUN	DIA.	INV.	RUN
MANHOLE MH1)	258.83	4"е 4"s	255.97 255.12	L=24 LF S=2.08%	6"	255.02	L=108 LF S=4.65%
GREASE TRAP GT1)	258.9 <u>+</u>	4"	255.54	L=9 LF S=2.08%	4"	255.29	L=8 LF S=2.08%
IOTES DOMESTIC SA FOUNDATION KITCHEN SAN FOUNDATION	ITARY WASTI						

MANHOLE MH1 OUTLET PIPE TO EXTEND TO EXT'G SEWER MANHOLE WITH NEW PENETRATION CORE DRILLED, SEALED WATERTIGHT, AND BENCH MODIFIED TO RECEIVE NEW INLET @ INV.=250.00

STORM SEWER STRUCTURE SCHEDULE						
D	RIM	DIA.	INV.	DIA.	INV.	SUMP
′D1	259.00	6 "N 6 "ds	255.60 255.60	8"	255.60	254.60
′D2	259.00	8"ℕ 6"ds	255.37 255.60	8"	255.37	254.37
′D3	257.00	8"	254.87	8"	254.87	253.37
′D4	256.50			8"	254.45	252.95
′D5	258.75	6"	257.00	6"	257.00	256.00

STORM DRAIN PIPING SCHEDULE							
ID	RUN	DIAMETER	LENGTH	SLOPE	INV. IN	INV. OUT	
INDERDRAIN		6" PERF.	30 LF		255.90	255.90	
C1	UD-YD1	6"	30 LF	1.0%	255.90	255.60	
C2	YD1-YD2	8"	23.5 LF	1.0%	255.60	255.37	
C3	YD2-YD3	8"	50 LF	1.0%	255.37	254.87	
C4	YD3-FES	8"	65 LF	1.3%	254.87	254.00	
C5	YD4-FES	8"	45 LF	1.0%	254.45	254.00	
OTES) PIPE LENGTHS DO NOT INCLUDE END SECTIONS, ALL INLETS/OUTLETS TO DAYLIGHT SHALL HAVE FLARED END SECTIONS) ALL PIPE TO BE CORPLICATED HORE SMOOTH WALL CUILVERT PIPE FOUND TO ADS N=12							

2) ALL PIPE TO BE CORRUGATED HDPE SMOOTH WALL CULVERT PIPE, EQUAL TO ADS N-12 SOIL TIGHT PIPE 3) GUTTER DOWNSPOUT COLLECTOR PIPING SHALL BE 6" DIA. SDR-35 FROM BUILDING FOUNDATION TO DISCHARGE POINT IN YARD DRAIN OR RAIN GARDEN, AS SHOWN

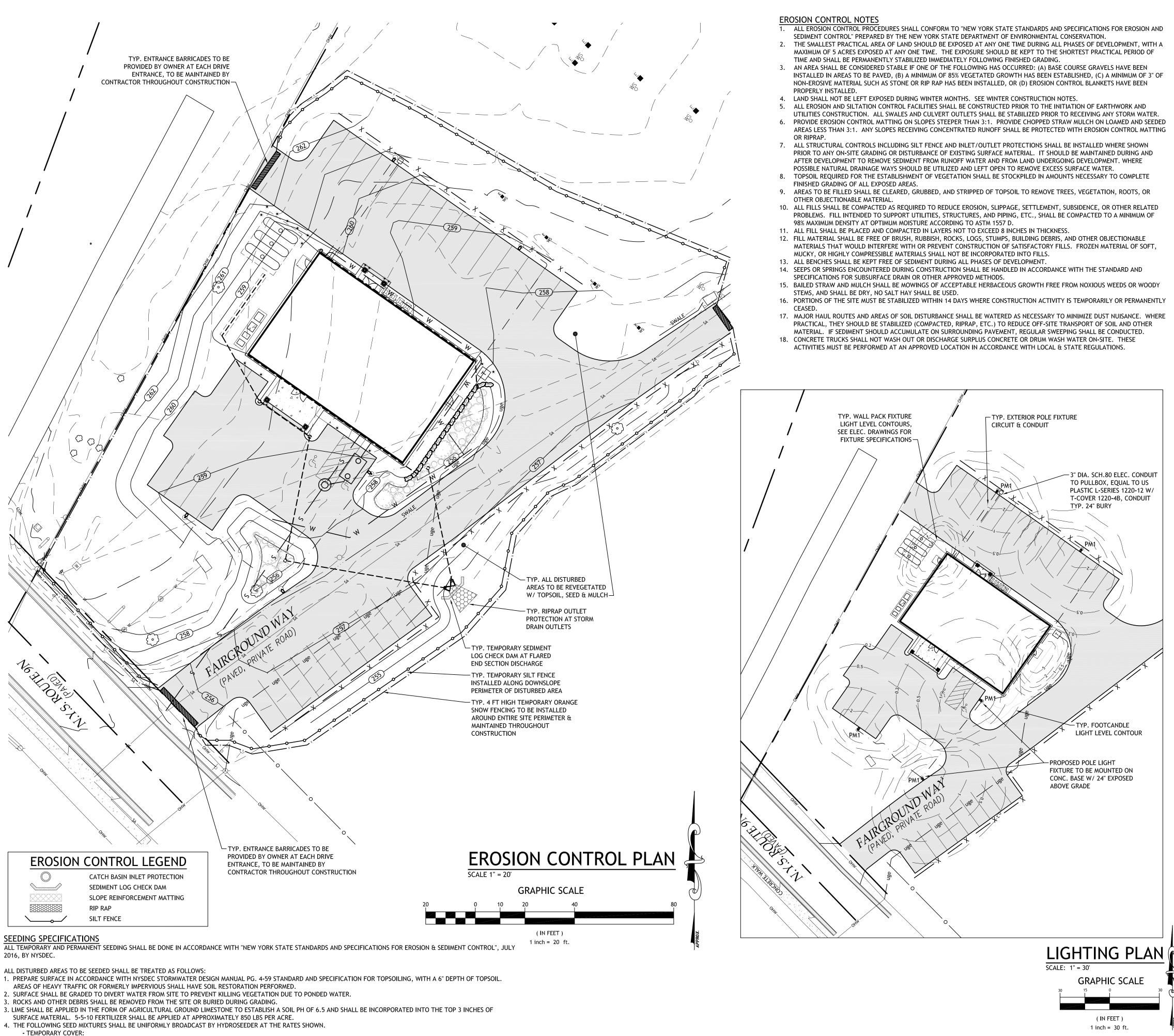


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- 4. THE FOLLOWING SEED MIXTURES SHALL BE UNIFORMLY BROADCAST BY HYDROSEEDER AT THE RATES SHOWN.
- SUMMER RYEGRASS (ANNUAL OR PERENNIAL) @ 30 LBS PER ACRE
- WINTER CERTIFIED "AROOSTOOK" WINTER RYE @ 100 LBS PER ACRI

WINTER - CERTIFIED "AROOSTOOK" WINTER RYE @ 100 LBS PER ACRE									
- PERMANENT COVER:									
SPECIES	APPL. RATE	APPL. RATE							
65% CREEPING RED FESCUE	85-114 LBS/AC	2.0-2.6 LBS/1000SF							
20% PERENNIAL RYEGRASS	26-35 LBS/AC	0.6-0.8 LBS/1000SF							
15% FINE FESCUE	19-26 LBS/AC	0.4-0.6 LBS/1000SF							
TOTAL MIX	130-175 LBS/ACRE	3.0-4.0 LBS/1000SF							
THE HYDROSEEDING SLURRY SHALL CONTAIN	I HIGH GRADE 70% PAPER /	30% WOOD MULCH AND AN ORGANIC COMPOSITION TACKIFIER.							

- 6. OPTIMAL PLANTING DATES ARE EARLY SPRING UNTIL END OF MAY AND AUGUST THROUGH EARLY OCTOBER, SPECIAL CONSIDERATIONS FOR WATERING SHALL BE GIVEN IF
- PLANTING OCCURS BETWEEN JUNE AND JULY. 7. AFTER GRASS COVER IS ESTABLISHED, INSPECT FOR BARE SPOTS OR WASHOUTS, REPAIR TOPSOIL AS NEEDED & REAPPLY SEED BY HAND TO FILL IN ALL UNVEGETATED VOIDS.
- 8. VEGETATIVE GROWTH MUST ACHIEVE 95% COVERAGE WITH NO BARE AREAS GREATER THAN 18 INCHES IN DIAMETER PRIOR TO ISSUANCE OF SUBSTANTIAL COMPLETION.

	LIGHTING SCHEDUL			
KEY	FIXTURE	WATTAGE	MOUNTING HEIGHT	LIGHTING
PM1	TR10-PH8 55W48LED4K-R-LE4A	55W	14 FT	▲ ★
PALET 2) POLE	RE COLOR TO BE CHOSE BY OWNER FROM PI	- 		

G LEGEND **EXISTING LIGHT FIXTURES** POLE MOUNTED FIXTURE

_ _ ILLUMINANCE PLOT W/ FOOTCANDLE INDICATED

WINTER CONSTRUCTION NOTES

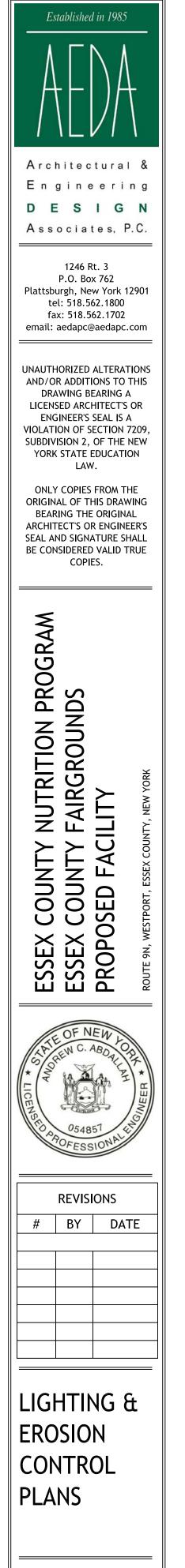
- 1. ALL PROPOSED VEGETATED AREAS WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATED GROWTH BY OCTOBER 15th, OR WHICH ARE DISTURBED AFTER OCTOBER 15th, SHALL BE STABILIZED BY SEEDING AND INSTALLING EROSION CONTROL BLANKETS ON SLOPES GREATER THAN 3:1, AND SEEDING AND PLACING 3 TO 4 TONS OF MULCH PER ACRE, SECURED WITH ANCHORED NETTING, ELSEWHERE. THE INSTALLATION OF EROSION BLANKETS OR MULCH AND NETTING SHALL NOT OCCUR OVER ACCUMULATED SNOW OR ON FROZEN GROUND AND SHALL BE COMPLETED IN
- ADVANCE OF THAW OR SPRING MELT EVENTS. 2. ALL DITCHES OR SWALES WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATED GROWTH BY OCTOBER 15th, OR WHICH ARE DISTURBED AFTER OCTOBER 15th, SHALL BE STABILIZED TEMPORARILY WITH STONE OR EROSION CONTROL BLANKETS
- APPROPRIATE FOR THE DESIGN FLOW CONDITIONS. 3. AFTER NOVEMBER 15th, INCOMPLETE ROAD OR PARKING SURFACES, WHERE WORK HAS STOPPED FOR THE WINTER SEASON, SHALL BE PROTECTED WITH A MINIMUM OF 3 INCHES OF GRAVEL PER NYSDOT ITEM #4.

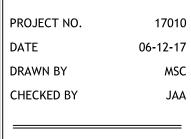
INSPECTION & MAINTENANCE PRACTICES

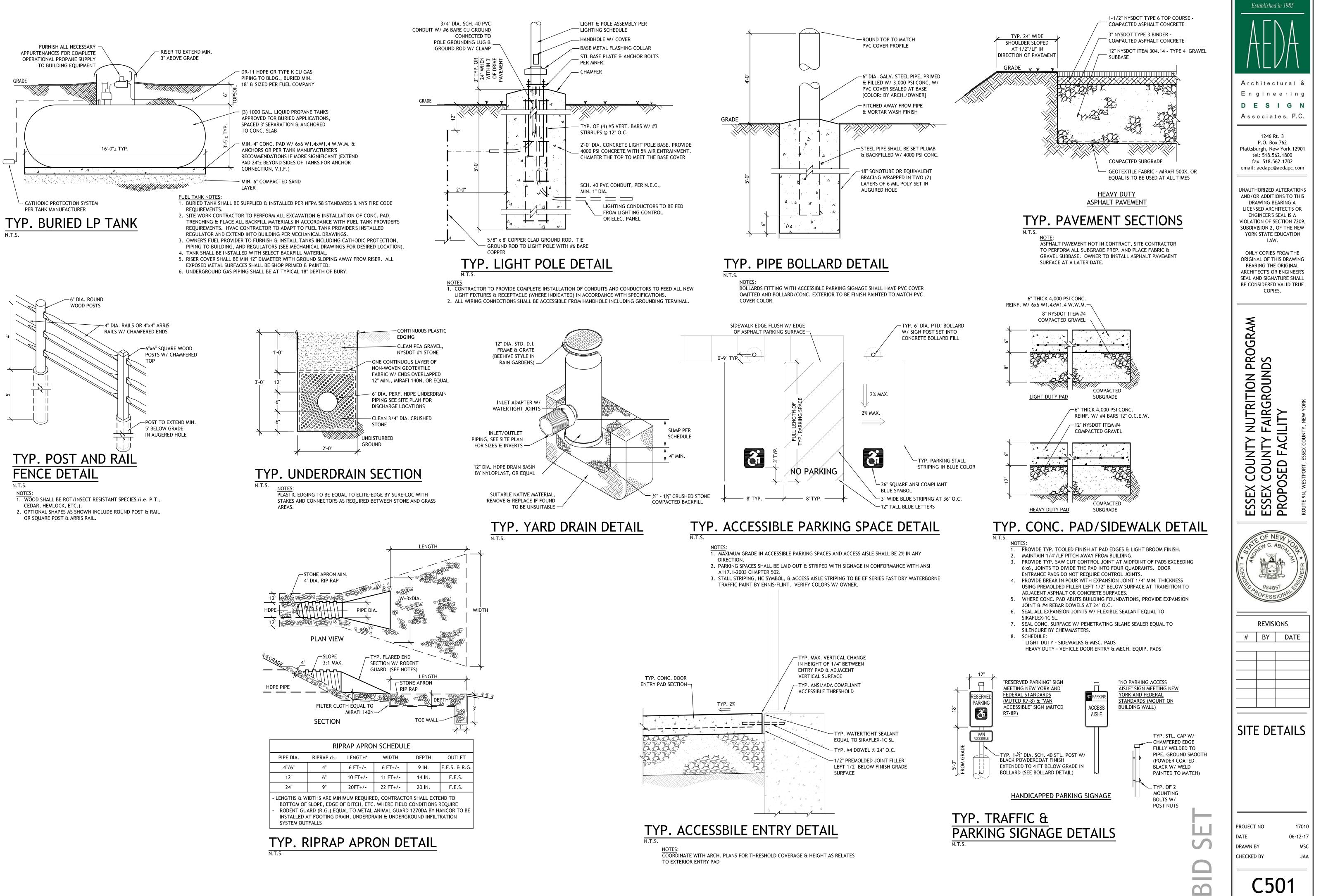
- THE FOLLOWING ARE INSPECTION AND MAINTENANCE PRACTICES THAT WILL BE IMPLEMENTED TO MAINTAIN EROSION PREVENTION AND SEDIMENT CONTROL.
- 1. THE MINIMUM PRACTICAL AREAS WILL BE DENUDED AT ONE TIME. 2. ALL EROSION CONTROL AND STABILIZATION MEASURES WILL BE INSPECTED AT LEAST ONCE EVERY 7 DAYS AND FOLLOWING ANY STORM EVENT OF 0.5 INCHES OR
- GREATER. 3. ALL MEASURES WILL BE MAINTAINED IN GOOD WORKING ORDER; IF A REPAIR IS NECESSARY, IT SHALL BE INITIATED WITHIN 24 HOURS OF THE INSPECTION. 4. BUILT UP SEDIMENT SHALL BE REMOVED FROM SILT FENCE WHEN IT HAS REACHED
- ONE-THIRD THE HEIGHT OF THE FENCE, OR PHYSICAL STRAIN ON THE FENCE IS EVIDENT. 5. SILT FENCE SHALL BE INSPECTED FOR DEPTH OF SEDIMENT, TEARS, FABRIC
- ATTACHMENT TO POSTS, AND STABILITY OF POSTS IN THE GROUND. 6. CHECK DAMS SHALL BE INSPECTED FOR DEPTH OF SEDIMENT, WASHOUT, AND
- STABILITY OF POSTS IN THE GROUND. BUILT UP SEDIMENT SHALL BE REMOVED WHEN IT HAS REACHED ONE-HALF THE HEIGHT OF THE DAM. REPLACE DAM MATERIAL AS REQUIRED. 7. THE STABILIZED CONSTRUCTION ENTRANCE SHALL BE INSPECTED FOR SEDIMENT
- BUILDUP, PROPER DEPTH OF STONE AND STONE WASHOUT. IF DEGRADATION IS EVIDENT, SEDIMENT BUILDUP SHALL BE REMOVED AND ADDITIONAL STONE PLACED TO RESTORE OPERATIONAL SURFACE. 8. STOCKPILED MATERIAL SHALL BE INSPECTED AND MAINTAINED IN SUCH A MANNER
- THAT WILL LIMIT MIGRATION. 9. NATURAL VEGETATIVE BUFFER AREAS AROUND WETLANDS, ABUTTING PROPERTY LINES, AND OTHER SENSITIVE AREAS SHALL BE ROUTINELY INSPECTED FOR SIGNS OF SEDIMENT MIGRATION, CONSTRUCTION DEBRIS, AND DAMAGE DUE TO ACTIVITY.
- 10. TEMPORARY AND PERMANENT SEEDING AND PLANTING WILL BE INSPECTED FOR BARE SPOTS, WASHOUTS, AND HEALTHY GROWTH.
- 11. A MAINTENANCE AND INSPECTION REPORT SHALL BE MADE AFTER EACH INSPECTION. A COPY OF EACH INSPECTION REPORT SHALL BE KEPT FOR RECORDS BY BOTH THE OWNER AND THE INSPECTOR.

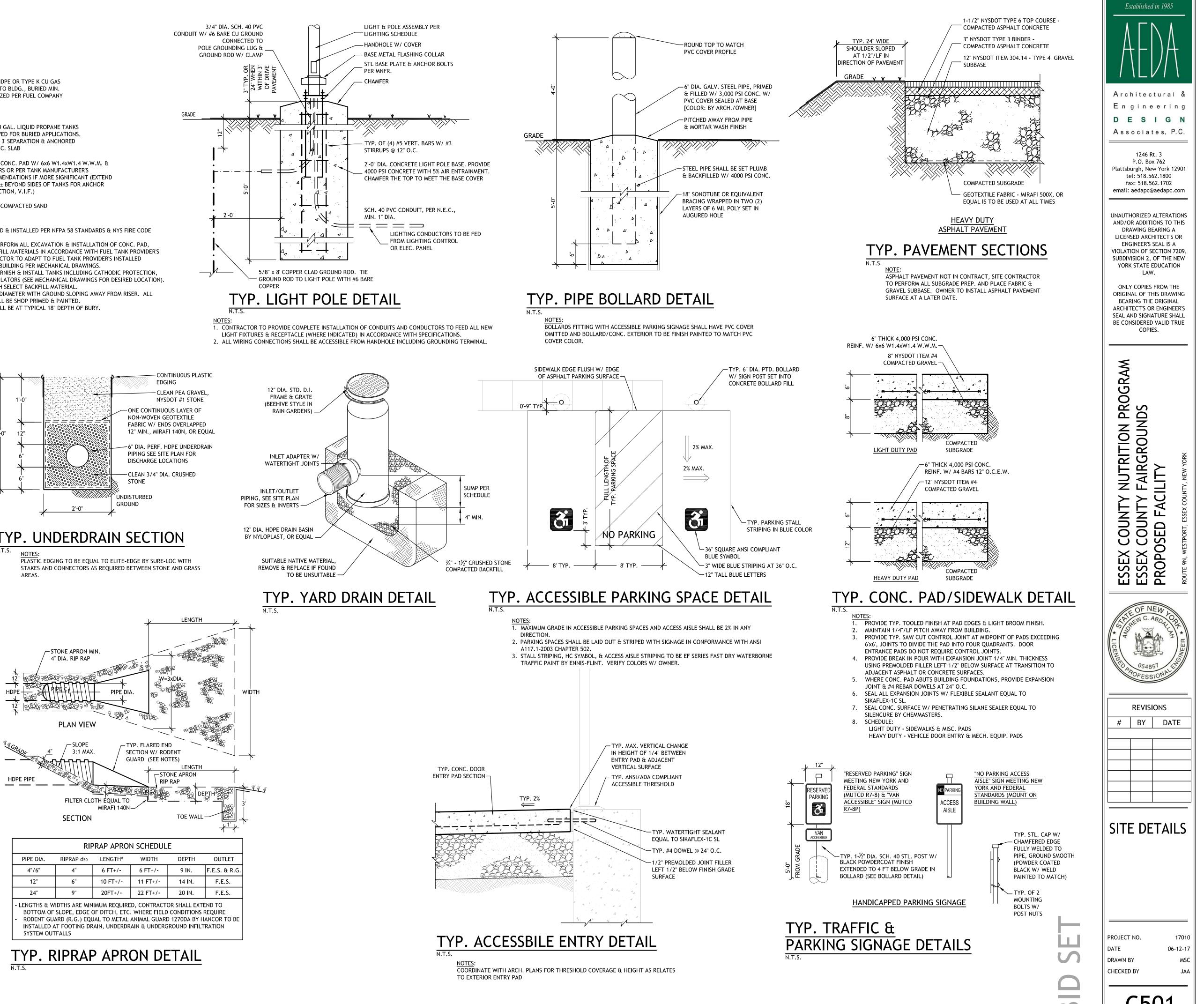
CONSTRUCTION SEQUENCING NOTES

- . PRIOR TO ANY OTHER SITE WORK, THE STABILIZED CONSTRUCTION ENTRANCE SHALL BE INSTALLED, THEN SEDIMENT LOG CHECK DAMS AND SILTATION FENCING ARE TO BE CONSTRUCTED AS SHOWN, AND ARE TO BE MAINTAINED THROUGHOUT CONSTRUCTION UNTIL THE AREA IS COMPLETELY STABILIZED
- 2. INSTALL INLET/OUTLET PROTECTIONS PRIOR TO THE DISTURBANCE OF ANY LANDS TO PROTECT EXISTING CLOSED DRAINAGE SYSTEMS. AT COMPLETION OF WORK, INSPECT AND FLUSH ALL SEDIMENT FROM CULVERTS, STORM DRAIN PIPING, ETC. 3. ALL EARTH STOCKPILES ARE TO BE STABILIZED WITH STRAW MULCH AND SEEDED WITH RYE GRASS. SILTATION FENCING TO BE PLACED AROUND THE BASE OF ALL
- STOCKPILES WHEREVER PRACTICAL. 4. GRADING OPERATIONS FOR AREAS TO BE PAVED OR OTHERWISE DISTURBED AND UNDERGROUND UTILITIES & STORM DRAIN SYSTEMS ARE TO BE INSTALLED. ALL EROSION CONTROL MEASURES ARE TO BE MAINTAINED DURING CONSTRUCTION UNTIL ALL AREAS ARE STABILIZED.
- 5. ALL EROSION CONTROL MEASURES SHALL BE INSPECTED WEEKLY OR AFTER EVERY RAINFALL OF 0.5" OR MORE. 6. DURING CONSTRUCTION, THE CULVERTS AND END SECTIONS SHALL BE SET TO A
- GRADE WITH SEDIMENTATION BASINS FORMED AT THE INLET, SUCH THAT STORM WATER RUNOFF CONTAINING ACCUMULATED SILT, OR OTHER ERODED MATERIAL FROM THE CONSTRUCTION SITE WILL BE DISCHARGED TO THE RECEIVING WATERS 7. AFTER CONSTRUCTION IS COMPLETED AND VEGETATION IS ESTABLISHED IN THE DISTURBED AREAS, THE AREAS IN AND AROUND THE TEMPORARY EROSION CONTROL
- SYSTEM SHALL BE CLEANED UP. CARE BEING TAKEN NOT TO ALLOW THE ACCUMULATION SILT TO RUN INTO THE WETLANDS AND/OR PROTECTED AREAS. THEN THE TEMPORARY CONTROL SYSTEMS SHALL BE REMOVED AND THE AREA RETURNED AS NEAR AS POSSIBLE TO ITS NATURAL STATE.

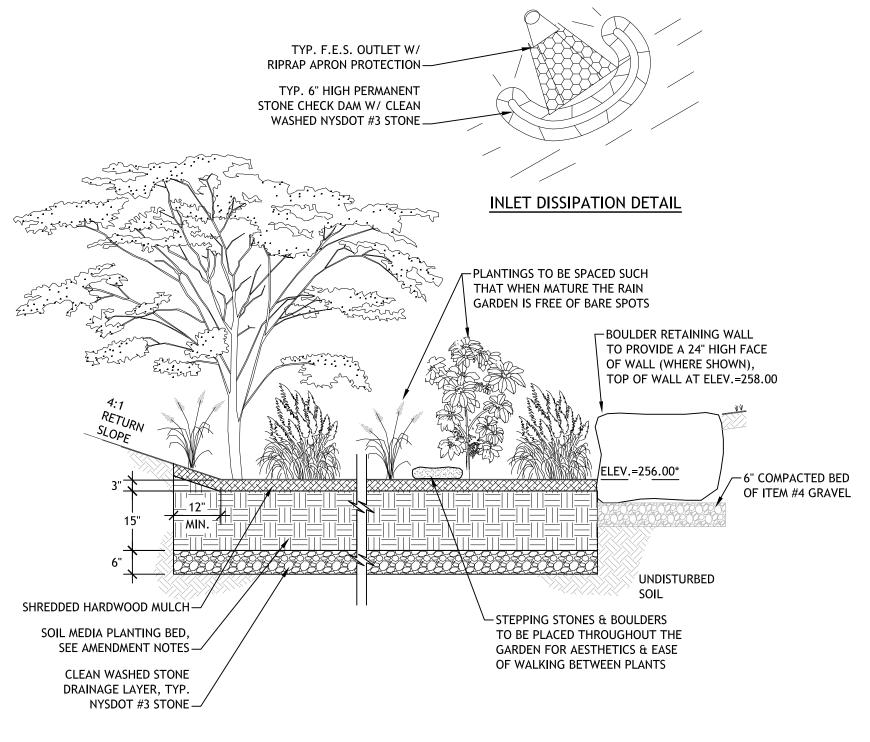








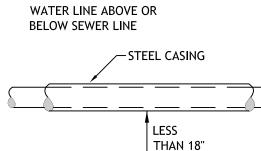
	RIPRAP APRON SCHEI					
	PIPE DIA.	RIPRAP d50	LENGTH*	WIDTH		
	4"/6"	4"	6 FT+/-	6 FT+/-		
	12"	6"	10 FT+/-	11 FT+/-		
	24"	9"	20FT+/ -	22 FT+/-		
 LENGTHS & WIDTHS ARE MINIMUM REQUIRED, CONTRAGE BOTTOM OF SLOPE, EDGE OF DITCH, ETC. WHERE FIE RODENT GUARD (R.G.) EQUAL TO METAL ANIMAL GUA INSTALLED AT FOOTING DRAIN, UNDERDRAIN & UNDE SYSTEM OUTFALLS 						
	TVD D					



TYP. RAIN GARDEN DETAIL

- 1. *- BOTTOM OF RAIN GARDEN SHOWN REPRESENTS LOWEST ELEVATION, SEE SITE PLAN FOR
- ADDITIONAL FINISH GRADES. 2. SOIL MEDIA SHALL CONSIST OF 50%-70% SAND (LESS THAN 5% CLAY CONTENT) AND 50-30% TOPSOIL WITH AN AVERAGE OF 5% ORGANIC
- MATERIAL (SUCH AS COMPOST OR PEAT). 3. SOIL SHALL BE FREE OF STONES, ROOTS, WOODY DEBRIS, AND ANIMAL WASTE.
- 4. PLANTINGS SHALL INCORPORATE SPECIES LISTED IN THE PLANT LIST, LAID OUT IN AN APPROVED PATTERN DEVELOPED BY AN EXPERIENCED
- LANDSCAPE CONSULTANT. 5. THE PLANTING PATTERN SHALL BE ESTABLISHED SUCH THAT MORE UPLAND SPECIES ARE AT THE OUTERMOST ZONE OF THE GARDEN TO MORE
- WETLAND SPECIES AT THE INNERMOST ZONE. 6. THE QUANTITIES IDENTIFIED PROVIDE A GENERAL OUANTITY REQUIRED FOR BIDDING TO OBTAIN A FULL GARDEN WITHOUT BARE SPOTS WHEN PLANTS MATURE.
- 7. PLANTS SHALL BE CONTAINER GROWN WITH A WELL ESTABLISHED ROOT SYSTEM. 8. FIRST WATERING PERFORMED AT TIME OF
- PLANTING BY G.C., SUBSEQUENT WATERING TO BE PERFORMED BY OWNER.

RAIN GARDEN PLANT LIST						
SHRUBS (QTY.) HERBACEOUS PLANTS (QTY.)						
WITCH HAZEL (5) - HAMEMELIS VIRGINIANA ,FAC-	CINNAMON FERN - OSMUNDA CINNAMOMEA, FACW					
WINTERBERRY (8) - ILEX VERTICILLATA, FACW+	CUTLEAF CONEFLOWER - RUDBECKIA LACINIATA, FACW					
ARROWWOOD (13) - VIBURNUM DENTATUM, FAC	WOOLGRASS - SCIRPUS CYPERINUS, FACW+					
RED-OSIER DOGWOOD (11) - CORNUS STOLONIFERA, FACW+	NEW ENGLAND ASTER - ASTER NOVAE-ANGLIAE, FACW-					
SWEET PEPPERBUSH (8) - CLETHRA ALNIFOLIA, FAC+	FOX SEDGE - CAREX VULPINOIDEA, OBL					
	SPOTTED JOE-PYE WEED - EUPATORIUM MACULATUM, FACW					
	SWITCH GRASS - PANICUM VIRGATUM, FAC					
	GREAT BLUE LOBELIA - LOBELIA SIPHATICA, FACW+					
	WILD BERGAMOT - MONARDA FISTULOSA, UPL					
	RED MILKWEED - ASCLEPIAS INCARNATE, OBL					
	ERBACEOUS PLANT SPECIES LISTED CREATE A DIVERSE GARDEN WITH NO EN PLANTS MATURE.					
SEE NOTES FOR ADDITIONAL PLANTING AND GENERAL CONSTRUCTION INFORMATION.						



18" OR MORE VERTICAL SEPARATION

18" OR

MORE

SECTION

1. CENTER FULL LENGTH OF PIPE AT CROSSING.

HORIZONTAL SEPARATION

SEWER LINE

10'-0" OR

MORE

WATER LINE

WATER LINE ABOVE OR

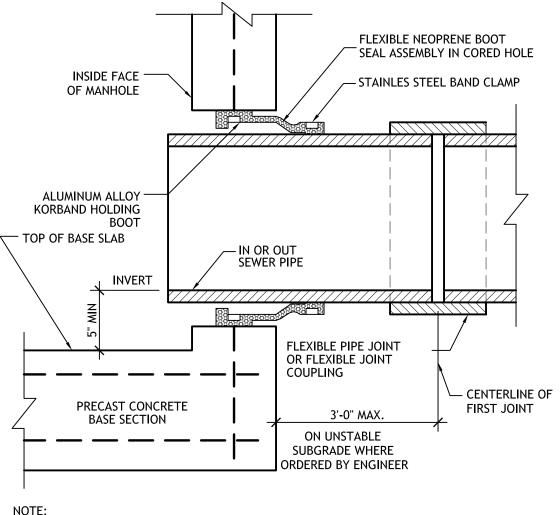
BELOW SEWER LINE

ABOVE SEWER LINE.

MAINS.

N.T.S.

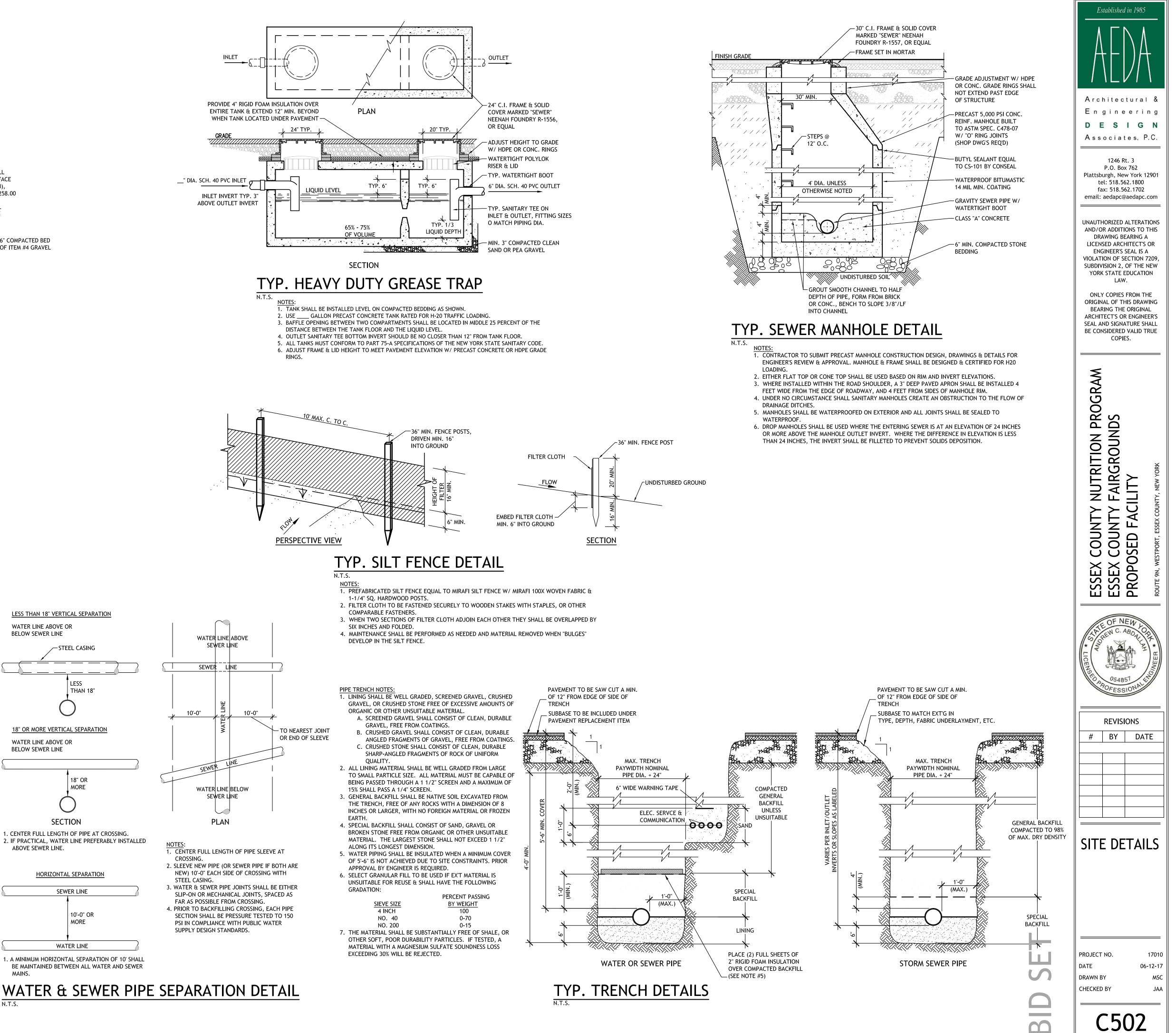
LESS THAN 18" VERTICAL SEPARATION



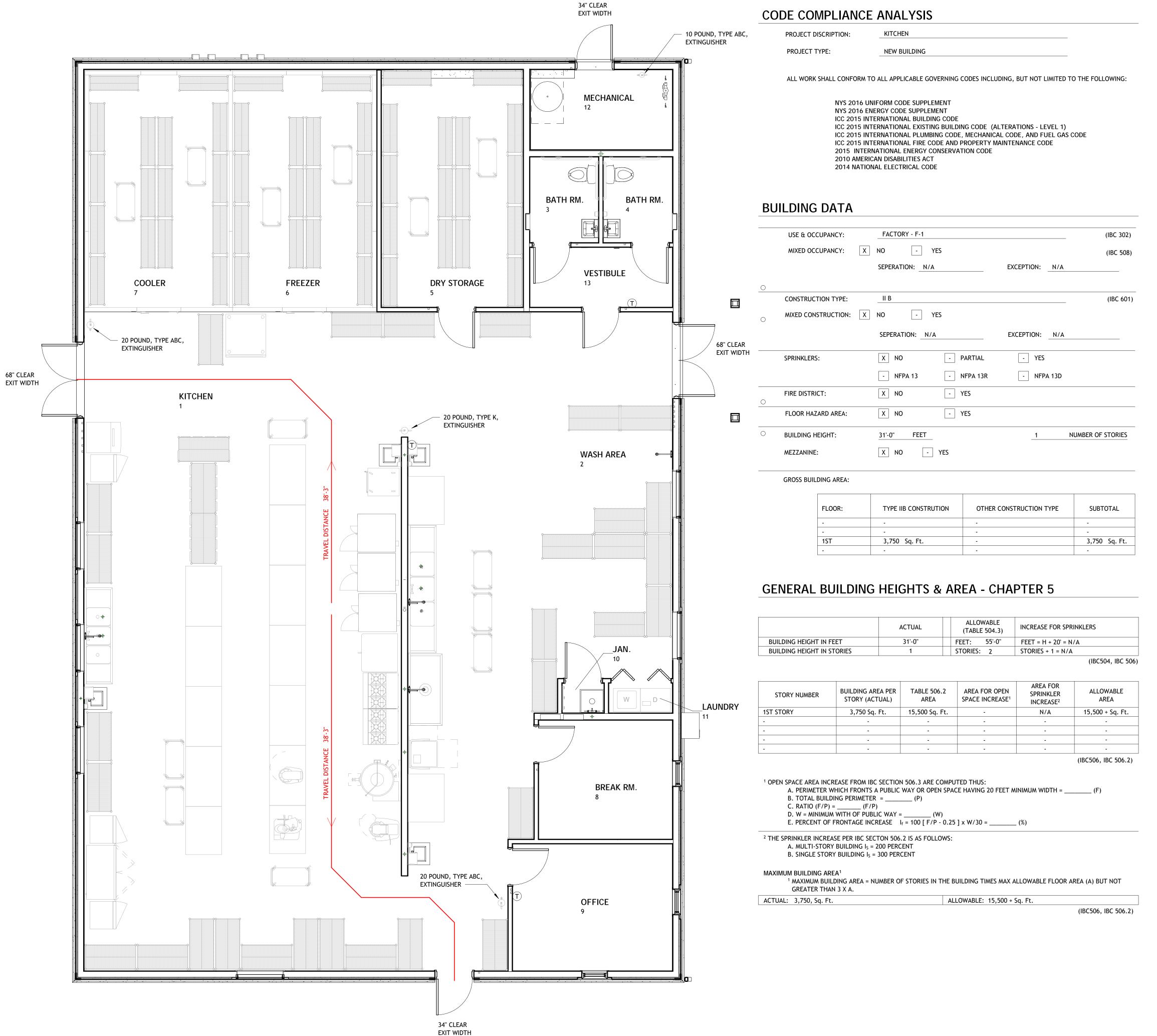
CONNECTION TO AN EXISTING MANHOLE SHALL BE SIMILAR IN DETAIL. CONTRACTOR TO COORDINATE CORING OF EXISTING MANHOLE WITH TOWN OF WESTPORT WATER & SEWER DEPT. NEW PIPE TO BE GROUTED IN PLACE TO CREATE AN AIRTIGHT SEAL W/ BENCH SLOPED TO DRAIN.

TYP. MANHOLE CONNECTION DETAIL

N.T.S.







OCCUPANT LOAD AND EXIT WIDTH

USE GROUP OR SPACE DESCIPTION	(A)	(B)	(C)	([))	EXIT WIDTH (IN)				
	AREA SQ. FT.	AREA PER OCCUPANT (TABLE	CCCUPANT LOAD	EGRESS WIDTH PER OCCUPANT (IBC 1005.2)		REQUIRED WIDTH (IBC 1005.1)		ACTUAL WIDTH SHOWN ON PLANS		
	-	1004.1.2)		STAIR	LEVEL	STAIR	LEVEL	STAIR	LEVEL	
KITCHEN	2412	200	12	N/A	.15	N/A	1.8	N/A	170	
BREAK ROOM	111	100	1	N/A	.15	N/A	.15	N/A	34	
OFFICE	140	100	1	N/A	.15	N/A	.15	N/A	34	
-	-	-	-	-	-	-	-	-	-	
•	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
TOTAL	-	-	14	-	-	-	-	-	-	

(IBC1003 AND IBC1004)

(IBC CHAPTER 10)

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NUMBER AND ARRANGMENT OF EXITS

FLOOR, ROOM OR SPACE DESIGNATION	MINIMUM NUMBER OF EXITS (IBC 1006.2.1)		TRAVEL DISTANCE (IBC 1017.2)		ARRANGEMENT MEANS OF EGRESS (IBC 1007.1.1 & 1022.2.2)		
	REQUIRED	ACTUAL	ALLOWABLE	ACTUAL	ALLOWABLE	ACTUAL	
KITCHEN	1	3	200	40	37'	50'	
-	-	-	-	-	-	-	
-	-	-	-	-	-	-	
-	-	-	-	-	-	-	
-	-	-	-	-	-	-	
-	-	-	-	-	-	-	
-	-	-	-	-	-	-	
-	-	-	-	-	-	-	
-	-	-	-	-	-	-	
-	-	-	-	-	-	-	

PLUMBING FIXTURE REQUIREMENTS

OCCUPANCY	WATERCLOSETS			LAVATORIES		SHOWERS	DRINKING FOUNTAINS		SERVICE
	MALE	FEMALE	URINALS	MALE	FEMALE	/ TUBS & EYEWASH	REGULAR	ACCESSIBLE	SINK
F1 - REQUIRED	1 PER 125	1 PER 65	0	1 PER 200	1 PER 200	0	0	0	1
F1 - ACTUAL	1	1	0	1	1	0	0	0	1
-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-
								(IBC2902.2).	(PC403)



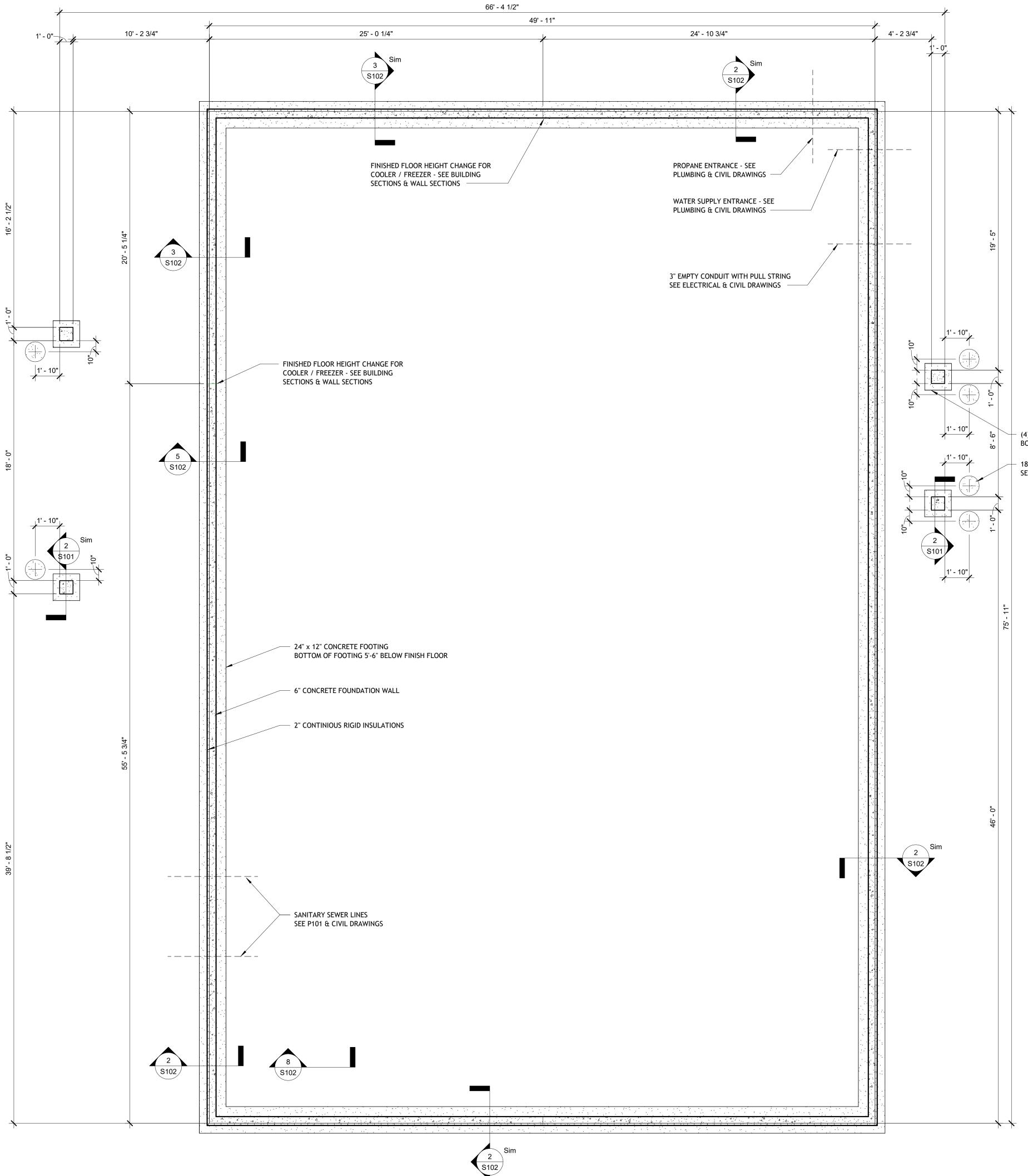
Established in 1985

ADDITIONS TO THIS DRAWING BEARING A LICENSED ARCHITECT'S OR ENGINEER'S SEAL IS A VIOLATION OF SECTION 7209, SUBDIVISION 2, OF THE NEW YORK STATE EDUCATION LAW.

ONLY COPIES FROM THE ORIGINAL OF THIS DRAWING BEARING THE ORIGINAL ARCHITECT'S OR ENGINEER'S SEAL AND SIGNATURE SHALL BE CONSIDERED VALID TRUE COPIES.

ESSEX COUNTY NUTRITION PROGRAM -	PROPOSED FACILITY	WESTPORT, NEW YORK 12993
ALS * RECON		ARCCHAITELLE VOI
	REVISI	ONS
#	BY	DATE
LIFE	SAF	ETY
PROJECT DATE	NO.	17010 06-12-17





FOUNDATION PLAN

S101 1/4" = 1'-0"

STRUCTURAL DESIGN CRITERIA

GROUND SNOW LOAD	=60 PSF
WIND EXPOSURE	=90 MPH
SEISMIC DESIGN CATEGORY	=Do
SITE CLASS	=Do
LOAD BEARING PRESSURE	=2000 PSF

EARTHWORK NOTES

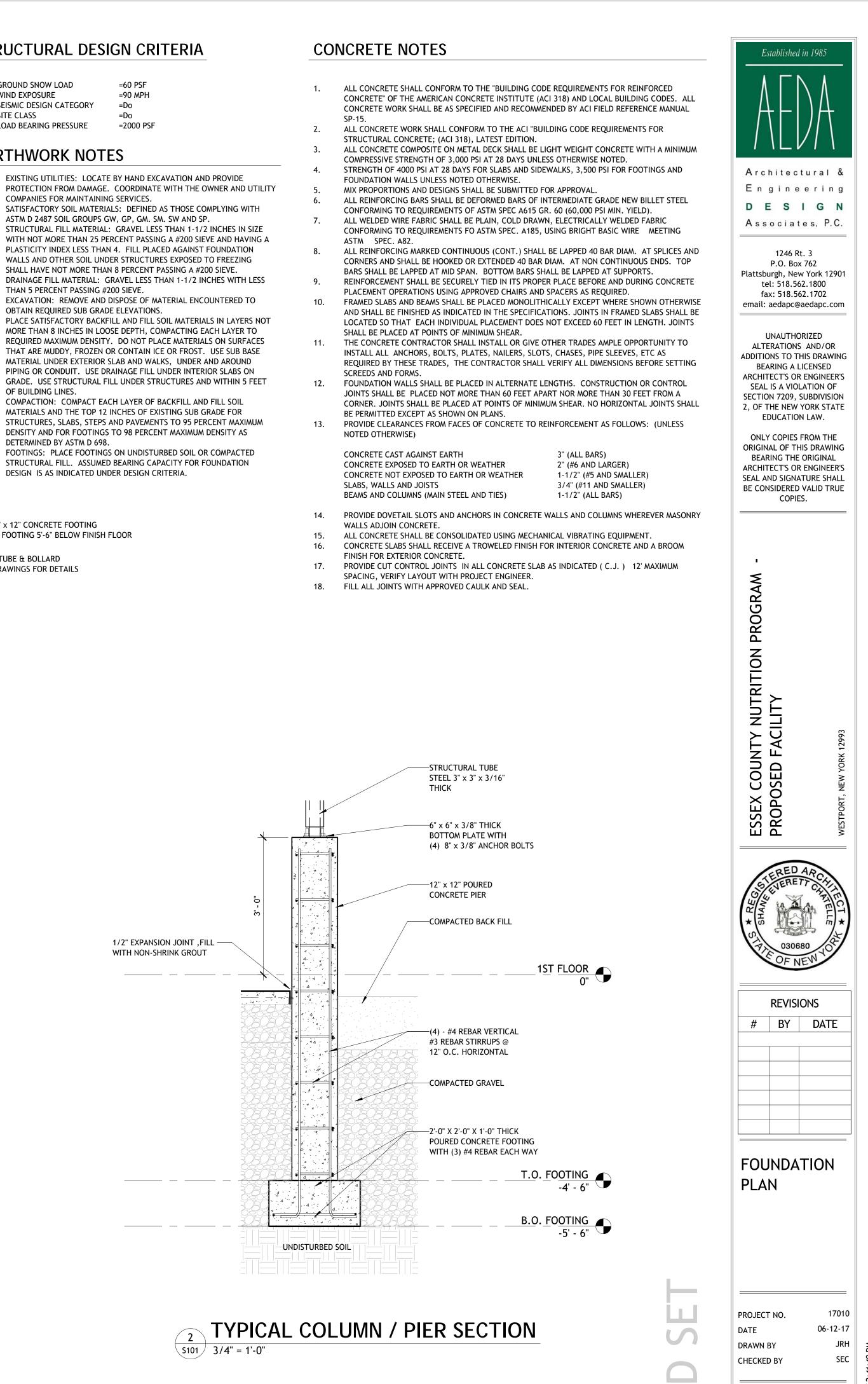
- EXISTING UTILITIES: LOCATE BY HAND EXCAVATION AND PROVIDE PROTECTION FROM DAMAGE. COORDINATE WITH THE OWNER AND UTILITY COMPANIES FOR MAINTAINING SERVICES.
- ASTM D 2487 SOIL GROUPS GW, GP, GM. SM. SW AND SP. STRUCTURAL FILL MATERIAL: GRAVEL LESS THAN 1-1/2 INCHES IN SIZE WITH NOT MORE THAN 25 PERCENT PASSING A #200 SIEVE AND HAVING A PLASTICITY INDEX LESS THAN 4. FILL PLACED AGAINST FOUNDATION WALLS AND OTHER SOIL UNDER STRUCTURES EXPOSED TO FREEZING SHALL HAVE NOT MORE THAN 8 PERCENT PASSING A #200 SIEVE.
- DRAINAGE FILL MATERIAL: GRAVEL LESS THAN 1-1/2 INCHES WITH LESS THAN 5 PERCENT PASSING #200 SIEVE. EXCAVATION: REMOVE AND DISPOSE OF MATERIAL ENCOUNTERED TO
- OBTAIN REQUIRED SUB GRADE ELEVATIONS. PLACE SATISFACTORY BACKFILL AND FILL SOIL MATERIALS IN LAYERS NOT MORE THAN 8 INCHES IN LOOSE DEPTH, COMPACTING EACH LAYER TO REQUIRED MAXIMUM DENSITY. DO NOT PLACE MATERIALS ON SURFACES THAT ARE MUDDY, FROZEN OR CONTAIN ICE OR FROST. USE SUB BASE MATERIAL UNDER EXTERIOR SLAB AND WALKS, UNDER AND AROUND
- PIPING OR CONDUIT. USE DRAINAGE FILL UNDER INTERIOR SLABS ON GRADE. USE STRUCTURAL FILL UNDER STRUCTURES AND WITHIN 5 FEET OF BUILDING LINES. COMPACTION: COMPACT EACH LAYER OF BACKFILL AND FILL SOIL MATERIALS AND THE TOP 12 INCHES OF EXISTING SUB GRADE FOR
- STRUCTURES, SLABS, STEPS AND PAVEMENTS TO 95 PERCENT MAXIMUM DENSITY AND FOR FOOTINGS TO 98 PERCENT MAXIMUM DENSITY AS DETERMINED BY ASTM D 698.
- FOOTINGS: PLACE FOOTINGS ON UNDISTURBED SOIL OR COMPACTED STRUCTURAL FILL. ASSUMED BEARING CAPACITY FOR FOUNDATION DESIGN IS AS INDICATED UNDER DESIGN CRITERIA.

(4) 24" x 24" x 12" CONCRETE FOOTING BOTTOM OF FOOTING 5'-6" BELOW FINISH FLOOR

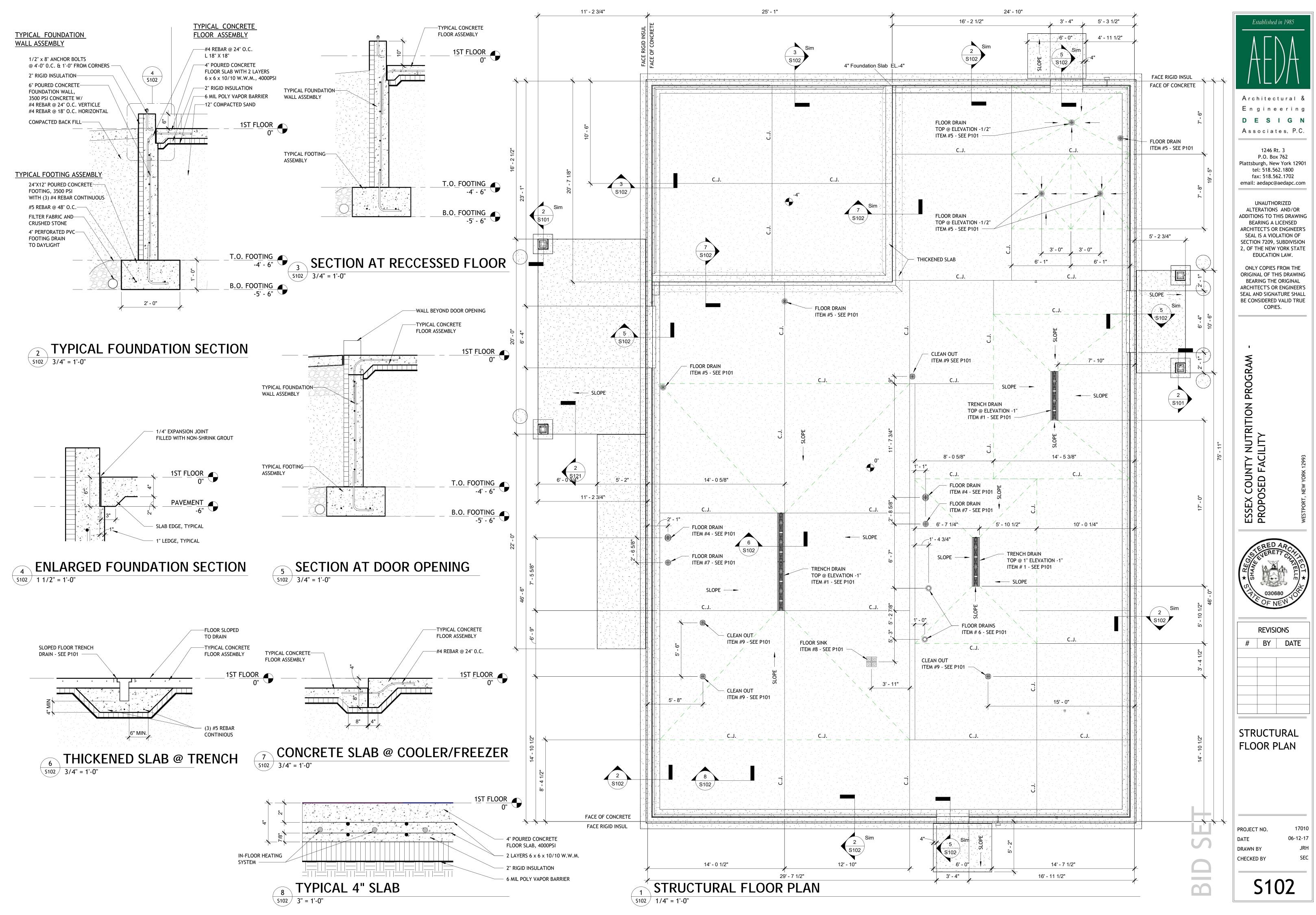
18" Ø SONOTUBE & BOLLARD SEE CIVIL DRAWINGS FOR DETAILS

5.

1/2" EXPANSION JOINT ,FILL -WITH NON-SHRINK GROUT



S101



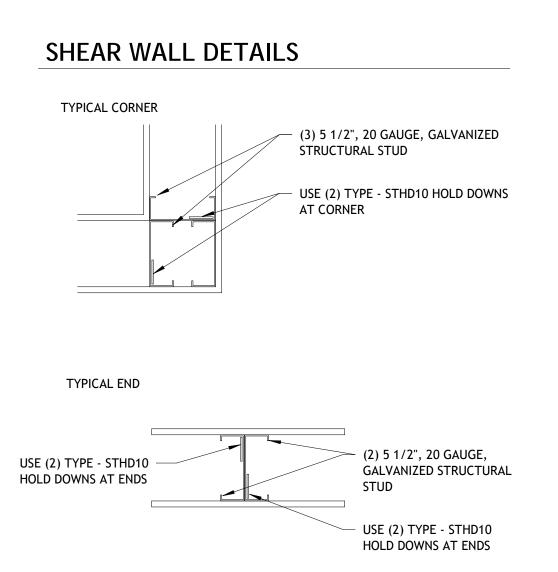
6/21/2017 2:4

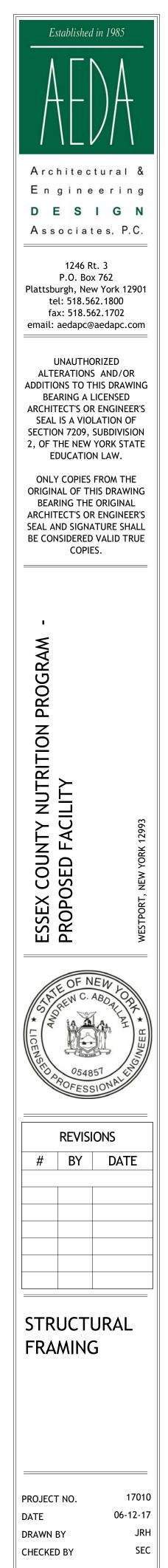


SHEAR WALL CONSTRUCTION NOTES



1. GYPSUM SHEATHING, USE 4' x 10' SHEETS. APPLY SHEETS VERTICAL TO MINIMIZE SEEMS. ANY PANEL JOINTS NOT ON STUDS MUST BE BACKED WITH 1 1/2" WIDE GALVANIZED STRAPPING GYPSUM SCREWS APPLIED IN A 4/4 PATTERN FASTENING SHEATHING TO METAL STUDS BOTH



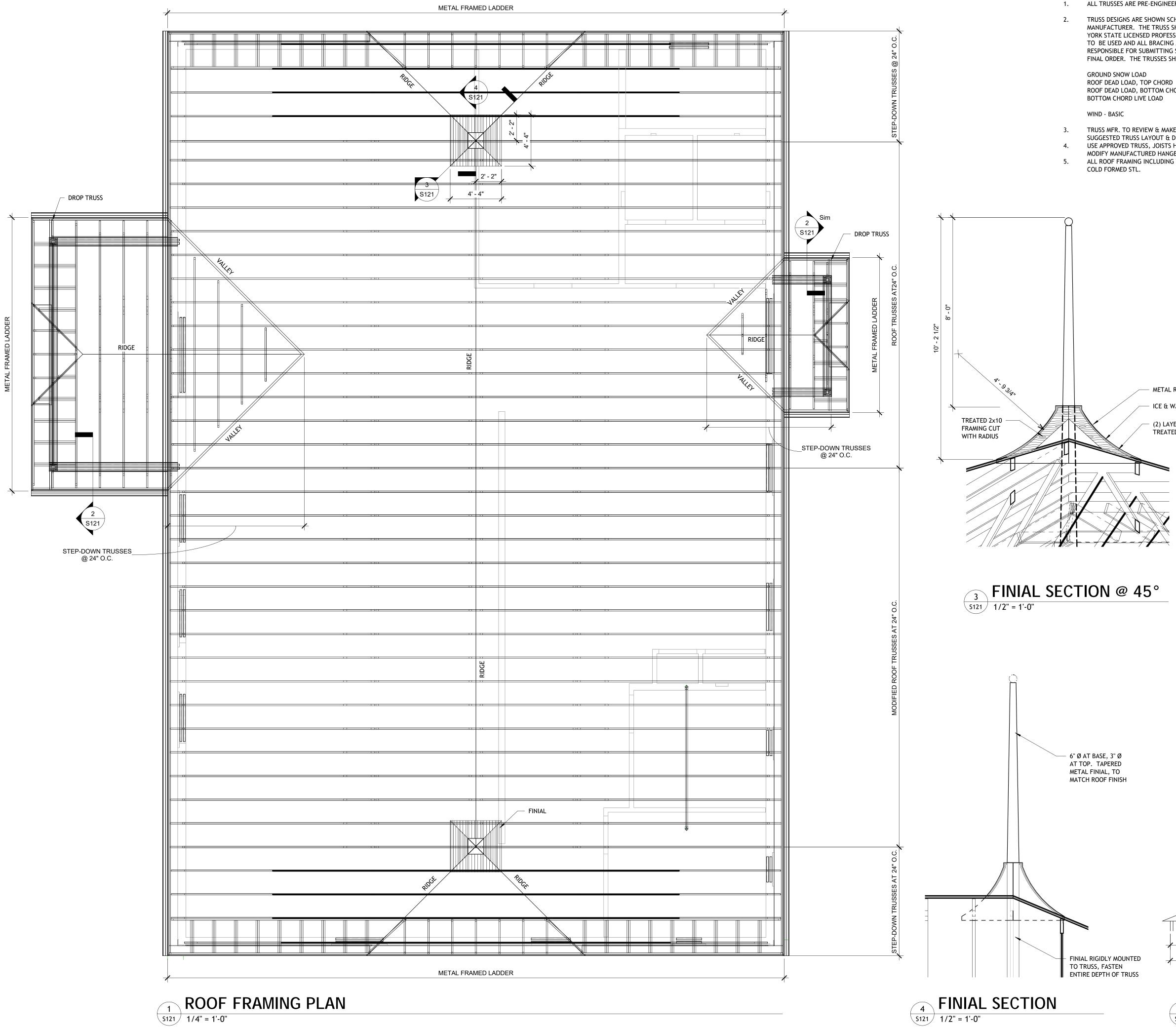


S103

S

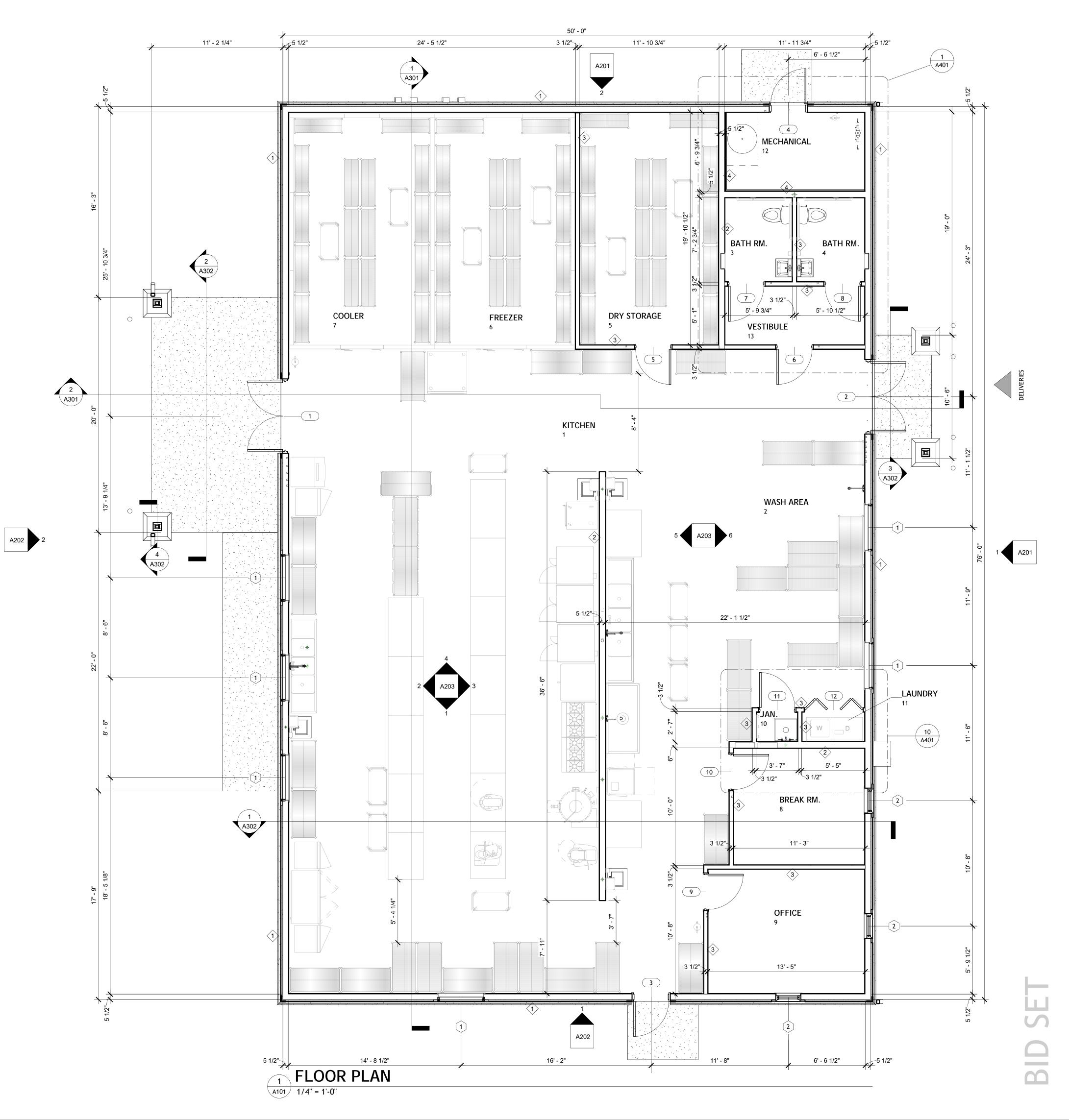
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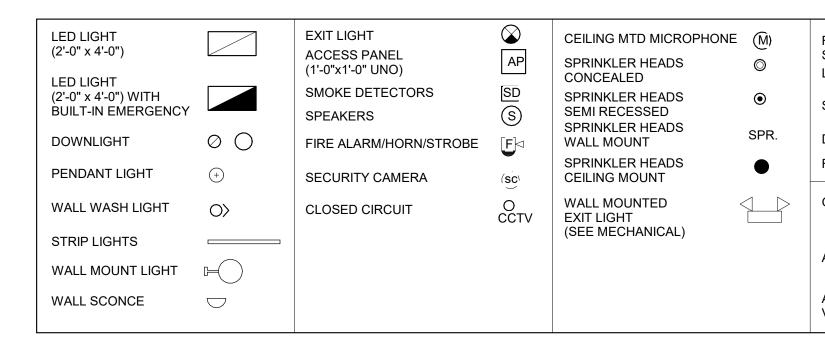
Established in 1985 ROOF TRUSS NOTES 1. ALL TRUSSES ARE PRE-ENGINEERED METAL CONSTRUCTION TRUSS DESIGNS ARE SHOWN SCHEMATICALLY AND SHALL BE DESIGNED BY THE TRUSS MANUFACTURER. THE TRUSS SHOP DRAWINGS SHALL BEAR THE SEAL AND SIGNATURE OF A NEW YORK STATE LICENSED PROFESSIONAL ENGINEER. TRUSS SYSTEMS MUST INDICATE EXACT DESIGN TO BE USED AND ALL BRACING AND LIFTING INSTRUCTIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SUBMITTING SHOP DRAWINGS TO THE OWNER/ENG'R FOR APPROVAL PRIOR TO FINAL ORDER. THE TRUSSES SHALL BE DESIGNED WITH THE FOLLOWING LOADS: Architectural & GROUND SNOW LOAD = 60 PSF Engineering ROOF DEAD LOAD, TOP CHORD = 10 PSF ROOF DEAD LOAD, BOTTOM CHORD 15 PSF = DESIGN BOTTOM CHORD LIVE LOAD = 20 PSF Associates, P.C. WIND - BASIC = 90 MPH TRUSS MFR. TO REVIEW & MAKE NECESSARY REVISIONS TO ROOF FRAMING AS REQ'D. FROM 1246 Rt. 3 SUGGESTED TRUSS LAYOUT & DESIGN. P.O. Box 762 USE APPROVED TRUSS, JOISTS HANGERS, & HURRICANE CLIPS THROUGHOUT AS REQ'D. DO NOT Plattsburgh, New York 12901 MODIFY MANUFACTURED HANGERS OR FASTENING DEVICES. tel: 518.562.1800 ALL ROOF FRAMING INCLUDING TRUSSES, RAFTERS, VALLEY & RIDGE BEAMS TO BE PRE-ENG'RD fax: 518.562.1702 COLD FORMED STL. email: aedapc@aedapc.com UNAUTHORIZED ALTERATIONS AND/OR ADDITIONS TO THIS DRAWING BEARING A LICENSED ARCHITECT'S OR ENGINEER'S SEAL IS A VIOLATION OF SECTION 7209, SUBDIVISION 2, OF THE NEW YORK STATE EDUCATION LAW. ONLY COPIES FROM THE ORIGINAL OF THIS DRAWING BEARING THE ORIGINAL PREMANUFACTURED ARCHITECT'S OR ENGINEER'S METAL TRUSS SEAL AND SIGNATURE SHALL BE CONSIDERED VALID TRUE COPIES. _____ 10' - 0" PROGRAM METAL ROOF BUILT-UP BEAT, TYPE - ICE & WATER MEMBRANE ____ SF-1 SEE SHEET S103 -SIMPSON STRONG TIE - (2) LAYERS 1/4" TOP PLATE ROOF TRUSS CONNECTION TREATED SHEATHING JNTY NUTRITION F FACILITY 6" x 6 x 3/8" THICK TYPE - SSP AT EVERY TRUSS TUBE COLUMN ACT CEILING 3" x 3" x 3/16" THICK 8' - 0" ESSEX COUN PROPOSED EREDA BOTTOM PLATE PLATE 6" x 6" x 3/8" THICK WITH (4) 8" X 3/8" ANCHOR BOLTS 3' - 0' ╲┍╡╺┡╩ REVISIONS # BY DATE 2 COVERED ENTRY SECTION 5121 1" = 1'-0" — 6" Ø AT BASE, 3" Ø AT TOP. TAPERED METAL FINIAL, TO MATCH ROOF FINISH ROOF 11' - 0" FRAMING 12 14' - 0" 14' - 0" 22' - 0" 17010 50' - 0" PROJECT NO. FINIAL RIGIDLY MOUNTED TRUSS BEARING / SPAN 06-12-17 TO TRUSS, FASTEN S DATE ENTIRE DEPTH OF TRUSS DRAWN BY JRH CHECKED BY SEC 5 5121 1/8" = 1'-0" S121

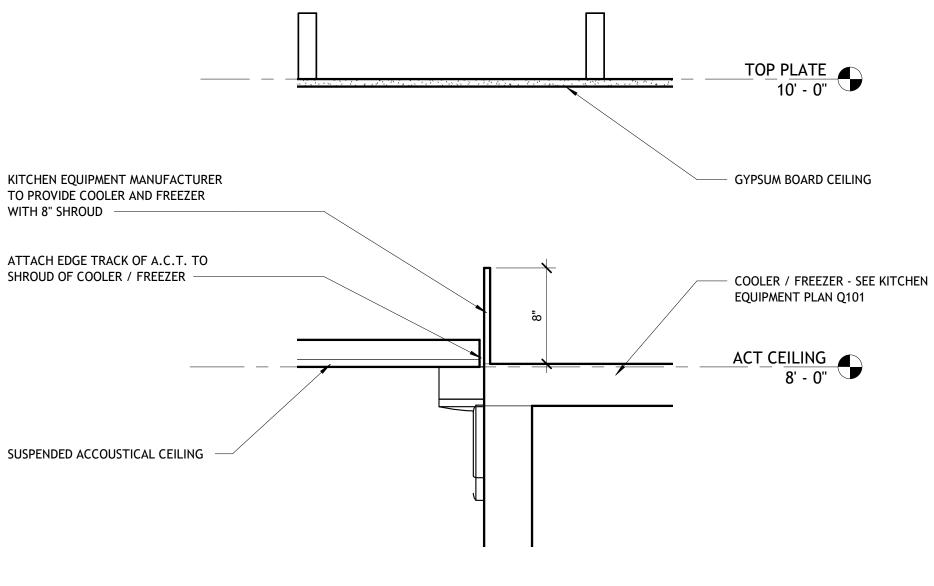
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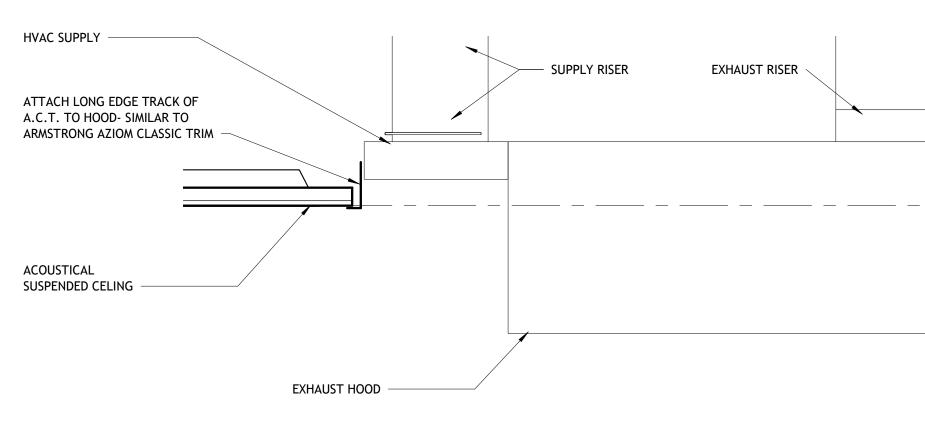


REFLECTED CEILING PLAN LEGEND

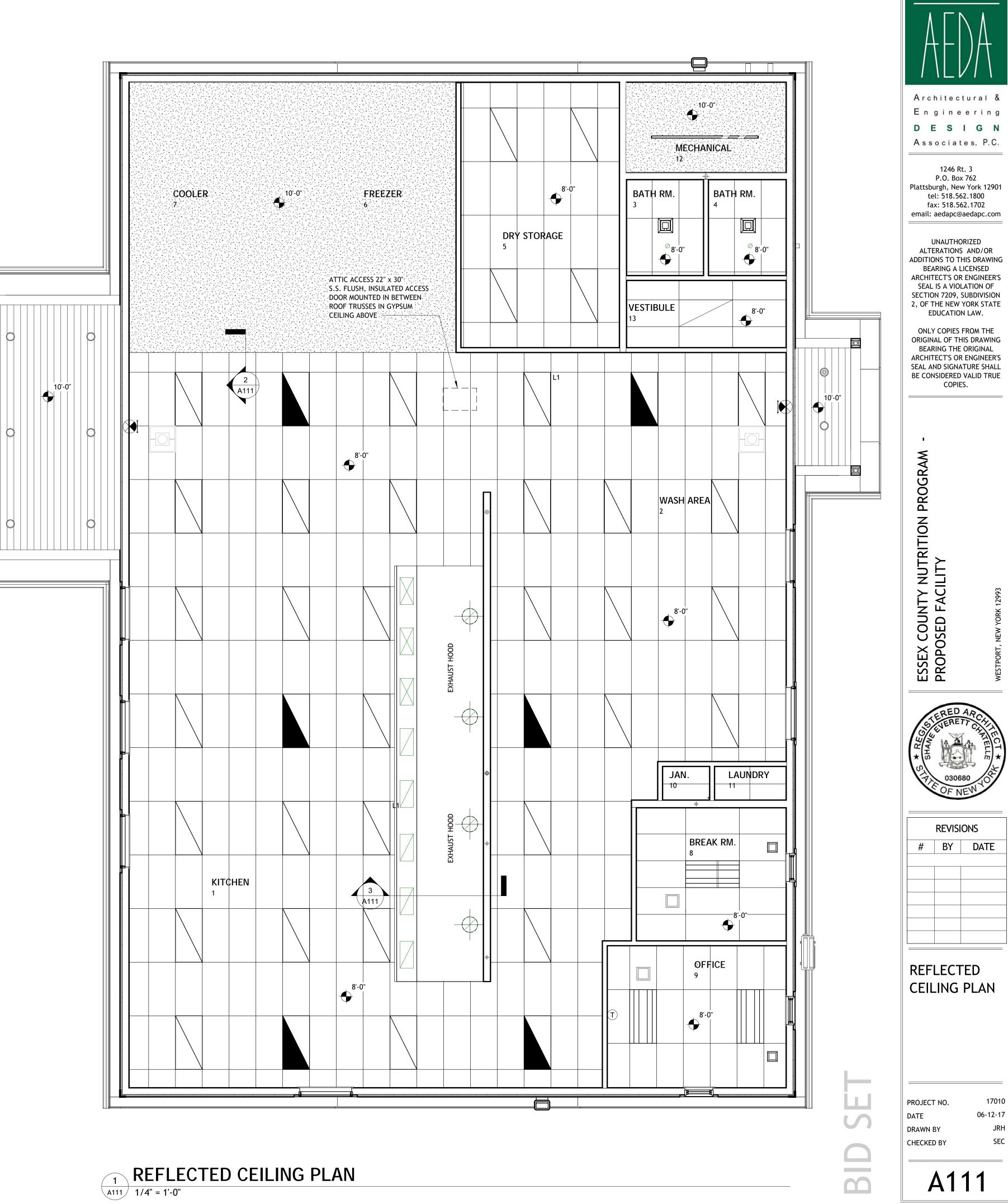




2 A.C.T. @ COOLER / FREEZER 11/2" = 1'-0"



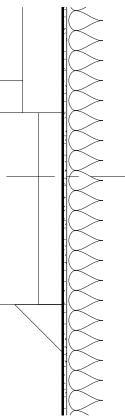
3 A111 SECTION THROUGH HOOD



RETURN/EXHAU ST GRILLE	
LINEAR DIFFUSER	
SUPPLY AIR DIFFUSER	
DECORATIVE T5'S	
RECESSED HALOGEN	
GYPSUM BOARD CEILING	
A.C.T. CEILING TILE	
ALUMINUM SURFACE VENTED	

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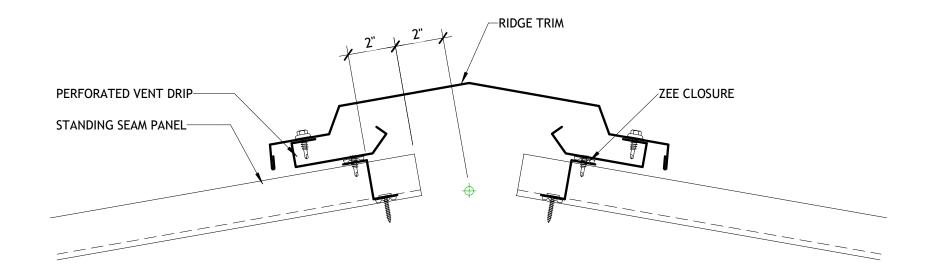




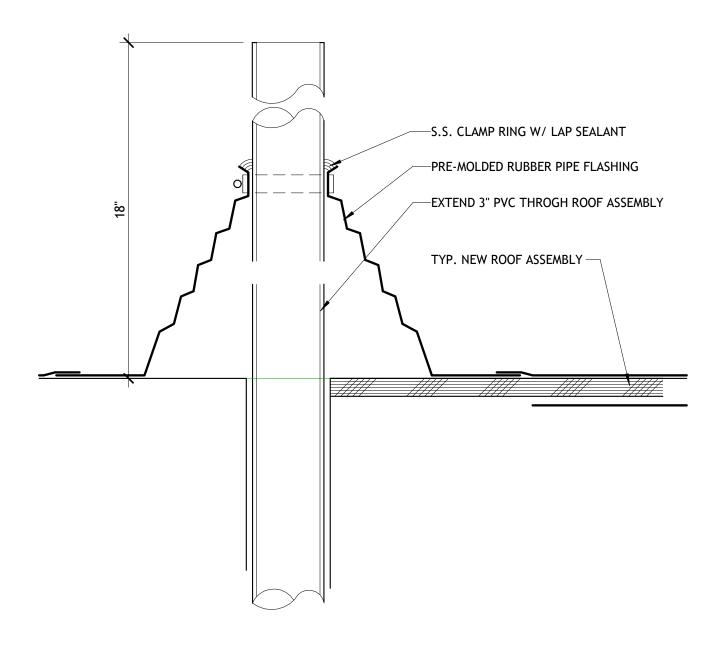
JRH

SEC

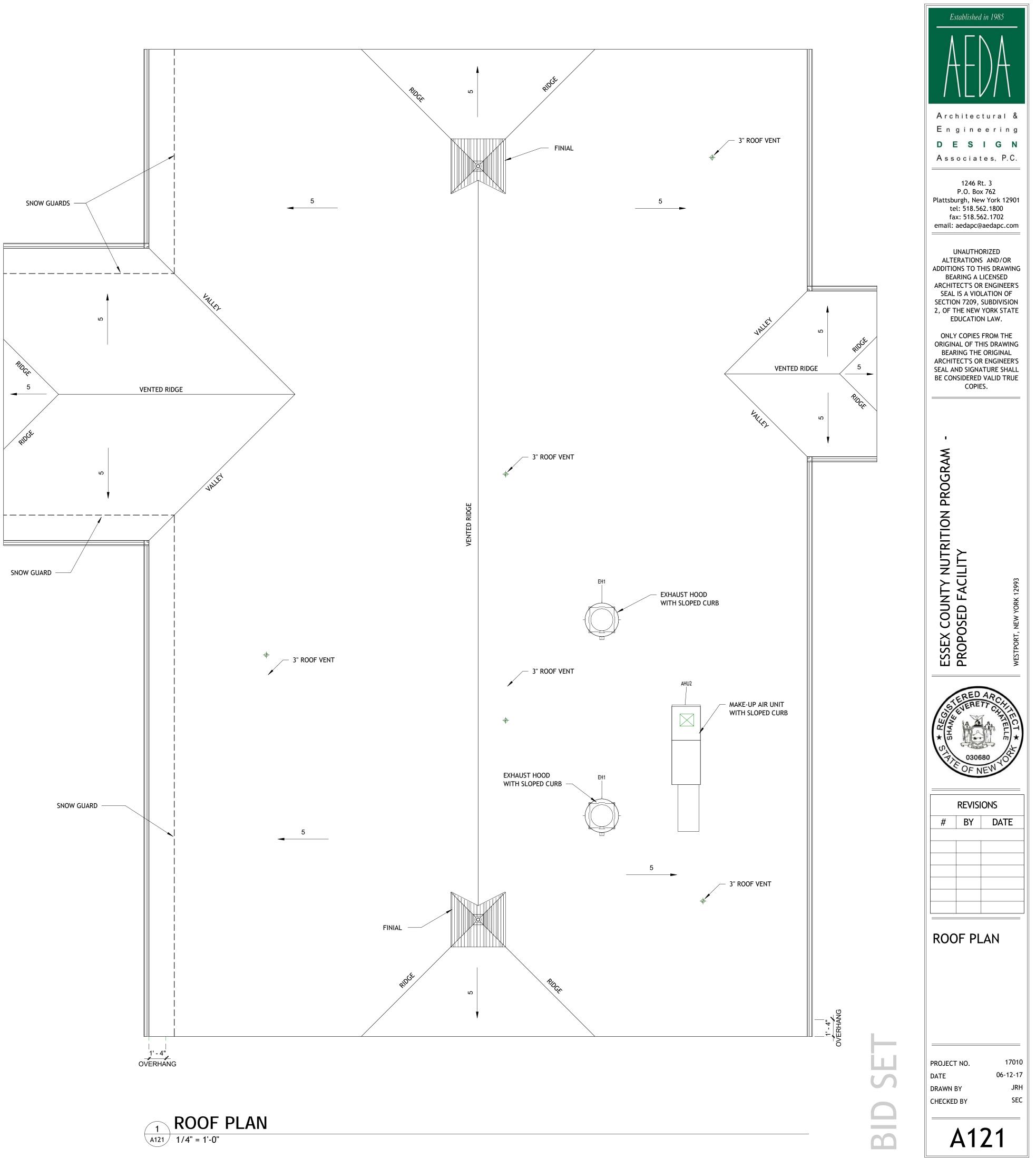
Established in 1985





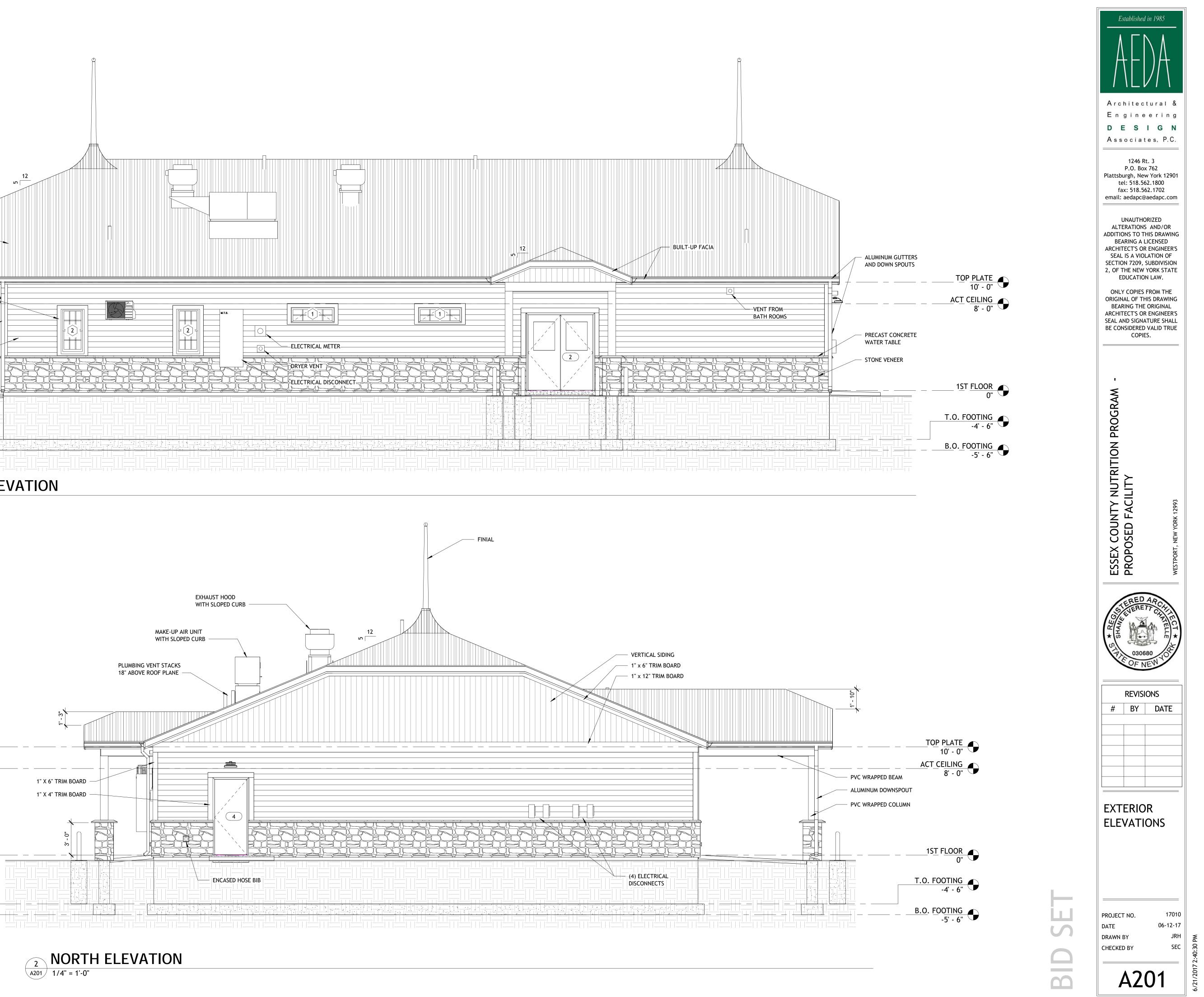


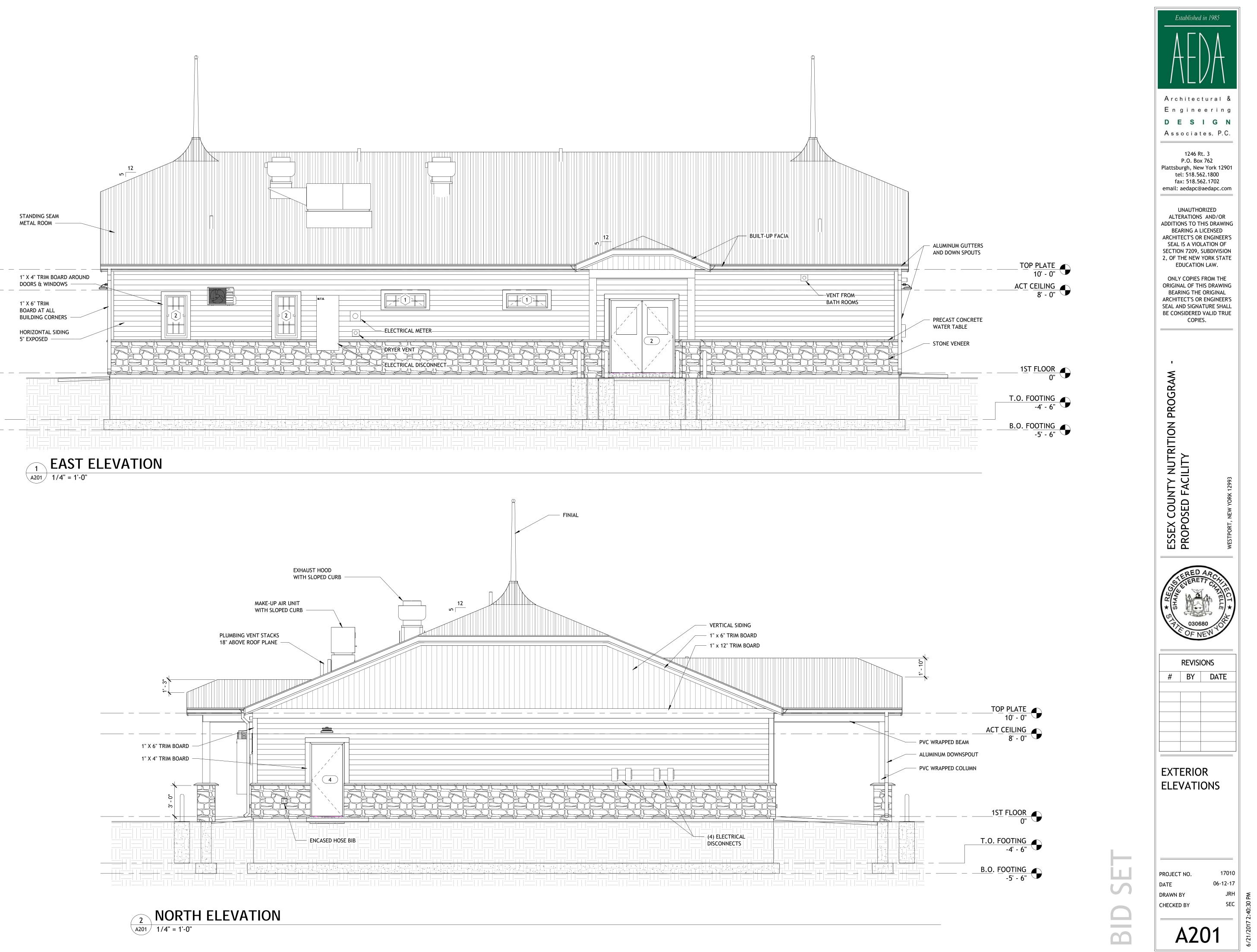


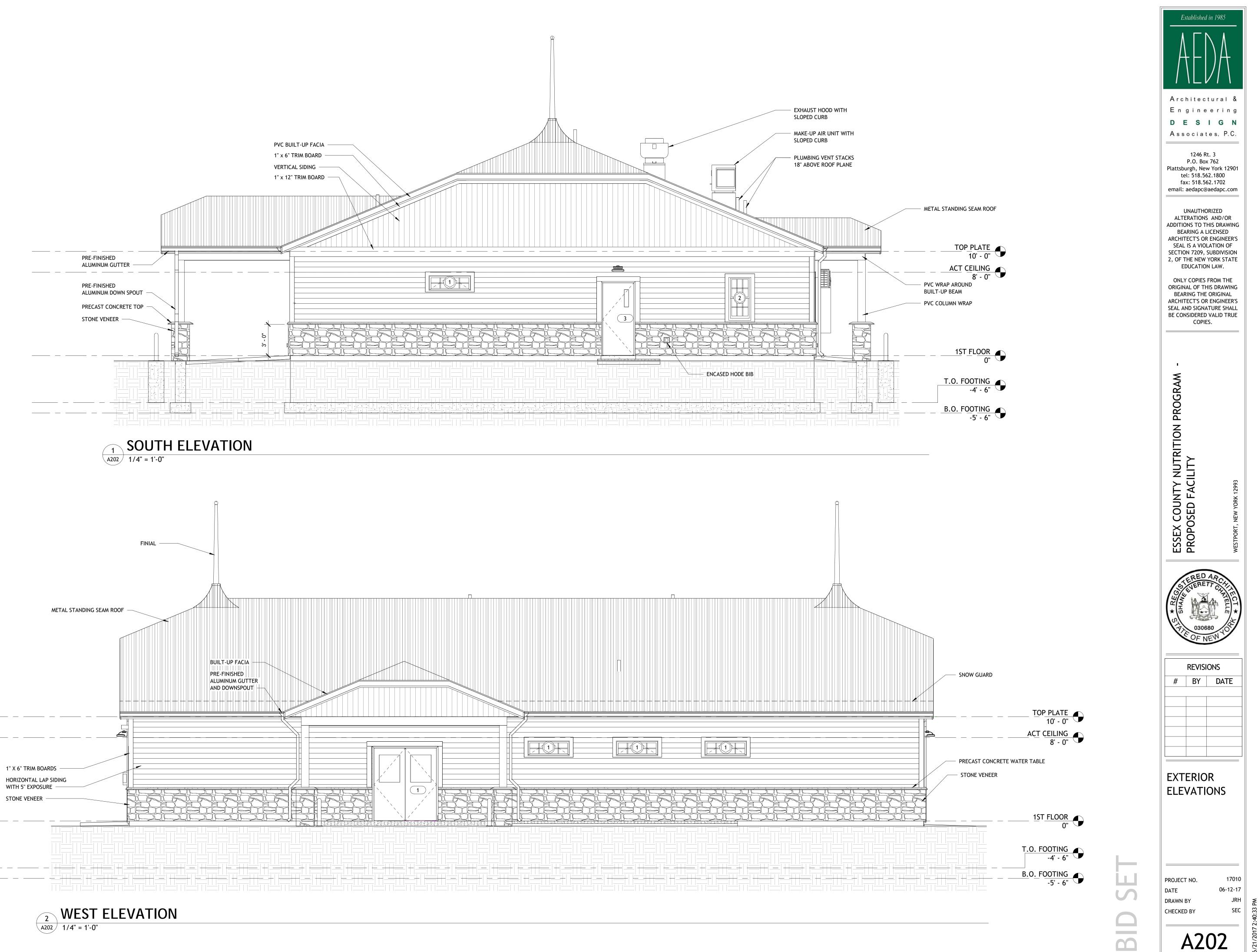


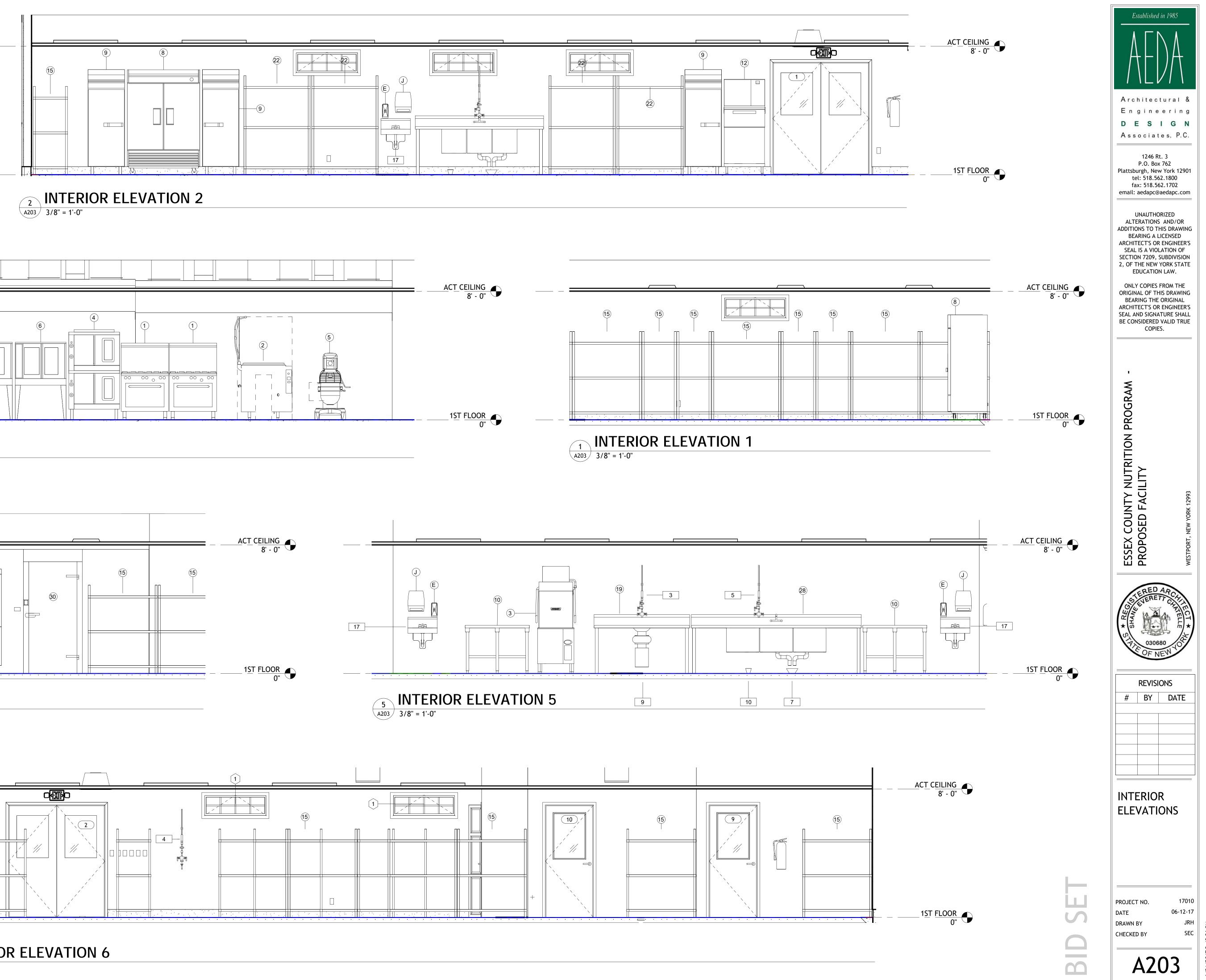


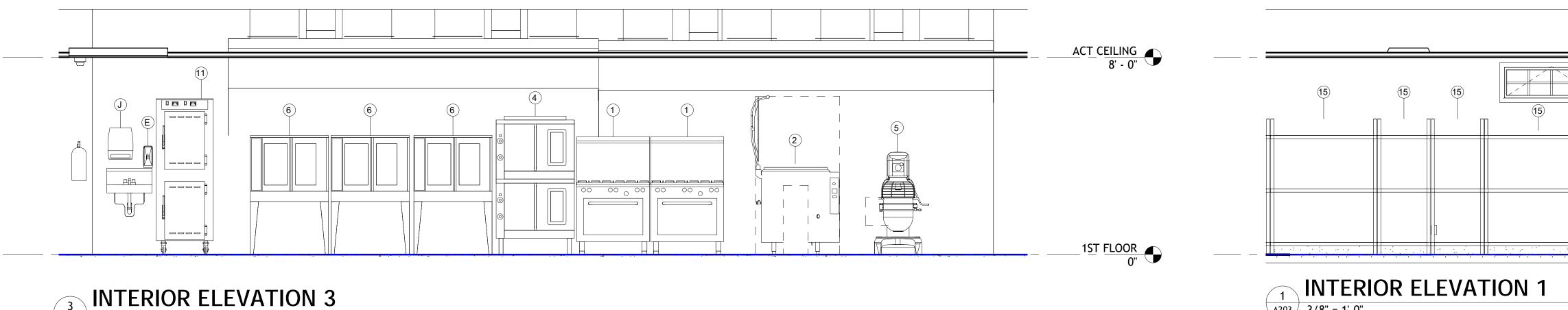




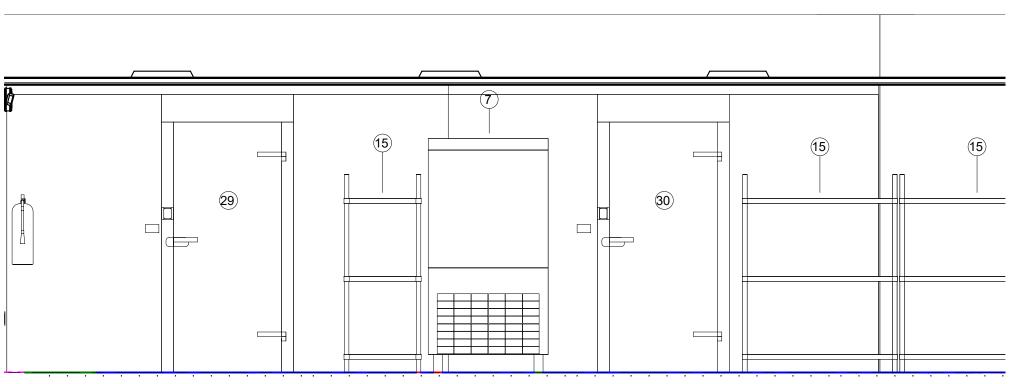






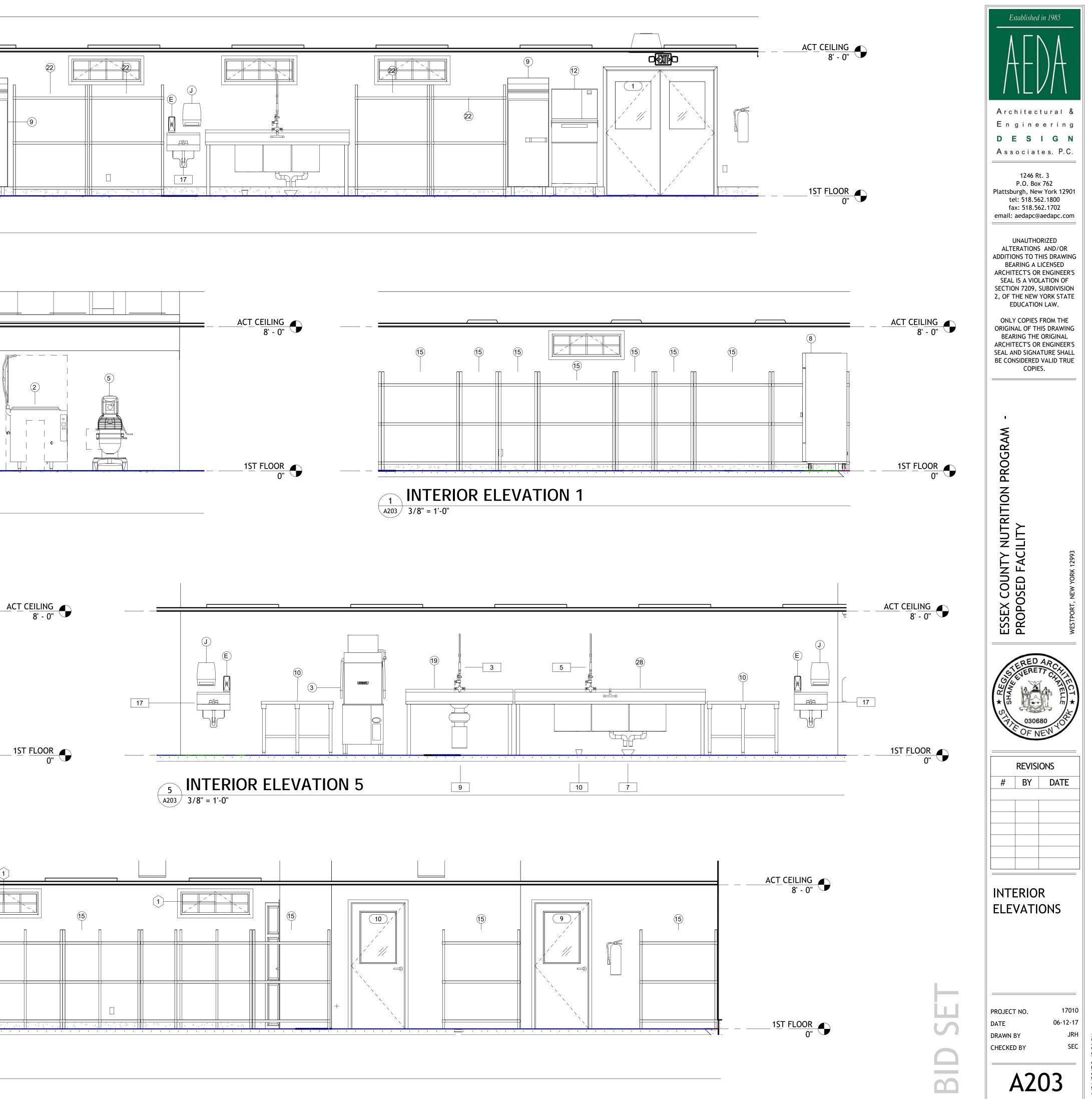


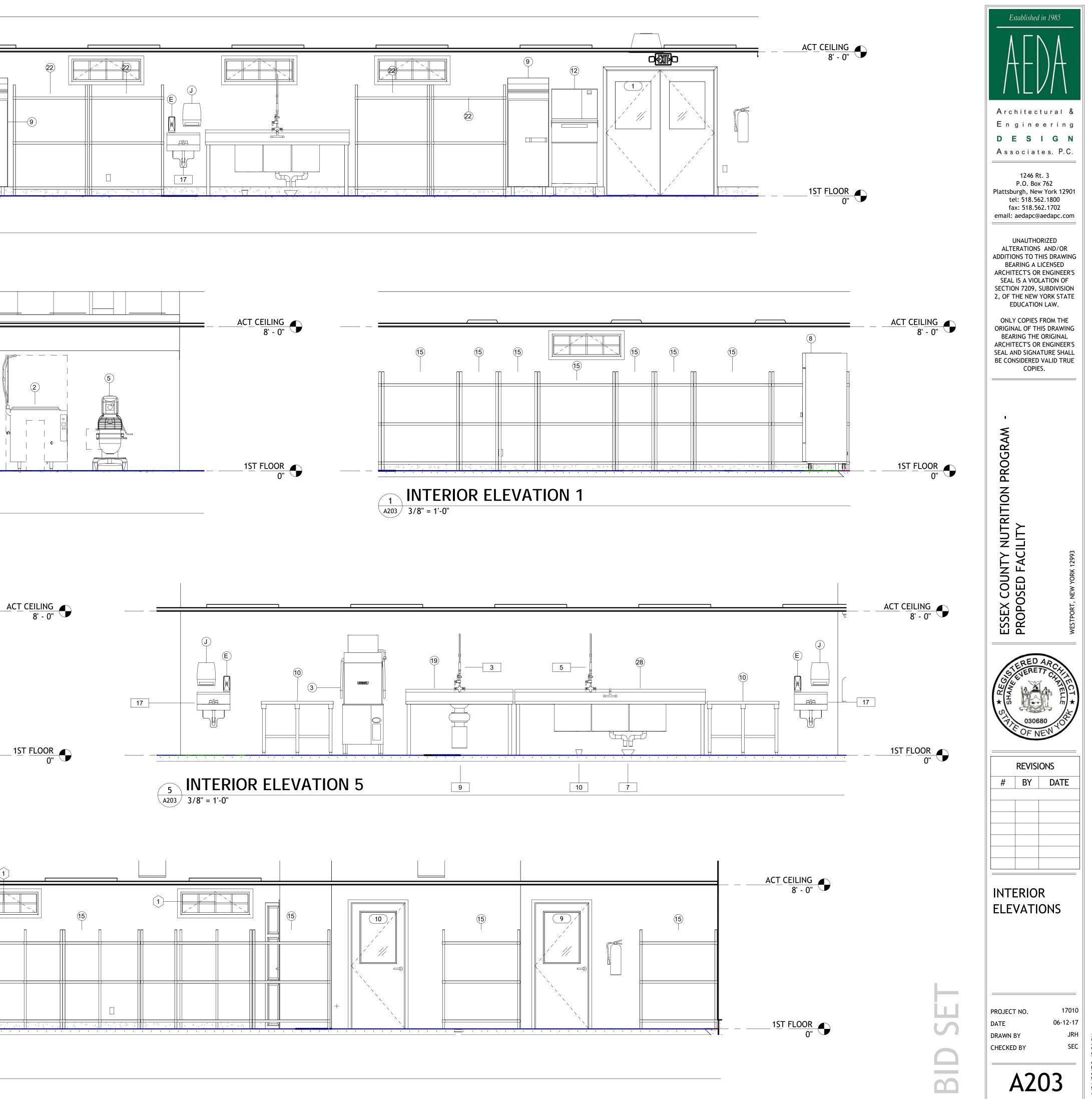


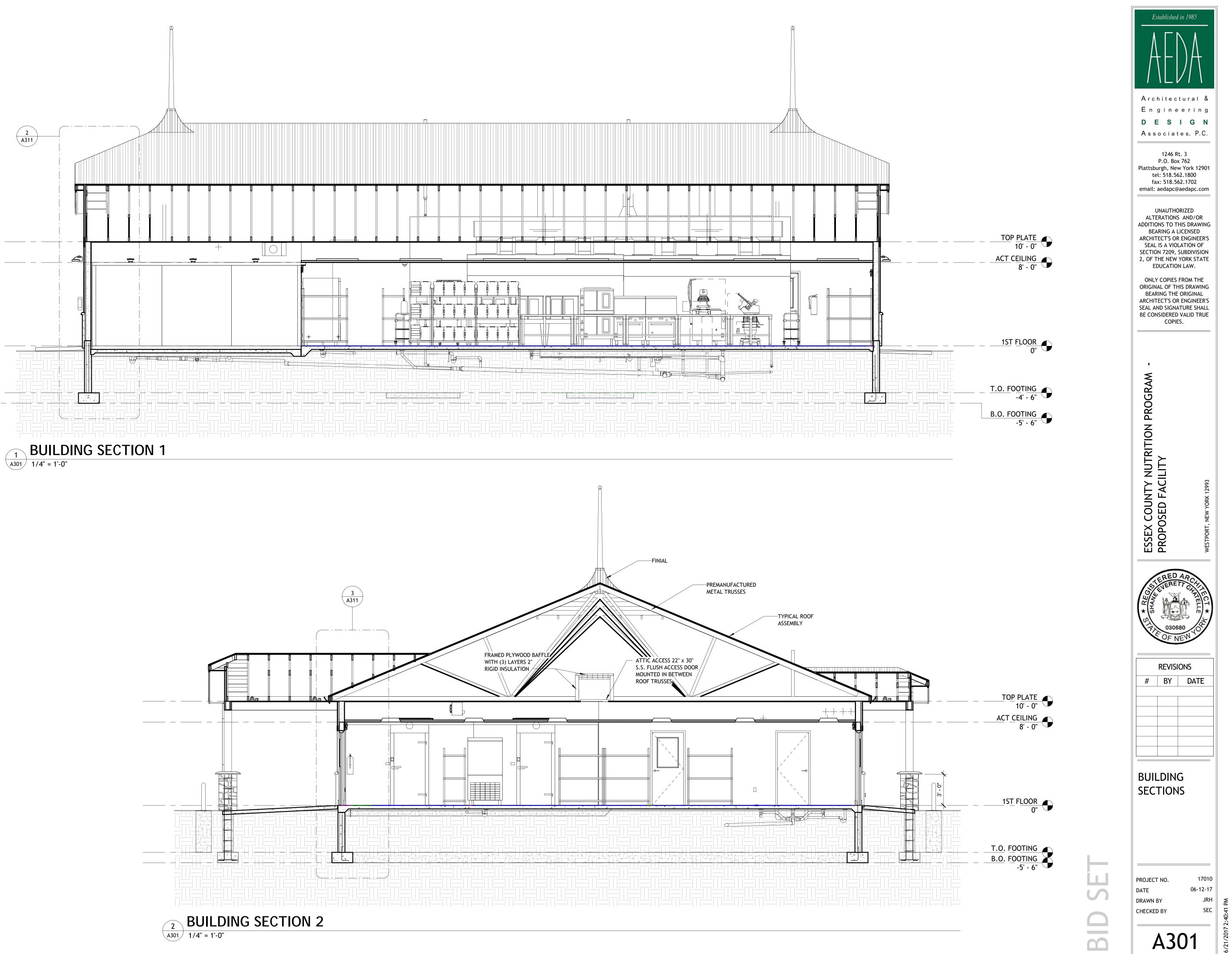


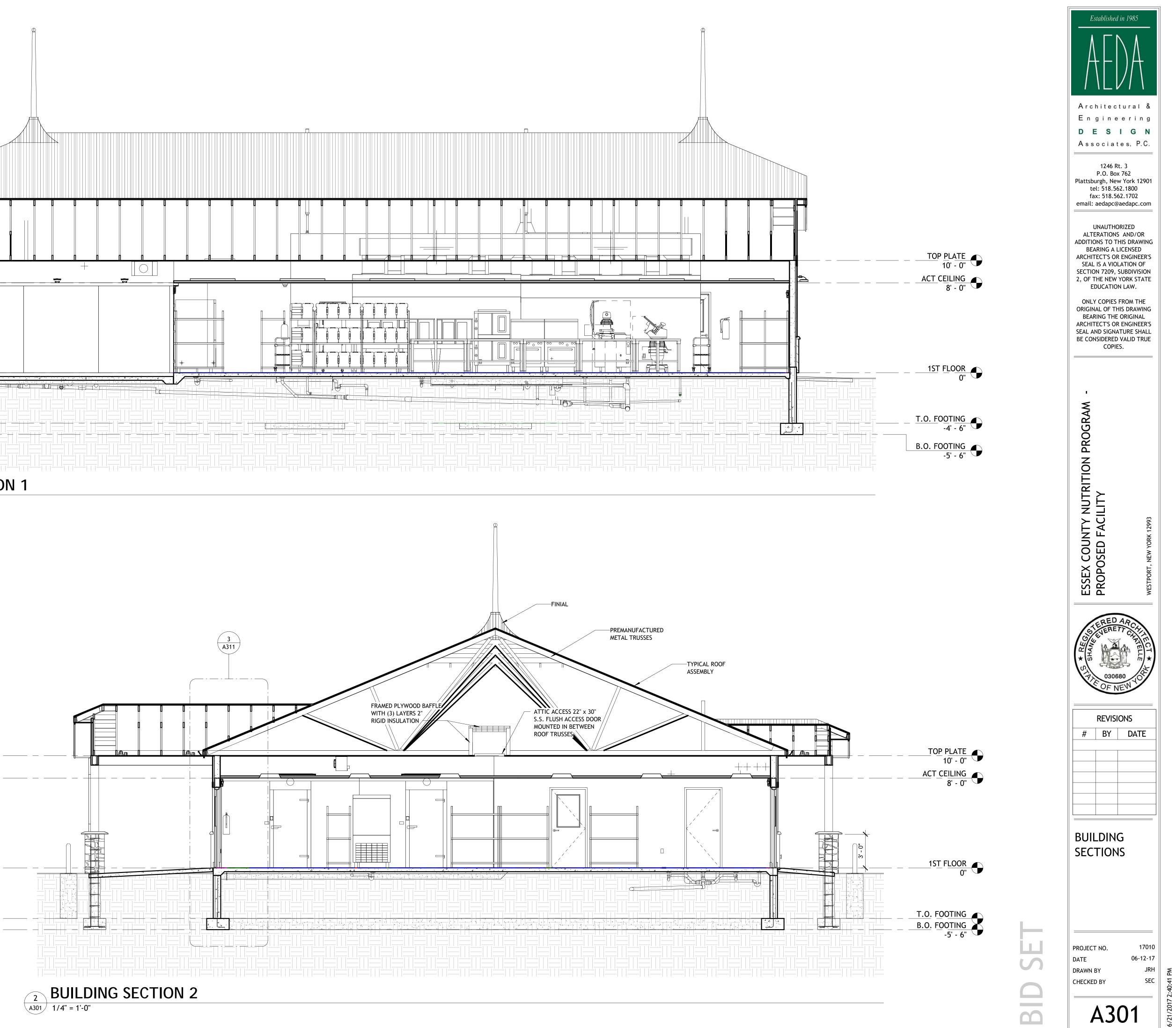


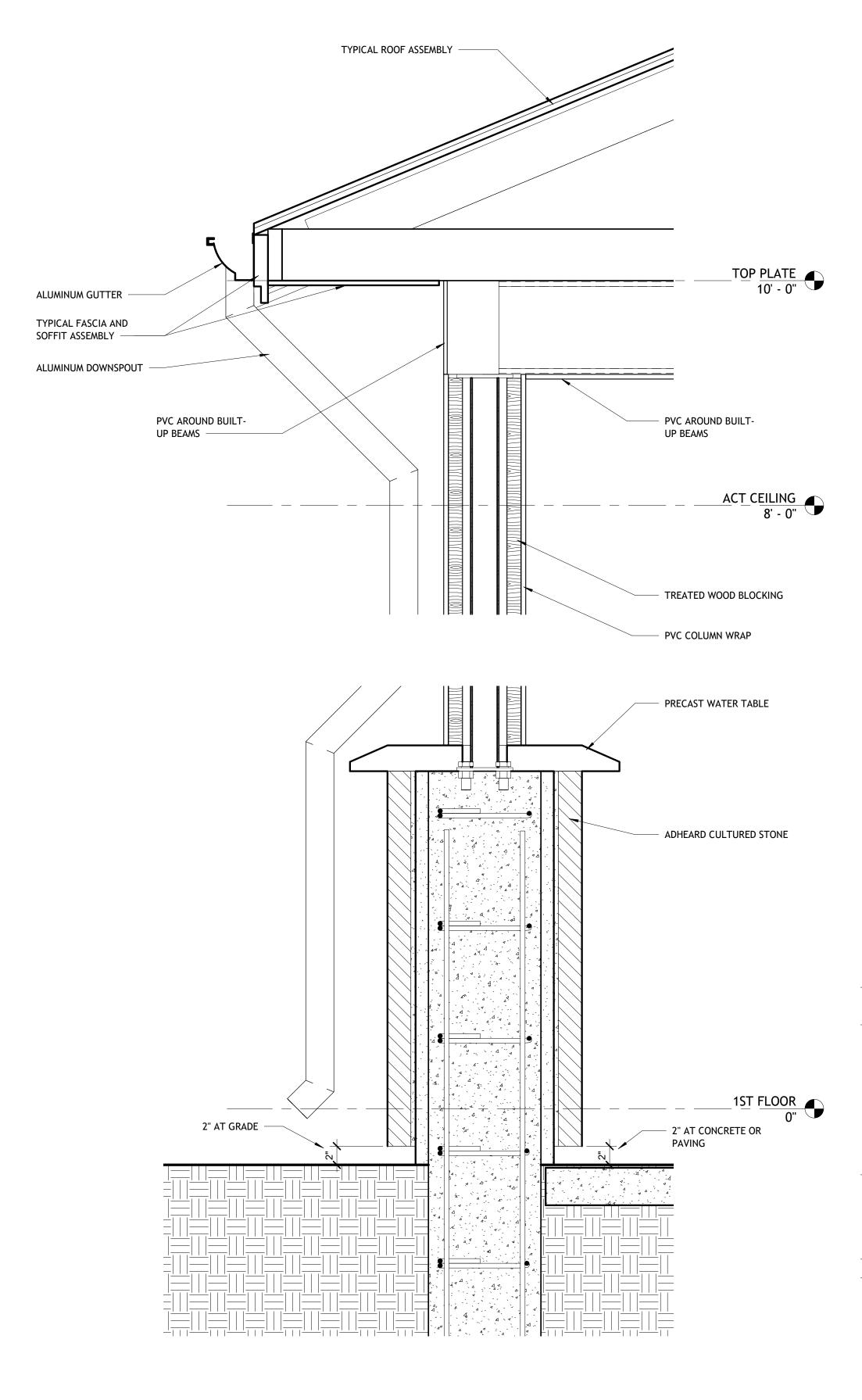


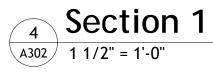


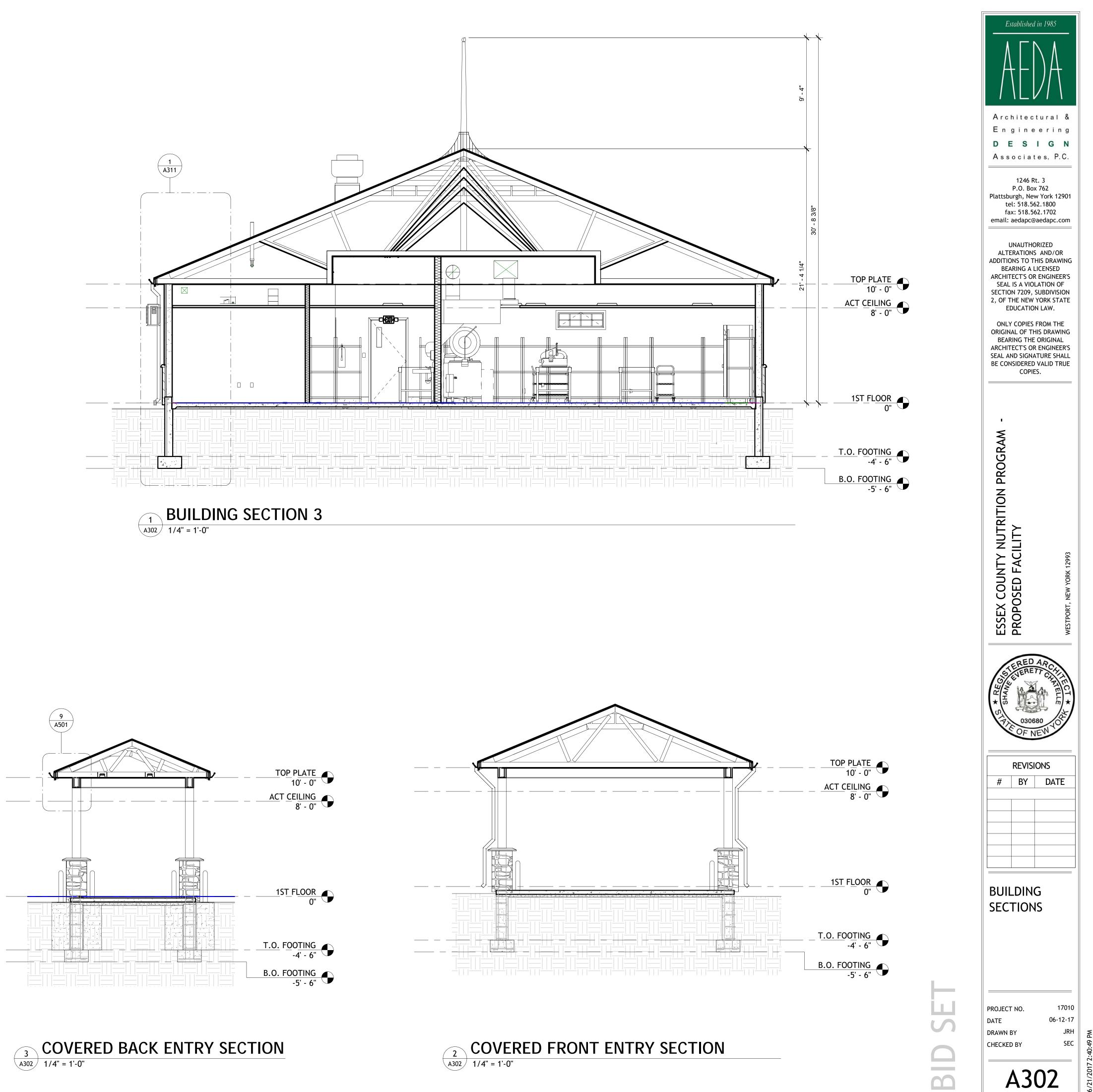




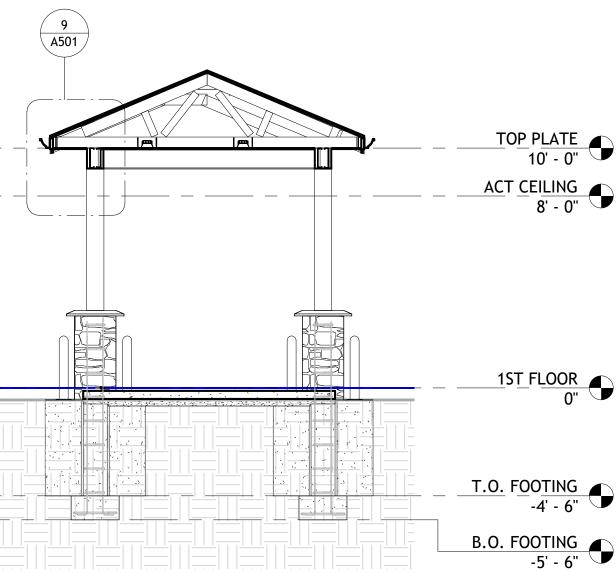


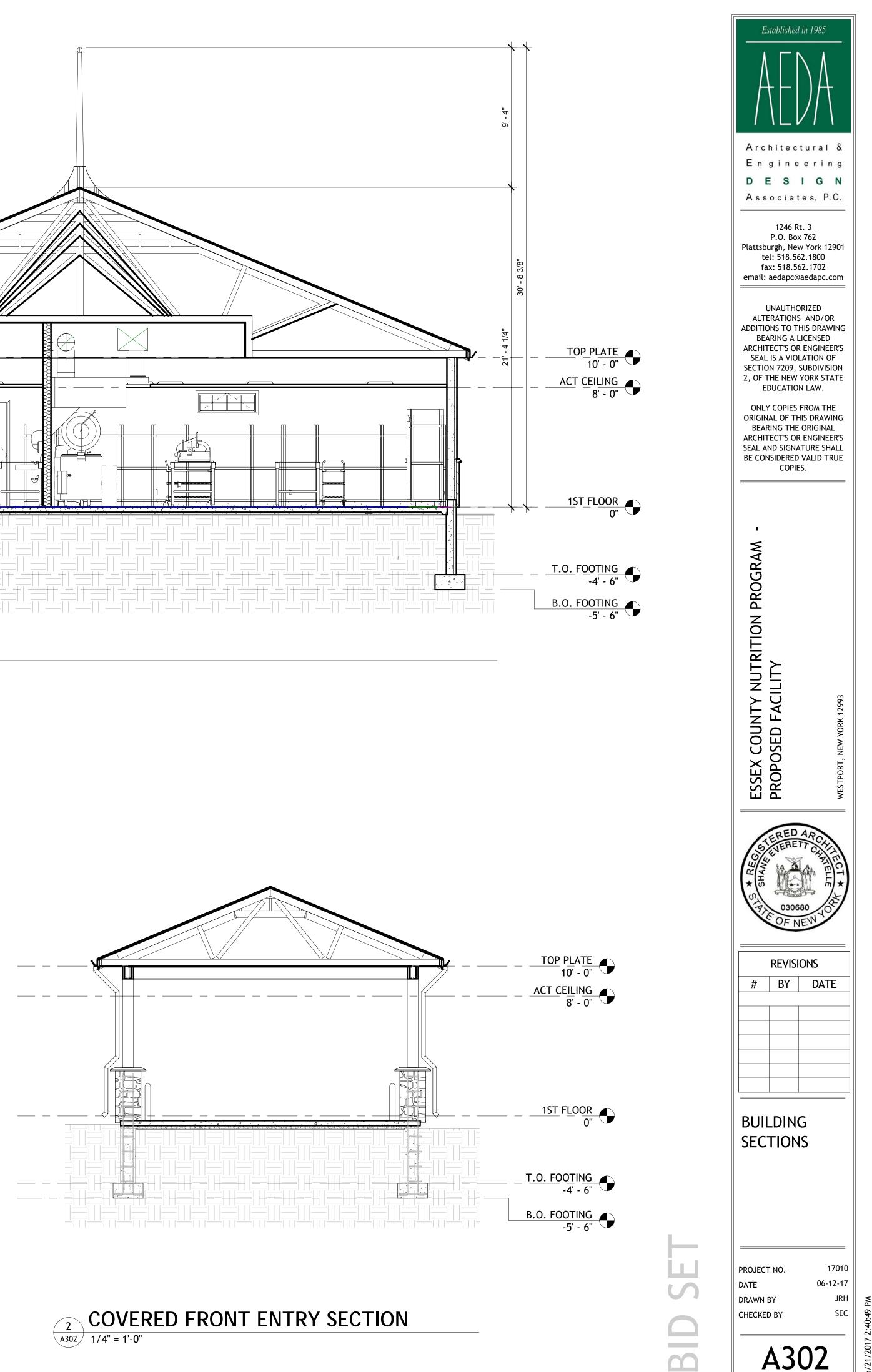




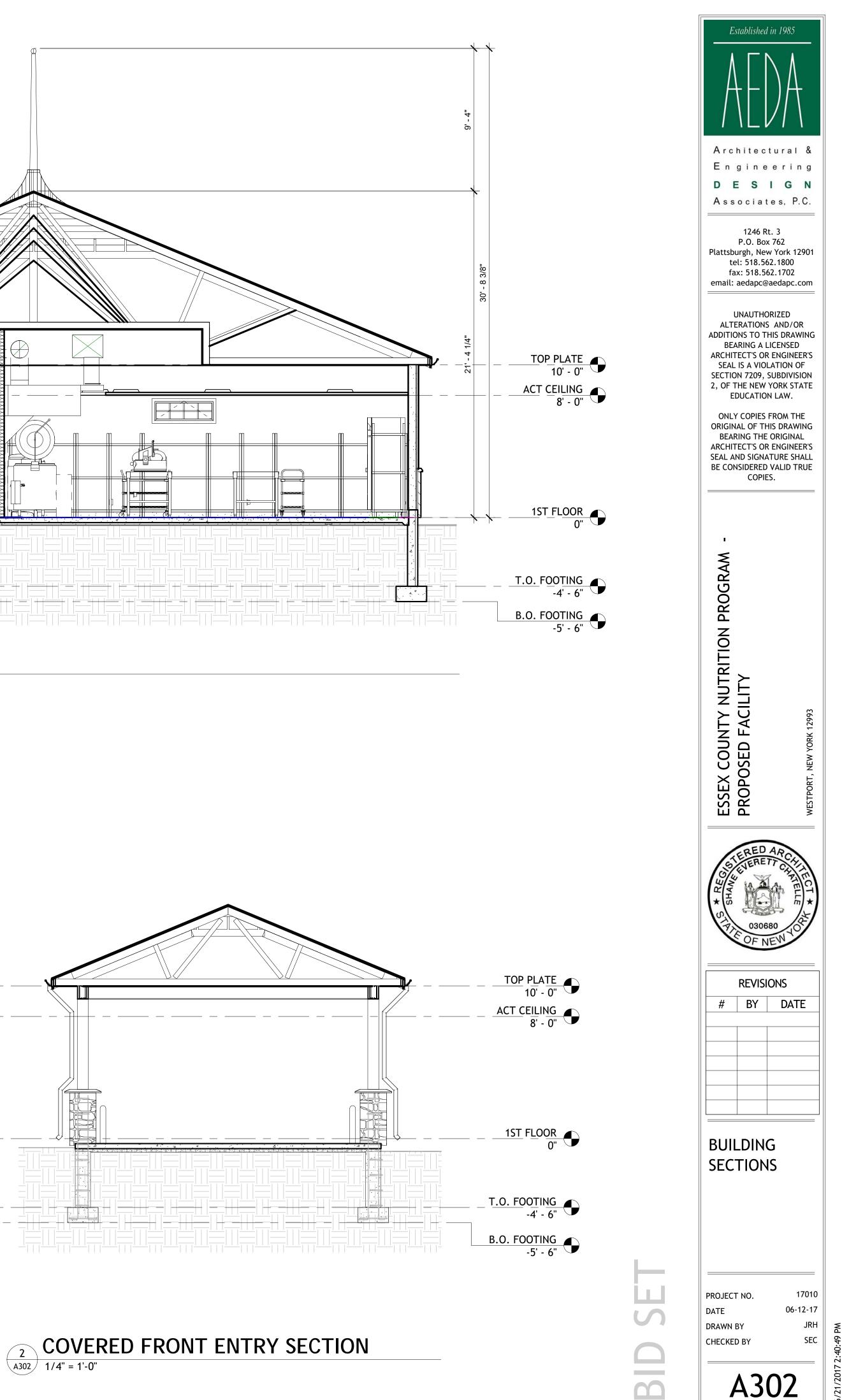


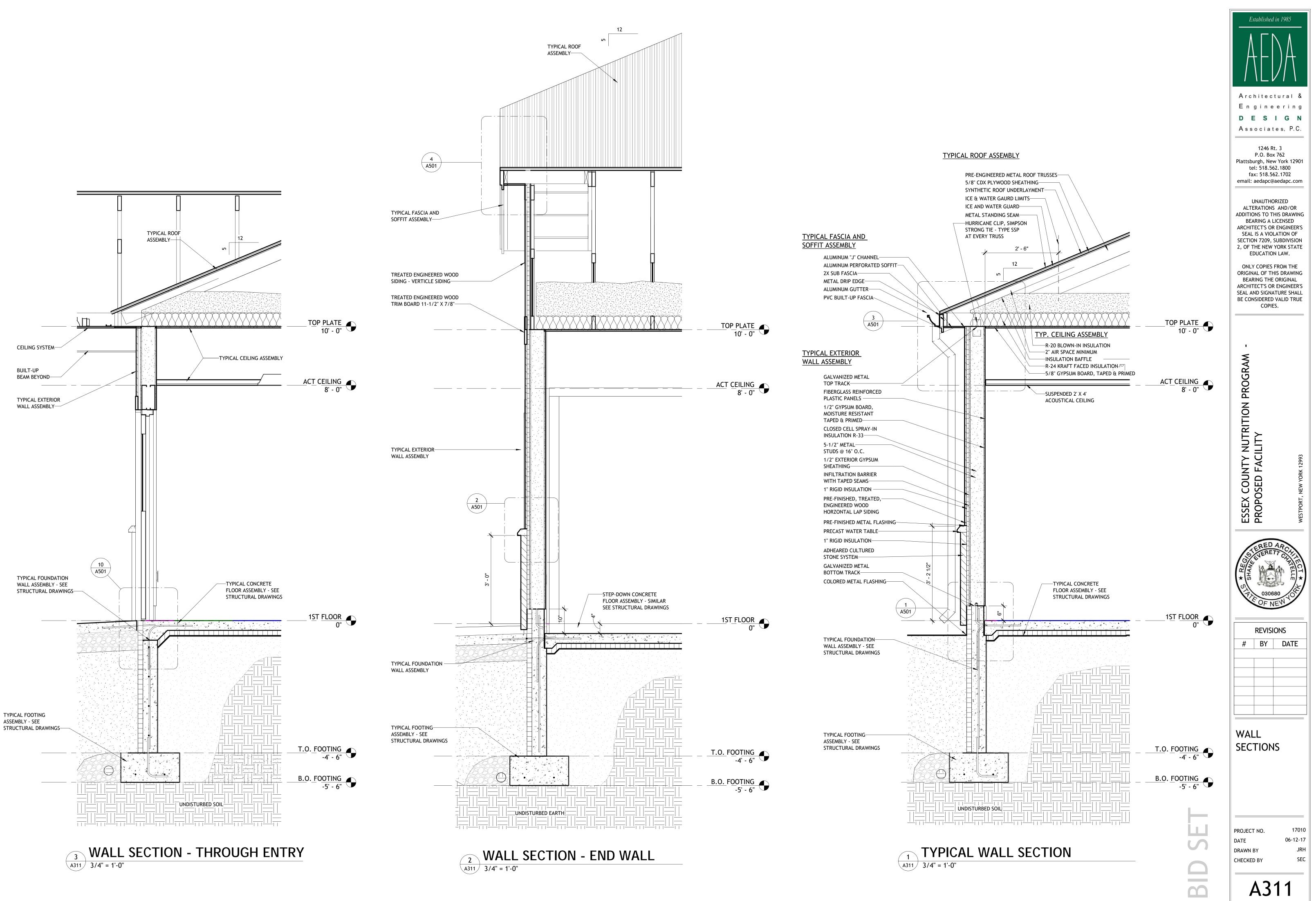


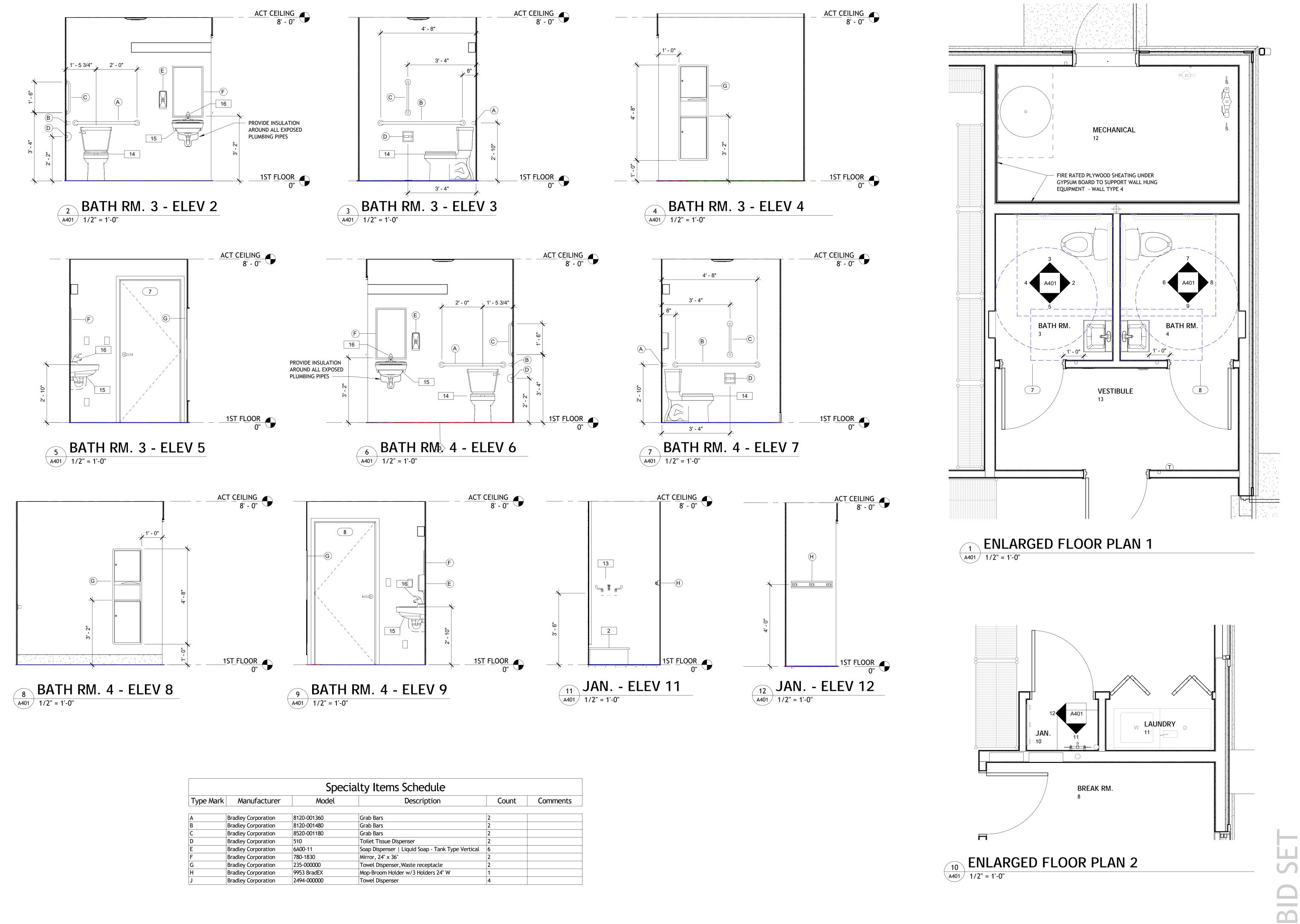




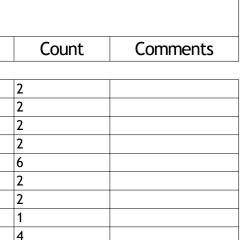


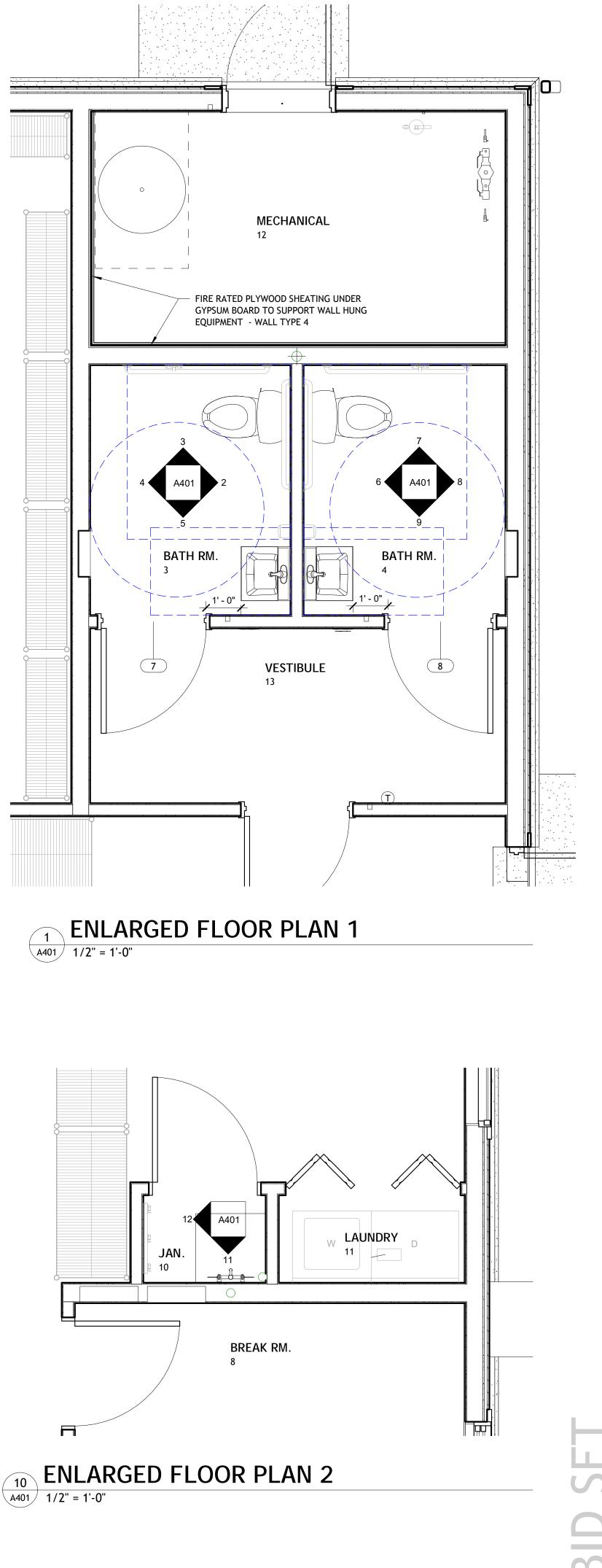


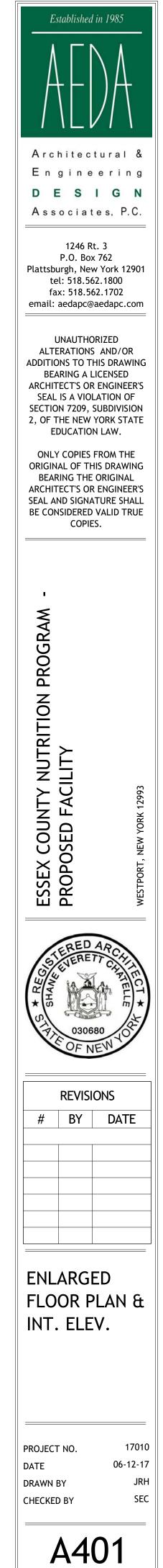


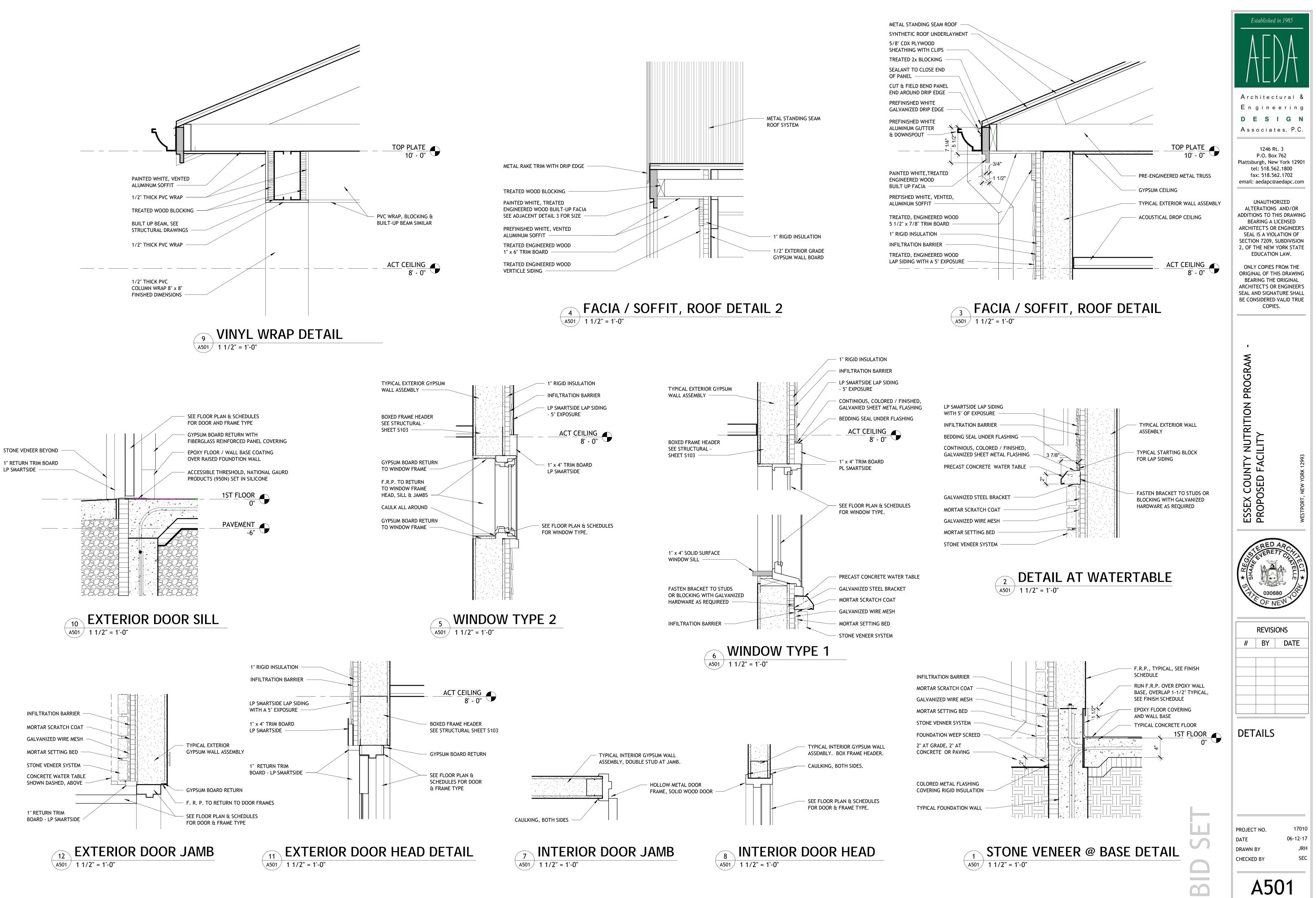


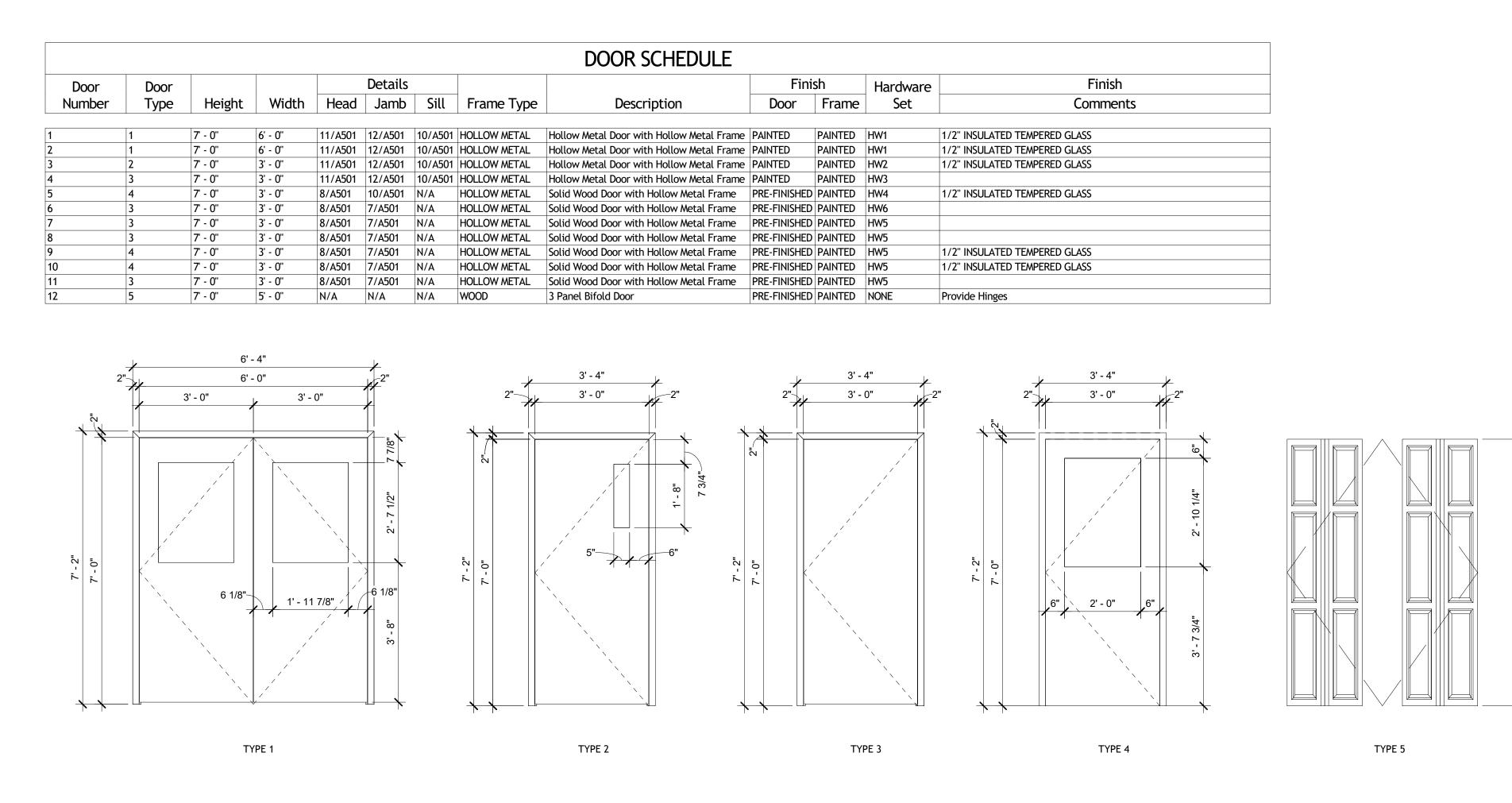
	cialty Items Schedule		
Type Mark Manufacturer		Model	Description
L		L	
Α	Bradley Corporation	8120-001360	Grab Bars
В	Bradley Corporation	8120-001480	Grab Bars
C	Bradley Corporation	8520-001180	Grab Bars
D	Bradley Corporation	510	Toilet Tissue Dispenser
E	Bradley Corporation	6A00-11	Soap Dispenser Liquid Soap - Tank Type Vertica
F	Bradley Corporation	780-1830	Mirror, 24" x 36"
G	Bradley Corporation	235-000000	Towel Dispenser, Waste receptacle
Н	Bradley Corporation	9953 BradEX	Mop-Broom Holder w/3 Holders 24" W
J	Bradley Corporation	2494-000000	Towel Dispenser





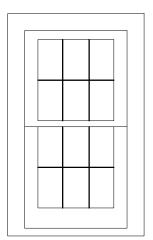


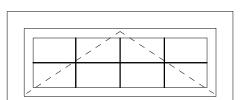




DOOR ELEVATIONS

	WINDOW SCHEDULE										
						DULE					
Rough Opening						Detail					
Type Mark	Width	Height	Manufacturer	Model	Description	Head	Jamb	Sill	Hei		
1	4' - 0''	1' - 5"	Andersen Corporation	Silver Line - V3 Series	Vinyl Awning Window	6/A501		6/A501	7' - 6"		
2	2' - 1 5/8"	4' - 0 7/8"	Andersen Corporation	Silver Line - V3 Series	Vinyl Double Hung Window	5/A501		5/A501	7' - 3 3/		





TYPE 1

TYPE 2

WINDOW ELEVATIONS





HW1: HINGES: 'STANLEY' #FBB191 LOCKSET: 'ADAMS RITE' #MS-1850A-505 HOOKBOLT LOCK W/ BLANK @ INTERIOR. PANIC HARWARE: ADAMS RITE 8200 SERES KICKPLATE: 'ROCKWOOD' K4125 - US32D 8" x 34" CLOSER: 'LCN' HEAVY-DUTY W/ HOLD OPEN #4111 WEATHERSTRIPPING: 'NAT'L GUARD PROD.' #130NA ASTRAGAL / MEETING STILE: PEMKO 305_N DOOR SWEEP: 'NAT'L GUARD PROD.' #200NA ACCESSIBLE THRESHOLD: 'NAT'L GUARD PROD. #950N

HW2: HINGES: 'STANLEY' #FBB191 LOCKSET: 'ADAMS RITE' #MS-1850A-505 HOOKBOLT LOCK W/ BLANK @ INTERIOR. PANIC HARWARE: ADAMS RITE 8200 SERES KICKPLATE: 'ROCKWOOD' K4125 - US32D 8" x 34" CLOSER: 'LCN' HEAVY-DUTY W/ HOLD OPEN #4111 WEATHERSTRIPPING: 'NAT'L GUARD PROD.' #130NA DOOR SWEEP: 'NAT'L GUARD PROD.' #200NA ACCESSIBLE THRESHOLD: 'NAT'L GUARD PROD. #950N

HW3: HINGES: 'STANLEY' #FBB191 LOCKSET: 'FALCON T SERIES' #T561-CLASSROOM, STYLE D KICKPLATE: 'ROCKWOOD' K4125 - US32D 8" x 34" CLOSER: 'LCN' HEAVY-DUTY W/ HOLD OPEN #4111 WEATHERSTRIPPING: 'NAT'L GUARD PROD.' #130NA DOOR SWEEP: 'NAT'L GUARD PROD.' #200NA ACCESSIBLE THRESHOLD: 'NAT'L GUARD PROD. #950N

HW4: HINGES: 'STANLEY' #FBB191 LOCKSET: 'FALCON T SERIES' #T561-CLASSROOM, STYLE D KICKPLATE: 'ROCKWOOD' K4125 - US32D 8" x 34" CLOSER: 'LCN' HEAVY-DUTY W/ HOLD OPEN #4111

HW5: HINGES: 'STANLEY' #FBB191 LOCKSET: 'FALCON T SERIES' #T561-CLASSROOM, STYLE D CLOSER: 'LCN' HEAVY-DUTY W/ HOLD OPEN #4111

HW6:

			ROOM FI	NISH SCHED	ULE		
		Finish					
Room Number	Room Name	Floor	Base	Wall	Ceiling	Ceiling Height	Comments
1	KITCHEN	EPOXY	EPOXY	F.R.P.	A.C.T.	8	
2	WASH AREA	EPOXY	EPOXY	F.R.P.	A.C.T.	8	
3	BATH RM.	EPOXY	EPOXY	F.R.P.	A.C.T.	8	
4	BATH RM.	EPOXY	EPOXY	F.R.P.	A.C.T.	8	
5	DRY STORAGE	EPOXY	EPOXY	F.R.P.	A.C.T.	8	
6	FREEZER	BY MANUFACTURER	BY MANUFACTURER	BY MANUFACTURER	BY MANUFACTURER	8	
7	COOLER	BY MANUFACTURER	BY MANUFACTURER	BY MANUFACTURER	BY MANUFACTURER	8	
8	BREAK RM.	EPOXY	EPOXY	GYP. PAINTED	A.C.T.	8	
9	OFFICE	EPOXY	EPOXY	GYP. PAINTED	A.C.T.	8	
10	JAN.	EPOXY	EPOXY	F.R.P.	A.C.T.	8	
11	LAUNDRY	EPOXY	EPOXY	F.R.P.	A.C.T.	8	
12	MECHANICAL	CONCRETE SEALER	CONCRETE SEALER	GYP PAINTED	GYP. PAINTED	10	
13	VESTIBULE	EPOXY	EPOXY	F.R.P.	A.C.T.	8	

Towel Dispenser

		-
Type Mark	Manufacturer	Mode
Α	Bradley Corporation	8120-001360
В	Bradley Corporation	8120-001480
C	Bradley Corporation	8520-001180
D	Bradley Corporation	510
E	Bradley Corporation	6A00-11
F	Bradley Corporation	780-1830
G	Bradley Corporation	235-000000
Н	Bradley Corporation	9953 BradEX
J	Bradley Corporation	2494-000000

HARDWARE SCHEDULE

HINGES: 'STANLEY' #FBB191 LOCKSET: 'FALCON T SERIES' #T561-CLASSROOM, STYLE D, NO LOCK CLOSER: 'LCN' HEAVY-DUTY W/ HOLD OPEN #4111

Specialty Items Schedule Description Count Comments Grab Bars Grab Bars Grab Bars Toilet Tissue Dispenser Soap Dispenser | Liquid Soap - Tank Type Vertical 6 Mirror, 24" x 36" Towel Dispenser, Waste receptacle Mop-Broom Holder w/3 Holders 24" W 1

4

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Arch Eng DE Asso	ine S	eri IG	ng N
Plattsbur tel:	: 518.5 : 518.5	x 762 w York 52.1800 62.1702	
ALTEF ADDITION BEAF ARCHITE SEAL I SECTION 2, OF TH EDI ONLY ORIGINA	NS TO T RING A I CT'S OF S A VIO I 7209, HE NEW UCATIO COPIES L OF TH NG THE CT'S OF D SIGN/	5 AND/ HIS DRA ICENSE RENGIN LATION SUBDIV YORK S N LAW. FROM T HIS DRA CORIGIN RENGIN ATURE S VALID	WING D EER'S OF ISION TATE 'HE WING IAL EER'S HALL
ESSEX COUNTY NUTRITION PROGRAM -			WESTPORT, NEW YORK 12993
ALS * REG	RED VERE 0306 OF N	ART CRIP.	TECT * VS
#	revisi By	ONS DA	TE
SCHE	EDU	LES	
PROJECT	NO.	<u></u>	17010

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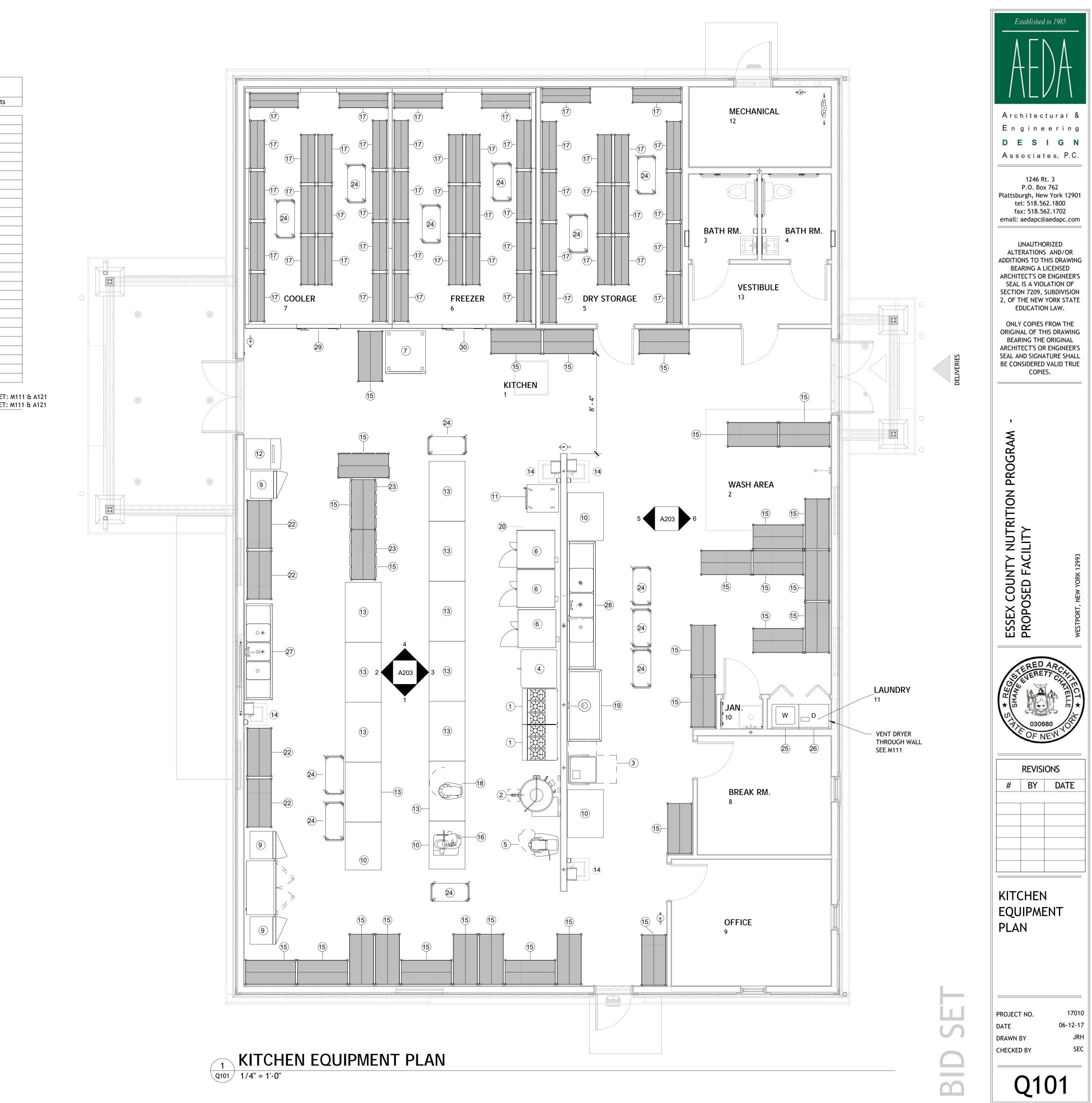
DRAWN BY

CHECKED BY

A601

EQUIPMENT SUPPLIED BY OWNER, CONTRACTOR TO INSTALL ALL EQUIPMENT

Type Mark	Manufacturer	Model	Description	Count	Comments	Volts
	1					
1	Garland	G36-6R	Gas 6 Burner Range + Oven	2	New	0 V
2	Accu Temp	ACGL-60E	60 Gallon Steam Kettle	1	New	208 V
3	Hobart	AM15VLT	Dishwasher	1	New	208 V
4	Garland	MCO-GS-20-S	Double Convection Oven	1	Already Purchased	120 V
5	Hobart	HL600-1	60qt Mixer	1	New	208 V
6	Blodgett	DFG-100	Single Convection Oven	3	New	115 V
7	Master Built	MBCF220/110-16A	Blast Chiller	1	Already Purchased	220 V
8	TRUE	T-49	Solid 2 Door Reach-In Refrigerator	1	New	115 V
9	True	T-19	Solid Door Reach-In Refrigerator	3	New	115 V
10	Advance Tabco	MS-362	Stainless Steel Work Table 48" x 36"	4	New	
11	Metro	C 539 HFC-L	LOW TEMPERATURE HOLDING CABINETS	1	Already Purchased	120 V
12	Manitowac	ID-0502A	Ice Maker	1	Existing - Relocated	
13	Advance Tabco	MSLAG-365-X	Stainless Steel Work Tables 60" x 36"	10	New	
15			Racking - Relocated	29	Existing - Relocated	
16	Hobart	HS7	Slicer	1	New	120 V
17	Advance Tabco	ECC-1448	Racking - New	48	New	
18	Hobart	HL200	20-qt Mixer	1	New	120 V
19			Waste Table	1	New	
20	CaptiveAire	6024 ND-2-PSP-F	Left Exhaust Hood	1	New	
21	CaptiveAire	6024 ND-2-PSP-F	Right Exhaust Hood With Ansul System	1	New	
22	Advance Tabco	ECC-2448	Racking - New	4	New	
23			Hot Box	66	Existing - Relocated	
24	Eagle Group	EU3-1836CS	Utility Cart with Solid Shelf	13	Existing - Relocated	
25			Washing Machine	1	New	
26			Dryer	1	New	
27	Advance Tabco	93-63-54-18RL	THREE BAY SINK	1	New	
28	Advance Tabco	93-43-72-24RL	THREE BAY SINK	1	New	
29	Kolpak - Manitowoc	NSF / FM4820	Walk-In Cooler	1	New	
30	Kolpak - Manitowoc	NSF / FM4820	Walk-In Freezer	1	New	
14	Advance Tabco	7-PS-54	Hand Wash Sink	4	New	
EH1	CaptiveAire	DU180HFA	Exhaust Fan	2	New	SEE SHEET:
AHU2	CaptiveAire	A3-D.500-G18 - Heater HMUA-1	Make-up Air Unit w/ Heater	1	New	SEE SHEET:



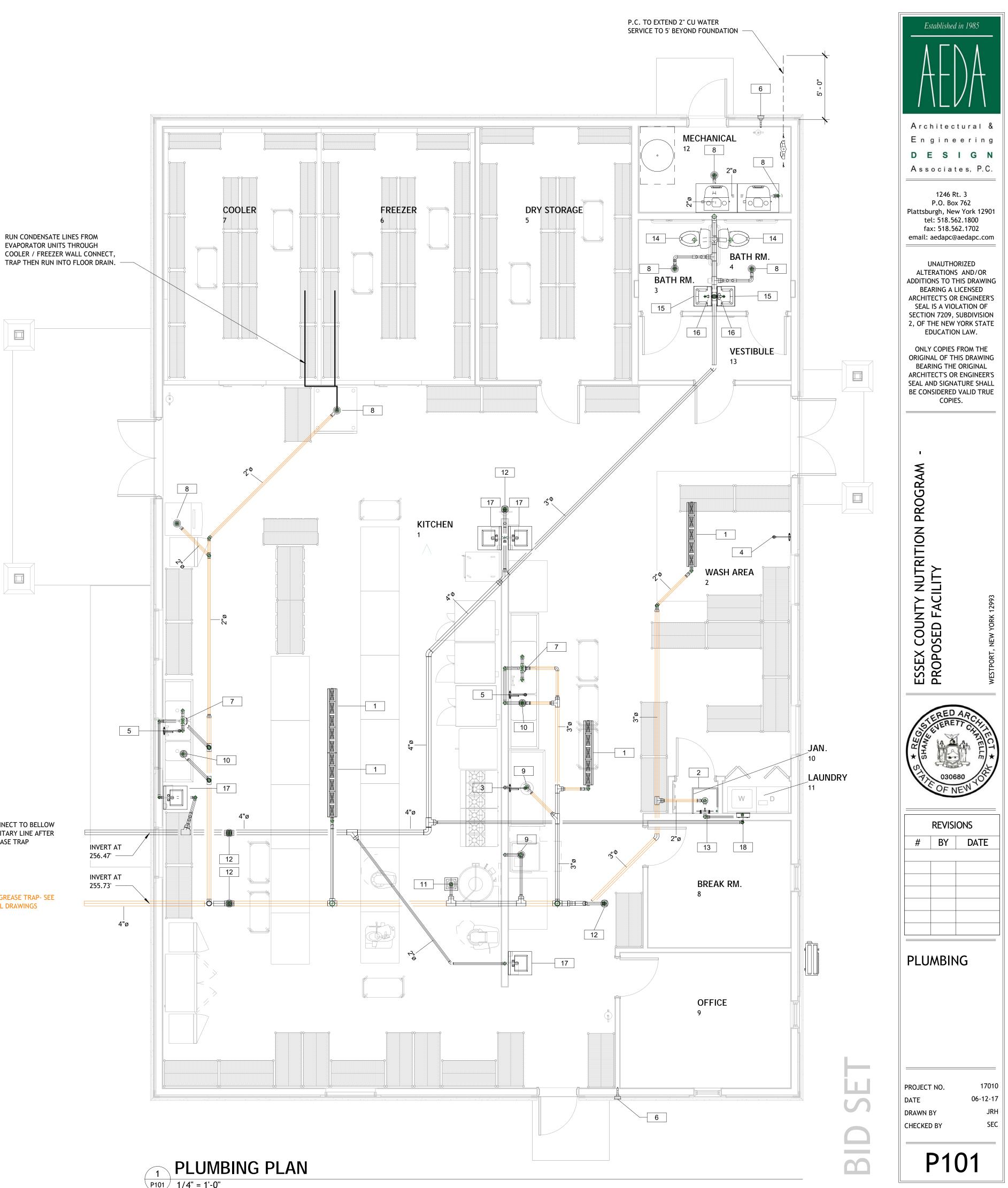
PLU	IMBING FIX	FURE SCH	IEDULE			
TYPE	MANUFACTURE R	MODEL	DESCRIPTION	COUNT	Waste Connection	COMMENTS
1	Zurn Industries, LLC	Z890	7 Inch Wide Reveal Trench Drain System	4		
2	Zurn Industries, LLC	Z1996-24	Mop Service Basin	1		Provide ProSet Trap Guard
3	Zurn Industries, LLC	Z842X1-XL-AF	Wall Mount Facuet with Hose	1		
4	Zurn Industries, LLC	Z842X1-XL	Wall Mount Facuet with Hose	1		
5	Zurn Industries, LLC	Z842X1-AF-H-15F	Wall Mount Facuet with Hose	2		
6	Zurn Industries, LLC	Z1320-CXL	Ecolotrol Wall Hydrant, Encased, Non-Freeze, Anti-Siphon, Automatic Draining	2		
7	WATTS	FD-102-EG	Floor Drain, Round with Oval Funnel	2		Provide ProSet Trap Guard
8	WATTS	FD-202-A5	Watts Drainage Products FD-200-A on-grade epoxy coated cast iron floor drain with anchor flange, weepholes, adjustable round nickel bronze strainer, and no hub (standard) outlet.	6		Provide ProSet Trap Guard
9	WATTS	FD-202-DD	Watts Drainage FD-200-DD on-grade epoxy coated cast iron floor drain with anchor flange, weepholes, cast iron hub funnel, and no hub (standard) outlet.	2		Provide ProSet Trap Guard
10	WATTS	FD-202-EF	Watts Drainage FD-200-EF on-grade epoxy coated cast iron floor drain with anchor flange, weepholes, adjustable heel proof nickel bronze strainer with 4 in. (102mm) dia. nickel bronze funnel, and no hub (standard) outlet.	2		Provide ProSet Trap Guard
11	WATTS	FS-782	12 Inch Square x 6 Inch Deep Stainless Steel Sanitary Floor Sink	1		Provide ProSet Trap Guard
12	WATTS	CO-202-S	Watts Drainage Products CO-200-S epoxy coated cast iron floor cleanout with 5-1/8 in.(130mm) square adjustable nickel bronze (standard) top, and no hub (MJ) connection	4		
13	Fisher Manufacturing	18066	8" Wall Pot Filler Faucet with SVEI Vacuum Breaker	1		
14	American Standard	2018.214	Elongated Toilet	2		
15	American Standard	0321.026	Wall Mount Sink	2		
16	American Standard	2000.100.002	'CERAMIX' Faucet, C.P. 4" (102mm) C.C., solid cast brass lead-free body, washerless, ceramic drip-free disc valve cartridge, maximum temperature limit stop, with 5.7 LPM (1.5 GPM) flow p.c. aerator outlet with brass deck plate, single control metal lever handle and flexible copper supplies.	2		
17	Advance Tabco	7-PS-54	Hand Wash Sink	4		PROVIDED BY OWNER
18	Oatey	38993	Washing Machine Oulet Box, Standard Pack	1		

PLUMBING NOTES

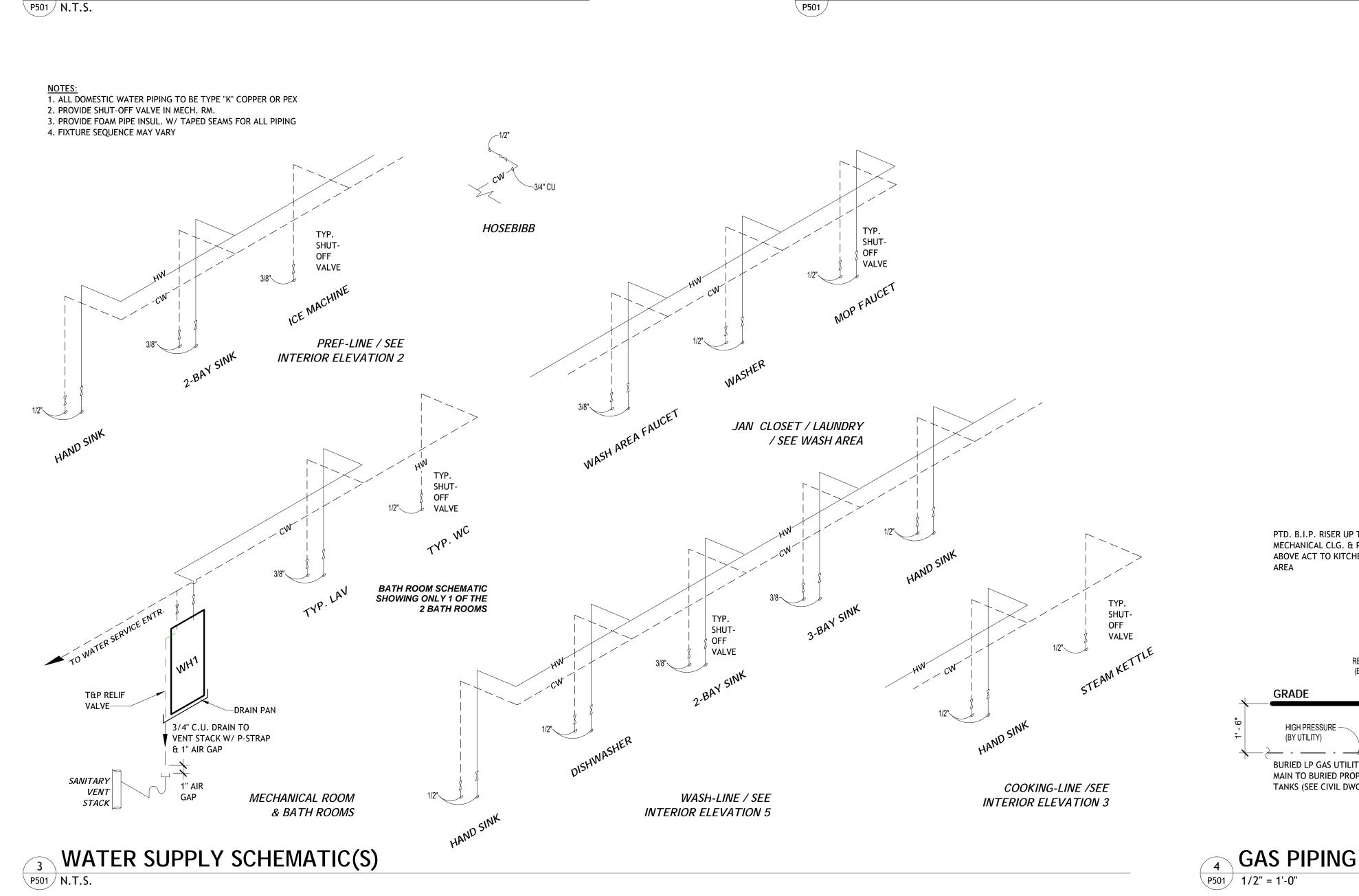
- 1. ALL PLUMBING WORK TO CONFORM TO GENERAL TRADE STANDARDS AND CODE REQUIRMENTS
- CAULK AROUND ALL PLUMBING FIXTURES TO SEAL ALL PENETRATIONS, EDGES OF FIXTURES, 2. ETCETERA VERIFY LOCATIONS WITH ENGINEER PRIOR TO INSTALLATION.& COUNTERTOPS AS REQUIRED.
- SEAL ALL PENETRATIONS THRU EXTERIOR, INTERIOR, FOUNDATION, CEILING & ROOF. CONFORM TO 3. UL STANDARDS FOR FIRE RATE ASSEMBLIES.
- 4. PROVIDE FIBERGLASS PIPE INSULATION WITH VAPOR RETARDANT WITH APED SEAMS & FITTINGS PER ALL EXPOSED WATER PIPING & FOAM PIPE INSULATION IN CONCEALED AREAS.
- PROVIDE PIPE HANGERS AS REQUIRED FOR PROPER INSTALLATION 5.
- PROVIDE PTD. PVC PLUMBING ACCESS PANELS AS REQ'D. FOR CONCEALED CEILING & WALL PLUMBING 6. CONTROLS, SHUT-OFF VALVES, ETCETERA
- 7. ALL SANITARY PIPING IS TO BE SCHEDULE 40 PVC & SLOPED AT 1/4" PER FOOT MINIMUM U.N.O. ALL DOMESTIC WATER TO BE PEX WITH APPROVED FITTINGS OR COPPER.
- 8. ALL KITCHEN & BATH ROOM PLUMBING FIXTURES & FAUCETS TO BE ADA COMPLIANT.
- 9. SANITARY SEWER AND WATER SUPPLY SCHEMATICS SHOW TYPICAL FIXTURE TYPE CONNECTIONS. COORDINATE LOCATIONS OF VENTS UP TOROUGH ROOF WITH GENERAL CONTRACTOR.
- 10. PROVIDE ANTI-SPHON VALVES AT ALL HOSEBIBBS.
- 11. PROVIDE CONCEALED STEEL SUPPORTS IN WALL PER ALL LAVATORIES
- 12. PROVIDE MUNICIPALITY APPROVED WATER METERS & REMOTE READING DEVICES MOUNT REMOTE READING DEVICES AT BUILDING EXTERIOR IN LOCATIONS APPROVED BY OWNER / ENGINEER & WATER DEPARTMENT.

- CONNECT TO BELLOW SANITARY LINE AFTER GREASE TRAP

TO GREASE TRAP- SEE CIVIL DRAWINGS

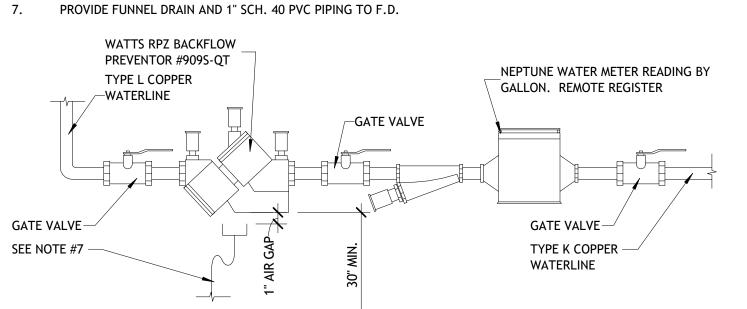




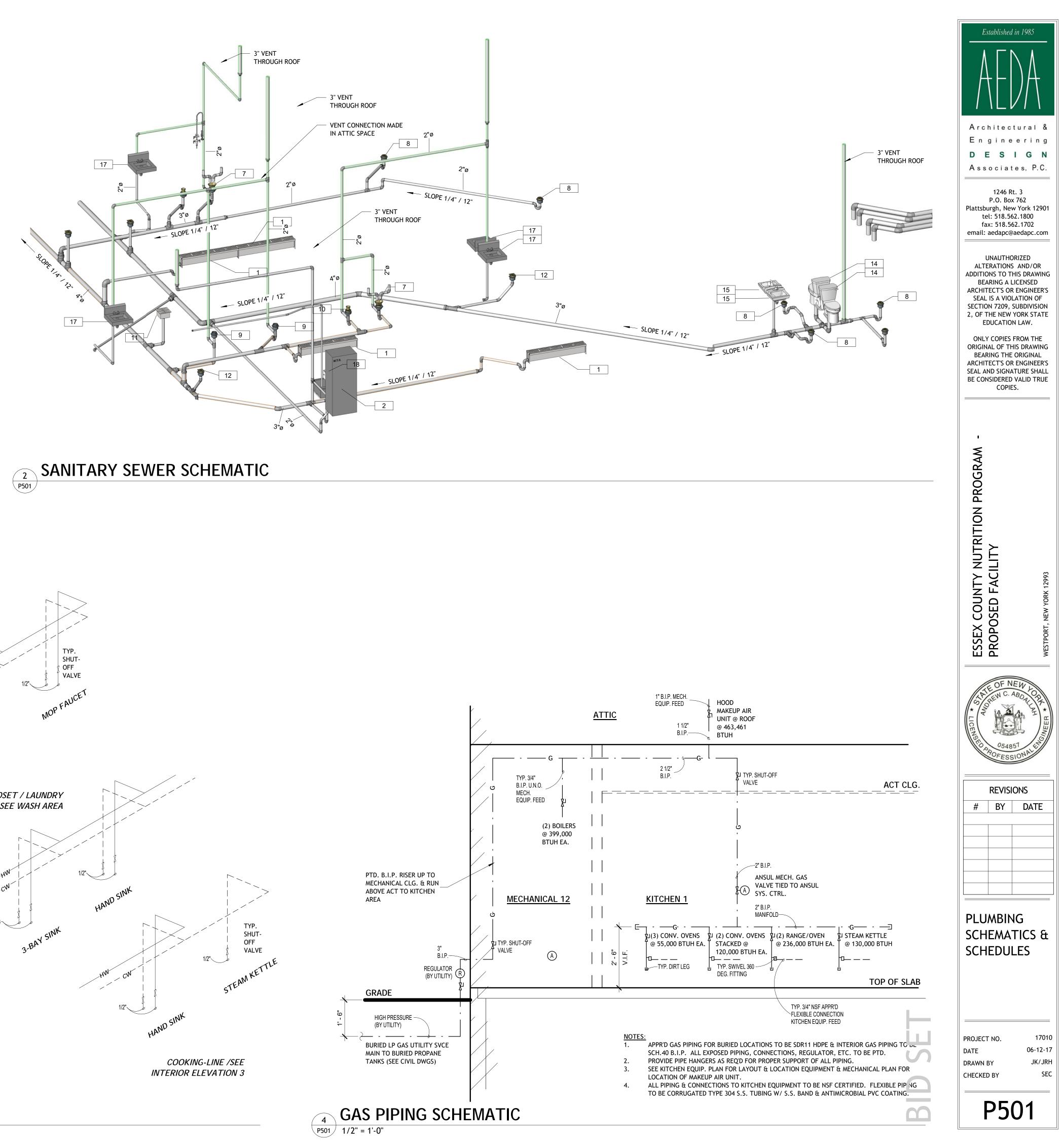


F.F.

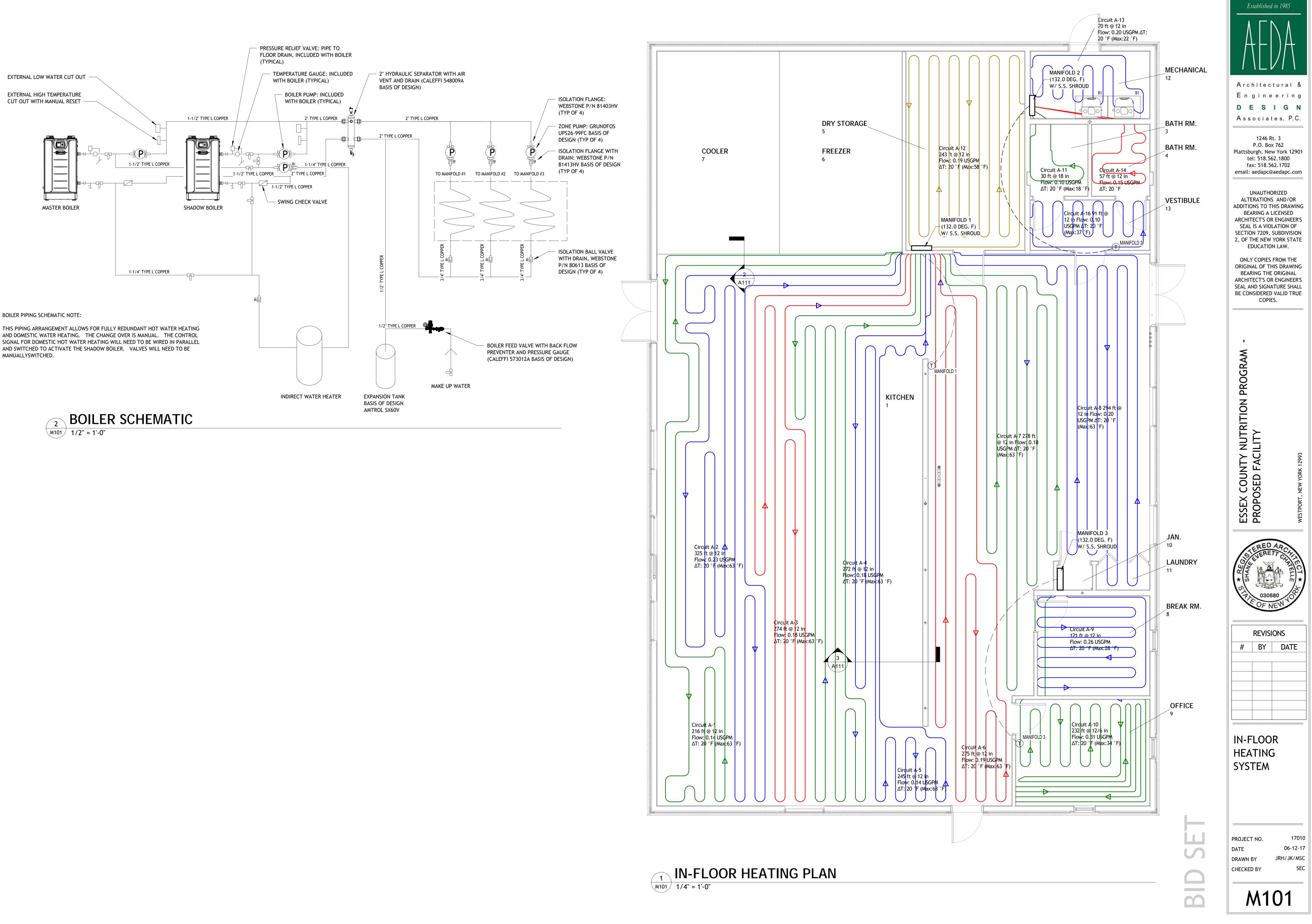
MATER SERVICE SCHEMATIC N.T.S.



- SEE SITE/PLUMBING PLANS FOR WATER SVCE. SIZE & LOCATIONS. 6.
- PRIOR TO ISSUANCE OF BUILDING PERMIT. SUBMITTALS FOR WATER SERVICE COMPONENTS REQ'D. FOR REVIEW BY ENG'R. 4. LOCATION & MOUNTING OF EXTERNAL METER DATA COLLECTION PORT MUST BE FIELD COORD. W/ OWNER/ENG'R PRIOR TO 5. INSTALLATION.
- SEE PLUMBING FLOOR PLAN FOR WATER METER AND BACKFLOW PREVENTOR LOCATION. BACKFLOW DEVICE AND CONFIGURATION SHALL BE APPROVED BY THE LOCAL MUNICIPALITY WATER & SEWER DEPARTMENT
- NOTES: LOCAL MUNICIPALITY WATER SERVICE PERMITS FOR CONNECTION TO MUNICIPAL WATER MAIN REQ'D. BY SITE CONTRACTOR. 1.









HVAC NOTES

- ALL PLUMBING & MECHANICAL WORK TO CONFORM TO APPLICABLE TRADE 1. STANDARDS AND ICC 2015 IPC PLUMBING, IMC MECHANICAL & IFGC FUEL GAS INTERNATIONAL CODES W/ NYS 2016 UNIFORM CODE SUPPLEMENT.
- 2 PROVIDE SUBMITTALS AND SHOP DRAWINGS FOR APPROVAL FOR ALL EQUIPMENT, SUPPLIES, CONTROLS, ETC. FOR COMPLETE HVAC SCOPE OF WORK. 3 COORD. CEILING PLAN W/ MECHANICAL PLAN TO AVOID INTERFERENCE BTWN
- DIFFUSERS, RETURN AIR GRILLES AND LIGHT FIXTURES.
- PROVIDE ENERGY-STAR THERMOSTATS, SENSORS AND CONTROL WIRING AS REQ'D, 4. INSTALL EACH THERMOSTAT IN A KEYED ACCESS COVER.
- DUCTWORK TYPE "LOW VELOCITY" GALVANIZED STEEL PER "SMACNA" LOW 5.
- VELOCITY DUCT CONSTRUCTION STANDARDS. ALL DUCT SIZES AS SHOWN ARE INTERIOR DIMENSIONS. AIR BALANCE - ALL AIR HANDLING EQUIPMENT AND OUTLETS, AND INLETS FOR "PLUS 6.
- OR MINUS" 10 PERCENT OF THEIR LISTED CAPACITIES AS DEFINED IN APPROVED SUBMITTED SHOP DWGS. PROVIDE AIR BALANCE DAMPERS WHERE REQUIRED TO ESTABLISH SPECIFIED CFM DELIVERY TO EACH BRANCH DUCT & SUPPLY REGISTER.
- 7. ALL DUCTWORK SHALL BE INSULATED W/ FSK FACED INSULATION EQUAL TO 800 SERIES SPIN-GLASS BY JOHNS MANVILLE W/ ALL SEAMS SEALED WITH FSK TAPE. ALL DUCTWORK IN UNCONDITIONED SPACES SHALL HAVE TYPE 814 INSULATION AT A THICKNESS OF 2" (R=8.70) AND ALL DUCTWORK WITHIN THE BUILDING THERMAL ENVELOPE SHALL HAVE TYPE 814 INSULATION AT A THICKNESS OF 1.5" (R=6.52), ALL DUCT INSULATION SHALL INCLUDE A VAPOR RETARDER WITH MAXIMUM PERMEANCE OF 0.05 PERM.
- ALL DIFFUSERS & GRILLES SHALL BE WHITE BAKED ENAMEL W/ OPERABLE DAMPER 8. WHERE SCHEDULED. PROVIDE STEEL T-BAR LAY IN PANEL @ SUSPENDED CEILING LOCATION.
- 9. ALL HVAC CONTROLS AND WIRING SHALL BE BY M.C. COORD. W/ E.C. FOR POWER CIRCUITS TO BE PROVIDED BY E.C. TO ALL EQUIPMENT CONNECTIONS. 10. THERMOSTATIC CONTROLS SHALL HAVE A 5 DEGREE F DEADBAND & SETPOINT
- OVERLAP RESTRICTIONS PROVIDE PROPER DUCT SIZE/TRANSITIONS TO AVOID CONFLICTS W/ OTHER WORK 11. WHILE MAINTAINING REQUIRED AIR FLOWS AND VELOCITIES.
- REFERENCE STRUCT. DWGS. FOR TRUSS LAYOUT & COORD. W/ G.C. 12. REFERENCE DWG. INTERIOR ELEVATIONS MOUNTING HEIGHTS FOR H.C. UNITS 13.
- SWITCHES, OUTLETS & THERMOSTATS.
- PROVIDE PIPE HANGERS AS REQ'D FOR PROPER SUPPORT OF ALL PIPING. 14. PROVIDE BIRD SCREEN AT ALL EXHAUST OR OUTSIDE AIR PENETRATIONS. 15.
- APPR'D GAS PIPING FOR BURIED LOCATIONS TO BE SDR11 HDPE & INTERIOR GAS 16. PIPING TO BE SCH.40 B.I.P. ALL EXPOSED PIPING, CONNECTIONS, REGULATOR, ETC.
- TO BE PTD. 17. CAULK & SEAL ALL PENETRATIONS THROUGH EXTERIOR AND FIRE SEPARATION

MECHANICAL EQUIPMENT SCHEDULE

TYPE	MANUFACTURER	MODEL	SUPPLY AIRFLOW	DESCRIPTION	COMMENTS
			1		
AHU2	Captive-Aire	A3-D.500-G18-PB	5640 CFM	Gas Fired Make-up Air Unit	Provided by Owner, Installed by Provided with sloped curb.
EH1	CaptiveAire	DU180HFA		Exhaust Fan for Kitchen Hood	Provided by Owner, Installed by Provided with sloped curb.
EH1	CaptiveAire	DU180HFA		Exhaust Fan for Kitchen Hood	Provided by Owner, Installed by Provided with sloped curb.
AHU1	Daikin	FDXS12LVJU	280 CFM	LV Series Slim Duct 1-ton Indoor Unit	Provide with BRC944B2-A08 wall r
CND1	Daikin	RXS12LVJU		LV Series 1-ton Outdoor Unit	Provide with DACA-WB-3 wall mout top of unit with window header h
B1	Weil-McLain	Evergreen 399 Gas Boiler		Evergreen High-Efficiency Condensing Gas Boiler	399 MBH Boiler with Concentric V Mount Kit 383-900-074, extend co
B1	Weil-McLain	Evergreen 399 Gas Boiler		Evergreen High-Efficiency Condensing Gas Boiler	399 MBH Boiler with Concentric V Mount Kit 383-900-074, extend co
WH1	Weil-McLain	Aqua Plus		Indirect-Fired Water Heater	Model 105 with 109.4 gallon stora

	Air Terminal Schedule							
Mark	Count	Manufacturer	Model	Size	Comments			
R1	2	Price Industries	82 Series	10"x10"	T-Bar panel mounted, aluminum blade damper			
51	2	Price Industries	LCMD Series	6"x6"	4A discharrge pattern, face adjustable damper, T-Bar panel mounted			

² KITCHEN HOOD DUCT NOTES

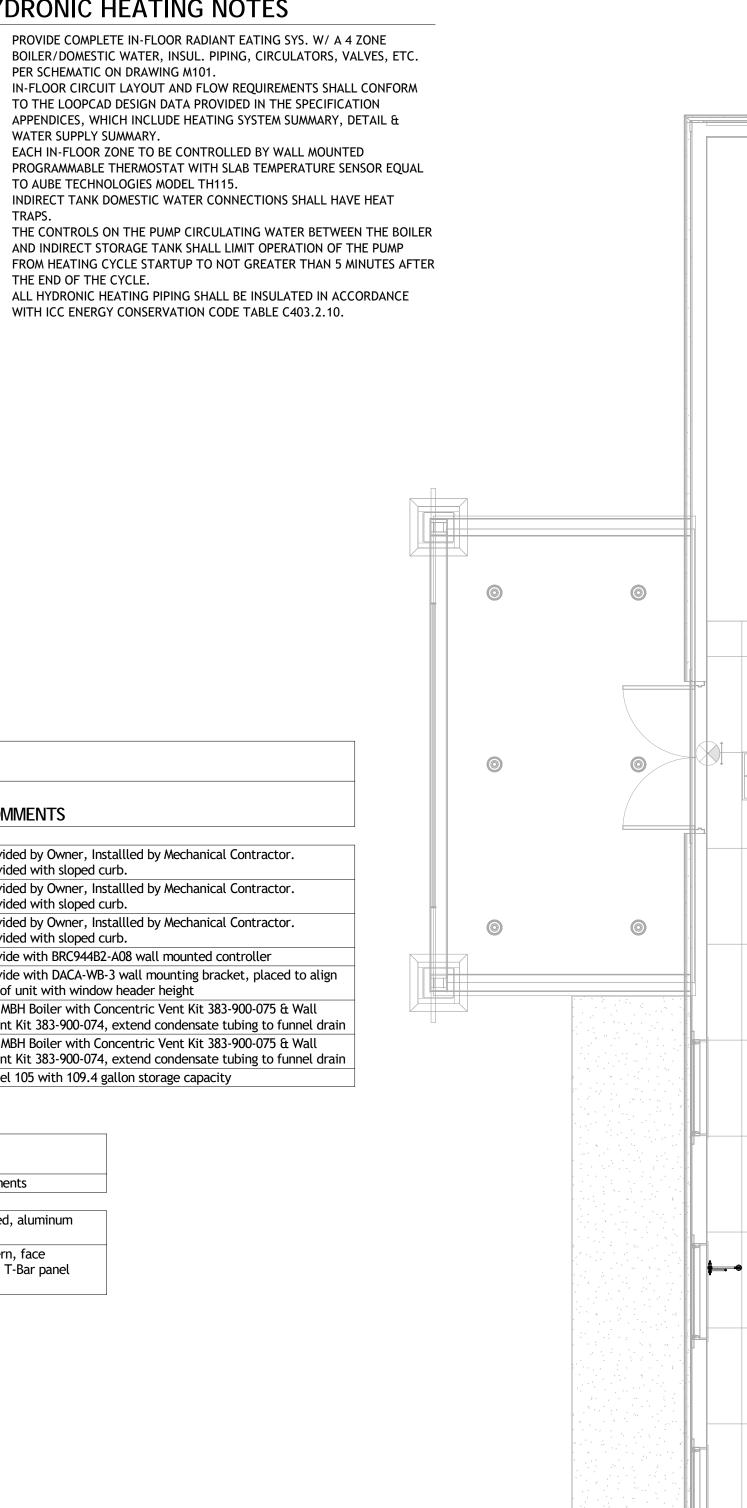
∖m111/ 1/4" = 1'-0' HOOD EXHAUST DUCTS SHALL BE CONSTRUCTED OF DUAL WALL FACTORY-BUILT KITCHEN GREASE DUCTS LISTED AND LABELED IN ACCORDANCE WITH UL 1978, EQUAL TO CAPTIVE-AIRE MODEL DW-3R, AND INSTALLED IN ACCORDANCE WITH ICC MECHANICAL CODE SECTION 304.1.

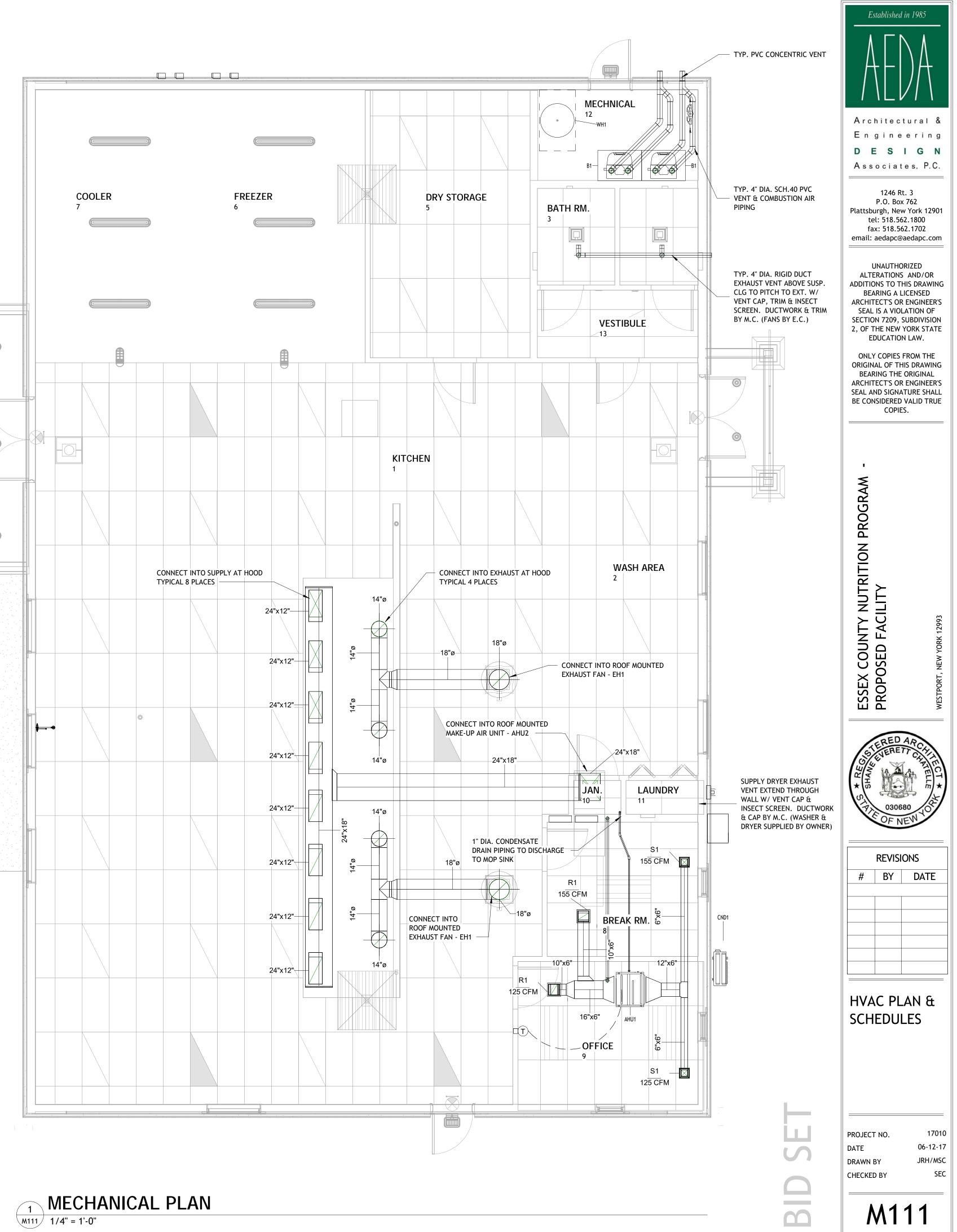
- HOOD MAKE-UP AIR DUCTS SHALL BE CONSTRUCTED OF MIN. 0.024 INCH WALL 2. THICKNESS GALV. STEEL RECTANGULAR DUCT OR GREATER AS REQUIRED BY SMACNA HVAC DUCT CONSTRUCTION STANDARDS- METAL AND FLEXIBLE, WITH DUCT INSULATION INSTALLED WITHIN 18 INCHES OF THE HOOD OF A NONCOMBUSTIBLE TYPE OR LISTED FOR INSTALLATION AT KITCHEN HOODS.
- 3. JOINTS OF GREASE DUCTS SHALL BE FACTORY-WELDED WITH V-BAND DUCT CONNECTORS PER LISTED ASSEMBLY. ANY OTHER SEAMS, PENETRATIONS, ETC. SHALL BE MADE WITH A CONTINUOUS LIQUID-TIGHT WELD OR BRAZE MADE ON THE EXTERNAL SURFACE OF THE DUCT SYSTEM.
- 4. DUCT TO HOOD CONNECTIONS SHALL BE MADE WITH CONTINUOUS INTERNAL OR EXTERNAL LIQUID-TIGHT WELDED OR BRAZEN JOINTS, SUCH JOINTS SHALL BE SMOOTH, ACCESSIBLE FOR INSPECTION, AND WITHOUT GREASE TRAPS. FACTORY AND LISTED DUCT TO HOOD CONNECTIONS SHALL COMPLY WITH ICC MECHANICAL CODE SECTION 506.3.2.2.
- 5. DUCT TO EXHAUST FAN CONNECTIONS SHALL BE FLANGED AND GASKETED AT THE BASE OF THE FAN, GASKET AND SEALING MATERIALS SHALL BE RATED FOR CONTINUOUS DUTY AT A TEMPERATURE OF NOT LESS THAN 1500 DEGREES F.
- 6. A VIBRATION ISOLATOR SHALL BE INSTALLED AT THE DUCT TO EXHAUST FAN CONNECTION, CONSISTING OF NON-COMBUSTIBLE PACKGING IN A METAL SLEEVE JOINT OF APPROVED DESIGN OR SHALL BE A COATED-FABRIC FLEXIBLE DUCT CONNECTOR LISTED AND LABELED FOR THE APPLICATION.
- 7. GREASE DUCT LEAKAGE TESTS SHALL BE PERFORMED IN ACCORDANCE WITH ICC MECHANICAL CODE SECTION 506.3.2.5 PRIOR TO THE CONCEALMENT OF ANY PORTION OF DUCTWORK.
- 8. GREASE DUCT SUPPORTS SHALL BE OF NON-COMBUSTIBLE MATERIAL SECURELY FASTENED TO THE STRUCTURE, NO MECHANICAL FASTENERS SHALL PENETRATE THE DUCT WALLS.
- 9. GREASE DUCTS SHALL BE SLOPED NOT LESS THAN 1/4 INCH PER LINEAR FOOT TOWARD THE HOOD OR TOWARD A GREASE RESERVIOR DESIGNED AND INSTALLED IN ACCORDANCE WITH ICC MECHANICAL CODE SECTION 506.3.7.1.
- 10. GREASE DUCT CLEANOUTS AND OPENINGS SHALL BE PROVIDED IN ACCORDANCE WITH ICC MECHANICAL CODE SECTION 506.3.8 & 506.3.9, TYPICAL AT GREASE RESERVIORS, SPACED NOT MORE THAN 20 FEET APART IN HORIZONTAL RUNS, AND NOT MORE THAN 10 FEET FROM CHANGES IN DIRECTION GREATER THAN 45 DEGREES.

HYDRONIC HEATING NOTES

1.

- PER SCHEMATIC ON DRAWING M101. 2.
- WATER SUPPLY SUMMARY. 3.
- TO AUBE TECHNOLOGIES MODEL TH115. 4. TRAPS. 5.
- THE END OF THE CYCLE.
- 6.





ELECTRICAL NOTES

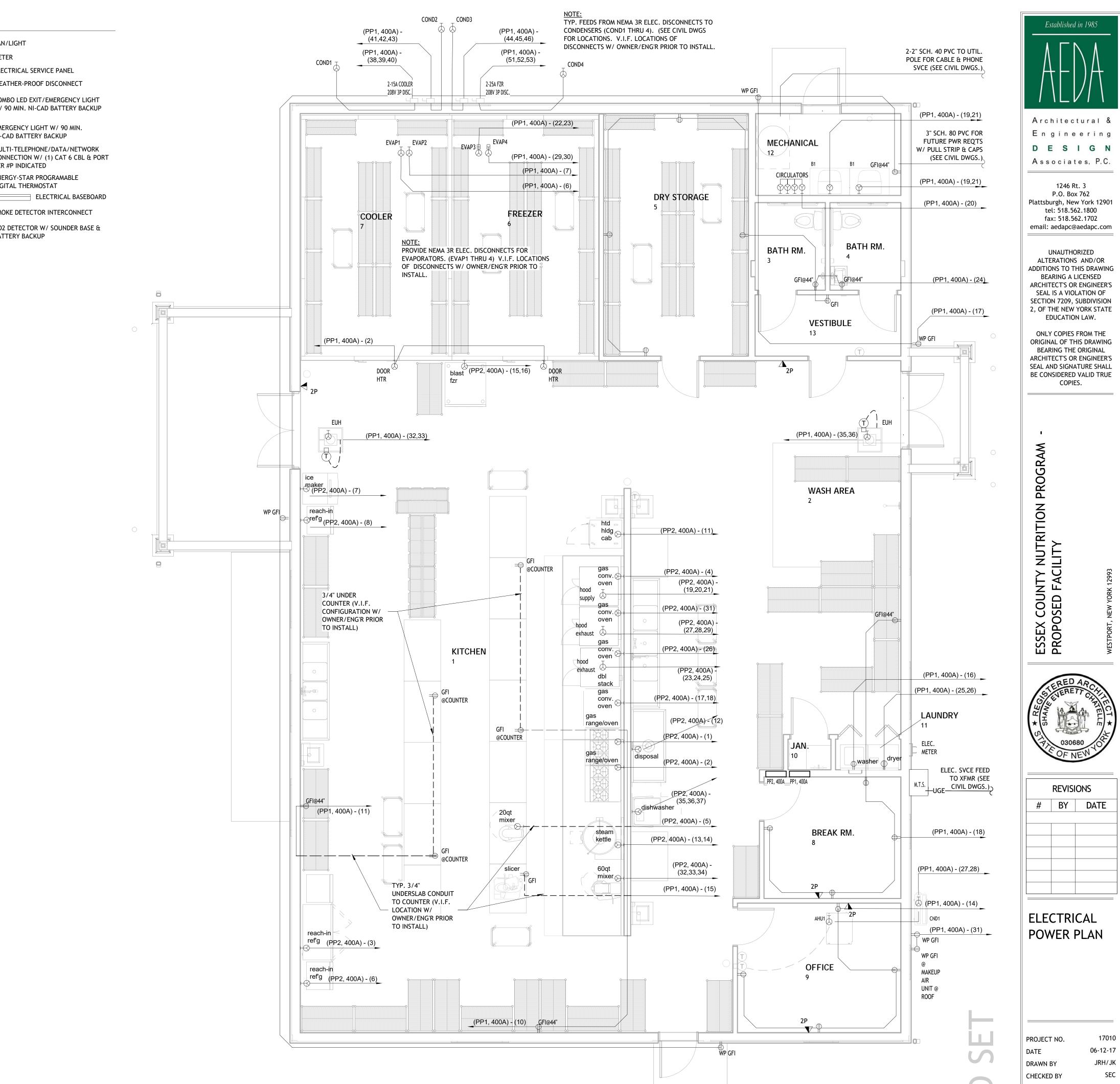
- ALL ELECTRICAL WORK TO CONFORM TO NFPA 70, N.E.C. 2014 STANDARDS
- PROVIDE SUBMITTALS FOR APPROVAL FOR ALL EQUIPMENT, FIXTURES, CONTROLS, ETC. FOR COMPLETE ELECTRICAL SCOPE OF WORK.
- SEE SITE UTILITY PLANS FOR SITE LIGHTING ELECTRICAL REQT'S.
- COORD. W/ SITE CONTRACTOR FOR ALL TRENCHING REQ'TS FOR ELECTRICAL, PHONE & CABLE SERVICE REQ'TS. ALL PVC JOINTS TO BE MADE USING SOLVENT WELD SO AS TO RENDER WATER TIGHT
- CONDUIT SYSTEM.
- PROVIDE SERVICE LATERAL & COORD. W/ LOCAL UTILITY. SUBMIT CATALOG CUTS OF METERING EQUIPMENT TO PLATTSBURGH MLD, 6 MILLER STREET, PLATTSBURGH POINT, NY 12921, ATTN .: WILLIAM TREACY 518-563-2200 PRIOR TO ORDERING. METER CENTER TO BE PERMANENTLY MARKED W/ EACH POSITION LABELED FOR RESPECTIVE SUB FEED PANEL.
- COORD. W/ LOCAL ELEC. UTILITY & OWNER'S SELECTED PHONE & CABLE TV UTILITIES & SHALL BE RESPONSIBLE FOR ALL CAPITAL CONSTRUCITON COSTS ASSESSED BY THE POWER, PHONE OR C.A.T.V. UTILITIES, IF ANY & ALL APPLICABLE & INSPECTION FEES FOR A COMPLETE INSTALLATION & CONNECTIONS TO XFMR, PHONE & CABLE BOXES.
- CONFIRM AVAILABLE SHORT CIRCUIT (A.I.C.) W/ LOCAL UTILITY PRIOR TO ORDERING ALL OVER-CURRENT PROTECTION EQUIPMENT. ALL CIRCUIT BREAKERS & FUSES SHALL BE RATED TO INTERRUPT NOT LESS THAN THE CONFIRMED A.I.C. 10. PROVIDE BUILDING STEEL GROUNDS & CONC. ENCASED ELECTRODES IN POURED
- CONC. SLAB AS REQ'D BY ELECTRICAL SVCE. & N.E.C. GROUNDING REQ'TS. ALL SERVICE BONDING AND EARTH GROUNDING CONDUCTORS SHALL BE COPPER. 11 BALANCE CONFIRMED ELECTRICAL LOADS IN PANELS AS REQ'D. SUBMIT AS-BUILTS 12. SHOWING ACTUAL CIRCUIT CONFIGURATION & AS-BUILTS FINAL DRAWINGS OF
- COMPLETED WORK. PROVIDE LABELS FOR ALL ELEC. PANELS. 13. ALL SWITCH AND RECEPTACLE PLATE COVERS ARE TO COLOR COLOR SELECTED BY 14.
- OWNER/ENG'R. COORD. W/ MECHANICAL CONTR. FOR BATH RM. & RANGE HOOD EXHAUST FANS, 15. HVAC SYSTEM POWER REQT'S., FIRE & SMOKE SYSTEM ALARMS, AND ANY OTHER MECHANICAL CONTR. ELECTRICAL POWER REQ'TS. VERIFY LOCATIONS PRIOR TO INSTALLATION.
- PROVIDE ISOLATED GROUNDS FOR ALL DATE/PHONE RECEPTACLES. 16 PROVIDE TYP. TELCOM OUTLETS W/ CAT-6 PHONE/DATA CABLES (SEE ELEC. DETAILS). 17 ALL DATA/PHONE CABLES TO TERMINATE IN MECHANICAL 12. COORD. EXACT LOCATION W/ OWNER/ENG'R.
- SEE INT. ELEV'S FOR ADDITIONAL INFORMATION REGARD MOUNTING HEIGHTS FOR 18. H.C. UNITS SWITCHES AND OUTLETS.
- ALL SWITCHES, ABOVE COUNTERTOP RECEPTACLES, THERMOSTATS, ETC. TO BE ADA 19. COMPLAINT @ ACCESSIBLE HGTS. OF 48" MAX., WALL RECEPTACLES @ ACCESSIBLE HGTS. OF 15" MIN.
- CONFIRM LAYOUT OF ALL ELEC. DEVICES W/ OWNER/ENG'R PRIOR TO INSTALLATION. 20.

ELECTRICAL FIXTURE SCHEDULE							
TYPE	MANUFACTURER	MODEL	ELECTRICAL DATA	DESCRIPTION			
EUH	QMARK	CDF-RE	208 V/2-5000 VA	2'x2' CLG. MTD. ELEC. UNIT HEATER			

ELECTRICAL LEGEND

	WIRING IN CONDUIT IN WALL OR CEILING	S F	L FAN/LIGHT
	LIGHTING CIRCUIT WIRING		METER
40	SPECIAL PURPOSE CONNECTION		ELECTRICAL SERVICE
- JO	DUPLEX RECEPTACLE	₩P	WEATHER-PROOF DI
GFI	220V RECEPTACLE - WEATHER-PROOF G.F.I.C. DUPLEX RECEPTACLE	EX	COMBO LED EXIT/EN W/ 90 MIN. NI-CAD E
	SINGLE POLE SWITCH	EM	EMERGENCY LIGHT V NI-CAD BATTERY BA
₹S	MOTION SWITCH DETECTOR PIR WALL SWITCH OCCUPANCY SENSOR	#	MULTI-TELEPHONE/ CONNECTION W/ (1)
(OS)	OCCUPANCY SENSOR PIR CLG MTD.		PER #P INDICATED
₩. N	THREE WAY SWITCH	(T) EB	ENERGY-STAR PROG DIGITAL THERMOSTA
₹ S	FAN LIGHT SWITCH	B	ELEC1
	CLG LIGHT FIXTURE	S	SMOKE DETECTOR IN
40	WALL MTD LIGHT FIXTURE	CO	CO2 DETECTOR W/ S BATTERY BACKUP
	SURFACE MTD CLG LIGHT FIXTURE		
	CLG CHAIN HUNG STRIP LIGHT		





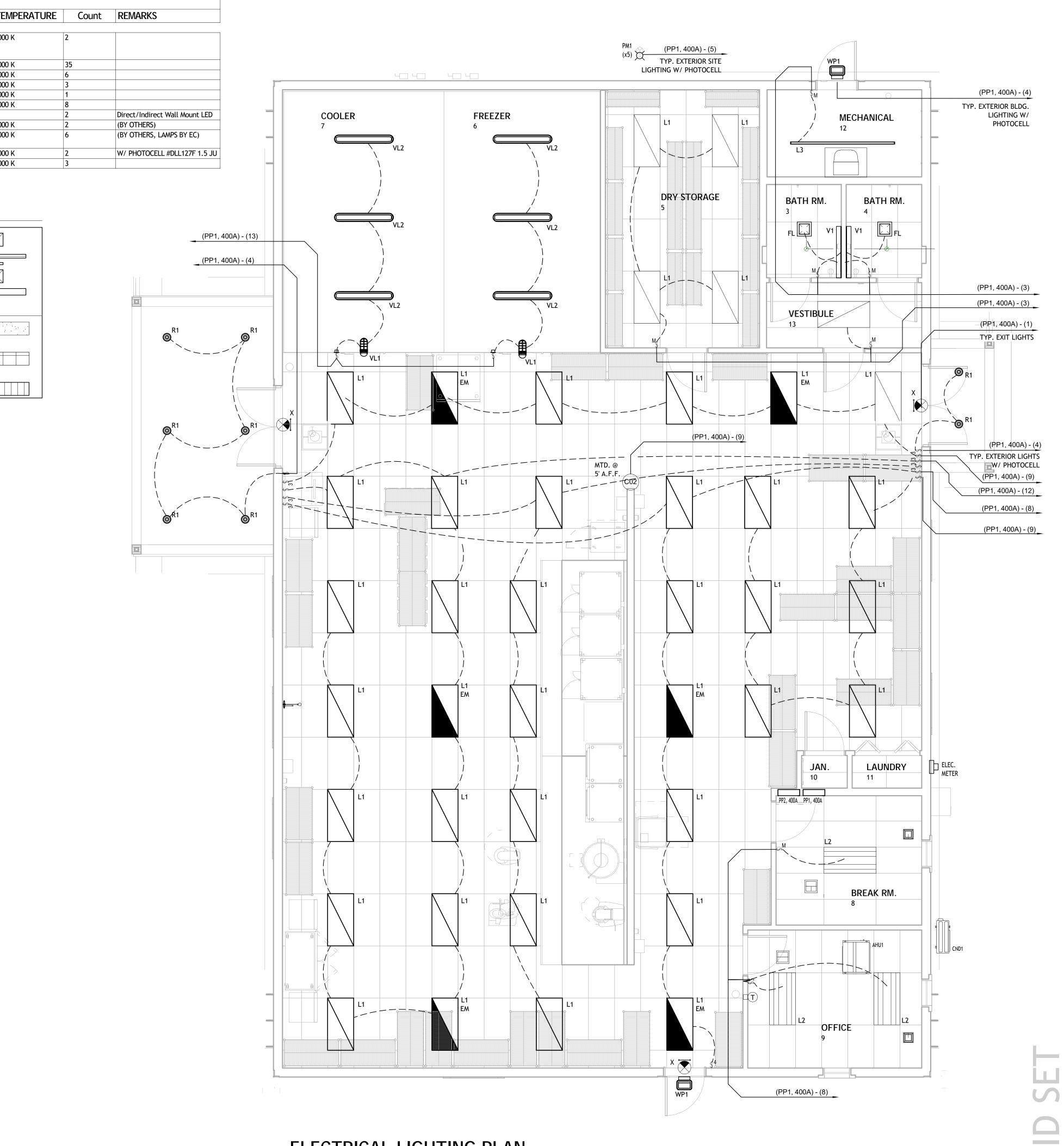
E101

LIGHTING FIXTURE SCHEDULE (SEE CIVIL DWGS. FOR EXTERIOR SITE LIGHTING FIXTURES)

TYPE	DESCRIPTION	MFR	MODEL NO.	LAMP	WATTAGE	LUMENS	TEMP
					1		
FL	WhisperGreen Select [™] One Fan/Light - Multiple IAQ Solutions, 50-80-110 CFM (pre-installed multi-speed) FV-05-11VKSL1	Panasonic	FV-05-11VKL1-50CFM-740RPM-4W		14 W	7700 lm	4000 K
L1	TROFFER (2x4)	LITHONIA	2TL4 40L RW A19 EZ1 LP850	LED	27 W	4046 lm	5000 K
L1 EM	TROFFER (2x4)	LITHONIA	2TL4 40L RW A19 EZ1 LP850 EL14L	LED	30 W	4046 lm	5000 K
L2	VOLUMETRIC TROFFEER (2x4)	LITHONIA	2RTL4 48L EZ1 LP850	LED	35 W	5147 lm	5000 K
L3	STRIP LIGHT (1x8)	LITHONIA	TZL1N L96 10000LM FST MVOLT 40K 80CRI WH	LED	67 W	10000 lm	4000 K
R1	OUTDOOR RECESSED	LITHONIA	LDN6-40/15-106AR-MVOLT	LED	40 W	5942 lm	5000 K
V1	23DIW Straight & Narrow - Individual & Continuous	Cooper Lighting	Series 23DIW	LED			
VL1	COOLER/FREEZER VAPORPROOF WALL LIGHT	KASON	1803LED	E26 LAMP	11 W	1634 lm	4000 K
VL2	COOLER/FREEZER VAPORPROOF CLG LIGHT (1x4)	KASON	1810EX	2-T5H0 FLOUR	65 W	9600 lm	4000 K
WP1	WALLPACK	LITHONIA	KAXW LED P1 50K R3 MVOLT PER	LED	43 W	6396 lm	5000 K
Х	EXIT/EMERGENCY LIGHT COMBO	LITHONIA	ECG LED M6	LED	40 W	6000 lm	4000 K

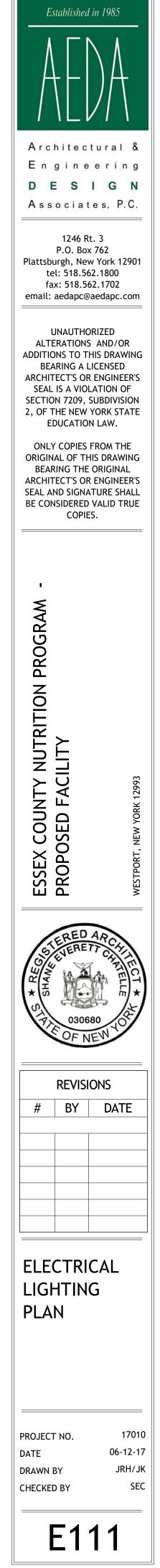
REFLECTED CEILING PLAN LEGEND

LED LIGHT (2'-0" x 4'-0")		EXIT LIGHT	\bigotimes	CEILING MTD MICROPHONE	(M)	RETURN/EXHAU	
		ACCESS PANEL (1'-0"x1'-0" UNO)	AP	SPRINKLER HEADS CONCEALED	Ø	ST GRILLE LINEAR DIFFUSER	
(2'-0" x 4'-0") WITH BUILT-IN EMERGENCY		SMOKE DETECTORS	SD	SPRINKLER HEADS SEMI RECESSED	۲	SUPPLY AIR DIFFUSER	
	$\land \cap$	SPEAKERS	S	SPRINKLER HEADS	SPR.	DECORATIVE T5'S	
DOWNLIGHT	$\bigcirc \bigcirc$	FIRE ALARM/HORN/STROBE	F⊲	WALL MOUNT SPRINKLER HEADS		RECESSED HALOGEN	
PENDANT LIGHT	(+)	SECURITY CAMERA	(SC)	CEILING MOUNT	•	RECESSED HALOGEN	
WALL WASH LIGHT	\bigcirc	CLOSED CIRCUIT	О ССТV	WALL MOUNTED EXIT LIGHT (SEE MECHANICAL)		GYPSUM BOARD CEILING	<u>)</u>
STRIP LIGHTS							
WALL MOUNT LIGHT						A.C.T. CEILING TILE	
WALL SCONCE						ALUMINUM SURFACE VENTED	

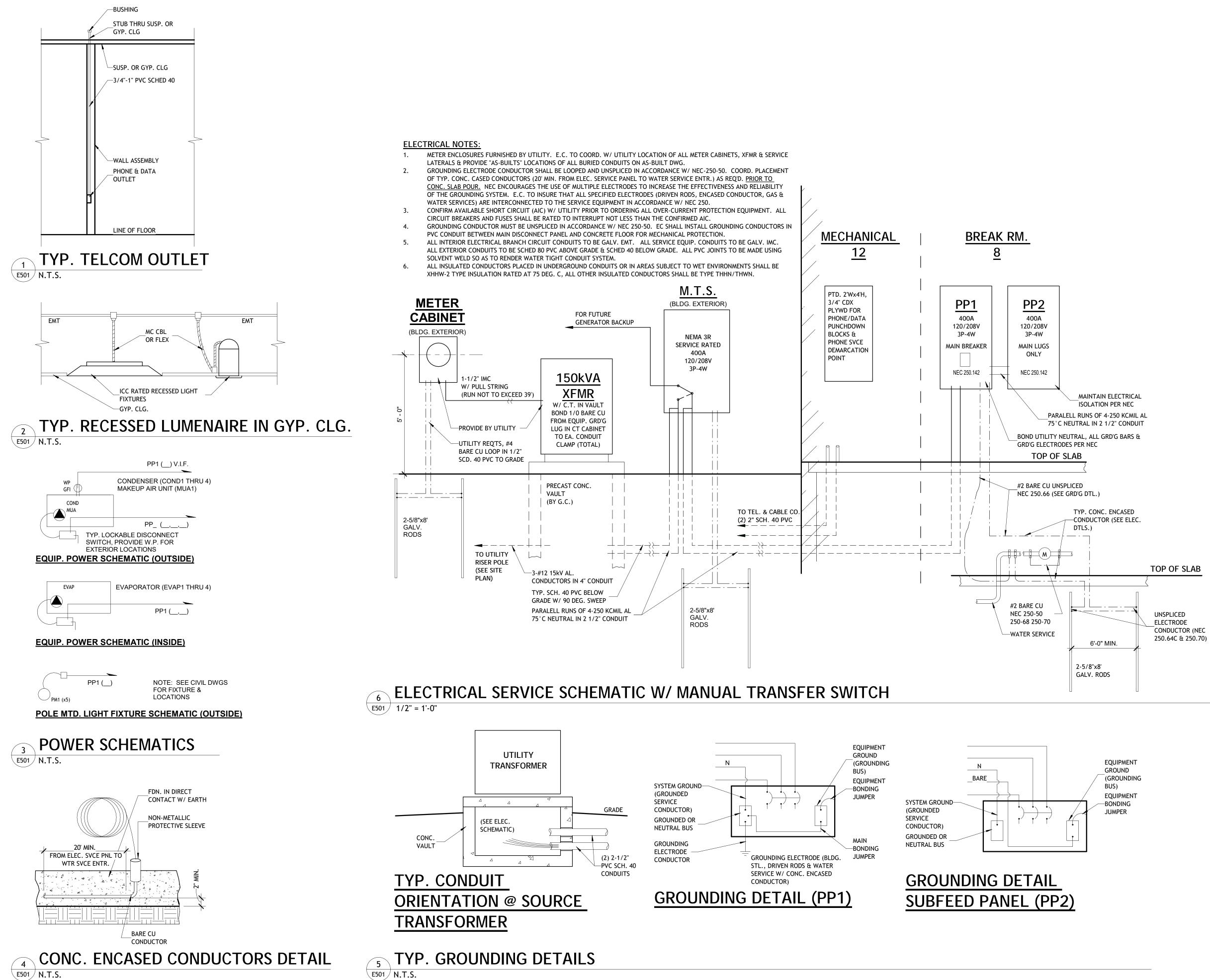


 1
 ELECTRICAL LIGHTING PLAN

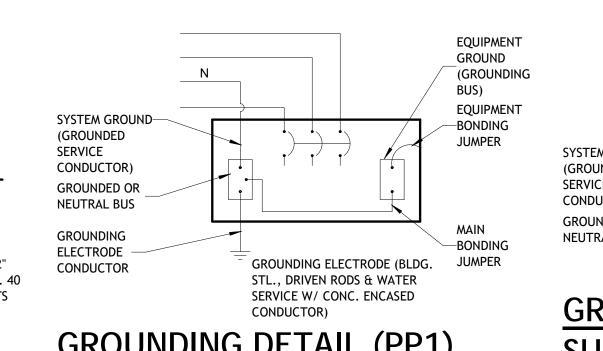
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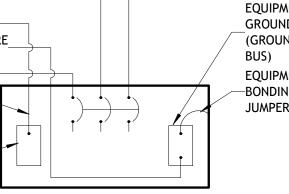
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E501 N.T.S.









S

Branch Panel: PP1, 400A

Location: BREAKER RM. 8 Supply From: Mounting: RECESSED Enclosure: NEMA 1

Notes:

.							_						
СКТ	Circuit Description	Trip	Poles		A		B	(2	Poles	Trip	Circuit Description	CKT
1	EXIT LIGHTS	20 A	1	16 VA	970 VA								28
2	COOLER/FREEZER DOOR HEATERS	20 A	1			96 VA	2984			2	20 A	FREEZER EVAP4	29
3	DRY STOR., MECH. RM. & BATH RM. LIGHTING	20 A	1					113 VA	0 VA				30
4	EXTERIOR BLDG. LIGHTING	20 A	1	262 VA	360 VA					1		WP GFI RECEPTACLE @ HVAC COND. & MUA	-
5	EXTERIOR SITE LIGHTING POLES	20 A	1			275 VA	2500			2	30 A	5kW EHU	32
6	COOLER EVAP1	20 A	1					324 VA	2500				33
7	COOLER EVAP2	20 A	1	324 VA									34
8	KITCHEN WASH AREA LIGHTING	20 A	1			330 VA	2500			2	30 A	5kW EHU	35
9	KITCHEN PASS-THRU & WASH AREA LIGHTING		1					361 VA	2500				36
10	COUNTER GFI RECEPTACLES	20 A	1	540 VA									37
11	COUNTER GFI RECEPTACLES	20 A	1			540 VA	695 VA			3	15 A	COOLER COND1	38
12	KITCHEN PREP & COOKING AREA LIGHTING	20 A	1					576 VA	686 VA				39
13	COOLER/FREEZER LIGHTS	20 A	1	658 VA	686 VA								40
14	BREAK RM. RECEPTACLES	20 A	1			720 VA	686 VA			3	15 A	COOLER COND2	41
15	SLICER	20 A	1					750 VA	686 VA				42
16	WASHER	20 A	1	750 VA	686 VA								43
17	EXTERIOR WP GFI RECEPTACLES	20 A	1			900 VA	686 VA			3	25 A	FREEZER COND3	44
18	OFFICE RECEPTACLES	20 A	1					900 VA	686 VA				45
19	GAS BOILER	20 A	1	1008	686 VA								46
20	CIRCULATORS	20 A	1			1056	0 VA			1	20 A	SPARE	47
21	GAS BOILER	20 A	1					1008	0 VA	1	20 A	SPARE	48
22	FREEZER EVAP3	20 A	2	2984	0 VA					1	20 A	SPARE	49
23						0 VA	0 VA			1	20 A	SPARE	50
24	DRY STOR. & BATH RM. RECEPTACLES	20 A	1					2190	686 VA	3		FREEZER COND4	51
25	DRYER	40 A	2	4500	686 VA								52
26						0 VA	686 VA						53
27	HVAC SPLIT SYS.	15 A	2					970 VA	0 VA	1	20 A	SPARE	54
			al Load:	1493	5 VA	1465	6 VA	1475					

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel	Totals
HVAC	1940 VA	100.00%	1940 VA		
Lighting	2256 VA	100.00%	2256 VA	Total Conn. Load:	44338 VA
Motor	4040 VA	100.00%	4040 VA	Total Est. Demand:	43332 VA
Other	12076 VA	100.00%	12076 VA	Total Conn. Current:	123 A
Power	11974 VA	100.00%	11974 VA	Total Est. Demand Current:	120 A
Receptacle	12150 VA	91.15%	11075 VA		
Lighting - Exterior	275 VA	125.00%	344 VA		
Lighting - Exterior					

Branch Panel: PP2, 400A

Location: BREAKER RM. 8

Supply From: Mounting: RECESSED Enclosure: NEMA 1

Notes

			-
СКТ	Circuit Description	Trip	Poles
1	RANGE/OVEN	15 A	1
2	RANGE/OVEN	15 A	1
3	REACH-IN REF'G (2 DR)	15 A	1
4	CONVECTION OVEN	15 A	1
5	20QT MIXER	15 A	1
6	REACH-IN REF'G	15 A	1
7	ICE MAKER	20 A	1
8	REACH-IN-REF'G	15 A	1
9	SPARE	20 A	1
10	SPARE	20 A	1
11	HEATED HOLDING CABINET	20 A	1
12	DISPOSAL	20 A	1
13	STEAM KETTLE	15 A	2
14			
15	BLAST FREEZER	50 A	2
16			
17	DBL STACK CONVECTION OVEN	30 A	2
18			
19	HOOD MAKEUP AIR	20 A	3
20			
21			
		Tota	al Load:
		Tota	I Amps:
Legend	:		

Load Classification HVAC Motor Other Power

Notes:

Connected Load 5476 VA 6967 VA 19023 VA 2352 VA Volts: 120/208 Wye Phases: 3 Wires: 4

A.I.C. Rating: V.I.F. W/ UTILITY Mains Type: MAIN BREAKER Mains Rating: 400 A MCB Rating: 400 A

Volts:	120/208 Wye
Phases:	3
Wires:	4

A.I.C. Rating:	V.I.F. W/ UTILITY
Mains Type:	LUGS ONLY
Mains Rating:	400 A
MCB Rating:	400 A

oles		4	E	3	C		Poles	1
1	408 VA	0 VA					1	
1			408 VA	2738			3	1
1					648 VA	0 VA		
1	720 VA	0 VA						
1			960 VA	720 VA			1	1
1					1068	2738	3	1
1	1704	0 VA						
1			1068	0 VA				
1					0 VA			
1	0 VA	720 VA					1	1
1			2000	693 VA			3	1
1					720 VA	693 VA		
2	104 VA	693 VA						
			104 VA	1726			3	6
2					1820	1726		
	1820	1726						
2			1082	0 VA			1	2
					1082	0 VA	1	2
3	3927	0 VA					1	2
			0 VA	0 VA			1	2
					0 VA	0 VA	1	2
oad:	1182	3 VA	1150	0 VA	1049	6 VA		
mps:	100	AC	97	Ϋ́Α	87	A		

	Estimated Demand	Demand Factor	
	5476 VA	100.00%	
То	6967 VA	100.00%	
Tota	19023 VA	100.00%	
Total	2352 VA	100.00%	
Total Est. De			

Trip	Circuit Description	СКТ
0 A	HOOD MAKEUP AIR SHUNT TRIP	22
15 A	HOOD EXHAUST	23
		24
		25
15 A	CONVECTION OVEN	26
15 A	HOOD EXHAUST	27
		28
		29
		30
15 A	CONVECTION OVEN	31
15 A	60QT MIXER	32
		33
		34
60 A	DISHWASHER W/ BOOSTER	35
		36
		37
20 A	SPARE	38
20 A	SPARE	39
20 A	SPARE	40
20 A	SPARE	41
20 A	SPARE	42
1	1	

Panel	Totals
Total Conn. Load:	33818 VA
Total Est. Demand:	33818 VA
Total Conn. Current:	94 A
Total Est. Demand Current:	94 A

1

S

$\frac{Established in 1985}{}$
Architectural & Engineering DESIGN Associates, P.C.
1246 Rt. 3 P.O. Box 762 Plattsburgh, New York 12901 tel: 518.562.1800 fax: 518.562.1702 email: aedapc@aedapc.com
UNAUTHORIZED ALTERATIONS AND/OR ADDITIONS TO THIS DRAWING BEARING A LICENSED ARCHITECT'S OR ENGINEER'S SEAL IS A VIOLATION OF SECTION 7209, SUBDIVISION 2, OF THE NEW YORK STATE EDUCATION LAW. ONLY COPIES FROM THE ORIGINAL OF THIS DRAWING BEARING THE ORIGINAL ARCHITECT'S OR ENGINEER'S
SEAL AND SIGNATURE SHALL BE CONSIDERED VALID TRUE COPIES.
ESSEX COUNTY NUTRITION PROGRAM - PROPOSED FACILITY WESTPORT, NEW YORK 1293
STERED ARCHITECT STERETT CHITECT STERETT CHITECT STERE STERE O30680 OF NEW YOU
REVISIONS # BY DATE
ELECTRICAL PANEL SCHEDULE
PROJECT NO. 17010 DATE 06-12-17 DRAWN BY JK CHECKED BY SEC
E600

INDEX TO BID FORMS

DESCRIPTION

Vendor Responsibility Questionnaire	4 pages
Certificate of Authority	1 page
Certification of Experience	1 page
Bid Security Form #1: Consent of Surety	1 page
Statement of Surety's Intent	2 pages
Bidder's Checklist	1 page
Certification of Compliance With The Iran Divestment Act	1 page
Non-Collusive Bidding Certification	1 page
Contractor's Acknowledgement	1 page
Bid Form – Section 00 4100	3 pages

ESSEX COUNTY VENDOR RESPONSIBILITY QUESTIONNAIRE

1. VEND	OOR IS:					
	PRIME CONTRACTOR					
2. VEND	OR'S LEGAL BUSINESS	NAME	3	B. IDENTIFICA	TION NUM	IBERS
				A) FEIN #		
				B) DUNS #	#	
4. D/B/A	– Doing Business As (if a	pplicable) & COUNTY FIELD	5	5. WEBSITE AD	DDRESS (if applicable)
	C (,	
6. ADDR	ESS OF PRIMARY PLAC	E OF BUSINESS/EXECUTIVE OF		'. TELEPHONE NUMBER		8. FAX NUMBER
0 4000						
-	W YORK STATE, if differ	CE OF BUSINESS/EXECUTIVE OF ent from above	-	0. TELEPHON	IE	11. FAX NUMBER
12. AUTH	HORIZED CONTACT FO	R THIS QUESTIONNAIRE				
Name)					
Title						
Telep	hone Number					
Fax N	lumber					
Email						
13. LIST	ALL OF THE VENDOR'S	PRINCIPAL OWNERS				
A) NAME	1	TITLE	B) NAME		TITLE	
C) NAME	E	TITLE	D) NAME		TITLE	
A DETAI	LED EXPLANATION IS F	REQUIRED FOR EACH QUESTION	ANSWERED WITH	A "YES," AND	MUST BE	PROVIDED AS AN
		TED QUESTIONNAIRE. YOU MU				
	ON NUMBER.	ATION OF VENDOR RESPONSIBI	LITT. PLEASE NUM	IDER EAUN RI	ESPONSE	
		R HAS IT USED IN THE PAST FIVI				
		HAN THOSE LISTED IN ITEMS 2-4 umber(s) or any D/B/A names and th				YESNO
	in use. Explain the relati				515	
		LS NOW SERVING IN A MANAGE				
	R, INCLUDING PRINCIPA HAVE SERVED AS:	AL OWNERS AND OFFICERS, WH	O NOW SERVE OR I	N THE PAST (ONE (1)	
a)	An elected or appointed					
	List each individual's na appointed to, and dates	me, business title, the name of the o of service	prganization and posi	uon elected or		YESNO
b)		I party organization in Essex County			h a l al se s''	
	List each individuals nai applicable service dates	ne, business title or consulting capa	icity and the official p	uiiticai position	neia with	YESNO

CONSUL OF THE	HIN THE PAST (5) YEARS, HAS THE VENDOR, ANY INDIVIDUALS SERVING IN MANAGERIAL OR LTING CAPACITY, PRINCIPAL, OWNERS, OFFICERS, MAJOR STOCKHOLDER(S) (10% OR MORE VOTING SHARES FOR PUBLICLY TRADED COMPANIES, 25% OR MORE OF THE SHARES FOR ALL COMPANIES), AFFILIATE OR ANY PERSON INVOLVED IN THE BIDDING OR CONTRACTING SS:	
a)	1. been suspended, debarred or terminated by a local, state or federal authority in connection with a contract or contracting process;	YESNO
	2. been disqualified for cause as a bidder on any permit, license, concession, franchise or lease;	
	3. entered into an agreement to a voluntary exclusion from bidding/contracting;	
	4. had a bid rejected on an Essex County contract for failure to comply with the MacBride Fair Employment Principles;	
	5. had a low bid rejected on a local, state or federal contract for failure to meet statutory affirmative action or M/WBE requirements on a previously held contract;	
	6. had a status as a Women's Business Enterprise, Minority Business Enterprise or Disadvantaged Business Enterprise, de-certified, revoked or forfeited;	
	7. been subject to an administrative proceeding or civil action seeking specific performance or restitution in connection with any local, state or federal government contract;	
	8. been denied an award of a local, state or federal government contract, had a contract suspended or had a contract terminated for non-responsibility; or	
	9. had a local, state or federal government contract suspended or terminated for cause prior to the completion of the term of the contract.	
b)	been indicted, convicted, received a judgment against them or a grant of immunity for any business- related conduct constituting a crime under local, state or federal law including but not limited to, fraud, extortion, bribery, racketeering, price-fixing, bid collusion or any crime related to truthfulness and/or business conduct?	YES NO
c)	been issued a citation, notice, violation order, or are pending an administrative hearing or proceeding or determination of violations of:	YESNO
	1. federal, state or local health laws, rules or regulations	
JUDGME Indicate judgmen amount o	HE PAST THREE (3) YEARS, HAS THE VENDOR OR ITS AFFILIATES ¹ HAD ANY CLAIMS, ENTS, INJUNCTIONS, LIENS, FINES OR PENALTIES SECURED BY ANY GOVERNMENTAL AGENCY? if this is applicable to the submitting vendor or affiliate. State whether the situation(s) was a claim, it, injunction, lien or other with an explanation. Provide the name(s) and address(es) of the agency, the of the original obligation and outstanding balance. If any of these items are open, unsatisfied, indicate the f each items as "open" or "unsatisfied".	YESNO
18. DUR	ING THE PAST THREE (3) YEARS, HAS THE VENDOR FAILED TO:	
a)	file returns or pay any applicable federal, state or city taxes? Identify the taxing jurisdiction, type of tax, liability year(s), and tax liability amount the vendor failed to file/pay and the current status of the liability.	YES NO
b)	file returns or pay New York State unemployment insurance? Indicate the years the vendor failed to file/pay the insurance and the current status of the liability.	YESNO
c)	Property Tax Indicate the years the vendor failed to file.	YESNO
AFFILIA PROCEE OF FILIN		YES NO
FEIN. P	if this is applicable to the submitting vendor or affiliate. If it is an affiliate, include the affiliate's name and rovide the court name, address and docket number. Indicate if the proceedings have been initiated, bending or have been closed. If closed, provide the date closed.	

20. IS THE VENDOR CURRENTLY INSOLVENT, OR DOES VENDOR CURRENTLY HAVE REASON TO BELIEVE THAT AN INVOLUNTARY BANKRUPTCY PROCEEDING MAY BE BROUGHT AGAINST IT? Provide financial information to support the vendor's current position, for example, Current Ration, Debt Ration, Age of Accounts Payable, Cash Flow and any documents that will provide the agency with an understanding of the vendor's situation.	YES	NO
21. IN THE PAST FIVE (5) YEARS, HAS THE VENDOR OR ANY AFFILIATES:		
 a) defaulted or been terminated on, or had its surety called upon to complete, any contract (public or private) awarded; 	YES	NO
Indicate if this is applicable to the submitting vendor or affiliate. Detail the situation(s) that gave rise to the negative action, any corrective action taken by the vendor and the name of the contracting agency.		

¹ "Affiliate" meaning: (a) any entity in which the vendor owns more than 50% of the voting stock; (b) any individual, entity or group of principal owners or officers who own more than 50% of the voting stock of the vendor; or (c) any entity whose voting stock is more than 50% owned by the same individual, entity or group described in clause (b). In addition, if a vendor owns less than 50% of the voting stock of another entity, but directs or has the right to direct such entity's daily operations, that entity will be an "affiliate" for purposes of this questionnaire.

ESSEX COUNTY VENDOR RESPONSIBILITY QUESTIONNAIRE

State of:)
) ss:
County of:)

CERTIFICATION:

The undersigned: recognizes that this questionnaire is submitted for the express purpose of assisting the County of Essex in making a determination regarding an award of contract or approval of a subcontract; acknowledges that the County may in its discretion, by means which it may choose, verify the truth and accuracy of all statements made herein; acknowledges that intentional submission of false or misleading information may constitute a felony under Penal Law Section 210.40 or a misdemeanor under Penal Law Section 210.35 or Section 210.45, and may also be punishable by a fine and/or imprisonment of up to five years under 18 USC Section 1001 and may result in contract termination; and states that the information submitted in this questionnaire and any attached pages is true, accurate and complete.

The undersigned certifies that he/she:

- Has not altered the content of the questions in the questionnaire in any manner;
- Has read and understands all of the items contained in the questionnaire and any pages attached by the submitting vendor;
- Has supplied full and complete responses to each item therein to the best of his/her knowledge, information and belief;
- Is knowledgeable about the submitting vendor's business and operations;
- Understands that Essex County will rely on the information supplied in the questionnaire when entering into a contract with the vendor;
- Is under duty to notify the Essex County Purchasing Officer of any changes to the vendor's responses.

Name of Business:	
Signature of Owner:	
Printed Name of Signatory:	
Title:	
Address:	
Date:	
Sworn before me this day of, 20	

Notary Public

FEIN # _____

CERTIFICATE OF AUTHORITY

(Officer other than officer executing proposal documents) certify that I am the	I,			
a corporation, duly organized and in good standing under the (Law under which organized, e.g., the New York Business Corporation Law) named in the foregoing agreement; that(Person executing proposal documents) who signed said agreement on behalf of the Contractor was, at the time of execution, of the Contractor; that said agreement was duly signed for (Title of such person) and in behalf of said Contractor by authority of its Board of Directors, thereunto duly authorized, and that such authority is in full force and effect at the date hereof. Signature Corporate Seal STATE OF NEW YORK) SS.: COUNTY OF ESSEX) On this to me known, and known to me to be the the corporation described and which executed the above certificate, who being by me duly sworn did depose and say that he, the said resides at, and that he is		(Officer other t	han officer execu	uting proposal documents)
a corporation, duly organized and in good standing under the (Law under which organized, e.g., the New York Business Corporation Law) named in the foregoing agreement; that(Person executing proposal documents) who signed said agreement on behalf of the Contractor was, at the time of execution, of the Contractor; that said agreement was duly signed for (Title of such person) and in behalf of said Contractor by authority of its Board of Directors, thereunto duly authorized, and that such authority is in full force and effect at the date hereof. Signature Corporate Seal STATE OF NEW YORK) SS.: COUNTY OF ESSEX) On this to me known, and known to me to be the the corporation described and which executed the above certificate, who being by me duly sworn did depose and say that he, the said resides at, and that he is	certify that I am the		of the	
(Law under which organized, e.g., the New York Business Corporation Law) named in the foregoing agreement; that		(Title)		(Name of Contractor)
named in the foregoing agreement; that			a corporation	, duly organized and in good standing under the
who signed said agreement on behalf of the Contractor was, at the time of execution,	(La	aw under which organ	ized, e.g., the Ne	w York Business Corporation Law)
who signed said agreement on behalf of the Contractor was, at the time of execution,	named in the foregoi	ing agreement; that		
of the Contractor; that said agreement was duly signed for (Title of such person) and in behalf of said Contractor by authority of its Board of Directors, thereunto duly authorized, and that such authority is in full force and effect at the date hereof. 	-		(Perso)	n executing proposal documents)
(Title of such person) and in behalf of said Contractor by authority of its Board of Directors, thereunto duly authorized, and that such authority is in full force and effect at the date hereof. 	who signed said agree	ement on behalf of th	e Contractor was	s, at the time of execution,
and in behalf of said Contractor by authority of its Board of Directors, thereunto duly authorized, and that such authority is in full force and effect at the date hereof. Signature Corporate Seal STATE OF NEW YORK) SS.: COUNTY OF ESSEX) On this			of the Contra	ctor; that said agreement was duly signed for
such authority is in full force and effect at the date hereof. Signature Corporate Seal STATE OF NEW YORK) SS.: COUNTY OF ESSEX) On this day of, 20, before me personally came to me known, and known to me to be the (Title) of	(Title of such	ı person)		
such authority is in full force and effect at the date hereof. Signature Corporate Seal STATE OF NEW YORK) SS.: COUNTY OF ESSEX) On this day of, 20, before me personally came	and in behalf of said	Contractor by authori	ity of its Board o	f Directors, thereunto duly authorized, and that
STATE OF NEW YORK) SS.: COUNTY OF ESSEX) On this day of, 20, before me personally came to me known, and known to me to be the (Title) of the corporation described and which executed the above certificate, who being by me duly sworn did depose and say that he, the said, and that he is resides at, and that he is	such authority is in f	ull force and effect at	the date hereof.	
COUNTY OF ESSEX) On this day of, 20, before me personally came to me known, and known to me to be the (Title) of the corporation described and which executed the above certificate, who being by me duly sworn did depose and say that he, the said, and that he is, of said corporation and knows the corporate seal of the said corporation; that		Signature		- Corporate Seal
to me known, and known to me to be thethe corporation described and which executed the above certificate, who being by me duly sworn did depose and say that he, the said resides at, and that he is, and that he is		· · ·		
to me known, and known to me to be thethe corporation described and which executed the above certificate, who being by me duly sworn did depose and say that he, the said resides at, and that he is, and that he is	On this	day of	, 20	, before me personally came
and which executed the above certificate, who being by me duly sworn did depose and say that he, the said				
, and that he is, and that he is of said corporation and knows the corporate seal of the said corporation; that	(Title) of			the corporation described in
of said corporation and knows the corporate seal of the said corporation; that	and which executed	the above certificate, v	who being by me	e duly sworn did depose and say that he, the said
of said corporation and knows the corporate seal of the said corporation; that		resides at		, and that he is
seal affixed to the above certificate is such corporate seal and that it was so affixed by order of the Board of	seal affixed to the ab	ove certificate is such	corporate seal a	nd that it was so affixed by order of the Board of
Directors of said corporation, and that he signed his name thereto by like order.	Directors of said cor	poration, and that he s	signed his name t	hereto by like order.

Notary Public

County

CERTIFICATION OF EXPERIENCE

I,HERE	BY CERTIFY THAT (COMPANY
HAS P	ERFORMED THE FOLLOWING WORK WITHING THE LAST
THREE YEARS UNLESS SPECIFIED DI	
NAMES OF BUSINESS:	CONTACT NAME:
ADDRESS:	
	TELEPHONE NO.:
	FAX NO.:
	CONTACT NAME:
ADDRESS:	
AMOUNT OF CONTRACT:	TELEPHONE NO.:
	FAX NO.:
	CONTACT NAME:
ADDRESS:	
	TELEPHONE NO.:
	FAX NO.:
	CONTACT NAME:
ADDRESS:	
AMOUNT OF CONTRACT:	TELEPHONE NO.:
TYPE OF WORK:	FAX NO.:
NAMES OF BUSINESS:	CONTACT NAME:
ADDRESS:	
AMOUNT OF CONTRACT:	TELEPHONE NO.:
	FAX NO.:
	CONTACT NAME:
	TELEPHONE NO.:
TYPE OF WORK:	FAX NO.:

NOTE: THIS FORM MUST BE EXECUTED BY YOUR SURETY AND SUBMITTED WITH YOUR BID.

ESSEX COUNTY **BID SECURITY FORM #1**

CONSENT OF SURETY

Issued to:_____(Name of Bidder)

CONTRACT NUMBER _____

In consideration of the premises and of one dollar to it in hand paid by the County of Essex the receipt whereof is hereby acknowledged, the undersigned contents and agrees that if the contract, for which the preceding estimate and proposal is made, be awarded to the corporation, person or persons making the same, it will become bound as surety and guarantor for its faithful performance, and will execute it as party of the third part thereto when required to do so by the said County of Essex and if the said corporation, person or persons shall omit or refuse to execute such contract if so awarded, it will pay, on demand, to the said County of Essex, any difference between the sum bid by the corporation, person or persons and the sum which the said County may be obliged to pay the corporation, person or person to whom the contract may be afterwards awarded, the amount in each case to be determined by the bids for said contract.

In witness whereof,	said Surety has set its	s seal and caused these	presents to be signed by its duly author	orized
officers, this	day of	,20		

(SEAL)

BY:_____

TITLE:

NOTE: Attach necessary Power of Attorney, Notarial Acknowledgement of Signature and Surety's Financial Statement.

STATEMENT OF SURETY'S INTENT

We have reviewed the Bid of	
	(Contractor)
	(Address)

Bids for which will be received on

(Bid Opening Date)

and wish to advise that should this Bid of the Contractor be accepted and the Contract awarded to him, it is our present intention to become surety on the Performance Bond and Labor and Materials Payment Bond required by this Contract.

Any arrangement for the bonds required by the Contract is a matter between the Contractor and ourselves, and we assume no liability to you or third parties if for any reason we do not execute the requisite bonds.

We are duly authorized to transact business in the State of New York, and we appear on the U.S. Treasury Department's most current list (Circular 570 as amended).

Attest:

т.,

Surety's Authorized Signature(s)

Attach Power of Attorney

(Corporate seal if any. If no seal, write "No Seal" across this place and sign.)

BID SECURITY

(ATTACHED HERE – CERTIFIED CHECK, CASH OR BID BOND)

BIDDER'S CHECKLIST

Each of the following forms must be executed and notarized if applicable:

VENDOR RESPONSIBILITY QUESTIONNAIRE	 [Have Notarized]
CERTIFICATE OF AUTHORITY	
CERTIFICATION OF EXPERIENCE	
BID SECURITY FORM # 1	
STATEMENT OF SURETY'S INTENT	
CERTIFICATE OF COMPLIANCE WITH THE IRAN DIVESTMENT ACT	 [Have Notarized]
NON-COLLUSIVE BIDDING CERTIFICATION	 [Have Notarized]

CERTIFICATION OF COMPLIANCE WITH THE IRAN DIVESTMENT ACT

As a result of the Iran Divestment Act of 2012 (the "Act"), Chapter 1 of the 2012 Laws of New York, a new provision has been added to State Finance Law (SFL) § 165-a and New York General Municipal Law § 103-g, both effective April 12, 2012. Under the Act, the Commissioner of the Office of General Services (OGS) will be developing a list of "persons" who are engaged in "investment activities in Iran" (both are defined terms in the law) (the "Prohibited Entities List"). Pursuant to SFL § 165-a(3)(b), the initial list is expected to be issued no later than 120 days after the Act's effective date at which time it will be posted on the OGS website.

By submitting a bid in response to this solicitation or by assuming the responsibility of a Contract awarded hereunder, each Bidder/Contractor, any person signing on behalf of any Bidder/Contractor and any assignee or subcontractor and, in the case of a joint bid, each party thereto, certifies, under penalty of perjury, that once the Prohibited Entities List is posted on the OGS website, that to the best of its knowledge and belief, that each Bidder/Contractor and any subcontractor or assignee is not identified on the Prohibited Entities List created pursuant to SFL § 165-a(3)(b).

Additionally, Bidder/Contractor is advised that once the Prohibited Entities List is posted on the OGS Website, any Bidder/Contractor seeking to renew or extend a Contract or assume the responsibility of a Contract awarded in response to this solicitation must certify at the time the Contract is renewed, extended or assigned that it is not included on the Prohibited Entities List.

During the term of the Contract, should the County receive information that a Bidder/Contractor is in violation of the above-referenced certification, the County will offer the person or entity an opportunity to respond. If the person or entity fails to demonstrate that he/she/it has ceased engagement in the investment which is in violation of the Act within 90 days after the determination of such violation, then the County shall take such action as may be appropriate including, but not limited to, imposing sanctions, seeking compliance, recovering damages or declaring the Bidder/Contractor in default.

The County reserves the right to reject any bid or request for assignment for a Bidder/Contractor that appears on the Prohibited Entities List prior to the award of a contract and to pursue a responsibility review with respect to any Bidder/Contractor that is awarded a contract and subsequently appears on the Prohibited Entities List.

I,	, being duly sworn, deposes and says that he/she is the
of the _	Corporation and

that neither the Bidder/Contractor nor any proposed subcontractor is identified on the Prohibited Entities List.

SIGNED

SWORN to before me this _____

day of _____, 20___

Notary Public

NON-COLLUSIVE BIDDING CERTIFICATION

By submission of this bid, the undersigned bidder and each person signing on behalf of such bidder 1. certifies and in the case of a joint bid each party thereto certifies as to its own organization - UNDER PENALTY OF PERJURY, that to the best of the undersigned's knowledge and belief:

The prices in this bid have been arrived at independently without collusion, consultation, (a) communication, or agreement, for the purpose of restricting competition, as to any matter relating to such prices with any other bidder or with any competitor;

Unless otherwise required by law, the prices which have been quoted in this bid have not been (b) knowingly disclosed by the bidder and will not knowingly be disclosed by the bidder prior to opening, directly or indirectly, to any other bidder or to any competitor; and

No attempt has been made or will be made by the bidder to induce any other person, partnership (c) or corporation to submit or not to submit a bid for the purpose of restricting competition.

The undersigned acknowledges and agrees that a bid shall not be considered for award nor shall any 2. award be made where any of the above have not been complied with; provided however, that if in any case the bidder cannot make the foregoing certification, the bidder shall so state and shall furnish with the bid a signed statement which sets forth in detail the reasons therefor. Where one or more of the above has/have not been complied with, the bid shall not be considered for award nor shall any award be made unless the political subdivision, public department, agency or official thereof to which the bid is made, or his designee, determines that such disclosure was not made for the purpose of restricting competition.

3. The undersigned also acknowledges and agrees that the fact that a bidder (a) has published price lists, rates, or tariffs covering items being procured, (b) has informed prospective customers of proposed or pending publication of new or revised price lists for such items, or (c) has sold the same items to other customers at the same prices being bid, does not constitute, without more, a disclosure within the meaning of paragraph 1 above.

4. The undersigned further acknowledges and agrees that any bid hereafter made to any political subdivision of the state or any public department, agency or official thereof by a bidder which is a corporation or a limited liability company for work or services performed or to be performed or goods sold or to be sold, where competitive bidding is required by statute, rule, regulation, or local law, and where such bid contains the certification referred to in paragraph 1 of this certificate, shall be deemed to have been authorized by the board of directors of the bidder, and such authorization shall be deemed to include the signing and submission of the bid and the inclusion therein of the certificate as to non-collusion as the act and deed of the corporation or limited liability company.

Name of Bidder: _________ (print full legal name)

Date Signed: Signature: Name of Person Signing Certificate: ________________(print full legal name of signer)

Bidder is (check one): \Box an individual, \Box a limited liability partnership, \Box a limited liability company, other entity (specify):

CONTRACTOR'S ACKNOWLEDGEMENT

(If Corporation)

STATE OF NEW YORK) SS: COUNTY OF ESSEX)

On this ______day of ______20___, before me personally came______ to me known, and known to me to be the ______ of the Corporation described in and which executed the within instrument, who being duly sworn did depose and say that he, the said ______ reside at ______ and that he is ______ of said corporation and knows the corporate seal of the said corporation; that the seal affixed to the within instrument is such corporate seal and that it was so affixed by order of the Board of Directors of said corporation, and that he signed his name thereto by like order.

Notary Public

<u>CONTRACTOR'S</u> <u>ACKNOWLEDGEMENT</u> (If Individual)

STATE OF NEW YORK) SS: COUNTY OF ESSEX)

On this ______ day of ______ 20____, before me personally came ______ to me known, and known to me to be the same ______ to me known, and known to me to be the same _______.

person described in and who executed the within instrument and he duly acknowledged to me that he executed the same for the purpose herein mentioned and, if operating under and trade name, that the certificate required by the New York State Penal Law, Sections 440 and 440-b has been filed with the County Clerk of Essex County.

Notary Public

<u>CONTRACTOR'S</u> <u>ACKNOWLEDGEMENT</u> (If Co-Partnership)

STATE OF NEW YORK) SS: COUNTY OF ESSEX)

On this ______ day of ______ 20____, before me personally came _______ to me known, and known to me to be a member of the firm of and the person described in, and who executed the within instrument in behalf of said firm for the purposes herein mentioned and that the certificate required by the New York State Penal Law, Sections 440 and 440-b has been filed with the County Clerk of Essex County.

Notary Public

ESSEX COUNTY NUTRITION PROGRAM PROPOSED FACILITY

SECTION 00 4100 BID FORM

THE PROJECT AND THE PARTIES

1.01 TO:

Essex County - Nutrition Building

7551 Court Street

Elizabethhtown, NY 12932

1.02 FOR:

All General Construction work, including but not limited to superstructure, roofing, interior partitions, finishes and other associated work as necessary to provide a complete and functioning facility as indicated in the plans & specifications, excluding site work, concrete construction and MEP trade work. Includeds coordination with other trades to accommodate completion of work required by other Prime Contract holders.

1.03 DATE: _____ (BIDDER TO ENTER DATE)

1.04 SUBMITTED BY: (BIDDER TO ENTER NAME AND ADDRESS)

- A. Bidder's Full Name _____
 - 1. Address ____
 - 2. City, State, Zip_____

1.05 OFFER

A. Having examined the Place of The Work and all matters referred to in the Instructions to Bidders and the Contract Documents prepared by AEDA, PC for the above mentioned project, we, the undersigned, hereby offer to enter into a Contract to perform the Work for the Sum of:

		dollars
(\$_), in lawful money of the United States of America.
	Alternate #6 - Lun foam-in-place insu Deduct	sum price to install batt insulation in the exterior walls in lieu of spray tion.
		dollars
	(\$), in lawful money of the United States of America.

B. Cost Breakdown Form by Specification Division:

Division/Section #	Division/Section Description	Division/Section Value
00	Procurement & Contracting (Bonds & Insurances)	\$
01	General Requirements/Conditions	\$
03	Concrete	\$
04	Masonry	\$
05	Metals	\$
06	Woods, Plastics & Composites	\$

ESSEX COUNTY NUTRITION PROGRAM PROPOSED FACILITY

07	Thermal & Moisture Protection	\$
08	Openings	\$
09	Finishes	\$
10	Specialties	\$
	TOTAL - GC BASE BID (Alternates Not Included)	\$

- C. We have included the required security Bid Bond as required by the Instruction to Bidders.
- D. All applicable federal taxes are excluded and State of New York taxes are excluded from the Bid Sum.

1.06 ACCEPTANCE

- A. This offer shall be open to acceptance and is irrevocable for forty-five days from the bid closing date.
- B. If this bid is accepted by Owner within the time period stated above, we will:
 - Execute the Agreement within ten days of receipt of Notice of Award. 1.
 - Furnish the required insurance documents within ten days of receipt of Notice of Award. 2.
 - Commence work within ten days after written Notice to Proceed of this bid. 3.
- C. If this bid is accepted within the time stated, and we fail to commence the Work or we fail to provide the required Bond(s), the security deposit shall be forfeited as damages to Owner by reason of our failure, limited in amount to the lesser of the face value of the security deposit or the difference between this bid and the bid upon which a Contract is signed.
- D. In the event our bid is not accepted within the time stated above, the required security deposit shall be returned to the undersigned, in accordance with the provisions of the Instructions to Bidders: unless a mutually satisfactory arrangement is made for its retention and validity for an extended period of time.

1.07 CONTRACT TIME

- A. If this Bid is accepted, we will:
- B. It shall be understood that the actual completion date or time frame will be subject to consideration of all Pime Contract holders work schedule and shall ultimately be established by Essex County after coordination with all parties.

1.08 CHANGES TO THE WORK

- A. When Architect establishes that the method of valuation for Changes in the Work will be net cost plus a percentage fee in accordance with General Conditions, our percentage fee will be:
 - 1. 10 percent overhead and 5 percent profit on the net cost of our own Work;
 - 5 percent on the cost of work done by any Subcontractor. 2.
- B. On work deleted from the Contract, our credit to Owner shall be Architect-approved net cost plus 100 percent of the profit percentage noted above.

1.09 ADDENDA

- The following Addenda have been received. The modifications to the Bid Documents noted Α. below have been considered and all costs are included in the Bid Sum.
 - Addendum # _____ Dated _____. Addendum # _____ Dated _____. 1.
 - 2.

ESSEX COUNTY NUTRITION PROGRAM PROPOSED FACILITY

- Addendum # _____ Dated _____.
 Addendum # _____ Dated _____.

1.10 BID FORM SIGNATURE(S)

- A. The Corporate Seal of
- В.
- C. (Bidder print the full name of your firm)
- D. was hereunto affixed in the presence of:
- E. __
- F. (Authorized signing officer, Title)
- G. (Seal)
- Н. ____ (Authorized signing officer, Title) 1.
- 1.11 IF THE BID IS A JOINT VENTURE OR PARTNERSHIP, ADD ADDITIONAL FORMS OF EXECUTION FOR EACH MEMBER OF THE JOINT VENTURE IN THE APPROPRIATE FORM OR FORMS AS ABOVE.

END OF BID FORM

ESSEX COUNTY DEPARTMENT OF PUBLIC WORKS

8053 US Route 9 Elizabethtown NY 12932 (518) 873-6326 or (518) 873-3666 Fax: (518) 873-9195

Christopher M. Garrow Superintendent

CHANGE ORDER

ESSEX COUNTY CONTRACT NO.:	CHANGE ORDER NO.:
CONTRACTOR:	
PROJECT:	

DESCRIPTION OF CHANGES / ADDITIONAL WORK AUTHORIZED:

AGREED INCREASE IN	AGREED DECREASE IN	
CONTRACT PRICES:	CONTRACT PRICE:	

Pursuant to Section 9 of the above-referenced contract, I, the Essex County Superintendent of Public Works, hereby authorize the changes or additions in work described above and agree to the increase or decrease, if any and as indicated above, in the Contract Price.

Dated: _____

Christopher M. Garrow Superintendent of Public Works

I, the duly authorized representative of the Contractor, hereby agree that the Contractor will perform/provide the changes or additions in work described above and to accept the increase or decrease, if any and as indicated above, in the Contract Price.

Dated:

(Signature)

(Print Name)

(Print Title)

SECTION 011000

SUMMARY

PART 1 - GENERAL

1.1 SECTION INCLUDES:

- A. Contract description.
- B. Work By owner or others
- C. Owner Furnished products
- D. Contractor's use of site and premises.
- E. Coordination of separate Contracts.

1.2 CONTRACT DESCRIPTION

- A. Work of the overall Project includes the construction of a new building which will be utilized by the Owner to operate the Essex County Nutrition Program. Work includes the following major components: site work, concrete foundations, general construction, plumbing, heating, electrical, kitchen equipment and miscellaneous improvements located at the Essex County Fairgrounds in Westport, New York.
- B. Perform Work of this Contract with Owner in accordance with Conditions of Contract.
- C. Work of Contract Is identified in the following articles:
 - 1. Contract for General Construction Provide work identified in contract drawings generally consisting of A, Q, and S drawings and in specification divisions 00, 01, 03, 04, 05, 06, 07, 08, 09, and 10. Refer to entire drawing set for work and coordination items.
 - 2. Contract for Site Work and Concrete Construction Provide work identified in contract drawings generally consisting of A, C, Q, and S drawings and in specification divisions 00, 01, 03, 07, 12, 31, 32, and 33. Refer to entire drawing set for work and coordination items.
 - 3. Contract for Mechanical Construction Provide work identified in contract drawings generally consisting of M and Q drawings and in specification divisions 00, 01, and 23. Refer to entire drawing set for work and coordination items.
 - 4. Contract for Electrical Construction Provide work identified in contract drawings generally consisting of E and Q drawings and in specification divisions 00, 01, 26, 27, and 28. Refer to entire drawing set for work and coordination items.
 - 5. Contract for Plumbing Construction Provide work identified in contract drawings generally consisting of P and Q drawings and in specification divisions 00, 01, and 22. Refer to entire drawing set for work and coordination items.

1.3 WORK BY OWNER OR OTHERS

- A. Owner will award a contract to provide certain Kitchen Equipment as shown on Drawing Q101 with Product cut sheets as included in Appendix B of the project Manual.
 - 1. It will be the responsibility of the General Contractor to accept delivery, off load, un package and place in their final location all Kitchen Equipment, including installation of permanently installed items such as walk-in cooler, walk-in freezer and exhaust hood.
 - 2. It will be the responsibility of the electrical, plumbing and HVAC contracts to make all final connects of their respective work to owner supplied kitchen equipment.
- B. Owner, through the Essex County Soil and Water department will furnish and install all plant materials found within the Rain Gardens as shown on the drawings.
- C. If Owner-awarded contracts interfere with each other due to work being performed at the same time or at the same Site, Owner will determine the sequence of work under all contracts according to "Work Sequence" and "Contractor's Use of Site " Articles in this Section.
- D. Coordinate Work with utilities of Owner and public or private agencies.

1.4 OWNER-FURNISHED PRODUCTS

- A. Owner's Responsibilities:
 - 1. Arrange for and deliver Owner-reviewed Shop Drawings, Product Data, and Samples to Contractor.
 - 2. Arrange and pay for delivery to Site.
 - 3. Upon delivery, inspect products jointly with Contractor.
 - 4. Submit claims for transportation damage and replace damaged, defective, or deficient items.
 - 5. Arrange for manufacturers' warranties, inspections, and service.
- B. Contractor's Responsibilities:
 - 1. Review Owner-reviewed Shop Drawings, Product Data, and Samples.
 - 2. Receive and unload products at Site; inspect for completeness or damage jointly with Owner.
 - 3. Handle, store, install, and finish products.
 - 4. Repair or replace items damaged after receipt.
- C. Items Furnished by Owner for Installation by Contractor:
 - 1. Kitchen Equipment as shown on Drawing Q101.

1.5 CONTRACTOR'S USE OF SITE AND PREMISES

- A. Limit use of site and premises to allow:
 - 1. Owner occupancy.
 - 2. Work by Others and Work by Owner.

- B. The Essex County Fair will take place between the dates of August 16 and August 20, 2017. Between the dates of August 9 and August 21, 2017, the access road from NYS Route 22 to the Nutrition site and into the fairgrounds must be open and available as an emergency access and exit for both Vehicular and Pedestrian traffic at all times. Contractors may work during these dates but must make access road passable for emergency access and exit.
- C. General safety and security standards for construction projects:
 - 1. All construction materials shall be stored in a safe and secure manner.

PART 2 - PRODUCTS - Not Used

PART 3 - EXECUTION

3.1 COORDINATION OF SEPARATE CONTRACTS

- A. The Owner may award other contracts, which affects the Work of this contract. In that event, the Contractor shall coordinate its Work with the Work of other contractors. Each Contractor shall control and coordinate the work of its subcontractors, if any. The Owner shall approve or require the modification of the work schedules of all contractors to the end that project may be progressed as expeditiously as case permits.
- B. If any part of the Work depends for proper execution or results upon the work of any other contractor, the Contractor shall inspect and promptly report in writing to the Owner's Representative, any defects in such work. The Contractor's failure to inspect and report shall constitute an acceptance of the other contractor's work as fit and proper for the reception of the following work.
- C. The award of more than one contract for the Project requires sequential of otherwise interrelated contractor operations, and will involve inherent delays in the guarantee of unimpeded operations of any contractor. The Contractor acknowledges these conditions, and understands that the Contractor shall bear the risk of all delays caused by the presence or operations of other contractors engaged by the Owner and delays attendant upon any approved construction schedule.
- D. The Owner shall not be liable for delays, which occur by reason of any contractor's failure to comply with directions of the Owner or because of the neglect, failure or inability of any contractor to perform its work efficiently.
- E. The Contractor shall defend, indemnify and hold the Owner harmless from any and all claims or judgments of damages and from costs and expenses to which the Owner may be subjected or which it may suffer or incur by reason of or based upon an allegation of the Contractor's failure to promptly comply with the directions of the Owner's Representative.
- F. Should the Contractor sustain any damage through any act or omissions of any other contractor having a contract with the Owner for the performance of work upon the site of work which may be necessary to be performed for the proper execution of the Work to be performed hereunder, or through any act or omission of a subcontractor of such contractor, the Contractor shall have

no claim against the Owner for such damage, but shall have a right to recover such damage from the other contractor under the provision similar to the following provision which has been or will be inserted in the contract with such other contractors.

- G. Should any other contractor having or who shall hereafter have a contract with Owner for the performance of work upon the site sustain any damage through any act or omission of the Contractor hereunder or through any act or omission of any subcontractor of the Contractor, the Contractor agrees to reimburse such other contractor for all such damages and to indemnify and hold the Owner harmless from all such claims.
- H. The Engineer shall determine the loss and amounts claimed for errors, omissions, and liability of a Contractor in damage to other Contractor's work, damage to Owner's property, and corrective work necessary by other Contractors in order to perform their work. The Contractors will have the opportunity to take corrective action at the discretion of the Engineer. The Engineer's decision will be based on maintaining the Construction Schedule and performance of timely work by all Contractors. Contractor shall be obligated to accept the Engineer's determination in change in time and money will execute a Change Order reflection same. Claims, disputes or other matters in question between the Prime Contractors arising out of or relating to the contractual obligation or breach thereof shall be subject to and decided by arbitration in accordance with the Construction Industry Arbitration Rules of the American Arbitration Association currently in effect unless the parties mutually agree otherwise.

SECTION 013216 - CONSTRUCTION PROGRESS SCHEDULE

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Submittals.
- B. Bar chart schedules.
- C. Review and evaluation.
- D. Updating schedules.
- E. Distribution.

1.2 SUBMITTALS

- A. At the preconstruction meeting submit proposed preliminary network diagram defining planned operations for first 60 days of Work, with general outline for remainder of Work.
- B. Participate in review of preliminary and complete network diagrams jointly with Architect/Engineer.
- C. Within 10 days after joint review of proposed preliminary network diagram, submit draft of proposed complete network diagram for review.
- D. Submit updated network schedules with each Application for Payment.
- E. Submit network schedules under transmittal letter form specified in Section 013300 Submittal Procedures.
- F. Schedule Updates:
 - 1. Overall percent complete, projected and actual.
 - 2. Completion progress by listed activity and subactivity, to within 5 days prior to submittal.
 - 3. Changes in Work scope and activities modified since submittal.
 - 4. Delays in submittals or resubmittals, deliveries, or Work.
 - 5. Adjusted or modified sequences of Work.
 - 6. Other identifiable changes.
 - 7. Revised projections of progress and completion.

1.3 BAR CHART SCHEDULES

A. Format: Bar chart Schedule, to include at least:

- 1. Identification and listing in chronological order of those activities reasonably required to complete the Work, including:
 - a. Subcontract Work.
 - b. Major equipment design, fabrication, factory testing, and delivery dates including required lead times.
 - c. Move-in and other preliminary activities.
 - d. Equipment and equipment system test and startup activities.
 - e. Project closeout and cleanup.
 - f. Work sequences, constraints, and milestones.
- 2. Listings identified by Specification Section number.
- 3. Identification of the following:
 - a. Horizontal time frame by year, month, and week.
 - b. Duration, early start, and completion for each activity and subactivity.
 - c. Critical activities and Project float.
 - d. Subschedules to further define critical portions of Work.

1.4 REVIEW AND EVALUATION

- A. Participate in joint review and evaluation of schedules with Architect/Engineer at each progress meeting.
- B. Evaluate Project status to determine Work behind schedule and Work ahead of schedule.
- C. After review, revise schedules incorporating results of review, and resubmit within 5 days.

1.5 UPDATING SCHEDULES

- A. Maintain schedules to record actual start and finish dates of completed activities.
- B. Indicate progress of each activity to date of revision, with projected completion date of each activity. Update schedules to depict current status of Work.
- C. Identify activities modified since previous submittal, major changes in Work, and other identifiable changes.
- D. Upon approval of a Change Order, include the change in the next schedule submittal.
- E. Indicate changes required to maintain Date of Substantial Completion.

1.6 DISTRIBUTION

- A. Following joint review, distribute copies of updated schedules to to Subcontractors, suppliers, Architect/Engineer, Owner, and other prime contractors.
- B. Instruct recipients to promptly report, in writing, problems anticipated by projections shown in schedules.

PART 2 - PRODUCTS - Not Used

PART 3 - EXECUTION - Not Used

END OF SECTION 013216

SECTION 013300 - SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Definitions.
- B. Submittal procedures.
- C. Construction progress schedules.
- D. Proposed product list.
- E. Product data.
- F. Use of electronic CAD files of Project Drawings.
- G. Shop Drawings.
- H. Samples.
- I. Other submittals.
- J. Design data.
- K. Test reports.
- L. Certificates.
- M. Manufacturer's instructions.
- N. Manufacturer's field reports.
- O. Erection Drawings.
- P. Construction photographs.
- Q. Contractor review.
- R. Architect/Engineer review.

1.2 DEFINITIONS

A. Action Submittals: Written and graphic information and physical samples that require Architect/Engineer's responsive action.

B. Informational Submittals: Written and graphic information and physical Samples that do not require Architect/Engineer's responsive action. Submittals may be rejected for not complying with requirements.

1.3 SUBMITTAL PROCEDURES

- A. Transmit each submittal with a submittal cover sheet similar to cover sheet attached at the end of this section.
- B. Identify: Project, Contractor, Subcontractor and supplier, pertinent Drawing and detail number, and Specification Section number appropriate to submittal.
- C. Apply Contractor's stamp, signed or initialed, certifying that review, approval, verification of products required, field dimensions, adjacent construction Work, and coordination of information is according to requirements of the Work and Contract Documents.
- D. Schedule submittals to expedite Project, and submit electronic submittals via email as PDF electronic files. Coordinate submission of related items.
- E. For each submittal for review, allow 10 days excluding delivery time to and from Contractor.
- F. Identify variations in Contract Documents and product or system limitations that may be detrimental to successful performance of completed Work.
- G. Allow space on submittals for Contractor and Architect/Engineer review stamps.
- H. When revised for resubmission, identify changes made since previous submission.
- I. Distribute copies of reviewed submittals as appropriate. Instruct parties to promptly report inability to comply with requirements.
- J. Incomplete Submittals: Architect/Engineer will not review. Complete submittals for each item are required. Delays resulting from incomplete submittals are not the responsibility of Architect/Engineer.

1.4 CONSTRUCTION PROGRESS SCHEDULES

A. Comply with Section 013216 - Construction Progress Schedule

1.5 PROPOSED SUBCONTRACTOR / SUPPLIER LIST

A. Within 10 days after date of Notice to Proceed submit list of major subcontractors and suppliers, along with scope of work or major product / service being supplied / provided.

1.6 PRODUCT DATA

A. Product Data: Action Submittal: Submit to Architect/Engineer for review for assessing conformance with information given and design concept expressed in Contract Documents.

- B. Submit electronic submittals via email as PDF electronic files.
- C. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturers' standard data to provide information specific to this Project.
- D. Indicate product utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.
- E. After review, produce copies and distribute according to "Submittal Procedures" Article and for record documents described in Section 017000 Execution and Closeout Requirements.

1.7 SHOP DRAWINGS

- A. Shop Drawings: Action Submittal: Submit to Architect/Engineer for assessing conformance with information given and design concept expressed in Contract Documents.
- B. Indicate special utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.
- C. When required by individual Specification Sections, provide Shop Drawings signed and sealed by a professional Engineer responsible for designing components shown on Shop Drawings.
 - 1. Include signed and sealed calculations to support design.
 - 2. Submit Shop Drawings and calculations in form suitable for submission to and approval by authorities having jurisdiction.
 - 3. Make revisions and provide additional information when required by authorities having jurisdiction.
- D. Submit electronic submittals via email as PDF electronic files.
- E. After review, produce copies and distribute according to "Submittal Procedures" Article and for record documents described in Section 017000 Execution and Closeout Requirements.

1.8 SAMPLES

- A. Samples: Action Submittal: Submit to Architect/Engineer for assessing conformance with information given and design concept expressed in Contract Documents.
- B. Samples for Selection as Specified in Product Sections:
 - 1. Submit to Architect/Engineer for aesthetic, color, and finish selection.
 - 2. Submit Samples of finishes, textures, and patterns for Architect/Engineer selection.
- C. Submit Samples to illustrate functional and aesthetic characteristics of products, with integral parts and attachment devices. Coordinate Sample submittals for interfacing work.
- D. Include identification on each Sample, with full Project information.
- E. Submit number of Samples required by contractor plus two for Architect/Engineer and owner.

- F. Reviewed Samples that may be used in the Work are indicated in individual Specification Sections.
- G. Samples will not be used for testing purposes unless specifically stated in Specification Section.
- H. After review, produce copies and distribute according to "Submittal Procedures" Article and for record documents described in Section 017000 Execution and Closeout Requirements.

1.9 OTHER SUBMITTALS

- A. Closeout Submittals: Comply with Section 017000 Execution and Closeout Requirements.
- B. Informational Submittal: Submit data for Architect/Engineer's knowledge as Contract administrator or for Owner.
- C. Submit information for assessing conformance with information given and design concept expressed in Contract Documents.

1.10 TEST REPORTS

- A. Informational Submittal: Submit reports for Architect/Engineer's knowledge as Contract administrator or for Owner.
- B. Submit test reports for information for assessing conformance with information given and design concept expressed in Contract Documents.

1.11 CERTIFICATES

- A. Informational Submittal: Submit certification by manufacturer, installation/application Subcontractor, or Contractor to Architect/Engineer, in quantities specified for Product Data.
- B. Indicate material or product conforms to or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate.
- C. Certificates may be recent or previous test results on material or product but must be acceptable to Architect/Engineer.

1.12 MANUFACTURER'S INSTRUCTIONS

- A. Informational Submittal: Submit manufacturer's installation instructions for Architect/Engineer's knowledge as Contract administrator or for Owner.
- B. Submit printed instructions for delivery, storage, assembly, installation, startup, adjusting, and finishing, to Architect/Engineer in quantities specified for Product Data.
- C. Indicate special procedures, perimeter conditions requiring special attention, and special environmental criteria required for application or installation.

1.13 MANUFACTURER'S FIELD REPORTS

- A. Informational Submittal: Submit reports for Architect/Engineer's knowledge as Contract administrator or for Owner.
- B. Submit report within 5 days of observation to Architect/Engineer for information.
- C. Submit reports for information for assessing conformance with information given and design concept expressed in Contract Documents.

1.14 ERECTION DRAWINGS

- A. Informational Submittal: Submit Drawings for Architect/Engineer's knowledge as Contract administrator or for Owner.
- B. Submit Drawings for information assessing conformance with information given and design concept expressed in Contract Documents.
- C. Data indicating inappropriate or unacceptable Work may be subject to action by Architect/Engineer or Owner.

1.15 CONSTRUCTION PHOTOGRAPHS

- A. Provide preconstruction photographs prior to start of construction.
- B. Provide photographs of construction throughout progress of Work .
- C. Submit photographs at least once per month or with each Application for Payment.
- D. Photographs should document major work completed by contractor that pay period.
- E. Digital Images: Deliver complete set of digital image electronic files on CD-ROM to Owner with Project record documents. Identify electronic media with date photographs were taken. Submit images that have same aspect ratio as sensor, uncropped.
 - 1. Date and Time: Include date and time in filename for each image.

1.16 CONTRACTOR REVIEW

- A. Review for compliance with Contract Documents and approve submittals before transmitting to Architect/Engineer.
- B. Contractor: Responsible for:
 - 1. Determination and verification of materials including manufacturer's catalog numbers.
 - 2. Determination and verification of field measurements and field construction criteria.
 - 3. Checking and coordinating information in submittal with requirements of Work and of Contract Documents.
 - 4. Determination of accuracy and completeness of dimensions and quantities.
 - 5. Confirmation and coordination of dimensions and field conditions at Site.

- 6. Construction means, techniques, sequences, and procedures.
- 7. Safety precautions.
- 8. Coordination and performance of Work of all trades.
- C. Stamp, sign or initial, and date each submittal to certify compliance with requirements of Contract Documents.
- D. Do not fabricate products or begin Work for which submittals are required until approved submittals have been received from Architect/Engineer.

1.17 ARCHITECT/ENGINEER REVIEW

- A. Do not make "mass submittals" to Architect/Engineer. "Mass submittals" are defined as ten or more submittals or items in one day or 50 or more submittals or items in one week. If "mass submittals" are received, Architect/Engineer's review time stated above will be extended as necessary to perform proper review. Architect/Engineer will review "mass submittals" based on priority determined by Architect/Engineer after consultation with Owner.
- B. Informational submittals and other similar data are for Architect/Engineer's information, do not require Architect/Engineer's responsive action, and will not be reviewed or returned with comment.
- C. Submittals made by Contractor that are not required by Contract Documents may be returned without action.
- D. Submittal approval does not authorize changes to Contract requirements unless accompanied by Change Order or Construction Change Directive.

PART 2 - PRODUCTS - Not Used

PART 3 - EXECUTION - Not Used

END OF SECTION 013300

Contractors Letterhead

PROJECT TITLE: OWNER: ARRCHITECT / ENGINEER:	Essex County Nutrition Building Essex County AEDA
SPECIFICATION NO. :	Product Data Shop Drawing Warranty Other
DESCRIPTION:	
NO. OF PAGES :	
DATE SUBMITTED :	
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SECTION 015000 - TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Temporary facilities .
- B. Temporary Utilities:
 - 1. Temporary electricity.
 - 2. Temporary lighting for construction purposes.
 - 3. Temporary heating.
 - 4. Temporary ventilation.
 - 5. Communication services.
 - 6. Temporary water service.
 - 7. Temporary sanitary facilities.
- C. Construction Facilities:
 - 1. Field offices and sheds.
 - 2. Vehicular access.
 - 3. Progress cleaning and waste removal.
 - 4. Project identification.
 - 5. Fire-prevention facilities.
- D. Temporary Controls:
 - 1. Barriers.
 - 2. Enclosures and fencing.
 - 3. Security.
 - 4. Water control.
 - 5. Dust control.
 - 6. Erosion and sediment control.
 - 7. Noise control.
 - 8. Pest and rodent control.
 - 9. Pollution control.
- E. Removal of utilities, facilities, and controls.

1.2 REFERENCES

- A. ASTM International:
 - 1. ASTM E 84 Standard Test Method for Surface Burning Characteristics of Building Materials.
 - 2. ASTM E 90 Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements.

3. ASTM E 119 - Standard Test Methods for Fire Tests of Building Construction and Materials.

1.3 TEMPORARY FACILITIES

- A. Temporary Provisions Provided by owner
 - 1. Temporary barricades for entrance road.
 - 2. Temporary sanitary facilities.
 - 3. Temporary electrical service and distribution system for power and lighting.
- B. Each Contractor: Coordinate provisions with Construction Manager and provide the following items as necessary for execution of the Work including associated costs:
 - 1. Construction aids.
 - 2. Temporary fire protection, dust control, erosion and sediment control, water control, noise control, and other necessary temporary controls.
 - 3. Temporary barriers, barricades, and similar devices as necessary for safety and protection of construction personnel and public.
 - 4. Temporary tree and plant protection.
 - 5. Temporary heating before building enclosure.
 - 6. Electrical service required in addition to temporary service and distribution provided by owner.
 - 7. Temporary provisions for protection of installed Work.

1.4 TEMPORARY ELECTRICITY (Electrical Contract)

- A. Use Owner's existing power service, Electrical Contract will be responsible to furnish and install panel box and wiring from Owners existing service located near the Grandstand building to a temporary panel to be used by all contracts.
- B. Owner will pay cost of energy used. Exercise measures to conserve energy.
- C. Electrical contract to provide temporary electric feeder from Grandstand building. Do not disrupt Owner's use of service.
- D. Complement existing power service capacity and characteristics as required for construction operations.
- E. Provide power outlets with branch wiring and distribution boxes located as required for construction operations.
- F. Permanent convenience receptacles may be used during construction.

1.5 TEMPORARY LIGHTING FOR CONSTRUCTION PURPOSES (Electrical Contract)

A. Provide and maintain lighting for construction operations .

- B. Provide branch wiring from power source to distribution boxes with lighting conductors, pigtails, lamps, and the like, for specified lighting levels.
- C. Maintain lighting and provide routine repairs.
- D. Permanent building lighting may be used during construction.

1.6 TEMPORARY HEATING (Contract GC)

- A. Existing heating systems shall not be used during construction.
- B. Provide and pay for heating devices and heat as needed to maintain specified conditions for construction operations. Provide separate metering and reimburse Owner for cost of energy used.
- C. Before operating permanent equipment for temporary heating purposes, verify installation is approved for operation, equipment is lubricated, and filters are in place. Provide and pay for operation, maintenance, and regular replacement of filters and worn or consumed parts. Replace filters at Substantial Completion.

1.7 TEMPORARY VENTILATION (All contracts)

A. Ventilate enclosed areas to achieve curing of materials, to dissipate humidity, and to prevent accumulation of dust, fumes, vapors, or gases.

1.8 COMMUNICATION SERVICES

A. No temporary Telephone Service is required.

1.9 TEMPORARY WATER SERVICE (Sitework contract)

A. Owner will pay cost of temporary water. Exercise measures to conserve energy. Use Owner's existing water system, extended and supplemented with temporary devices as needed to maintain specified conditions for construction operations.

1.10 TEMPORARY SANITARY FACILITIES

- A. Existing facilities may be used during construction operations. Maintain a clean and sanitary condition daily. Contract GC to have facilities cleaned and stocked once per week or may provide and pay for portable toilets in lieu of cleaning requirement.
- B. At end of construction, return existing facilities used for construction operations to same or better condition as original condition.

1.11 FIELD OFFICES AND SHEDS (all Contracts)

- A. The owner and Architect are not requiring a field office for this project, if contractors feel the need for a field office obtain written permission from Owner prior to locating on site.
- B. Storage Areas and Sheds: The owner and architect are not requiring a storage area or shed for this project, if contractors feel the need for storage sheds, obtain permission from owner prior to locating on site.
- C. Preparation: Fill and grade Sites for temporary structures sloped for drainage away from buildings.

1.12 VEHICULAR ACCESS (Sitework Contract)

- A. Construct temporary all-weather access roads from public thoroughfares to serve construction area, of width and load-bearing capacity to accommodate unimpeded traffic for construction purposes.
- B. Construct temporary culverts to span low areas and allow unimpeded drainage.
- C. Extend and relocate vehicular access as Work progress requires and provide detours as necessary for unimpeded traffic flow.
- D. Locate as indicated on Drawings.
- E. Provide means of removing mud from vehicle wheels before entering streets.

1.13 PROGRESS CLEANING AND WASTE REMOVAL (all contracts)

- A. Maintain areas free of waste materials, debris, and rubbish. Maintain Site in clean and orderly condition.
- B. Remove debris and rubbish from pipe chases, plenums, attics, crawl spaces, and other closed or remote spaces, before enclosing spaces.
- C. Broom and vacuum clean interior areas before starting surface finishing, and continue cleaning to eliminate dust.
- D. Collect and remove waste materials, debris, and rubbish from Site **weekly** and dispose of off-Site. Owner will provide a dumpster for use by contractors, only construction debris from this project to be disposed of in dumpster provided by owner.
- E. Open free-fall chutes are not permitted. Terminate closed chutes into appropriate containers with lids.

1.14 PROJECT IDENTIFICATION

A. Project Identification Sign:

1. Owner will provide project sign to meet funding agency requirements

1.15 FIRE-PREVENTION FACILITIES (all contracts)

- A. Prohibit smoking within buildings under construction. Designate area on Site where smoking is permitted. Provide approved ashtrays in designated smoking areas.
- B. Establish fire watch for cutting, welding, and other hazardous operations capable of starting fires. Maintain fire watch before, during, and after hazardous operations until threat of fire does not exist.
- C. Portable Fire Extinguishers: NFPA 10; 10-pound capacity, 4A-60B: C UL rating.
 - 1. Provide minimum of one fire extinguisher within building and in every construction trailer and storage shed.
 - 2. Provide minimum of one fire extinguisher on roof during roofing operations using heatproducing equipment.

1.16 BARRIERS

- A. Provide barriers to prevent unauthorized entry to construction areas and to protect existing facilities and adjacent properties from damage from construction operations.
- B. Protect non-owned vehicular traffic, stored materials, Site, and structures from damage.

1.17 ENCLOSURES AND FENCING (sitework contract)

- A. Construction:
 - 1. Provide temporary construction fencing as indicated on drawings.
- 1.18 SECURITY (all contracts)
 - A. Security Program:
 - 1. Protect Work from theft, vandalism, and unauthorized entry.
 - B. Entry Control:
 - 1. Restrict entrance of persons and vehicles to Project Site
 - 2. Allow entrance only to authorized persons with proper identification.
- 1.19 WATER CONTROL (sitework Contract)
 - A. Grade Site to drain. Maintain excavations free of water. Provide, operate, and maintain necessary pumping equipment.
 - B. Protect Site from puddles or running water.

- 1.20 DUST CONTROL (sitework Contract)
 - A. Execute Work by methods that minimize raising dust from construction operations.
 - B. Provide positive means to prevent airborne dust from dispersing into atmosphere.

1.21 EROSION AND SEDIMENT CONTROL (sitework Contract)

- A. Plan and execute construction by methods to control surface drainage from cuts and fills from borrow and waste disposal areas. Prevent erosion and sedimentation.
- B. Minimize surface area of bare soil exposed at one time.
- C. Provide temporary measures including berms, dikes, drains, and other devices to prevent water flow.
- D. Construct fill and waste areas by selective placement to avoid erosive surface silts and clays.
- E. Periodically inspect earthwork to detect evidence of erosion and sedimentation. Promptly apply corrective measures.
- F. Comply with sediment and erosion control plan indicated on Drawings.
- 1.22 NOISE CONTROL (all contracts)
 - A. Provide methods, means, and facilities to minimize noise produced by construction operations.
- 1.23 PEST AND RODENT CONTROL (all contracts)
 - A. Provide methods, means, and facilities to prevent pests and insects from damaging the Work and entering facility.
 - B. Provide methods, means, and facilities to prevent rodents from accessing or invading premises.
- 1.24 POLLUTION CONTROL (all contracts)
 - A. Provide methods, means, and facilities to prevent contamination of soil, water, and atmosphere from discharge of noxious, toxic substances and pollutants produced by construction operations.
 - B. Comply with pollution and environmental control requirements of authorities having jurisdiction.
- 1.25 REMOVAL OF UTILITIES, FACILITIES, AND CONTROLS (all contracts)
 - A. Remove temporary utilities, equipment, facilities, and materials before Substantial Completion inspection.

- B. Clean and repair damage caused by installation or use of temporary Work.
- C. Restore existing facilities used during construction to original condition. Restore permanent facilities used during construction to specified condition.

PART 2 - PRODUCTS - Not Used

PART 3 - EXECUTION - Not Used

END OF SECTION 015000

SECTION 017000 - EXECUTION AND CLOSEOUT REQUIREMENTS

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Field engineering.
- B. Closeout procedures.
- C. Starting of systems.
- D. Demonstration and instructions.
- E. Testing, adjusting, and balancing.
- F. Project record documents.
- G. Operation and maintenance data.
- H. Manual for materials and finishes.
- I. Manual for equipment and systems.
- J. Spare parts and maintenance products.
- K. Product warranties and product bonds.
- L. Maintenance service.
- M. Examination.
- N. Preparation.
- O. Execution.
- P. Cutting and patching.
- Q. Protecting installed construction.
- R. Final cleaning.

1.2 FIELD ENGINEERING

A. Employ land surveyor registered in the State of New York and acceptable to [Architect/Engineer and owner.

- B. Architect / Engineer shall provide a survey control point. Contractor shall protect survey control and reference points. Promptly notify Architect/Engineer of discrepancies discovered.
- C. Control datum for survey is established by Architect / Engineer.
- D. Prior to beginning Work, verify and establish floor elevations of existing facilities to ensure that new Work will meet existing elevations in smooth and level alignment except where specifically detailed or indicated otherwise.
- E. Provide field engineering services. Establish elevations, lines, and levels using recognized engineering survey practices.
- F. Protect survey control points prior to starting Site Work; preserve permanent reference points during construction.
- G. Promptly report to Architect/Engineer loss or destruction of reference point or relocation required because of changes in grades or other reasons.
- H. Replace dislocated survey control points based on original survey control. Make no changes without prior written notice to Architect/Engineer.

1.3 CLOSEOUT PROCEDURES

- A. Prerequisites to Final Completion: Complete following items before requesting Certification of Final Completion, either for entire Work or for portions of Work:
 - 1. Submit maintenance manuals, Project record documents, digital images of construction photographs, and other similar final record data in compliance with this Section.
 - 2. Complete facility startup, testing, adjusting, balancing of systems and equipment, demonstrations, and instructions to Owner's operating and maintenance personnel as specified in compliance with this Section.
 - 3. Conduct inspection to establish basis for request that Work is substantially complete. Create comprehensive list (initial punch list) indicating items to be completed or corrected, value of incomplete or nonconforming Work, reason for being incomplete, and date of anticipated completion for each item. Include copy of list with request for Certificate of Substantial Completion.
 - 4. Obtain and submit releases enabling Owner's full, unrestricted use of Project and access to services and utilities. Include certificate of occupancy, operating certificates, and similar releases from authorities having jurisdiction and utility companies.
 - 5. Deliver tools, spare parts, extra stocks of material, and similar physical items to Owner.
 - 6. Make final change-over of locks and transmit keys directly to Owner. Advise Owner's personnel of change-over in security provisions.
 - 7. Discontinue or change over and remove temporary facilities and services from Project Site, along with construction tools, mockups, and similar elements.
 - 8. Perform final cleaning according to this Section.
- B. Substantial Completion Inspection:
 - 1. When Contractor considers Work to be substantially complete, submit to Architect / Engineer:

- a. Written certificate that Work, or designated portion, is substantially complete.
- b. List of items to be completed or corrected (initial punch list).
- 2. Within seven days after receipt of request for Substantial Completion, Architect/Engineer will make inspection to determine whether Work or designated portion is substantially complete.
- 3. Should Architect/Engineer determine that Work is not substantially complete:
 - a. Architect/Engineer will promptly notify Contractor in writing, stating reasons for its opinion.
 - b. Contractor shall remedy deficiencies in Work and send second written request for Substantial Completion to Architect/Engineer.
 - c. Architect/Engineer will reinspect Work.
 - d. Redo and Inspection of Deficient Work: Repeated until Work passes Architect/Engineer's inspection.
- 4. When Architect/Engineer finds that Work is substantially complete, Architect/Engineer will:
 - a. Prepare Certificate of Substantial Completion on EJCDC C-625 Certificate of Substantial Completion, accompanied by Contractor's list of items to be completed or corrected as verified and amended by Architect/Engineer and Owner (final punch list).
 - b. Submit Certificate to Owner and Contractor for their written acceptance of responsibilities assigned to them in Certificate.
- 5. After Work is substantially complete, Contractor shall:
 - a. Allow Owner occupancy of Project under provisions stated in Certificate of Substantial Completion.
 - b. Complete Work listed for completion or correction within time period stipulated.
- 6. Owner will occupy all of building as specified in Section 011000 Summary.
- C. Prerequisites for Final Completion: Complete following items before requesting final acceptance and final payment.
 - 1. When Contractor considers Work to be complete, submit written certification that:
 - a. Contract Documents have been reviewed.
 - b. Work has been examined for compliance with Contract Documents.
 - c. Work has been completed according to Contract Documents.
 - d. Work is completed and ready for final inspection.
 - 2. Submittals: Submit following:
 - a. Final punch list indicating all items have been completed or corrected.
 - b. Final payment request with final releases and supporting documentation not previously submitted and accepted. Include certificates of insurance for products and completed operations where required.

- c. Specified warranties, workmanship/maintenance bonds, maintenance agreements, and other similar documents.
- d. Accounting statement for final changes to Contract Sum.
- e. Contractor's affidavit of payment of debts and claims.
- f. Contractor affidavit of release of liens.
- g. Consent of surety to final payment .
- 3. Perform final cleaning for Contractor-soiled areas according to this Section.
- D. Final Completion Inspection:
 - 1. Within seven days after receipt of request for final inspection, Architect/Engineer will make inspection to determine whether Work or designated portion is complete.
 - 2. Should Architect/Engineer consider Work to be incomplete or defective:
 - a. Architect/Engineer will promptly notify Contractor in writing, listing incomplete or defective Work.
 - b. Contractor shall remedy stated deficiencies and send second written request to Architect/Engineer that Work is complete.
 - c. Architect/Engineer will reinspect Work.
 - d. Redo and Inspection of Deficient Work: Repeated until Work passes Architect/Engineer's inspection.

1.4 STARTING OF SYSTEMS

- A. Coordinate schedule for startup of various equipment and systems.
- B. Notify Owner, in writing, seven days prior to startup of each item.
- C. Verify that each piece of equipment or system has been checked for proper lubrication, drive rotation, belt tension, control sequence, and for conditions which may cause damage.
- D. Verify that tests, meter readings, and electrical characteristics agree with those required by equipment or system manufacturer.
- E. Verify that wiring and support components for equipment are complete and tested.
- F. Execute startup under supervision of manufacturer's representative or Contractors' personnel according to manufacturer's instructions.
- G. When specified in individual Specification Sections, require manufacturer to provide authorized representative who will be present at Site to inspect, check, and approve equipment or system installation prior to startup and will supervise placing equipment or system in operation.
- H. Submit a written report according to Section 013300 Submittal Procedures that equipment or system has been properly installed and is functioning correctly.

1.5 DEMONSTRATION AND INSTRUCTIONS

- A. Demonstrate operation and maintenance of products to Owner's personnel two weeks prior to date of Substantial Completion .
- B. Use operation and maintenance manuals as basis for instruction. Review contents of manual with Owner's personnel in detail to explain all aspects of operation and maintenance.
- C. Prepare and insert additional data in operations and maintenance manuals when need for additional data becomes apparent during instruction.
- D. Required instruction time for each item of equipment and system is specified in individual Specification Sections.

1.6 TESTING, ADJUSTING, AND BALANCING

- A. Where required by individual specification sections Contractor shall employ and pay for services of independent firm to perform testing, adjusting, and balancing.
- B. Reports will be submitted by independent firm to Architect/Engineer indicating observations and results of tests and indicating compliance or noncompliance with requirements of Contract Documents.

1.7 PROJECT RECORD DOCUMENTS

- A. Maintain on Site one set of the following record documents; record actual revisions to the Work:
 - 1. Drawings.
 - 2. Specifications.
 - 3. Addenda.
 - 4. Change Orders and other modifications to the Contract.
 - 5. Reviewed Shop Drawings, product data, and Samples.
 - 6. Manufacturer's instruction for assembly, installation, and adjusting.
- B. Ensure entries are complete and accurate, enabling future reference by Owner.
- C. Store record documents separate from documents used for construction.
- D. Record information concurrent with construction progress, not less than weekly.
- E. Specifications: Legibly mark and record, at each product Section, description of actual products installed, including the following:
 - 1. Manufacturer's name and product model and number.
 - 2. Product substitutions or alternates used.
 - 3. Changes made by Addenda and modifications.
- F. Record Drawings : Legibly mark each item to record actual construction as follows:

- 1. Include Contract modifications such as Addenda, supplementary instructions, change directives, field orders, minor changes in the Work, and change orders.
- 2. Include locations of concealed elements of the Work.
- 3. Identify depth of buried utility lines and provide dimensions showing distances from permanent facility components that are parallel to utilities.
- 4. Dimension ends, corners, and junctions of buried utilities to permanent facility components using triangulation.
- 5. Identify and locate existing buried or concealed items encountered during Project.
- 6. Measured depths of foundations in relation to finish floor datum.
- 7. Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
- 8. Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of the Work.
- 9. Field changes of dimension and detail.
- 10. Details not on original Drawings.
- G. Submit PDF electronic files of marked-up documents to Architect/Engineer with claim for final Application for Payment.

1.8 OPERATION AND MAINTENANCE DATA

- A. Submit one copy in PDF composite electronic indexed file.
- B. Submit one hard copy of data bound three D side ring binders with durable plastic covers.
- C. Prepare binder cover with printed title "OPERATION AND MAINTENANCE INSTRUCTIONS," title of Project and subject matter of binder when multiple binders are required.
- D. Internally subdivide binder contents with permanent page dividers, logically organized as described below; with tab titling clearly printed under reinforced laminated plastic tabs.
- E. Drawings: Provide with reinforced punched binder tab. Bind in with text; fold larger drawings to size of text pages.
- F. Contents: Prepare table of contents for each volume, with each product or system description identified, typed on white paper, in three parts as follows:
 - 1. Part 1: Directory, listing names, addresses, and telephone numbers of Architect/Engineer, Contractor, Subcontractors, and major equipment suppliers.
 - 2. Part 2: Operation and maintenance instructions, arranged by system and subdivided by Specification Section. For each category, identify names, addresses, and telephone numbers of Subcontractors and suppliers. Include the following:
 - a. Significant design criteria.
 - b. List of equipment.
 - c. Parts list for each component.
 - d. Operating instructions.
 - e. Maintenance instructions for equipment and systems.

- f. Maintenance instructions for special finishes, including recommended cleaning methods and materials, and special precautions identifying detrimental agents.
- g. Safety precautions to be taken when operating and maintaining or working near equipment.
- 3. Part 3: Project documents and certificates, including the following:
 - a. Shop Drawings and product data.
 - b. Air and water balance reports.
 - c. Certificates.
 - d. Originals of warranties .
- G. Instructions for Care and Maintenance: Include manufacturer's recommendations for cleaning agents and methods, precautions against detrimental agents and methods, and recommended schedule for cleaning and maintenance.
- H. Moisture Protection and Weather Exposed Products: Include product data listing applicable reference standards, chemical composition, and details of installation. Include recommendations for inspections, maintenance, and repair.
- I. Additional Requirements: As specified in individual product Specification Sections.
- J. Include listing in table of contents for design data, with tabbed fly sheet and space for insertion of data.
- K. Each Item of Equipment and Each System: Include description of unit or system and component parts. Identify function, normal operating characteristics, and limiting conditions. Include performance curves, with engineering data and tests, and complete nomenclature and model number of replaceable parts.
- L. Panelboard Circuit Directories: Provide electrical service characteristics, controls, and communications; Include color-coded wiring diagrams as installed.
- M. Operating Procedures: Include startup, break-in, and routine normal operating instructions and sequences. Include regulation, control, stopping, shutdown, and emergency instructions. Include summer, winter, and special operating instructions.
- N. Maintenance Requirements: Include routine procedures and guide for preventative maintenance and troubleshooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.
- O. Include servicing and lubrication schedule and list of lubricants required.
- P. Include manufacturer's printed operation and maintenance instructions.
- Q. Include sequence of operation by controls manufacturer.
- R. Include original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.
- S. Include control diagrams by controls manufacturer as installed.

- T. Include Contractor's coordination drawings with color-coded piping diagrams as installed.
- U. Include charts of valve tag numbers, with location and function of each valve, keyed to flow and control diagrams.
- V. Include list of original manufacturer's spare parts, current prices, and recommended quantities to be maintained in storage.
- W. Include test and balancing reports as specified in Section 014000 Quality Requirements.
- X. Additional Requirements: As specified in individual product Specification Sections.
- Y. Include listing in table of contents for design data with tabbed dividers and space for insertion of data.

1.9 SPARE PARTS AND MAINTENANCE PRODUCTS

- A. Furnish spare parts, maintenance, and extra products in quantities specified in individual Specification Sections.
- B. Deliver to place in location as directed by Owner; obtain receipt prior to final payment.

1.10 PRODUCT WARRANTIES AND PRODUCT BONDS

- A. Obtain warranties by responsible Subcontractors, suppliers, and manufacturers within **ten** days after completion of applicable item of Work.
- B. Execute and assemble transferable warranty documents and bonds from Subcontractors, suppliers, and manufacturers.
- C. Verify documents are in proper form, contain full information, and are notarized.
- D. Co-execute submittals when required.
- E. Include table of contents and assemble in three D side ring binder with durable plastic cover.
- F. Submit prior to final Application for Payment.

1.11 MAINTENANCE SERVICE

- A. Furnish service and maintenance of components indicated in Specification Sections as required or during 1 year warranty period (whichever period is longer.
- B. Examine system components at frequency consistent with reliable operation. Clean, adjust, and lubricate as required.
- C. Include systematic examination, adjustment, and lubrication of components. Repair or replace parts whenever required. Use parts produced by manufacturer of original component.

- D. Do not assign or transfer maintenance service to agent or Subcontractor without prior written consent of Owner.
- PART 2 PRODUCTS Not Used

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that existing Site conditions and substrate surfaces are acceptable for subsequent Work. Beginning new Work means acceptance of existing conditions.
- B. Verify that existing substrate is capable of structural support or attachment of new Work being applied or attached.
- C. Examine and verify specific conditions described in individual Specification Sections.
- D. Verify that utility services are available with correct characteristics and in correct locations.

3.2 PREPARATION

- A. Clean substrate surfaces prior to applying next material or substance according to manufacturer's instructions.
- B. Seal cracks or openings of substrate prior to applying next material or substance.
- C. Apply manufacturer-required or -recommended substrate primer, sealer, or conditioner prior to applying new material or substance in contact or bond.

3.3 EXECUTION

- A. Comply with manufacturer's installation instructions, performing each step in sequence. Maintain one set of manufacturer's installation instructions at Project Site during installation and until completion of construction.
- B. When manufacturer's installation instructions conflict with Contract Documents, request clarification from Architect/Engineer before proceeding.
- C. Verify that field measurements are as indicated on approved Shop Drawings or as instructed by manufacturer.
- D. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, or disfigurement.
 - 1. Secure Work true to line and level and within specified tolerances, or if not specified, industry-recognized tolerances.

- 2. Physically separate products in place, provide electrical insulation, or provide protective coatings to prevent galvanic action or corrosion between dissimilar metals.
- 3. Exposed Joints: Provide uniform joint width and arrange to obtain best visual effect. Refer questionable visual-effect choices to Architect/Engineer for final decision.
- E. Allow for expansion of materials and building movement.
- F. Climatic Conditions and Project Status: Install each unit of Work under conditions to ensure best possible results in coordination with entire Project.
 - 1. Isolate each unit of Work from incompatible Work as necessary to prevent deterioration.
 - 2. Coordinate enclosure of Work with required inspections and tests to minimize necessity of uncovering Work for those purposes.
- G. Mounting Heights: Where not indicated, mount individual units of Work at industry recognized standard mounting heights for particular application indicated.
 - 1. Refer questionable mounting heights choices to Architect/Engineer for final decision.
 - 2. Elements Identified as Accessible to Handicapped: Comply with applicable codes and regulations.
- H. Adjust operating products and equipment to ensure smooth and unhindered operation.
- I. Clean and perform maintenance on installed Work as frequently as necessary through remainder of construction period. Lubricate operable components as recommended by manufacturer.

3.4 CUTTING AND PATCHING

- A. Employ skilled and experienced installers to perform cutting and patching.
- B. Submit written request in advance of cutting or altering elements affecting:
 - 1. Structural integrity of element.
 - 2. Integrity of weather-exposed or moisture-resistant elements.
 - 3. Efficiency, maintenance, or safety of element.
 - 4. Visual qualities of sight-exposed elements.
 - 5. Work of Owner or separate contractor.
- C. Execute cutting, fitting, and patching including excavation and fill to complete Work and to:
 - 1. Fit the several parts together, to integrate with other Work.
 - 2. Uncover Work to install or correct ill-timed Work.
 - 3. Remove and replace defective and nonconforming Work.
 - 4. Remove samples of installed Work for testing.
 - 5. Provide openings in elements of Work for penetrations of mechanical and electrical Work.
- D. Execute Work by methods to avoid damage to other Work and to provide proper surfaces to receive patching and finishing.
- E. Cut masonry and concrete materials using masonry saw or core drill.

- F. Restore Work with new products according to requirements of Contract Documents.
- G. Fit Work tight to pipes, sleeves, ducts, conduits, and other penetrations through surfaces.
- H. Maintain integrity of wall, ceiling, or floor construction; completely seal voids.
- I. At penetrations of fire-rated walls, partitions, ceiling, or floor construction, completely seal voids with **fire-rated** material, to full thickness of penetrated element.
- J. Refinish surfaces to match adjacent finishes. For continuous surfaces, refinish to nearest intersection; for assembly, refinish entire unit.
- K. Identify hazardous substances or conditions exposed during the Work to Architect/Engineer for decision or remedy.

3.5 PROTECTING INSTALLED CONSTRUCTION

- A. Protect installed Work and provide special protection where specified in individual Specification Sections.
- B. Provide temporary and removable protection for installed products. Control activity in immediate Work area to prevent damage.
- C. Provide protective coverings at walls, projections, jambs, sills, and soffits of openings.
- D. Use durable sheet materials to protect finished floors, stairs, and other surfaces from traffic, dirt, wear, damage, or movement of heavy objects.
- E. Prohibit traffic or storage upon waterproofed or roofed surfaces. When traffic or activity is necessary, obtain recommendations for protection from waterproofing or roofing material manufacturer.
- F. Prohibit traffic from landscaped areas.

3.6 FINAL CLEANING

- A. Each Contractor to remove all debris, all tools and provide all surfaces in a clean working condition.
- B. Owner will provide final cleaning after all contractors have been issued substantial completion. Any recleaning of areas due to contractors punchlist work after final cleaning will be charged to contractor responsible.
- C. Each contractor to remove waste and surplus materials, rubbish, and construction facilities from Site prior to issuance of substantial completion.

END OF SECTION 017000

SECTION 03 3000

CAST-IN-PLACE CONCRETE

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Concrete formwork.
- B. Floors and slabs on grade.
- C. Concrete foundation walls.
- D. Concrete reinforcement.
- E. Concrete curing.

1.02 RELATED REQUIREMENTS

A. Section 07 9200 - Joint Sealants: Products and installation for sealants for saw cut joints and isolation joints in slabs.

1.03 REFERENCE STANDARDS

- A. ACI 211.1 Standard Practice for Selecting Proportions for Normal, Heavyweight, and Mass Concrete; 1991 (Reapproved 2009).
- B. ACI 301 Specifications for Structural Concrete; 2010 (Errata 2012).
- C. ACI 302.1R Guide for Concrete Floor and Slab Construction; 2004 (Errata 2007).
- D. ACI 304R Guide for Measuring, Mixing, Transporting, and Placing Concrete; 2000.
- E. ACI 305R Hot Weather Concreting; 2010.
- F. ACI 306R Cold Weather Concreting; 2010.
- G. ACI 308R Guide to Curing Concrete; 2001 (Reapproved 2008).
- H. ACI 318 Building Code Requirements for Structural Concrete and Commentary; 2011.
- I. ASTM A615/A615M Standard Specification for Deformed and Plain Carbon Steel Bars for Concrete Reinforcement; 2015.
- J. ASTM A884/A884M Standard Specification for Epoxy-Coated Steel Wire and Welded Wire Reinforcement; 2014.
- K. ASTM A1064/A1064M Standard Specification for Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete; 2015.
- L. ASTM C33/C33M Standard Specification for Concrete Aggregates; 2013.
- M. ASTM C39/C39M Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens; 2015a.
- N. ASTM C94/C94M Standard Specification for Ready-Mixed Concrete; 2015.
- O. ASTM C143/C143M Standard Test Method for Slump of Hydraulic-Cement Concrete; 2012.
- P. ASTM C150/C150M Standard Specification for Portland Cement; 2015.
- Q. ASTM C171 Standard Specification for Sheet Materials for Curing Concrete; 2007.
- R. ASTM C260/C260M Standard Specification for Air-Entraining Admixtures for Concrete; 2010a.
- S. ASTM C330/C330M Standard Specification for Lightweight Aggregates for Structural Concrete; 2014.
- T. ASTM C494/C494M Standard Specification for Chemical Admixtures for Concrete; 2013.
- U. ASTM C618 Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete; 2015.
- V. ASTM C685/C685M Standard Specification for Concrete Made by Volumetric Batching and Continuous Mixing; 2014.
- W. ASTM C1240 Standard Specification for Silica Fume Used in Cementitious Mixtures; 2014.

- X. ASTM D994/D994M Standard Specification for Preformed Expansion Joint Filler for Concrete (Bituminous Type); 2011.
- Y. ASTM D1751 Standard Specification for Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Nonextruding and Resilient Bituminous Types); 2004 (Reapproved 2013).

1.04 SUBMITTALS

- A. Product Data: Submit manufacturers' data on manufactured products showing compliance with specified requirements and installation instructions.
- B. Manufacturer's Installation Instructions: For concrete accessories, indicate installation procedures and interface required with adjacent construction.
- C. Project Record Documents: Accurately record actual locations of embedded utilities and components that will be concealed from view upon completion of concrete work.

1.05 QUALITY ASSURANCE

- A. Perform work of this section in accordance with ACI 301 and ACI 318.
- B. Acquire cement from same source and aggregate from same source for entire project.
- C. Follow recommendations of ACI 305R when concreting during hot weather.
- D. Follow recommendations of ACI 306R when concreting during cold weather.

1.06 WARRANTY

- A. Moisture Emission Reducing Curing and Sealing Compound: Provide warranty to cost of flooring delamination failures for 10 years.
 - 1. Include cost of repair or removal of failed flooring, remediation with a moisture vapor impermeable surface coating, and replacement of flooring with comparable flooring system.

PART 2 PRODUCTS

2.01 FORMWORK

- A. Form Materials: Contractor's choice of standard products with sufficient strength to withstand hydrostatic head without distortion in excess of permitted tolerances.
 - 1. Form Coating: Release agent that will not adversely affect concrete or interfere with application of coatings.
 - 2. Form Ties: Cone snap type that will leave no metal within 1-1/2 inches of concrete surface.

2.02 REINFORCEMENT

- A. Reinforcing Steel: ASTM A615/A615M, Grade 60 (60,000 psi).
 - 1. Type: Deformed billet-steel bars.
 - 2. Finish: Unfinished, unless otherwise indicated.
- B. Steel Welded Wire Reinforcement (WWR): Plain type, ASTM A1064/A1064M.
 - 1. WWR Style: As indicated on drawings.
 - 2. Placed in top third of concrete.
- C. Reinforcement Accessories:
 - 1. Tie Wire: Annealed, minimum 16 gage, 0.0508 inch.
 - 2. Chairs, Bolsters, Bar Supports, Spacers: Sized and shaped for adequate support of reinforcement during concrete placement.
 - a. Provide chairs of proper height to place wire reinforcement within top 1-1/2 inch of concrete.
 - b. Provide proper number of chairs to maintain 24 inch spacing for proper support of wire reinforcement.

2.03 CONCRETE MATERIALS

A. Cement: ASTM C150/C150M, Type I - Normal Portland type.

- B. Fine and Coarse Aggregates: ASTM C33.
 - Limestone aggregate is not allowable for use in exposed concrete such as:
 a. Equipment pads, sidewalk, curbing, apparatus/garage bays, etc.
 - a. Equipment pads, sidewalk, curbing, apparatus/gara
 - 2. Preferred aggreate is granite.
 - 3. Acquire all aggregates for entire project from same source.
- C. Fly Ash: ASTM C618, Class C or F.
- D. Silica Fume: ASTM C1240, proportioned in accordance with ACI 211.1.
- E. Water: Clean and not detrimental to concrete.

2.04 ADMIXTURES

- A. Do not use chemicals that will result in soluble chloride ions in excess of 0.1 percent by weight of cement.
- B. Air Entrainment Admixture: ASTM C260/C260M.
- C. High Range Water Reducing and Retarding Admixture: ASTM C494/C494M Type G.
- D. Accelerating Admixture: ASTM C494/C494M Type C.
- E. Water Reducing Admixture: ASTM C494/C494M Type A.

2.05 ACCESSORY MATERIALS

- A. Underslab Vapor Retarder: Singly ply polyethylene 15 mil thickness, stated by manufacturer as suitable for installation in contact with soil or granular fill under concrete slabs.
 - 1. Accessory Products: Vapor retarder manufacturer's recommended tape, adhesive,
 - mastic, prefabricated boots, etc., for sealing seams and penetrations in vapor retarder.
 - 2. Manufacturers:
 - a. Stego Industries, LLC; Stego Wrap Vapor Barrier 15 mils: www.stegoindustries.com.
 - b. W.R. Meadows, Inc.; PERMINATOR Class A 15 mils: www.wrmeadows.com/sle.

2.06 BONDING AND JOINTING PRODUCTS

- A. Slab Isolation Joint Filler: 1/2 inch thick, height equal to slab thickness, with removable top section that will form 1/2 inch deep sealant pocket after removal.
- B. Joint Filler: Nonextruding, resilient asphalt impregnated fiberboard or felt, complying with ASTM D 1751, 1/2 inch thick and full depth of slab less 1/2 inch.

2.07 CURING MATERIALS

- A. Moisture-Retaining Sheet: ASTM C171.
 - 1. Burlap.
 - 2. Curing paper, regular.
- B. Water: Potable, not detrimental to concrete.

2.08 CONCRETE MIX DESIGN

- A. Proportioning Normal Weight Concrete: Comply with ACI 211.1 recommendations.
- B. Concrete Strength: Establish required average strength for each type of concrete on the basis of field experience or trial mixtures, as specified in ACI 301.
 - 1. For trial mixtures method, employ independent testing agency acceptable to Architect for preparing and reporting proposed mix designs.
- C. Admixtures: Add acceptable admixtures as recommended in ACI 211.1 and at rates recommended by manufacturer. Admixtures identified below developed from PCA Design and Control of Concrete Mixtures, Tables 7.1, 7.3 & 7.6.
 - 1. Normal Weight Concrete:
 - a. Exterior Flatwork
 - b. Exterior Formwork
 - c. Interior Flatwork

- D. Typical Admixtures
 - 1. Compressive Strength, when tested in accordance with ASTM C39/C39M at 28 days: As indicated on drawings.
 - 2. Fly Ash Content: Maximum 15 percent of cementitious materials by weight.
 - 3. Silica Fume Content: Maximum 5 percent of cementitious materials by weight.
 - 4. Maximum Slump: 4 inches.
 - 5. Maximum Aggregate Size: 3/4 inch.
- E. Air Entrainment:
 - 1. Exterior: 5-7%
 - 2. Interior: 0-3%
- F. Water Weight:
 - 1. Exterior/Interior Normal Weight: 305 lbs.
- G. Cement Content:
 - 1. 4,000 psi Exterior Flatwork: 675 lb per cubic yard.
 - 2. 3,500 psi Exterior Formwork: 610 lb per cubic yard.
 - 3. 4,000 psi Interior Flatwork: 635 lb per cubic yard.

2.09 MIXING

- A. On Project Site: Mix in drum type batch mixer, complying with ASTM C685/C685M. Mix each batch not less than 1-1/2 minutes and not more than 5 minutes.
- B. Transit Mixers: Comply with ASTM C94/C94M.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify lines, levels, and dimensions before proceeding with work of this section.

3.02 PREPARATION

- A. Formwork: Comply with requirements of ACI 301. Design and fabricate forms to support all applied loads until concrete is cured, and for easy removal without damage to concrete.
- B. Verify that forms are clean and free of rust before applying release agent.
- C. Coordinate placement of embedded items with erection of concrete formwork and placement of form accessories.
- D. Where new concrete is to be bonded to previously placed concrete, prepare existing surface by cleaning with steel brush and applying bonding agent in accordance with manufacturer's instructions.
- E. In locations where new concrete is doweled to existing work, drill holes in existing concrete, insert steel dowels and pack solid with non-shrink grout.
- F. Interior Slabs on Grade: Install vapor retarder under interior slabs on grade. Lap joints minimum 12 inches. Seal joints, seams and penetrations watertight with manufacturer's recommended products and follow manufacturer's written instructions. Repair damaged vapor retarder before covering.

3.03 INSTALLING REINFORCEMENT AND OTHER EMBEDDED ITEMS

- A. Comply with requirements of ACI 301. Clean reinforcement of loose rust and mill scale, and accurately position, support, and secure in place to achieve not less than minimum concrete coverage required for protection.
- B. Install welded wire reinforcement in maximum possible lengths, and offset end laps in both directions. Splice laps with tie wire.
- C. Verify that anchors, seats, plates, reinforcement and other items to be cast into concrete are accurately placed, positioned securely, and will not interfere with concrete placement.

3.04 PLACING CONCRETE

A. Place concrete in accordance with ACI 304R.

- B. Place concrete for floor slabs in accordance with ACI 302.1R.
- C. Notify Architect not less than 24 hours prior to commencement of placement operations.
- D. Ensure reinforcement, embedded parts, and formed construction joint devices will not be disturbed during concrete placement.
- E. Place concrete continuously without construction (cold) joints wherever possible; where construction joints are necessary, before next placement prepare joint surface by removing laitance and exposing the sand and sound surface mortar, by sandblasting or high-pressure water jetting.
- F. Finish floors level and flat, unless otherwise indicated, within the tolerances specified below.

3.05 SLAB JOINTING

- A. Locate joints as indicated on the drawings.
- B. Anchor joint fillers and devices to prevent movement during concrete placement.
- C. Isolation Joints: Use preformed joint filler with removable top section for joint sealant, total height equal to thickness of slab, set flush with top of slab.
 - 1. Install wherever necessary to separate slab from other building members, including columns, walls, equipment foundations, footings, stairs, manholes, sumps, and drains.
- D. Saw Cut Contraction Joints: Saw cut joints before concrete begins to cool, within 4 to 12 hours after placing; use 1/8 inch thick blade and cut at least 1 inch deep but not less than one quarter (1/4) the depth of the slab.
- E. Separate slabs on grade from vertical surfaces with joint filler.
- F. Place joint filler in floor slab and sidewalk pattern placement sequence. Set top to required elevations. Secure to resist movement by wet concrete.
- G. Extend joint filler from bottom of slab to within 1/2 inch of finished slab surface. Conform to Section 07 9200 for finish joint sealer requirements.
- H. Install joint devices in accordance with manufacturer's instructions.
- I. Maintain records of concrete placement. Record date, location, quantity, air temperature, and test samples taken.
- J. Place concrete continuously between predetermined expansion, control, and construction joints.
- K. Do not interrupt successive placement; do not permit cold joints to occur.
- L. Place floor slabs in saw cut pattern indicated.
- M. Screed slabs level, maintaining surface pitch as indicated on drawings.

3.06 FLOOR FLATNESS AND LEVELNESS TOLERANCES

A. Correct defects by grinding or by removal and replacement of the defective work. Areas requiring corrective work will be identified. Re-measure corrected areas by the same process.

3.07 CONCRETE FINISHING

- A. Repair surface defects, including tie holes, immediately after removing formwork.
- B. Unexposed Form Finish: Rub down or chip off fins or other raised areas 1/4 inch or more in height.
- C. Exposed Form Finish: Rub down or chip off and smooth fins or other raised areas 1/4 inch or more in height. Provide finish as follows:
 - 1. Smooth Rubbed Finish: Wet concrete and rub with carborundum brick or other abrasive, not more than 24 hours after form removal.
 - 2. Grout Cleaned Finish: Wet areas to be cleaned and apply grout mixture by brush or spray; scrub immediately to remove excess grout. After drying, rub vigorously with clean burlap, and keep moist for 36 hours.
- D. Concrete Slabs: Finish to requirements of ACI 302.1R, and as follows:

- 1. Surfaces to Receive Thin Floor Coverings: "Steel trowel" as described in ACI 302.1R; thin floor coverings include carpeting, resilient flooring, seamless flooring, resinous matrix terrazzo, thin set quarry tile, and thin set ceramic tile.
- 2. Surfaces to Receive Thin Floor Coatings: "Light steel trowel or plastic trowel blades; thin floor coatings include, epoxy and urethane coatings.
 - a. Verify exact concrete finish with floor coating manufacturer.
- 3. Control and construction joints must be filled with wheeled traffic rated floor joint filler installed in accordance with manufacturer's instructions.
- E. In areas with floor drains, maintain floor elevation at walls; pitch surfaces uniformly to drains as indicated on drawings.

3.08 CURING AND PROTECTION

- A. Comply with requirements of ACI 308R. Immediately after placement, protect concrete from premature drying, excessively hot or cold temperatures, and mechanical injury.
- B. Maintain concrete with minimal moisture loss at relatively constant temperature for period necessary for hydration of cement and hardening of concrete.
 - 1. Normal concrete: Not less than 7 days.
 - 2. High early strength concrete: Not less than 5 days.
- C. Surfaces Not in Contact with Forms:
 - 1. Slabs and Floors To Receive Adhesive-Applied Flooring: Curing compounds and other surface coatings are usually considered unacceptable by flooring and adhesive manufacturers. If such materials must be used, either obtain the approval of the flooring and adhesive manufacturers prior to use or remove the surface coating after curing to flooring manufacturer's satisfaction.
 - 2. Curing: Start as soon as free water has disappeared and before surface is dry. Keep continuously moist for not less than seven days by water ponding.
 - a. Saturated Burlap: Saturate burlap over floor slab areas, lapping ends and sides; maintain in place. Spray water over burlap to maintain wet surface in all areas for duration of curing period.
 - 3. Drying: Begin after curing timeframe is achieved.
- D. Protection from traffic:
 - 1. The following timeframes shall be adhered to after curing is complete.
 - a. Keep foot traffic off for 1 day.
 - b. Keep light, rubber-tired vehicles off for 7 days.
 - c. Protect surfaces with sheets of plywood or hardboard where heavy traffic is expected.

3.09 FIELD QUALITY CONTROL

- A. Provide free access to concrete operations at project site and cooperate with appointed firm.
- B. Submit proposed mix design of each class of concrete to inspection and testing firm for review prior to commencement of concrete operations.
- C. Tests of concrete and concrete materials may be performed at any time to ensure conformance with specified requirements.
- D. Compressive Strength Tests: ASTM C39/C39M. For each test, mold and cure three concrete test cylinders. Obtain test samples for every 100 cubic yards or less of each class of concrete placed.
- E. Take one additional test cylinder during cold weather concreting, cured on job site under same conditions as concrete it represents.
- F. Perform one slump test for each set of test cylinders taken, following procedures of ASTM C143/C143M.

3.10 DEFECTIVE CONCRETE

A. Test Results: The testing agency shall report test results in writing to Architect and Contractor within 24 hours of test.

- B. Defective Concrete: Concrete not conforming to required lines, details, dimensions, tolerances or specified requirements.
- C. Repair or replacement of defective concrete will be determined by the Architect. The cost of additional testing shall be borne by Contractor when defective concrete is identified.

3.11 PROTECTION

A. Do not permit traffic over unprotected concrete floor surface until fully cured.

3.12 SCHEDULE - CONCRETE TYPES AND FINISHES

- A. Foundation Walls: 3,500 psi 28 day concrete, air entrained smooth rubbed finish.
- B. Footing: 3,500 psi 28 day concrete, air entrained, true and level floated finish.
- C. Floor Slabs: 4,000 psi 28 day concrete, naturally entrained, steel trowel finish.
- D. Exterior Flatwork: 4,000 psi 28 day concrete, air entrained, broom finish perpendicular to traffic flow.

END OF SECTION

SECTION 04 7200 CAST STONE MASONRY

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Architectural cast stone.
- B. Units required are:
 - 1. Exterior wall units, including wall caps, coping, and sills.

1.02 RELATED REQUIREMENTS

A. Section 07 9200 - Joint Sealants: Sealing joints indicated to be left open for sealant.

1.03 REFERENCE STANDARDS

- A. ACI 318 Building Code Requirements for Structural Concrete and Commentary; 2011.
- B. ASTM A185/A185M Standard Specification for Steel Welded Wire Reinforcement, Plain, for Concrete; 2007.
- C. ASTM A615/A615M Standard Specification for Deformed and Plain Carbon Steel Bars for Concrete Reinforcement; 2015.
- D. ASTM A767/A767M Standard Specification for Zinc-Coated (Galvanized) Steel Bars for Concrete Reinforcement; 2009.
- E. ASTM A884/A884M Standard Specification for Epoxy-Coated Steel Wire and Welded Wire Reinforcement; 2014.
- F. ASTM A1064/A1064M Standard Specification for Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete; 2015.
- G. ASTM C33/C33M Standard Specification for Concrete Aggregates; 2013.
- H. ASTM C150/C150M Standard Specification for Portland Cement; 2015.
- I. ASTM C270 Standard Specification for Mortar for Unit Masonry; 2014a.
- J. ASTM C494/C494M Standard Specification for Chemical Admixtures for Concrete; 2013.
- K. ASTM C1364 Standard Specification for Architectural Cast Stone; 2010b.

1.04 SUBMITTALS

- A. Manufacturer's Qualification Data: Documentation showing compliance with specified requirements.
- B. Full-Size Samples, For Review:
 - 1. Basic Shapes: One of each.

1.05 QUALITY ASSURANCE

- A. Manufacturer Qualifications:
 - 1. A firm with a minimum of 5 years experience producing cast stone of types required for project.
 - 2. Adequate plant capacity to furnish quality, sizes, and quantity of cast stone required without delaying progress of the work.
- B. Mock-Up: Provide full size cast stone components for installation in mock-up of exterior wall.
 1. Remove mock-up not incorporated into the work and dispose of debris.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Deliver cast stone components secured to shipping pallets and protected from damage and discoloration. Protect corners from damage.
- B. Number each piece individually to match shop drawings and schedule.
- C. Store cast stone components and installation materials in accordance with manufacturer's instructions.

- D. Store cast stone components on pallets with nonstaining, waterproof covers. Ventilate under covers to prevent condensation. Prevent contact with dirt.
- E. Protect cast stone components during handling and installation to prevent chipping, cracking, or other damage.
- F. Store mortar materials where contamination can be avoided.
- G. Schedule and coordinate production and delivery of cast stone components with unit masonry work to optimize on-site inventory and to avoid delaying the work.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Architectural Cast Stone:
 - 1. Eldorado Stone; Product: www.eldoradostone.com
 - 2. Environmental Stone Works; Product: www.estone.com.
 - 3. Boral Stone Products; Product: www.boralna.com.
 - 4. Substitutions: See Section 01 6000 Product Requirements.

2.02 ARCHITECTURAL CAST STONE

- A. Cast Stone: Architectural concrete product manufactured to simulate appearance of natural stone, complying with ASTM C1364.
 - 1. Compressive Strength: As specified in ASTM C1364; calculate strength of pieces to be field cut at 80 percent of uncut piece.
 - 2. Freeze-Thaw Resistance: Demonstrated by laboratory testing in accordance with ASTM C1364.
 - 3. Surface Texture: Fine grained texture, with no bugholes, air voids, or other surface blemishes visible from distance of 20 feet.
 - 4. Color: Selected by Architect from manufacturer's full range.
 - 5. Remove cement film from exposed surfaces before packaging for shipment.
- B. Shapes: Provide shapes indicated on drawings.
 - 1. Variation from Any Dimension, Including Bow, Camber, and Twist: Maximum of plus/minus 1/8 inch or length divided by 360, whichever is greater, but not more than 1/4 inch.
 - 2. Unless otherwise indicated on drawings, provide:
 - a. Wash or slope of 1:12 on exterior horizontal surfaces.
 - b. Drips on projecting components, wherever possible.
 - c. Raised fillets at back of sills and at ends to be built in.
- C. Reinforcement: Provide reinforcement as required to withstand handling and structural stresses; comply with ACI 318.

2.03 MATERIALS

- A. Portland Cement: ASTM C150/C150M.
 - 1. For Mortar: Type I or II, except Type III may be used in cold weather.
- B. Coarse Aggregate: ASTM C33/C33M, except for gradation; granite, quartz, or limestone.
- C. Fine Aggregate: ASTM C33/C33M, except for gradation; natural or manufactured sands.
- D. Admixtures: ASTM C494/C494M.
- E. Water: Potable.
- F. Reinforcing Bars: ASTM A615/A615M deformed bars, galvanized.
 - 1. Galvanized in accordance with ASTM A767/A767M, Class I.
- G. Steel Welded Wire Reinforcement: ASTM A1064/A1064M, galvanized or ASTM A884/A884M, epoxy coated.
- H. Embedded Anchors, Dowels, and Inserts: Type 304 stainless steel, of type and size as required for conditions.

- I. Mortar: Portland cement-lime, ASTM C270, Type N; do not use masonry cement.
- J. Sealant: As specified in Section 07 9200.
- K. Cleaner: General-purpose cleaner designed for removing mortar and grout stains, efflorescence, and other construction stains from new masonry surfaces without discoloring or damaging masonry surfaces; approved for intended use by cast stone manufacturer and by cleaner manufacturer for use on cast stone and adjacent masonry materials.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Examine construction to receive cast stone components. Notify Architect if construction is not acceptable.
- B. Do not begin installation until unacceptable conditions have been corrected.

3.02 INSTALLATION

- A. Setting:
 - 1. Drench cast stone components with clear, running water immediately before installation.
 - 2. Set units in a full bed of mortar unless otherwise indicated.
 - 3. Fill vertical joints with mortar.
 - 4. Fill dowel holes and anchor slots completely with mortar or non-shrink grout.
- B. Joints: Make all joints 3/8 inch, except as otherwise detailed.
 - 1. Rake mortar joints 3/4 inch for pointing.
 - 2. Remove excess mortar from face of stone before pointing joints.
 - 3. Point joints with mortar in layers 3/8 inch thick and tool to a slight concave profile.
 - 4. Leave the following joints open for sealant:
 - a. Head joints in top courses, including copings, parapets, cornices, sills, and steps.
 - b. Joints in projecting units.
 - c. Joints between rigidly anchored units, including soffits, panels, and column covers.
 - d. Joints below lugged sills and stair treads.
 - e. Joints below ledge and relieving angles.
 - f. Joints labeled "expansion joint".
- C. Sealant Joints: Install sealants as specified in Section 07 9200.
- D. Repairs: Repair chips and other surface damage noticeable when viewed in direct daylight at 10 feet.
 - 1. Repair with matching touchup material provided by the manufacturer and in accordance with manufacturer's instructions.
 - 2. Repair methods and results subject to Architect 's approval.

3.03 CLEANING

- A. Keep cast stone components clean as work progresses.
- B. Clean completed exposed cast stone after mortar is thoroughly set and cured.
 - 1. Wet surfaces with water before applying cleaner.
 - 2. Apply cleaner to cast stone in accordance with manufacturer's instructions.
 - 3. Remove cleaner promptly by rinsing thoroughly with clear water.
 - 4. Do not use acidic cleaners.

3.04 PROTECTION

- A. Protect completed work from damage.
- B. Clean, repair, or restore damaged or mortar-splashed work to condition of new work.

END OF SECTION

SECTION 05 4000

COLD-FORMED METAL FRAMING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Formed steel stud exterior wall and interior wall framing.
- B. Formed steel joist and purlin framing and bridging.
- C. Water-resistive barrier over sheathing.

1.02 RELATED REQUIREMENTS

- A. Section 06 1000 Rough Carpentry: Wood blocking and miscellaneous framing.
- B. Section 07 2100 Thermal Insulation: Insulation within framing members.
- C. Section 07 2500 Weather Barriers: Weather barrier over sheathing.
- D. Section 07 9200 Joint Sealants.
- E. Section 09 2116 Gypsum Board Assemblies: Lightweight, non-load bearing metal stud framing.
- F. Section 09 2116 Gypsum Board Assemblies: Gypsum-based sheathing.

1.03 REFERENCE STANDARDS

- A. AISI S100-12 North American Specification for the Design of Cold-Formed Steel Structural Members; American Iron and Steel Institute; 2012.
- B. ASTM A153/A153M Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware; 2009.
- C. ASTM A653/A653M Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2015.
- D. ASTM A1008/A1008M Standard Specification for Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, Solution Hardened, and Bake Hardenable; 2016.
- E. ASTM C955 Standard Specification for Load-Bearing (Transverse and Axial) Steel Studs, Runners (Tracks), and Bracing or Bridging for Screw Application of Gypsum Panel Products and Metal Plaster Bases; 2011c.
- F. ASTM C1007 Standard Specification for Installation of Load Bearing (Transverse and Axial) Steel Studs and Related Accessories; 2011a.
- G. SSPC-Paint 20 Zinc-Rich Primers (Type I, "Inorganic," and Type II, "Organic"); 2002 (Ed. 2004).

1.04 SUBMITTALS

- A. Product Data: Provide data on standard framing members; describe materials and finish, product criteria, limitations.
- B. Shop Drawings: Indicate component details, framed openings, bearing, anchorage, loading, welds, and type and location of fasteners, and accessories or items required of related work.
- C. Manufacturer's Installation Instructions: Indicate special procedures, conditions requiring special attention.

1.05 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the types of products specified in this section, and with minimum three years of documented experience.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Metal Framing:

- 1. Clarkwestern Dietrich Building Systems LLC: www.clarkdietrich.com.
- 2. Marino: www.marinoware.com.
- 3. The Steel Network, Inc: www.SteelNetwork.com.

2.02 FRAMING SYSTEM

A. Provide primary and secondary framing members, bridging, bracing, plates, gussets, clips, fittings, reinforcement, and fastenings as required to provide a complete framing system.

2.03 FRAMING MATERIALS

- A. Studs and Track: ASTM C955; studs formed to channel, "C", or "Sigma" shape with punched web; U-shaped track in matching nominal width and compatible height.
 - 1. Gage and Depth: As indicated on the drawings.
 - 2. Galvanized in accordance with ASTM A653/A653M, G90/Z275 coating.
- B. Joists and Purlins: Fabricated from ASTM A653/A653M steel sheet, with G90/Z275 hot dipped galvanized coating.
- C. Framing Connectors: Factory-made, formed steel sheet.
 - 1. Material: ASTM A653/A653M SS Grade 33 and 40 (minimum), with G90/Z275 hot dipped galvanized coating for base metal thickness less than 10 gage, 0.1345 inch, and factory punched holes and slots.
 - 2. Structural Performance: Maintain load and movement capacity required by applicable code, when evaluated in accordance with AISI S100-12.
 - 3. Fixed Connections: Provide non-movement connections for tie-down to foundation, floor-to-floor tie-down, roof-to-wall tie-down, joist hangers, gusset plates, and stiffeners.

2.04 ACCESSORIES

- A. Bracing, Furring, Bridging: Formed sheet steel, thickness determined for conditions encountered; finish to match framing components.
- B. Touch-Up Primer for Galvanized Surfaces: SSPC-Paint 20, Type I Inorganic, complying with VOC limitations of authorities having jurisdiction.
- C. Water-Resistive Barrier: As specified in Section 07 2500.

2.05 FASTENERS

- A. Self-Drilling, Self-Tapping Screws, Bolts, Nuts and Washers: Hot dip galvanized per ASTM A153/A153M.
- B. Anchorage Devices: Powder actuated.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that substrate surfaces are ready to receive work.
- B. Verify field measurements and adjust installation as required.

3.02 INSTALLATION OF STUDS

- A. Install components in accordance with manufacturers' instructions and ASTM C1007 requirements.
- B. Place studs at indicated inches on center; not more than 2 inches from abutting walls and at each side of openings. Connect studs to tracks using clip and tie method.
- C. Construct corners using minimum of three studs. Install double studs at wall openings, door and window jambs.
- D. Install load bearing studs full length in one piece. Splicing of studs is not permitted.
- E. Install load bearing studs, brace, and reinforce to develop full strength and achieve design requirements.
- F. Coordinate placement of insulation in multiple stud spaces made inaccessible after erection.
- G. Install intermediate studs above and below openings to align with wall stud spacing.

3.03 INSTALLATION OF JOISTS AND PURLINS

- A. Install framing components in accordance with manufacturer's instructions.
- B. Make provisions for erection stresses. Provide temporary alignment and bracing.
- C. Locate joist end bearing directly over load bearing studs or provide load distributing member to top of stud track.

END OF SECTION

SECTION 05 4400

COLD-FORMED STEEL TRUSSES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Light gage cold-formed steel open web floor trusses.
- B. Anchorages, bracing, and bridging.

1.02 RELATED REQUIREMENTS

A. Section 05 4000 - Cold-Formed Metal Framing: Light gage structural metal studs, joists, and rafters.

1.03 REFERENCE STANDARDS

- A. AISI S100-12 North American Specification for the Design of Cold-Formed Steel Structural Members; American Iron and Steel Institute; 2012.
- B. ASTM A653/A653M Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2015.
- C. ASTM A780/A780M Standard Practice for Repair of Damaged and Uncoated Areas of Hot-Dip Galvanized Coatings; 2009 (Reapproved 2015).
- D. AWS B2.1/B2.1M Specification for Welding Procedure and Performance Qualification; 2014.
- E. AWS D1.1/D1.1M Structural Welding Code Steel; 2015.
- F. AWS D1.3/D1.3M Structural Welding Code Sheet Steel; 2008.
- G. CFSEI 5000 Field Installation Guide for Cold-Formed Steel Roof Trusses; May 2000.

1.04 SUBMITTALS

- A. Product Data: Manufacturer's data sheets on each product to be used, including:
 - 1. Span charts.
 - 2. Storage and handling requirements and recommendations.
 - 3. Installation methods.
- B. Shop Drawings:
 - 1. Include detailed roof truss layout.
 - 2. Show member type, location, spacing, size and gage, methods of attachment, and erection details. Indicate supplemental bracing, strapping, splices, bridging, and accessories.
 - 3. Include truss design drawings, signed and sealed by a qualified professional engineer registered in the State in which the Project is located, verifying ability of each truss design to meet applicable code and design requirements.

1.05 QUALITY ASSURANCE

- A. Fabricator Qualifications: Steel truss fabricator with minimum 10 years of experience designing and fabricating truss systems equivalent to those required for this project and licensed by an acceptable manufacturer.
- B. Welders: Qualify welding processes and welding operators in accordance with AWS B2.1/B2.1M.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Deliver trusses and other materials in manufacturer's unopened bundles or containers, each marked with manufacturer's name, brand, type, and grade. Exercise care to avoid damage during unloading, storing, and erection.
- B. Store trusses on blocking, pallets, platforms, or other supports, off the ground and in an upright position, sufficiently braced to avoid damage from excessive bending. Gently slope stored trusses to avoid accumulation of water on interior of truss chord members.
- C. Protect trusses and accessories from contact with earth, corrosion, deformation, mechanical damage, or other deterioration when stored at project site.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Cold-Formed Steel Trusses:
 - 1. Aegis Metal Framing, a Division of MiTek Industries: www.aegismetalframing.com.
 - 2. TrusSteel Division of Alpine Engineered Products, Inc: www.trussteel.com.

2.02 TRUSS DESIGN REQUIREMENTS

- A. Design: Calculate structural characteristics of cold-formed steel truss members according to AISI S100-12.
- B. Structural Performance: Design, engineer, fabricate, and erect trusses to withstand specified design loads for project conditions within required limits.
 - 1. Design Loads: In accordance with applicable codes.
 - Deflections: Live load deflection meeting the following, unless otherwise indicated:
 a. Floors: Maximum vertical deflection under live load of 1/480 of span.
 - 3. Design trusses to accommodate movement attributable to temperature changes within a range of 120 degrees F without damage or overstressing, sheathing failure, undue strain on fasteners and anchors, or other deleterious effects.

2.03 COMPONENTS

- A. Trusses: Light gage steel assemblies providing a complete horizontal framing system for locations indicated, ready for deck installation.
 - 1. Truss Type, Span, and Height: As indicated on drawings.
 - 2. Chord and Web Members: Fabricate required shapes from commercial quality galvanized steel sheet complying with ASTM A653/A653M, with minimum yield strength of 40,000 psi; minimum G60/Z180 coating; gages as required for load conditions; all edges rolled or closed.
- B. Fasteners: Self-drilling, self-tapping screw fasteners with corrosion-resistant plated finish, as recommended by steel truss manufacturer and marked for easy identification.
 - 1. Welding: Comply with applicable provisions of AWS D1.1/D1.1M and AWS D1.3/D1.3M.
- C. Bracing, Bridging, and Blocking Members: Fabricate required shapes from commercial quality galvanized steel sheet complying with ASTM A653/A653M, with minimum yield strength of 33,000 psi; minimum G60/Z180 coating; gages as required for load conditions.

2.04 FABRICATION

- A. Factory fabricate cold-formed steel trusses plumb, square, true to line, and with secure connections, complying with manufacturer's recommendations and project requirements.
 - 1. Fabricate trusses using jig templates.
 - 2. Cut truss members by sawing, shearing, or plasma cutting.
 - 3. Fasten members in full compliance with instructions of manufacturer. Wire tying of framing members is not permitted.
- B. Tolerances: Fabricate trusses to maximum allowable tolerance variation from plumb, level and true line of 1/8 inch in 10 feet.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Examine structure, substrates, and installation conditions. Notify Architect of unsatisfactory preparation. Do not begin installation until substrates have been properly prepared and unsatisfactory conditions have been corrected.
- B. Proceeding with installation indicates installer's acceptance of substrate conditions.

3.02 INSTALLATION

A. Install cold-formed steel trusses in strict accordance with manufacturer's instructions and approved shop drawings, using approved fastening methods.

- B. Install temporary erection bracing and permanent bracing and bridging before application of any loads. Erect trusses with plane of truss webs vertical and parallel to each other, accurately located at spacing indicated. Anchor trusses securely at bearing points.
- C. Adequately distribute applied loads to avoid exceeding the carrying capacity of any one joint, truss, or other component.
- D. Exercise care to avoid damaging truss members during lifting and erection and to minimize horizontal bending of trusses.
- E. Removal, cutting, or alteration of any truss chord, web, or bracing member in the field is prohibited, unless approved in advance by Architect or the engineer of record and the truss manufacturer.
- F. Repair or replace damaged members and complete trusses as directed and approved in writing by Architect or the engineer of record and the truss manufacturer.
- G. Galvanizing Repair: Touch up bare steel with zinc-rich paint in compliance with ASTM A780/A780M.
- H. Open Web Floor Trusses:
 - 1. Install over supporting framing with minimum end bearing of 1-1/2 inches.
 - 2. Reinforce ends of trusses with web stiffeners, end clips, joist hangers, or other method as recommended by manufacturer.
 - 3. Frame openings with built-up joist hangers where indicated.
 - 4. Install truss reinforcement at interior supports as recommended by truss manufacturer.
 - 5. Install bridging at each end of trusses and at intervals as indicated.
 - 6. Secure trusses to load-bearing interior walls to prevent lateral movement of bottom flange.
 - 7. Install miscellaneous framing and connections, including web stiffeners, clip angles, hold-down angles, anchors, and fasteners as required for a complete and stable floor framing assembly.

3.03 TOLERANCES

- A. Install trusses to maximum allowable tolerance variation from plumb, level, and true to line of 1/8 inch in 10 feet.
- B. Space individual trusses not more than plus or minus 1/8 inch from plan location. Cumulative error in placement may not exceed minimum fastening requirements of sheathing or other material fastened to trusses.

3.04 PROTECTION

- A. Protect trusses from damage by subsequent construction activities.
- B. Repair or replace damaged trusses, truss members, and bracing members; obtain approval in advance by Architect or the engineer of record and the truss manufacturer for all cutting, repairs, and replacements.

END OF SECTION

SECTION 06 1000 ROUGH CARPENTRY

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Exposed timber structural framing.
- B. Preservative treated wood materials.
- C. Fire retardant treated wood materials.
- D. Miscellaneous framing and sheathing.
- E. Communications and electrical room mounting boards.
- F. Concealed wood blocking, nailers, and supports.
- G. Miscellaneous wood nailers, furring, and grounds.

1.02 RELATED REQUIREMENTS

- A. Section 07 2500 Weather Barriers: Water-resistive barrier over sheathing.
- B. Section 07 6200 Sheet Metal Flashing and Trim: Sill flashings.
- C. Section 07 7200 Roof Accessories: Prefabricated roof curbs.

1.03 REFERENCE STANDARDS

- A. ANSI A208.1 American National Standard for Particleboard; 2009.
- B. ASTM A153/A153M Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware; 2009.
- C. ASTM A653/A653M Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2015.
- D. ASTM C1396/C1396M Standard Specification for Gypsum Board; 2014.
- E. ASTM D2898 Standard Test Methods for Accelerated Weathering of Fire-Retardant-Treated Wood for Fire Testing; 2010.
- F. ASTM E84 Standard Test Method for Surface Burning Characteristics of Building Materials; 2015a.
- G. AWPA U1 Use Category System: User Specification for Treated Wood; 2012.
- H. PS 1 Structural Plywood; 2009.
- I. PS 20 American Softwood Lumber Standard; 2010.
- J. SPIB (GR) Grading Rules; 2014.

1.04 SUBMITTALS

- A. Product Data: Provide technical data on wood preservative materials and application instructions.
- B. Manufacturer's Certificate: Certify that wood products supplied for rough carpentry meet or exceed specified requirements.

1.05 DELIVERY, STORAGE, AND HANDLING

A. General: Cover wood products to protect against moisture. Support stacked products to prevent deformation and to allow air circulation.

PART 2 PRODUCTS

2.01 GENERAL REQUIREMENTS

- A. Dimension Lumber: Comply with PS 20 and requirements of specified grading agencies.
 - 1. Species: Spruce-Pine-Fir (South), unless otherwise indicated.

- 2. If no species is specified, provide any species graded by the agency specified; if no grading agency is specified, provide lumber graded by any grading agency meeting the specified requirements.
- 3. Grading Agency: Any grading agency whose rules are approved by the Board of Review, American Lumber Standard Committee (www.alsc.org) and who provides grading service for the species and grade specified; provide lumber stamped with grade mark unless otherwise indicated.
- 4. Lumber of other species or grades is acceptable provided structural and appearance characteristics are equivalent to or better than products specified.
- B. Lumber fabricated from old growth timber is not permitted.
- C. Provide wood harvested within a 500 mile radius of the project site.

2.02 DIMENSION LUMBER FOR CONCEALED APPLICATIONS

- A. Grading Agency: Southern Pine Inspection Bureau, Inc; SPIB (GR).
- B. Sizes: Nominal sizes as indicated on drawings, S4S.
- C. Moisture Content: Kiln-dry or MC15.
- D. Miscellaneous Framing, Blocking, Nailers, Grounds, and Furring:
 1. Lumber: S4S. No. 2 or Standard Grade.
 - 2. Boards: Standard or No. 3.

2.03 EXPOSED TIMBERS

- A. Submit manufacturer's certificate that products meet or exceed specified requirements, in lieu of grade stamping.
- B. Moisture Content: Kiln-dry (20 percent maximum).
- C. Surfacing: S4S.
- D. Species: Douglas Fir.
- E. Grade: Clear Structural.

2.04 CONSTRUCTION PANELS

- A. Roof Sheathing: Any PS 2 type, rated Structural I Sheathing.
 - 1. Bond Classification: Exterior.
 - 2. Span Rating: 60.
 - 3. Performance Category: 5/8 PERF CAT.
 - 4. Thickness: 5/8 inch, nominal.
- B. Wall Sheathing: Gypsum, complying with requirements of ASTM C1396/C1396M for gypsum sheathing, square long edges, 5/8 inch Type X fire resistant exterior rated.
- C. Communications and Electrical Room Mounting Boards: PS 1 A-D plywood, or medium density fiberboard; 3/4 inch thick; flame spread index of 25 or less, smoke developed index of 450 or less, when tested in accordance with ASTM E84.
- D. Other Applications:
 - 1. Plywood Concealed From View But Located Within Exterior Enclosure: PS 1, C-C Plugged or better, Exterior grade.
 - 2. Plywood Exposed to View But Not Exposed to Weather: PS 1, A-D, or better.
 - 3. Plywood Exposed to View and Exposed to Weather: PS 1, Exterior Exposure Class.
 - 4. Other Locations: PS 1, C-D Plugged or better.

2.05 ACCESSORIES

- A. Fasteners and Anchors:
 - 1. Metal and Finish: Hot-dipped galvanized steel complying with ASTM A153/A153M for high humidity and preservative-treated wood locations, unfinished steel elsewhere.
 - 2. Drywall Screws: Bugle head, hardened steel, power driven type, length three times thickness of sheathing.

- 3. Anchors: Toggle bolt type for anchorage to hollow masonry or expansion shield and lag bolt type for anchorage to solid masonry or concrete.
- B. Die-Stamped Connectors: Hot dipped galvanized steel, sized to suit framing conditions.
 - 1. For contact with preservative treated wood in exposed locations, provide minimum G185 galvanizing complying with ASTM A653/A653M.
- C. Sill Gasket on Top of Foundation Wall: 1/4 inch thick, plate width, closed cell plastic foam from continuous rolls.
- D. Sill Flashing: As specified in Section 07 6200.

2.06 FACTORY WOOD TREATMENT

- A. Treated Lumber and Plywood: Comply with requirements of AWPA U1 Use Category System for wood treatments determined by use categories, expected service conditions, and specific applications.
 - 1. Preservative-Treated Wood: Provide lumber and plywood marked or stamped by an ALSC-accredited testing agency, certifying level and type of treatment in accordance with AWPA standards.
- B. Preservative Treatment:
 - 1. Manufacturers:
 - a. Arch Wood Protection, Inc: www.wolmanizedwood.com.
 - b. Viance, LLC: www.treatedwood.com.
 - 2. Preservative Pressure Treatment of Lumber Above Grade: AWPA U1, Use Category UC3B, Commodity Specification A using waterborne preservative.
 - a. Kiln dry lumber after treatment to maximum moisture content of 19 percent.
 - b. Treat lumber exposed to weather.
 - c. Treat lumber in contact with roofing, flashing, or waterproofing.
 - d. Treat lumber in contact with masonry or concrete.
 - e. Treat lumber less than 18 inches above grade.
 - f. Treat lumber in other locations as indicated.
 - 3. Preservative Pressure Treatment of Lumber in Contact with Soil: AWPA U1, Use Category UC4A, Commodity Specification A using waterborne preservative.
 - a. Preservative for Field Application to Cut Surfaces: As recommended by manufacturer of factory treatment chemicals for brush-application in the field.
 - b. Restrictions: Do not use lumber or plywood treated with chromated copper arsenate (CCA) in exposed exterior applications subject to leaching.

PART 3 EXECUTION

3.01 PREPARATION

- A. Where wood framing bears on cementitious foundations, install full width sill flashing continuous over top of foundation, lap ends of flashing minimum of 4 inches and seal.
- B. Coordinate installation of rough carpentry members specified in other sections.

3.02 INSTALLATION - GENERAL

- A. Select material sizes to minimize waste.
- B. Reuse scrap to the greatest extent possible; clearly separate scrap for use on site as accessory components, including: shims, bracing, and blocking.
- C. Where treated wood is used on interior, provide temporary ventilation during and immediately after installation sufficient to remove indoor air contaminants.

3.03 BLOCKING, NAILERS, AND SUPPORTS

- A. Provide framing and blocking members as indicated or as required to support finishes, fixtures, specialty items, and trim.
- B. In framed assemblies that have concealed spaces, provide solid wood fireblocking as required by applicable local code, to close concealed draft openings between floors and between top

story and roof/attic space; other material acceptable to code authorities may be used in lieu of solid wood blocking.

- C. In metal stud walls, provide continuous blocking around door and window openings for anchorage of frames, securely attached to stud framing.
- D. In walls, provide blocking attached to studs as backing and support for wall-mounted items, unless item can be securely fastened to two or more studs or other method of support is explicitly indicated.
- E. Where ceiling-mounting is indicated, provide blocking and supplementary supports above ceiling, unless other method of support is explicitly indicated.
- F. Provide the following specific non-structural framing and blocking:
 - 1. Cabinets and shelf supports.
 - 2. Wall brackets.
 - 3. Handrails.
 - 4. Grab bars.
 - 5. Towel and bath accessories.
 - 6. Wall-mounted door stops.
 - 7. Chalkboards and marker boards.
 - 8. Wall paneling and trim.
 - 9. Joints of rigid wall coverings that occur between studs.

3.04 ROOF-RELATED CARPENTRY

- A. Coordinate installation of roofing carpentry with deck construction, framing of roof openings, and roofing assembly installation.
- B. Provide wood curb at all roof openings except where prefabricated curbs are specified and where specifically indicated otherwise. Form corners by alternating lapping side members.

3.05 INSTALLATION OF CONSTRUCTION PANELS

- A. Roof Sheathing: Secure panels with long dimension perpendicular to framing members, with ends staggered and over firm bearing.
 - 1. At long edges use sheathing clips where joints occur between roof framing members.
 - 2. Nail panels to framing; staples are not permitted.
- B. Wall Sheathing: Secure with perpendicular ends over firm bearing and staggered, using approved fasteners.
- C. Communications and Electrical Room Mounting Boards: Secure with screws to studs with edges over firm bearing; space fasteners at maximum 24 inches on center on all edges and into studs in field of board.
 - 1. At fire-rated walls, install board over wall board indicated as part of the fire-rated assembly.
 - 2. Where boards are indicated as full floor-to-ceiling height, install with long edge of board parallel to studs.
 - 3. Install adjacent boards without gaps.

3.06 SITE APPLIED WOOD TREATMENT

- A. Apply preservative treatment compatible with factory applied treatment at site-sawn cuts, complying with manufacturer's instructions.
- B. Allow preservative to dry prior to erecting members.

3.07 TOLERANCES

- A. Framing Members: 1/4 inch from true position, maximum.
- B. Variation from Plane (Other than Floors): 1/4 inch in 10 feet maximum, and 1/4 inch in 30 feet maximum.

SECTION 07 2100

THERMAL INSULATION

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Board insulation at perimeter foundation wall, underside of floor slabs, over roof deck, and exterior wall behind exterior wall finish.
- B. Batt insulation and vapor retarder in exterior wall, ceiling, and roof construction.

1.02 RELATED REQUIREMENTS

- A. Section 07 2119 Foamed-In-Place Insulation: Plastic foam insulation other than boards.
- B. Section 09 2116 Gypsum Board Assemblies: Acoustic insulation inside walls and partitions.

1.03 REFERENCE STANDARDS

- A. ASTM C578 Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation; 2015a.
- B. ASTM C665 Standard Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing; 2012.
- C. ASTM E84 Standard Test Method for Surface Burning Characteristics of Building Materials; 2015a.
- D. ASTM E96/E96M Standard Test Methods for Water Vapor Transmission of Materials; 2014.
- E. ASTM E136 Standard Test Method for Behavior of Materials in a Vertical Tube Furnace At 750 Degrees C; 2012.
- F. ASTM E2357 Standard Test Method for Determining Air Leakage of Air Barrier Assemblies; 2011.
- G. NFPA 255 Standard Method of Test of Surface Burning Characteristics of Building Materials; National Fire Protection Association; 2006.
- H. UL 723 Standard for Test for Surface Burning Characteristics of Building Materials; Underwriters Laboratories Inc.; Current Edition, Including All Revisions.

1.04 SUBMITTALS

- A. Product Data: Provide data on product characteristics, performance criteria, and product limitations.
- B. Manufacturer's Installation Instructions: Include information on special environmental conditions required for installation and installation techniques.

1.05 FIELD CONDITIONS

A. Do not install insulation adhesives when temperature or weather conditions are detrimental to successful installation.

PART 2 PRODUCTS

2.01 APPLICATIONS

- A. Insulation Under Concrete Slabs: Extruded polystyrene board.
- B. Insulation at Perimeter of Foundation: Extruded polystyrene board.
- C. Insulation Over Metal Stud Framed Walls, Continuous: Extruded polystyrene board.
- D. Insulation in Metal Framed Walls: Batt insulation with integral vapor retarder.

2.02 FOAM BOARD INSULATION MATERIALS

- A. Extruded Polystyrene Board Insulation: Extruded polystyrene board; ASTM C578; with either natural skin or cut cell surfaces, and the following characteristics:
 - 1. Flame Spread Index: 25 or less, when tested in accordance with ASTM E84.
 - 2. Smoke Developed Index: 450 or less, when tested in accordance with ASTM E84.
 - 3. R-value; 1 inch of material at 72 degrees F: 5, minimum.

- 4. Board Thickness: As indicated on drawings or a combination of thicknesses as required to infill identified areas.
- 5. Board Edges: Square.
- 6. Thermal Resistance: R-value of 5.0 per 1 inch at 75 degrees F mean temperature.
- 7. Compressive Resistance: 25 psi.
- 8. Water Absorption, Maximum: 0.3 percent, by volume.
- 9. Manufacturers:
 - a. Dow Chemical Company: www.dow.com.
 - b. Owens Corning Corporation; FOAMULAR Extruded Polystyrene (XPS) Insulation: www.ocbuildingspec.com.

2.03 BATT INSULATION MATERIALS

- A. Where batt insulation is indicated, either glass fiber or mineral fiber batt insulation may be used, at Contractor's option.
- B. Glass Fiber Batt Insulation: Flexible preformed batt or blanket, complying with ASTM C665; friction fit.
 - 1. Combustibility: Non-combustible, when tested in accordance with ASTM E136, except for facing, if any.
 - 2. Facing: Aluminum foil, flame spread 25 rated; one side.
 - 3. Manufacturers:
 - a. CertainTeed Corporation: www.certainteed.com.
 - b. Johns Manville: www.jm.com.
 - c. Owens Corning Corp: www.owenscorning.com.
- C. Mineral Fiber Batt Insulation: Flexible or semi-rigid preformed batt or blanket, complying with ASTM C665; friction fit; unfaced flame spread index of 0 (zero) when tested in accordance with ASTM E84.
 - 1. Smoke Developed Index: 0 (zero), when tested in accordance with ASTM E84.
 - 2. Manufacturers:
 - a. Johns Manville; MinWool Sound Attenuation Fire Batts: www.jm.com/sle.
 - b. Thermafiber, Inc; SAFB: www.thermafiber.com.
 - c. ROXUL, Inc; ComfortBatt: www.roxul.com/sle.

2.04 ACCESSORIES

A. Adhesive: Type recommended by insulation manufacturer for application.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that substrate, adjacent materials, and insulation materials are dry and that substrates are ready to receive insulation.
- B. Verify substrate surfaces are flat, free of honeycomb, fins, irregularities, or materials or substances that may impede adhesive bond.

3.02 BOARD INSTALLATION AT FOUNDATION PERIMETER

- A. Install boards horizontally on foundation perimeter.
 - 1. Place boards to maximize adhesive contact.
 - 2. Install in running bond pattern.
 - 3. Butt edges and ends tightly to adjacent boards and to protrusions.
- B. Cut and fit insulation tightly to protrusions or interruptions to the insulation plane.

3.03 BOARD INSTALLATION AT EXTERIOR WALLS

- A. Install boards vertically on walls.
- B. Cut and fit insulation tightly to protrusions or interruptions to the insulation plane.
- C. Tape insulation board joints.

3.04 BOARD INSTALLATION UNDER CONCRETE SLABS

- A. Place insulation under slabs on grade after base for slab has been compacted.
- B. Cut and fit insulation tightly to protrusions or interruptions to the insulation plane.
- C. Prevent insulation from being displaced or damaged while placing vapor retarder and placing slab.

3.05 BOARD INSTALLATION OVER LOW SLOPE ROOF DECK

3.06 BATT INSTALLATION

- A. Install insulation and vapor retarder in accordance with manufacturer's instructions.
- B. Install in exterior wall and roof spaces without gaps or voids. Do not compress insulation.
- C. Trim insulation neatly to fit spaces. Insulate miscellaneous gaps and voids.
- D. Fit insulation tightly in cavities and tightly to exterior side of mechanical and electrical services within the plane of the insulation.
- E. At metal framing, place vapor retarder on warm side of insulation; lap and seal sheet retarder joints over member face.
- F. Tape seal tears or cuts in vapor retarder.
- G. Extend vapor retarder tightly to full perimeter of adjacent window and door frames and other items interrupting the plane of the membrane. Tape seal in place.

3.07 PROTECTION

A. Do not permit installed insulation to be damaged prior to its concealment.

SECTION 07 2119

FOAMED-IN-PLACE INSULATION

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Foamed-in-place insulation.
 - 1. In exterior framed walls.
 - 2. In exterior wall crevices.

1.02 REFERENCE STANDARDS

- A. ASTM C518 Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus; 2010.
- B. ASTM D2842 Standard Test Method for Water Absorption of Rigid Cellular Plastics; 2012.
- C. ASTM E84 Standard Test Method for Surface Burning Characteristics of Building Materials; 2015a.
- D. ASTM E96/E96M Standard Test Methods for Water Vapor Transmission of Materials; 2014.
- E. ASTM E283 Standard Test Method for Determining the Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen; 2004 (Reapproved 2012).
- F. ASTM E2178 Standard Test Method for Air Permeance of Building Materials; 2013.

1.03 SUBMITTALS

A. Product Data: Provide product description, insulation properties, overcoat properties, and preparation requirements.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Foamed-In-Place Insulation: Medium-density, rigid or semi-rigid, open or closed cell polyurethane foam; foamed on-site, using blowing agent of water or non-ozone-depleting gas.
 - 1. Aged Thermal Resistance: R-value of 5 (deg F hr sq ft)/Btu, minimum, when tested at 1 inch thickness in accordance with ASTM C518 after aging for 180 days at 41 degrees F.
 - 2. Water Vapor Permeance: Vapor retarder; 2 perm, maximum, when tested at intended thickness in accordance with ASTM E96/E96M, desiccant method.
 - 3. Water Absorption: Less than 2 percent by volume, maximum, when tested in accordance with ASTM D2842.
 - 4. Air Permeance: 0.004 cfm/sq ft, maximum, when tested at intended thickness in accordance with ASTM E2178 or ASTM E283 at 1.5 psf.
 - 5. Closed Cell Content: At least 90 percent.
 - 6. Surface Burning Characteristics: Flame spread/Smoke developed index of 25/450, maximum, when tested in accordance with ASTM E84.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify work within construction spaces or crevices is complete prior to insulation application.
- B. Verify that surfaces are clean, dry, and free of matter that may inhibit insulation or overcoat adhesion.

3.02 APPLICATION

- A. Apply insulation in accordance with manufacturer's instructions.
- B. Apply insulation by spray method, to a uniform monolithic density without voids.
- C. Trim excess away for applied trim or remove as required for continuous sealant bead.

SECTION 07 2126 BLOWN INSULATION

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Attic: Loose insulation pneumatically placed and poured into joist spaces through access holes.

1.02 REFERENCE STANDARDS

- A. ASTM C739 Standard Specification for Cellulosic Fiber (Wood-Base) Loose-Fill Thermal Insulation; 2011.
- B. ASTM C1015 Standard Practice for Installation of Cellulosic and Mineral Fiber Loose-Fill Thermal Insulation; 2006 (Reapproved 2011).

1.03 SUBMITTALS

- A. Product Data: Provide data on product characteristics, performance criteria, limitations.
- B. Manufacturer's Installation Instructions: Indicate procedure for preparation and installation.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Blown Insulation:
 - 1. CertainTeed Corporation: www.certainteed.com.
 - 2. GreenFiber: www.greenfiber.com.
 - 3. Johns Manville: www.jm.com.

2.02 MATERIALS

- A. Loose Fill Insulation: ASTM C739, cellulose fiber type, nodulated for pour and bulk for pneumatic placement.
 - 1. Thermal Conductivity: 0.27 BTU in/(hr sq ft deg F).
 - 2. Total Thermal Resistance: R-value of 20 (deg F hr sq ft)/Btu.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install insulation and ventilation baffle in accordance with ASTM C1015 and manufacturer's instructions.
- B. Place insulation against baffles. Do not impede natural attic ventilation to soffit.
- C. Completely fill intended spaces. Leave no gaps or voids.

SECTION 07 2500 WEATHER BARRIERS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Water-Resistive Barrier: Under exterior wall cladding, over sheathing or other substrate; not air tight or vapor retardant.
- B. Vapor Retarders: Materials to make exterior walls, joints between exterior walls and roof, and joints around frames of openings in exterior walls water vapor resistant and air tight.
- C. Air Barriers: Materials that form a system to stop passage of air through exterior walls and joints around frames of openings in exterior walls.

1.02 RELATED REQUIREMENTS

- A. Section 03 3000 Cast-in-Place Concrete: Vapor retarder under concrete slabs on grade.
- B. Section 05 4000 Cold-Formed Metal Framing: Water-resistive barrier under exterior cladding.
- C. Section 06 1000 Rough Carpentry: Water-resistive barrier under exterior cladding.
- D. Section 07 6200 Sheet Metal Flashing and Trim: Metal flashings installed in conjunction with weather barriers.
- E. Section 07 9200 Joint Sealants: Sealing building expansion joints.

1.03 DEFINITIONS

- A. Weather Barrier: Assemblies that form either water-resistive barriers, air barriers, or vapor retarders.
- B. Air Barrier: Air tight barrier made of material that is relatively air impermeable but water vapor permeable, both to the degree specified, with sealed seams and with sealed joints to adjacent surfaces. Note: For the purposes of this specification, vapor impermeable air barriers are classified as vapor retarders.
- C. Vapor Retarder: Air tight barrier made of material that is relatively water vapor impermeable, to the degree specified, with sealed seams and with sealed joints to adjacent surfaces.
 - 1. Water Vapor Permeance: For purposes of conversion, 57.2 ng/(Pa s sq m) = 1 perm.
- D. Water-Resistive Barrier: Water-shedding barrier made of material that is moisture resistant, to the degree specified, intended to be installed to shed water without sealed seams.

1.04 REFERENCE STANDARDS

- A. 40 CFR 59, Subpart D National Volatile Organic Compound Emission Standards for Architectural Coatings; U.S. Environmental Protection Agency; current edition.
- B. ASTM C836/C836M Standard Specification for High Solids Content, Cold Liquid-Applied Elastomeric Waterproofing Membrane for Use with Separate Wearing Course; 2012.
- C. ASTM D226/D226M Standard Specification for Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing; 2009.
- D. ASTM E84 Standard Test Method for Surface Burning Characteristics of Building Materials; 2015a.
- E. ASTM E96/E96M Standard Test Methods for Water Vapor Transmission of Materials; 2014.
- F. ASTM E1745 Standard Specification for Plastic Water Vapor Retarders Used in Contact with Soil or Granular Fill under Concrete Slabs; 2011.
- G. ASTM E2178 Standard Test Method for Air Permeance of Building Materials; 2013.
- H. ICC-ES AC38 Acceptance Criteria for Water-Resistive Barriers; ICC Evaluation Service, Inc; 2013.

1.05 SUBMITTALS

A. Product Data: Provide data on material characteristics, performance criteria, and limitations.

- B. Shop Drawings: Provide drawings of special joint conditions.
- C. Manufacturer's Installation Instructions: Indicate preparation, installation methods, and storage and handling criteria.

1.06 FIELD CONDITIONS

A. Maintain temperature and humidity recommended by the materials manufacturers before, during and after installation.

PART 2 PRODUCTS

2.01 WEATHER BARRIER ASSEMBLIES

- A. Water-Resistive Barrier: Provide on roof sheathing.1. Use asphalt felt unless otherwise indicated.
- B. Air Barrier:
 - 1. On outside surface of sheathing of exterior walls use air barrier sheet, mechanically fastened type.
- C. Interior Vapor Retarder:
 - 1. On inside face of studs of exterior walls, under cladding, use mechanically fastened vapor retarder sheet.
- D. Exterior Vapor Retarder:
 - 1. Under building slab.

2.02 WATER-RESISTIVE BARRIER MATERIALS (NEITHER AIR BARRIER NOR VAPOR RETARDER)

A. Asphalt Felt: ASTM D226 Type I felt.

2.03 AIR BARRIER MATERIALS (WATER VAPOR PERMEABLE AND WATER-RESISTIVE)

- A. Air Barrier Sheet, Mechanically Fastened:
 - 1. Air Permeance: 0.004 cubic feet per minute per square foot, maximum, when tested in accordance with ASTM E2178.
 - 2. Water Vapor Permeance: 5 perms, minimum, when tested in accordance with ASTM E96/E96M Procedure A (desiccant procedure).
 - 3. Air Permeance: 0.004 cubic feet per square foot, maximum, when tested in accordance with ASTM E2178.
 - 4. Water Vapor Permeance: 20 perms, minimum, when tested in accordance with ASTM E96/E96M Procedure A (desiccant method).
 - 5. Ultraviolet and Weathering Resistance: Approved in writing by manufacturer for minimum of 180 days weather exposure.
 - 6. Ultraviolet and Weathering Resistance: Approved in writing by manufacturer for minimum of 4 months weather exposure.
 - 7. Surface Burning Characteristics: Flame spread index of 25 or less, and smoke developed index of 50 or less, when tested in accordance with ASTM E84.
 - 8. Seam and Perimeter Tape: Polyethylene self adhering type, mesh reinforced, 2 inches wide, compatible with sheet material; unless otherwise specified.

2.04 VAPOR RETARDER MATERIALS (AIR BARRIER AND WATER-RESISTIVE)

- A. Underslab Vapor Retarder: Singly ply polyethylene 6 mil thickness, stated by manufacturer as suitable for installation in contact with soil or granular fill under concrete slabs.
 - 1. Accessory Products: Vapor retarder manufacturer's recommended tape, adhesive, mastic, prefabricated boots, etc., for sealing seams and penetrations in vapor retarder.
- B. Insulated Underslab Vapor Retarder: Multi-layer product of high density closed-cell foam and high density polyethylene bubble sandwiched between outer layers of aluminum-reinforced polyethylene or equivalent, complying with ASTM E1643, stated by manufacturer as suitable for installation in contact with soil or granular fill under concrete slabs. The use of single ply polyethylene is prohibited.
 - 1. Accessory Products: Vapor retarder manufacturer's recommended tape, adhesive, mastic, prefabricated boots, etc., for sealing seams and penetrations in vapor retarder.

- 2. For use with in-floor radiant heating.
- 3. Products:
 - a. Insulation Solutions, Inc.; Insul-Tarp: www.insulationsolutions.com.
 - b. rFoil Reflective Insulation; Ultra CBF Concrete Barrier Foil: www.rfoil.com.
 - c. Substitutions: See Section 01 6000 Product Requirements.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that surfaces and conditions are ready to accept the work of this section.

3.02 PREPARATION

A. Remove projections, protruding fasteners, and loose or foreign matter that might interfere with proper installation.

3.03 INSTALLATION

- A. Install materials in accordance with manufacturer's instructions.
- B. Water-Resistive Barriers: Install continuous barrier over surfaces indicated, with sheets lapped to shed water but with seams not sealed.
- C. Air Barriers: Install continuous air tight barrier over surfaces indicated, with sealed seams and with sealed joints to adjacent surfaces.
- D. Vapor Retarders: Install continuous air tight barrier over surfaces indicated, with sealed seams and with sealed joints to adjacent surfaces.
- E. Mechanically Fastened Sheets On Exterior:
 - 1. Install sheets shingle-fashion to shed water, with seams generally horizontal.
 - 2. Overlap seams as recommended by manufacturer but at least 6 inches.
 - 3. Overlap at outside and inside corners as recommended by manufacturer but at least 12 inches.
 - 4. For applications specified to be air tight, seal seams, laps, penetrations, tears, and cuts with self-adhesive tape; use only large-headed, gasketed fasteners recommended by the manufacturer.
 - 5. Install water-resistive barrier over jamb flashings.
 - 6. Install air barrier and vapor retarder UNDER jamb flashings.
 - 7. Install head flashings under weather barrier.
 - 8. At openings to be filled with frames having nailing flanges, wrap excess sheet into opening; at head, seal sheet over flange and flashing.
- F. Mechanically Fastened Sheets Vapor Retarder On Interior:
 - 1. When insulation is to be installed in assembly, install vapor retarder over insulation.
 - 2. Seal seams, laps, perimeter edges, penetrations, tears, and cuts with self-adhesive tape, making air tight seal.
 - 3. Locate laps at a framing member; at laps fasten one sheet to framing member then tape overlapping sheet to first sheet.
 - 4. Seal entire perimeter to structure, window and door frames, and other penetrations.
 - 5. Where conduit, pipes, wires, ducts, outlet boxes, and other items are installed in insulation cavity, pass vapor retarder sheet behind item but over insulation and maintain air tight seal.
- G. Openings and Penetrations in Exterior Weather Barriers:
 - 1. Install flashing over sills, covering entire sill frame member, extending at least 5 inches onto weather barrier and at least 6 inches up jambs; mechanically fasten stretched edges.
 - 2. At openings to be filled with frames having nailing flanges, seal head and jamb flanges using a continuous bead of sealant compressed by flange and cover flanges with at least 4 inches wide; do not seal sill flange.
 - 3. At openings to be filled with non-flanged frames, seal weather barrier to all sides of opening framing, using flashing at least 9 inches wide, covering entire depth of framing.

- 4. At head of openings, install flashing under weather barrier extending at least 2 inches beyond face of jambs; seal weather barrier to flashing.
- 5. At interior face of openings, seal gap between window/door frame and rough framing, using joint sealant over backer rod.
- 6. Service and Other Penetrations: Form flashing around penetrating item and seal to weather barrier surface.

3.04 PROTECTION

- A. Do not leave materials exposed to weather longer than recommended by manufacturer.
- B. Do not leave paper- or felt-based barriers exposed to weather for longer than one week.

3.05 INSTALLATION

- A. Install materials in accordance with manufacturer's instructions.
- B. Install air and vapor seal materials and assemblies in conjunction with materials described in other sections to provide continuous sealed barrier in the exterior enclosure of the building.
- C. Install Concrete Barrier on prepared subbase material per manufacturer's recommendations.
 1. Tape all edges and seams with 3" wide vinyl tape, see manufacturer's recommendations.
- D. At window and door openings install sheet seal between frame and adjacent wall seal material and attach with adhesive. Seal laps with sealant. Position lap seal over firm bearing.

SECTION 07 4113 METAL ROOF PANELS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Architectural roofing system of preformed steel panels.
- B. Fastening system.
- C. Factory finishing.
- D. Accessories and miscellaneous components.

1.02 RELATED REQUIREMENTS

- A. Section 06 1000 Rough Carpentry: Roof sheathing.
- B. Section 07 9200 Joint Sealants: Sealing joints between metal roof panel system and adjacent construction.

1.03 REFERENCE STANDARDS

- A. ASTM A653/A653M Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2015.
- B. ASTM D1970/D1970M Standard Specification for Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection; 2013.
- C. ASTM E84 Standard Test Method for Surface Burning Characteristics of Building Materials; 2015a.
- D. ASTM E96/E96M Standard Test Methods for Water Vapor Transmission of Materials; 2014.
- E. ASTM E1592 Standard Test Method for Structural Performance of Sheet Metal Roof and Siding Systems by Uniform Static Air Pressure Difference; 2005 (Reapproved 2012).
- F. ASTM E1646 Standard Test Method for Water Penetration of Exterior Metal Roof Panel Systems by Uniform Static Air Pressure Difference; 1995 (Reapproved 2011).
- G. ASTM E1680 Standard Test Method for Rate of Air Leakage Through Exterior Metal Roof Panel Systems; 2011.
- H. UL 580 Standard for Tests for Uplift Resistance of Roof Assemblies; Current Edition, Including All Revisions.

1.04 SUBMITTALS

- A. Product Data: Manufacturer's data sheets on each product to be used, including:
 - 1. Storage and handling requirements and recommendations.
 - 2. Installation methods.
 - 3. Specimen warranty.
- B. Shop Drawings: Include layouts of roof panels, details of edge and penetration conditions, spacing and type of connections, flashings, underlayments, and special conditions.
 - 1. Show work to be field-fabricated or field-assembled.
- C. Selection Samples: For each roofing system specified, submit color chips representing manufacturer's full range of available colors and patterns.
- D. Warranty: Submit specified manufacturer's warranty and ensure that forms have been completed in Owner's name and are registered with manufacturer.

1.05 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in the manufacture of roofing systems similar to those required for this project.
 - 1. Not less than 5 years of documented experience.
- B. Installer Qualifications: Company trained and authorized by roofing system manufacturer.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Provide strippable plastic protection on prefinished roofing panels for removal after installation.
- B. Store roofing panels on project site as recommended by manufacturer to minimize damage to panels prior to installation.

1.07 WARRANTY

- A. Finish Warranty: Provide manufacturer's special warranty covering failure of factory-applied exterior finish on metal roof panels and agreeing to repair or replace panels that show evidence of finish degradation, including significant fading, chalking, cracking, or peeling within specified warranty period of 5 year period from date of Substantial Completion.
- B. Waterproofing Warranty: Provide manufacturer's warranty for weathertightness of roofing system, including agreement to repair or replace roofing that fails to keep out water within specified warranty period of 5 years from date of Substantial Completion.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Metal Roof Panels:
 - 1. Centria; SDP 175, 1-3/4" 24ga.: www.centria.com.
 - 2. McElroy Metals; Medalion-Lok, 1-3/4" 24ga.: www.mcelroymetal.com.
 - 3. MBCI; LokSeam, 1-3/4" 24ga.: www.mbci.com

2.02 ARCHITECTURAL METAL ROOF PANELS

- A. Architectural Metal Roofing: Provide complete engineered system complying with specified requirements and capable of remaining weathertight while withstanding anticipated movement of substrate and thermally induced movement of roofing system.
- B. Metal Panels: Factory-formed panels with factory-applied finish.
 - 1. Steel Panels:
 - a. Zinc-coated steel conforming to ASTM A653/A653M; minimum G60 galvanizing.
 - b. Steel Thickness: Minimum 24 gage (0.024 inch).
 - 2. Profile: Standing seam, with minimum 1.0 inch seam height; concealed fastener system for field seaming with special tool.
 - 3. Texture: Smooth.
 - 4. Length: Full length of roof slope, without lapped horizontal joints.
 - 5. Width: 18 inches.

2.03 ATTACHMENT SYSTEM

A. Concealed System: Provide manufacturer's standard stainless steel or nylon-coated aluminum concealed anchor clips designed for specific roofing system and engineered to meet performance requirements, including anticipated thermal movement.

2.04 PANEL FINISH

A. Fluoropolymer Coating System: Manufacturer's standard multi-coat thermocured coating system, including minimum 70 percent fluoropolymer color topcoat with minimum total dry film thickness of 0.9 mil; color and gloss to match sample.

2.05 ACCESSORIES AND MISCELLANEOUS ITEMS

- A. Miscellaneous Sheet Metal Items: Provide flashings, gutters, downspouts, trim, moldings, closure strips, preformed crickets, caps, and equipment curbs of the same material, thickness, and finish as used for the roofing panels. Items completely concealed after installation may optionally be made of stainless steel.
- B. Rib and Ridge Closures: Provide prefabricated, close-fitting components of steel with corrosion resistant finish or combination steel and closed-cell foam.
- C. Sealants:
 - 1. Exposed Sealant: Elastomeric; silicone, polyurethane, or silyl-terminated polyether/polyurethane.

- 2. Concealed Sealant: Non-curing butyl sealant or tape sealant.
- 3. Seam Sealant: Factory-applied, non-skinning, non-drying type.
- D. Underlayment: Synthetic non-asphaltic sheet, intended by manufacturer for mechanically fastened roofing underlayment without sealed seams.
 - 1. Type: Woven polypropylene with anti-slip polyolefin coating on both sides.
 - 2. Self Sealability: Passing nail sealability test specified in ASTM D1970/D1970M.
 - 3. Low Temperature Flexibility: Passing test specified in ASTM D1970/D1970M.
 - 4. Water Vapor Permeance: Vapor retarder; maximum of 1 perm, when tested in accordance with ASTM E96/E96M Procedure A (desiccant method).
 - 5. Fasteners: As specified by manufacturer and building code qualification report or approval, if any.
- E. Underlayment: Self-adhering rubber-modified asphalt sheet complying with ASTM D1970/D1970M; 22 mil total thickness; with strippable release film and woven polypropylene sheet top surface.

2.06 FABRICATION

- A. Panels: Fabricate panels and accessory items at factory, using manufacturer's standard processes as required to achieve specified appearance and performance requirements.
- B. Joints: Factory-install captive gaskets, sealants, or separator strips at panel joints to provide weathertight seals, eliminate metal-to-metal contact, and minimize noise from panel movements.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Do not begin installation of preformed metal roof panels until substrates have been properly prepared.
- B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.02 PREPARATION

- A. Broom clean wood sheathing prior to installation of roofing system.
- B. Coordinate roofing work with provisions for roof drainage, flashing, trim, penetrations, and other adjoining work to assure that the completed roof will be free of leaks.
- C. Coordinate installation of waterproof membrane over roof sheathing with 06 1000.
- D. Remove protective film from surface of roof panels immediately prior to installation. Strip film carefully, to avoid damage to prefinished surfaces.
- E. Separate dissimilar metals by applying a bituminous coating, self-adhering rubberized asphalt sheet, or other permanent method approved by roof panel manufacturer.
- F. Where metal will be in contact with wood or other absorbent material subject to wetting, seal joints with sealing compound and apply one coat of heavy-bodied bituminous paint.

3.03 INSTALLATION

- A. Overall: Install roofing system in accordance with approved shop drawings and panel manufacturer's instructions and recommendations, as applicable to specific project conditions. Anchor all components of roofing system securely in place while allowing for thermal and structural movement.
 - 1. Install roofing system with concealed clips and fasteners, except as otherwise recommended by manufacturer for specific circumstances.
 - 2. Minimize field cutting of panels. Where field cutting is absolutely required, use methods that will not distort panel profiles. Use of torches for field cutting is absolutely prohibited.
- B. Accessories: Install all components required for a complete roofing assembly, including flashings, gutters, downspouts, trim, moldings, closure strips, preformed crickets, caps, equipment curbs, rib closures, ridge closures, and similar roof accessory items.

- C. Install roofing felt and building paper slip sheet on roof deck before installing preformed metal roof panels. Secure by methods acceptable to roof panel manufacturer, minimizing use of metal fasteners. Apply from eaves to ridge in shingle fashion, overlapping horizontal joints a minimum of 2 inches and side and end laps a minimum of 3 inches. Offset seams in building paper and seams in roofing felt.
- D. Roof Panels: Install panels in strict accordance with manufacturer's instructions, minimizing transverse joints except at junction with penetrations.

3.04 CLEANING

A. Clean exposed sheet metal work at completion of installation. Remove grease and oil films, excess joint sealer, handling marks, and debris from installation, leaving the work clean and unmarked, free from dents, creases, waves, scratch marks, or other damage to the finish.

3.05 PROTECTION

- A. Do not permit storage of materials or roof traffic on installed roof panels. Provide temporary walkways or planks as necessary to avoid damage to completed work. Protect roofing until completion of project.
- B. Touch-up, repair, or replace damaged roof panels or accessories before Date of Substantial Completion.

SECTION 07 4213

METAL WALL PANELS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Manufactured metal panels for soffits, with accessory components.

1.02 REFERENCE STANDARDS

- A. ASTM B209 Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate; 2014.
- B. ASTM B209M Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate [Metric]; 2014.

PART 2 PRODUCTS

2.01 MANUFACTURED METAL PANELS

- A. Soffit Panels:
 - 1. Profile: Style as indicated.
 - 2. Material: Precoated aluminum sheet, 20 gage, 0.032 inch minimum thickness.
 - 3. Color: As selected by Architect from manufacturer's standard line.
- B. Trim: Same material, thickness and finish as exterior sheets; brake formed to required profiles.
- C. Anchors: Galvanized steel, Aluminum, or Stainless steel.

2.02 MATERIALS

A. Precoated Aluminum Sheet: ASTM B209 (ASTM B209M), 3105 alloy, O temper, smooth surface texture; continuous-coil-coated on exposed surfaces with specified finish coating and on panel back with specified panel back coating.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install panels on soffits in accordance with manufacturer's instructions.
- B. Fasten panels to structural supports; aligned, level, and plumb.
- C. Locate joints over supports. Lap panel ends minimum 2 inches.

SECTION 07 4623 WOOD SIDING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Board and Panel siding for Walls .
- B. Trim, flashings, accessories, and fastenings.

1.02 RELATED REQUIREMENTS

- A. Section 06 1000 Rough Carpentry: Siding substrate.
- B. Section 07 2500 Weather Barriers: Weather barrier under siding.
- C. Section 07 6200 Sheet Metal Flashing and Trim: Product requirements for metal flashings and trim associated with wood siding for placement by this section.
- D. Section 07 9200 Joint Sealants: Sealing joints between siding and adjacent construction and fixtures.

1.03 REFERENCE STANDARDS

A. APA B840 - 303 Siding Manufacturing Specifications; 2012.

1.04 SUBMITTALS

A. Product Data: Provide data indicating materials, component profiles, fastening methods, jointing details, sizes, surface texture, finishes, and accessories.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. LP SmartSide: www.lpsmartside.com.

2.02 SIDING

- A. Board Siding: Flat, treated engineered wood.
 - 1. Size: 0.375 inch thick, 7.84 inch high nominal board with 1.25 inch lap.
 - 2. Profile: Lap.
 - 3. Surface Texture: Cedar Texture.
- B. Siding Panels: APA B840 Rated Siding 303-6-S/W, Exterior exposure class, panel style.
 - 1. Panel Size: 48 inch size sheet, 3/8 inch thick.
 - 2. Texture/Pattern: Vertical channel cut at 8 inches on center.

2.03 ACCESSORIES

- A. Screws: Corrosion resistant type; non-staining, of size and strength to securely and rigidly retain the work.
- B. Flashing: Galvanized steel, 28 gage, 0.0149 inch minimum base metal thickness.
- C. Accessory Components: Fascias of same material and finish as siding.
- D. Prime Paint: Latex base primer enamel.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that substrates are ready to receive work.
- B. Verify that weather barrier has been installed over substrate completely and correctly.
- C. Do not begin until unacceptable conditions have been corrected.
- D. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.02 INSTALLATION

A. Install siding in accordance with manufacturer's instructions.

- 1. Fasten siding to metal studs at 16 inches on center; attachment to sheathing is not acceptable.
- B. Fasten siding in place, level and plumb.
 - 1. Arrange for orderly nailing pattern. Blind nail except on over trim.
 - 2. Install siding for natural shed of water.
 - 3. Position cut ends over bearing surfaces. Sand cut edges smooth and clean.
- C. Install panel siding sheets vertically with edges and ends over firm bearing.
- D. Install corner strips and trim.
- E. Touch-up prefinished paint surfaces that are disfigured. Unsightly touch-up will require removal and replacement of affected siding.
- F. Prime/paint all cut edges prior to installing.
- G. Sand work smooth and set exposed nails and screws.

SECTION 07 6200

SHEET METAL FLASHING AND TRIM

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Fabricated sheet metal items, including flashings, counterflashings, gutters, and downspouts.
- B. Sealants for joints within sheet metal fabrications.

1.02 RELATED REQUIREMENTS

- A. Section 06 1000 Rough Carpentry: Wood nailers for sheet metal work.
- B. Section 07 9200 Joint Sealants: Sealing non-lap joints between sheet metal fabrications and adjacent construction.

1.03 REFERENCE STANDARDS

- A. AAMA 611 Voluntary Specification for Anodized Architectural Aluminum; 2012.
- B. ASTM A653/A653M Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2015.
- C. ASTM B209 Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate; 2014.
- D. ASTM B209M Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate [Metric]; 2014.
- E. ASTM C920 Standard Specification for Elastomeric Joint Sealants; 2014.
- F. ASTM D4586/D4586M Standard Specification for Asphalt Roof Cement, Asbestos-Free; 2007 (Reapproved 2012).
- G. CDA A4050 Copper in Architecture Handbook; current edition.
- H. SMACNA (ASMM) Architectural Sheet Metal Manual; 2012.

1.04 SUBMITTALS

A. Shop Drawings: Indicate material profile, jointing pattern, jointing details, fastening methods, flashings, terminations, and installation details.

1.05 QUALITY ASSURANCE

A. Perform work in accordance with SMACNA (ASMM) and CDA A4050 requirements and standard details, except as otherwise indicated.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Stack material to prevent twisting, bending, and abrasion, and to provide ventilation. Slope metal sheets to ensure drainage.
- B. Prevent contact with materials that could cause discoloration or staining.

PART 2 PRODUCTS

2.01 SHEET MATERIALS

- A. Galvanized Steel: ASTM A653/A653M, with G90/Z275 zinc coating; minimum 24 gage (0.0239 inch) thick base metal.
- B. Aluminum: ASTM B209 (ASTM B209M); 20 gage (0.032 inch) thick; anodized finish of color as selected.
 - 1. Color Anodized Finish: AAMA 611 AA-M12C22A42/44 Class I integrally or electrolytically colored anodic coating not less than 0.7 mils thick.

2.02 ACCESSORIES

- A. Fasteners: Galvanized steel, with soft neoprene washers.
- B. Primer: Zinc chromate type.
- C. Protective Backing Paint: Zinc molybdate alkyd.

- D. Sealant to be Concealed in Completed Work: Non-curing butyl sealant.
- E. Sealant to be Exposed in Completed Work: ASTM C920; elastomeric sealant, 100 percent silicone with minimum movement capability of plus/minus 25 percent and recommended by manufacturer for substrates to be sealed; clear.
- F. Plastic Cement: ASTM D4586/D4586M, Type I.

2.03 FABRICATION

- A. Form sections true to shape, accurate in size, square, and free from distortion or defects.
- B. Form pieces in longest possible lengths.
- C. Hem exposed edges on underside 1/2 inch; miter and seam corners.
- D. Form material with flat lock seams, except where otherwise indicated. At moving joints, use sealed lapped, bayonet-type or interlocking hooked seams.
- E. Fabricate corners from one piece with minimum 18 inch long legs; seam for rigidity, seal with sealant.
- F. Fabricate vertical faces with bottom edge formed outward 1/4 inch and hemmed to form drip.
- G. Fabricate flashings to allow toe to extend 2 inches over roofing gravel. Return and brake edges.

2.04 GUTTER AND DOWNSPOUT FABRICATION

- A. Gutters: SMACNA (ASMM), Rectangular profile.
- B. Downspouts: Rectangular profile.
- C. Gutters and Downspouts: Size indicated.
- D. Accessories: Profiled to suit gutters and downspouts.
 - 1. Anchorage Devices: In accordance with SMACNA requirements.
 - 2. Gutter Supports: Brackets.
 - 3. Downspout Supports: Brackets.
- E. Downspout Boots: Plastic.
- F. Seal metal joints.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify roof openings, curbs, pipes, sleeves, ducts, and vents through roof are solidly set, reglets in place, and nailing strips located.
- B. Verify roofing termination and base flashings are in place, sealed, and secure.

3.02 PREPARATION

- A. Install starter and edge strips, and cleats before starting installation.
- B. Back paint concealed metal surfaces with protective backing paint to a minimum dry film thickness of 15 mil.

3.03 INSTALLATION

- A. Secure flashings in place using concealed fasteners. Use exposed fasteners only where permitted.
- B. Apply plastic cement compound between metal flashings and felt flashings.
- C. Fit flashings tight in place. Make corners square, surfaces true and straight in planes, and lines accurate to profiles.
- D. Secure gutters and downspouts in place using fasteners.
- E. Slope gutters 1/4 inch per 10 feet, minimum.
- F. Connect downspouts to downspout boots. Grout connection watertight.

SECTION 07 7200

ROOF ACCESSORIES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Snow guards.

1.02 RELATED REQUIREMENTS

- A. Section 07 4113 Metal Roof Panels.
- B. Section 07 6200 Sheet Metal Flashing and Trim: Roof accessory items fabricated from sheet metal.

1.03 REFERENCE STANDARDS

A. MSS SP-58 - Pipe Hangers and Supports - Materials, Design, Manufacture, Selection, Application, and Installation; 2009.

1.04 SUBMITTALS

- A. Product Data: Manufacturer's data sheets on each product to be used.
 - 1. Preparation instructions and recommendations.
 - 2. Storage and handling requirements and recommendations.
 - 3. Installation methods.
 - 4. Maintenance requirements.

PART 2 PRODUCTS

2.01 SNOW GUARDS

- A. Fence Type Snow Guard: Continuous snow guard; tubing set in brackets; two pipe-style.
 - 1. Brackets: Aluminum.
 - 2. Tubing: Aluminum.
 - a. Outside Diameter: 1 inch.
 - b. Sleeve Couplings: As recommended by manufacturer.
 - c. End Collars and Caps: Metal to match.
 - d. Ice Flags: Metal to match.
 - 3. Color: Powder Coated, to be selected by Architect from manufactures standards.
- B. Clamps for Standing Seam Roof: Aluminum clamps attached to standing seams of roof panels; for attachment of fence type snow guard.
 - 1. Seam Profile: Selected by Architect from manufacturer's standard range; match profile of metal roof.
 - 2. Clamp Spacing: Every panel seam; maximum spacing of 24 inches.
 - 3. Color: Powder Coated, to be selected by Architect from manufactures standards.
- C. Manufacturers:
 - 1. Alpine Snow Guards: www.alpinesnowguards.com.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Do not begin installation until substrates have been properly prepared.
- B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.02 PREPARATION

- A. Clean surfaces thoroughly prior to installation.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.03 INSTALLATION

A. Install in accordance with manufacturer's instructions, in manner that maintains roofing weather integrity.

3.04 CLEANING

A. Clean installed work to like-new condition.

3.05 PROTECTION

- A. Protect installed products until completion of project.
- B. Touch-up, repair or replace damaged products before Date of Substantial Completion.

SECTION 07 8400 FIRESTOPPING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Firestopping systems.
- B. Firestopping of all joints and penetrations in fire resistance rated and smoke resistant assemblies, whether indicated on drawings or not, and other openings indicated.

1.02 RELATED REQUIREMENTS

A. Section 09 2116 - Gypsum Board Assemblies: Gypsum wallboard fireproofing.

1.03 REFERENCE STANDARDS

- A. ASTM E119 Standard Test Methods for Fire Tests of Building Construction and Materials; 2015.
- B. ASTM E814 Standard Test Method for Fire Tests of Through-Penetration Fire Stops; 2013a.
- C. ITS (DIR) Directory of Listed Products; current edition.
- D. FM 4991 Approval Standard for Firestop Contractors; 2013.
- E. FM (AG) FM Approval Guide; current edition.
- F. SCAQMD 1168 South Coast Air Quality Management District Rule No.1168; current edition.
- G. UL (FRD) Fire Resistance Directory; current edition.

1.04 SUBMITTALS

- A. Schedule of Firestopping: List each type of penetration, fire rating of the penetrated assembly, and firestopping test or design number.
- B. Product Data: Provide data on product characteristics, performance ratings, and limitations.
- C. Manufacturer's Installation Instructions: Indicate preparation and installation instructions.
- D. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.
- E. Certificate from authority having jurisdiction indicating approval of materials used.
- F. Installer Qualification: Submit qualification statements for installing mechanics.

1.05 QUALITY ASSURANCE

- A. Fire Testing: Provide firestopping assemblies of designs that provide the scheduled fire ratings when tested in accordance with methods indicated.
 - 1. Listing in UL (FRD), FM (AG), or ITS (DIR) will be considered as constituting an acceptable test report.
 - 2. Valid evaluation report published by ICC Evaluation Service, Inc. (ICC-ES) at www.icc-es.org will be considered as constituting an acceptable test report.
 - 3. Submission of actual test reports is required for assemblies for which none of the above substantiation exists.
- B. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.
- C. Installer Qualifications: Company specializing in performing the work of this section and:
 - 1. Approved by Factory Mutual Research Corporation under FM 4991, or meeting any two of the following requirements:.
 - 2. With minimum 3 years documented experience installing work of this type.
 - 3. Able to show at least 5 satisfactorily completed projects of comparable size and type.
 - 4. Licensed by authority having jurisdiction.

1.06 FIELD CONDITIONS

- A. Comply with firestopping manufacturer's recommendations for temperature and conditions during and after installation. Maintain minimum temperature before, during, and for 3 days after installation of materials.
- B. Provide ventilation in areas where solvent-cured materials are being installed.

PART 2 PRODUCTS

2.01 FIRESTOPPING - GENERAL REQUIREMENTS

A. Primers, Sleeves, Forms, Insulation, Packing, Stuffing, and Accessories: Type required for tested assembly design.

2.02 FIRESTOPPING SYSTEMS

- A. Firestopping: Any material meeting requirements.
 - 1. Fire Ratings: Use any system that is listed by FM (AG), ITS (DIR), or UL (FRD) and tested in accordance with ASTM E814 or ASTM E119 with F Rating equal to fire rating of penetrated assembly and minimum T Rating Equal to F Rating and in compliance with other specified requirements.

2.03 MATERIALS

- A. Firestopping Sealants: Provide only products having lower volatile organic compound (VOC) content than required by South Coast Air Quality Management District Rule No.1168.
- B. Elastomeric Silicone Firestopping: Single component silicone elastomeric compound and compatible silicone sealant; conforming to the following:
 - 1. Durability and Longevity: Permanent.
 - 2. Color: Black, dark gray, or red.
 - 3. Manufacturers:
 - a. A/DFire Protection Systems Inc: www.adfire.com.
 - b. 3M Fire Protection Products: www.3m.com/firestop.
 - c. Hilti, Inc: www.us.hilti.com.
 - d. Specified Technologies, Inc: www.stifirestop.com.
 - e. Substitutions: See Section 01 6000 Product Requirements.
- C. Foam Firestoppping: Single component silicone foam compound; conforming to the following:
 - 1. Durability and Longevity: Permanent.
 - 2. Color: Dark grey.
 - 3. Manufacturers:
 - a. 3M Fire Protection Products: www.3m.com/firestop.
 - b. Hilti, Inc: www.us.hilti.com.
 - c. Specified Technologies, Inc: www.stifirestop.com.
 - d. Substitutions: See Section 01 6000 Product Requirements.
- D. Fibered Compound Firestopping: Formulated compound mixed with incombustible non-asbestos fibers; conforming to the following:
 - 1. Durability and Longevity: Permanent.
 - 2. Color: Dark grey.
 - 3. Manufacturers:
 - a. A/DFire Protection Systems Inc: www.adfire.com.
 - b. USG: www.usg.com.
 - c. Substitutions: See Section 01 6000 Product Requirements.
- E. Fiber Firestopping: Mineral fiber insulation used in conjunction with elastomeric surface sealer forming airtight bond to opening; conforming to the following:
 - 1. Durability and Longevity: Permanent.
 - 2. Manufacturers:
 - a. A/DFire Protection Systems Inc: www.adfire.com.
 - b. Pecora Corporation: www.pecora.com.

- c. Thermafiber, Inc: www.thermafiber.com.
- d. Substitutions: See Section 01 6000 Product Requirements.
- F. Firestop Devices Wrap Type: Mechanical device with incombustible filler and sheet stainless steel jacket, intended to be installed after penetrating item has been installed; conforming to the following:
 - 1. Durability and Longevity: Permanent; suitable for pedestrian traffic.
 - 2. Manufacturers:
 - a. RectorSeal: www.rectorseal.com.
 - b. 3M Fire Protection Products: www.3m.com/firestop.
 - c. Hilti, Inc: www.us.hilti.com.
 - d. Specified Technologies, Inc: www.stifirestop.com.
 - e. Substitutions: See Section 01 6000 Product Requirements.
- G. Firestop Devices Cast-In Type: Sleeve and sealing material, intended to be cast in concrete floor forms or in concrete on metal deck, not requiring any additional materials to achieve penetration seal.
 - 1. Durability and Longevity: Permanent.
 - 2. Manufacturers:
 - a. 3M Fire Protection Products: www.3m.com/firestop.
 - b. Hilti, Inc: www.us.hilti.com.
 - c. Substitutions: See Section 01 6000 Product Requirements.
- H. Intumescent Putty: Compound that expands on exposure to surface heat gain; conforming to the following:
 - 1. Durability and Longevity: Permanent.
 - 2. Color: Black, dark gray, or red.
 - 3. Manufacturers:
 - a. RectorSeal: www.rectorseal.com.
 - b. 3M Fire Protection Products: www.3m.com/firestop.
 - c. Hilti, Inc: www.us.hilti.com.
 - d. Specified Technologies, Inc: www.stifirestop.com.
 - e. Substitutions: See Section 01 6000 Product Requirements.
- I. Reusable Firestopping: Removable intumescent compressible shapes, pillows, or blocks specifically tested in removable configuration; conforming to the following:
 - 1. Durability and Longevity: Permanent.
 - 2. Manufacturers:
 - a. RectorSeal: www.rectorseal.com.
 - b. Hilti, Inc: www.us.hilti.com.
 - c. Nelson FireStop Products: www.nelsonfirestop.com.
 - d. Specified Technologies, Inc: www.stifirestop.com.
 - e. Substitutions: See Section 01 6000 Product Requirements.
- J. Primers, Sleeves, Forms, Insulation, Packing, Stuffing, and Accessories: Type required for tested assembly design.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify openings are ready to receive the work of this section.

3.02 PREPARATION

- A. Clean substrate surfaces of dirt, dust, grease, oil, loose material, or other matter that could adversely affect bond of firestopping material.
- B. Remove incompatible materials that could adversely affect bond.
- C. Install backing materials to arrest liquid material leakage.

3.03 INSTALLATION

- A. Install materials in manner described in fire test report and in accordance with manufacturer's instructions, completely closing openings.
- B. Do not cover installed firestopping until inspected by authorities having jurisdiction.

3.04 CLEANING

A. Clean adjacent surfaces of firestopping materials.

3.05 PROTECTION

A. Protect adjacent surfaces from damage by material installation.

SECTION 07 9200 JOINT SEALANTS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Nonsag gunnable joint sealants.
- B. Self-leveling pourable joint sealants.
- C. Joint backings and accessories.

1.02 REFERENCE STANDARDS

- A. ASTM C661 Standard Test Method for Indentation Hardness of Elastomeric-Type Sealants by Means of a Durometer; 2006 (Reapproved 2011).
- B. ASTM C834 Standard Specification for Latex Sealants; 2014.
- C. ASTM C920 Standard Specification for Elastomeric Joint Sealants; 2014.
- D. ASTM C1193 Standard Guide for Use of Joint Sealants; 2013.

1.03 SUBMITTALS

- A. Product Data for Sealants: Submit manufacturer's technical data sheets for each product to be used, that includes the following.
 - 1. Physical characteristics, including movement capability, VOC content, hardness, cure time, and color availability.
 - 2. List of backing materials approved for use with the specific product.
 - 3. Substrates that product is known to satisfactorily adhere to and with which it is compatible.
 - 4. Substrates the product should not be used on.
- B. Color Cards for Selection: Where sealant color is not specified, submit manufacturer's color cards showing standard colors available for selection.

1.04 QUALITY ASSURANCE

- A. Maintain one copy of each referenced document covering installation requirements on site.
- B. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.

1.05 WARRANTY

- A. See Section 01 7800 Closeout Submittals, for additional warranty requirements.
- B. Correct defective work within a five year period after Date of Substantial Completion.
- C. Warranty: Include coverage for installed sealants and accessories that fail to achieve watertight seal, exhibit loss of adhesion or cohesion, or do not cure.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Non-Sag Sealants: Permits application in joints on vertical surfaces without sagging or slumping.
 - 1. Sherwin-Williams Company: www.sherwin-williams.com.
 - 2. Sika Corporation: www.usa-sika.com.
- B. Self-Leveling Sealants: Pourable or self-leveling sealant that has sufficient flow to form a smooth, level surface when applied in a horizontal joint.
 - 1. Sika Corporation: www.usa-sika.com.

2.02 JOINT SEALANT APPLICATIONS

- A. Scope:
 - 1. Exterior Joints: Seal open joints, whether or not the joint is indicated on the drawings, unless specifically indicated not to be sealed. Exterior joints to be sealed include, but are not limited to, the following items.

- a. Wall expansion and control joints.
- b. Joints between door, window, and other frames and adjacent construction.
- c. Joints between different exposed materials.
- d. Openings below ledge angles in masonry.
- e. Concrete expansion joints..
- f. Other joints indicated below.
- 2. Interior Joints: Do not seal interior joints unless specifically indicated to be sealed. Interior joints to be sealed include, but are not limited to, the following items.
 - a. Joints between door, window, and other frames and adjacent construction.
 - b. Other joints indicated below.
- 3. Do not seal the following types of joints.
 - a. Intentional weepholes in masonry.
 - b. Joints indicated to be treated with manufactured expansion joint cover or some other type of sealing device.
 - c. Joints where sealant is specified to be provided by manufacturer of product to be sealed.
 - d. Joints where installation of sealant is specified in another section.
 - e. Joints between suspended panel ceilings/grid and walls.
- B. Exterior Joints: Use nonsag polyurethane sealant, Type II, Class A. Meets ASTM C-920, Type S, Grade NS, Class 35, use T, NT, O, M, G, I, unless otherwise indicated.
 - Control and Expansion Joints in Concrete Paving: Self-leveling polyurethane "traffic-grade" sealant; Type 1, Class A. Meets ASTM C-920, Type S, Grade P, Class 25, use T, M, A, G, I.
- C. Interior Joints: Use nonsag Acrylic emulsion latex sealant, Type OP, Grade NF, Meets ASTM C-834, unless otherwise indicated.
 - 1. Wall and Ceiling Joints in Non-Wet Areas: Acrylic emulsion latex sealant; Type OP, Grade NF, Meets ASTM C-834.
 - 2. Wall and Ceiling Joints in Wet Areas: Non-sag polyurethane sealant for continuous liquid immersion; Type 2, Class A. Meets ASTM C-920, Type S, Grade NS, Class 35, use T, NT, O, M, G, I.
 - 3. Floor Joints in Wet Areas: Self-leveling polyurethane "traffic-grade" sealant suitable for continuous liquid immersion; Type 1, Class A. Meets ASTM C-920, Type S, Grade P, Class 25, use T, M, A, G, I.
 - 4. Joints between Fixtures in Wet Areas and Floors, Walls, and Ceilings: Mildew-resistant silicone sealant; white.
 - 5. Other Floor Joints: Self-leveling polyurethane "traffic-grade" sealant; Type 1, Class A. Meets ASTM C-920, Type S, Grade P, Class 25, use T, M, A, G, I.
- D. Interior Wet Areas: Bathrooms, restrooms, kitchens, food service areas, and food processing areas; fixtures in wet areas include plumbing fixtures, food service equipment, countertops, cabinets, and other similar items.

2.03 NONSAG JOINT SEALANTS

- A. Mildew-Resistant Silicone Sealant: ASTM C920, Grade NS, Uses M and A; single component, mildew resistant; not expected to withstand continuous water immersion or traffic.
 - 1. Color: White.
 - 2. Manufacturers:

a. Sika Corporation; Sikasil GP: www.usa-sika.com.

- B. Polyurethane Sealant: ASTM C920, Grade NS, Uses M and A; single component; not expected to withstand continuous water immersion or traffic.
 - 1. Movement Capability: Plus and minus 25 percent, minimum.
 - 2. Hardness Range: 35 to 45, Shore A, when tested in accordance with ASTM C661.
 - 3. Color: Match adjacent finished surfaces.
 - 4. Service Temperature Range: minus 40 to 170 degrees F.
 - 5. Manufacturers:

- a. Sika Corporation; Sikaflex-1a: www.usa-sika.com.
- C. Polyurethane Sealant for Continuous Water Immersion: ASTM C920, Grade NS, Uses M and A; single or multi-component; explicitly approved by manufacturer for continuous water immersion; suitable for traffic exposure when recessed below traffic surface.
 - 1. Movement Capability: Plus and minus 35 percent, minimum.
 - 2. Manufacturers:
 - a. Sika Corporation; Sikaflex-1a: www.usa-sika.com.
- D. Acrylic Emulsion Latex: Water-based; ASTM C834, single component, non-staining, non-bleeding, non-sagging; not intended for exterior use.
 - 1. Color: Standard colors matching finished surfaces, Type OP (opaque).
 - 2. Manufacturers:
 - a. Sherwin-Williams Company; 950A Siliconized Acrylic Latex Caulk: www.sherwin-williams.com.

2.04 SELF-LEVELING SEALANTS

- A. Self-Leveling Polyurethane Sealant: ASTM C920, Grade P, Uses M and A; single component; explicitly approved by manufacturer for traffic exposure; not expected to withstand continuous water immersion.
 - 1. Movement Capability: Plus and minus 25 percent, minimum.
 - 2. Hardness Range: 35 to 45, Shore A, when tested in accordance with ASTM C661.
 - 3. Color: Gray.
 - 4. Service Temperature Range: Minus 40 to 170 degrees F.
 - 5. Manufacturers:
 - a. Sika Corporation; Sikaflex-1c SL: www.usa-sika.com.
- B. Self-Leveling Polyurethane Sealant for Continuous Water Immersion: Polyurethane; ASTM C920, Grade P, Uses M and A; single component; explicitly approved by manufacturer for traffic exposure and continuous water immersion.
 - 1. Movement Capability: Plus and minus 25 percent, minimum.
 - 2. Manufacturers:
 - a. Sika Corporation; Sikaflex-1c SL: www.usa-sika.com.

2.05 ACCESSORIES

- A. Backer Rod: Cylindrical cellular foam rod with surface that sealant will not adhere to, compatible with specific sealant used, and recommended by backing and sealant manufacturers for specific application.
- B. Backing Tape: Self-adhesive polyethylene tape with surface that sealant will not adhere to and recommended by tape and sealant manufacturers for specific application.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that joints are ready to receive work.
- B. Verify that backing materials are compatible with sealants.
- C. Verify that backer rods are of the correct size.

3.02 PREPARATION

- A. Remove loose materials and foreign matter that could impair adhesion of sealant.
- B. Clean joints, and prime as necessary, in accordance with manufacturer's instructions.
- C. Perform preparation in accordance with manufacturer's instructions and ASTM C1193.
- D. Mask elements and surfaces adjacent to joints from damage and disfigurement due to sealant work; be aware that sealant drips and smears may not be completely removable.
- E. Concrete Floor Joints That Will Be Exposed in Completed Work: Test joint filler in inconspicuous area to verify that it does not stain or discolor slab.

3.03 INSTALLATION

- A. Perform work in accordance with sealant manufacturer's requirements for preparation of surfaces and material installation instructions.
- B. Perform installation in accordance with ASTM C1193.
- C. Install bond breaker backing tape where backer rod cannot be used.
- D. Install sealant free of air pockets, foreign embedded matter, ridges, and sags, and without getting sealant on adjacent surfaces.
- E. Do not install sealant when ambient temperature is outside manufacturer's recommended temperature range, or will be outside that range during the entire curing period, unless manufacturer's approval is obtained and instructions are followed.
- F. Nonsag Sealants: Tool surface slightly recessed, unless otherwise indicated; remove masking tape immediately after tooling sealant surface.

SECTION 08 1113

HOLLOW METAL DOORS AND FRAMES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Non-fire-rated hollow metal doors and frames.
- B. Hollow metal frames for wood doors.
- C. Fire-rated hollow metal doors and frames.
- D. Thermally insulated hollow metal doors with frames.
- E. Hollow metal borrowed lites glazing frames.

1.02 RELATED REQUIREMENTS

- A. Section 08 7100 Door Hardware.
- B. Section 08 8000 Glazing: Glass for doors and borrowed lites.
- C. Section 09 9113 Exterior Painting: Field painting.
- D. Section 09 9123 Interior Painting: Field painting.

1.03 REFERENCE STANDARDS

- A. ADA Standards Americans with Disabilities Act (ADA) Standards for Accessible Design; 2010.
- B. ANSI/ICC A117.1 American National Standard for Accessible and Usable Buildings and Facilities; International Code Council; 2009.
- C. ANSI/SDI A250.4 Test Procedure and Acceptance Criteria for Physical Endurance for Steel Doors, Frames and Frame Anchors; 2011.
- D. ANSI/SDI A250.8 Specifications for Standard Steel Doors and Frames (SDI-100); 2014.
- E. ANSI/SDI A250.10 Test Procedure and Acceptance Criteria for Prime Painted Steel Surfaces for Steel Doors and Frames; 2011.
- F. ASTM A653/A653M Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2015.
- G. ASTM A1008/A1008M Standard Specification for Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, Solution Hardened, and Bake Hardenable; 2016.
- H. ASTM A1011/A1011M Standard Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, and Ultra-High Strength; 2014.
- I. BHMA A156.115 American National Standard for Hardware Preparation in Steel Doors and Steel Frames; 2014.
- J. ICC A117.1 Accessible and Usable Buildings and Facilities; 2009.
- K. ITS (DIR) Directory of Listed Products; current edition.
- L. NAAMM HMMA 830 Hardware Selection for Hollow Metal Doors and Frames; 2002.
- M. NAAMM HMMA 831 Hardware Locations for Hollow Metal Doors and Frames; 2011.
- N. NAAMM HMMA 840 Guide Specifications for Installation and Storage of Hollow Metal Doors and Frames; 2007.
- O. NAAMM HMMA 860 Guide Specifications for Hollow Metal Doors and Frames; 2013.
- P. NAAMM HMMA 861 Guide Specifications for Commercial Hollow Metal Doors and Frames; 2006.
- Q. NFPA 80 Standard for Fire Doors and Other Opening Protectives; 2016.
- R. NFPA 252 Standard Methods of Fire Tests of Door Assemblies; 2012.
- S. UL (DIR) Online Certifications Directory; current listings at database.ul.com.

- T. UL 10B Standard for Fire Tests of Door Assemblies; Current Edition, Including All Revisions.
- U. UL 1784 Standard for Air Leakage Tests of Door Assemblies; Current Edition, Including All Revisions.

1.04 SUBMITTALS

- A. Product Data: Materials and details of design and construction, hardware locations, reinforcement type and locations, anchorage and fastening methods, and finishes; and one copy of referenced standards/guidelines.
- B. Shop Drawings: Details of each opening, showing elevations, glazing, frame profiles, and any indicated finish requirements.
- C. Installation Instructions: Manufacturer's published instructions, including any special installation instructions relating to this project.
- D. Manufacturer's Certificate: Certification that products meet or exceed specified requirements.

1.05 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.
- B. Copies of Documents at Project Site: Maintain at the project site a copy of each referenced document that prescribes installation requirements.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Comply with NAAMM HMMA 840 or ANSI/SDI A250.8 (SDI-100) in accordance with specified requirements.
- B. Protect with resilient packaging; avoid humidity build-up under coverings; prevent corrosion and adverse effects on factory applied painted finish.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Hollow Metal Doors and Frames:
 - 1. Ceco Door, an Assa Abloy Group company: www.assaabloydss.com.
 - 2. Republic Doors: www.republicdoor.com.
 - 3. Steelcraft, an Allegion brand: www.allegion.com/us.

2.02 DESIGN CRITERIA

- A. Requirements for Hollow Metal Doors and Frames:
 - 1. Steel used for fabrication of doors and frames shall comply with one or more of the following requirements; Galvannealed steel conforming to ASTM A653/A653M, cold-rolled steel conforming to ASTM A1008/A1008M, or hot-rolled pickled and oiled (HRPO) steel conforming to ASTM A1011/A1011M, Commercial Steel (CS) Type B for each.
 - 2. Accessibility: Comply with ICC A117.1 and ADA Standards.
 - 3. Door Top Closures: Flush end closure channel, with top and door faces aligned.
 - 4. Door Edge Profile: Hinged edge square, and lock edge beveled.
 - 5. Typical Door Face Sheets: Flush.
 - 6. Glazed Lights: Non-removable stops on non-secure side; sizes and configurations as indicated on drawings. Style: Manufacturers standard.
 - 7. Hardware Preparations, Selections and Locations: Comply with NAAMM HMMA 830 and NAAMM HMMA 831 or BHMA A156.115 and ANSI/SDI A250.8 (SDI-100) in accordance with specified requirements.
 - 8. Zinc Coating for Typical Interior and/or Exterior Locations: Provide metal components zinc-coated (galvanized) and/or zinc-iron alloy-coated (galvannealed) by the hot-dip process in accordance with ASTM A653/A653M, with manufacturer's standard coating thickness, unless noted otherwise for specific hollow metal doors and frames.
- B. Combined Requirements: If a particular door and frame unit is indicated to comply with more than one type of requirement, comply with the specified requirements for each type; for

instance, an exterior door that is also indicated as being sound-rated must comply with the requirements specified for exterior doors and for sound-rated doors; where two requirements conflict, comply with the most stringent.

2.03 HOLLOW METAL DOORS

2.

1.

- A. Exterior Doors: Thermally insulated.
 - 1. Based on SDI Standards: ANSI/SDI A250.8 (SDI-100).
 - a. Level 3 Extra Heavy-duty.
 - b. Physical Performance Level A, 1,000,000 cycles; in accordance with ANSI/SDI A250.4.
 - c. Model 1 Full Flush.
 - d. Door Face Metal Thickness: 16 gage, 0.053 inch, minimum.
 - e. Zinc Coating: A60/ZF180 galvannealed coating; ASTM A653/A653M.
 - Core Material: Polyurethane, 1.8 lbs/cu ft minimum density.
 - 3. Door Thermal Resistance: R-Value of 8.7, minimum, for installed thickness of polyurethane.
 - 4. Door Thickness: 1-3/4 inch, nominal.
 - 5. Weatherstripping: Refer to Section 08 7100.
 - 6. Door Finish: Factory primed and field finished.
- B. Interior Doors, Non-Fire Rated:
 - Based on SDI Standards: ANSI/SDI A250.8 (SDI-100).
 - a. Level 1 Standard-duty.
 - b. Physical Performance Level C, 250,000 cycles; in accordance with ANSI/SDI A250.4.
 - c. Model 1 Full Flush.
 - d. Door Face Metal Thickness: 20 gage, 0.032 inch, minimum.
 - 2. Core: Polystyrene foam where indicated as insulated.
 - 3. Door Thickness: 1-3/4 inch, nominal.
 - 4. Door Finish: Factory primed and field finished.
 - 5. Galvanizing: All components hot-dipped zinc-iron alloy-coated (galvannealed) in accordance with ASTM A653/A653M, with manufacturer's standard coating thickness.
 - a. Interior doors to be galvanized where indentified per Door Schedule.
- C. Fire-Rated Doors:
 - 1. Based on SDI Standards: ANSI/SDI A250.8 (SDI-100).
 - a. Level 2 Heavy-duty.
 - b. Physical Performance Level B, 500,000 cycles; in accordance with ANSI/SDI A250.4.
 - c. Model 1 Full Flush.
 - d. Door Face Metal Thickness: 18 gage, 0.042 inch, minimum.
 - 2. Fire Rating: As indicated on Door ScheduleAs indicated on drawings, tested in accordance with UL 10B or NFPA 252 ("neutral pressure").
 - a. Provide units listed and labeled by UL (DIR) or ITS (DIR).
 - b. Attach fire rating label to each fire rated unit.
 - 3. Core Material: Manufacturers standard core material/construction in compliance with requirements.
 - 4. Door Thickness: 1-3/4 inch, nominal.
 - 5. Door Finish: Factory primed and field finished.

2.04 HOLLOW METAL FRAMES

- A. Comply with standards and/or custom guidelines as indicated for corresponding door in accordance with applicable door frame requirements.
- B. Frame Finish: Factory primed and field finished.
- C. Exterior Door Frames: Knock-down type.
 - 1. Galvanizing: Components hot-dipped zinc-iron alloy-coated (galvannealed) in accordance with ASTM A653/A653M, with A40/ZF120 coating.
 - 2. Weatherstripping: Separate, see Section 08 7100.

- 3. Insulating: Fill frames with low expanding spray foam insulation.
- D. Interior Door Frames, Non-Fire Rated: Full profile/continuously welded type.
- E. Door Frames, Fire-Rated: Knock-down type.
 - 1. Fire Rating: Same as door, labeled.
- F. Frames for Wood Doors: Comply with frame requirements in accordance with corresponding door.
- G. Borrowed Lites Glazing Frames: Construction and face dimensions to match door frames, and as indicated on drawings.

2.05 ACCESSORIES

- A. Louvers: Roll formed steel with overlapping frame; finish same as door components.
 1. In Fire-Rated Doors: UL (DIR) or ITS (DIR) listed fusible link louver, same rating as door.
- B. Glazing: As specified in Section 08 8000, factory installed.
- C. Insulation for Frames: Low expanding spray foam.
- D. Grout for Frames: Portland cement grout with maximum 4 inch slump for hand troweling; thinner pumpable grout is prohibited.
- E. Silencers: Resilient rubber, fitted into drilled hole; 3 on strike side of single door, 3 on center mullion of pairs, and 2 on head of pairs without center mullions.
- F. Temporary Frame Spreaders: Provide for factory- or shop-assembled frames.

2.06 FINISHES

- A. Primer: Rust-inhibiting, complying with ANSI/SDI A250.10, door manufacturer's standard.
- B. Bituminous Coating: Asphalt emulsion or other high-build, water-resistant, resilient coating.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify existing conditions before starting work.
- B. Verify that opening sizes and tolerances are acceptable.
- C. Verify that finished walls are in plane to ensure proper door alignment.

3.02 PREPARATION

- A. Coat inside of frames to be installed in masonry or to be grouted, with bituminous coating, prior to installation.
- B. Coat inside of other frames with bituminous coating to a thickness of 1/16 inch.

3.03 INSTALLATION

- A. Install doors and frames in accordance with manufacturer's instructions and related requirements of specified door and frame standards or custom guidelines indicated.
- B. Install fire rated units in accordance with NFPA 80.
- C. Coordinate frame anchor placement with wall construction.
- D. Grout frames in masonry construction, using hand trowel methods; brace frames so that pressure of grout before setting will not deform frames.
- E. Coordinate installation of hardware.
- F. Coordinate installation of glazing.
- G. Coordinate installation of electrical connections to electrical hardware items.
- H. Touch up damaged factory finishes.

3.04 TOLERANCES

A. Clearances Between Door and Frame: Comply with related requirements of specified door and frame standards or custom guidelines indicated.

B. Maximum Diagonal Distortion: 1/16 in measured with straight edge, corner to corner.

3.05 ADJUSTING

- A. Adjust for smooth and balanced door movement.
- B. Adjust sound control doors so that seals are fully engaged when door is closed.
- C. Test sound control doors for force to close, latch, and unlatch; adjust as necessary in compliance with requirements.

3.06 SCHEDULE

A. Refer to Door and Frame Schedule on the drawings.

SECTION 08 1416 FLUSH WOOD DOORS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Flush wood doors; flush configuration; fire rated, non-rated, acoustical, and special function.

1.02 RELATED REQUIREMENTS

- A. Section 08 1113 Hollow Metal Doors and Frames.
- B. Section 08 7100 Door Hardware.

1.03 REFERENCE STANDARDS

- A. ANSI A135.4 American National Standard for Basic Hardboard; 2012.
- B. ASTM E413 Classification for Rating Sound Insulation; 2010.
- C. ASTM E1408 Standard Test Method for Laboratory Measurement of the Sound Transmission Loss of Door Panels and Door Systems; 1991 (Reapproved 2000).
- D. AWI/AWMAC/WI (AWS) Architectural Woodwork Standards; 2014.
- E. ICC (IBC) International Building Code; 2012.
- F. ITS (DIR) Directory of Listed Products; Intertek Testing Services NA, Inc.; current edition.
- G. NFPA 80 Standard for Fire Doors and Other Opening Protectives; 2016.
- H. NFPA 252 Standard Methods of Fire Tests of Door Assemblies; 2012.
- I. UL (BMD) Building Materials Directory; Underwriters Laboratories Inc.; current edition.
- J. UL 10B Standard for Fire Tests of Door Assemblies; Current Edition, Including All Revisions.
- K. UL 10C Standard for Positive Pressure Fire Tests of Door Assemblies; Current Edition, Including All Revisions.
- L. UL 1784 Standard for Air Leakage Tests of Door Assemblies; Current Edition, Including All Revisions.
- M. WDMA I.S. 1A Interior Architectural Wood Flush Doors; 2013.

1.04 SUBMITTALS

- A. Product Data: Indicate door core materials and construction; veneer species, type and characteristics.
- B. Shop Drawings: Show doors and frames, elevations, sizes, types, swings, undercuts, beveling, blocking for hardware, factory machining, factory finishing, cutouts for glazing and other details.
- C. Specimen warranty.
- D. Samples: Submit two samples of door veneer, 6 by 6 inch in size illustrating wood grain, stain color, and sheen.
- E. Warranty, executed in Owner's name.

1.05 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years of documented experience.
- B. Installed Fire Rated Door and Transom Panel Assembly: Conform to NFPA 80 for fire-rating as indicated.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Package, deliver and store doors in accordance with specified quality standard.
- B. Accept doors on site in manufacturer's packaging. Inspect for damage.

C. Protect doors with resilient packaging sealed with heat shrunk plastic. Do not store in damp or wet areas; or in areas where sunlight might bleach veneer. Seal top and bottom edges with tinted sealer if stored more than one week. Break seal on site to permit ventilation.

1.07 WARRANTY

- A. Interior Doors: Provide manufacturer's warranty for the life of the installation.
- B. Include coverage for delamination of veneer, warping beyond specified installation tolerances, defective materials, and telegraphing core construction.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Wood Veneer Faced Doors:
 - 1. Eggers Industries: www.eggersindustries.com.
 - 2. Graham Wood Doors: www.grahamdoors.com.
 - 3. Haley Brothers: www.haleybros.com.
 - 4. Marshfield DoorSystems, Inc: www.marshfielddoors.com.
 - 5. Or approved equal.

2.02 DOORS AND PANELS

- A. Doors: See drawings for locations and additional requirements.
 - 1. Quality Level: Premium Grade, Standard Duty performance, in accordance with AWI/AWMAC/WI (AWS).
 - 2. Wood Veneer Faced Doors: 5-ply unless otherwise indicated.
- B. Interior Doors: 1-3/4 inches thick unless otherwise indicated; flush construction.
 - 1. Provide solid core doors at all locations.
 - 2. Fire Rated Doors: Tested to ratings indicated on drawings in accordance with International Building Code ("positive pressure"); UL or WH (ITS) labeled without any visible seals when door is open.

2.03 DOOR AND PANEL CORES

- A. Non-Rated Solid Core and 20 Minute Rated Doors: Type particleboard core (PC), plies and faces as indicated.
- B. Fire Rated Doors: Mineral core type, with fire resistant composite core (FD), plies and faces as indicated above; with core blocking as required to provide adequate anchorage of hardware without through-bolting.
- C. Sound Resistant Doors: Equivalent to type, with particleboard core (PC) construction with core as required to achieve STC rating specified; plies and faces as indicated above.

2.04 DOOR FACINGS

- A. Veneer Facing for Transparent Finish: White birch, veneer grade as specified aboveveneer grade in accordance with quality standard indicated, plain sliced, with book between leaves of veneer, running of spliced veneer leaves assembled on door or panel face; unless otherwise indicated.
 - 1. Vertical Edges: Any option allowed by quality standard for grade.
 - 2. "Pair Match" each pair of doors; "Set Match" pairs of doors within 10 feet of each other when doors are closed.
- B. Facing Adhesive: Type I waterproof.

2.05 DOOR CONSTRUCTION

- A. Fabricate doors in accordance with door quality standard specified.
- B. Cores Constructed with stiles and rails:
 - 1. Provide solid blocks at lock edge and top of door for closer for hardware reinforcement.
 - 2. Provide solid blocking for other throughbolted hardware.

- C. Factory machine doors for hardware other than surface-mounted hardware, in accordance with hardware requirements and dimensions.
- D. Factory fit doors for frame opening dimensions identified on shop drawings, with edge clearances in accordance with specified quality standard.
- E. Provide edge clearances in accordance with the quality standard specified.

2.06 FACTORY FINISHING - WOOD VENEER DOORS

- A. Finish work in accordance with AWI/AWMAC/WI (AWS), Section 5 Finishing for grade specified and as follows:
 - 1. Transparent:
 - a. Stain: As selected by Architect.
 - b. Sheen: Semigloss.
- B. Factory finish doors in accordance with approved sample.
- C. Seal door top edge with color sealer to match door facing.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify existing conditions before starting work.
- B. Verify that opening sizes and tolerances are acceptable.
- C. Do not install doors in frame openings that are not plumb or are out-of-tolerance for size or alignment.

3.02 INSTALLATION

- A. Install doors in accordance with manufacturer's instructions and specified quality standard.
 1. Install fire-rated doors in accordance with NFPA 80 requirements.
- B. Factory-Finished Doors: Do not field cut or trim; if fit or clearance is not correct, replace door.
- C. Use machine tools to cut or drill for hardware.
- D. Coordinate installation of doors with installation of frames and hardware.

3.03 TOLERANCES

- A. Conform to specified quality standard for fit and clearance tolerances.
- B. Conform to specified quality standard for telegraphing, warp, and squareness.

3.04 ADJUSTING

- A. Adjust doors for smooth and balanced door movement.
- B. Adjust closers for full closure.

3.05 SCHEDULE

A. Refer to Door and Frame Schedule appended to this section.

SECTION 08 3100

ACCESS DOORS AND PANELS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Ceiling access door and frame units.

1.02 SUBMITTALS

A. Product Data: Provide sizes, types, finishes, hardware, scheduled locations, and details of adjoining work.

PART 2 PRODUCTS

2.01 ACCESS DOOR AND PANEL APPLICATIONS

- A. Ceilings, Unless Otherwise Indicated: Same type as for walls.
 - 1. Material: Steel.
 - 2. Size in Other Ceilings: 22 by 30 inch, unless otherwise indicated.
 - 3. Standard duty, hinged door.
 - 4. Tool-operated spring or cam lock; no handle.

2.02 WALL AND CEILING UNITS

- A. Manufacturers:
 - 1. ACUDOR Products Inc: www.acudor.com.
 - a. Units in Insulated Ceilngs: ACUDOR FW-5050.
- B. Access Doors: Factory fabricated door and frame units, fully assembled units with corner joints welded, filled, and ground flush; square and without rack or warp; coordinate requirements with assemblies that units are to be installed in.
 - 1. Style: Exposed frame with door surface flush with frame surface.
 - 2. Door Style: Single thickness with rolled or turned in edges.
 - 3. Frames: 16 gage, 0.0598 inch, minimum.
 - 4. Insulation: Non-combustible mineral or glass fiber.
 - a. R-Value: 8.0 minimum.
 - 5. Steel Finish: Primed.
 - 6. Primed and Factory Finish: Polyester powder coat; color _____.
 - 7. Hardware:
 - a. Hinges for Non-Fire-Rated Units: Concealed, constant force closure spring type.
 - b. Latch/Lock: Screw driver slot for quarter turn cam latch.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that rough openings are correctly sized and located.

3.02 INSTALLATION

- A. Install units in accordance with manufacturer's instructions.
- B. Install frames plumb and level in openings. Secure rigidly in place.
- C. Position units to provide convenient access to the concealed work requiring access.

SECTION 08 5313 VINYL WINDOWS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Vinyl-framed, factory-glazed windows.
- B. Operating hardware.
- C. Insect screens.

1.02 RELATED REQUIREMENTS

A. Section 07 9200 - Joint Sealants: Sealing joints between frames and adjacent construction.

1.03 REFERENCE STANDARDS

- A. AAMA/WDMA/CSA 101/I.S.2/A440 North American Fenestration Standard/Specification for windows, doors, and skylights; 2011.
- B. AAMA 1503 Voluntary Test Method for Thermal Transmittance and Condensation Resistance of Windows, Doors and Glazed Wall Sections; 2009.
- C. ASTM E90 Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements; 2009.
- D. ASTM E1423 Standard Practice for Determining the Steady State Thermal Transmittance of Fenestration Systems; 2014.
- E. ASTM E2112 Standard Practice for Installation of Exterior Windows, Doors and Skylights; 2007.
- F. NFRC 100 Procedure for Determining Fenestration Product U-factors; 2014.

1.04 SUBMITTALS

- A. Product Data: Provide component dimensions, anchors, fasteners, glass, and internal drainage.
- B. Grade Substantiation: Prior to submitting shop drawings or starting fabrication, submit one of the following showing compliance with specified grade:
 - 1. Evidence of AAMA Certification.
 - 2. Evidence of WDMA Certification.
 - 3. Evidence of CSA Certification.
 - 4. Test report(s) by independent testing agency itemizing compliance and acceptable to authorities having jurisdiction.
- C. Test Reports: Prior to submitting shop drawings or starting fabrication, submit test report(s) by independent testing agency showing compliance with performance requirements in excess of those prescribed by specified grade.

1.05 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with not less than three years of experience.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Protect finished surfaces with wrapping. Do not use adhesive papers or sprayed coatings that bond when exposed to sunlight or weather.
- B. Jig, brace, and box the window frame assemblies for transport to minimize flexing of members or joints.

1.07 FIELD CONDITIONS

A. Do not install sealants when ambient temperature is less than 40 degrees F.

1.08 WARRANTY

A. Provide five year manufacturer warranty for insulated glass units from seal failure, interpane dusting or misting, and replacement of same. Include coverage for degradation of color finish.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Vinvl Windows:
 - Silver Line by Andersen: www.silverlinewindow.com. 1.
 - a. New Construction:
 - 1) Double Hung: V3 Series.
 - 2) Awning: V3 Series.
 - 2. Or approved equal.

2.02 DESCRIPTION

- A. Vinyl Windows: Factory fabricated frame and sash members of extruded, hollow, ultra-violet-resistant, polyvinyl chloride (PVC) with integral color; with factory-installed glazing, hardware, related flashings, anchorage and attachment devices.
 - 1. Configuration: As indicated on drawings.
 - a. Product Type: AP Awning projected window and H Hung window, vertically sliding.
 - 2 Color: White.
 - Size to fit openings with minimum clearance around perimeter of assembly providing 3 necessary space for perimeter seals.
 - Framing Members: Fusion welded corners and joints, with internal reinforcement where 4. required for structural rigidity; concealed fasteners.
 - 5. System Internal Drainage: Drain to exterior side by means of weep drainage network any water entering joints, condensation within glazing channel, or other migrating moisture within system.
 - Glazing Stops, Trim, Flashings, and Accessory Pieces: Formed of rigid PVC, fitting tightly 6. into frame assembly.
 - 7. Mounting Flange: Integral to frame assembly, providing weather stop at entire perimeter of frame.
 - 8. Insect Screens: Tight fitting for operating sash location.
- B. Performance Requirements: Provide products that comply with the following:
 - Grade: AAMA/WDMA/CSA 101/I.S.2/A440 requirements for specific window type: a. Performance Class (PC): LC.

 - Performance Grade (PG): 40, with minimum design pressure (DP) of 40.10 psf. b.
 - Grade Substantiation: Either AAMA Certification Label or independent test report itemizing 2 compliance will constitute acceptable evidence of compliance.
 - Thermal Transmittance: U-factor of 0.30, maximum, that includes window glazing and 3. frame system based on average window size required for project and determined in accordance with AAMA 1503, ASTM E1423, or NFRC 100.

2.03 COMPONENTS

- A. Glazing: Insulated double pane, annealed glass, clear, low-E coated, argon filled, with glass thicknesses as recommended by manufacturer for specified wind conditions and acoustic rating indicated.
- B. Frame Depth: Manufacturer's standard.
- Divided Lite Grid: Installed between panes of insulating glass, 5/8 inch wide flat metal bars, C. color to match frame and sash.
 - Pattern: Manufacturer's standard lavout. 1.
- D. Insect Screens: Aluminum, extruded or roll-formed frame with mitered and reinforced corners; apply screen mesh taut to frame; secure to window with hardware to allow easy removal.
 - 1. Hardware: Manufacturer's standard; guantity as required per screen.
 - Screen Mesh: Vinyl-coated fiberglass, window manufacturer's 18 x 16 mesh. 2

- 3. Frame Finish: Manufacturer's standard, color to match window frame and sash color.
- E. Sealants for Setting Window Sill Pan Flashing: Provide butyl tape, non-hardening butyl, polyurethane, or silicone sealant; in compliance with ASTM E2112 installation practices.

2.04 HARDWARE

- A. Vertical Sliding Sash: Metal and nylon spiral friction slide cylinder, provide two for each sash and jamb.
- B. Casement/Awning Sash: Steel rotary arm sash operating mechanism with fold-down handle and two bar adjustable hinges and keepers fitted to projecting sash arms with limit stops.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify wall openings and adjoining air and vapor seal materials are ready to receive this work.

3.02 INSTALLATION

- A. Install window unit assemblies in accordance with manufacturers instructions and applicable building codes.
- B. Attach window frame and shims to perimeter opening to accommodate construction tolerances and other irregularities as necessary.
- C. Align window plumb and level, free of warp or twist, and maintain dimensional tolerances and alignment with adjacent work.
- D. Provide thermal isolation where components penetrate or disrupt building insulation. Pack fibrous insulation in shim spaces at perimeter of assembly to maintain continuity of thermal barrier.
- E. Coordinate attachment and seal of perimeter air and vapor barrier materials.
- F. Install operating hardware.
- G. Install perimeter sealant and backing materials in accordance with Section 07 9005.

3.03 TOLERANCES

A. Maximum Variation from Level or Plumb: 0.06 inches every 3 ft non-cumulative or 0.5 inches per 100 ft, whichever is less.

3.04 ADJUSTING

A. Adjust hardware for smooth operation and secure weathertight closure.

3.05 CLEANING

- A. Remove protective material from pre-finished surfaces.
- B. Wash surfaces by method recommended and acceptable to window manufacturer; rinse and wipe surfaces clean.
- C. Remove excess glazing sealant by moderate use of mineral spirits or other solvent acceptable to sealant manufacturer and appropriate for application indicated.

SECTION 08 7100 DOOR HARDWARE

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Hardware for wood, hollow steel, and hollow metal doors.
- B. Thresholds.
- C. Weatherstripping, seals and door gaskets.

1.02 RELATED REQUIREMENTS

- A. Section 08 1113 Hollow Metal Doors and Frames.
- B. Section 08 1416 Flush Wood Doors.

1.03 REFERENCE STANDARDS

- A. ANSI/ICC A117.1 American National Standard for Accessible and Usable Buildings and Facilities; International Code Council; 2009.
- B. BHMA A156.1 American National Standard for Butts and Hinges; 2013.
- C. BHMA A156.2 American National Standard for Bored and Preassembled Locks & Latches; 2011.
- D. BHMA A156.3 American National Standard for Exit Devices; 2014.
- E. BHMA A156.4 American National Standard for Door Controls Closers; 2013.
- F. BHMA A156.6 American National Standard for Architectural Door Trim; 2010.
- G. BHMA A156.7 American National Standard for Template Hinge Dimensions; 2014.
- H. BHMA A156.8 American National Standard for Door Controls Overhead Stops and Holders; 2010.
- I. BHMA A156.18 American National Standard for Materials and Finishes; 2012.
- J. BHMA A156.21 American National Standard for Thresholds; 2014.
- K. BHMA A156.22 American National Standard for Door Gasketing and Edge Seal Systems, Builders Hardware Manufacturers Association; 2012.
- L. DHI (LOCS) Recommended Locations for Architectural Hardware for Standard Steel Doors and Frames; 2004.
- M. DHI WDHS.3 Recommended Locations for Architectural Hardware for Flush Wood Doors; 1993; also in WDHS-1/WDHS-5 Series, 1996.
- N. NFPA 80 Standard for Fire Doors and Other Opening Protectives; 2016.
- O. NFPA 101 Life Safety Code; 2015.
- P. UL (DIR) Online Certifications Directory; current listings at database.ul.com.

1.04 SUBMITTALS

- A. Product Data: Manufacturer's catalog literature for each type of hardware, marked to clearly show products to be furnished for this project.
- B. Hardware Schedule: Detailed listing of each item of hardware to be installed on each door. Use door numbering scheme as included in the Contract Documents. Identify electrically operated items and include power requirements.
- C. Keying Schedule: Submit for approval of Owner.
- D. Manufacturer's Installation Instructions: Indicate special procedures, perimeter conditions requiring special attention.
- E. Keys: Deliver with identifying tags to Owner by security shipment direct from hardware supplier.

F. Warranty: Submit manufacturer's warranty and ensure that forms have been completed in Owner's name and registered with manufacturer.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Package hardware items individually; label and identify each package with door opening code to match hardware schedule.

PART 2 PRODUCTS

2.01 DOOR HARDWARE - GENERAL

- A. Provide hardware specified or required to make doors fully functional, compliant with applicable codes, and secure to the extent indicated.
- B. Provide items of a single type of the same model by the same manufacturer.
- C. Provide products that comply with the following:
 - 1. Applicable provisions of federal, state, and local codes.
 - 2. ANSI/ICC A117.1, American National Standard for Accessible and Usable Buildings and Facilities.
 - 3. Fire-Rated Doors: NFPA 80.
 - 4. Hardware on Fire-Rated Doors: Listed and classified by UL as suitable for the purpose specified and indicated.
 - 5. Products Requiring Electrical Connection: Listed and classified by UL (DIR) as suitable for the purpose specified and indicated.

2.02 LOCKS AND LATCHES

- A. Locks: Provide a lock for every door, unless specifically indicated as not requiring locking.
 - 1. Hardware Sets indicate locking functions required for each door.
 - 2. Trim: Provide lever handle or pull trim on outside of all locks unless specifically stated to have no outside trim.
 - 3. Lock Cylinders: Provide key access on outside of all locks unless specifically stated to have no locking or no outside trim.
- B. Lock Cylinders: Manufacturer's standard tumbler type, seven-pin large format interchangeable core.
 - 1. Provide cams and/or tailpieces as required for locking devices required.
- C. Keying: Master keyed.
 - 1. Key to existing keying system.
 - 2. Supply keys in the following quantities:
 - a. 8 master keys.
 - b. 2 change keys for each lock.
- D. Latches: Provide a latch for every door that is not required to lock, unless specifically indicated "push/pull" or "not required to latch".

2.03 HINGES

- A. Hinges: Provide hinges on every swinging door.
 - 1. Provide five-knuckle full mortise butt hinges unless otherwise indicated.
 - 2. Provide ball-bearing hinges at all doors.
 - 3. For doors up to 44 inches wide use 4-1/2 inch hinges, for doors over 44 inches wide use 5 inch hinges.
 - 4. Provide non-removable pins on exterior outswinging doors.
 - 5. All exterior hinges to be non-ferrous metal.
 - 6. Where electrified hardware is mounted in door leaf, provide power transfer hinges.
- B. Butt Hinges: Comply with BHMA A156.1 and BHMA A156.7; standard weight, unless otherwise indicated.
 - 1. Kawneer Hinges on Aluminum doors only.
- C. Quantity of Hinges Per Door:

- 1. Doors up to 60 inches High: Two hinges.
- 2. Doors From 60 inches High up to 90 inches High: Three hinges.
- 3. Doors 90 inches High up to 120 inches High: Four hinges.
- D. Manufacturers Hinges:
 - 1. Stanley Hardware: www.stanleycommercialhardware.com.
 - a. Interior Hinges unless otherwise noted on hardware schedule: Model FBB179.
 - b. Exterior Hinges: Model FBB191.

2.04 PUSH/PULLS

- A. Push/Pulls: Comply with BHMA A156.6.
 - 1. Provide push and pull on doors not specified to have lockset, latchset, exit device, or auxiliary lock.
 - 2. On solid doors, provide matching push plate and pull plate on opposite faces.
- B. Manufacturers Push/Pulls:
 - 1. Rockwood Manufacturing Co.: www.rockwoodmfg.com
 - a. Pulls: Model 110x70C.
 - b. Push: Model 73F.

2.05 CYLINDRICAL LOCKSETS

- A. Locking Functions: As defined in BHMA A156.2, and as follows.
 - 1. Passage: No locking, always free entry and exit.
 - 2. Privacy: F76, emergency tool unlocks.
 - 3. Office: F82 Grade 1, key not required to lock, unlocks upon exit.
 - 4. Classroom: F84, key required to lock.
- B. Manufacturers Cylindrical Locksets:
 - Assa Abloy Brands; Corbin Russwin: www.assaabloydss.com.
 - a. Product: CL3300 Series with NZD trim.

2.06 FLUSHBOLTS AND COORDINATORS

- A. Flushbolts: Lever extension bolts in leading edge of door, one bolt into floor, one bolt into top of frame.
 - 1. Pairs of Swing Doors: At inactive leaves, provide flush bolts of type as required to comply with code.
 - 2. Floor Bolts: Provide dustproof strike except at metal thresholds.

2.07 EXIT DEVICES

1

- A. Exit Devices: ED5000 Series as indicated on drawings door/hardware schedules.
- B. Locking Functions: Functions as defined in BHMA A156.3, and as follows:
 - 1. Entry/Exit, Always-Unlocked: Outside lever unlocked, no outside key access, no latch holdback.
 - 2. Entry/Exit, Always-Latched: Key outside locks and unlocks lever, no latch holdback (dogging).
- C. Manufacturers Exit Devices:
 - 1. Assa Abloy Brands; Corbin Russwin: www.assaabloydss.com.
 - 2. Von Duprin, an Allegion brand: www.allegion.com/us.

2.08 CLOSERS

- A. Closers: Complying with BHMA A156.4.
 - 1. Provide surface-mounted, door-mounted closers unless otherwise indicated with proper brackets to install closers away from view.
 - 2. Provide a door closer on every exterior door.
 - 3. Provide a door closer on every fire- and smoke-rated door. Spring hinges are not an acceptable self-closing device unless specifically so indicated.
 - 4. At corridors, locate door-mounted closer on room side of door.
 - 5. At outswinging exterior doors, mount closer in inside of door.

- B. Manufacturers Surface Mounted Closers:
 - DORMA USA, Inc.; 8600 Series and 8900 Series: www.dorma.com.
 - a. Product: 8916 Series with and without thumb turn hold open and 8616 Series; as indicated on hardware schedule.
 - b. Provide "-P" style as required to mount closer away from view.

2.09 STOPS

1.

- A. Stops: Complying with BHMA A156.8; provide a stop for every swinging door, unless otherwise indicated.
 - 1. Provide wall stops, unless otherwise indicated.
 - 2. If wall stops are not practical, due to configuration of room or furnishings, provide floor stop.
 - 3. Review type and location with architect/owner prior to ordering and installing.
 - 4. Stop is not required if positive stop feature is specified for door closer; positive stop feature of door closer is not an acceptable substitute for a stop unless specifically so stated.
- B. Wall Stops: Model 409 manufactured by Rockwood Manufacturing Company.
- C. Floor Stops: Model 411 manufactured by Rockwood Manufacturing Company.
- D. Manufacturers Wall and Floor Stops:
 - 1. Rockwood Manufacturing Company: www.rockwoodmfg.com.

2.10 GASKETING AND THRESHOLDS

- A. Gaskets: Complying with BHMA A156.22.
 - 1. On each door in smoke partition, provide smoke gaskets; top, sides, and meeting stile of pairs. If fire/smoke partitions are not indicated on drawings, provide smoke gaskets on each door identified as a "smoke door" and 20-minute rated fire doors.
 - On interior doors, provide a concealed gasket, unless otherwise indicated; top and sides.
 a. Product: Model 661 manufactured by National Guard Products.
 - 3. On interior/exterior double doors, provide smoke seals and smoke-rated astragal sets, unless otherwise indicated.
 - a. Product: Model 2525 and model 137NA manufactured by National Guard Products.
 - 4. On each exterior door, provide weatherstripping gaskets, unless otherwise indicated; top, sides, and meeting stiles of pairs.
 - a. Where exterior door is also required to have fire or smoke rating, provide gaskets functioning as both smoke and weather seals.
 - b. Product: Model 130NA manufactured by National Guard Products.
 - On interior doors, provide door bottom sweep, unless otherwise indicated.
 a. Product: Model D608A manufactured by National Guard Products.
 - 6. On each exterior door, provide door bottom sweep, unless otherwise indicated. a. Product: Model 200NA manufactured by National Guard Products.
 - a. Product: Model 200NA manufactured by National Gua
- B. Thresholds: Complying with BHMA A156.21.
 - 1. At each exterior doors, provide a threshold unless otherwise indicated.
 - 2. All thresholds to be ADA compliant without any field modifications.
 - 3. Products:
 - a. All Openings: Model 950N manufactured by National Guard Products.
- C. Fasteners: Non-corroding.
- D. Manufacturers Gasketing and Thresholds:
 - 1. National Guard Products, Inc: www.ngpinc.com.

2.11 PROTECTION PLATES AND ARCHITECTURAL TRIM

- A. Protection Plates:
 - 1. Kickplate: Provide on push side of every door with closer, except aluminum storefront and glass entry doors.
- B. Manufacturers Protection Plates and Architectural Trim:

1. Rockwood Manufacturing Company: www.rockwoodmfg.com

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install hardware in accordance with manufacturer's instructions and applicable codes.
- B. Use templates provided by hardware item manufacturer.
- C. Do not install surface mounted items until finishes applied to substrate are complete.
- D. Install hardware on fire-rated doors and frames in accordance with code and NFPA 80.
- E. Mounting heights for hardware from finished floor to center line of hardware item.
 - 1. For steel doors and frames: Comply with DHI (LOCS) "Recommended Locations for Architectural Hardware for Standard Steel Doors and Frames".
 - 2. For Wood Doors: Comply with DHI WDHS.3 "Recommended Locations for Architectural Hardware for Flush Wood Doors".
- F. Set exterior door thresholds with full-width bead of elastomeric sealant on each point of contact with floor providing a continuous weather seal; anchor thresholds with stainless steel countersunk screws.

3.02 CLEANING

A. Clean adjacent surfaces soiled by hardware installation. Clean finished hardware per manufacturer's instructions after final adjustments has been made. Replace items that cannot be cleaned to manufacturer's level of finish quality at no additional cost.

SECTION 08 8000 GLAZING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Insulating glass units.
- B. Glazing compounds and accessories.

1.02 RELATED REQUIREMENTS

A. Section 08 1113 - Hollow Metal Doors and Frames: Glazed lites in doors and borrowed lites.

1.03 REFERENCE STANDARDS

- A. 16 CFR 1201 Safety Standard for Architectural Glazing Materials; current edition.
- B. ASTM C864 Standard Specification for Dense Elastomeric Compression Seal Gaskets, Setting Blocks, and Spacers; 2005 (Reapproved 2011).
- C. ASTM C920 Standard Specification for Elastomeric Joint Sealants; 2014.
- D. ASTM C1036 Standard Specification for Flat Glass; 2011.
- E. ASTM C1048 Standard Specification for Heat-Strengthened and Fully Tempered Flat Glass; 2012.
- F. ASTM C1193 Standard Guide for Use of Joint Sealants; 2013.
- G. ASTM C1376 Standard Specification for Pyrolytic and Vacuum Deposition Coatings on Flat Glass; 2015.
- H. ASTM E1300 Standard Practice for Determining Load Resistance of Glass in Buildings; 2012a.
- I. ASTM E2190 Standard Specification for Insulating Glass Unit Performance and Evaluation; 2010.
- J. GANA (GM) GANA Glazing Manual; 2009.
- K. GANA (SM) GANA Sealant Manual; 2008.
- L. ICC (IBC) International Building Code; 2015.
- M. IGMA TM-3000 North American Glazing Guidelines for Sealed Insulating Glass Units for Commercial & Residential Use; 1990 (2004).
- N. NFRC 100 Procedure for Determining Fenestration Product U-factors; 2014.
- O. NFRC 200 Procedure for Determining Fenestration Product Solar Heat Gain Coefficient and Visible Transmittance at Normal Incidence; 2014.
- P. NFRC 300 Test Method for Determining the Solar Optical Properties of Glazing Materials and Systems; 2014.

1.04 SUBMITTALS

- A. Product Data on Insulating Glass Unit Glazing Types: Provide structural, physical and environmental characteristics, size limitations, special handling and installation requirements.
- B. Product Data on Glazing Compounds and Accessories: Provide chemical, functional, and environmental characteristics, limitations, special application requirements. Identify available colors.
- C. Warranty Documentation: Submit manufacturer warranty and ensure that forms have been completed in Owner's name and registered with manufacturer.

1.05 QUALITY ASSURANCE

A. Perform Work in accordance with GANA (GM), GANA (SM), and IGMA TM-3000 for glazing installation methods.

1.06 FIELD CONDITIONS

- A. Do not install glazing when ambient temperature is less than 40 degrees F.
- B. Maintain minimum ambient temperature before, during and 24 hours after installation of glazing compounds.

1.07 WARRANTY

A. Insulating Glass Units: Provide a five (5) year manufacturer warranty to include coverage for seal failure, interpane dusting or misting, including replacement of failed units.

PART 2 PRODUCTS

2.01 PERFORMANCE REQUIREMENTS - EXTERIOR GLAZING ASSEMBLIES

- A. Provide type and thickness of exterior glazing assemblies to support assembly dead loads, and to withstand live loads caused by positive and negative wind pressure acting normal to plane of glass.
 - 1. Comply with ASTM E1300 for design load resistance of glass type, thickness, dimensions, and maximum lateral deflection of supported glass.
 - 2. Provide glass edge support system sufficiently stiff to limit the lateral deflection of supported glass edges to less than 1/175 of their lengths under specified design load.
 - 3. Glass thicknesses listed are minimum.
- B. Vapor Retarder and Air Barrier Seals: Provide completed assemblies that maintain continuity of building enclosure vapor retarder and air barrier.
 - 1. In conjunction with vapor retarder and joint sealer materials described in other sections.
- C. Thermal and Optical Performance: Provide glass products with performance properties as indicated. Performance properties are in accordance with manufacturer's published data as determined with the following procedures and/or test methods:
 - 1. Center of Glass U-Value: Comply with NFRC 100 using Lawrence Berkeley National Laboratory (LBNL) WINDOW 6.3 computer program.
 - 2. Center of Glass Solar Heat Gain Coefficient (SHGC): Comply with NFRC 200 using Lawrence Berkeley National Laboratory (LBNL) WINDOW 6.3 computer program.
 - 3. Solar Optical Properties: Comply with NFRC 300 test method.

2.02 GLASS MATERIALS

- A. Float Glass: Provide float glass based glazing unless noted otherwise.
 - 1. Annealed Type: ASTM C1036, Type I Transparent Flat, Class 1 Clear, Quality-Q3.
 - 2. Heat-Strengthened and Fully Tempered Types: ASTM C1048, Kind HS and FT.
 - 3. Tinted Type: ASTM C1036, Class 2 Tinted, Quality-Q3, color and performance characteristics as indicated.
 - 4. Thicknesses: As indicated; provide greater thickness as required for exterior glazing wind load design.

2.03 INSULATING GLASS UNITS

- A. Insulating Glass Units: Types as indicated.
 - 1. Durability: Certified by an independent testing agency to comply with ASTM E2190.
 - Coated Glass: Comply with requirements of ASTM C1376 for pyrolytic (hard-coat) or magnetic sputter vapor deposition (soft-coat) type coatings on flat glass; coated vision glass, Kind CV; coated overhead glass, Kind CO; or coated spandrel glass, Kind CS.
 - 3. Metal Edge Spacers: Aluminum, bent and soldered corners.
 - 4. Spacer Color: Black.
 - 5. Edge Seal:
 - a. Single-Sealed System: Provide silicone sealant as secondary seal applied around perimeter.
 - 6. Color: Black.
 - 7. Purge interpane space with dry air, hermetically sealed.

2.04 BASIS OF DESIGN - INSULATING GLASS UNITS

- A. Insulating Glass Units: Vision glazing, with Low-E coating.
 - 1. Applications: Exterior insulating glass glazing unless otherwise indicated.
 - 2. Space between lites filled with air.
 - 3. Total Thickness: 1 inch.
 - 4. Thermal Transmittance (U-Value), Summer Center of Glass: 0.29, nominal.
 - 5. Visible Light Transmittance (VLT): 69 percent, nominal.
 - 6. Solar Heat Gain Coefficient (SHGC): 0.38, nominal.

2.05 GLAZING COMPOUNDS

- A. Glazing Putty: Polymer modified latex recommended by manufacturer for outdoor use, knife grade consistency; grey color.
- B. Butyl Sealant: Single component; ASTM C920, Grade NS, Class 12-1/2, Uses M and A, Shore A hardness of 10 to 20; black color.
- C. Polysulfide Sealant: Two component; chemical curing, non-sagging type; ASTM C920, Type M, Grade NS, Class 25, Uses M, A, and G; with cured Shore A hardness range of 15 to 25; color as selected.
- D. Polyurethane Sealant: Single component, chemical curing, non-staining, non-bleeding; ASTM C920, Type S, Grade NS, Class 25, Uses M, A, and G; with cured Shore A hardness range of 20 to 35; color as selected.
- E. Silicone Sealant: Single component; neutral curing; capable of water immersion without loss of properties; non-bleeding, non-staining; ASTM C920, Type S, Grade NS, Class 25, Uses M, A, and G; with cured Shore A hardness range of 15 to 25; color as selected.

2.06 ACCESSORIES

- A. Setting Blocks: Neoprene, with 80 to 90 Shore A durometer hardness; ASTM C864 Option I. Length of 0.1 inch for each square foot of glazing or minimum 4 inch x width of glazing rabbet space minus 1/16 inch x height to suit glazing method and pane weight and area.
- B. Spacer Shims: Neoprene, 50 to 60 Shore A durometer hardness; ASTM C864 Option I. Minimum 3 inch long x one half the height of the glazing stop x thickness to suit application, self adhesive on one face.
- C. Glazing Tape, Back Bedding Mastic Type: Preformed, butyl-based, 100 percent solids compound with integral resilient spacer rod applicable to application indicated; 5 to 30 cured Shore A durometer hardness; coiled on release paper; black color.
- D. Glazing Gaskets: Resilient silicone extruded shape to suit glazing channel retaining slot; ASTM C864 Option I; color black.
- E. Glazing Clips: Manufacturer's standard type.
- F. Smoke Removal Window/Glazing Unit Markings: Adhesive backed markings affixed to manually operable or fixed windows of high-rise buildings to identify units intended for post-fire smoke removal in compliance with ICC (IBC) and local building officials.

PART 3 EXECUTION

3.01 VERIFICATION OF CONDITIONS

- A. Verify that openings for glazing are correctly sized and within tolerances, including those for size, squareness, and offsets at corners.
- B. Verify that surfaces of glazing channels or recesses are clean, free of obstructions that may impede moisture movement, weeps are clear, and support framing is ready to receive glazing system.

3.02 PREPARATION

A. Clean contact surfaces with appropriate solvent and wipe dry within maximum of 24 hours before glazing. Remove coatings that are not tightly bonded to substrates.

- B. Seal porous glazing channels or recesses with substrate compatible primer or sealer.
- C. Prime surfaces scheduled to receive sealant where required for proper sealant adhesion.

3.03 INSTALLATION, GENERAL

- A. Install glazing in compliance with written instructions of glass, gaskets, and other glazing material manufacturers, unless more stringent requirements are indicated, including those in glazing referenced standards.
- B. Install glazing sealants in accordance with ASTM C1193, GANA (SM), and manufacturer's instructions.

3.04 INSTALLATION - DRY GLAZING METHOD (GASKET GLAZING)

- A. Application Exterior and/or Interior Glazed: Set glazing infills from either the exterior or the interior of the building.
- B. Place setting blocks at 1/4 points with edge block no more than 6 inch from corners.
- C. Rest glazing on setting blocks and push against fixed stop with sufficient pressure on gasket to attain full contact.
- D. Install removable stops without displacing glazing gasket; exert pressure for full continuous contact.

3.05 INSTALLATION - DRY GLAZING METHOD (TAPE AND GASKET SPLINE GLAZING)

- A. Application Exterior Glazed: Set glazing infills from the exterior of the building.
- B. Cut glazing tape to length; install on glazing pane. Seal corners by butting tape and sealing junctions with butyl sealant.
- C. Place setting blocks at 1/4 points with edge block no more than 6 inch from corners.
- D. Rest glazing on setting blocks and push against fixed stop with sufficient pressure to attain full contact.
- E. Install removable stops without displacing glazing spline. Exert pressure for full continuous contact.
- F. Carefully trim protruding tape with knife.

3.06 INSTALLATION - WET/DRY GLAZING METHOD (PREFORMED TAPE AND SEALANT)

- A. Application Exterior Glazed: Set glazing infills from the exterior of the building.
- B. Cut glazing tape to length and set against permanent stops, 3/16 inch below sight line. Seal corners by butting tape and dabbing with butyl sealant.
- C. Apply heel bead of butyl sealant along intersection of permanent stop with frame ensuring full perimeter seal between glass and frame to complete the continuity of the air and vapor seal.
- D. Place setting blocks at 1/4 points with edge block no more than 6 inch from corners.
- E. Rest glazing on setting blocks and push against tape and heel bead of sealant with sufficient pressure to attain full contact at perimeter of pane or glass unit.
- F. Install removable stops, with spacer strips inserted between glazing and applied stops 1/4 inch below sight lines.
 - 1. Place glazing tape on glazing pane of unit with tape flush with sight line.
- G. Fill gap between glazing and stop with polyurethane type sealant to depth equal to bite of frame on glazing, but not more than 3/8 inch below sight line.
- H. Apply cap bead of polyurethane type sealant along void between the stop and the glazing, to uniform line, flush with sight line. Tool or wipe sealant surface smooth.

3.07 INSTALLATION - BUTT JOINT GLAZING METHOD (SEALANT ONLY)

- A. Application Exterior Glazed: Set glazing infills from the exterior of the building.
- B. Temporarily brace glass in position for duration of glazing process. Mask edges of glass at adjoining glass edges and between glass edges and framing members.

- C. Temporarily secure a small diameter non-adhering foamed rod on back side of joint.
- D. Apply sealant to open side of joint in continuous operation; thoroughly fill the joint without displacing the foam rod. Tool the sealant surface smooth to concave profile.
- E. Permit sealant to cure then remove foam backer rod. Apply sealant to opposite side, tool smooth to concave profile.
- F. Remove masking tape.

3.08 CLEANING

- A. Remove excess glazing materials from finish surfaces immediately after application using solvents or cleaners recommended by manufacturers.
- B. Remove non-permanent labels immediately after glazing installation is complete.
- C. Clean glass and adjacent surfaces after sealants are fully cured.
- D. Clean glass on both exposed surfaces not more than 4 days prior to Date of Substantial Completion in accordance with glass manufacturer's written recommendations.

SECTION 09 2116 GYPSUM BOARD ASSEMBLIES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Metal stud wall framing.
- B. Gypsum sheathing.
- C. Gypsum wallboard.
- D. Joint treatment and accessories.

1.02 RELATED REQUIREMENTS

- A. Section 05 4000 Cold-Formed Metal Framing: Exterior wind-load-bearing metal stud framing.
- B. Section 06 1000 Rough Carpentry: Wood blocking product and execution requirements.
- C. Section 07 2100 Thermal Insulation: Acoustic insulation.
- D. Section 07 2500 Weather Barriers: Water-resistive barrier over sheathing.
- E. Section 07 8400 Firestopping: Top-of-wall assemblies at fire rated walls.
- F. Section 07 9200 Joint Sealants: Sealing acoustical gaps in construction other than gypsum board or plaster work.

1.03 REFERENCE STANDARDS

- A. ASTM C475/C475M Standard Specification for Joint Compound and Joint Tape for Finishing Gypsum Board; 2015.
- B. ASTM C514 Standard Specification for Nails for the Application of Gypsum Board; 2004 (Reapproved 2014).
- C. ASTM C557 Standard Specification for Adhesives for Fastening Gypsum Wallboard to Wood Framing; 2003 (Reapproved 2009).
- D. ASTM C840 Standard Specification for Application and Finishing of Gypsum Board; 2013.
- E. ASTM C1047 Standard Specification for Accessories For Gypsum Wallboard and Gypsum Veneer Base; 2014a.
- F. ASTM C1177/C1177M Standard Specification for Glass Mat Gypsum Substrate for Use as Sheathing; 2013.
- G. ASTM C1278/C1278M Standard Specification for Fiber-Reinforced Gypsum Panel; 2007a (Reapproved 2011).
- H. ASTM C1280 Standard Specification for Application of Gypsum Sheathing Board; 2013.
- I. ASTM C1396/C1396M Standard Specification for Gypsum Board; 2014.
- J. ASTM C1658/C1658M Standard Specification for Glass Mat Gypsum Panels; 2013.
- K. ASTM D3273 Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber; 2012.
- L. ASTM E84 Standard Test Method for Surface Burning Characteristics of Building Materials; 2015a.
- M. GA-216 Application and Finishing of Gypsum Board; 2013.
- N. GA-600 Fire Resistance Design Manual; 2015.
- O. UL (FRD) Fire Resistance Directory; current edition.

1.04 SUBMITTALS

A. Product Data: Provide data on metal framing, gypsum board, glass mat faced gypsum board, accessories, and joint finishing system.

1.05 QUALITY ASSURANCE

A. Installer Qualifications: Company specializing in performing gypsum board installation and finishing, with minimum 5 years of experience.

PART 2 PRODUCTS

2.01 GYPSUM BOARD ASSEMBLIES

A. Provide completed assemblies complying with ASTM C840 and GA-216.

2.02 METAL FRAMING MATERIALS

- A. Non-Loadbearing Framing System Components: ASTM C645; galvanized sheet steel, of size and properties necessary to comply with ASTM C754 for the spacing indicated, with maximum deflection of wall framing of L/240 at 5 psf.
 - 1. Studs: "C" shaped with flat or formed webs with knurled faces.
 - 2. Runners: U shaped, sized to match studs.
- B. Loadbearing Studs for Application of Gypsum Board: As specified in Section 05 4000.

2.03 BOARD MATERIALS

- A. Manufacturers Gypsum-Based Board:
 - 1. CertainTeed Corporation: www.certainteed.com.
 - 2. Georgia-Pacific Gypsum: www.gpgypsum.com.
 - 3. USG Corporation: www.usg.com.
- B. Gypsum Wallboard: Paper-faced gypsum panels as defined in ASTM C1396/C1396M; sizes to minimize joints in place; ends square cut.
 - 1. Application: Use for vertical surfaces and ceilings, unless otherwise indicated.
 - Mold Resistance: Score of 10, when tested in accordance with ASTM D3273.
 a. Mold resistant board is required at all locations.
 - 3. At Assemblies Indicated with Fire-Rating: Use type required by indicated tested assembly; if no tested assembly is indicated, use Type X board, UL or WH listed.
 - 4. Thickness:
 - a. Vertical Surfaces: 1/2 inch.
 - b. Ceilings: 5/8 inch.
 - 5. Mold Resistant Paper Faced Products:
 - a. CertainTeed Corporation; ProRoc Brand Moisture & Mold Resistant Gypsum Board.
 - b. Georgia-Pacific Gypsum; ToughRock Mold-Guard.
 - c. Lafarge North America Inc; Mold Defense Drywall.
 - 6. Glass Mat Faced Products:
 - a. Georgia-Pacific Gypsum; DensArmor Plus.
 - b. USG Corporation; USG Sheetrock Brand Glass-Mat Panels Mold Tough.
- C. Exterior Sheathing Board: Sizes to minimize joints in place; ends square cut.
 - 1. Application: Exterior sheathing, unless otherwise indicated.
 - 2. Glass Mat Faced Sheathing: Glass mat faced gypsum substrate as defined in ASTM C1177/C1177M.
 - 3. Regular Board Thickness: 1/2 inch.
 - 4. Edges: Square.
 - 5. Glass Mat Faced Products:
 - a. American Gypsum Company; M-Glass Exterior Sheathing.
 - b. Georgia-Pacific Gypsum; DensGlass Sheathing.
 - c. National Gypsum Company; Gold Bond eXP Sheathing.

2.04 ACCESSORIES

- A. Acoustic Insulation: As specified in Section 07 2100.
- B. Acoustic Sealant: As specified in Section 07 9200.
- C. Water-Resistive Barrier: As specified in Section 07 2500.

- D. Finishing Accessories: ASTM C1047, galvanized steel or rolled zinc, unless noted otherwise.
 - 1. Types: As detailed or required for finished appearance.
 - 2. Special Shapes: In addition to conventional corner bead and control joints, provide U-bead at exposed panel edges.
- E. Joint Materials: ASTM C475/C475M and as recommended by gypsum board manufacturer for project conditions.
 - 1. Tape: 2 inch wide, coated glass fiber tape for joints and corners, except as otherwise indicated.
 - 2. Tape: 2 inch wide, creased paper tape for joints and corners, except as otherwise indicated.
 - 3. Ready-mixed vinyl-based joint compound.
 - 4. Powder-type vinyl-based joint compound.
 - 5. Chemical hardening type compound.
- F. Screws for Fastening of Gypsum Panel Products to Cold-Formed Steel Studs Less than 0.033 inch in Thickness and Wood Members: ASTM C1002; self-piercing tapping screws, corrosion resistant.
- G. Screws for Fastening of Gypsum Panel Products to Steel Members from 0.033 to 0.112 inch in Thickness: ASTM C954; steel drill screws, corrosion resistant.
- H. Anchorage to Substrate: Tie wire, nails, screws, and other metal supports, of type and size to suit application; to rigidly secure materials in place.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that project conditions are appropriate for work of this section to commence.

3.02 FRAMING INSTALLATION

- A. Metal Framing: Install in accordance with ASTM C754 and manufacturer's instructions.
- B. Studs: Space studs at 16 inches on center.
 - 1. Extend partition framing to structure where indicated and to ceiling in other locations.
 - 2. Partitions Terminating at Ceiling: Attach ceiling runner securely to ceiling track in accordance with manufacturer's instructions.

3.03 BOARD INSTALLATION

- A. Comply with ASTM C840, GA-216, and manufacturer's instructions. Install to minimize butt end joints, especially in highly visible locations.
- B. Single-Layer Non-Rated: Install gypsum board perpendicular to framing, with ends and edges occurring over firm bearing.
 - 1. Exception: Tapered edges to receive joint treatment at right angles to framing.
- C. Exterior Sheathing: Comply with ASTM C1280. Install sheathing vertically, with edges butted tight and ends occurring over firm bearing.
 - 1. Paper-Faced Sheathing: Immediately after installation, protect from weather by application of water-resistive barrier.
- D. Installation on Metal Framing: Use screws for attachment of gypsum board.
- E. Moisture Protection: Treat cut edges and holes in moisture resistant gypsum board and exterior gypsum soffit board with sealant.

3.04 INSTALLATION OF TRIM AND ACCESSORIES

- A. Corner Beads: Install at external corners, using longest practical lengths.
- B. Edge Trim: Install at locations where gypsum board abuts dissimilar materials.

3.05 JOINT TREATMENT

A. Glass Mat Faced Gypsum Board and Exterior Glass Mat Faced Sheathing: Use fiberglass joint tape, bedded and finished with chemical hardening type joint compound.

- B. Paper Faced Gypsum Board: Use paper joint tape, bedded with ready-mixed vinyl-based joint compound and finished with ready-mixed vinyl-based joint compound.
- C. Finish gypsum board in accordance with levels defined in ASTM C840, as follows:
 - 1. Level 2: In utility areas, behind cabinetry, and on backing board to receive tile finish.
 - 2. Level 1: Wall areas above finished ceilings, whether or not accessible in the completed construction.
- D. Tape, fill, and sand exposed joints, edges, and corners to produce smooth surface ready to receive finishes.
 - 1. Feather coats of joint compound so that camber is maximum 1/32 inch.

3.06 TOLERANCES

A. Maximum Variation of Finished Gypsum Board Surface from True Flatness: 1/8 inch in 10 feet in any direction.

SECTION 09 7733

GLASS FIBER REINFORCED PLASTIC PANELS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Glass fiber reinforced plastic panels.
- B. Glass fiber reinforced plastic ceiling suspension system.
- C. Trim.

1.02 REFERENCE STANDARDS

- A. ASTM D5319 Standard Specification for Glass-Fiber Reinforced Polyester Wall and Ceiling Panels; 2012.
- B. ASTM E84 Standard Test Method for Surface Burning Characteristics of Building Materials; 2015a.

1.03 SUBMITTALS

- A. Product Data: Provide data on specified products, describing physical and performance characteristics; including sizes, patterns and colors available; and installation instructions.
- B. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
 1. Extra Panels: Quantity equal to 5 percent of total installed.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Glass Fiber Reinforced Plastic Panels:
 - 1. Crane Composites, Inc; Glasbord: www.cranecomposites.com.
- B. Glass Fiber Reinforced Plastic Ceiling Suspension System:
 - 1. Crane Composites, Inc; Kemply with Sanigrid II grid system: www.cranecomposites.com.

2.02 PANEL SYSTEMS

- A. Wall Panels:
 - 1. Panel Size: 4 by 8 feet.
 - 2. Panel Thickness: 0.09 inch.
 - 3. Surface Design: Embossed.
 - 4. Color: White.
 - 5. Attachment Method: Adhesive only, with trim and sealant in joints.
- B. Ceiling:
 - 1. Panel Size: 23-3/4 by 47-3/4 inch.
 - 2. Panel Thickness: 5/8 inch.
 - 3. Surface Design: Smooth.
 - 4. Color: White.

2.03 MATERIALS

- A. Panels: Glass fiber reinforced plastic (FRP), complying with ASTM D5319.
 - 1. Surface Burning Characteristics: Maximum flame spread index of 25 and smoke developed index of 450; when system tested in accordance with ASTM E84.
- B. Ceiling Suspension System: Glass fiber reinforced plastic (FRP) lay-in grid.
 - 1. Profile: Tee; 1-1/2 inch wide face.
 - 2. Support Channels and Hangers: Galvanized or stainless steel, size and type to suit application.
 - 3. Plastic hold-down clips.
- C. Trim: Vinyl; color coordinating with panel.
- D. Fasteners: Nylon rivets.

- E. Adhesive: Type recommended by panel manufacturer.
- F. Sealant: Type recommended by panel manufacturer; white.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify existing conditions and substrate flatness before starting work.
- B. Verify that substrate conditions are ready to receive the work of this section.
- C. Verify that layout of hangers will not interfere with other work; make adjustments in layout as necessary.
- D. Do not begin ceiling installation until services above ceiling are complete except for final trim

3.02 INSTALLATION - WALLS

- A. Install panels in accordance with manufacturer's instructions.
- B. Cut and drill panels with carbide tipped saw blades, drill bits, or snips.
- C. Pre-drill fastener holes in panels, 1/8 inch greater in diameter than fastener, spaced as indicated by panel manufacturer.
- D. Apply adhesive to the back side of the panel using trowel as recommended by adhesive manufacturer.
- E. Apply panels to wall with seams plumb and pattern aligned with adjoining panels.
- F. Install panels with manufacturer's recommended gap for panel field and corner joints.
- G. Drive fasteners to provide snug fit, and do not over-tighten.
- H. Place trim on panel before fastening edges, as required.
- I. Fill channels in trim with sealant before attaching to panel.
- J. Install trim with adhesive and screws or nails, as required.
- K. Seal gaps at floor, ceiling, and between panels with applicable sealant to prevent moisture intrusion.
- L. Remove excess sealant after paneling is installed and prior to curing.

3.03 INSTALLATION - CEILINGS

- A. Install suspension system in accordance with manufacturer's instructions.
- B. Lay out system to a balanced grid design, with edge units greater than 50 percent of panel size.
- C. Locate system on room axis in accordance with reflected ceiling plan.
- D. Space hangers not more than 48 inches on center.
- E. Support fixture loads using supplementary hangers located within 6 inches of each corner, or support components independently. Do not eccentrically load system or induce rotation of runners.
- F. Install ceiling panels using hold down clips.

SECTION 09 9113 EXTERIOR PAINTING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Surface preparation.
- B. Field application of paints and other coatings.
- C. Scope: Finish exterior surfaces exposed to view, unless fully factory-finished and unless otherwise indicated, including the following:
 - 1. Both sides and edges of plywood backboards for electrical and telecom equipment before installing equipment.
 - 2. Exposed surfaces of steel lintels and ledge angles.
- D. Do Not Paint or Finish the Following Items:
 - 1. Items factory-finished unless otherwise indicated; materials and products having factory-applied primers are not considered factory finished.
 - 2. Items indicated to receive other finishes.
 - 3. Items indicated to remain unfinished.
 - 4. Fire rating labels, equipment serial number and capacity labels, and operating parts of equipment.
 - 5. Stainless steel, anodized aluminum, bronze, terne coated stainless steel, zinc, and lead.
 - 6. Marble, granite, slate, and other natural stones.
 - 7. Floors, unless specifically indicated.
 - 8. Glass.
 - 9. Concealed pipes, ducts, and conduits.

1.02 RELATED REQUIREMENTS

A. Section 09 9123 - Interior Painting.

1.03 REFERENCE STANDARDS

- A. 40 CFR 59, Subpart D National Volatile Organic Compound Emission Standards for Architectural Coatings; U.S. Environmental Protection Agency; current edition.
- B. ASTM D16 Standard Terminology for Paint, Related Coatings, Materials, and Applications; 2014.
- C. ASTM D4258 Standard Practice for Surface Cleaning Concrete for Coating; 2005 (Reapproved 2012).
- D. ASTM D4442 Standard Test Methods for Direct Moisture Content Measurement of Wood and Wood-Base Materials; 2007.
- E. MPI (APSM) Master Painters Institute Architectural Painting Specification Manual; Current Edition, www.paintinfo.com.
- F. SSPC V1 (PM1) Good Painting Practice: Painting Manual, Volume 1; Fourth Edition.
- G. SSPC-SP 1 Solvent Cleaning; 2015.
- H. SSPC-SP 2 Hand Tool Cleaning; 1982 (Ed. 2004).
- I. SSPC-SP 6 Commercial Blast Cleaning; 2007.

1.04 SUBMITTALS

- A. Product Data: Provide complete list of products to be used, with the following information for each:
 - 1. Manufacturer's name, product name and/or catalog number, and general product category (e.g. "alkyd enamel").
 - 2. MPI product number (e.g. MPI #47).
 - 3. Cross-reference to specified paint system(s) product is to be used in; include description of each system.

- 4. Manufacturer's installation instructions.
- B. Samples: Submit two paper chip samples, 3x4 inch in size illustrating range of colors and textures available for each surface finishing product scheduled.
- C. Certification: By manufacturer that paints and finishes comply with VOC limits specified.
- D. Manufacturer's Instructions: Indicate special surface preparation procedures.
- E. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
 - 1. Extra Paint and Finish Materials: 1 gallon of each color; from the same product run, store where directed (per each building).
 - 2. Label each container with color in addition to the manufacturer's label.

1.05 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing the products specified, with minimum three years documented experience.
- B. Applicator Qualifications: Company specializing in performing the type of work specified with minimum five years experience.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Deliver products to site in sealed and labeled containers; inspect to verify acceptability.
- B. Container Label: Include manufacturer's name, type of paint, brand name, lot number, brand code, coverage, surface preparation, drying time, cleanup requirements, color designation, and instructions for mixing and reducing.
- C. Paint Materials: Store at minimum ambient temperature of 45 degrees F and a maximum of 90 degrees F, in ventilated area, and as required by manufacturer's instructions.

1.07 FIELD CONDITIONS

- A. Do not apply materials when surface and ambient temperatures are outside the temperature ranges required by the paint product manufacturer.
- B. Follow manufacturer's recommended procedures for producing best results, including testing of substrates, moisture in substrates, and humidity and temperature limitations.
- C. Do not apply exterior paint and finishes during rain or snow, or when relative humidity is outside the humidity ranges required by the paint product manufacturer.
- D. Minimum Application Temperatures for Latex Paints: 50 degrees F for exterior; unless required otherwise by manufacturer's instructions.
- E. Minimum Application Temperature for Varnish Finishes: 65 degrees F for exterior, unless required otherwise by manufacturer's instructions.
- F. Provide lighting level of 80 ft candles measured mid-height at substrate surface.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Provide paints and finishes used in any individual system from the same manufacturer; no exceptions.
- B. Paints:
 - 1. Benjamin Moore & Co: www.benjaminmoore.com.
 - 2. PPG Paints: www.ppgpaints.com.
 - 3. Sherwin-Williams Company: www.sherwin-williams.com.
- C. Primer Sealers: Same manufacturer as top coats.
- D. Substitutions: See Section 01 6000 Product Requirements.

2.02 PAINTS AND FINISHES - GENERAL

A. Paints and Finishes: Ready mixed, unless required to be a field-catalyzed paint.

- 1. Provide paints and finishes of a soft paste consistency, capable of being readily and uniformly dispersed to a homogeneous coating, with good flow and brushing properties, and capable of drying or curing free of streaks or sags.
- 2. Provide materials that are compatible with one another and the substrates indicated under conditions of service and application, as demonstrated by manufacturer based on testing and field experience.
- 3. Supply each paint material in quantity required to complete entire project's work from a single production run.
- 4. Do not reduce, thin, or dilute paint or finishes or add materials unless such procedure is specifically described in manufacturer's product instructions.
- B. Volatile Organic Compound (VOC) Content:
 - 1. Provide paints and finishes that comply with the most stringent requirements specified in the following:
 - a. 40 CFR 59, Subpart D--National Volatile Organic Compound Emission Standards for Architectural Coatings.
 - b. Ozone Transport Commission (OTC) Model Rule, Architectural, Industrial, and Maintenance Coatings; www.otcair.org; specifically:
 - 1) Opaque, Flat: 50 g/L, maximum.
 - 2) Opaque, Nonflat: 150 g/L, maximum.
 - 3) Opaque, High Gloss: 250 g/L, maximum.
 - 4) Varnishes: 350 g/L, maximum.
 - c. Architectural coatings VOC limits of the State in which the Project is located.
 - 2. Determination of VOC Content: Testing and calculation in accordance with 40 CFR 59, Subpart D (EPA Method 24), exclusive of colorants added to a tint base and water added at project site; or other method acceptable to authorities having jurisdiction.
- C. Flammability: Comply with applicable code for surface burning characteristics.
- D. Sheens: Provide the sheens specified; where sheen is not specified, sheen will be selected later by Architect from the manufacturer's full line.
- E. Colors: To be selected from manufacturer's full range of available colors.
 - 1. Selection to be made by Architect after award of contract.

2.03 PAINT SYSTEMS - EXTERIOR

- A. Paint E-OP Exterior Surfaces to be Painted, Unless Otherwise Indicated: Including primed wood and stucco.
 - 1. Two top coats.
 - 2. Top Coat(s): High build, waterproofing coating; MPI #161, 163, or 164.
 - a. Products:
 - 1) Sherwin-Williams Loxon XP A24-1400 series.
 - 2) Substitutions: Section 01 6000 Product Requirements.
- B. Paint WE-OP-3A Wood, Opaque, Alkyd, 3 Coat:
 - 1. One coat of alkyd primer sealer.
 - a. Sherwin-Williams Exterior Wood Primer B42W08041 series
 - 2. Gloss: Two coats of alkyd enamel.
 - a. Sherwin-Williams Pro Industrial Waterbased Alkyd Urethane B53-1250 series
- C. Paint ME-OP-3A Ferrous Metals, Unprimed, Alkyd, 3 Coat:
 - 1. One coat of alkyd primer.
 - a. Sherwin-Williams Pro Industrial Pro-Cryl Primer
 - 2. Gloss: Two coats of alkyd enamel.
 - a. Sherwin-Williams Pro Industrial Waterbased Alkyd Urethane B53-1250 series

2.04 ACCESSORY MATERIALS

A. Accessory Materials: Provide primers, sealers, cleaning agents, cleaning cloths, sanding materials, and clean-up materials as required for final completion of painted surfaces.

- B. Patching Material: Latex filler.
- C. Fastener Head Cover Material: Latex filler.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Do not begin application of paints and finishes until substrates have been properly prepared.
- B. Verify that surfaces are ready to receive work as instructed by the product manufacturer.
- C. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially effect proper application.
- D. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.
- E. Test shop-applied primer for compatibility with subsequent cover materials.
- F. Measure moisture content of surfaces using an electronic moisture meter. Do not apply finishes unless moisture content of surfaces are below the following maximums:
 - 1. Exterior Wood: 15 percent, measured in accordance with ASTM D4442.
 - 2. Concrete Floors and Traffic Surfaces: 8 percent.

3.02 PREPARATION

- A. Clean surfaces thoroughly and correct defects prior to application.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
- C. Remove or mask surface appurtenances, including electrical plates, hardware, light fixture trim, escutcheons, and fittings, prior to preparing surfaces for finishing.
- D. Seal surfaces that might cause bleed through or staining of topcoat.
- E. Remove mildew from impervious surfaces by scrubbing with solution of tetra-sodium phosphate and bleach. Rinse with clean water and allow surface to dry.
- F. Galvanized Surfaces:
 - 1. Remove surface contamination and oils and wash with solvent according to SSPC-SP 1.
 - 2. Prepare surface according to SSPC-SP 2.
- G. Ferrous Metal:
 - 1. Solvent clean according to SSPC-SP 1.
 - 2. Remove rust, loose mill scale, and other foreign substances using using methods recommended in writing by paint manufacturer and blast cleaning according to SSPC-SP 6 "Commercial Blast Cleaning". Protect from corrosion until coated.
- H. Exterior Wood Surfaces to Receive Opaque Finish: Remove dust, grit, and foreign matter. Seal knots, pitch streaks, and sappy sections. Fill nail holes with tinted exterior calking compound after prime coat has been applied. Back prime concealed surfaces before installation.
- I. Exterior Wood to Receive Transparent Finish: Remove dust, grit, and foreign matter; seal knots, pitch streaks, and sappy sections with sealer. Fill nail holes with tinted exterior calking compound after sealer has been applied. Prime concealed surfaces.
- J. Glue-Laminated Beams: Prior to finishing, wash surfaces with solvent, remove grease and dirt.
- K. Wood Doors to be Field-Finished: Seal wood door top and bottom edge surfaces with tinted primer.
- L. Metal Doors to be Painted: Prime metal door top and bottom edge surfaces.

3.03 APPLICATION

A. Exterior Wood to Receive Opaque Finish: If final painting must be delayed more than 2 weeks after installation of woodwork, apply primer within 2 weeks and final coating within 4 weeks.

- B. Apply products in accordance with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual".
- C. Where adjacent sealant is to be painted, do not apply finish coats until sealant is applied.
- D. Do not apply finishes to surfaces that are not dry. Allow applied coats to dry before next coat is applied.
- E. Apply each coat to uniform appearance.
- F. Sand wood and metal surfaces lightly between coats to achieve required finish.
- G. Vacuum clean surfaces of loose particles. Use tack cloth to remove dust and particles just prior to applying next coat.
- H. Wood to Receive Transparent Finishes: Tint fillers to match wood. Work fillers into the grain before set. Wipe excess from surface.
- I. Reinstall electrical cover plates, hardware, light fixture trim, escutcheons, and fittings removed prior to finishing.

3.04 CLEANING

A. Collect waste material that could constitute a fire hazard, place in closed metal containers, and remove daily from site.

3.05 PROTECTION

- A. Protect finishes until completion of project.
- B. Touch-up damaged finishes after Substantial Completion.

3.06 SCHEDULE - PAINT SYSTEMS

- A. Concrete, Concrete Masonry Units (CMU), Concrete Block, Stucco: Finish surfaces exposed to view, except for flatwork, paving, stairs and ramps to be finished with sealer.
 - 1. Exterior: E-OP.
- B. Wood: Finish surfaces exposed to view.
 - 1. Exterior trim and frames: WE-OP-3A.
 - 2. Exterior siding: WE-TR-S.
 - 3. Exterior timbers: WE-TR-S.
- C. Steel Fabrications: Finish surfaces exposed to view.
 - 1. Exterior: ME-OP-3A, gloss.
- D. Shop-Primed Metal Items: Finish surfaces exposed to view.1. Exterior: Paint-ME-OP-3A, gloss.
- E. Exterior Pavement Markings: Paint E-Pav.

SECTION 09 9123 INTERIOR PAINTING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Surface preparation.
- B. Field application of paints, stains, varnishes, and other coatings.
- C. Scope: Finish interior surfaces exposed to view, unless fully factory-finished and unless otherwise indicated, including the following:
 - 1. Both sides and edges of plywood backboards for electrical and telecom equipment before installing equipment.
 - 2. Mechanical and Electrical:
 - a. In finished areas, paint insulated and exposed pipes, conduit, boxes, insulated and exposed ducts, hangers, brackets, collars and supports, mechanical equipment, and electrical equipment, unless otherwise indicated.
 - b. In finished areas, paint shop-primed items.
 - c. Paint interior surfaces of air ducts that are visible through grilles and louvers with one coat of flat black paint to visible surfaces.
 - d. Paint dampers exposed behind louvers, grilles, to match face panels.
- D. Do Not Paint or Finish the Following Items:
 - 1. Items factory-finished unless otherwise indicated; materials and products having factory-applied primers are not considered factory finished.
 - 2. Items indicated to receive other finishes.
 - 3. Items indicated to remain unfinished.
 - 4. Fire rating labels, equipment serial number and capacity labels, bar code labels, and operating parts of equipment.
 - 5. Stainless steel, anodized aluminum, bronze, terne coated stainless steel, and lead items.
 - 6. Marble, granite, slate, and other natural stones.
 - 7. Floors, unless specifically indicated.
 - 8. Ceramic and other tiles.
 - 9. Glass.
 - 10. Concealed pipes, ducts, and conduits.

1.02 RELATED REQUIREMENTS

A. Section 09 9113 - Exterior Painting.

1.03 REFERENCE STANDARDS

- A. 40 CFR 59, Subpart D National Volatile Organic Compound Emission Standards for Architectural Coatings; U.S. Environmental Protection Agency; current edition.
- B. ASTM D16 Standard Terminology for Paint, Related Coatings, Materials, and Applications; 2014.
- C. ASTM D4442 Standard Test Methods for Direct Moisture Content Measurement of Wood and Wood-Base Materials; 2007.
- D. MPI (APSM) Master Painters Institute Architectural Painting Specification Manual; Current Edition, www.paintinfo.com.
- E. SSPC V1 (PM1) Good Painting Practice: Painting Manual, Volume 1; Fourth Edition.
- F. SSPC-SP 1 Solvent Cleaning; 2015.
- G. SSPC-SP 6 Commercial Blast Cleaning; 2007.

1.04 SUBMITTALS

A. Product Data: Provide complete list of products to be used, with the following information for each:

- 1. Manufacturer's name, product name and/or catalog number, and general product category (e.g. "alkyd enamel").
- 2. MPI product number (e.g. MPI #47).
- 3. Cross-reference to specified paint system(s) product is to be used in; include description of each system.
- 4. Manufacturer's installation instructions.
- B. Samples: Submit two paper chip samples, 3x4 inch in size illustrating range of colors and textures available for each surface finishing product scheduled.
- C. Certification: By manufacturer that paints and finishes comply with VOC limits specified.
- D. Manufacturer's Instructions: Indicate special surface preparation procedures.
- E. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
 - 1. Extra Paint and Finish Materials: 1 gallon of each color; from the same product run, store where directed (per each building).
 - 2. Label each container with color in addition to the manufacturer's label.

1.05 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing the products specified, with minimum three years documented experience.
- B. Applicator Qualifications: Company specializing in performing the type of work specified with minimum five years experience and approved by manufacturer.

1.06 MOCK-UP

- A. Locate where directed by Architect.
- B. Mock-up may remain as part of the work.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Deliver products to site in sealed and labeled containers; inspect to verify acceptability.
- B. Container Label: Include manufacturer's name, type of paint, brand name, lot number, brand code, coverage, surface preparation, drying time, cleanup requirements, color designation, and instructions for mixing and reducing.
- C. Paint Materials: Store at minimum ambient temperature of 45 degrees F and a maximum of 90 degrees F, in ventilated area, and as required by manufacturer's instructions.

1.08 FIELD CONDITIONS

- A. Do not apply materials when surface and ambient temperatures are outside the temperature ranges required by the paint product manufacturer.
- B. Follow manufacturer's recommended procedures for producing best results, including testing of substrates, moisture in substrates, and humidity and temperature limitations.
- C. Do not apply materials when relative humidity exceeds 85 percent; at temperatures less than 5 degrees F above the dew point; or to damp or wet surfaces.
- D. Minimum Application Temperatures for Paints: 50 degrees F for interiors unless required otherwise by manufacturer's instructions.
- E. Minimum Application Temperature for Varnish Finishes: 65 degrees F for interior, unless required otherwise by manufacturer's instructions.
- F. Provide lighting level of 80 ft candles measured mid-height at substrate surface.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Provide paints and finishes used in any individual system from the same manufacturer; no exceptions.
- B. Paints:
 - 1. Benjamin Moore & Co: www.benjaminmoore.com.

- 2. PPG Paints: www.ppgpaints.com.
- 3. Sherwin-Williams Company: www.sherwin-williams.com.
- C. Primer Sealers: Same manufacturer as top coats.
- D. Substitutions: See Section 01 6000 Product Requirements.

2.02 PAINTS AND FINISHES - GENERAL

- A. Paints and Finishes: Ready mixed, unless intended to be a field-catalyzed paint.
 - 1. Provide paints and finishes of a soft paste consistency, capable of being readily and uniformly dispersed to a homogeneous coating, with good flow and brushing properties, and capable of drying or curing free of streaks or sags.
 - 2. Supply each paint material in quantity required to complete entire project's work from a single production run.
 - 3. Do not reduce, thin, or dilute paint or finishes or add materials unless such procedure is specifically described in manufacturer's product instructions.
- B. Volatile Organic Compound (VOC) Content:
 - 1. Provide paints and finishes that comply with the most stringent requirements specified in the following:
 - a. 40 CFR 59, Subpart D--National Volatile Organic Compound Emission Standards for Architectural Coatings.
 - b. Ozone Transport Commission (OTC) Model Rule, Architectural, Industrial, and Maintenance Coatings; www.otcair.org; specifically:
 - 1) Opaque, Flat: 50 g/L, maximum.
 - 2) Opaque, Nonflat: 150 g/L, maximum.
 - 3) Opaque, High Gloss: 250 g/L, maximum.
 - 4) Varnishes: 350 g/L, maximum.
 - 2. Determination of VOC Content: Testing and calculation in accordance with 40 CFR 59, Subpart D (EPA Method 24), exclusive of colorants added to a tint base and water added at project site; or other method acceptable to authorities having jurisdiction.
- C. Colors: To be selected from manufacturer's full range of available colors.
 - 1. Selection to be made by Architect after award of contract.
 - 2. In finished areas, finish pipes, ducts, conduit, and equipment the same color as the wall/ceiling they are mounted on/under.
 - 3. In utility areas, finish equipment, piping, conduit, and exposed duct work in colors according to the room color.

2.03 PAINT SYSTEMS - INTERIOR

- A. Paint I-OP Interior Surfaces to be Painted, Unless Otherwise Indicated: Including gypsum board, wood, plaster, and pvc trims.
 - 1. Two top coats.
 - a. Sherwin-Williams Pro Industrial Waterbased Alkyd Urethane B53-1150 series, semi-gloss
 - 2. One primer coat
 - a. Sherwin-Williams Premium Wall & Wood Primer B24W08111 series
- B. Paint I-OP-MD-DT Medium Duty Door/Trim: For surfaces subject to frequent contact by occupants, including metals and wood:
 - 1. Two top coats.
 - a. Sherwin-Williams Pro Industrial Waterbased Alkyd Urethane B53-1150 series, semi-gloss
- C. Paint GI-OP-3L Gypsum Board/Plaster, Latex, 3 Coat:
 - 1. One coat of alkyd primer sealer.
 - 2. Gloss: Two coats of latex enamel.
 - 3. Semi-gloss: Two coats of latex enamel; All walls, trims and ceilings for Bathrooms, Janitors, Kitchens, Exit Stairways and other wet locations or as noted..
 - 4. Eggshell: Two coats of latex enamel; All walls unless otherwise noted.

5. Flat: Two coats of latex enamel; All ceilings unless otherwise noted.

2.04 ACCESSORY MATERIALS

- A. Accessory Materials: Provide primers, sealers, cleaning agents, cleaning cloths, sanding materials, and clean-up materials as required for final completion of painted surfaces.
- B. Patching Material: Latex filler.
- C. Fastener Head Cover Material: Latex filler.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Do not begin application of paints and finishes until substrates have been properly prepared.
- B. Verify that surfaces are ready to receive work as instructed by the product manufacturer.
- C. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially effect proper application.
- D. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.
- E. Test shop-applied primer for compatibility with subsequent cover materials.
- F. Measure moisture content of surfaces using an electronic moisture meter. Do not apply finishes unless moisture content of surfaces are below the following maximums:
 - 1. Gypsum Wallboard: 12 percent.
 - 2. Plaster and Stucco: 12 percent.
 - 3. Interior Wood: 15 percent, measured in accordance with ASTM D4442.

3.02 PREPARATION

- A. Clean surfaces thoroughly and correct defects prior to application.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
- C. Remove or repair existing paints or finishes that exhibit surface defects.
- D. Remove or mask surface appurtenances, including electrical plates, hardware, light fixture trim, escutcheons, and fittings, prior to preparing surfaces or finishing.
- E. Seal surfaces that might cause bleed through or staining of topcoat.
- F. Remove mildew from impervious surfaces by scrubbing with solution of tetra-sodium phosphate and bleach. Rinse with clean water and allow surface to dry.
- G. Gypsum Board: Fill minor defects with filler compound. Spot prime defects after repair.
- H. Plaster: Fill hairline cracks, small holes, and imperfections with latex patching plaster. Make smooth and flush with adjacent surfaces. Wash and neutralize high alkali surfaces.
- I. Insulated Coverings: Remove dirt, grease, and oil from canvas and cotton.
- J. Ferrous Metal:
 - 1. Solvent clean according to SSPC-SP 1.
 - 2. Shop-Primed Surfaces: Sand and scrape to remove loose primer and rust. Feather edges to make touch-up patches inconspicuous. Clean surfaces with solvent. Prime bare steel surfaces.
 - 3. Remove rust, loose mill scale, and other foreign substances using using methods recommended in writing by paint manufacturer and blast cleaning according to SSPC-SP 6 "Commercial Blast Cleaning". Protect from corrosion until coated.
- K. Wood Surfaces to Receive Opaque Finish: Wipe off dust and grit prior to priming. Seal knots, pitch streaks, and sappy sections with sealer. Fill nail holes and cracks after primer has dried; sand between coats. Back prime concealed surfaces before installation.
- L. Wood Surfaces to Receive Transparent Finish: Wipe off dust and grit prior to sealing, seal knots, pitch streaks, and sappy sections with sealer. Fill nail holes and cracks after sealer has

dried; sand lightly between coats. Prime concealed surfaces with gloss varnish reduced 25 percent with thinner.

- M. Wood Doors to be Field-Finished: Seal wood door top and bottom edge surfaces with clear sealer.
- N. Metal Doors to be Painted: Prime metal door top and bottom edge surfaces.

3.03 APPLICATION

- A. Remove unfinished louvers, grilles, covers, and access panels on mechanical and electrical components and paint separately.
- B. Apply products in accordance with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual".
- C. Do not apply finishes to surfaces that are not dry. Allow applied coats to dry before next coat is applied.
- D. Apply each coat to uniform appearance in thicknesses specified by manufacturer.
- E. Sand wood and metal surfaces lightly between coats to achieve required finish.
- F. Vacuum clean surfaces of loose particles. Use tack cloth to remove dust and particles just prior to applying next coat.
- G. Wood to Receive Transparent Finishes: Tint fillers to match wood. Work fillers into the grain before set. Wipe excess from surface.
- H. Reinstall electrical cover plates, hardware, light fixture trim, escutcheons, and fittings removed prior to finishing.

3.04 CLEANING

A. Collect waste material that could constitute a fire hazard, place in closed metal containers, and remove daily from site.

3.05 PROTECTION

- A. Protect finishes until completion of project.
- B. Touch-up damaged finishes after Substantial Completion.

3.06 SCHEDULE - PAINT SYSTEMS

- A. Gypsum Board: Finish surfaces exposed to view.
 - 1. Interior Ceilings and Bulkheads: I-OP, semi-gloss.
 - 2. Interior Walls: I-OP, semi-gloss.
- B. Plaster: Finish surfaces exposed to view.
 1. Interior Walls and Ceilings: I-OP, semi-gloss.
- C. Wood: Finish surfaces exposed to view.
 1. Interior doors, trim and frames: I-OP-MD-DT, semi-gloss.
- D. Steel Doors and Frames: Finish surfaces exposed to view; I-OP-MD-DT, semi-gloss.

SECTION 09 9600

HIGH-PERFORMANCE COATINGS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. High performance coatings.
- B. Surface preparation.

1.02 REFERENCE STANDARDS

- A. MPI (APSM) Master Painters Institute Architectural Painting Specification Manual; Current Edition, www.paintinfo.com.
- B. SSPC-SP 13 Surface Preparation of Concrete; (Reaffirmed 2015); 2003.

1.03 SUBMITTALS

- A. Product Data: Provide complete list of all products to be used, with the following information for each:
 - 1. Manufacturer's name, product name and/or catalog number, and general product category (e.g. "alkyd enamel").
 - Cross-reference to specified coating system(s) product is to be used in; include description of each system.
 - 3. Manufacturer's installation instructions.
- B. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
 - 1. Extra Coating Materials: 1 gallon of each type and color.
 - 2. Label each container with manufacturer's name, product number, color number, and room names and numbers where used.

1.04 QUALITY ASSURANCE

- A. Maintain one copy of each referenced document that applies to application on site.
- B. Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with minimum three years documented experience.
- C. Applicator Qualifications: Company specializing in performing the work of this section with minimum three years documented experience.

PART 2 PRODUCTS

2.01 TOP COAT MATERIALS

- A. Coatings General: Provide complete multi-coat systems formulated and recommended by manufacturer for the applications indicated, in the thicknesses indicated; number of coats specified does not include primer or filler coat.
- B. Epoxy Floor Coating:
 - 1. Number of Coats: As needed to acheive full coverage.
 - 2. Product Characteristics:
 - a. Percentage of solids by volume, 100%, minimum.
 - 3. Top Coat(s): Epoxy Polysiloxane, Two-Component.
 - a. Sheen: Gloss.
 - b. Color: Selected from manufacturer's standard colors.
 - c. Products:
 - 1) Sparten Chemical Company, Inc.; New Generation 100: www.spartanchemical.com.
 - 2) Substitutions: Section 01 6000 Product Requirements.
 - 4. Primer: As recommended by coating manufacturer for specific substrate.

2.02 ACCESSORY MATERIALS

A. Accessory Materials: Provide all primers, sealers, cleaning agents, cleaning cloths, sanding materials, and clean-up materials as required for final completion of coated surfaces.

B. Plastic Aggregate: Finely ground polymer for addition to coatings for slip resistance.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify existing conditions before starting work.
- B. Do not begin application of coatings until substrates have been properly prepared.
- C. Verify that substrate surfaces are ready to receive work as instructed by the coating manufacturer. Obtain and follow manufacturer's instructions for examination and testing of substrates.
- D. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially affect proper application.

3.02 PREPARATION

- A. Clean surfaces of loose foreign matter.
- B. Remove substances that would bleed through finished coatings. If unremovable, seal surface with shellac.
- C. Remove finish hardware, fixture covers, and accessories and store.
- D. Concrete:
 - 1. Remove release agents, curing compounds, efflorescence, and chalk. Do not coat surfaces if moisture content or alkalinity of surfaces to be coated exceeds that permitted in manufacturer's written instructions.
 - 2. Prepare surface as recommended by coating manufacturer and according to SSPC-SP 13.
- E. Protect adjacent surfaces and materials not receiving coating from spatter and overspray; mask if necessary to provide adequate protection. Repair damage.

3.03 PRIMING

A. Apply primer to all surfaces, unless specifically not required by coating manufacturer. Apply in accordance with coating manufacturer's instructions.

3.04 COATING APPLICATION

- A. Apply coatings in accordance with manufacturer's written instructions, to thicknesses specified.
- B. Apply in uniform thickness coats, without runs, drips, pinholes, brush marks, or variations in color, texture, or finish. Finish edges, crevices, corners, and other changes in dimension with full coating thickness.

SECTION 10 1400 SIGNAGE

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Room and door signs.
- B. Traffic signs.

1.02 REFERENCE STANDARDS

- A. 36 CFR 1191 Americans with Disabilities Act (ADA) Accessibility Guidelines for Buildings and Facilities; Architectural Barriers Act (ABA) Accessibility Guidelines; current edition.
- B. ADA Standards Americans with Disabilities Act (ADA) Standards for Accessible Design; 2010.
- C. ICC A117.1 Accessible and Usable Buildings and Facilities; 2009.

1.03 SUBMITTALS

- A. See Section 01 3000 Administrative Requirements, for submittal procedures.
- B. Product Data: Manufacturer's printed product literature for each type of sign, indicating sign styles, font, foreground and background colors, locations, overall dimensions of each sign.
- C. Signage Schedule: Provide information sufficient to completely define each sign for fabrication, including room number, room name, other text to be applied, sign and letter sizes, fonts, and colors.
 - 1. When room numbers to appear on signs differ from those on the drawings, include the drawing room number on schedule.
 - 2. When content of signs is indicated to be determined later, request such information from Owner through Architect at least 2 months prior to start of fabrication; upon request, submit preliminary schedule.
 - 3. Submit for approval by Owner through Architect prior to fabrication.
- D. Selection Samples: Where colors are not specified, submit two sets of color selection charts or chips.
- E. Manufacturer's Installation Instructions: Include installation templates and attachment devices.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Flat Signs:
 - 1. Mohawk Sign Systems, Inc; Product Series 200A Sand Carved: www.mohawksign.com.
 - 2. Substitutions: See Section 01 6000 Product Requirements.

2.02 SIGNAGE APPLICATIONS

- A. Accessibility Compliance: Signs are required to comply with ADA Standards and ICC A117.1, unless otherwise indicated; in the event of conflicting requirements, comply with the most comprehensive and specific requirements.
- B. Room and Door Signs: Provide a sign for all rooms as indicated on drawings Finish Schedule to receive a room sign.
 - 1. Sign Type: Flat signs with engraved panel media as specified.
 - 2. Provide "tactile" signage, with letters raised minimum 1/32 inch and Grade II braille.
 - 3. Size of letters shall be as follows:
 - a. Lettering for room ID signs shall be 3/4".
 - b. Symbol size shall be 4".
 - c. Standard Grade 2 braille shall be 1/2" below copy.
 - 4. Room function signs; Design M1000, 3" x length as required.
 - 5. Restroom signs shall be design ADA-4 size 8" x 8" with a 4" accessibility symbol, gender symbol and the verbal description placed directly below followed by Grade 2 braille.
 - 6. See typical sign layouts on drawings

- 7. Sign Height: 3 inches, unless otherwise indicated.
- 8. Office Doors: Identify with room names to be determined later by Owner .
- 9. Conference and Meeting Rooms: Identify with room names to be determined later by Owner .
- 10. Service Rooms: Identify with room names to be determined later by Owner.
- 11. Rest Rooms: Identify with pictograms, the names "MEN" and "WOMEN", and braille.
- 12. All Other Locations: Identify with room names to be determined later by Owner.
- C. Traffic Signs: To match campus standards; locate where indicated on the drawings.

2.03 SIGN TYPES

- A. Flat Signs: Signage media without frame.
 - 1. Edges: Square.
 - 2. Corners: Square.
 - 3. Wall Mounting of One-Sided Signs: Signs shall be mounted using silastic adhesive and vinyl tape for interior signs. The signs shall be mounted 60" from the floor to the center of the sign on the latch side. The distance between the door frame and sign should be 2". Installer/user assume responsibility for suitable installation of the signs.
- B. Color and Font: Unless otherwise indicated:
 - 1. Character Font: Helvetica, Arial, or other sans serif font.
 - 2. Character Case: Upper case only.
 - 3. Background Color: To be selected by Architect form Manufactures standard colors.
 - 4. Character Color: Contrasting color to be selected by Architect from manufactures standard colors.

2.04 TACTILE SIGNAGE MEDIA

- A. Engraved Panels: Laminated colored plastic; engraved through face to expose core as background color:
 - 1. Total Thickness: 1/16 inch.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that substrate surfaces are ready to receive work.

3.02 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Signs shall be mounted using silastic adhesive and vinyl tape for interior signs. The signs shall be mounted 60" from the floor to the center of the sign on the latch side. The distance between the door frame and sign should be 2". Installer/user assume responsibility for suitable installation of the signs.
 - 1. Review sign locations for each room with Architect prior to installation.
- C. Install neatly, with horizontal edges level.
- D. Locate signs and mount at heights indicated on drawings and in accordance with ADA Standards and ICC A117.1.
- E. Protect from damage until Substantial Completion; repair or replace damaged items.

SECTION 10 2800

TOILET, BATH, AND LAUNDRY ACCESSORIES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Accessories for toilet rooms and utility rooms.
- B. Grab bars.

1.02 RELATED REQUIREMENTS

A. Section 06 1000 - Rough Carpentry: Concealed supports for accessories, including in wall framing and plates and above ceiling framing.

1.03 REFERENCE STANDARDS

- A. ASTM A123/A123M Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products; 2015.
- B. ASTM A269/A269M Standard Specification for Seamless and Welded Austenitic Stainless Steel Tubing for General Service; 2015.
- C. ASTM A653/A653M Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2015.
- D. ASTM A666 Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar; 2015.
- E. ASTM B456 Standard Specification for Electrodeposited Coatings of Copper Plus Nickel Plus Chromium and Nickel Plus Chromium; 2011.
- F. ASTM C1036 Standard Specification for Flat Glass; 2011.
- G. ASTM C1503 Standard Specification for Silvered Flat Glass Mirror; 2008 (Reapproved 2013).
- H. GSA CID A-A-3002 Mirrors, Glass; U.S. General Services Administration; 1996.

1.04 SUBMITTALS

- A. Product Data: Submit data on accessories describing size, finish, details of function, and attachment methods.
- B. Manufacturer's Installation Instructions: Indicate special procedures and conditions requiring special attention.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Toilet Accessories:
 - 1. ASI American Specialties, Inc: www.americanspecialties.com.
 - 2. Bradley Corporation: www.bradleycorp.com.
 - 3. Kohler Co.: www.us.kohler.com.
 - 4. Moen, Inc.: www.moen.com.
 - 5. American Standard: www.americanstandard-us.com.

2.02 MATERIALS

- A. Accessories General: Shop assembled, free of dents and scratches and packaged complete with anchors and fittings, steel anchor plates, adapters, and anchor components for installation.
 - 1. Grind welded joints smooth.
 - 2. Fabricate units made of metal sheet of seamless sheets, with flat surfaces.
- B. Mirror Glass: Annealed float glass, ASTM C1036 Type I, Class 1, Quality Q2, with silvering, protective and physical characteristics complying with ASTM C1503.
- C. Adhesive: Two component epoxy type, waterproof.
- D. Fasteners, Screws, and Bolts: Hot dip galvanized.

E. Expansion Shields: Fiber, lead, or rubber as recommended by accessory manufacturer for component and substrate.

2.03 FINISHES

- A. Chrome/Nickel Plating: ASTM B456, SC 2, satin finish, unless otherwise noted.
- B. Back paint components where contact is made with building finishes to prevent electrolysis.

2.04 TOILET ROOM ACCESSORIES

- A. See Bath Accessory Schedule on drawings.
- B. Toilet Paper Dispenser: Single roll, semi-recessed, stainless steel unit with pivot hinge.
- C. Combination Towel Dispenser/Waste Receptacle: Recessed flush with wall, stainless steel; seamless wall flanges, continuous piano hinges, tumbler locks on upper and lower doors.
 - 1. Towel dispenser capacity: 800 multi-fold.
 - 2. Waste receptacle capacity: 4.9 gallons.
- D. Soap Dispenser: Liquid soap dispenser, wall-mounted, surface, with stainless steel cover and horizontal stainless steel tank and working parts; push type soap valve, check valve, and window gage refill indicatorbattery powered sensin dispenser and lockable cover.
 - 1. Minimum Capacity: 27 ounces.
- E. Mirrors: Stainless steel framed, 1/4 inch thick annealed float glass; ASTM C1036.
 - 1. Annealed Float Glass: Silvering, protective and physical characteristics in compliance with ASTM C1503.
 - 2. Size: As indicated on drawings.
 - 3. Frame: 0.05 inch angle shapes, with mitered and welded and ground corners; No.4 finish.
 - 4. Backing: Full-mirror sized, minimum 0.03 inch galvanized steel sheet and nonabsorptive filler material.
- F. Grab Bars: Stainless steel, nonslip grasping surface finish.
 - 1. Heavy Duty Grab Bars: Floor supports are acceptable if necessary to achieve load rating.
 - a. Push/Pull Point Load: Minimum 1000 pound-force, minimum.
 - b. Dimensions: 1-1/2 inch outside diameter, minimum 0.125 inch wall thickness, exposed flange mounting, 1-1/2 inch clearance between wall and inside of grab bar.
 - c. Length and Configuration: As indicated on drawings.

2.05 UTILITY ROOM ACCESSORIES

- A. See Plumbing Fixture Schedule on drawings.
- B. Mop and Broom Holder: 0.05 inch thick stainless steel, Type 304, hat-shaped channel.
 - 1. Holders: 3 spring-loaded rubber cam holders.
 - 2. Length: Manufacturer's standard length for number of holders.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify existing conditions before starting work.
- B. Verify exact location of accessories for installation.
- C. Verify that field measurements are as indicated on drawings.
- D. See Section 06 1000 for installation of blocking in walls.

3.02 PREPARATION

- A. Deliver inserts and rough-in frames to site for timely installation.
- B. Provide templates and rough-in measurements as required.

3.03 INSTALLATION

A. Install accessories in accordance with manufacturers' instructions in locations indicated on the drawings.

- B. Install plumb and level, securely and rigidly anchored to substrate.
- C. Mounting Heights and Locations: As required by accessibility regulations and as indicated on drawings

SECTION 10 4400

FIRE PROTECTION SPECIALTIES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Fire extinguishers.

1.02 RELATED REQUIREMENTS

A. Section 06 1000 - Rough Carpentry: Wood blocking product and execution requirements.

1.03 REFERENCE STANDARDS

- A. FM (AG) FM Approval Guide; current edition.
- B. NFPA 10 Standard for Portable Fire Extinguishers; 2013.
- C. UL (DIR) Online Certifications Directory; current listings at database.ul.com.

1.04 SUBMITTALS

- A. Product Data: Provide extinguisher operational features, extinguisher ratings and classifications, color and finish, anchorage details, and installation instructions.
- B. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.
- C. Maintenance Data: Include test, refill or recharge schedules and re-certification requirements.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Fire Extinguishers:
 - 1. Potter-Roemer; Product 3005 Class ABC: .www.potterroemer.com.
 - 2. Substitutions: See Section 01 6000 Product Requirements.

2.02 FIRE EXTINGUISHERS

- A. Fire Extinguishers General: Comply with product requirements of NFPA 10 and applicable codes, whichever is more stringent.
 - 1. Provide extinguishers labeled by UL (DIR) or FM (AG) for purpose specified and as indicated.
- B. Multipurpose Dry Chemical Type Fire Extinguishers: Carbon steel tank, with pressure gage.
 - 1. Class: A:B:C type.
 - 2. Size: 5 pound.
 - 3. Type: 2A:10B:C
 - 4. Finish: Baked polyester powder coat, color as selected.
 - 5. Location: As per plans.
 - 6. Temperature range: Minus 40 degrees F to 120 degrees F.

2.03 ACCESSORIES

A. Extinguisher Brackets: Formed steel, chrome-plated.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify existing conditions before starting work.
- B. Verify rough openings for cabinet are correctly sized and located.

3.02 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Secure rigidly in place.
- C. Place extinguishers in cabinets.

D. Install signage as required.

SECTION 12 9300 SITE FURNISHINGS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Bollards.

1.02 RELATED REQUIREMENTS

A. Section 03 3000 - Cast-in-Place Concrete: Bollard infill and underground encasement.

1.03 REFERENCE STANDARDS

A. ASTM A53/A53M - Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless; 2012.

PART 2 PRODUCTS

2.01 BOLLARDS

- A. Steel Pipe Bollards: Concrete filled steel pipe with plain shaft.
 - 1. Shape: Round.
 - 2. Diameter: 6.0 inches.
 - 3. Height Above Grade: 48.0 inches.
 - 4. Depth Below Grade: 54.0 inches.
 - 5. Cap: Concrete fill rounded-off to form a smooth convex cap.
 - 6. Materials:
 - a. Steel Pipe: ASTM A53/A53M, galvanized.
 - b. Factory Finish: PVC Cover.
 - c. Color: As selected by Architect from manufacturer's standard range.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install site furnishings in accordance with approved shop drawings, and manufacturer's installation instructions.
- B. See Section 03 3000 for bollard infill and underground encasement.

SECTION 22 0719 PLUMBING PIPING INSULATION

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Piping insulation.

1.02 RELATED REQUIREMENTS

- A. Section 22 1005 Plumbing Piping: Placement of hangers and hanger inserts.
- B. Section 23 2300 Refrigerant Piping: Placement of inserts.

1.03 REFERENCE STANDARDS

- A. ASTM C177 Standard Test Method for Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Guarded-Hot-Plate Apparatus; 2013.
- B. ASTM C518 Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus; 2010.
- C. ASTM C534/C534M Standard Specification for Preformed Flexible Elastomeric Cellular Thermal Insulation in Sheet and Tubular Form; 2014.
- D. ASTM C547 Standard Specification for Mineral Fiber Pipe Insulation; 2015.
- E. ASTM C552 Standard Specification for Cellular Glass Thermal Insulation; 2015.
- F. ASTM C795 Standard Specification for Thermal Insulation for Use in Contact with Austenitic Stainless Steel; 2008 (Reapproved 2013).
- G. ASTM D1056 Standard Specification for Flexible Cellular Materials--Sponge or Expanded Rubber; 2014.
- H. ASTM E84 Standard Test Method for Surface Burning Characteristics of Building Materials; 2015a.
- I. ASTM E96/E96M Standard Test Methods for Water Vapor Transmission of Materials; 2014.
- J. UL 723 Standard for Test for Surface Burning Characteristics of Building Materials; Current Edition, Including All Revisions.

1.04 SUBMITTALS

- A. See Section 01 3000 Administrative Requirements, for submittal procedures.
- B. Product Data: Provide product description, thermal characteristics, list of materials and thickness for each service, and locations.

PART 2 PRODUCTS

2.01 REGULATORY REQUIREMENTS

A. Surface Burning Characteristics: Flame spread index/Smoke developed index of 25/50, maximum, when tested in accordance with ASTM E84 or UL 723.

2.02 GLASS FIBER

- A. Manufacturers:
 - 1. CertainTeed Corporation: www.certainteed.com.
 - 2. Johns Manville Corporation: www.jm.com.
 - 3. Knauf Insulation: www.knaufusa.com.
 - 4. Owens Corning Corporation; Fiberglas Pipe Insulation ASJ: www.ocbuildingspec.com.
 - 5. Owens Corning Corp: www.owenscorning.com.
 - 6. Substitutions: See Section 01 6000 Product Requirements.
- B. Insulation: ASTM C547 and ASTM C795; rigid molded, noncombustible.
 - 1. 'K' Value: ASTM C177, 0.24 at 75 degrees F.
 - 2. Maximum Service Temperature: 850 degrees F.
 - 3. Maximum Moisture Absorption: 0.2 percent by volume.

2.03 POLYETHYLENE

- A. Manufacturers:
 - 1. Armacell LLC; Tubolit: www.armacell.us.
 - 2. Substitutions: See Section 01 6000 Product Requirements.
- B. Insulation: Flexible closed-cell polyethylene tubing, slit lengthwise for installation, complying with applicable requirements of ASTM D1056.
 - 1. 'K' Value: ASTM C177; 0.25 at 75 degrees F.
 - 2. Maximum Service Temperature: 200 degrees F.
 - 3. Density: 2 lb/cu ft.
 - 4. Maximum Moisture Absorption: 1.0 percent by volume.
 - 5. Moisture Vapor Permeability: 0.05 perm inch, when tested in accordance with ASTM E96/E96M.
 - 6. Connection: Contact adhesive.

2.04 FLEXIBLE ELASTOMERIC CELLULAR INSULATION

- A. Manufacturer:
 - 1. Aeroflex USA, Inc: www.aeroflexusa.com.
 - 2. Armacell LLC; AP/Armaflex: www.armacell.us.
 - 3. K-Flex USA LLC: www.kflexusa.com.
 - 4. Substitutions: See Section 01 6000 Product Requirements.
- B. Insulation: Preformed flexible elastomeric cellular rubber insulation complying with ASTM C534/C534M Grade 3; use molded tubular material wherever possible.
 - 1. Minimum Service Temperature: Minus 40 degrees F.
 - 2. Maximum Service Temperature: 220 degrees F.
 - 3. Connection: Waterproof vapor barrier adhesive.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that piping has been tested before applying insulation materials.
- B. Verify that surfaces are clean and dry, with foreign material removed.

3.02 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Exposed Piping: Locate insulation and cover seams in least visible locations.
- C. Insulated pipes conveying fluids below ambient temperature: Insulate entire system including fittings, valves, unions, flanges, strainers, flexible connections, pump bodies, and expansion joints.

SECTION 22 1005 PLUMBING PIPING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Pipe, pipe fittings, specialties, and connections for piping systems.
 - 1. Sanitary sewer.
 - 2. Domestic water.
 - 3. Storm water.
 - 4. Pipe hangers and supports.
 - 5. Valves.

1.02 RELATED REQUIREMENTS

- A. Section 31 2316 Excavation.
- B. Section 31 2323 Fill.
- C. Section 07 8400 Firestopping.
- D. Section 22 0719 Plumbing Piping Insulation.

1.03 REFERENCE STANDARDS

- A. ASME B16.18 Cast Copper Alloy Solder Joint Pressure Fittings; 2012.
- B. ASME B16.22 Wrought Copper and Copper Alloy Solder-Joint Pressure Fittings; 2013.
- C. ASME B31.2 Fuel Gas Piping; The American Society of Mechanical Engineers; 1968.
- D. ASTM A53/A53M Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless; 2012.
- E. ASTM A123/A123M Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products; 2015.
- F. ASTM B32 Standard Specification for Solder Metal; 2008 (Reapproved 2014).
- G. ASTM B42 Standard Specification for Seamless Copper Pipe, Standard Sizes; 2015a.
- H. ASTM B75/B75M Standard Specification for Seamless Copper Tube; 2011.
- I. ASTM B88 Standard Specification for Seamless Copper Water Tube; 2014.
- J. ASTM B88M Standard Specification for Seamless Copper Water Tube (Metric); 2013.
- K. ASTM B280 Standard Specification for Seamless Copper Tube for Air Conditioning and Refrigeration Field Service; 2013.
- L. ASTM B813 Standard Specification for Liquid and Paste Fluxes for Soldering of Copper and Copper Alloy Tube; 2010.
- M. ASTM B828 Standard Practice for Making Capillary Joints by Soldering of Copper and Copper Alloy Tube and Fittings; 2002 (Reapproved 2010).
- N. ASTM D1785 Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Pipe, Schedules 40, 80, and 120; 2015.
- O. ASTM D2239 Standard Specification for Polyethylene (PE) Plastic Pipe (SIDR-PR) Based on Controlled Inside Diameter; 2012.
- P. ASTM D2241 Standard Specification for Poly (Vinyl Chloride) (PVC) Pressure-Rated Pipe (SDR Series); 2015.
- Q. ASTM D2466 Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 40; 2013.
- R. ASTM D2564 Standard Specification for Solvent Cements for Poly(Vinyl Chloride) (PVC) Plastic Piping Systems; 2012.
- S. ASTM D2609 Standard Specification for Plastic Insert Fittings for Polyethylene (PE) Plastic Pipe; 2002 (Reapproved 2009).

- T. ASTM D2661 Standard Specification for Acrylonitrile-Butadiene-Styrene (ABS) Schedule 40 Plastic Drain, Waste, and Vent Pipe and Fittings; 2014.
- U. ASTM D2665 Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Drain, Waste, and Vent Pipe and Fittings; 2014.
- V. ASTM D2680 Standard Specification for Acrylonitrile-Butadiene-Styrene (ABS) and Poly(Vinyl Chloride) (PVC) Composite Sewer Piping; 2001 (Reapproved 2014).
- W. ASTM D2729 Standard Specification for Poly(Vinyl Chloride) (PVC) Sewer Pipe and Fittings; 2011.
- X. ASTM D2855 Standard Practice for Making Solvent-Cemented Joints with Poly(Vinyl Chloride) (PVC) Pipe and Fittings; 1996 (Reapproved 2010).
- Y. ASTM D3034 Standard Specification for Type PSM Poly(Vinyl Chloride) (PVC) Sewer Pipe and Fittings; 2015.
- Z. ASTM F441/F441M Standard Specification for Chlorinated Poly(Vinyl Chloride) (CPVC) Plastic Pipe, Schedules 40 and 80; 2013.
- AA. ASTM F477 Standard Specification for Elastomeric Seals (Gaskets) for Joining Plastic Pipe; 2010.
- AB. ASTM F493 Standard Specification for Solvent Cements for Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Pipe and Fittings; 2014.
- AC. ASTM F876 Standard Specification for Crosslinked Polyethylene (PEX) Tubing; 2013a.
- AD. ASTM F877 Standard Specification for Crosslinked Polyethylene (PEX) Plastic Hot- and Cold-Water Distribution Systems; 2011.
- AE. AWWA C901 Polyethylene (PE) Pressure Pipe and Tubing, 1/2 In. (13 mm) Through 3 In. (76 mm), for Water Service; 2008.
- AF. MSS SP-58 Pipe Hangers and Supports Materials, Design, Manufacture, Selection, Application, and Installation; 2009.
- AG. MSS SP-110 Ball Valves Threaded, Socket-Welding, Solder Joint, Grooved and Flared Ends; 2010.
- AH. NSF 61 Drinking Water System Components Health Effects; 2014 (Errata 2015).
- Al. NSF 372 Drinking Water System Components Lead Content; 2011.
- AJ. PPI TR-4 PPI Listing of Hydrostatic Design Basis (HDB), Hydrostatic Design Stress (HDS), Strength Design Basis (SDB), Pressure Design Basis (PDB), and Minimum Required Strength (MRS) Ratings For Thermoplastic Piping Materials or Pipe; 2013.

1.04 SUBMITTALS

- A. See Section 01 3000 Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data on pipe materials, pipe fittings, valves, and accessories. Provide manufacturers catalog information. Indicate valve data and ratings.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Accept valves on site in shipping containers with labeling in place. Inspect for damage.
- B. Provide temporary protective coating on cast iron and steel valves.
- C. Provide temporary end caps and closures on piping and fittings. Maintain in place until installation.
- D. Protect piping systems from entry of foreign materials by temporary covers, completing sections of the work, and isolating parts of completed system.

1.06 FIELD CONDITIONS

A. Do not install underground piping when bedding is wet or frozen.

PART 2 PRODUCTS

2.01 GENERAL REQUIREMENTS

A. Potable Water Supply Systems: Provide piping, pipe fittings, and solder and flux (if used), that comply with NSF 61 and NSF 372 for maximum lead content; label pipe and fittings.

2.02 SANITARY SEWER PIPING, BURIED BEYOND 5 FEET OF BUILDING

- A. PVC Pipe: ASTM D3034 DR 35.
 - 1. Fittings: PVC.
 - 2. Joints: Push-on, using ASTM F477 elastomeric gaskets.

2.03 SANITARY SEWER PIPING, BURIED WITHIN 5 FEET OF BUILDING

- A. PVC Pipe: ASTM D2665 or ASTM D3034.
 - 1. Fittings: PVC.
 - 2. Joints: Solvent welded, with ASTM D2564 solvent cement.

2.04 SANITARY SEWER PIPING, ABOVE GRADE

- A. PVC Pipe: ASTM D1785 Schedule 40, or ASTM D2241 SDR 26 with not less than 150 psi pressure rating.
 - 1. Fittings: ASTM D2466, PVC.
 - 2. Joints: Solvent welded, with ASTM D2564 solvent cement.

2.05 DOMESTIC WATER PIPING, BURIED BEYOND 5 FEET OF BUILDING

A. PE Pipe: AWWA C901.

2.06 DOMESTIC WATER PIPING, BURIED WITHIN 5 FEET OF BUILDING

- A. PE Pipe: ASTM D2239.
 - 1. Fittings: ASTM D2609, PE.
 - 2. Joints: Mechanical with stainless steel clamp.

2.07 DOMESTIC WATER PIPING, ABOVE GRADE

- A. Copper Tube: ASTM B88 (ASTM B88M), Type L (B), Drawn (H).
 - 1. Fittings: ASME B16.18, cast copper alloy or ASME B16.22, wrought copper and bronze.
 - 2. Joints: ASTM B32, alloy Sn95 solder.
 - 3. Joints: Grooved mechanical couplings.
 - 4. Mechanical Press Sealed Fittings: Double pressed type, NSF 61 and NSF 372 approved or certified, utilizing EPDM, non toxic synthetic rubber sealing elements.
 - a. Manufacturers:
 - 1) Grinnell Products, a Tyco Business: www.grinnell.com.
 - 2) Viega LLC: www.viega.com.
- B. Cross-Linked Polyethylene (PEX) Pipe: ASTM F876 or ASTM F877.
 - 1. PPI TR-4 Pressure Design Basis:
 - a. 100 psig at maximum 180 degrees F.
 - 2. Fittings: Brass or bronze connectors with full circle brass, copper or stainless steel crimp ring connectors.
 - 3. Joints: Mechanical compression fittings.

2.08 STORM WATER PIPING, BURIED BEYOND 5 FEET OF BUILDING

- A. PVC Pipe: ASTM D3034 DR 35.
 - 1. Fittings: PVC.
 - 2. Joints: Push-on, using ASTM F477 elastomeric gaskets.

2.09 STORM WATER PIPING, BURIED WITHIN 5 FEET OF BUILDING

- A. PVC Pipe: ASTM D2665 or ASTM D3034.
 - 1. Fittings: PVC.
 - 2. Joints: Solvent welded, with ASTM D2564 solvent cement.

2.10 STORM WATER PIPING, ABOVE GRADE

- A. PVC Pipe: ASTM D2665 or ASTM D3034.
 - 1. Fittings: PVC.
 - 2. Joints: Solvent welded, with ASTM D2564 solvent cement.

2.11 PIPE HANGERS AND SUPPORTS

- A. Provide hangers and supports that comply with MSS SP-58.
 - 1. If type of hanger or support for a particular situation is not indicated, select appropriate type using MSS SP-58 recommendations.
 - 2. Overhead Supports: Individual steel rod hangers attached to structure or to trapeze hangers.
 - 3. Trapeze Hangers: Welded steel channel frames attached to structure.
 - 4. Vertical Pipe Support: Steel riser clamp.
 - 5. Rooftop Supports for Low-Slope Roofs: Steel pedestals with bases that rest on top of roofing membrane, not requiring any attachment to the roof structure and not penetrating the roofing assembly, with support fixtures as specified; and as follows:
 - a. Bases: High density polypropylene.
 - b. Base Sizes: As required to distribute load sufficiently to prevent indentation of roofing assembly.
 - c. Steel Components: Stainless steel, or carbon steel hot-dip galvanized after fabrication in accordance with ASTM A123/A123M.
 - d. Attachment/Support Fixtures: As recommended by manufacturer, same type as indicated for equivalent indoor hangers and supports; corrosion resistant material.
 - e. Height: Provide minimum clearance of 6 inches under pipe to top of roofing.

2.12 BALL VALVES

A. Construction, 4 Inches and Smaller: MSS SP-110, Class 150, 400 psi CWP, bronze or ductile iron body, 304 stainless steel or chrome plated brass ball, regular port, teflon seats and stuffing box ring, blow-out proof stem, lever handle with balancing stops, threaded or grooved ends with union.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that excavations are to required grade, dry, and not over-excavated.

3.02 PREPARATION

- A. Ream pipe and tube ends. Remove burrs. Bevel plain end ferrous pipe.
- B. Remove scale and dirt, on inside and outside, before assembly.
- C. Prepare piping connections to equipment with flanges or unions.

3.03 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Route piping in orderly manner and maintain gradient. Route parallel and perpendicular to walls.
- C. Install piping to maintain headroom, conserve space, and not interfere with use of space.
- D. Group piping whenever practical at common elevations.
- E. Provide clearance in hangers and from structure and other equipment for installation of insulation and access to valves and fittings.
- F. Copper Pipe and Tube: Make soldered joints in accordance with ASTM B828, using specified solder, and flux meeting ASTM B813; in potable water systems use flux also complying with NSF 61 and NSF 372.
- G. PVC Pipe: Make solvent-welded joints in accordance with ASTM D2855.

SECTION 22 1006 PLUMBING PIPING SPECIALTIES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Drains.
- B. Cleanouts.

1.02 REFERENCE STANDARDS

- A. ASME A112.6.3 Floor and Trench Drains; 2001 (R2007).
- B. NSF 61 Drinking Water System Components Health Effects; 2014 (Errata 2015).
- C. NSF 372 Drinking Water System Components Lead Content; 2011.

1.03 SUBMITTALS

- A. Product Data: Provide component sizes, rough-in requirements, service sizes, and finishes.
- B. Manufacturer's Instructions: Indicate Manufacturer's Installation Instructions: Indicate assembly and support requirements.
- C. Maintenance Data: Include installation instructions, spare parts lists, exploded assembly views.

PART 2 PRODUCTS

2.01 GENERAL REQUIREMENTS

A. Specialties in Potable Water Supply Systems: Provide products that comply with NSF 61 and NSF 372 for maximum lead content.

2.02 DRAINS

- A. Manufacturers:
 - 1. Zurn Industries, LLC: www.zurn.com.
 - 2. Watts Drainage: www.watts.com.
- B. Floor Drain:
 - 1. ASME A112.6.3; Epoxy coated cast iron or stainless steel, two piece body with double drainage flange, weep holes, and round, adjustable nickel-bronze strainer.
- C. Floor Drain:
 - 1. ASME A112.6.3; Epoxy coated cast iron or stainless steel, two piece body with double drainage flange, weep holes, and round, adjustable nickel-bronze strainer with nickel-bronze funnel.
- D. Prefabricated Trench Drain: Trench drain system assembled from factory fabricated, polymer concrete castings in standard lengths and variable depths, with integral joint flanges and integral grating support rails; includes joint gaskets and grating.
 - 1. Trench Width: 7 inches.
 - 2. Trench Section Length: 60 inches.
 - 3. Grating Support Rail: Stainless steel.
- E. Floor Sink: Square stainless steel body with stainless steel grate and dome bottom strainer.

2.03 CLEANOUTS

- A. Manufacturers:
 - 1. Zurn Industries, LLC: www.zurn.com.
 - 2. Watts Drainage: www.watts.com.
- B. Cleanouts at Interior Finished Floor Areas:
 - 1. Epoxy coated cast iron body with anchor flange, threaded top assembly, and round gasketed scored cover in service areas and square gasketed depressed cover to accept floor finish in finished floor areas.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Install floor cleanouts at elevation to accommodate finished floor.

SECTION 22 4000 PLUMBING FIXTURES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Plumbing Fixtures.

1.02 RELATED REQUIREMENTS

- A. Section 07 9200 Joint Sealants: Sealing joints between fixtures and walls and floors.
- B. Section 22 1005 Plumbing Piping.

1.03 REFERENCE STANDARDS

- A. ANSI Z124.1.2 American National Standard for Plastic Bathtub and Shower Units; 2005.
- B. ANSI Z358.1 American National Standard for Emergency Eyewash and Shower Equipment; 2009.
- C. ASHRAE Std 18 Methods of Testing for Rating Drinking-Water Coolers with Self-Contained Mechanical Refrigeration; 2008.
- D. ASME A112.6.1M Supports for Off-the-Floor Plumbing Fixtures for Public Use; 1997 (Reaffirmed 2002).
- E. ASME A112.18.1 Plumbing Supply Fittings; 2012.
- F. ASME A112.19.2 Ceramic Plumbing Fixtures; 2013.
- G. ASME A112.19.3 Stainless Steel Plumbing Fixtures (Designed for Residential Use); 2008 (R2013).
- H. ASME A112.19.4M Porcelain Enameled Formed Steel Plumbing Fixtures; 1994 (R2004).
- I. ASME A112.19.5 Flush Valves and Spuds for Water Closets, Urinals, and Tanks; 2011.
- J. ASTM E84 Standard Test Method for Surface Burning Characteristics of Building Materials; 2015a.
- K. ISFA 2-01 Classification and Standards for Solid Surfacing Material; 2013.
- L. NSF 61 Drinking Water System Components Health Effects; 2014 (Errata 2015).
- M. NSF 372 Drinking Water System Components Lead Content; 2011.

1.04 SUBMITTALS

- A. See Section 01 3000 Administrative Requirements, for submittal procedures.
- B. Product Data: Provide catalog illustrations of fixtures, sizes, rough-in dimensions, utility sizes, trim, and finishes.
- C. Warranty: Submit manufacturer warranty and ensure forms have been completed in Owner's name and registered with manufacturer.

1.05 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the type of products specified in this section, with minimum three years of documented experience.

1.06 REGULATORY REQUIREMENTS

A. Products Requiring Electrical Connection: Listed and classified by Underwriters Laboratories Inc., as suitable for the purpose specified and indicated.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Accept fixtures on site in factory packaging. Inspect for damage.
- B. Protect installed fixtures from damage by securing areas and by leaving factory packaging in place to protect fixtures and prevent use.

1.08 WARRANTY

- A. See Section 01 7800 Closeout Submittals, for additional warranty requirements.
- B. Provide five year manufacturer warranty for electric water cooler.

PART 2 PRODUCTS

2.01 GENERAL

A. Potable Water Systems: Provide plumbing fittings and faucets that comply with NSF 61 and NSF 372 for maximum lead content; label pipe and fittings.

2.02 PLUMBING FIXTURES

- A. Manufactures:
 - 1. As indicated in the Plumbing Fixture Schedule, drawing P100.
 - 2. Or approved equal.
 - 3. Substitutions: See Section 01 6000 Product Requirements.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that walls and floor finishes are prepared and ready for installation of fixtures.
- B. Verify that electric power is available and of the correct characteristics.
- C. Confirm that millwork is constructed with adequate provision for the installation of counter top lavatories and sinks.

3.02 PREPARATION

A. Rough-in fixture piping connections in accordance with minimum sizes indicated in fixture rough-in schedule for particular fixtures.

3.03 INSTALLATION

- A. Install each fixture with trap, easily removable for servicing and cleaning.
- B. Provide chrome plated rigid or flexible supplies to fixtures with loose key stops, reducers, and escutcheons.
- C. Install components level and plumb.
- D. Seal fixtures to wall and floor surfaces with sealant as specified in Section 07 9200, color to match fixture.

3.04 INTERFACE WITH WORK OF OTHER SECTIONS

A. Review millwork shop drawings. Confirm location and size of fixtures and openings before rough-in and installation.

3.05 ADJUSTING

A. Adjust stops or valves for intended water flow rate to fixtures without splashing, noise, or overflow.

3.06 CLEANING

A. Clean plumbing fixtures and equipment.

3.07 PROTECTION

- A. Protect installed products from damage due to subsequent construction operations.
- B. Do not permit use of fixtures by construction personnel.
- C. Repair or replace damaged products before Date of Substantial Completion.

SECTION 23 0713 DUCT INSULATION

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Duct insulation.

1.02 REFERENCE STANDARDS

- A. ASTM C518 Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus; 2010.
- B. ASTM C553 Standard Specification for Mineral Fiber Blanket Thermal Insulation for Commercial and Industrial Applications; 2013.
- C. ASTM C916 Standard Specification for Adhesives for Duct Thermal Insulation; 2014.
- D. ASTM C1338 Standard Test Method for Determining Fungi Resistance of Insulation Materials and Facings; 2008.
- E. ASTM E84 Standard Test Method for Surface Burning Characteristics of Building Materials; 2015a.
- F. ASTM E96/E96M Standard Test Methods for Water Vapor Transmission of Materials; 2014.
- G. SMACNA (DCS) HVAC Duct Construction Standards Metal and Flexible; 2005 (Rev. 2009).
- H. UL 723 Standard for Test for Surface Burning Characteristics of Building Materials; Current Edition, Including All Revisions.

1.03 SUBMITTALS

A. Product Data: Provide product description, thermal characteristics, list of materials and thickness for each service, and locations.

PART 2 PRODUCTS

2.01 REGULATORY REQUIREMENTS

A. Surface Burning Characteristics: Flame spread index/Smoke developed index of 25/50, maximum, when tested in accordance with ASTM E84 or UL 723.

2.02 GLASS FIBER, FLEXIBLE

- A. Manufacturer:
 - 1. Knauf Insulation: www.knaufinsulation.com.
 - 2. Johns Manville: www.jm.com.
 - 3. Owens Corning Corporation: www.ocbuildingspec.com.
 - 4. CertainTeed Corporation: www.certainteed.com.
 - 5. Manson Insulation Inc.; Alley Wrap FSK: www.imanson.com.
 - 6. Substitutions: See Section 01 6000 Product Requirements.
- B. Insulation: ASTM C553; flexible, noncombustible blanket.
 - 1. Facing: FSK.
 - 2. Thickness: 1-1/2 inches minimum.
 - 3. R-Value: 6.1 minimum and with a 4.8 minimum installed value.
 - 4. 'K' value: 0.24 at 75 degrees F, when tested in accordance with ASTM C518.
 - 5. Maximum Service Temperature: 250 degrees F.
 - 6. Maximum Water Vapor Absorption: 5.0 percent by weight.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that ducts have been tested before applying insulation materials.
- B. Verify that surfaces are clean, foreign material removed, and dry.

3.02 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Insulated ducts conveying air below ambient temperature:
 - 1. Insulate entire system including fittings, joints, flanges, fire dampers, flexible connections, and expansion joints.
- C. Insulated ducts conveying air above ambient temperature:
 - 1. Insulate fittings and joints. Where service access is required, bevel and seal ends of insulation.

SECTION 23 0719 HVAC PIPING INSULATION

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Piping insulation.

1.02 REFERENCE STANDARDS

- A. ASTM C534/C534M Standard Specification for Preformed Flexible Elastomeric Cellular Thermal Insulation in Sheet and Tubular Form; 2014.
- B. ASTM E84 Standard Test Method for Surface Burning Characteristics of Building Materials; 2015a.
- C. UL 723 Standard for Test for Surface Burning Characteristics of Building Materials; Underwriters Laboratories Inc.; Current Edition, Including All Revisions.

1.03 SUBMITTALS

A. Product Data: Provide product description, thermal characteristics, list of materials and thickness for each service, and locations.

PART 2 PRODUCTS

2.01 REGULATORY REQUIREMENTS

A. Surface Burning Characteristics: Flame spread index/Smoke developed index of 25/50, maximum, when tested in accordance with ASTM E84 or UL 723.

2.02 FLEXIBLE ELASTOMERIC CELLULAR INSULATION

- A. Manufacturer:
 - 1. Aeroflex USA, Inc: www.aeroflexusa.com.
 - 2. Armacell LLC: www.armacell.us.
 - 3. K-Flex USA LLC: www.kflexusa.com.
- B. Insulation: Preformed flexible elastomeric cellular rubber insulation complying with ASTM C534/C534M Grade 3; use molded tubular material wherever possible.
 - 1. Minimum Service Temperature: Minus 40 degrees F.
 - 2. Maximum Service Temperature: 220 degrees F.
 - 3. Connection: Waterproof vapor barrier adhesive.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that piping has been tested before applying insulation materials.
- B. Verify that surfaces are clean and dry, with foreign material removed.

3.02 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Exposed Piping: Locate insulation and cover seams in least visible locations.
- C. Insulated pipes conveying fluids below ambient temperature; insulate entire system including fittings, valves, unions, flanges, strainers, flexible connections, pump bodies, and expansion joints.
- D. For hot piping conveying fluids 140 degrees F or less, do not insulate flanges and unions at equipment, but bevel and seal ends of insulation.

SECTION 23 1126

FACILITY LIQUEFIED-PETROLEUM GAS PIPING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Pipe, pipe fittings, valves, and connections for propane gas piping systems.

1.02 REFERENCE STANDARDS

- A. ASME B16.3 Malleable Iron Threaded Fittings: Classes 150 and 300; 2011.
- B. ASME B31.1 Power Piping; 2014.
- C. ASTM A47/A47M Standard Specification for Ferritic Malleable Iron Castings; 1999 (Reapproved 2014).
- D. ASTM A53/A53M Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless; 2012.
- E. ASTM A234/A234M Standard Specification for Piping Fittings of Wrought Carbon Steel and Alloy Steel for Moderate and High Temperature Service; 2015.
- F. ASTM D2513 Standard Specification for Polyethylene (PE) Gas Pressure Pipe, Tubing, and Fittings; 2014.
- G. ASTM D2683 Standard Specification for Socket-Type Polyethylene Fittings for Outside Diameter-Controlled Polyethylene Pipe and Tubing; 2014.
- H. AWWA C606 Grooved and Shouldered Joints; 2011.
- I. MSS SP-58 Pipe Hangers and Supports Materials, Design, Manufacture, Selection, Application, and Installation; 2009.
- J. NFPA 58 Liquefied Petroleum Gas Code; 2014.

1.03 SUBMITTALS

A. Product Data: Provide data on pipe materials, pipe fittings, valves, and accessories. Provide manufacturers catalog information. Indicate valve data and ratings.

1.04 QUALITY ASSURANCE

A. Perform work in accordance with applicable codes.

PART 2 PRODUCTS

2.01 PROPANE GAS PIPING, BURIED BEYOND 5 FEET OF BUILDING

- A. Polyethylene Pipe: ASTM D2513, SDR 11.
 - 1. Fittings: ASTM D2683 or ASTM D2513 socket type.
 - 2. Joints: Fusion welded.

2.02 PROPANE GAS PIPING, ABOVE GRADE

- A. Steel Pipe: ASTM A53/A53M Schedule 40 black.
 - 1. Fittings: ASME B16.3, malleable iron, or ASTM A234/A234M, wrought steel welding type.
 - 2. Joints: NFPA 58, threaded or welded to ASME B31.1.

2.03 FLANGES, UNIONS, AND COUPLINGS

- A. Unions for Pipe Sizes 3 Inches and Under:
 - 1. Ferrous pipe: Class 150 malleable iron threaded unions.
- B. Flanges for Pipe Size Over 1 Inch:
 - 1. Ferrous Pipe: Class 150 malleable iron threaded or forged steel slip-on flanges; preformed neoprene gaskets.
- C. Mechanical Couplings for Grooved and Shouldered Joints: Two or more curved housing segments with continuous key to engage pipe groove, circular C-profile gasket, and bolts to secure and compress gasket.
 - 1. Dimensions and Testing: In accordance with AWWA C606.

- 2. Housing Material: Provide ASTM A47/A47M malleable iron or ductile iron, galvanized.
- 3. Bolts and Nuts: Hot dipped galvanized or zinc-electroplated steel.
- 4. When pipe is field grooved, provide coupling manufacturer's grooving tools.

2.04 PIPE HANGERS AND SUPPORTS

- A. Provide hangers and supports that comply with MSS SP-58.
 - 1. If type of hanger or support for a particular situation is not indicated, select appropriate type using MSS SP-58 recommendations.
 - 2. Overhead Supports: Individual steel rod hangers attached to structure or to trapeze hangers.
 - 3. Trapeze Hangers: Welded steel channel frames attached to structure.
 - 4. Vertical Pipe Support: Steel riser clamp.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that excavations are to required grade, dry, and not over-excavated.

3.02 PREPARATION

- A. Ream pipe and tube ends. Remove burrs. Bevel plain end ferrous pipe.
- B. Remove scale and dirt, on inside and outside, before assembly.
- C. Prepare piping connections to equipment with flanges or unions.

3.03 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Provide non-conducting dielectric connections wherever jointing dissimilar metals.
- C. Route piping in orderly manner and maintain gradient. Route parallel and perpendicular to walls.
- D. Install piping to maintain headroom, conserve space, and not interfere with use of space.
- E. Group piping whenever practical at common elevations.

SECTION 23 2113 HYDRONIC PIPING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Hydronic system requirements.
- B. Heating water piping, buried.
- C. Heating water piping, above grade.
- D. Condenser water piping, above grade.
- E. Radiant heating piping system.
- F. Equipment drains and overflows.
- G. Pipe hangers and supports.
- H. Unions, flanges, mechanical couplings, and dielectric connections.
- I. Valves:
 - 1. Gate valves.
 - 2. Ball valves.
 - Check valves.

1.02 RELATED REQUIREMENTS

A. Section 23 0719 - HVAC Piping Insulation.

1.03 REFERENCE STANDARDS

- A. ASME B16.18 Cast Copper Alloy Solder Joint Pressure Fittings; 2012.
- B. ASME B16.22 Wrought Copper and Copper Alloy Solder-Joint Pressure Fittings; 2013.
- C. ASME B31.9 Building Services Piping; 2014.
- D. ASTM B32 Standard Specification for Solder Metal; 2008 (Reapproved 2014).
- E. ASTM B88 Standard Specification for Seamless Copper Water Tube; 2014.
- F. ASTM B88M Standard Specification for Seamless Copper Water Tube (Metric); 2013.
- G. ASTM D1785 Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Pipe, Schedules 40, 80, and 120; 2015.
- H. ASTM D2241 Standard Specification for Poly (Vinyl Chloride) (PVC) Pressure-Rated Pipe (SDR Series); 2015.
- I. ASTM D2466 Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 40; 2013.
- J. ASTM D2467 Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 80; 2015.
- K. ASTM D2855 Standard Practice for Making Solvent-Cemented Joints with Poly(Vinyl Chloride) (PVC) Pipe and Fittings; 1996 (Reapproved 2010).
- L. ASTM F708 Standard Practice for Design and Installation of Rigid Pipe Hangers; 1992 (Reapproved 2008).
- M. ASTM F876 Standard Specification for Crosslinked Polyethylene (PEX) Tubing; 2013a.
- N. ASTM F877 Standard Specification for Crosslinked Polyethylene (PEX) Plastic Hot- and Cold-Water Distribution Systems; 2011.
- O. ASTM F1476 Standard Specification for Performance of Gasketed Mechanical Couplings for Use in Piping Applications; 2007 (Reapproved 2013).
- P. AWS A5.8M/A5.8 Specification for Filler Metals for Brazing and Braze Welding; 2011-AMD 1.
- Q. AWWA C606 Grooved and Shouldered Joints; 2011.

R. MSS SP-58 - Pipe Hangers and Supports - Materials, Design, Manufacture, Selection, Application, and Installation; 2009.

1.04 SUBMITTALS

- A. See Section 01 3000 Administrative Requirements, for submittal procedures.
- B. Product Data:
 - 1. Include data on pipe materials, pipe fittings, valves, and accessories.
 - 2. Provide manufacturers catalogue information.
 - 3. Indicate valve data and ratings.
 - 4. Show grooved joint couplings, fittings, valves, and specialties on drawings and product submittals, specifically identified with the manufacturer's style or series designation.

1.05 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing products of the type specified in this section, with minimum three years of documented experience.
- B. Installer Qualifications: Company specializing in performing work of the type specified in this section, with minimum three years of experience.

PART 2 PRODUCTS

2.01 HYDRONIC SYSTEM REQUIREMENTS

- A. Comply with ASME B31.9 and applicable federal, state, and local regulations.
- B. Piping: Provide piping, fittings, hangers and supports as required, as indicated, and as follows:
 - 1. Where more than one piping system material is specified, provide joining fittings that are compatible with piping materials and ensure that the integrity of the system is not jeopardized.
 - 2. Use non-conducting dielectric connections whenever jointing dissimilar metals.
 - 3. Grooved mechanical joints may be used in accessible locations only.
 - a. Accessible locations include those exposed on interior of building, in pipe chases, and in mechanical rooms, aboveground outdoors, and as approved by Architect.
 - b. Use rigid joints unless otherwise indicated.
 - 4. Provide pipe hangers and supports in accordance with ASME B31.9 or MSS SP-58 unless indicated otherwise.
- C. Pipe-to-Valve and Pipe-to-Equipment Connections: Use flanges, unions, or grooved couplings to allow disconnection of components for servicing; do not use direct welded, soldered, or threaded connections.
- D. Valves: Provide valves where indicated:
 - 1. Provide drain valves where indicated, and if not indicated provide at least at main shut-off, low points of piping, bases of vertical risers, and at equipment. Use 3/4 inch gate valves with cap; pipe to nearest floor drain.
 - 2. For shut-off and to isolate parts of systems or vertical risers, use ball or butterfly valves.

2.02 HEATING WATER PIPING, BURIED

- A. Copper Tube: ASTM B88 (ASTM B88M), Type K (A), annealed.
 - 1. Fittings: ASME B16.22, wrought copper.
 - 2. Joints: Braze, AWS A5.8M/A5.8 BCuP copper/silver alloy.
 - 3. Casing: Polyurethane insulation with high density polyethylene jacket and heat shrink sleeves.

2.03 HEATING WATER PIPING, ABOVE GRADE

- A. Copper Tube: ASTM B88 (ASTM B88M), Type K (A), drawn, using one of the following joint types:
 - 1. Solder Joints: ASME B16.18 cast brass/bronze or ASME B16.22 solder wrought copper fittings.
 - a. Solder: ASTM B32 lead-free solder, HB alloy (95-5 tin-antimony) or tin and silver.

- b. Braze: AWS A5.8M/A5.8 BCuP copper/silver alloy.
- 2. Grooved Joints: AWWA C606 grooved tube, fittings of same material, and copper-tube-dimension mechanical couplings.
- 3. Tee Connections: Mechanically extracted collars with notched and dimpled branch tube.
- 4. Mechanical Press Sealed Fittings: Double pressed type complying with ASME B16.22, utilizing EPDM, nontoxic synthetic rubber sealing elements.

2.04 CONDENSER WATER PIPING, ABOVE GRADE

- A. PVC Pipe: ASTM D1785, Schedule 40, or ASTM D2241, SDR 21 or 26.
 - 1. Fittings: ASTM D2466 or ASTM D2467, PVC.
 - 2. Joints: Solvent welded in accordance with ASTM D2855.

2.05 RADIANT HEATING PIPING

- A. Polyethylene Pipe: ASTM F876 or ASTM F877, cross-linked polyethylene, 100 psig operating pressure at 180 degrees F.
 - 1. Fittings: Brass and copper.
 - 2. Joints: Mechanical compression fittings.

2.06 EQUIPMENT DRAINS AND OVERFLOWS

- A. PVC Pipe: ASTM D1785, Schedule 40, or ASTM D2241, SDR 21 or 26.
 - 1. Fittings: ASTM D2466 or D2467, PVC.
 - 2. Joints: Solvent welded in accordance with ASTM D2855.

2.07 PIPE HANGERS AND SUPPORTS

- A. Provide hangers and supports that comply with MSS SP-58.
 - 1. If type of hanger or support for a particular situation is not indicated, select appropriate type using MSS SP-58 recommendations.
- B. In grooved installations, use rigid couplings with offsetting angle-pattern bolt pads or with wedge shaped grooves in header piping to permit support and hanging in accordance with ASME B31.9.

2.08 UNIONS, FLANGES, MECHANICAL COUPLINGS, AND DIELECTRIC CONNECTIONS

- A. Unions for Pipe 2 Inches and Less:
- B. Flanges for Pipe 2 Inches and Greater:
- C. Mechanical Couplings for Grooved and Shouldered Joints: Two or more curved housing segments with continuous key to engage pipe groove, circular C-profile gasket, and bolts to secure and compress gasket.
 - 1. Dimensions and Testing: In accordance with AWWA C606.
 - 2. Mechanical Couplings: Comply with ASTM F1476.
 - 3. Bolts and Nuts: Hot dipped galvanized or zinc-electroplated steel.
 - 4. When pipe is field grooved, provide coupling manufacturer's grooving tools.

2.09 GATE VALVES

- A. Up To and Including 2 Inches:
 - 1. Bronze body, bronze trim, screwed bonnet, non-rising stem, lockshield stem, inside screw with backseating stem, solid wedge disc, alloy seat rings, solder or threaded ends.
- B. Over 2 Inches:
 - 1. Iron body, bronze trim, bolted bonnet, rising stem, handwheel, outside screw and yoke, solid wedge disc with bronze seat rings, flanged or grooved ends.

2.10 BALL VALVES

- A. Up To and Including 2 Inches:
 - 1. Bronze one piece body, chrome plated brass ball, teflon seats and stuffing box ring, lever handle with balancing stops, solder or threaded ends with union.
- B. Over 2 Inches:

1. Ductile iron body, chrome plated stainless steel ball, teflon or Virgin TFE seat and stuffing box seals, lever handle or gear operated, flanged ends, rated to 800 psi.

PART 3 EXECUTION

3.01 PREPARATION

- A. Ream pipe and tube ends. Remove burrs. Bevel plain end ferrous pipe.
- B. Prepare pipe for grooved mechanical joints as required by coupling manufacturer.
- C. Remove scale and dirt on inside and outside before assembly.
- D. Prepare piping connections to equipment using jointing system specified.
- E. Keep open ends of pipe free from scale and dirt. Protect open ends with temporary plugs or caps.

3.02 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. PVC Pipe: Make solvent-welded joints in accordance with ASTM D2855.
- C. Route piping in orderly manner, parallel to building structure, and maintain gradient.
- D. Install piping to conserve building space and to avoid interfere with use of space.
- E. Group piping whenever practical at common elevations.
- F. Slope piping and arrange to drain at low points.
- G. Pipe Hangers and Supports:
 - 1. Install in accordance with ASME B31.9, ASTM F708, or MSS SP-58.

SECTION 23 2114 HYDRONIC SPECIALTIES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Expansion tanks.

1.02 RELATED REQUIREMENTS

A. Section 23 2113 - Hydronic Piping.

1.03 REFERENCE STANDARDS

A. ASME BPVC-VIII-1 - Boiler and Pressure Vessel Code, Section VIII, Division 1 - Rules for Construction of Pressure Vessels; 2015.

1.04 SUBMITTALS

- A. See Section 01 3000 Administrative Requirements, for submittal procedures.
- B. Product Data: Provide product data for manufactured products and assemblies required for this project. Include component sizes, rough-in requirements, service sizes, and finishes. Include product description, model and dimensions.
- C. Certificates: Inspection certificates for pressure vessels from authority having jurisdiction.
- D. Manufacturer's Installation Instructions: Indicate hanging and support methods, joining procedures.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Accept valves on site in shipping containers with labeling in place. Inspect for damage.
- B. Provide temporary end caps and closures on piping and fittings. Maintain in place until installation.
- C. Protect piping systems from entry of foreign materials by temporary covers, completing sections of the work, and isolating parts of completed system.

PART 2 PRODUCTS

2.01 EXPANSION TANKS

- A. Construction: Welded steel, tested and stamped in accordance with ASME BPVC-VIII-1; supplied with National Board Form U-1, rated for working pressure of 125 psi, with flexible EPDM diaphragm or bladder sealed into tank, and steel support stand.
- B. Accessories: Pressure gage and air-charging fitting, tank drain; precharge to 12 psi.
- C. Automatic Cold Water Fill Assembly: Pressure reducing valve, reduced pressure double check back flow preventer, test cocks, strainer, vacuum breaker, and valved by-pass.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install specialties in accordance with manufacturer's instructions.

SECTION 23 2123 HYDRONIC PUMPS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. In-line circulators.

1.02 RELATED REQUIREMENTS

A. Section 23 2113 - Hydronic Piping.

1.03 REFERENCE STANDARDS

A. UL 778 - Standard for Motor-Operated Water Pumps; Current Edition, Including All Revisions.

1.04 SUBMITTALS

- A. See Section 01 3000 Administrative Requirements, for submittal procedures.
- B. Product Data: Provide certified pump curves showing performance characteristics with pump and system operating point plotted. Include NPSH curve when applicable. Include electrical characteristics and connection requirements.
- C. Manufacturer's Installation Instructions: Indicate hanging and support requirements and recommendations.
- D. Operation and Maintenance Data: Include installation instructions, assembly views, lubrication instructions, and replacement parts list.

PART 2 PRODUCTS

2.01 HVAC PUMPS - GENERAL

- A. Provide pumps that operate at specified system fluid temperatures without vapor binding and cavitation, are non-overloading in parallel or individual operation, and operate within 25 percent of midpoint of published maximum efficiency curve.
- B. Products Requiring Electrical Connection: Listed and classified by UL or testing agency acceptable to Authority Having Jurisdiction as suitable for the purpose specified and indicated.

2.02 IN-LINE CIRCULATORS

- A. Type: Horizontal shaft, single stage, direct connected, with resiliently mounted motor for in-line mounting, oil lubricated, for 175 psi maximum working pressure.
- B. Casing: Cast iron, with flanged pump connections.
- C. Impeller: Non-ferrous keyed to shaft.
- D. Bearings: Permanently-lubricated ball bearings.
- E. Shaft: Stainless steel with bronze sleeve, integral thrust collar.

PART 3 EXECUTION

3.01 PREPARATION

A. Verify that electric power is available and of the correct characteristics.

3.02 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Provide access space around pumps for service. Provide no less than minimum space recommended by manufacturer.

SECTION 23 2300 REFRIGERANT PIPING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Piping.
- B. Refrigerant.

1.02 RELATED REQUIREMENTS

- A. Section 07 8400 Firestopping.
- B. Section 22 0719 Plumbing Piping Insulation.

1.03 REFERENCE STANDARDS

- A. AHRI 495 Performance Rating of Refrigerant Liquid Receivers; 2005.
- B. AHRI 750 Standard for Thermostatic Refrigerant Expansion Valves; 2007.
- C. ASHRAE Std 34 Designation and Safety Classification of Refrigerants; 2013.
- D. ASME B16.22 Wrought Copper and Copper Alloy Solder-Joint Pressure Fittings; 2013.
- E. ASME B31.5 Refrigeration Piping and Heat Transfer Components; 2013.
- F. ASME B31.9 Building Services Piping; 2014.
- G. ASTM B88 Standard Specification for Seamless Copper Water Tube; 2014.
- H. ASTM B280 Standard Specification for Seamless Copper Tube for Air Conditioning and Refrigeration Field Service; 2013.
- I. AWS A5.8M/A5.8 Specification for Filler Metals for Brazing and Braze Welding; 2011-AMD 1.
- J. MSS SP-58 Pipe Hangers and Supports Materials, Design, Manufacture, Selection, Application, and Installation; 2009.

1.04 SUBMITTALS

A. Product Data: Provide general assembly of specialties, including manufacturers catalogue information. Provide manufacturers catalog data including load capacity.

PART 2 PRODUCTS

2.01 REGULATORY REQUIREMENTS

A. Conform to ASME B31.9 for installation of piping system.

2.02 PIPING

- A. Copper Tube: ASTM B280, H58 hard drawn or O60 soft annealed.
 - 1. Fittings: ASME B16.22 wrought copper.
 - 2. Joints: Braze, AWS A5.8M/A5.8 BCuP silver/phosphorus/copper alloy.
- B. Pipe Supports and Anchors:
 - 1. Provide hangers and supports that comply with MSS SP-58.
 - a. If type of hanger or support for a particular situation is not indicated, select appropriate type using MSS SP-58 recommendations.
 - 2. Hangers for Pipe Sizes 2 Inches and Over: Carbon steel, adjustable, clevis.
 - 3. Multiple or Trapeze Hangers: Steel channels with welded spacers and hanger rods.
 - 4. Wall Support for Pipe Sizes to 3 Inches: Cast iron hook.
 - 5. Vertical Support: Steel riser clamp.
 - 6. Copper Pipe Support: Carbon steel ring, adjustable, copper plated.
 - 7. Hanger Rods: Mild steel threaded both ends, threaded one end, or continuous threaded.
 - 8. Inserts: Malleable iron case of galvanized steel shell and expander plug for threaded connection with lateral adjustment, top slot for reinforcing rods, lugs for attaching to forms; size inserts to suit threaded hanger rods.

2.03 REFRIGERANT

A. Refrigerant: R410A as defined in ASHRAE Std 34.

PART 3 EXECUTION

3.01 PREPARATION

- A. Ream pipe and tube ends. Remove burrs. Bevel plain end ferrous pipe.
- B. Remove scale and dirt on inside and outside before assembly.
- C. Prepare piping connections to equipment with flanges or unions.

3.02 INSTALLATION

- A. Install refrigeration specialties in accordance with manufacturer's instructions.
- B. Route piping in orderly manner, with plumbing parallel to building structure, and maintain gradient.
- C. Install piping to conserve building space and avoid interference with use of space.
- D. Install piping to allow for expansion and contraction without stressing pipe, joints, or connected equipment.
- E. Pipe Hangers and Supports:
 - 1. Install in accordance with ASME B31.5.
 - 2. Support horizontal piping as scheduled.
 - 3. Install hangers to provide minimum 1/2 inch space between finished covering and adjacent work.
 - 4. Place hangers within 12 inches of each horizontal elbow.
- F. Provide clearance for installation of insulation and access to valves and fittings.
- G. Insulate piping; refer to Section 22 0719.

SECTION 23 3100 HVAC DUCTS AND CASINGS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Metal ductwork.
- B. Nonmetal ductwork.
- C. Casing and plenums.

1.02 RELATED REQUIREMENTS

- A. Section 07 8400 Firestopping.
- B. Section 23 0713 Duct Insulation: External insulation and duct liner.

1.03 REFERENCE STANDARDS

- A. ASTM A653/A653M Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2015.
- B. ASTM A1008/A1008M Standard Specification for Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, Solution Hardened, and Bake Hardenable; 2016.
- C. ASTM A1011/A1011M Standard Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, and Ultra-High Strength; 2014.
- D. ASTM E84 Standard Test Method for Surface Burning Characteristics of Building Materials; 2015a.
- E. NFPA 90A Standard for the Installation of Air-Conditioning and Ventilating Systems; 2015.
- F. SMACNA (DCS) HVAC Duct Construction Standards Metal and Flexible; 2005 (Rev. 2009).
- G. UL 181 Standard for Factory-Made Air Ducts and Air Connectors; current edition, including all revisions.

1.04 SUBMITTALS

- A. Product Data: Provide data for duct materials.
- B. Project Record Documents: Record actual locations of ducts and duct fittings. Record changes in fitting location and type. Show additional fittings used.

1.05 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing the type of products specified in this section, with minimum three years of documented experience, and approved by manufacturer.
- B. Installer Qualifications: Company specializing in performing the type of work specified in this section, with minimum three years ofdocumented experience.

1.06 FIELD CONDITIONS

A. Do not install duct sealants when temperatures are less than those recommended by sealant manufacturers.

PART 2 PRODUCTS

2.01 DUCT ASSEMBLIES

- A. Regulatory Requirements: Construct ductwork to NFPA 90A standards.
- B. Ducts: Galvanized steel, unless otherwise indicated.

2.02 MATERIALS

A. Galvanized Steel for Ducts: Hot-dipped galvanized steel sheet, ASTM A653/A653M FS Type B, with G60/Z180 coating.

- B. Joint Sealers and Sealants: Non-hardening, water resistant, mildew and mold resistant.
 - 1. Type: Heavy mastic or liquid used alone or with tape, suitable for joint configuration and compatible with substrates, and recommended by manufacturer for pressure class of ducts.
 - 2. Surface Burning Characteristics: Flame spread index of zero and smoke developed index of zero, when tested in accordance with ASTM E84.

2.03 DUCTWORK FABRICATION

- A. Fabricate and support in accordance with SMACNA (DCS) and as indicated.
- B. Provide duct material, gages, reinforcing, and sealing for operating pressures indicated.
- C. Increase duct sizes gradually, not exceeding 15 degrees divergence wherever possible; maximum 30 degrees divergence upstream of equipment and 45 degrees convergence downstream.
- D. Fabricate continuously welded round and oval duct fittings in accordance with SMACNA (DCS).

2.04 MANUFACTURED DUCTWORK AND FITTINGS

2.05 CASINGS

- A. Fabricate casings in accordance with SMACNA (DCS) and construct for operating pressures indicated.
- B. Mount floor mounted casings on 4 inch high concrete curbs. At floor, rivet panels on 8 inch centers to angles. Where floors are acoustically insulated, provide liner of galvanized 18 gage, 0.0478 inch expanded metal mesh supported at 12 inch centers, turned up 12 inches at sides with sheet metal shields.
- C. Reinforce door frames with steel angles tied to horizontal and vertical plenum supporting angles. Install hinged access doors where indicated or required for access to equipment for cleaning and inspection.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install, support, and seal ducts in accordance with SMACNA (DCS).
- B. Install in accordance with manufacturer's instructions.
- C. During construction provide temporary closures of metal or taped polyethylene on open ductwork to prevent construction dust from entering ductwork system.
- D. Flexible Ducts: Connect to metal ducts with adhesive.
- E. Duct sizes indicated are inside clear dimensions. For lined ducts, maintain sizes inside lining.
- F. Locate ducts with sufficient space around equipment to allow normal operating and maintenance activities.

SECTION 23 3423

POWER VENTILATORS

PART 1 GENERAL

1.01 REFERENCE STANDARDS

- A. AMCA (DIR) (Directory of) Products Licensed Under AMCA International Certified Ratings Program; http://www.amca.org/certified/search/company.aspx.
- B. AMCA 99 Standards Handbook; 2010.
- C. AMCA 204 Balance Quality and Vibration Levels for Fans; 2005.
- D. AMCA 210 Laboratory Methods of Testing Fans for Certified Aerodynamic Performance Rating; 2007.
- E. AMCA 300 Reverberant Room Method for Sound Testing of Fans; 2014.
- F. AMCA 301 Methods for Calculating Fan Sound Ratings from Laboratory Test Data; 2014.

PART 2 PRODUCTS

2.01 POWER VENTILATORS - GENERAL

- A. Static and Dynamically Balanced: AMCA 204 Balance Quality and Vibration Levels for Fans.
- B. Performance Ratings: Determined in accordance with AMCA 210 and bearing the AMCA Certified Rating Seal.
- C. Sound Ratings: AMCA 301, tested to AMCA 300 and bearing AMCA Certified Sound Rating Seal.
- D. Fabrication: Conform to AMCA 99.
- E. Electrical Components: Listed and classified by Underwriters Laboratories Inc. as suitable for the purpose specified and indicated.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install in accordance with manufacturer's instructions.

SECTION 23 3700 AIR OUTLETS AND INLETS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Registers/grilles.

1.02 RELATED REQUIREMENTS

A. Section 09 9123 - Interior Painting: Painting of ducts visible behind outlets and inlets.

1.03 REFERENCE STANDARDS

- A. AMCA 500-L Laboratory Methods of Testing Louvers for Rating; 2012.
- B. ASHRAE Std 70 Method of Testing the Performance of Air Outlets and Inlets; 2006 (R2011).
- C. SMACNA (DCS) HVAC Duct Construction Standards Metal and Flexible; 2005 (Rev. 2009).

1.04 SUBMITTALS

A. Product Data: Provide data for equipment required for this project. Review outlets and inlets as to size, finish, and type of mounting prior to submission. Submit schedule of outlets and inlets showing type, size, location, application, and noise level.

1.05 QUALITY ASSURANCE

A. Test and rate air outlet and inlet performance in accordance with ASHRAE Std 70.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Price Industries: www.price-hvac.com.
- B. Titus: www.titus-hvac.com.
- C. See Return Grille and Supply Diffuser Schedules on Drawings.

2.02 CEILING SUPPLY REGISTERS/GRILLES

- A. Type: Streamlined and individually adjustable curved blades to discharge air along face of grille, four-way deflection.
- B. Frame: 1-1/4 inch margin with countersunk screw mounting and gasket.
- C. Construction: Made of aluminum extrusions with factory enamel finish.
- D. Color: White.
- E. Damper: Integral, gang-operated, opposed blade type with removable key operator, operable from face.

2.03 CEILING EXHAUST AND RETURN REGISTERS/GRILLES

- A. Fabrication: Steel with 20 gage, 0.0359 inch minimum frames and 22 gage, 0.0299 inch minimum blades, steel and aluminum with 20 gage, 0.0359 inch minimum frame, or aluminum extrusions, with factory baked enamel finish.
- B. Color: White.
- C. Damper: Integral, gang-operated, opposed blade type with removable key operator, operable from face where not individually connected to exhaust fans.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Check location of outlets and inlets and make necessary adjustments in position to conform with architectural features, symmetry, and lighting arrangement.
- C. Install diffusers to ductwork with air tight connection.

- D. Provide balancing dampers on duct take-off to diffusers, and grilles and registers, despite whether dampers are specified as part of the diffuser, or grille and register assembly.
- E. Paint ductwork visible behind air outlets and inlets matte black. Refer to Section 09 9123.

SECTION 23 5216 CONDENSING BOILERS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Manufactured units.
- B. Boiler construction.
- C. Boiler trim.
- D. Fuel burning system.
- E. Factory installed controls.

1.02 REFERENCE STANDARDS

- A. AHRI Directory of Certified Product Performance Air-Conditioning, Heating, and Refrigeration Institute (AHRI); current edition at www.ahrinet.org.
- B. ANSI Z21.13 American National Standard for Gas-Fired Low-Pressure Steam and Hot Water Boilers; 2014, with Errata.
- C. ASHRAE Std 90.1 I-P Energy Standard for Buildings Except Low-Rise Residential Buildings; 2013, Including All Amendments and Errata.
- D. ASME BPVC-IV Boiler and Pressure Vessel Code, Section IV Rules for Construction of Heating Boilers; 2015.
- E. NBBI Manufacturer and Repair Directory The National Board of Boiler and Pressure Vessel Inspectors (NBBI); current edition at www.nationalboard.org.
- F. NFPA 54 National Fuel Gas Code; 2015.
- G. SCAQMD 1146.1 South Coast Air Quality Management District Rule No.1146.1; current edition.

1.03 SUBMITTALS

- A. Product Data: Provide data indicating general assembly, components, controls, safety controls, and wiring diagrams with electrical characteristics and connection requirements, and service connections.
- B. Manufacturer's Installation Instructions: Indicate assembly, support details, connection requirements, and include start up instructions.
- C. Warranty: Submit manufacturer warranty and ensure forms have been completed in Owner's name and registered with manufacturer.

1.04 WARRANTY

A. Provide a five year warranty to include coverage for heat exchanger.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Natural Gas, Propane, or Combination Natural Gas/Propane for Indoor Applications:
 1. Weil-McLain; Evergreen: www.weil-mclain.com.

2.02 MANUFACTURED UNITS

- A. Factory assembled, factory fire-tested, self-contained, readily transported unit ready for automatic operation except for connection of water, fuel, electrical, and vent services.
- B. Unit: Metal membrane wall, water or fire tube, condensing boiler on integral structural steel frame base with integral fuel burning system, firing controls, boiler trim, insulation, and removable jacket, suitable for indoor application.
 - 1. Accessory Unit: Indirect-Fired Water Heater with 316L stainless steel insulated tank, 304 stainless steel heat exchanger, magnesium Anode and recirculation tap.

2.03 BOILER CONSTRUCTION

- A. Conform to the minimum requirements of ASME BPVC-IV and ANSI Z21.13 for construction of boilers.
- B. Assembly to bear the ASME "H" stamp and comply with the efficiency requirements of the latest edition of ASHRAE Std 90.1.
- C. Required Directory Listings:
 - 1. AHRI Directory of Certified Product Performance Air-Conditioning, Heating, and Refrigeration Institute (AHRI); current edition at www.ahrinet.org.
 - 2. NBBI Manufacturer and Repair Directory The National Board of Boiler and Pressure Vessel Inspectors (NBBI); current edition at www.nationalboard.org.
- D. Heat Exchanger: Construct with materials that are impervious to corrosion where subject to contact with corrosive condensables.
 - 1. Stainless Steel.
- E. Provide adequate tappings, observation ports, removable panels, and access doors for entry, cleaning, and inspection.
- F. Insulate casing with insulation material, protected and covered by heavy-gage metal jacket.
- G. Factory apply boiler base and other components, that are subject to corrosion, with durable, acrylic, powder coated, painted, or weather-proofed finish.

2.04 BOILER TRIM

- A. ASME rated pressure relief valve.
- B. Flow switch.
- C. Electronic Low Water Cut-off: Complete with test light and manual reset button to automatically prevent firing operation whenever boiler water falls below safe level.
- D. Temperature and pressure gage.
- E. Pressure Switches:
 - 1. High gas pressure.
 - 2. Low gas pressure.
 - 3. Air pressure.
- F. Manual reset high limit.
- G. Boiler Pump (where required by boiler design):
 - 1. Primary pump, factory supplied and sized for field installation to ensure minimum, continuous circulation through boiler.
 - 2. Where pump is not provided by boiler manufacturer, provide pump in accordance with boiler manufacturer's recommendations.
 - 3. Pump time delay.

2.05 FUEL BURNING SYSTEM

- A. Provide forced draft automatic burner or pulse combustion, integral to boiler, designed to burn propane, and maintain fuel-air ratios automatically.
 - 1. Blower Design: Statically and dynamically balanced to supply combustion air; direct connected to motor.
 - 2. Forced Draft Design: Mixes combustion air and gas to achieve 90 percent combustion efficiency.
 - 3. Pulse Combustion Design: Self-aspirating, not requiring blower for combustion.
 - 4. Combustion Air Filter: Protects fuel burning system from debris.
- B. Gas Train: Plug valve, safety gas valve, gas-air ratio control valve, and pressure regulator controls air and gas mixture.
- C. Emission of Oxides of Nitrogen Requirements: Comply with SCAQMD 1146.1 for natural gas fired system, as applicable.

D. Intakes: Combustion air intake capable of accepting free mechanical room air or direct outside air through a sealed intake pipe

2.06 FACTORY INSTALLED CONTROLS

- A. Option for internal or external (0-10) VDC control.
- B. Temperature Controls:
 - 1. Automatic reset type to control fuel burning system on-off and firing rate to maintain temperature.
 - 2. Manual reset type to control fuel burning system to prevent boiler water temperature from exceeding safe system water temperature.
 - 3. Low-fire start time delay relay.
- C. Electronic PI setpoint/modulation control system.
- D. Microprocessor-based, fuel/air mixing controls.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Install boiler and provide connection of natural gas service in accordance with requirements of NFPA 54 and applicable codes.
- C. Pipe cooled condensate produced by the combustion process from the boiler condensate connection and/or flue stack with suitable piping material to neutralizer prior to discharging into nearest floor drain.

3.02 CLOSEOUT ACTIVITIES

- A. Demonstrate proper operation of equipment to Owner's designated representative.
- B. Demonstration: Demonstrate operation of system to Owner's personnel.
 - 1. Use operation and maintenance data as reference during demonstration.
 - 2. Briefly describe function, operation, and maintenance of each component.

SECTION 23 8127

SMALL SPLIT-SYSTEM HEATING AND COOLING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Indoor air handler (fan & coil) units for duct connection.
- B. Controls.

1.02 REFERENCE STANDARDS

- A. AHRI 210/240 Standard for Performance Rating of Unitary Air-Conditioning and Air-Source Heat Pump Equipment; 2008, Including All Addenda.
- B. ASHRAE Std 15 Safety Standard for Refrigeration Systems; 2013.
- C. ASHRAE Std 23.1 Methods of Testing for Rating the Performance of Positive Displacement Refrigerant Compressors and Condensing Units that Operate at Subcritical Temperatures of the Refrigerant; 2010.
- D. NFPA 90A Standard for the Installation of Air-Conditioning and Ventilating Systems; 2015.
- E. NFPA 90B Standard for the Installation of Warm Air Heating and Air-Conditioning Systems; 2015.
- F. UL 207 Standard for Refrigerant-Containing Components and Accessories, Nonelectrical; Current Edition, Including All Revisions.

1.03 SUBMITTALS

- A. Product Data: Provide rated capacities, weights, accessories, electrical nameplate data, and wiring diagrams.
- B. Shop Drawings: Indicate assembly, required clearances, and location and size of field connections.
- C. Manufacturer's Instructions: Indicate rigging, assembly, and installation instructions.
- D. Operation and Maintenance Data: Include manufacturer's descriptive literature, operating instructions, installation instructions, maintenance and repair data, and parts listing.
- E. Warranty: Submit manufacturers warranty and ensure forms have been filled out in Owner's name and registered with manufacturer.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Daikin; LV Series: www.daikincomfort.com.

2.02 SYSTEM DESIGN

- A. Split-System Heating and Cooling Units: Self-contained, packaged, matched factory-engineered and assembled, pre-wired indoor and outdoor units; UL listed.
 - 1. Heating: None.
 - 2. Cooling: Outdoor electric condensing unit with evaporator coil in central ducted indoor unit.
 - 3. Provide refrigerant lines internal to units and between indoor and outdoor units, factory cleaned, dried, pressurized and sealed, with insulated suction line.
- B. Performance Requirements: See Drawings for additional requirements.
 - 1. Efficiency:
 - a. Seasonal Energy Efficiency Ratio: 23, minimum.
 - b. Energy Efficiency Ratio: 12.8.
 - c. Heating Seasonal Performance Factor: 12.5, minimum.
 - d. Coefficient of Performance (COP): 4.4.
 - 2. Air Handling:
 - a. Air Flow: 280 cfm.

- 3. Cooling Performance Requirements:
 - a. Evaporator Cooling Output: 12,000 Btuh.
- C. Electrical Characteristics:
 - 1. 208/230 volts, single phase, 60 Hz.
 - 2. 15 amperes maximum fuse size.

2.03 INDOOR UNITS FOR DUCTED SYSTEMS

- A. Indoor Units: Self-contained, packaged, factory assembled, pre-wired unit consisting of cabinet, supply fan, heating and cooling element(s), controls, and accessories; wired for single power connection with control transformer.
 - 1. Air Flow Configuration: Horizontal.
 - 2. Cabinet: Steel with baked enamel finish, easily removed and secured access doors with safety interlock switches, glass fiber insulation with reflective liner.
- B. Evaporator Coils: Copper tube aluminum fin assembly, galvanized or polymer drain pan sloped in all directions to drain, drain connection, refrigerant piping connections, restricted distributor or thermostatic expansion valve.
 - 1. Construction and Ratings: In accordance with AHRI 210/240 and UL 207.
 - 2. Manufacturers: System manufacturer.

2.04 OUTDOOR UNITS

- A. Outdoor Units: Self-contained, packaged, pre-wired unit consisting of cabinet, with compressor and condenser.
 - 1. Refrigerant: R-410A.
 - 2. Cabinet: Steel with baked enamel finish, easily removed and secured access doors with safety interlock switches, glass fiber insulation with reflective liner.
 - 3. Construction and Ratings: In accordance with AHRI 210/240 with testing in accordance with ASHRAE Std 23.1 and UL 207.
- B. Operating Controls:
 - 1. Control by room thermostat to maintain room temperature setting.

2.05 ACCESSORY EQUIPMENT

- A. Room Thermostat: Wall-mounted, electric solid state microcomputer based room thermostat with remote sensor to maintain temperature setting; low-voltage; with following features:
 - 1. Preferential rate control to minimize overshoot and deviation from setpoint.
 - 2. Thermostat Display:
 - a. Actual room temperature.
 - b. System Mode Indication: Heating, Cooling, Auto or On, Off.
 - 3. Manufacturers:
 - a. York International Corporation / Johnson Controls; DWCR: www.york.com.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install in accordance with manufacturer's instructions and requirements of local authorities having jurisdiction.
- B. Install in accordance with NFPA 90A and NFPA 90B.
- C. Install refrigeration systems in accordance with ASHRAE Std 15.

SECTION 26 0519

LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Single conductor building wire.
- B. Underground feeder and branch-circuit cable.
- C. Service entrance cable.
- D. Wiring connectors.
- E. Electrical tape.
- F. Oxide inhibiting compound.
- G. Wire pulling lubricant.
- H. Cable ties.

1.02 RELATED REQUIREMENTS

- A. Section 07 8400 Firestopping.
- B. Section 26 0526 Grounding and Bonding for Electrical Systems: Additional requirements for grounding conductors and grounding connectors.
- C. Section 26 0553 Identification for Electrical Systems: Identification products and requirements.
- D. Section 28 3100 Fire Detection and Alarm: Fire alarm system conductors and cables.
- E. Section 31 2316 Excavation.
- F. Section 31 2323 Fill: Bedding and backfilling.

1.03 REFERENCE STANDARDS

- A. ASTM B3 Standard Specification for Soft or Annealed Copper Wire; 2013.
- B. ASTM B8 Standard Specification for Concentric-Lay-Stranded Copper Conductors, Hard, Medium-Hard, or Soft; 2011.
- C. ASTM B33 Standard Specification for Tin-Coated Soft or Annealed Copper Wire for Electrical Purposes; 2010 (Reapproved 2014).
- D. ASTM B787/B787M Standard Specification for 19 Wire Combination Unilay-Stranded Copper Conductors for Subsequent Insulation; 2004 (Reapproved 2014).
- E. ASTM B800 Standard Specification for 8000 Series Aluminum Alloy Wire for Electrical Purposes Annealed and Intermediate Tempers; 2005 (Reapproved 2011).
- F. ASTM B801 Standard Specification for Concentric-Lay-Stranded Conductors of 8000 Series Aluminum Alloy Wire for Subsequent Covering of Insulation; 2007 (Reapproved 2012).
- G. ASTM D3005 Standard Specification for Low-Temperature Resistant Vinyl Chloride Plastic Pressure-Sensitive Electrical Insulating Tape; 2010.
- H. NECA 1 Standard for Good Workmanship in Electrical Construction; 2010.
- I. NECA 104 Recommended Practice for Installing Aluminum Building Wire and Cable; 2012.
- J. NECA 121 Standard for Installing Nonmetallic-Sheathed Cable (Type NM-B) and Underground Feeder and Branch-Circuit Cable (Type UF); 2007.
- K. NEMA WC 70 Nonshielded Power Cable 2000 V or Less for the Distribution of Electrical Energy; 2009.
- L. NETA ATS Acceptance Testing Specifications for Electrical Power Equipment and Systems; 2013.
- M. NFPA 70 National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

- N. UL 44 Thermoset-Insulated Wires and Cables; Current Edition, Including All Revisions.
- O. UL 83 Thermoplastic-Insulated Wires and Cables; Current Edition, Including All Revisions.
- P. UL 486A-486B Wire Connectors; Current Edition, Including All Revisions.
- Q. UL 486C Splicing Wire Connectors; Current Edition, Including All Revisions.
- R. UL 486D Sealed Wire Connector Systems; Current Edition, Including All Revisions.
- S. UL 493 Thermoplastic-Insulated Underground Feeder and Branch-Circuit Cables; Current Edition, Including All Revisions.
- T. UL 510 Polyvinyl Chloride, Polyethylene, and Rubber Insulating Tape; Current Edition, Including All Revisions.

1.04 SUBMITTALS

- A. See Section 01 3000 Administrative Requirements, for submittal procedures.
- B. Product Data: Provide manufacturer's standard catalog pages and data sheets for conductors and cables, including detailed information on materials, construction, ratings, listings, and available sizes, configurations, and stranding.
- C. Project Record Documents: Record actual installed circuiting arrangements. Record actual routing for underground circuits.

1.05 QUALITY ASSURANCE

A. Conform to requirements of NFPA 70.

1.06 FIELD CONDITIONS

A. Do not install or otherwise handle thermoplastic-insulated conductors at temperatures lower than 14 degrees F, unless otherwise permitted by manufacturer's instructions. When installation below this temperature is unavoidable, notify Architect and obtain direction before proceeding with work.

PART 2 PRODUCTS

2.01 CONDUCTOR AND CABLE APPLICATIONS

- A. Do not use conductors and cables for applications other than as permitted by NFPA 70 and product listing.
- B. Provide single conductor building wire installed in suitable raceway unless otherwise indicated, permitted, or required.

2.02 CONDUCTOR AND CABLE GENERAL REQUIREMENTS

- A. Provide products that comply with requirements of NFPA 70.
- B. Provide products listed, classified, and labeled as suitable for the purpose intended.
- C. Provide new conductors and cables manufactured not more than one year prior to installation.
- D. Unless specifically indicated to be excluded, provide all required conduit, boxes, wiring, connectors, etc. as required for a complete operating system.
- E. Comply with NEMA WC 70.
- F. Thermoplastic-Insulated Conductors and Cables: Listed and labeled as complying with UL 83.
- G. Thermoset-Insulated Conductors and Cables: Listed and labeled as complying with UL 44.
- H. Conductors for Grounding and Bonding: Also comply with Section 26 0526.
- I. Conductor Material:
 - 1. Provide copper conductors except where aluminum conductors are specifically indicated. Substitution of aluminum conductors for copper is not permitted. Conductor sizes indicated are based on copper unless specifically indicated as aluminum. Conductors designated with the abbreviation "AL" indicate aluminum.

- 2. Copper Conductors: Soft drawn annealed, 98 percent conductivity, uncoated copper conductors complying with ASTM B3, ASTM B8, or ASTM B787/B787M unless otherwise indicated.
- 3. Tinned Copper Conductors: Comply with ASTM B33.
- 4. Aluminum Conductors (only where specifically indicated or permitted for substitution): AA-8000 series aluminum alloy conductors recognized by ASTM B800 and compact stranded in accordance with ASTM B801 unless otherwise indicated.
- J. Minimum Conductor Size: 12 AWG.
- K. Conductor Color Coding:
 - 1. Color code conductors as indicated unless otherwise required by the authority having jurisdiction. Maintain consistent color coding throughout project.
 - 2. Color Coding Method: Integrally colored insulation.
 - 3. Color Code:
 - a. 240/120 V, 1 Phase, 3 Wire System:
 - 1) Phase A: Black.
 - 2) Phase B: Red.
 - 3) Neutral/Grounded: White.
 - b. Equipment Ground, All Systems: Green.

2.03 SINGLE CONDUCTOR BUILDING WIRE

- A. Description: Single conductor insulated wire.
- B. Conductor Stranding:
 - 1. Feeders and Branch Circuits:
 - a. Size 10 AWG and Smaller: Solid.
 - b. Size 8 AWG and Larger: Stranded.
- C. Insulation Voltage Rating: 600 V.
- D. Insulation:
 - 1. Copper Building Wire: Type THHN/THWN or XHHW-2, except as indicated below.

2.04 UNDERGROUND FEEDER AND BRANCH-CIRCUIT CABLE

- A. Description: NFPA 70, Type UF multiple-conductor cable listed and labeled as complying with UL 493, Type UF-B.
- B. Provide equipment grounding conductor unless otherwise indicated.
- C. Conductor Stranding:
 - 1. Size 10 AWG and Smaller: Solid.
 - 2. Size 8 AWG and Larger: Stranded.
- D. Insulation Voltage Rating: 600 V.

2.05 SERVICE ENTRANCE CABLE

- A. Conductor Stranding: Stranded.
- B. Insulation Voltage Rating: 600 V.

2.06 WIRING CONNECTORS

- A. Description: Wiring connectors appropriate for the application, suitable for use with the conductors to be connected, and listed as complying with UL 486A-486B or UL 486C as applicable.
- B. Connectors for Grounding and Bonding: Comply with Section 26 0526.
- C. Wiring Connectors for Splices and Taps:
 - 1. Copper Conductors Size 8 AWG and Smaller: Use twist-on insulated spring connectors.
 - 2. Copper Conductors Size 6 AWG and Larger: Use mechanical connectors or compression connectors.

- D. Twist-on Insulated Spring Connectors: Rated 600 V, 221 degrees F for standard applications and 302 degrees F for high temperature applications; pre-filled with sealant and listed as complying with UL 486D for damp and wet locations.
- E. Mechanical Connectors: Provide bolted type or set-screw type.
- F. Compression Connectors: Provide circumferential type or hex type crimp configuration.

2.07 WIRING ACCESSORIES

- A. Electrical Tape:
 - 1. Vinyl Color Coding Electrical Tape: Integrally colored to match color code indicated; listed as complying with UL 510; minimum thickness of 7 mil; resistant to abrasion, corrosion, and sunlight; suitable for continuous temperature environment up to 221 degrees F.
 - 2. Vinyl Insulating Electrical Tape: Complying with ASTM D3005 and listed as complying with UL 510; minimum thickness of 7 mil; resistant to abrasion, corrosion, and sunlight; conformable for application down to 0 degrees F and suitable for continuous temperature environment up to 221 degrees F.
- B. Oxide Inhibiting Compound: Listed; suitable for use with the conductors or cables to be installed.
- C. Wire Pulling Lubricant: Listed; suitable for use with the conductors or cables to be installed and suitable for use at the installation temperature.
- D. Cable Ties: Material and tensile strength rating suitable for application.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that interior of building has been protected from weather.
- B. Verify that work likely to damage wire and cable has been completed.
- C. Verify that raceways, boxes, and equipment enclosures are installed and are properly sized to accommodate conductors and cables in accordance with NFPA 70.
- D. Verify that field measurements are as shown on the drawings.
- E. Verify that conditions are satisfactory for installation prior to starting work.

3.02 PREPARATION

A. Clean raceways thoroughly to remove foreign materials before installing conductors and cables.

3.03 INSTALLATION

- A. Install products in accordance with manufacturer's instructions.
- B. Install conductors and cable in a neat and workmanlike manner in accordance with NECA 1.
- C. Install aluminum conductors in accordance with NECA 104.
- D. Install underground feeder and branch-circuit cable (Type UF-B) in accordance with NECA 121.
- E. Installation in Raceway:
 - 1. Tape ends of conductors and cables to prevent infiltration of moisture and other contaminants.
 - 2. Pull all conductors and cables together into raceway at same time.
 - 3. Do not damage conductors and cables or exceed manufacturer's recommended maximum pulling tension and sidewall pressure.
 - 4. Use suitable wire pulling lubricant where necessary, except when lubricant is not recommended by the manufacturer.
- F. Paralleled Conductors: Install conductors of the same length and terminate in the same manner.
- G. Secure and support conductors and cables in accordance with NFPA 70 using suitable supports and methods approved by the authority having jurisdiction. Provide independent support from building structure. Do not provide support from raceways, piping, ductwork, or other systems.

- H. Terminate cables using suitable fittings.
- I. Install conductors with a minimum of 12 inches of slack at each outlet.
- J. Neatly train and bundle conductors inside boxes, wireways, panelboards and other equipment enclosures.
- K. Group or otherwise identify neutral/grounded conductors with associated ungrounded conductors inside enclosures in accordance with NFPA 70.
- L. Make wiring connections using specified wiring connectors.
 - 1. Make splices and taps only in accessible boxes. Do not pull splices into raceways or make splices in conduit bodies or wiring gutters.
 - 2. Remove appropriate amount of conductor insulation for making connections without cutting, nicking or damaging conductors.
 - 3. Do not remove conductor strands to facilitate insertion into connector.
 - 4. Clean contact surfaces on conductors and connectors to suitable remove corrosion, oxides, and other contaminates. Do not use wire brush on plated connector surfaces.
 - 5. Connections for Aluminum Conductors: Fill connectors with oxide inhibiting compound where not pre-filled by manufacturer.
 - 6. Mechanical Connectors: Secure connections according to manufacturer's recommended torque settings.
 - 7. Compression Connectors: Secure connections using manufacturer's recommended tools and dies.
- M. Insulate splices and taps that are made with uninsulated connectors using methods suitable for the application, with insulation and mechanical strength at least equivalent to unspliced conductors.
- N. Insulate ends of spare conductors using vinyl insulating electrical tape.
- O. Install firestopping to preserve fire resistance rating of partitions and other elements, using materials and methods specified in Section 07 8400.
- P. Unless specifically indicated to be excluded, provide final connections to all equipment and devices, including those furnished by others, as required for a complete operating system.

3.04 FIELD QUALITY CONTROL

- A. See Section 01 4000 Quality Requirements, for additional requirements.
- B. Inspect and test in accordance with NETA ATS, except Section 4.
- C. Perform inspections and tests listed in NETA ATS, Section 7.3.2. The insulation resistance test is required for all conductors. The resistance test for parallel conductors listed as optional is not required.
- D. Correct deficiencies and replace damaged or defective conductors and cables.

SECTION 26 0526

GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Grounding and bonding requirements.
- B. Conductors for grounding and bonding.
- C. Connectors for grounding and bonding.

1.02 RELATED REQUIREMENTS

- A. Section 26 0519 Low-Voltage Electrical Power Conductors and Cables: Additional requirements for conductors for grounding and bonding, including conductor color coding.
- B. Section 26 0553 Identification for Electrical Systems: Identification products and requirements.

1.03 REFERENCE STANDARDS

- A. NECA 1 Standard for Good Workmanship in Electrical Construction; 2010.
- B. NFPA 70 National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- C. UL 467 Grounding and Bonding Equipment; Current Edition, Including All Revisions.

PART 2 PRODUCTS

2.01 GROUNDING AND BONDING REQUIREMENTS

- A. Do not use products for applications other than as permitted by NFPA 70 and product listing.
- B. Unless specifically indicated to be excluded, provide all required components, conductors, connectors, conduit, boxes, fittings, supports, accessories, etc. as necessary for a complete grounding and bonding system.
- C. Where conductor size is not indicated, size to comply with NFPA 70 but not less than applicable minimum size requirements specified.
- D. Grounding System Resistance:
 - 1. Achieve specified grounding system resistance under normally dry conditions unless otherwise approved by Architect. Precipitation within the previous 48 hours does not constitute normally dry conditions.
- E. Grounding Electrode System:
 - 1. Provide connection to required and supplemental grounding electrodes indicated to form grounding electrode system.
 - a. Provide continuous grounding electrode conductors without splice or joint.
 - b. Install grounding electrode conductors in raceway where exposed to physical damage. Bond grounding electrode conductor to metallic raceways at each end with bonding jumper.
 - 2. Metal Underground Water Pipe(s):
 - a. Provide connection to underground metal domestic and fire protection (where present) water service pipe(s) that are in direct contact with earth for at least 10 feet at an accessible location not more than 5 feet from the point of entrance to the building.
 - b. Provide bonding jumper(s) around insulating joints/pipes as required to make pipe electrically continuous.
 - c. Provide bonding jumper around water meter of sufficient length to permit removal of meter without disconnecting jumper.
 - 3. Metal Building or Structure Frame:
 - a. Provide connection to metal building or structure frame effectively grounded in accordance with NFPA 70 at nearest accessible location.
 - 4. Concrete-Encased Electrode:

- a. Provide connection to concrete-encased electrode consisting of not less than 20 feet of either steel reinforcing bars or bare copper conductor not smaller than 4 AWG embedded within concrete foundation or footing that is in direct contact with earth in accordance with NFPA 70.
- 5. Provide additional ground electrode(s) as required to achieve specified grounding electrode system resistance.
- F. Bonding and Equipment Grounding:
 - 1. Provide bonding for equipment grounding conductors, equipment ground busses, metallic equipment enclosures, metallic raceways and boxes, device grounding terminals, and other normally non-current-carrying conductive materials enclosing electrical conductors/equipment or likely to become energized as indicated and in accordance with NFPA 70.
 - 2. Where circuit conductor sizes are increased for voltage drop, increase size of equipment grounding conductor proportionally in accordance with NFPA 70.
 - 3. Unless otherwise indicated, connect wiring device grounding terminal to branch circuit equipment grounding conductor and to outlet box with bonding jumper.
 - 4. Terminate branch circuit equipment grounding conductors on solidly bonded equipment ground bus only. Do not terminate on neutral (grounded) or isolated/insulated ground bus.
 - 5. Provide bonding jumper across expansion or expansion/deflection fittings provided to accommodate conduit movement.

2.02 GROUNDING AND BONDING COMPONENTS

- A. General Requirements:
 - 1. Provide products listed, classified, and labeled as suitable for the purpose intended.
 - 2. Provide products listed and labeled as complying with UL 467 where applicable.
- B. Conductors for Grounding and Bonding, in Addition to Requirements of Section 26 0526:
 - 1. Use insulated copper conductors unless otherwise indicated.
 - a. Exceptions:
 - 1) Use bare copper conductors where installed underground in direct contact with earth.
 - 2) Use bare copper conductors where directly encased in concrete (not in raceway).
- C. Connectors for Grounding and Bonding:
 - 1. Description: Connectors appropriate for the application and suitable for the conductors and items to be connected; listed and labeled as complying with UL 467.
 - 2. Unless otherwise indicated, use exothermic welded connections for underground, concealed and other inaccessible connections.
 - 3. Unless otherwise indicated, use mechanical connectors, compression connectors, or exothermic welded connections for accessible connections.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that work likely to damage grounding and bonding system components has been completed.
- B. Verify that field measurements are as shown on the drawings.
- C. Verify that conditions are satisfactory for installation prior to starting work.

3.02 INSTALLATION

- A. Install products in accordance with manufacturer's instructions.
- B. Install grounding and bonding system components in a neat and workmanlike manner in accordance with NECA 1.
- C. Make grounding and bonding connections using specified connectors.

- 1. Remove appropriate amount of conductor insulation for making connections without cutting, nicking or damaging conductors. Do not remove conductor strands to facilitate insertion into connector.
- 2. Remove nonconductive paint, enamel, or similar coating at threads, contact points, and contact surfaces.
- 3. Exothermic Welds: Make connections using molds and weld material suitable for the items to be connected in accordance with manufacturer's recommendations.
- 4. Mechanical Connectors: Secure connections according to manufacturer's recommended torque settings.
- 5. Compression Connectors: Secure connections using manufacturer's recommended tools and dies.
- D. Identify grounding and bonding system components in accordance with Section 26 0553.

SECTION 26 0529

HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Support and attachment components for equipment, conduit, cable, boxes, and other electrical work.

1.02 REFERENCE STANDARDS

- A. ASTM A123/A123M Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products; 2015.
- B. ASTM A153/A153M Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware; 2009.
- C. ASTM B633 Standard Specification for Electrodeposited Coatings of Zinc on Iron and Steel; 2013.
- D. MFMA-4 Metal Framing Standards Publication; 2004.
- E. NECA 1 Standard for Good Workmanship in Electrical Construction; 2010.
- F. NFPA 70 National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

1.03 SUBMITTALS

- A. See Section 01 3000 Administrative Requirements, for submittal procedures.
- B. Product Data: Provide manufacturer's standard catalog pages and data sheets for metal channel (strut) framing systems, non-penetrating rooftop supports, and post-installed concrete and masonry anchors.

PART 2 PRODUCTS

2.01 SUPPORT AND ATTACHMENT COMPONENTS

- A. General Requirements:
 - 1. Provide all required hangers, supports, anchors, fasteners, fittings, accessories, and hardware as necessary for the complete installation of electrical work.
 - 2. Provide products listed, classified, and labeled as suitable for the purpose intended, where applicable.
 - 3. Where support and attachment component types and sizes are not indicated, select in accordance with manufacturer's application criteria as required for the load to be supported. Include consideration for vibration, equipment operation, and shock loads where applicable.
 - 4. Do not use products for applications other than as permitted by NFPA 70 and product listing.
 - 5. Steel Components: Use corrosion resistant materials suitable for the environment where installed.
 - a. Zinc-Plated Steel: Electroplated in accordance with ASTM B633.
 - b. Galvanized Steel: Hot-dip galvanized after fabrication in accordance with ASTM A123/A123M or ASTM A153/A153M.
- B. Conduit and Cable Supports: Straps, clamps, etc. suitable for the conduit or cable to be supported.
 - 1. Conduit Straps: One-hole or two-hole type; steel or malleable iron.
 - 2. Conduit Clamps: Bolted type unless otherwise indicated.
- C. Outlet Box Supports: Hangers, brackets, etc. suitable for the boxes to be supported.
- D. Metal Channel (Strut) Framing Systems: Factory-fabricated continuous-slot metal channel (strut) and associated fittings, accessories, and hardware required for field-assembly of supports.
 - 1. Comply with MFMA-4.

- E. Hanger Rods: Threaded zinc-plated steel unless otherwise indicated.
- F. Anchors and Fasteners:
 - 1. Unless otherwise indicated and where not otherwise restricted, use the anchor and fastener types indicated for the specified applications.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install products in accordance with manufacturer's instructions.
- B. Install support and attachment components in a neat and workmanlike manner in accordance with NECA 1.
- C. Provide independent support from building structure. Do not provide support from piping, ductwork, or other systems.
- D. Unless specifically indicated or approved by Architect, do not provide support from suspended ceiling support system or ceiling grid.
- E. Unless specifically indicated or approved by Architect, do not provide support from roof deck.
- F. Do not penetrate or otherwise notch or cut structural members without approval of Structural Engineer.
- G. Equipment Support and Attachment:
 - 1. Use metal fabricated supports or supports assembled from metal channel (strut) to support equipment as required.
 - 2. Use metal channel (strut) secured to studs to support equipment surface-mounted on hollow stud walls when wall strength is not sufficient to resist pull-out.
 - 3. Use metal channel (strut) to support surface-mounted equipment in wet or damp locations to provide space between equipment and mounting surface.
 - 4. Securely fasten floor-mounted equipment. Do not install equipment such that it relies on its own weight for support.
- H. Secure fasteners according to manufacturer's recommended torque settings.
- I. Remove temporary supports.

3.02 FIELD QUALITY CONTROL

- A. See Section 01 4000 Quality Requirements, for additional requirements.
- B. Inspect support and attachment components for damage and defects.
- C. Repair cuts and abrasions in galvanized finishes using zinc-rich paint recommended by manufacturer. Replace components that exhibit signs of corrosion.
- D. Correct deficiencies and replace damaged or defective support and attachment components.

SECTION 26 0534 CONDUIT

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Galvanized steel rigid metal conduit (RMC).
- B. Intermediate metal conduit (IMC).
- C. Electrical metallic tubing (EMT).
- D. Rigid polyvinyl chloride (PVC) conduit.
- E. Conduit fittings.

1.02 RELATED REQUIREMENTS

- A. Section 07 8400 Firestopping.
- B. Section 26 0526 Grounding and Bonding for Electrical Systems.
- C. Section 26 0529 Hangers and Supports for Electrical Systems.

1.03 REFERENCE STANDARDS

- A. ANSI C80.1 American National Standard for Electrical Rigid Steel Conduit (ERSC); 2005.
- B. ANSI C80.3 American National Standard for Steel Electrical Metallic Tubing (EMT); 2005.
- C. ANSI C80.6 American National Standard for Electrical Intermediate Metal Conduit (EIMC); 2005.
- D. NECA 1 Standard for Good Workmanship in Electrical Construction; 2010.
- E. NECA 101 Standard for Installing Steel Conduits (Rigid, IMC, EMT); 2013.
- F. NECA 111 Standard for Installing Nonmetallic Raceways (RNC, ENT, LFNC); 2003.
- G. NEMA FB 1 Fittings, Cast Metal Boxes, and Conduit Bodies for Conduit, Electrical Metallic Tubing, and Cable; 2012.
- H. NEMA TC 2 Electrical Polyvinyl Chloride (PVC) Conduit; 2013.
- I. NEMA TC 3 Polyvinyl Chloride (PVC) Fittings for Use with Rigid PVC Conduit and Tubing; 2015.
- J. NFPA 70 National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- K. UL 6 Electrical Rigid Metal Conduit-Steel; Current Edition, Including All Revisions.
- L. UL 514B Conduit, Tubing, and Cable Fittings; Current Edition, Including All Revisions.
- M. UL 651 Schedule 40, 80, Type EB and A Rigid PVC Conduit and Fittings; Current Edition, Including All Revisions.
- N. UL 797 Electrical Metallic Tubing-Steel; Current Edition, Including All Revisions.
- O. UL 1242 Electrical Intermediate Metal Conduit-Steel; Current Edition, Including All Revisions.

1.04 SUBMITTALS

- A. See Section 01 3000 Administrative Requirements for submittals procedures.
- B. Product Data: Provide manufacturer's standard catalog pages and data sheets for conduits and fittings.
- C. Project Record Documents: Record actual routing for conduits installed underground, conduits embedded within concrete slabs, and conduits 2 inch (53 mm) trade size and larger.

1.05 QUALITY ASSURANCE

A. Conform to requirements of NFPA 70.

PART 2 PRODUCTS

2.01 CONDUIT APPLICATIONS

- A. Do not use conduit and associated fittings for applications other than as permitted by NFPA 70 and product listing.
- B. Unless otherwise indicated and where not otherwise restricted, use the conduit types indicated for the specified applications. Where more than one listed application applies, comply with the most restrictive requirements. Where conduit type for a particular application is not specified, use galvanized steel rigid metal conduit.

2.02 CONDUIT REQUIREMENTS

- A. Provide all conduit, fittings, supports, and accessories required for a complete raceway system.
- B. Provide products listed, classified, and labeled as suitable for the purpose intended.
- C. Where conduit size is not indicated, size to comply with NFPA 70 but not less than applicable minimum size requirements specified.

2.03 GALVANIZED STEEL RIGID METAL CONDUIT (RMC)

- A. Description: NFPA 70, Type RMC galvanized steel rigid metal conduit complying with ANSI C80.1 and listed and labeled as complying with UL 6.
- B. Fittings:
 - 1. Non-Hazardous Locations: Use fittings complying with NEMA FB 1 and listed and labeled as complying with UL 514B.
 - 2. Material: Use steel or malleable iron.
 - 3. Connectors and Couplings: Use threaded type fittings only. Threadless set screw and compression (gland) type fittings are not permitted.

2.04 INTERMEDIATE METAL CONDUIT (IMC)

- A. Description: NFPA 70, Type IMC galvanized steel intermediate metal conduit complying with ANSI C80.6 and listed and labeled as complying with UL 1242.
- B. Fittings:
 - 1. Non-Hazardous Locations: Use fittings complying with NEMA FB 1 and listed and labeled as complying with UL 514B.
 - 2. Material: Use steel or malleable iron.
 - 3. Connectors and Couplings: Use threaded type fittings only. Threadless set screw and compression (gland) type fittings are not permitted.

2.05 ELECTRICAL METALLIC TUBING (EMT)

- A. Description: NFPA 70, Type EMT steel electrical metallic tubing complying with ANSI C80.3 and listed and labeled as complying with UL 797.
- B. Fittings:
 - 1. Description: Fittings complying with NEMA FB 1 and listed and labeled as complying with UL 514B.
 - 2. Material: Use steel or malleable iron.
 - 3. Connectors and Couplings: Use compression (gland) or set-screw type.
 - a. Do not use indenter type connectors and couplings.

2.06 RIGID POLYVINYL CHLORIDE (PVC) CONDUIT

- A. Description: NFPA 70, Type PVC rigid polyvinyl chloride conduit complying with NEMA TC 2 and listed and labeled as complying with UL 651; Schedule 40 unless otherwise indicated, Schedule 80 where subject to physical damage; rated for use with conductors rated 90 degrees C.
- B. Fittings:
 - 1. Manufacturer: Same as manufacturer of conduit to be connected.
 - 2. Description: Fittings complying with NEMA TC 3 and listed and labeled as complying with UL 651; material to match conduit.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that field measurements are as shown on drawings.
- B. Verify that mounting surfaces are ready to receive conduits.
- C. Verify that conditions are satisfactory for installation prior to starting work.

3.02 INSTALLATION

- A. Install products in accordance with manufacturer's instructions.
- B. Install conduit in a neat and workmanlike manner in accordance with NECA 1.
- C. Install galvanized steel rigid metal conduit (RMC) in accordance with NECA 101.
- D. Install intermediate metal conduit (IMC) in accordance with NECA 101.
- E. Install rigid polyvinyl chloride (PVC) conduit in accordance with NECA 111.
- F. Conduit Support:
 - 1. Secure and support conduits in accordance with NFPA 70 and Section 26 0529 using suitable supports and methods approved by the authority having jurisdiction.
 - 2. Provide independent support from building structure. Do not provide support from piping, ductwork, or other systems.
- G. Connections and Terminations:
 - 1. Use approved zinc-rich paint or conduit joint compound on field-cut threads of galvanized steel conduits prior to making connections.
 - 2. Where two threaded conduits must be joined and neither can be rotated, use three-piece couplings or split couplings. Do not use running threads.
 - 3. Use suitable adapters where required to transition from one type of conduit to another.
 - 4. Terminate threaded conduits in boxes and enclosures using threaded hubs or double lock nuts for dry locations and raintight hubs for wet locations.
 - 5. Provide insulating bushings or insulated throats at all conduit terminations to protect conductors.
 - 6. Secure joints and connections to provide maximum mechanical strength and electrical continuity.
- H. Penetrations:
 - 1. Do not penetrate or otherwise notch or cut structural members, including footings and grade beams, without approval of Structural Engineer.
 - 2. Make penetrations perpendicular to surfaces unless otherwise indicated.
 - 3. Provide sleeves for penetrations as indicated or as required to facilitate installation. Set sleeves flush with exposed surfaces unless otherwise indicated or required.
 - 4. Conceal bends for conduit risers emerging above ground.
 - 5. Seal interior of conduits entering the building from underground at first accessible point to prevent entry of moisture and gases.
 - 6. Where conduits penetrate waterproof membrane, seal as required to maintain integrity of membrane.
 - 7. Make penetrations for roof-mounted equipment within associated equipment openings and curbs where possible to minimize roofing system penetrations. Where penetrations are necessary, seal as indicated or as required to preserve integrity of roofing system and maintain roof warranty. Include proposed locations of penetrations and methods for sealing with submittals.
 - 8. Install firestopping to preserve fire resistance rating of partitions and other elements, using materials and methods specified in Section 07 8400.
- I. Conduit Movement Provisions: Where conduits are subject to movement, provide expansion and expansion/deflection fittings to prevent damage to enclosed conductors or connected equipment. This includes, but is not limited to:
 - 1. Where conduits cross structural joints intended for expansion, contraction, or deflection.

- 2. Where conduits are subject to earth movement by settlement or frost.
- J. Condensation Prevention: Where conduits cross barriers between areas of potential substantial temperature differential, provide sealing fitting or approved sealing compound at an accessible point near the penetration to prevent condensation. This includes, but is not limited to:
 - 1. Where conduits pass from outdoors into conditioned interior spaces.
 - 2. Where conduits pass from unconditioned interior spaces into conditioned interior spaces.
- K. Provide pull string in all empty conduits and in conduits where conductors and cables are to be installed by others. Leave minimum slack of 12 inches at each end.
- L. Provide grounding and bonding in accordance with Section 26 0526.

3.03 FIELD QUALITY CONTROL

- A. See Section 01 4000 Quality Requirements, for additional requirements.
- B. Repair cuts and abrasions in galvanized finishes using zinc-rich paint recommended by manufacturer. Replace components that exhibit signs of corrosion.
- C. Correct deficiencies and replace damaged or defective conduits.

SECTION 26 0537 BOXES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Outlet and device boxes up to 100 cubic inches, including those used as junction and pull boxes.
- B. Cabinets and enclosures, including junction and pull boxes larger than 100 cubic inches.
- C. Underground boxes/enclosures.

1.02 RELATED REQUIREMENTS

- A. Section 26 0529 Hangers and Supports for Electrical Systems.
- B. Section 26 2726 Wiring Devices:
 - 1. Wall plates.

1.03 REFERENCE STANDARDS

- A. NECA 1 Standard for Good Workmanship in Electrical Construction; 2010.
- B. NECA 130 Standard for Installing and Maintaining Wiring Devices; 2010.
- C. NEMA FB 1 Fittings, Cast Metal Boxes, and Conduit Bodies for Conduit, Electrical Metallic Tubing, and Cable; 2012.
- D. NEMA OS 1 Sheet-Steel Outlet Boxes, Device Boxes, Covers, and Box Supports; 2013.
- E. NEMA 250 Enclosures for Electrical Equipment (1000 Volts Maximum); 2014.
- F. NFPA 70 National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- G. UL 50 Enclosures for Electrical Equipment, Non-Environmental Considerations; Current Edition, Including All Revisions.
- H. UL 50E Enclosures for Electrical Equipment, Environmental Considerations; Current Edition, Including All Revisions.
- I. UL 508A Industrial Control Panels; Current Edition, Including All Revisions.
- J. UL 514A Metallic Outlet Boxes; Current Edition, Including All Revisions.

1.04 SUBMITTALS

A. Product Data: Provide manufacturer's standard catalog pages and data sheets for cabinets and enclosures, boxes for hazardous (classified) locations, floor boxes, and underground boxes/enclosures.

1.05 QUALITY ASSURANCE

A. Conform to requirements of NFPA 70.

PART 2 PRODUCTS

2.01 BOXES

- A. General Requirements:
 - 1. Do not use boxes and associated accessories for applications other than as permitted by NFPA 70 and product listing.
 - 2. Provide all boxes, fittings, supports, and accessories required for a complete raceway system and to accommodate devices and equipment to be installed.
 - 3. Provide products listed, classified, and labeled as suitable for the purpose intended.
 - 4. Where box size is not indicated, size to comply with NFPA 70 but not less than applicable minimum size requirements specified.
 - 5. Provide grounding terminals within boxes where equipment grounding conductors terminate.

- B. Outlet and Device Boxes Up to 100 cubic inches, Including Those Used as Junction and Pull Boxes:
 - 1. Use sheet-steel boxes for dry locations unless otherwise indicated or required.
 - 2. Use cast iron boxes or cast aluminum boxes for damp or wet locations unless otherwise indicated or required; furnish with compatible weatherproof gasketed covers.
 - 3. Use suitable concrete type boxes where flush-mounted in concrete.
 - 4. Use suitable masonry type boxes where flush-mounted in masonry walls.
 - 5. Use raised covers suitable for the type of wall construction and device configuration where required.
 - 6. Use shallow boxes where required by the type of wall construction.
 - 7. Do not use "through-wall" boxes designed for access from both sides of wall.
 - 8. Sheet-Steel Boxes: Comply with NEMA OS 1, and list and label as complying with UL 514A.
 - 9. Cast Metal Boxes: Comply with NEMA FB 1, and list and label as complying with UL 514A; furnish with threaded hubs.
 - 10. Boxes for Supporting Luminaires and Ceiling Fans: Listed as suitable for the type and weight of load to be supported; furnished with fixture stud to accommodate mounting of luminaire where required.
 - 11. Boxes for Ganged Devices: Use multigang boxes of single-piece construction. Do not use field-connected gangable boxes.
 - 12. Wall Plates: Comply with Section 26 2726.
- C. Cabinets and Enclosures, Including Junction and Pull Boxes Larger Than 100 cubic inches:
 - 1. Comply with NEMA 250, and list and label as complying with UL 50 and UL 50E, or UL 508A.
 - 2. NEMA 250 Environment Type, Unless Otherwise Indicated:
 - 3. Junction and Pull Boxes Larger Than 100 cubic inches:
 - a. Provide screw-cover or hinged-cover enclosures unless otherwise indicated.
- D. Underground Boxes/Enclosures:
 - 1. Description: In-ground, open bottom boxes furnished with flush, non-skid covers with legend indicating type of service and stainless steel tamper resistant cover bolts.
 - 2. Size: As indicated on drawings.
 - 3. Depth: As required to extend below frost line to prevent frost upheaval, but not less than 12 inches.
 - 4. Applications:
 - a. Do not use polymer concrete enclosures in areas subject to deliberate vehicular traffic.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that field measurements are as shown on drawings.
- B. Verify that mounting surfaces are ready to receive boxes.
- C. Verify that conditions are satisfactory for installation prior to starting work.

3.02 INSTALLATION

- A. Install products in accordance with manufacturer's instructions.
- B. Perform work in a neat and workmanlike manner in accordance with NECA 1 and, where applicable, NECA 130, including mounting heights specified in those standards where mounting heights are not indicated.
- C. Arrange equipment to provide minimum clearances in accordance with manufacturer's instructions and NFPA 70.
- D. Unless otherwise indicated, provide separate boxes for line voltage and low voltage systems.
- E. Flush-mount boxes in finished areas unless specifically indicated to be surface-mounted.

- F. Unless otherwise indicated, boxes may be surface-mounted where exposed conduits are indicated or permitted.
- G. Box Supports:
 - 1. Secure and support boxes in accordance with NFPA 70 and Section 26 0529 using suitable supports and methods approved by the authority having jurisdiction.
 - 2. Provide independent support from building structure except for cast metal boxes (other than boxes used for fixture support) supported by threaded conduit connections in accordance with NFPA 70. Do not provide support from piping, ductwork, or other systems.
- H. Install boxes plumb and level.
- I. Flush-Mounted Boxes:
 - 1. Install boxes in noncombustible materials such as concrete, tile, gypsum, plaster, etc. so that front edge of box or associated raised cover is not set back from finished surface more than 1/4 inch or does not project beyond finished surface.
 - 2. Install boxes in combustible materials such as wood so that front edge of box or associated raised cover is flush with finished surface.
 - 3. Repair rough openings around boxes in noncombustible materials such as concrete, tile, gypsum, plaster, etc. so that there are no gaps or open spaces greater than 1/8 inch at the edge of the box.
- J. Install boxes as required to preserve insulation integrity.
- K. Underground Boxes/Enclosures:
 - 1. Install enclosure on gravel base, minimum 6 inches deep.
 - 2. Install additional bracing inside enclosures in accordance with manufacturer's instructions to minimize box sidewall deflections during backfilling. Backfill with cover bolted in place.
- L. Install permanent barrier between ganged wiring devices when voltage between adjacent devices exceeds 300 V.
- M. Install firestopping to preserve fire resistance rating of partitions and other elements, using materials and methods specified in Section 07 8400.
- N. Close unused box openings.
- O. Install blank wall plates on junction boxes and on outlet boxes with no devices or equipment installed or designated for future use.
- P. Provide grounding and bonding in accordance with Section 26 0526.

3.03 CLEANING

A. Clean interior of boxes to remove dirt, debris, plaster and other foreign material.

3.04 PROTECTION

A. Immediately after installation, protect boxes from entry of moisture and foreign material until ready for installation of conductors.

SECTION 26 0553

IDENTIFICATION FOR ELECTRICAL SYSTEMS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Electrical identification requirements.
- B. Identification nameplates and labels.
- C. Underground warning tape.
- D. Warning signs and labels.

1.02 RELATED REQUIREMENTS

A. Section 26 0519 - Low-Voltage Electrical Power Conductors and Cables: Color coding for power conductors and cables 600 V and less; vinyl color coding electrical tape.

1.03 REFERENCE STANDARDS

- A. ANSI Z535.2 American National Standard for Environmental and Facility Safety Signs; 2011.
- B. ANSI Z535.4 American National Standard for Product Safety Signs and Labels; 2011.
- C. UL 969 Marking and Labeling Systems; Current Edition, Including All Revisions.

1.04 SUBMITTALS

- A. See Section 01 3000 Administrative Requirements for submittals procedures.
- B. Product Data: Provide manufacturer's standard catalog pages and data sheets for each product.

PART 2 PRODUCTS

2.01 IDENTIFICATION REQUIREMENTS

- A. Identification for Equipment:
 - 1. Use identification nameplate to identify each piece of electrical distribution and control equipment and associated sections, compartments, and components.
 - 2. Service Equipment:
 - a. Use identification nameplate to identify each service disconnecting means.
 - b. Use identification nameplate at each piece of service equipment to identify the available fault current and the date calculations were performed.
- B. Identification for Conductors and Cables:
 - 1. Color Coding for Power Conductors 600 V and Less: Comply with Section 26 0519.
 - 2. Use identification nameplate or identification label to identify color code for ungrounded and grounded power conductors inside door or enclosure at each piece of feeder or branch-circuit distribution equipment when premises has feeders or branch circuits served by more than one nominal voltage system.

2.02 IDENTIFICATION NAMEPLATES AND LABELS

- A. Identification Nameplates:
 - 1. Materials:
 - a. Indoor Clean, Dry Locations: Use plastic nameplates.
 - b. Outdoor Locations: Use plastic, stainless steel, or aluminum nameplates suitable for exterior use.
 - Plastic Nameplates: Two-layer or three-layer laminated acrylic or electrically non-conductive phenolic with beveled edges; minimum thickness of 1/16 inch; engraved text.
 - 3. Stainless Steel Nameplates: Minimum thickness of 1/32 inch; engraved or laser-etched text.
 - 4. Aluminum Nameplates: Anodized; minimum thickness of 1/32 inch; engraved or laser-etched text.

- 5. Mounting Holes for Mechanical Fasteners: Two, centered on sides for sizes up to 1 inch high; Four, located at corners for larger sizes.
- B. Identification Labels:
 - 1. Materials: Use self-adhesive laminated plastic labels; UV, chemical, water, heat, and abrasion resistant.
 - 2. Text: Use factory pre-printed or machine-printed text. Do not use handwritten text unless otherwise indicated.

2.03 UNDERGROUND WARNING TAPE

- A. Materials: Use foil-backed detectable type polyethylene tape suitable for direct burial, unless otherwise indicated.
- B. Foil-backed Detectable Type Tape: 3 inches wide, with minimum thickness of 5 mil, unless otherwise required for proper detection.
- C. Legend: Type of service, continuously repeated over full length of tape.
- D. Color:
 - 1. Tape for Buried Power Lines: Black text on red background.
 - 2. Tape for Buried Communication, Alarm, and Signal Lines: Black text on orange background.

2.04 WARNING SIGNS AND LABELS

- A. Comply with ANSI Z535.2 or ANSI Z535.4 as applicable.
- B. Warning Signs:
 - 1. Materials:
 - 2. Minimum Size: 7 by 10 inches unless otherwise indicated.
- C. Warning Labels:
 - 1. Materials: Use factory pre-printed or machine-printed self-adhesive polyester or self-adhesive vinyl labels; UV, chemical, water, heat, and abrasion resistant; produced using materials recognized to UL 969.
 - 2. Machine-Printed Labels: Use thermal transfer process printing machines and accessories recommended by label manufacturer.
 - 3. Minimum Size: 2 by 4 inches unless otherwise indicated.

PART 3 EXECUTION

3.01 PREPARATION

A. Clean surfaces to receive adhesive products according to manufacturer's instructions.

3.02 INSTALLATION

- A. Install products in accordance with manufacturer's instructions.
- B. Install identification products to be plainly visible for examination, adjustment, servicing, and maintenance. Unless otherwise indicated, locate products as follows:
 - 1. Surface-Mounted Equipment: Enclosure front.
 - 2. Flush-Mounted Equipment: Inside of equipment door.
 - 3. Free-Standing Equipment: Enclosure front; also enclosure rear for equipment with rear access.
 - 4. Elevated Equipment: Legible from the floor or working platform.
 - 5. Interior Components: Legible from the point of access.
 - 6. Conductors and Cables: Legible from the point of access.
- C. Install identification products centered, level, and parallel with lines of item being identified.
- D. Secure nameplates to exterior surfaces of enclosures using stainless steel screws and to interior surfaces using self-adhesive backing or epoxy cement.
- E. Install self-adhesive labels and markers to achieve maximum adhesion, with no bubbles or wrinkles and edges properly sealed.

F. Install underground warning tape above buried lines with one tape per trench at 3 inches below finished grade.

SECTION 26 2416 PANELBOARDS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Power distribution panelboards.
- B. Lighting and appliance panelboards.
- C. Load centers.
- D. Overcurrent protective devices for panelboards.

1.02 RELATED REQUIREMENTS

- A. Section 26 0526 Grounding and Bonding for Electrical Systems.
- B. Section 26 0529 Hangers and Supports for Electrical Systems.

1.03 REFERENCE STANDARDS

- A. FS W-C-375 Circuit Breakers, Molded Case; Branch Circuit and Service; Federal Specification; Revision E, 2013.
- B. NECA 1 Standard for Good Workmanship in Electrical Construction; 2010.
- C. NECA 407 Standard for Installing and Maintaining Panelboards; 2009.
- D. NEMA 250 Enclosures for Electrical Equipment (1000 Volts Maximum); 2014.
- E. NEMA PB 1 Panelboards; 2011.
- F. NEMA PB 1.1 General Instructions for Proper Installation, Operation and Maintenance of Panelboards Rated 600 Volts or Less; 2013.
- G. NETA ATS Acceptance Testing Specifications for Electrical Power Equipment and Systems; 2013.
- H. NFPA 70 National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- I. UL 50 Enclosures for Electrical Equipment, Non-Environmental Considerations; Current Edition, Including All Revisions.
- J. UL 50E Enclosures for Electrical Equipment, Environmental Considerations; Current Edition, Including All Revisions.
- K. UL 67 Panelboards; Current Edition, Including All Revisions.
- L. UL 489 Molded-Case Circuit Breakers, Molded-Case Switches and Circuit Breaker Enclosures; Current Edition, Including All Revisions.

1.04 SUBMITTALS

- A. See Section 01 3000 Administrative Requirements, for submittal procedures.
- B. Product Data: Provide manufacturer's standard catalog pages and data sheets for panelboards, enclosures, overcurrent protective devices, and other installed components and accessories.
- C. Provide a panel schedule breakdown showing all circuits and loads on each circuit.

1.05 QUALITY ASSURANCE

A. Conform to requirements of NFPA 70.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Eaton Corporation: www.eaton.com.
- B. General Electric Company: www.geindustrial.com.
- C. Schneider Electric; Square D Products: www.schneider-electric.us.

D. Siemens Industry, Inc: www.usa.siemens.com.

2.02 PANELBOARDS - GENERAL REQUIREMENTS

- A. Provide products listed, classified, and labeled as suitable for the purpose intended.
- B. Unless otherwise indicated, provide products suitable for continuous operation under the following service conditions:
 - 1. Altitude: Less than 6,600 feet.
 - 2. Ambient Temperature:
 - a. Panelboards Containing Circuit Breakers: Between 23 degrees F and 104 degrees F.
- C. Short Circuit Current Rating:
 - 1. Contractor to confirm available A.I.C. rating with local Electric Company and provide all circuit breakers rated accordingly.
- D. Mains: Configure for top or bottom incoming feed as indicated or as required for the installation.
- E. Branch Overcurrent Protective Devices: Replaceable without disturbing adjacent devices.
- F. Bussing: Sized in accordance with UL 67 temperature rise requirements.
 - 1. Provide solidly bonded equipment ground bus in each panelboard, with a suitable lug for each feeder and branch circuit equipment grounding conductor.
- G. Conductor Terminations: Suitable for use with the conductors to be installed.
- H. Enclosures: Comply with NEMA 250, and list and label as complying with UL 50 and UL 50E.
 - 1. Environment Type per NEMA 250: As indicated on the drawings.
 - 2. Boxes: Galvanized steel unless otherwise indicated.
 - a. Provide wiring gutters sized to accommodate the conductors to be installed.
 - 3. Fronts:
 - a. Fronts for Surface-Mounted Enclosures: Same dimensions as boxes.
 - b. Fronts for Flush-Mounted Enclosures: Overlap boxes on all sides to conceal rough opening.
 - 4. Lockable Doors: All locks keyed alike unless otherwise indicated.
- I. Future Provisions: Prepare all unused spaces for future installation of devices including bussing, connectors, mounting hardware and all other required provisions.

2.03 POWER DISTRIBUTION PANELBOARDS

- A. Description: Panelboards complying with NEMA PB 1, power and feeder distribution type, circuit breaker type, and listed and labeled as complying with UL 67; ratings, configurations and features as indicated on the drawings.
- B. Conductor Terminations:
 - 1. Main and Neutral Lug Material: Aluminum, suitable for terminating aluminum or copper conductors.
 - 2. Main and Neutral Lug Type: Mechanical.
- C. Bussing:
 - 1. Phase and Neutral Bus Material: Aluminum.
 - 2. Ground Bus Material: Aluminum.
- D. Circuit Breakers:
 - 1. Provide bolt-on type or plug-in type secured with locking mechanical restraints.
- E. Enclosures:
 - 1. Provide surface-mounted enclosures unless otherwise indicated.

2.04 LIGHTING AND APPLIANCE PANELBOARDS

- A. Description: Panelboards complying with NEMA PB 1, lighting and appliance branch circuit type, circuit breaker type, and listed and labeled as complying with UL 67; ratings, configurations and features as indicated on the drawings.
- B. Conductor Terminations:

- 1. Main and Neutral Lug Material: Aluminum, suitable for terminating aluminum or copper conductors.
- 2. Main and Neutral Lug Type: Mechanical.
- C. Bussing:
 - 1. Phase Bus Connections: Arranged for sequential phasing of overcurrent protective devices.
 - 2. Phase and Neutral Bus Material: Aluminum.
 - 3. Ground Bus Material: Aluminum.
- D. Circuit Breakers: Thermal magnetic bolt-on type unless otherwise indicated.
- E. Enclosures:
 - 1. Provide flush-mounted enclosures as indicated.
 - 2. Provide clear plastic circuit directory holder mounted on inside of door.

2.05 LOAD CENTERS

- A. Description: Circuit breaker type load centers listed and labeled as complying with UL 67; ratings, configurations, and features as indicated on the drawings.
- B. Bussing:
 - 1. Phase Bus Connections: Arranged for sequential phasing of overcurrent protective devices.
 - 2. Bus Material: Aluminum.
- C. Circuit Breakers: Thermal magnetic plug-in type.
- D. Enclosures:
 - 1. Provide flush-mounted enclosures unless otherwise indicated.
 - 2. Provide circuit directory label on inside of door or individual circuit labels adjacent to circuit breakers.

2.06 OVERCURRENT PROTECTIVE DEVICES

- A. Molded Case Circuit Breakers:
 - 1. Description: Quick-make, quick-break, over center toggle, trip-free, trip-indicating circuit breakers listed and labeled as complying with UL 489, and complying with FS W-C-375 where applicable; ratings, configurations, and features as indicated on the drawings.
 - 2. Interrupting Capacity:
 - a. Provide circuit breakers with interrupting capacity as required to provide the short circuit current rating indicated, but not less than:
 - b. Fully Rated Systems: Provide circuit breakers with interrupting capacity not less than the short circuit current rating indicated.
 - 3. Conductor Terminations:
 - a. Lug Material: Aluminum, suitable for terminating aluminum or copper conductors.
 - 4. Thermal Magnetic Circuit Breakers: For each pole, furnish thermal inverse time tripping element for overload protection and magnetic instantaneous tripping element for short circuit protection.
 - 5. Multi-Pole Circuit Breakers: Furnish with common trip for all poles.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that field measurements are as shown on the drawings.
- B. Verify that the ratings and configurations of the panelboards and associated components are consistent with the indicated requirements.
- C. Verify that mounting surfaces are ready to receive panelboards.
- D. Verify that conditions are satisfactory for installation prior to starting work.

3.02 INSTALLATION

A. Install products in accordance with manufacturer's instructions.

- B. Install panelboards securely, in a neat and workmanlike manner in accordance with NECA 1 (general workmanship), NECA 407 (panelboards), and NEMA PB 1.1.
- C. Arrange equipment to provide minimum clearances in accordance with manufacturer's instructions and NFPA 70.
- D. Provide required supports in accordance with Section 26 0529.
- E. Install panelboards plumb.
- F. Install flush-mounted panelboards so that trims fit completely flush to wall with no gaps and rough opening completely covered.
- G. Mount panelboards such that the highest position of any operating handle for circuit breakers or switches does not exceed 79 inches above the floor or working platform.
- H. Provide minimum of 3 spare 1 inch trade size conduits out of each flush-mounted panelboard stubbed into accessible space above ceiling.
- I. Provide grounding and bonding in accordance with Section 26 0526.
- J. Install all field-installed branch devices, components, and accessories.
- K. Provide filler plates to cover unused spaces in panelboards.

3.03 FIELD QUALITY CONTROL

- A. Inspect and test in accordance with NETA ATS, except Section 4.
- B. Molded Case Circuit Breakers: Perform inspections and tests listed in NETA ATS, Section 7.6.1.1 for all main circuit breakers. Tests listed as optional are not required.
- C. Ground Fault Protection Systems: Test in accordance with manufacturer's instructions as required by NFPA 70.
- D. Test GFCI circuit breakers to verify proper operation.
- E. Correct deficiencies and replace damaged or defective panelboards or associated components.

3.04 ADJUSTING

- A. Adjust tightness of mechanical and electrical connections to manufacturer's recommended torque settings.
- B. Adjust alignment of panelboard fronts.

3.05 CLEANING

- A. Clean dirt and debris from panelboard enclosures and components according to manufacturer's instructions.
- B. Repair scratched or marred exterior surfaces to match original factory finish.

SECTION 26 2726 WIRING DEVICES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Wall switches.
- B. Fan speed controllers.
- C. Receptacles.
- D. Wall plates.

1.02 RELATED REQUIREMENTS

- A. Section 26 0537 Boxes.
- B. Section 26 0553 Identification for Electrical Systems: Identification products and requirements.

1.03 REFERENCE STANDARDS

- A. FS W-C-596 Connector, Electrical, Power, General Specification for; Federal Specification; Revision G, 2001.
- B. FS W-S-896 Switches, Toggle (Toggle and Lock), Flush-mounted (General Specification); Federal Specification; Revision F, 1999.
- C. NECA 1 Standard for Good Workmanship in Electrical Construction; 2010.
- D. NEMA WD 1 General Color Requirements for Wiring Devices; 1999 (R 2010).
- E. NEMA WD 6 Wiring Devices Dimensional Specifications; 2012.
- F. NFPA 70 National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- G. UL 20 General-Use Snap Switches; Current Edition, Including All Revisions.
- H. UL 498 Attachment Plugs and Receptacles; Current Edition, Including All Revisions.
- I. UL 514D Cover Plates for Flush-Mounted Wiring Devices; Current Edition, Including All Revisions.
- J. UL 943 Ground-Fault Circuit-Interrupters; Current Edition, Including All Revisions.
- K. UL 1917 Solid-State Fan Speed Controls; Current Edition, Including All Revisions.

1.04 SUBMITTALS

- A. See Section 01 3000 Administrative Requirements, for submittal procedures.
- B. Product Data: Provide manufacturer's catalog information showing dimensions, colors, and configurations.

1.05 QUALITY ASSURANCE

- A. Conform to requirements of NFPA 70.
- B. Products: Listed, classified, and labeled as suitable for the purpose intended.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Hubbell Incorporated: www.hubbell-wiring.com.
- B. Leviton Manufacturing Company, Inc: www.leviton.com.
- C. Lutron Electronics Company, Inc: www.lutron.com.
- D. Pass & Seymour, a brand of Legrand North America, Inc: www.legrand.us

2.02 WIRING DEVICE APPLICATIONS

A. Provide wiring devices suitable for intended use and with ratings adequate for load served.

- B. For single receptacles installed on an individual branch circuit, provide receptacle with ampere rating not less than that of the branch circuit.
- C. Provide weather resistant GFCI receptacles with specified weatherproof covers for receptacles installed outdoors or in damp or wet locations.
- D. Provide GFCI protection for receptacles installed within 6 feet of sinks.
- E. Provide GFCI protection for receptacles installed in kitchens.
- F. Provide isolated ground receptacles for receptacles serving computers and electronic cash registers.
- G. Unless noted otherwise, do not use combination switch/receptacle devices.

2.03 ALL WIRING DEVICES

- A. Provide products listed and classified by Underwriters Laboratories Inc. as suitable for the purpose specified and indicated.
- B. Finishes:
 - 1. All Wiring Devices: Color to be selected with stainless steel wall plate unless otherwise indicated.

2.04 WALL SWITCHES

- A. Wall Switches General Requirements: AC only, quiet operating, general-use snap switches with silver alloy contacts, complying with NEMA WD 1 and NEMA WD 6, and listed as complying with UL 20 and where applicable, FS W-S-896; types as indicated on the drawings.
 - 1. Wiring Provisions: Terminal screws for side wiring with separate ground terminal screw.

2.05 FAN SPEED CONTROLLERS

- A. Description: 120 V AC, solid-state, full-range variable speed, slide control type with separate on/off switch, with integral radio frequency interference filtering, fan noise elimination circuitry, power failure preset memory, complying with NEMA WD 1 and NEMA WD 6, and listed as complying with UL 1917.
 - 1. Current Rating: 1.5 A unless otherwise indicated or required to control the load indicated on the drawings.

2.06 RECEPTACLES

- A. Receptacles General Requirements: Self-grounding, complying with NEMA WD 1 and NEMA WD 6, and listed as complying with UL 498, and where applicable, FS W-C-596; types as indicated on the drawings.
 - 1. Wiring Provisions: Terminal screws for side wiring with separate ground terminal screw.
 - 2. NEMA configurations specified are according to NEMA WD 6.
- B. Convenience Receptacles:
 - 1. Isolated Ground Convenience Receptacles: Industrial specification grade, 20A, 125V, NEMA 5-20R, with ground contacts isolated from mounting strap; isolated ground triangle mark on device face; single or duplex as indicated on the drawings.
- C. GFCI Receptacles:
 - 1. GFCI Receptacles General Requirements: Self-testing, with feed-through protection and light to indicate ground fault tripped condition and loss of protection; listed as complying with UL 943, class A.
 - 2. Standard GFCI Receptacles: Industrial specification grade, duplex, 20A, 125V, NEMA 5-20R, rectangular decorator style.
 - 3. Weather Resistant GFCI Receptacles: Industrial specification grade, duplex, 20A, 125V, NEMA 5-20R, rectangular decorator style, listed and labeled as weather resistant type complying with UL 498 Supplement SE suitable for installation in damp or wet locations.

2.07 WALL PLATES

A. Wall Plates: Comply with UL 514D.

- 1. Configuration: One piece cover as required for quantity and types of corresponding wiring devices.
- 2. Size: Standard.
- 3. Screws: Metal with slotted heads finished to match wall plate finish.
- B. Stainless Steel Wall Plates: Brushed satin finish, Type 302 stainless steel.
- C. Weatherproof Covers for Wet Locations: Gasketed, cast aluminum, with hinged lockable cover and corrosion-resistant screws; listed as suitable for use in wet locations while in use with attachment plugs connected and identified as extra-duty type.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that field measurements are as shown on the drawings.
- B. Verify that outlet boxes are installed in proper locations and at proper mounting heights and are properly sized to accommodate devices and conductors in accordance with NFPA 70.
- C. Verify that wall openings are neatly cut and will be completely covered by wall plates.
- D. Verify that final surface finishes are complete, including painting.
- E. Verify that branch circuit wiring installation is completed, tested, and ready for connection to wiring devices.
- F. Verify that conditions are satisfactory for installation prior to starting work.

3.02 PREPARATION

- A. Provide extension rings to bring outlet boxes flush with finished surface.
- B. Clean dirt, debris, plaster, and other foreign materials from outlet boxes.

3.03 INSTALLATION

- A. Perform work in a neat and workmanlike manner in accordance with NECA 1 and, where applicable, NECA 130, including mounting heights specified in those standards unless otherwise indicated.
- B. Coordinate locations of outlet boxes provided under Section 26 0537 as required for installation of wiring devices provided under this section.
- C. Install wiring devices in accordance with manufacturer's instructions.
- D. Install permanent barrier between ganged wiring devices when voltage between adjacent devices exceeds 300 V.
- E. Where required, connect wiring devices using pigtails not less than 6 inches long. Do not connect more than one conductor to wiring device terminals.
- F. Connect wiring devices by wrapping conductor clockwise 3/4 turn around screw terminal and tightening to proper torque specified by the manufacturer. Where present, do not use push-in pressure terminals that do not rely on screw-actuated binding.
- G. Unless otherwise indicated, connect wiring device grounding terminal to branch circuit equipment grounding conductor and to outlet box with bonding jumper.
- H. For isolated ground receptacles, connect wiring device grounding terminal only to identified branch circuit isolated equipment grounding conductor. Do not connect grounding terminal to outlet box or normal branch circuit equipment grounding conductor.
- I. Install wiring devices plumb and level with mounting yoke held rigidly in place.
- J. Install wall switches with OFF position down.
- K. Install vertically mounted receptacles with grounding pole on top and horizontally mounted receptacles with grounding pole on left.
- L. Install wall plates to fit completely flush to wall with no gaps and rough opening completely covered without strain on wall plate. Repair or reinstall improperly installed outlet boxes or

improperly sized rough openings. Do not use oversized wall plates in lieu of meeting this requirement.

M. Install blank wall plates on junction boxes and on outlet boxes with no wiring devices installed or designated for future use.

3.04 FIELD QUALITY CONTROL

- A. See Section 01 4000 Quality Requirements, for additional requirements.
- B. Inspect each wiring device for damage and defects.
- C. Operate each wall switch, wall dimmer, and fan speed controller with circuit energized to verify proper operation.
- D. Test each receptacle to verify operation and proper polarity.
- E. Test each GFCI receptacle for proper tripping operation according to manufacturer's instructions.
- F. Correct wiring deficiencies and replace damaged or defective wiring devices.

3.05 ADJUSTING

A. Adjust devices and wall plates to be flush and level.

3.06 CLEANING

A. Clean exposed surfaces to remove dirt, paint, or other foreign material and restore to match original factory finish.

SECTION 26 3600

TRANSFER SWITCHES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Transfer switches for low-voltage (600 V and less) applications and associated accessories:
 - 1. Non-automatic transfer switches.
 - 2. Manual transfer switches.

1.02 RELATED REQUIREMENTS

- A. Section 03 3000 Cast-in-Place Concrete: Concrete equipment pads.
- B. Section 26 0526 Grounding and Bonding for Electrical Systems.
- C. Section 26 0529 Hangers and Supports for Electrical Systems.
- D. Section 26 0553 Identification for Electrical Systems: Identification products and requirements.

1.03 REFERENCE STANDARDS

- A. NECA 1 Standard for Good Workmanship in Electrical Construction; 2010.
- B. NEMA 250 Enclosures for Electrical Equipment (1000 Volts Maximum); 2014.
- C. NEMA ICS 10 Part 1 Industrial Control and Systems Part 1: Electromechanical AC Transfer Switch Equipment; 2005.
- D. UL 1008 Transfer Switch Equipment; Current Edition, Including All Revisions.

1.04 SUBMITTALS

- A. Product Data: Provide manufacturer's standard catalog pages and data sheets for each product, including ratings, configurations, dimensions, finishes, weights, service condition requirements, and installed features.
- B. Source quality control test reports.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Transfer Switches:
 - 1. ASCO Power Technologies, a brand of Emerson Network Power: www.emersonnetworkpower.com.
 - 2. Eaton Corporation: www.eaton.com.

2.02 TRANSFER SWITCHES

- A. Provide complete power transfer system consisting of all required equipment, conduit, boxes, wiring, supports, accessories, system programming, etc. as necessary for a complete operating system that provides the functional intent indicated.
- B. Provide products listed, classified, and labeled as suitable for the purpose intended.
- C. Construction Type: Either "contactor type" (open contact) or "breaker type" (enclosed contact) transfer switches complying with specified requirements are acceptable.
- D. Comply with NEMA ICS 10 Part 1, and list and label as complying with UL 1008 for the classification of the intended application (e.g. emergency, optional standby).
- E. Do not use double throw safety switches or other equipment not specifically designed for power transfer applications and listed as transfer switch equipment.
- F. Load Classification: Classified for total system load (any combination of motor, electric discharge lamp, resistive, and tungsten lamp loads with tungsten lamp loads not exceeding 30 percent of the continuous current rating) unless otherwise indicated or required.
- G. Switching Methods:

- 1. Obtain control power for transfer operation from line side of source to which the load is to be transferred.
- H. Service Conditions: Provide transfer switches suitable for continuous operation at indicated ratings under the service conditions at the installed location.
- I. Enclosures:

2.

- 1. Environment Type per NEMA 250: Unless otherwise indicated, as specified for the following installation locations:
- 2. Finish: Manufacturer's standard unless otherwise indicated.
- J. Short Circuit Current Rating:
- K. Non-Automatic Transfer Switches:
 - 1. Description: Transfer switches with manually initiated transfer between sources; electrically operated and mechanically held.
 - Control Functions:
 - a. Manual source selection.
 - b. Outputs:
 - 1) Auxiliary contacts; one set for each switch position.
 - 3. Status Indications:
 - a. Connected to alternate/emergency source.
 - b. Connected to primary/normal source.
 - c. Alternate/emergency source available.
- L. Manual Transfer Switches:
 - 1. Description: Transfer switches with manually initiated transfer between sources; mechanically operated and mechanically held.

2.03 SOURCE QUALITY CONTROL

A. Perform production tests on transfer switches at factory to verify operation and performance characteristics prior to shipment. Include certified test report with submittals.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Perform work in a neat and workmanlike manner in accordance with NECA 1.
- B. Install transfer switches in accordance with manufacturer's instructions.
- C. Arrange equipment to provide minimum clearances and required maintenance access.
- D. Provide required support and attachment in accordance with Section 26 0529.
- E. Install transfer switches plumb and level.
- F. Unless otherwise indicated, mount floor-mounted transfer switches on properly sized 3 inch high concrete pad constructed in accordance with Section 03 3000.
- G. Provide grounding and bonding in accordance with Section 26 0526.
- H. Identify transfer switches and associated system wiring in accordance with Section 26 0553.

SECTION 26 5100 INTERIOR LIGHTING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Interior luminaires.
- B. Exit signs.
- C. Ballasts and drivers.
- D. Lamps.

1.02 RELATED REQUIREMENTS

- A. Section 26 0519 Low-Voltage Electrical Power Conductors and Cables.
- B. Section 26 0537 Boxes.
- C. Section 26 0923 Lighting Control Devices: Automatic controls for lighting including occupancy sensors and lighting control panels.

1.03 REFERENCE STANDARDS

- A. ANSI C82.1 American National Standard for Lamp Ballast Line Frequency Fluorescent Lamp Ballast; 2004.
- B. IES LM-79 Approved Method: Electrical and Photometric Measurements of Solid-State Lighting Products; 2008.
- C. IES LM-80 Approved Method: Measuring Luminous Flux and Color Maintenance of LED Packages, Arrays, and Modules; Illuminating Engineering Society; 2015.
- D. NECA 1 Standard for Good Workmanship in Electrical Construction; 2010.
- E. NECA/IESNA 500 Standard for Installing Indoor Commercial Lighting Systems; 2006.
- F. NECA/IESNA 502 Standard for Installing Industrial Lighting Systems; 2006.
- G. NEMA WD 6 Wiring Devices Dimensional Requirements; National Electrical Manufacturers Association; 2002 (R2008).
- H. NFPA 70 National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- I. NFPA 101 Life Safety Code; 2015.
- J. UL 924 Emergency Lighting and Power Equipment; Current Edition, Including All Revisions.
- K. UL 1598 Luminaires; Current Edition, Including All Revisions.
- L. UL 8750 Light Emitting Diode (LED) Equipment for Use in Lighting Products; Current Edition, Including All Revisions.

1.04 SUBMITTALS

- A. See Section 01 3000 Administrative Requirements, for submittal procedures.
- B. Product Data: Provide manufacturer's standard catalog pages and data sheets including detailed information on luminaire construction, dimensions, ratings, finishes, mounting requirements, listings, service conditions, photometric performance, installed accessories, and ceiling compatibility; include model number nomenclature clearly marked with all proposed features.
 - 1. LED Luminaires:
 - a. Include estimated useful life, calculated based on IES LM-80 test data.
- C. Manufacturer's Installation Instructions: Indicate application conditions and limitations of use stipulated by product testing agency. Include instructions for storage, handling, protection, examination, preparation, and installation of product.
- D. Operation and Maintenance Data: Instructions for each product including information on replacement parts.

E. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
1. See Section 01 6000 - Product Requirements, for additional provisions.

1.05 QUALITY ASSURANCE

- A. Conform to requirements of NFPA 70.
- B. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.

PART 2 PRODUCTS

2.01 MANUFACTURERS - LUMINAIRES

- A. Cooper Lighting, a division of Cooper Industries: www.cooperindustries.com.
- B. Beghelli Group: www.beghelliusa.com.
- C. Lithonia Lighting: www.lithonia.com.
- D. H.E. Williams: www.hewilliams.com.
- E. Westinghouse Lighting Corp.: www.westinghouselighting.com

F. _

G. Substitutions: See Section 01 6000 - Product Requirements, except where individual luminaire types are designated with substitutions not permitted.

2.02 LUMINAIRES

- A. Provide products that comply with requirements of NFPA 70.
- B. Provide products that are listed and labeled as complying with UL 1598, where applicable.
- C. Provide products listed, classified, and labeled as suitable for the purpose intended.
- D. Unless otherwise indicated, provide complete luminaires including lamp(s) and all sockets, ballasts, reflectors, lenses, housings and other components required to position, energize and protect the lamp and distribute the light.
- E. Unless specifically indicated to be excluded, provide all required conduit, boxes, wiring, connectors, hardware, supports, trims, accessories, etc. as necessary for a complete operating system.
- F. Provide products suitable to withstand normal handling, installation, and service without any damage, distortion, corrosion, fading, discoloring, etc.
- G. LED Luminaires:
 - 1. Components: UL 8750 recognized or listed as applicable.
 - 2. Tested in accordance with IES LM-79 and IES LM-80.
 - 3. LED Estimated Useful Life: Minimum of 50,000 hours at 70 percent lumen maintenance, calculated based on IES LM-80 test data.

2.03 FIXTURE TYPES

A. Furnish products as indicated in Schedule included on the Drawings.

2.04 EXIT SIGNS

- A. Description: Internally illuminated exit signs with LEDs unless otherwise indicated; complying with NFPA 101 and all applicable state and local codes, and listed and labeled as complying with UL 924.
 - 1. Number of Faces: Single or double as indicated or as required for the installed location.
 - 2. Directional Arrows: As indicated or as required for the installed location.
- B. Exit Signs: Exit sign fixture suitable for use as emergency lighting unit.
 - 1. Provide fixtures complying with NFPA 101.
 - 2. Lamps: LED.
 - 3. Mounting: As indicated.
 - 4. Battery: 6 volt, nickel-cadmium type, with 1.5 hour capacity.

5. Battery Charger: Dual-rate type, with sufficient capacity to recharge discharged battery to full charge within twelve hours.

2.05 BALLASTS AND DRIVERS

- A. Dimmable LED Drivers:
 - 1. Dimming Range: Continuous dimming from 100 percent to five percent relative light output unless dimming capability to lower level is indicated, without flicker.
 - 2. Control Compatibility: Fully compatible with the dimming controls to be installed.

2.06 LAMPS

- A. Lamps General Requirements:
 - 1. Unless explicitly excluded, provide new, compatible, operable lamps in each luminaire.
 - 2. Verify compatibility of specified lamps with luminaires to be installed. Where lamps are not specified, provide lamps per luminaire manufacturer's recommendations.
 - 3. Minimum Efficiency: Provide lamps complying with all current applicable federal and state lamp efficiency standards.
 - 4. Color Temperature Consistency: Unless otherwise indicated, for each type of lamp furnish products which are consistent in perceived color temperature. Replace lamps that are determined by the Architect to be inconsistent in perceived color temperature.
- B. Lamp Types: As specified for each fixture.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that field measurements are as shown on the drawings.
- B. Verify that outlet boxes are installed in proper locations and at proper mounting heights and are properly sized to accommodate conductors in accordance with NFPA 70.
- C. Verify that suitable support frames are installed where required.
- D. Verify that branch circuit wiring installation is completed, tested, and ready for connection to luminaires.
- E. Verify that conditions are satisfactory for installation prior to starting work.

3.02 PREPARATION

- A. Provide extension rings to bring outlet boxes flush with finished surface.
- B. Clean dirt, debris, plaster, and other foreign materials from outlet boxes.

3.03 INSTALLATION

- A. Coordinate locations of outlet boxes provided under Section 26 0537 as required for installation of luminaires provided under this section.
- B. Install products according to manufacturer's instructions.
- C. Install luminaires securely, in a neat and workmanlike manner, as specified in NECA 1 (general workmanship), NECA 500 (commercial lighting), and NECA 502 (industrial lighting).
- D. Install luminaires plumb and square and aligned with building lines and with adjacent luminaires.
- E. Install fixtures securely, in a neat and workmanlike manner, as specified in NECA 500 (commercial lighting).
- F. Surface Mounted Fixtures: Install plumb and square and aligned with building lines and with each other; secure to prevent movement.
- G. Install accessories furnished with each luminaire.
- H. Make wiring connections to branch circuit using building wire with insulation suitable for temperature conditions within fixture; use flexible conduit.
- I. Bond products and metal accessories to branch circuit equipment grounding conductor.
- J. Connect interior luminaires to Lighting Control Panel where indicated on drawings.

- K. Connect interior luminaires to motion sensors where indicated on drawings.
- L. Exit Signs:
 - 1. Unless otherwise indicated, connect unit to unswitched power. Bypass local switches, contactors, or other lighting controls.
- M. Install lamps in each luminaire.

3.04 FIELD QUALITY CONTROL

- A. Inspect each product for damage and defects.
- B. Operate each luminaire after installation and connection to verify proper operation.
- C. Correct wiring deficiencies and repair or replace damaged or defective products. Repair or replace excessively noisy ballasts as determined by Architect.

3.05 ADJUSTING

- A. Aim and position adjustable luminaires to achieve desired illumination as indicated or as directed by Architect. Secure locking fittings in place.
- B. Exit Signs with Field-Selectable Directional Arrows: Set as indicated or as required to properly designate egress path as directed by Architect or authority having jurisdiction.
- C. Aim and adjust fixtures as indicated.

3.06 CLEANING

- A. Clean surfaces according to NECA 500 (commercial lighting), NECA 502 (industrial lighting), and manufacturer's instructions to remove dirt, fingerprints, paint, or other foreign material and restore finishes to match original factory finish.
- B. Clean electrical parts to remove conductive and deleterious materials.
- C. Remove dirt and debris from enclosures.
- D. Clean finishes and touch up damage.

3.07 SCHEDULE - SEE DRAWINGS

SECTION 26 5600 EXTERIOR LIGHTING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Exterior luminaires.
- B. LED Drivers.
- C. Lamps.

1.02 RELATED REQUIREMENTS

- A. Section 26 0519 Low-Voltage Electrical Power Conductors and Cables.
- B. Section 26 0537 Boxes.
- C. Section 26 0923 Lighting Control Devices: Automatic controls for lighting including outdoor photo controls and Lighting Control Panels.

1.03 REFERENCE STANDARDS

- A. ANSI C78.379 American National Standard for Electric Lamps -- Reflector Lamps --Classification of Beam Patterns; 2006.
- B. ANSI C82.4 American National Standard for Ballasts for High-Intensity-Discharge and Low-Pressure Sodium Lamps (Multiple-Supply Type); 2002.
- C. IESNA LM-63 ANSI Approved Standard File Format for Electronic Transfer of Photometric Data and Related Information; 2002 (Reaffirmed 2008).
- D. IES LM-79 Approved Method: Electrical and Photometric Measurements of Solid-State Lighting Products; 2008.
- E. IES LM-80 Approved Method: Measuring Luminous Flux and Color Maintenance of LED Packages, Arrays, and Modules; Illuminating Engineering Society; 2015.
- F. IES RP-8 Roadway Lighting; 2014.
- G. NECA 1 Standard for Good Workmanship in Electrical Construction; 2010.
- H. NECA/IESNA 501 Standard for Installing Exterior Lighting Systems; 2006.
- I. NFPA 70 National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- J. UL 1598 Luminaires; Current Edition, Including All Revisions.
- K. UL 8750 Light Emitting Diode (LED) Equipment for Use in Lighting Products; Current Edition, Including All Revisions.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Coordination: Furnish bolt templates and pole mounting accessories to installer of pole foundations.

1.05 SUBMITTALS

- A. Shop Drawings: Indicate dimensions and components for each luminaire that is not a standard product of the manufacturer.
- B. Product Data: Provide manufacturer's standard catalog pages and data sheets including detailed information on luminaire construction, dimensions, ratings, finishes, mounting requirements, listings, service conditions, photometric performance, weight, effective projected area (EPA), and installed accessories; include model number nomenclature clearly marked with all proposed features.
 - 1. LED Luminaires:
 - a. Include estimated useful life, calculated based on IES LM-80 test data.

- C. Manufacturer's Installation Instructions: Indicate application conditions and limitations of use stipulated by product testing agency. Include instructions for storage, handling, protection, examination, preparation, installation, and starting of product.
- D. Operation and Maintenance Data: Instructions for each product including information on replacement parts.

1.06 QUALITY ASSURANCE

- A. Conform to requirements of NFPA 70.
- B. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.
- C. Electrical Components: Listed and classified by Underwriters Laboratories Inc. as suitable for the purpose specified and indicated.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Receive, handle, and store products according to NECA/IESNA 501 and manufacturer's written instructions.
- B. Keep products in original manufacturer's packaging and protect from damage until ready for installation.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Lithonia: www.lithonia.com.
- B. Philips: www.lighting.philips.com.
- C. H.E. Williams: www.hewilliams.com.
- D. Cooper Lighting: www.cooperlighting.com
- E. Substitutions: See Section 01 6000 Product Requirements.

2.02 LUMINAIRE TYPES

- A. Furnish products as indicated in luminaire schedule included on the drawings.
- B. Substitutions: See Section 01 6000 Product Requirements.

2.03 LUMINAIRES

- A. Provide products that comply with requirements of NFPA 70.
- B. Provide products that are listed and labeled as complying with UL 1598, where applicable.
- C. Provide products listed, classified, and labeled as suitable for the purpose intended.
- D. Unless otherwise indicated, provide complete luminaires including lamp(s) and all sockets, ballasts, reflectors, lenses, housings and other components required to position, energize and protect the lamp and distribute the light.
- E. Unless specifically indicated to be excluded, provide all required conduit, boxes, wiring, connectors, hardware, poles, foundations, supports, trims, accessories, etc. as necessary for a complete operating system.
- F. Provide products suitable to withstand normal handling, installation, and service without any damage, distortion, corrosion, fading, discoloring, etc.

G. LED Luminaires:

- 1. Components: UL 8750 recognized or listed as applicable.
- 2. Tested in accordance with IES LM-79 and IES LM-80.
- 3. LED Estimated Useful Life: Minimum of 50,000 hours at 70 percent lumen maintenance, calculated based on IES LM-80 test data.

2.04 LED DRIVERS

- A. LED drivers shall meet the following requirements:
 - 1. Drivers shall have a minimum efficiency of 85%.

- 2. Starting Temperature: -40 deg. F.
- 3. Input Voltage: 120 to 480 (±10%) V.
- 4. Power Supplies: Class I or II output.
- Surge Protection: The system must survive 250 repetitive strikes of "C Low" (C Low: 6kV/1.2 x 50 µs, 10kA/8 x 20 ?µs) waveforms at 1-minute intervals with less than 10% degradation in clamping voltage. "C Low" waveforms are as defined in IEEE/ASNI C62.41.2-2002, Scenario 1 Location Category C.
- 6. Power Factor (PF): ?≥ 0.90.
- 7. Total Harmonic Distortion (THD): $\leq 20\%$.
- 8. Comply with FCC Title 47 CFR Part 18 Non-consumer RFI/EMI Standards.
- 9. Drivers shall be reduction of hazardous substances (ROHS)-compliant.

2.05 LAMPS

- A. Furnish all fixtures complete with new lamps of wattage, style, type and quantity designated; submittal required for each type of lamp.
- B. Submit E.T.L. certified photometric data showing candle power distribution, lumen efficiency, maximum and average brightness, and utilization coefficients for all fixtures.
- C. Lamps General Requirements:
 - 1. Unless explicitly excluded, provide new, compatible, operable lamps in each luminaire.
 - 2. Verify compatibility of specified lamps with luminaires to be installed. Where lamps are not specified, provide lamps per luminaire manufacturer's recommendations.
 - 3. Minimum Efficiency: Provide lamps complying with all current applicable federal and state lamp efficiency standards.
 - 4. Color Temperature Consistency: Unless otherwise indicated, for each type of lamp furnish products which are consistent in perceived color temperature. Replace lamps that are determined by the Architect to be inconsistent in perceived color temperature.
- D. LED sources shall meet the following requirements:
 - 1. Operating temperature rating shall be between -40 deg F and 120 deg F.
 - 2. Correlated Color Temperature (CCT): 5500K.
 - 3. Color Rendering Index (CRI): \geq 65.
 - 4. The manufacturer shall have performed JEDEC (Joint Electron Devices Engineering Council) reliability tests on the LEDs as follows: High Temperature Operating Life (HTOL), Room Temperature Operating Life (RTOL), Low Temperature Operating Life (LTOL), Powered Temperature Cycle (PTMCL), Non-Operating Thermal Shock (TMSK), Mechanical Shock Variable Vibration Frequency, and Solder Heat Resistance (SHR).//

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that field measurements are as shown on the drawings.
- B. Verify that outlet boxes are installed in proper locations and at proper mounting heights and are properly sized to accommodate conductors in accordance with NFPA 70.
- C. Verify that suitable support frames are installed where required.
- D. Verify that branch circuit wiring installation is completed, tested, and ready for connection to luminaires.
- E. Verify that conditions are satisfactory for installation prior to starting work.

3.02 PREPARATION

- A. Provide extension rings to bring outlet boxes flush with finished surface.
- B. Clean dirt, debris, plaster, and other foreign materials from outlet boxes.

3.03 INSTALLATION

A. Coordinate locations of outlet boxes provided under Section 26 0537 as required for installation of luminaires provided under this section.

- B. Install products according to manufacturer's instructions.
- C. Rough-in electrical connections for mounting heights as indicated on drawings.
- D. Install luminaires securely, in a neat and workmanlike manner, as specified in NECA 1 (general workmanship) and NECA/IESNA 501 (exterior lighting).
- E. Install luminaires plumb and square and aligned with building lines and with adjacent luminaires.
- F. Install accessories furnished with each luminaire.
- G. Bond products and metal accessories to branch circuit equipment grounding conductor.
- H. Install lamps in each luminaire.
- I. Bond luminaires and metal accessories to branch circuit equipment grounding conductor.

3.04 FIELD QUALITY CONTROL

- A. Inspect each product for damage and defects.
- B. Operate each luminaire after installation and connection to verify proper operation.
- C. Correct wiring deficiencies and repair or replace damaged or defective products. Repair or replace excessively noisy ballasts as determined by Architect.

3.05 ADJUSTING

- A. Aim and position adjustable luminaires to achieve desired illumination as indicated or as directed by Architect. Secure locking fittings in place.
- B. Aim and adjust luminaires to provide illumination levels and distribution as directed.

3.06 CLEANING

- A. Clean surfaces according to NECA/IESNA 501 and manufacturer's instructions to remove dirt, fingerprints, paint, or other foreign material and restore finishes to match original factory finish.
- B. Clean electrical parts to remove conductive and deleterious materials.
- C. Remove dirt and debris from enclosure.
- D. Clean photometric control surfaces as recommended by manufacturer.
- E. Clean finishes and touch up damage.

3.07 ATTACHMENTS

A. Luminaire schedule.

3.08 SCHEDULE - SEE DRAWINGS

SECTION 27 1005

STRUCTURED CABLING FOR VOICE AND DATA - INSIDE-PLANT

PART 2 PRODUCTS

1.01 SYSTEM DESIGN

- A. Provide a complete permanent system of cabling and pathways for voice and data communications, including cables, conduits and wireways, pull wires, support structures, enclosures and cabinets, and outlets.
 - 1. Provide fixed cables and pathways that comply with NFPA 70 and TIA-607-C and are UL listed or third party independent testing laboratory certified.
 - 2. Provide connection devices that are rated for operation under conditions of 32 to 140 degrees F at relative humidity of 0 to 95 percent, noncondensing.
 - 3. In this project, the term plenum is defined as return air spaces above ceilings, inside ducts, under raised floors, and other air-handling spaces.
- B. Main Distribution Frame (MDF): Centrally located support structure for terminating horizontal cables that extend to telecommunications outlets, functioning as point of presence to external service provider.
 - 1. Locate main distribution frame as indicated on the drawings.
- C. Cabling to Outlets: Specified horizontal cabling, wired in star topology to distribution frame located at center hub of star; also referred to as "links".

1.02 IDENTIFICATION PRODUCTS

A. Comply with TIA-606-B.

SECTION 28 3100

FIRE DETECTION AND ALARM

PART 1 GENERAL

1.01 SUMMARY

- A. This specification provides the functional requirements for the installation, programming, configuration, warranty and maintenance of a complete Analog/Addressable Intelligent Fire Alarm / Life Safety System for Essex County.
- B. The Contractor shall furnish all labor, services and materials necessary to provide and install a complete, functional life safety fire system. The System shall comply in respects with all pertinent codes, rules, regulations and laws of the local Authority Having Jurisdiction. The System shall comply in all respects with the requirements of these specifications, manufacturer's recommendations and Underwriters Laboratories Inc. (UL) listings.
- C. This Fire Alarm / Life Safety System Specification must be conformed to in its entirety to ensure that the installed and programmed Life Safety System will function as designed, and will accommodate the future requirements and operations required by the building owner. All specified operational features must be met without exception.
- D. It is further intended that upon completion of this work, the Owner be provided with: Complete information and drawings describing and depicting the entire system(s) as installed, including all information necessary for maintaining, troubleshooting, and/or expanding the system at a future date.
- E. The system shall include, but not be limited to:
 - 1. Fire alarm control panel.
 - 2. Automatic and manually activated alarm initiating and monitoring devices
 - 3. Notification appliances and peripherals
 - 4. Standby power supplies including rechargeable back-up batteries.
 - 5. System programming and commissioning.
 - 6. Training of operators
 - 7. Conduit, wire, and accessories required to provide a complete and operational life safety system
- F. ALTERNATES:
 - OR EQUAL, Fire Alarm specified is manufactured by EDWARDS VIGILANT, THE 1. EDWARDS VIGILANT Product Line. ENGINEER reserves the right to require proof of performance prior to acceptance entirely at the bidding contractors expense. THE CENTRAL STATION OF BIDDERS PROPOSED SUPPLIER MUST NOT CHARGE ANY EXTRA FEE ABOVE THE NORMAL FIRE ALARM MONITORING CHARGE FOR RECEIPT AND INDIVIDUAL DISPATCH OF ALL OF THE INDIVIDUAL POINTS OF ALARM TO BE REPORTED INDIVIDUALLY BY THE SYSTEM DACT TO THE CENTRAL STATION MONITORING FACILITY. Should there be an extra charge, the bidder and is supplier together or separately may be rejected without comment by Architect at its discretion. Any equipment that is other than the base specification that is to be supplied by a bidder must be noted, along with any differences in performance and/or capabilities delineated in detail with notation as to which section and page of the specification applies must be supplied with the Bidder's bid along with manufacturer proposed and supplier to be used. Failure to submit this information for any proposed or-equal submission by bidder shall allow ARCHITECT to reject the entire bid without comment at its discretion.
 - EDWARDS SYSTEMS TECHNOLOGY (EST) IO500 FACP AND ASSOCIATED IDENTICAL PARTS including new Siga 2 combination smoke/heat as acceptable and AS SPECIFIED IN THE EST product line (multisensor smoke) will be considered equal.

1.02 REFERENCES

- A. The equipment and installation shall comply with the current provisions of the following standards and codes:
 - 1. National Fire Protection Association Standards:

- a. NFPA 70
- National Electric Code® National Fire Alarm Code®
- NFPA 72 b.
- NFPA 90A C. d. NFPA 92A

 - NFPA 92B
- e. Large Areas

UL 521

UL 228

f.

e.

f.

g.

h.

i.

- **NFPA 101**
- Life Safety Code®

Air Conditioning Systems

Smoke-Control Systems

- 2. Underwriters Laboratories Inc. Standards
 - Underwriters Laboratories Inc. shall list the system and all components for use in fire a. protective signaling systems. The UL Label shall be considered as evidence of compliance with this requirement. The equipment shall be listed by UL under the following standards as applicable:
 - b. UL 864/UOJZ Control Units for Fire Protective Signaling Systems.
 - UL 268 Smoke Detectors for Fire Protective Signaling C. Systems.
 - UL 268A Smoke Detectors for Duct Applications. d.
 - UL 217 Smoke Detectors Single Station.
 - Heat Detectors for Fire Protective Signaling Systems.

Smoke Management Systems in Malls, Atria, and

- Door Holders for Fire Protective Signaling Systems.
- UL 464 Audible Signaling Appliances.
- Manually Activated Signaling Boxes. UL 38
- Waterflow Indicators for Fire Protective Signaling UL 346
- j. Systems.
- k. UL 1971
- Visual Signaling Appliances. Power Supplies for Fire Protective Signaling Systems. UL 1481 1
- 3. Any equipment not bearing a UL Label shall be removed and replaced with UL labeled equipment at the contractor's expense.
- B. Americans with Disabilities Act (ADA)
- C. In the case of any discrepancy between these specifications, the project drawings, and any applicable local codes, the installed Fire Alarm / Life Safety System shall comply with the most stringent requirement.

1.03 DEFINITIONS / ABBREVIATIONS

- A. ADA: Americans with Disabilities Act.
- B. AFF: Above Finished Floor.
- C. AHJ: Authority Having Jurisdiction.
- D. Approved: Unless otherwise stated, materials, equipment or submittals approved by the Authority or AHJ.
- E. Circuit: Wire path from a group of devices or appliances to a control panel or transponder.
- F. CPU: The central computer of a multiplex fire alarm or voice command control system.
- G. FACP: Fire Alarm Control Panel.
- H. HVAC: Heating Ventilating and Air Conditioning.
- I. IDC: Initiating Device Circuit.
- J. LED: Light Emitting Diode.
- K. LCD: Liquid Crystal Display.
- L. NFPA: National Fire Protection Association.
- M. NAC: Notification Appliance Circuit.
- N. SLC: Signaling Line Circuit.
- O. Style 1: As defined by NFPA 72, Class B.
- P. Style 4: As defined by NFPA 72, Class B.

- Q. Style 6: As defined by NFPA 72, Class A.
- R. Style 7: As defined by NFPA 72, Class A.
- S. Style B: As defined in NFPA 72, Class B.
- T. Style D: As defined in NFPA 72, Class A.
- U. Style Y: As defined in NFPA 72, Class B.
- V. UL or ULI: Underwriters Laboratories, Inc.
- W. UL Listed: Materials or equipment listed and included in the most recent edition of the UL Fire Protection Equipment Directory.

1.04 SYSTEM DESCRIPTION

- A. Design requirements
 - 1. All control panel assemblies and the connected automatic and manual alarm and notification appliances shall be designed and manufactured by the same company; shall be tested and cross-listed as to ensure that a fully functioning life safety system is designed and provided.
 - 2. The Fire Alarm / Life Safety System supplied under this specification shall be a microprocessor-based, Analog/Addressable Intelligent Fire Alarm / Life Safety system. The system shall utilize independently addressed, microprocessor-based smoke detectors, heat detectors, and modules, as described in this specification.
- B. All Fire alarm equipment shall be arranged and programmed to provide a system for the early detection of fire, the notification of building occupants, the automatic summoning of the local fire department, the override of the HVAC system operation, and the activation of other auxiliary systems to inhibit the spread of smoke and fire, and to facilitate the safe evacuation of building occupants.
- C. A standby power supply shall automatically supply electrical energy to the system upon primary power supply failure. Standby power supply shall be an electrical battery with capacity to operate the system under maximum supervisory load for 24 hours and capable of operating the system for five (5) Minutes in the alarm mode at 100% load. Fire alarm system shall include a charging circuit to automatically maintain the electrical charge of the battery.
- D. Fire Alarm / Life Safety System shall be designed to allow the fire alarm contractor to phase-in the commissioning of the installed system to coincide with the construction schedule for the project. When phased-in commissioning of a system is required, each phase shall be treated as a separate project, and the fire alarm contractor shall use the system program functionality to print out and fully document the progress of each phase. No Fire Alarm functions shall be compromised as the system is phased into service.
- E. Performance requirements
 - 1. The Alarm activation of any area smoke detector, heat detector, manual pull station, sprinkler waterflow, the following functions shall automatically occur:
 - a. The internal audible device shall sound at the control panel and/or remote annunciator.
 - b. The LCD Display shall indicate all applicable information associated with the alarm condition including; point, device type, device location and time/date.
 - c. All system activity/events shall be documented in system history and on the system printer.
 - d. Any remote or local annunciator LCD shall display the English text alarm description of any active alarm(s).
 - e. Activate notification audible appliances throughout the building
 - f. Activate visual strobes notification appliances throughout the building. The visual strobe shall continue to flash until the system has been reset. The visual strobe shall not stop operating when the "Alarm Silence" is pressed.
 - g. Transmit signal to the Central Station with point identification. One point or device in alarm shall not prevent subsequent alarm points from immediately transmitting the

individual point alarm to the central station monitoring facility. Summary alarm transmission or transmission by "zone" (a group of points [DEVICES]) is NOT acceptable. Central station monitoring facilities that charge extra for receipt and dispatch of each alarm point are unacceptable and subject to disapproval by ARCHITECT without comment.

- h. All automatic events programmed to the alarm point shall be executed and the associated outputs activated.
- i. All stairwell/exit doors shall unlock throughout the building, if shown.
- j. All self-closing fire/smoke doors held open shall be released, if shown.
- 2. The Supervisory activation of any sprinkler valve supervisory switch, the following functions shall automatically occur:
 - a. The internal audible device shall sound at the control panel and/or remote annunciator.
 - b. The LCD Display shall indicate all applicable information associated with the supervisory condition including; zone, device type, device location and time/date.
 - c. All system activity/events shall be documented on the system printer and system history file.
 - d. Any remote or local annunciator LCD associated with the supervisory point shall indicate the individual English test description.
 - e. Transmit signal to the Central Station with point identification.
- 3. The activation of a trouble condition or signal from any device on the system, the following functions shall automatically occur:
 - a. The internal audible device shall sound at the control panel and/or remote annunciator.
 - b. The LCD Display shall indicate all applicable information associated with the trouble condition including; point, device type, device location English text description and time/date.
 - c. All system activity/events shall be documented on the system printer (if shown) and system history file.
 - d. Transmit signal to the Central Station.
- 4. The Supervisory activation of any duct smoke detector, the following functions shall automatically occur:
 - a. The internal audible device shall sound at the control panel and/or remote annunciator.
 - b. The LCD Display shall indicate all applicable information associated with the supervisory condition including; zone, device type, device location and time/date.
 - c. All system activity/events shall be recorded on the system printer and system history file.
 - d. Any remote or local annunciator associated LCD shall display the Point's English Text description.
 - e. Transmit the signal to the Central Station.
 - f. Shutdown the local air handling unit.
 - g. All automatic events programmed to the alarm point shall be executed and the associated outputs activated.
- 5. The Status activation of any fire pump or generator, the following functions shall automatically occur:
 - a. The internal audible device shall sound at the control panel and/or remote annunciator.
 - b. The LCD Display shall indicate all applicable information associated with the status condition including; zone, device type, device location and time/date.
 - c. All system activity/events shall be documented on the system printer and system history file.
 - d. Any remote or local annunciator LCD shall display the Point's English Text description.

- 6. The Alarm activation of any duct smoke detector, the following functions shall automatically occur:
 - a. The internal audible device shall sound at the control panel and/or remote annunciator.
 - b. The LCD Display shall indicate all applicable information associated with the alarm condition including; Point, device type, device location and time/date.
 - c. All system activity/events shall be recorded on the system printer and system history file.
 - d. Any remote or local annunciator LCD shall display the English text alarm description of any active alarm(s).
 - e. Transmit signal to the Central Station with Individual Alarm Point Identification.
 - f. Shutdown the local air handling unit.

1.05 SUBMITTALS

- A. The contractor shall purchase no equipment for the system specified herein until the owner has approved the project submittals in their entirety and has returned them to the contractor. It is the responsibility of the contractor to meet the entire intent and functional performance detailed in these specifications. Approved submittals shall only allow the contractor to proceed with the installation and shall not be construed to mean that the contractor has satisfied the requirements of these specifications.
- B. Project Submittal
 - 1. The contractor shall submit five (4) complete sets of project submittal documentation in order to be considered for this project. This project submittal documentation shall include but not be limited to:
 - a. Product Data: Data sheets bearing the printed logo or trademark of the Fire Alarm / Life Safety System manufacturer for all equipment. Indicated in the documentation will be the type, size, rating, style, catalog number, and manufacturer's name for all items proposed to meet the system performance detailed in this specification.
 - 2. The proposed equipment shall be subject to the approval of the ARCHITECT and no equipment shall be ordered or installed on the premises without approval in the form of a written notice to proceed.
- C. Quality Statements
 - 1. Furnish proof of the level of factory training and authorization of the servicing contractor.
 - 2. Furnish evidence of listing by Underwriters' Laboratories for all proposed equipment designed for use as fire alarm equipment. (Example: Underwriters Laboratories, Section UOJZ).
 - 3. Furnish proof that the manufacturer of the Fire Alarm / Life Safety System components is certified as an ISO 9001 company in each of the following disciplines: design engineering, manufacturing, technical support, and training. In lieu of such proof, the manufacturer must be able to show that the Quality Control methods they employ in the listed disciplines are equivalent to ISO 9001 requirements.
- D. Closeout Submittals
 - 1. One (1) copy of the following documents shall be delivered to the building owner's representative at the time of system acceptance. The close out submittals shall include:
 - a. Project specific operating manuals covering the installed Life Safety System including a detailed narrative description of the system architecture, inputs, notification signaling, auxiliary functions, annunciation, intended sequence of operations; expansion capability, application considerations, and limitations.
 - b. Include the Name, address and telephone of the authorized factory representative with a 24-hour emergency service number that is monitored on a 24-hour basis.
 - c. The manual shall also include Manufacturer's data sheets and installation manuals/instructions for all equipment installed, a list of recommended spare parts.
 - d. An up-to-date record ("as-built") set of approved shop drawing prints that have been revised to show each and every change made to the fire system from the original

approved shop drawings. ARCHITECT will provide the blank print for the as-built with the building structural corrections noted for bidder's use.

- e. Drawings shall consist of a scaled plan of each building showing the placement of each individual item of the Life Safety System equipment as well as raceway size and routing, junction boxes, and conductor size, quantity, and color in each raceway.
- f. All drawings must reflect point to point wiring, device address and programmed characteristics as verified in the presence of the engineer and/or the end user unless device addressing is electronically generated, and automatically graphically self-documented by the system.

1.06 QUALITY ASSURANCE

- A. Fire alarm contractor qualifications
 - 1. Equipment and materials shall be provided by factory authorized distributor to ensure proper specification adherence, final connection, test, turnover, warranty compliance, and service. The factory authorized distributor is required to have been in the fire alarm industry (service and installation) for a minimum of five (5) years.
 - 2. Factory authorized distributor must be have been in the business of being a factory authorized distributor in the state of NY continuously for at least the last ten (10) consecutive years.
 - 3. The distributor shall have successfully installed similar fire detection and signaling control components to form a complete functional system on at least 5 previous projects of comparable size and complexity. The Owner reserves the right to reject any control components for which evidence of a successful prior installation performed by the Contractor cannot be provided. Proof of compliance is entirely at the expense of the bidder.
 - 4. The Contractor shall have in-house system design and project management capability consistent with the requirements of this project. Qualified and approved representatives of the system manufacturer shall perform the detailed design of central and remote control equipment. Qualified and approved representatives of the system manufacturer shall produce all panel and equipment drawings and submittals, operating manuals. The Contractor is responsible for retaining qualified and approved representative(s) of those system manufacturer specified for detailed system design, documentation, coordination of system installation requirements, and final system testing and commissioning in accordance with these specifications.
 - 5. Qualifications for contractors must be submitted in writing with the bid and include as a minimum:
 - a. Recent references from projects of similar magnitude, insurance information, and service capabilities
 - b. A list of subcontractors and their qualifications that will be working on this project shall also be submitted with the bid.
 - 6. The supplier shall maintain sufficient spare parts stock on hand and have a fully equipped service organization capable of guaranteeing service call response time within 8 hours, 24 hours a day, 7 days a week, to service the completed system. The supplier shall also maintain at least two (2) technicians on 24 hour call available by pager and/or cellular telephone to supplier's 24 hour dispatch and/or answering service. END USER shall be furnished with a one toll free (or local) 24 hour service number and one toll free, local or long distance back up number (must be by a different telephone carrier, direct to a different facility (may be direct to answering dispatch service) to provide LIVE OPERATOR's to receive END USER'S service request and to have supplier's live operators contact and dispatch the service personnel. Any suppliers giving numbers answered by answering machines, computers or that require END USER to do the paging or notification of the service personnel may be disqualified by ARCHITECT without comment.
 - 7. The Engineered Systems Distributor supplying the equipment specified herein shall provide to ARCHITECT, with the submittal, a copy of the certificates of the individual(s) having participated in an authorized training course given by the manufacturer of the Fire

Alarm / Life Safety Equipment. The certificate shall indicate successful completion of the course.

1.07 DELIVERY, STORAGE AND HANDLING

- A. The Contractor shall be responsible for all receiving, handling, and storage of his materials at the job site. Use of loading docks, service driveways, and freight elevators shall be coordinated with the Owner.
- B. Rubbish
 - 1. The Contractor shall remove rubbish and debris resulting from his work on a daily basis. Rubbish not removed by the Contractor will be removed by the Owner and back-charged to the Contractor. Removal of debris and rubbish from the premises shall be coordinated with the Owner.

1.08 WARRANTY AND MAINTENANCE

- A. The Fire Alarm / Life Safety System manufacturer shall supply a one (1) year warranty from date of manufacture for all control system, field devices, and appliances.
- B. Contractor shall warrant the installed system to be free from any defects of material and installation for a period of one (1) year from acceptance by the engineer. Any deficiencies shall be immediately corrected at no additional cost to the owner.
- C. The Fire Alarm Contractor shall maintain a service organization with adequate spare parts stock within 50 miles of the installation. Any defects that render the system inoperative shall be repaired within 3 days of the owner notifying the contractor. Other defects shall be repaired within one week of the owner notifying the contractor.

1.09 OWNER'S INSTRUCTIONS:

- A. The fire alarm contractor shall schedule and execute an instruction class for the building owner, which details the proper operation of the installed fire alarm system. The instruction shall also cover the schedule of maintenance required by NFPA 72 and any additional maintenance recommended by the system manufacturer.
- B. Instruction shall also be furnished to the local municipal fire department if requested by the Authority Having Jurisdiction.
- C. The instruction shall be a minimum of 2 hours in duration and presented in an organized and professional manner by a person factory trained in the operation and maintenance of the equipment and who is also thoroughly familiar with the installation.
- D. The fire alarm contractor shall provide operations manuals or any other curricula that may enhance the instruction of the Owner's or municipal fire department in the operation and maintenance of the system.

1.10 COMMISSIONING:

- A. The system shall be commissioned in accordance with the needs of the occupants of the protected building. Both "complete system commissioning" and "phased system commissioning" shall be possible with the specified system, and the execution of either method of commissioning shall be treated as stand-alone projects, and shall be documented as such, including the need for a complete contract close out submittal package for each project phase.
 - 1. The factory trained and authorized fire alarm contractor, in the presence of the AHJ, the owners' representative, and a representative of the general contractor shall perform commissioning of the entire installed system, if deemed appropriate.
- B. A complete system documentation package, as detailed in this specification shall be provided to the owner's representative at the time of commissioning.

PART 2 PRODUCTS

2.01 MANUFACTURER

A. The specified and approved equipment manufacturer is EDWARDS VIGILANT. EDWARDS VIGILANT, A Divison of UTC Fire & Security, products constitute the type, quality and performance minimum standard(s) of fire alarm equipment to be installed. Alternate equipment

manufacturer's will be considered, providing the alternate equipment, supplier and features meet or exceed all requirements as set forth in this specification. Note Section 1.1 F.

- B. All equipment and components shall be the approved manufacturer's current models. The materials, appliances, equipment and devices shall be tested and listed by a nationally recognized approval agency for use as part of a protected premises protective signaling (fire alarm) system. The Contractor shall provide, from the acceptable manufacturer's current product lines, equipment and components that comply, with the requirements of these Specifications. Equipment or components, which do not provide the performance and features, required by these specifications are not acceptable, regardless of manufacturer.
- C. Contractors are cautioned to conform to these requirements in whole to ensure that system provided will accommodate future options and priorities of the owner with regard to the systems use. Any item not specifically addressed in the submittal prior to bid date must be met, without exception.

2.02 GENERAL

A. All equipment furnished for this project shall be new and unused. All equipment, materials, accessories, devices, and other facilities covered by this specification or noted on contract drawings and installation specifications shall be the best suited for the intended use and shall be the product of a single manufacturer as submitted and approved by ENGINEER.

2.03 SYSTEM OVERVIEW:

A. The Fire Alarm / Life Safety System shall be a microprocessor based system designed specifically for smoke and fire detection applications. The Fire Alarm / Life Safety System shall be UL listed under Standards 864 (Control Units for Fire-Protective Signaling Systems) under category UOJZ.

2.04 PANEL COMPONENTS AND FUNCTIONS

- A. Product: VS-2 Edwards Vigilant Grey Fire Alarm Control
- B. General
 - 1. The control panel shall be a multi-processor based system designed specifically for fire and releasing system applications. The control panel shall be listed and approved for the application standard(s) as listed under the General section.
 - 2. The control panel shall include all required hardware, software and system programming to provide a complete and operational system. The control panel shall assure that life safety takes precedence among all panel activities.
 - 3. The control panel shall include the following capacities:
 - a. Support up to 125 Detector and 125 Module analog/addressable points.
 - b. Support up to 8 fully supervised remote annunciators.
 - c. Support digital dialer (DACT) with multiple communication protocols
 - d. Support up to 1000 chronological history events.
 - e. Expandable to an additional 125 Detector and 125 Module Points with optional SLIC.
 - 4. The control panel shall include the following features:
 - a. Provide electronic addressing of analog/addressable devices.
 - b. Provide an operator interface display that shall include functions required to annunciate, command and control system functions.
 - c. Provide an internal audible signal with different programmable patterns to distinguish between alarm, supervisory, trouble and monitor conditions.
 - d. Provide a discreet system control switch provided for reset, alarm silence, panel silence, drill switch, up/down/right/left switches, status switch and help switch.
 - e. Provide system reports to ENGINEER Personnel via the built-in LCD.
 - f. Provide an authorized operator with the ability to operate or modify system functions like system time, date, passwords, holiday dates, restart the system and clear control panel event history file.
 - g. Provide an authorized operator to perform test functions within the installed system.

- h. All system programming and history shall be permanently stored in non-volatile memory to ensure that no programming or history is lost. Systems which store initial programming or field programming changes in battery backed memory will not be accepted.
- 5. Supervision of system components, wiring, initiating devices and software shall be provided by the control panel. Failure or fault of system component or wiring shall be indicated by type and location on the LCD display.
- 6. Software and processor operation shall be independently monitored for failure. The system shall provide fail-safe operation, with a backup level of system operation.
- 7. A compare utility shall identify programming and device changes on the system.
- C. Operators' Interface:
 - 1. A Liquid Crystal Display (LCD) shall provide the means to inform the system operator with detailed information about the off-normal status of the installed Fire Alarm / Life Safety System. The LCD shall automatically respond to the status of the system, and shall display that status in an 80 character front panel display with up to 40 character zone label.
 - 2. The following status functions shall be annunciated by the LCD Display:
 - a. When the Fire Alarm / Life Safety System is in the "Normal" Mode, the panel shall display: current date and time, a two-line custom system title, and a summary total of system events.
- D. Addressable Device Controller Built In:
 - 1. A 100% digital loop controller shall be provided in the Fire Alarm / Life Safety System panel to interface with the intelligent microprocessor-based detectors and modules.
 - 2. It shall be possible to connect the loop controller to the detectors and modules using any wiring material or method complying with Chapter 3 of the National Electrical Code without the need for special shielding, twisted wire, or conduits. The loop controller shall be capable of supporting Class A (Style 7) or Class B (Style 4) circuits without the need for additional hardware modules. It shall be possible to wire multiple branch circuits (T-Taps) from Class B Circuits (Style 4). NOTE, HOWEVER, FOR THIS SYSTEM, ONLY STYLE 7, CLASS A LOOP IS ACCEPTABLE.
 - 3. The loop controller shall be capable of setting the address of all Intelligent microprocessor-based devices connected to it electronically, without the need to set switches at any of the individual devices.
 - 4. The loop controller shall provide a minimum of 6 types of supervision for each smoke detector on the circuit:
 - a. Device location
 - b. Unexpected device add/Delete
 - c. Missing device address
 - d. Changes in the physical wiring of the circuit
 - e. Changes in device settings
 - f. Device maintenance alert
 - 5. The loop controller shall determine the electrical location of each connected detector and module. The location and type of each connected device shall be mapped and stored in memory in the loop controller. It shall be possible to access and display this map.
 - 6. It shall be possible to obtain a mapping report of all devices connected to the loop controller for confirmation of "as-built" wiring. The mapping report shall show the electrical relationship of all connected devices, including T-Taps, device types, and the panel addresses of devices on the circuit. The loop controller shall be capable of reporting any additional device addresses, which may have been added to the circuit, and/or changes that may have been made to the wiring in the data circuit. A specific trouble shall be reported for any and all off-normal non-alarm condition.
 - 7. The loop controller shall notify the system when any connected smoke detector reports a "routine maintenance required" signal to the system.
 - 8. One additional addressable device controller may be added to accommodate an additional 125 detectors and 125 modules on this fire alarm control panel. SA-SLIC

- E. Notification Appliance Circuits:
 - Provide as indicated on the plans, supervised hard-wired Notification Appliance Circuits (NAC) for the control of 24Vdc notification appliances. Each NAC shall operate as CLASS B (STYLE Y) power limited circuit.
 - 2. NAC's shall be capable of providing steady strobe as well as Genesis Audible Power.
 - 3. Strobe synchronization and control shall be built-into the fire alarm control panel [VS2] and booster power supplies [BPS-10A] so that separate strobe synchronization modules shall NOT be required. Only 2 wires shall be required to operate the audible (code 3 temporal sound) horn and strobe while allowing the operator to silence the system without de-activating the strobe lights. All strobe lights in this system are REQUIRED to continue to flash from the point of activation until the system is reset. Silencing of the audible signals MUST NOT de-activate the strobe lights
- F. Power Supply
 - 1. The built in system power supply shall be a minimum of 6 amps @ 24 vdc.
 - 2. Upon failure of normal (AC) power, the affected portion(s) of the system shall automatically switch over to secondary power without losing any alarm, trouble or operator acknowledgement signals. MAX 2.5A PER CIRCUIT 5A SIGNAL TOTAL.
 - 3. Each system power supply shall be annunciated individually as a shall annunciate as a trouble signal, identifying the inoperable power supply(ies).
 - 4. All standby batteries shall be continuously monitored by the system. Low battery and disconnection of battery power supply conditions shall immediately annunciate as a trouble signal, identifying the deficient batteries.
 - 5. All system power supplies shall be capable of recharging their associated batteries, from a fully discharged condition to a capacity sufficient to allow the system to perform consistent with the requirements of this section, in 48 hours maximum.
- G. Booster Power Supply [BPS-10A]
 - 1. Each system power supply shall be a minimum of 10 amps @ 24 vdc.
 - Upon failure of normal (AC) power, the affected portion(s) of the system shall automatically switch over to secondary power without losing any alarm, trouble or operator acknowledgments signals. MAX 2.5A PER OUTPUT CIRCUIT.
 - 3. Each system booster power supply shall be annunciated individually as a shall annunciate as a trouble signal, identifying the inoperable power supply(ies).
 - 4. All standby batteries shall be continuously monitored by the system. Low battery and disconnection of battery power supply conditions shall immediately annunciate as a trouble signal, identifying the deficient batteries.
 - 5. Include all required synchronization modules.
 - 6. All system power supplies shall be capable of recharging their associated batteries, from a fully discharged condition to a capacity sufficient to allow the system to perform consistent with the requirements of this section, in 48 hours maximum. BPS-10A
- H. Dialer (Digital Alarm Communicator Transmitter DACT), SA-DACT.
 - The system shall provide an off premise communications module capable of transmitting system events (ALARMS MUST BE COMMUNICATED INDIVIDUALLY BY DEVICE WITH SEPARATE RESTORAL SIGNALS FOR EACH DEVICE) to multiple primary and secondary central monitoring station monitoring station receivers.
 - 2. The system module shall provide multiple monitoring station receiver formats capable of transmitting up to 8 subscribers.
 - The system shall be capable of transmitting point information via Contact ID protocol. DACT's that do NOT transmit individual alarm & restoral signals for each device are NOT acceptable. SA-DACT
- I. System Reports
 - 1. The system shall provide the operator with system reports that give detailed description of the status of system parameters for corrective action, or for preventative maintenance programs. The system shall provide these reports via the main LCD, and shall be capable of being printed on the system printer (PRINTER OPTIONAL, NOT IN CONTRACT).

- 2. The system shall provide a report that gives a sensitivity listing of all detectors that have less than 80% environmental compensation remaining. The system shall provide a report that provides a sensitivity (% Obscuration per foot) listing of any particular detector.
- 3. The system shall provide a report that gives a listing of the sensitivity of all of the detectors on the system, or any given analog/addressable device circuit.
- 4. The system shall provide a report that gives a chronological listing of up to the last 1000 system events.
- 5. The system shall provide a listing of all of the firmware revision listings for all of the installed components in the system.

2.05 LIFE SAFETY SYSTEM PROGRAMMABLE OPERATIONS:

- A. The routing of all system annunciation and control parameters shall be configurable to any or all remote annunciator(s) on the system manually, or automatically as a function of the time of day or date.
- B. The system printer shall be configurable to display any combination or all of the following functions: Alarm, Supervisory, Trouble, and Monitor events.
- C. Each remote annunciator connected to the panel shall be configurable to show the status of any combination or of Alarm, Supervisory, Trouble, Monitor functions pertaining to any point in the system.
- D. Each point in the system shall be labeled with up to a 40 character custom message.
- E. System shall have the capability to provide logical "Counting AND" Groups and "Matrix Groups. Each matrix group shall be programmable by radius and activation number.
- F. System shall have the ability to define Service Groups. A Service group shall consist of any addressable field device and shall not be defined or limited by the physical layout of the Fire Alarm / Life Safety System, or its application to the protected premises. The system shall include the ability to define an alternate set of device commands which may be used in combination with the system test command and service groups for the testing of the connected Intelligent microprocessor based devices.
- G. The system shall include Time Control functions that have the ability to control any system output or system operational sequence as a function of the month, day of week, date, hour, minute, or holiday.
- H. The system shall support software defined Logical Zone Groups which may group any input from any initiating device circuit, in order to control a system output or function, or initiate any system operational sequence. A device or IDC may be a member of one Zone.
- I. The system shall have the ability to download data from the intelligent devices to a PC while the system is on-line and operational in the protected premises. The downloaded data may then be analyzed in a diagnostic program supplied by the system manufacturer.

2.06 FIELD MOUNTED SYSTEM COMPONENTS:

- A. Analytical Microprocessor-based Detectors General:
 - 1. System shall use Analytical Microprocessor-based Detectors that are capable of full digital communications with the Fire Alarm / Life Safety System using both broadcast and polling communications protocols. Each detector shall be capable of performing independent advanced fire detection algorithms. The fire detection algorithm shall measure sensor signal dimensions, time patterns, and combine different fire parameters to increase reliability and distinguish real fire conditions from unwanted nuisance alarms caused by environmental events. Signal patterns that are not typical of fires shall be eliminated by digital filters and shall not cause a system alarm condition. Devices not capable of combining different fire parameters or employing digital filters will not be acceptable.
 - 2. Each detector shall have an integral microprocessor capable of making alarm decisions based on fire parameter information stored in the detector's memory. Detectors not capable of making independent alarm decisions are not acceptable.
 - 3. Each detector shall have a separate means of locally displaying system communication and detector alarm status. A different LED indication for alarm and trouble shall be

provided (devices in which the LED does not flash in supervisory mode are not acceptable).

- 4. Each detector shall be capable of identifying diagnostic codes to be used for system maintenance. All diagnostic codes shall be stored in the detector. Each smoke detector shall be capable of transmitting pre-alarm, alarm, and maintenance signals to the Fire Alarm Control Panel via the Loop Controller.
- 5. Each detector microprocessor shall contain an environmental compensation algorithm, which identifies and sets ambient "Environmental Thresholds" continually and periodically. In this manner, the environmental impact of temperature, humidity, environmental contaminates as well as detector aging shall be automatically monitored and adjusted for. This process shall employ digital compensation techniques to adapt the detector to both long term and short term changes in the environmental compensation value and alert the system operator when the detector approaches 80% and 100% of the allowable environmental compensation value. Differential sensing algorithms shall maintain a constant differential between selected detector sensitivity and the derived base line sensitivity that the detector has sensed in its environment. The base line sensitivity information shall be automatically and periodically updated and permanently stored in the detector.
- 6. Each detector shall be capable of automatic electronic addressing and/or custom addressing, without the use of DIP or rotary switches, and shall mount on a common base to allow the simple replacement of one detector type with another detector type. The addressing of the detectors shall not depend on the electrical position of the detector in the circuit.
- 7. If devices require DIP or rotary switches for addressing, every device shall be physically removed and verified during final checkout with ENGINEER to confirm devices are located and programmed correctly. All switch addressed devices and their bases must be labeled with plastic labels to identify device address and intended location. Labels shall have a WHITE background with RED OR BLACK letters or numbers, letters or numbers shall be aminimum of 1/4" in height. Brother P-Touch TZ tapes or equivalent laminated.
- B. Detectors Multisensor Detector [GSA-IPHS]
 - 1. Multisensor Analog detector shall use a combination of a photoelectric smoke sensor, an ionization smoke sensor and an ambient temperature sensor to detect both visible particulates, high energy particles of combustion, and changes in ambient temperature.
 - 2. The integral microprocessor shall employ time-based algorithms to dynamically examine values from the three sensors simultaneously and initiate an alarm based on the analysis of that data.
 - 3. The temperature sensor shall self-adjust to the ambient temperature of the surrounding air and generate a system alarm when there is a change of 65oF (35oC) in ambient temperature.
 - 4. The detector shall continually monitor itself for any changes in sensitivity due to the environmental affects of dirt, smoke, temperature, age and humidity. The information shall be stored in the integral processor and transferred to the Analog loop controller for retrieval using a laptop PC or a Service Tool designed by the manufacturer of the detector, specifically for the purpose. Separately mounted Analog Ionization, Photoelectric Detectors and Analog Heat Detectors in the same location will not be accepted.
 - 5. The alarm set point shall be field selectable to any of five sensitivity settings ranging from 1.0% to 3.5% smoke obscuration per foot. The integral heat sensor shall cause an alarm when it senses a change in ambient temperature of 65oF (35oC) or reaches it fixed temperature alarm set point of 135oF (57oC) nominal. The Multisensor detector shall be suitable for operation in the following environment:
 - a. Temperature: 32oF to 100oF (0oC to 38oC)
 - b. Humidity: 0-93% RH, non condensing
 - c. Elevation : Up to 5,000 ft (1828 m)
- C. Detectors Conventional Fixed Temp/Rate of Rise Heat, 193*F: [282B-PL]

- 1. This device is a conventional ROR / Fixed Temperature Heat Detector to be installed in inaccessible or unheated attic areas.
- 2. Remotely mounted Intelligent alarm modules will supervise the electrical connection to these devices (1 module per device) and provide the required individual alarm, wiring trouble and restoral signals to the intelligent signature signaling line circuit. [GSA-CT1]
- 3. All wiring from the intelligent signature side of the module must be Class A, Style Z but the wires from the intelligent alarm module to the conventional detector may be Class B w/EOL.
- D. Detectors Fixed Temperature/Rate of Rise Heat Detector: [GSA-HRS]
 - Heat Detector shall have a solid state heat sensor, and shall transmit an alarm at a fixed temperature of 135° F (57°C) or due to a temperature Rate of Rise of 15°F/minute (9°C/minute). The detector shall continually monitor the temperature of the air in its surroundings to minimize thermal lag to the time required to process an alarm.
 - 2. The heat detector shall be rated for ceiling installation at 70 ft (21.3m) centers and be suitable for wall mount applications.
- E. Detectors Fixed Temperature Heat Detector: [GSA-HFS]
 - 1. Heat detector shall have a solid-state heat sensor, and shall transmit an alarm at a fixed temperature of 135° F (57°C). Detector shall continually monitor the temperature of the air in its surroundings to minimize thermal lag to the time required to process an alarm.
 - 2. Heat detector shall be rated for ceiling installation at 70 ft (21.3m) centers and be suitable for wall mount applications.
- F. Detectors-Mounting Bases: [GSA-SB4, GSA-IB4]
 - 1. Mounting base will not contain any electronics, shall support all Microprocessor-based Smoke detector types detailed in this specification, and have the following minimum requirements:
 - a. Removal of the respective detector shall not affect electronic loop communications with other detectors on that loop.
 - b. Field Wiring Connections shall be made to the room side of the base, so that wiring connections can be made or disconnected by the contractor without the need to remove the mounting base from the electrical box.
 - c. Bases will have the option of external LED operation, Relay base or data line isolator base. [GAS-SB4]
 - d. Isolator bases shall operate within a minimum of 23 msec. of a short circuit on the SLC, shall run self-test procedure to re-establish normal operation, and shall operate in a class 'A' configuration. [GSA-IB4]

2.07 MICROPROCESSOR-BASED INTELLIGENT MODULES - GENERAL

- A. Fire Alarm / Life Safety System shall incorporate microprocessor-based addressable modules for the monitoring and control of system Input and Output functions over a 2 wire electronic communications loop, using both broadcast and serial polling protocols. All modules shall display communications and alarm status via LED indicators.
- B. The function of each connected module shall be determined by the module type, and shall be defined in the system software through the application of a personality code. Simply changing the associated personality code may change module operation at any time.
- C. All addressing of the Microprocessor-based Addressable Modules shall be done electronically, and the electrical location of each module shall be automatically reported to the Fire Alarm Control Panel, where it may be downloaded into a PC, or printed out. The addressing of the modules will not be dependent on their electrical location on the circuit.
- D. All Microprocessor-based Addressable Modules shall have a visual means to confirm communications with the panel, and a visual means to confirm the alarm status of the modules.
- E. All field wiring to the Microprocessor-based Addressable Modules shall be supervised for opens and ground faults and shall be location identified to the module of incidence.

- F. Diagnostic circuitry, and their associated indicators, with reviewable Trouble Codes, shall be integral to the Microprocessor-based Addressable Modules to assist in troubleshooting system faults.
- G. The module shall be suitable for operation in the following environment:
 - 1. Temperature: 32°F to 120°F (0°C to 49°C)
 - 2. Humidity: 0-93% RH, non-condensing
- H. Single Input Module:
 - 1. Microprocessor-based Addressable Modules shall be used to provide one (1) supervised Class B (style B) input circuit capable of latching operation for use with contact devices, non-damped Waterflow Switches, non-latching supervisory sprinkler switches, explosion proof heat detectors, explosion proof manual pull stations. [GSA-CT1]
- I. Control Relay Module:
 - 1. Microprocessor-based Addressable Control Relay Modules shall provide one form "C" dry relay contact rated at 2 amps @ 24 Vdc or 0.5 amps at 120 VAC to, control external appliances or equipment processes. The control relay module shall be rated for pilot duty applications and releasing systems service. The position of the relay contact shall be confirmed by the system firmware. [GSA-CR]
- J. MICROPROCESSOR-BASED ADDRESSABLE MANUAL PULL STATIONS
 - 1. Fire Alarm / Life Safety System shall incorporate microprocessor-based addressable Manual Pull Stations connected over a 2 wire electronic communications loop, using both broadcast and serial polling protocols. All Manual Pull Stations shall display communications and alarm status via integral LED's, and shall be dual action, key reset (key same as fire control panel).
 - 2. All addressing of the Microprocessor-based Addressable Manual Pull Stations shall be done electronically, and the electrical location of each station shall be automatically reported to the Fire Alarm Control Panel, where it may be downloaded into a PC, or printed out. The addressing of the Manual Pull Station will not be dependent on their location on the circuit.
 - 3. All field wiring to the Microprocessor-based Addressable Manual Pull Stations shall be supervised for opens and ground faults. All ground faults shall be location identified to the module of incidence.
 - 4. Diagnostic circuitry, and their associated indicators, with reviewable Trouble Codes, shall be integral to the Microprocessor-based Addressable Manual Pull Stations to assist in troubleshooting system faults, including ground faults on the device.
 - 5. All Manual Fire Alarm station shall be suitable for operation in the following environment:
 - a. Temperature: 32°F to 120°F (0°C to 49°C)
 - b. Humidity: 0-93% RH, non-condensing
 - c. [GSA-M278]

2.08 FIRE ALARM NOTIFICATION APPLIANCES - GENERAL REQUIREMENTS

- A. All appliances which are supplied for the requirements of this specification shall be UL Listed for Fire Protective Service, and shall be capable of providing the "Equivalent Facilitation" which is allowed under the Americans with Disabilities Act Accessabilities Guidelines (ADA(AG)), and shall be UL 1971 Listed.
- B. All appliances shall be of the same manufacturer as the Fire Alarm Control Panel specified to insure absolute compatibility between the appliances and the control panels, and to insure that the application of the appliances are done in accordance with the single manufacturer's instructions.
- C. Any appliances that do not meet the above requirements, and are submitted for use must show written proof of their compatibility for the purpose intended. Such proof shall be in the form of documentation from all manufacturers that clearly states that their equipment (as submitted) is 100% compatible with each other for the purpose intended. All strobes shall be provided with lens markings oriented for wall mounting. It shall be possible to replace the lens of any installed strobe in order to facilitate the replacement of a broken lens, or to change the orientation of the

lens markings. Removal of an installed strobe to facilitate the changing of a lens will not be acceptable.

- D. Horn/Strobes
 - Provide low profile WHITE wall mount horn/strobes at the locations shown on the drawings. The Horn/Strobe shall provide an audible output of 84 dBA at 10 ft. when measured in reverberation room per UL-464. Strobes shall provide synchronized flash outputs. The strobe output shall be determined as required by its specific location and application from a family of 75cd devices. The horn shall have a selectable steady or synchronized temporal output. In and Out screw terminals shall be provided for wiring. Low profile horn/strobes shall mount in a North American 4 Square deep box ON A CEILING. [MGCF-HDVM]
- E. Strobes
 - Provide low profile wall mounted WHITE strobes at the locations shown on the drawings. In and out screw terminals shall be provided for wiring. Strobes shall provide synchronized flash outputs. Strobe output shall be determined as required by its specific location and application from a family of 75cd devices. Low profile strobes shall mount in a North American 4 Square deep box ON THE CEILING. [MGCF-VM]

PART 3 EXECUTION

3.01 INSTALLAERS

- A. The Fire Alarm / Life Safety System specified herein shall be installed by a factory trained and authorized fire alarm contractor, specializing in multiplex fire alarm systems. The installing contractor shall provide proof of their qualifications of factory training and factory authorization for the product(s) specified herein as required by the fire alarm contractor qualification section of this specification.
- B. Field connected devices may be installed and wired by approved contractors under the direct supervision of the factory trained and authorized fire alarm distributor (supplier).

3.02 INSTALLATION:

- A. General
 - 1. The entire system shall be installed in a workmanlike manner in accordance with approved manufacturer's manuals and wiring diagrams. The contractor shall furnish all conduit, wiring, outlet boxes, junction boxes, cabinets and similar devices necessary for the complete installation.
 - a. All wiring shall be of the type recommended by the manufacturer and approved by the local authorities having jurisdiction for the purpose.
 - b. All penetration of floor slabs and firewalls shall be fire stopped in accordance with all local fire codes.
 - 2. All wiring shall be installed according to NEC standards per the drawings submitted by the fire alarm system supplier, unless otherwise noted.
 - 3. ALL intelligent signature circuit wiring shall be a minimum of 14awg, shall be twisted and jacketed (minimum) and the jacket shall be type FPL (FPLP IF A PLENUM) and shall not be in the same raceway as the signaling circuits which may be THHN. Shielding is optional, however if manufacturer recommends it and it is used, the shield drain wire shall only be grounded at the control panel, it shall be connected together at each point it is cut by a UL Listed crimp connector (installed with the appropriate ratcheting UL Listed crimp tool) and fully insulated (taped) until you reach the end of the return loop at the FACP where it will be capped and insulated (unconnected). Use of smaller wire gauge or untwisted and/or unjacketed wire is UNACCEPTABLE.
- B. Installation sequence
 - 1. Installation of the system shall be conducted in stages and phased such that circuits and equipment are installed in the following order:
 - a. Riser conduits, AC power conduits and control cabinets.
 - b. Remote annunciator(s), control component(s), and printer(s).

- c. Conduits and wiring for complete notification circuits and appliance installation throughout facility.
- d. Pre-test the audible and visual notification devices prior to switch over.
- e. Install all new detection devices.
- f. Terminations between field devices and the associated control equipment.
- g. Complete contractor pre-test of system.
- h. Complete system testing.
- C. Open Cable
 - 1. Power-limited cable in accordance with NEC 70, shall be installed in ULI listed metal conduit or raceway that shall be mechanically protected by building construction features:
 - a. Installation shall be in areas not subjected to mechanical injury.
 - b. Cable shall be types FPLP, FPLR, FPL, THHN as permitted for the installation application as required by NEC 70, Section 760-61.
 - c. All cable MUST be enclosed by conduit that shall be supported and anchored properly in a neat and workmanlike manner.
 - d. All visible cable must be ACCEPTED type and must have a WHITE JACKET.
- D. Conduit & Raceway
 - 1. The requirements of this section apply to all system conduits, raceways, electrical enclosures, junction boxes, pullboxes and device backboxes.
 - 2. All system conduits shall be of the sizes and types specified.
 - 3. All system conduits shall be EMT, 3/4 -inch minimum, except for flexible metallic conduit used for whips to devices only, maximum length 6 feet, 3/4-inch diameter, minimum. All system conduits, which are installed in areas, which may be subject to physical damage or weather, shall be IMC or Rigid steel, 3/4 -inch minimum.
 - 4. Conduits shall be sized according to the conductors contained therein. Cross sectional area percentage fill for system conduits shall not exceed 40%.
 - 5. Provide all new conduit raceway and conduit riser.
 - 6. Existing conduit raceway system may be re-used where possible.
 - 7. All fire alarm conduit systems shall be routed and installed to minimize the potential for physical, mechanical or by fire damage, and so as not to interfere with existing building systems, facilities or equipment, and to facilitate service and minimize maintenance.
 - 8. All conduits, except flexible conduit whips to devices, shall be solidly attached to building structural members, ceiling slabs or permanent walls. Conduits shall not be attached to existing conduit, duct work, cable trays, other ceiling equipment, drop ceiling hangers/grids or partition walls, except where necessary to connect to initiating, evacuation signaling or auxiliary function devices.
 - 9. All system conduits, junction boxes, pull boxes, terminal cabinets, electrical enclosures and device backboxes shall be readily accessible for inspection, testing, service and maintenance.
- E. Control Panel:
 - 1. Installation of all Fire Alarm / Life Safety Control Equipment, field mounted devices and appliances shall be in strict compliance with the manufacturer's written instructions.
 - Connection of the fire alarm system power supply to the electrical system shall be by a dedicated branch electrical circuit. The means to disconnect this circuit shall be accessible only to authorized personnel, shall be capable of being locked in the "on" position, and shall be clearly marked "FIRE ALARM CIRCUIT CONTROL" in accord with NFPA standards.
 - 3. Control equipment shall not be installed until all field wiring to the field mounted devices and appliances have been installed and the wiring on those circuits have been checked for ground faults, opens, and shorts, and have been corrected.
 - 4. The fire alarm contractor shall neatly bundle all field wiring conductors in the gutter spaces of the control panels and secure the wiring away from all circuit boards and control equipment components. All field-wiring circuits shall be neatly and legibly labeled in the control panel. No wiring except home runs from fire alarm system circuits and system

power supply circuits shall be permitted in the control panel enclosure. No wiring splices will be permitted in the control panel enclosure.

3.03 FIELD QUALITY CONTROL:

- A. The system shall be installed and fully tested under the supervision of trained manufacturer's representative. The system shall be demonstrated to perform all the functions as specified.
- B. SYSTEM TEST AND CERTIFICATION / DEMONSTRATION:
 - 1. The completely installed fire alarm system will be fully tested in compliance with Testing Procedures for Signaling Systems (NFPA 72, 1999).
 - 2. ENGINEER shall be notified at least five (5) working days prior to the scheduled testing so that owner's, engineering and fire department representatives may be present for such testing.
 - 3. All test equipment, instruments, tools and labor required to conduct the tests shall be made available by the installing contractor.
 - 4. The Fire Alarm Contractor shall test:
 - a. All wiring for continuity, shorts, and grounds before the system is activated.
 - b. Every intelligent analog addressable device shall be tested for correct address, sensitivity, user defined message and program execution.
 - c. Every notification appliance shall be tested for proper operation and audible/visual output.
 - 5. In the event of system faults are uncovered during testing, corrections shall be made and the testing procedure shall be repeated until it is acceptable to the engineer, Owner's representative, and the fire department.
 - 6. After the system has been completely tested to the satisfaction of the engineer and the building owner; the fire alarm contractor shall submit a Fire Alarm System Inspection Report to ENGINEER.

SECTION 31 1000 SITE CLEARING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Clearing and protection of vegetation.
- B. Removal of existing debris.

1.02 RELATED REQUIREMENTS

A. Section 31 2323 - Fill: Filling holes, pits, and excavations generated as a result of removal operations.

PART 2 PRODUCTS -- NOT USED

PART 3 EXECUTION

3.01 SITE CLEARING

A. Minimize production of dust due to clearing operations; do not use water if that will result in ice, flooding, sedimentation of public waterways or storm sewers, or other pollution.

3.02 VEGETATION

- A. Do not remove or damage vegetation beyond the limits indicated on drawings.
- B. Install substantial, highly visible fences at least 3 feet high to prevent inadvertent damage to vegetation to remain:
 - 1. At vegetation removal limits.
- C. In areas where vegetation must be removed but no construction will occur other than pervious paving, remove vegetation with minimum disturbance of the subsoil.
- D. Vegetation Removed: Do not burn, bury, landfill, or leave on site, except as indicated.
 - 1. Chip, grind, crush, or shred vegetation for mulching, composting, or other purposes; preference should be given to on-site uses.
 - 2. Trees: Sell if marketable; if not, treat as specified for other vegetation removed; remove stumps and roots to depth of 18 inches.
 - 3. Sod: Re-use on site if possible; otherwise sell if marketable, and if not, treat as specified for other vegetation removed.
- E. Restoration: If vegetation outside removal limits or within specified protective fences is damaged or destroyed due to subsequent construction operations, replace at no cost to Owner.

3.03 DEBRIS

- A. Remove debris, junk, and trash from site.
- B. Leave site in clean condition, ready for subsequent work.
- C. Clean up spillage and wind-blown debris from public and private lands.

SECTION 31 2200 GRADING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Removal and storage of topsoil.
- B. Rough grading the site for site structures and building pads.
- C. Finish grading .

1.02 RELATED REQUIREMENTS

- A. Section 31 1000 Site Clearing.
- B. Section 32 9219 Seeding: Finish ground cover.
- C. Section 32 9300 Plants: Topsoil in beds and pits.

PART 2 PRODUCTS

2.01 MATERIALS

A. Topsoil: Topsoil excavated on-site.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that survey bench mark and intended elevations for the Work are as indicated.

3.02 PREPARATION

- A. Identify required lines, levels, contours, and datum.
- B. Stake and flag locations of known utilities.
- C. Locate, identify, and protect from damage above- and below-grade utilities to remain.
- D. Notify utility company to remove and relocate utilities.
- E. Protect site features to remain, including but not limited to bench marks, survey control points, existing structures, fences, sidewalks, paving, and curbs, from damage by grading equipment and vehicular traffic.
- F. Protect trees to remain by providing substantial fencing around entire tree at the outer tips of its branches; no grading is to be performed inside this line.
- G. Protect plants, lawns, rock outcroppings, and other features to remain as a portion of final landscaping.

3.03 ROUGH GRADING

- A. Remove topsoil from areas to be further excavated, re-landscaped, or re-graded, without mixing with foreign materials.
- B. Do not remove topsoil when wet.
- C. Remove subsoil from areas to be further excavated, re-landscaped, or re-graded.
- D. Do not remove wet subsoil, unless it is subsequently processed to obtain optimum moisture content.
- E. When excavating through roots, perform work by hand and cut roots with sharp axe.
- F. Stability: Replace damaged or displaced subsoil to same requirements as for specified fill.

3.04 SOIL REMOVAL AND STOCKPILING

- A. Stockpile topsoil to be re-used on site; remove remainder from site.
- B. Stockpile subsoil to be re-used on site; remove remainder from site.
- C. Stockpiles: Use areas designated on site; pile depth not to exceed 8 feet; protect from erosion.

3.05 FINISH GRADING

- A. Before Finish Grading:
 - 1. Verify building and trench backfilling have been inspected.
 - 2. Verify subgrade has been contoured and compacted.
- B. Remove debris, roots, branches, stones, in excess of 1/2 inch in size. Remove soil contaminated with petroleum products.
- C. In areas where vehicles or equipment have compacted soil, scarify surface to depth of 3 inches.
- D. Place topsoil in areas where seeding and planting are indicated.
- E. Place topsoil where required to level finish grade.
- F. Place topsoil to the following compacted thicknesses:
 - 1. Areas to be Seeded with Grass: 6 inches.
 - 2. Shrub Beds: 18 inches.
- G. Place topsoil during dry weather.
- H. Remove roots, weeds, rocks, and foreign material while spreading.
- I. Near plants spread topsoil manually to prevent damage.
- J. Fine grade topsoil to eliminate uneven areas and low spots. Maintain profiles and contour of subgrade.
- K. Lightly compact placed topsoil.

3.06 REPAIR AND RESTORATION

- A. Existing Facilities, Utilities, and Site Features to Remain: If damaged due to this work, repair or replace to original condition.
- B. Other Existing Vegetation to Remain: If damaged due to this work, replace with vegetation of equivalent species and size.

3.07 CLEANING

- A. Remove unused stockpiled topsoil and subsoil. Grade stockpile area to prevent standing water.
- B. Leave site clean and raked, ready to receive landscaping.

SECTION 31 2316 EXCAVATION

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Excavating for building volume below grade, footings, slabs-on-grade, paving, site structures, and utilities within the building.
- B. Trenching for utilities outside the building to utility main connections.

1.02 RELATED REQUIREMENTS

A. Section 31 2323 - Fill: Fill materials, filling, and compacting.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that survey bench mark and intended elevations for the work are as indicated.

3.02 PREPARATION

- A. Identify required lines, levels, contours, and datum locations.
- B. Locate, identify, and protect utilities that remain and protect from damage.
- C. Notify utility company to remove and relocate utilities.
- D. Protect bench marks, survey control points, existing structures, fences, sidewalks, paving, and curbs from excavating equipment and vehicular traffic.
- E. Protect plants, lawns, rock outcroppings, and other features to remain.

3.03 EXCAVATING

- A. Excavate to accommodate new structures and construction operations.
- B. Notify Architect of unexpected subsurface conditions and discontinue affected Work in area until notified to resume work.
- C. Slope banks of excavations deeper than 4 feet to angle of repose or less until shored.
- D. Do not interfere with 45 degree bearing splay of foundations.
- E. Cut utility trenches wide enough to allow inspection of installed utilities.
- F. Hand trim excavations. Remove loose matter.
- G. Correct areas that are over-excavated and load-bearing surfaces that are disturbed; see Section 31 2323.
- H. Grade top perimeter of excavation to prevent surface water from draining into excavation.
- I. Remove excavated material that is unsuitable for re-use from site.
- J. Remove excess excavated material from site.

3.04 PROTECTION

- A. Prevent displacement of banks and keep loose soil from falling into excavation; maintain soil stability.
- B. Protect bottom of excavations and soil adjacent to and beneath foundation from freezing.

SECTION 31 2323 FILL

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Filling, backfilling, and compacting for building volume below grade, footings, slabs-on-grade, paving, site structures, and utilities within the building.
- B. Backfilling and compacting for utilities outside the building to utility main connections.
- C. Filling holes, pits, and excavations generated as a result of removal (demolition) operations.

1.02 RELATED REQUIREMENTS

- A. Section 31 2200 Grading: Site grading.
- B. Section 31 2316 Excavation: Removal and handling of soil to be re-used.
- C. Section 03 3000 Cast-in-Place Concrete.

1.03 REFERENCE STANDARDS

- A. AASHTO T 180 Standard Specification for Moisture-Density Relations of Soils Using a 4.54 kg (10-lb) Rammer and a 457 mm (18 in.) Drop; 2010.
- B. ASTM C136/C136M Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates; 2014.
- C. ASTM D698 Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft3 (600 kN-m/m3)); 2012.
- D. ASTM D1556 Standard Test Method for Density and Unit Weight of Soil in Place by the Sand-Cone Method; 2007.
- E. ASTM D1557 Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft3 (2,700 kN m/m3)); 2012.
- F. ASTM D2167 Standard Test Method for Density and Unit Weight of Soil in Place by the Rubber Balloon Method; 2008.
- G. ASTM D 2922 Standard Test Methods for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth); 2005.
- H. ASTM D3017 Standard Test Method for Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth); 2005.
- I. ASTM D4318 Standard Test Methods for Liquid Limit, Plastic Limit, and Plasticity Index of Soils; 2010.

1.04 SUBMITTALS

- A. Samples: 10 pounds sample of each type of fill; submit in air-tight containers to testing laboratory.
- B. Materials Sources: Submit name of imported materials source.
- C. Fill Composition Test Reports: Results of laboratory tests on proposed and actual materials used, including manufactured fill.
- D. Compaction Density Test Reports.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. When necessary, store materials on site in advance of need.
- B. When fill materials need to be stored on site, locate stockpiles where designated.
 - 1. Prevent contamination.
 - 2. Protect stockpiles from erosion and deterioration of materials.

PART 2 PRODUCTS

2.01 FILL MATERIALS

- A. General Fill: Subsoil excavated on-site.
 - 1. Free of lumps larger than 3 inches, rocks larger than 2 inches, and debris.
 - 2. Conforming to ASTM D2487 Group Symbol CL.
 - 3. Must be approved by Engineer/Owner prior to use.
- B. Structural Fill Fill Type Item 4: Conforming to State of New York Highway Department standard.
- C. Granular Fill- Gravel : Angular crushed stone; free of shale, clay, friable material and debris.
 1. Graded in accordance with ASTM D2487 Group Symbol GW.
- D. Sand: Natural river or bank sand; free of silt, clay, loam, friable or soluble materials, and organic matter.
 - 1. Grade in accordance with ASTM D2487 Group Symbol SW.
- E. Topsoil: Friable loam; imported borrow.
 - 1. Free of roots, rocks larger than 1/2 inch, subsoil, debris, large weeds and foreign matter.
 - 2. Acidity range (pH) of 5.5 to 7.5.
 - 3. Containing a minimum of 4 percent and a maximum of 25 percent inorganic matter.
 - 4. Conforming to ASTM D2487 Group Symbol OH.

2.02 ACCESSORIES

A. Geotextile Fabric: Non-biodegradable, woven, fabric to be as indicated on plans or determined based on specific application.

2.03 SOURCE QUALITY CONTROL

- A. Where fill materials are specified by reference to a specific standard, testing of samples for compliance will be provided before delivery to site.
- B. If tests indicate materials do not meet specified requirements, change material and retest.
- C. Provide materials of each type from same source throughout the Work.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that survey bench marks and intended elevations for the Work are as indicated.
- B. Identify required lines, levels, contours, and datum locations.
- C. See Section 31 2200 for additional requirements.
- D. Verify subdrainage, dampproofing, or waterproofing installation has been inspected.
- E. Verify structural ability of unsupported walls to support imposed loads by the fill.
- F. Verify underground tanks are anchored to their own foundations to avoid flotation after backfilling.

3.02 PREPARATION

- A. Scarify and proof roll subgrade surface to a depth of 6 inches to identify soft spots.
- B. Cut out soft areas of subgrade not capable of compaction in place. Backfill with structural fill.
- C. Compact subgrade to density equal to or greater than requirements for subsequent fill material.
- D. Until ready to fill, maintain excavations and prevent loose soil from falling into excavation.

3.03 FILLING

- A. Fill to contours and elevations indicated using unfrozen materials.
- B. Fill up to subgrade elevations unless otherwise indicated.
- C. Employ a placement method that does not disturb or damage other work.

- D. Systematically fill to allow maximum time for natural settlement. Do not fill over porous, wet, frozen or spongy subgrade surfaces.
- E. Maintain optimum moisture content of fill materials to attain required compaction density.
- F. Granular Fill: Place and compact materials in equal continuous layers not exceeding 8 inches compacted depth.
- G. Slope grade away from building minimum 2 inches in 10 feet, unless noted otherwise. Make gradual grade changes. Blend slope into level areas.
- H. Correct areas that are over-excavated.
 - 1. Load-bearing foundation surfaces: Use structural fill, flush to required elevation, compacted to 100 percent of maximum dry density.
 - 2. Other areas: Use general fill, flush to required elevation, compacted to minimum 98 percent of maximum dry density.
- I. Compaction Density Unless Otherwise Specified or Indicated:
 - 1. Under slabs-on-grade and similar construction: 98 percent of maximum dry density.
 - 2. At other locations: 95 percent of maximum dry density.
- J. Reshape and re-compact fills subjected to vehicular traffic.

3.04 FILL AT SPECIFIC LOCATIONS

- A. Use general fill unless otherwise specified or indicated.
- B. Structural Fill at concrete slabs-on-grade and similar construction:
 - 1. Maximum depth per lift: 8 inches, compacted.
 - 2. Compact to minimum 98 percent of maximum dry density.
- C. At Foundation Walls and Footings:
 - 1. Use general fill.
 - 2. Compact each lift to 90 percent of maximum dry density.
 - 3. Do not backfill against unsupported foundation walls.
- D. Over Subdrainage Piping at Foundation Perimeter and Under Slabs:
 - 1. Drainage fill and geotextile fabric: Section 33 4600.
 - 2. Cover drainage fill with general fill.
 - 3. Compact to 95 percent of maximum dry density.
- E. Over Buried Utility Piping and Conduits in Trenches:
 - 1. Bedding: Use sand.
 - 2. Cover with general fill.
 - 3. Fill up to subgrade elevation.
 - 4. Compact in maximum 8 inch lifts to 95 percent of maximum dry density.
- F. Around and Over Underground Tanks:
 - 1. Use initial fill of sand.
 - a. Compact to 95 percent of maximum dry density.
 - 2. Complete with general fill.
 - a. Compact to 95 percent of maximum dry density.
 - 3. Coordinate with tank manufacturer for any special backfill requirements.
- G. At Lawn Areas:
 - 1. Use general fill.
 - 2. Compact to 95 percent of maximum dry density.
 - 3. See Section 31 2200 for topsoil placement.

3.05 TOLERANCES

- A. Top Surface of General Filling: Plus or minus 1 inch from required elevations.
- B. Top Surface of Filling Under Paved Areas and slabs-on-grade: Plus or minus 1/2 inch from required elevations.

3.06 FIELD QUALITY CONTROL

- A. See Section 01 4000 Quality Requirements, for general requirements for field inspection and testing.
- B. Perform compaction density testing on compacted fill in accordance with ASTM D1556, ASTM D2167, ASTM D2922, or ASTM D3017.
- C. Evaluate results in relation to compaction curve determined by testing uncompacted material in accordance with ASTM D698 ("standard Proctor"), ASTM D1557 ("modified Proctor"), or AASHTO T 180.
- D. If tests indicate work does not meet specified requirements, remove work, replace and retest.
- E. Frequency of Tests: As directed by Engineer.
- F. Proof roll compacted fill at surfaces that will be under slabs-on-grade and paving.

3.07 CLEANING

- A. See Section 01 7419 Construction Waste Management and Disposal, for additional requirements.
- B. Remove unused stockpiled materials, leave area in a clean and neat condition. Grade stockpile area to prevent standing surface water.
- C. Leave borrow areas in a clean and neat condition. Grade to prevent standing surface water.

SECTION 31 3700 RIPRAP

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Riprap.

1.02 RELATED REQUIREMENTS

A. Section 31 2323 - Fill: Aggregate requirements.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Riprap: Granite type; broken stone; solid and nonfriable; 4 inch minimum size, 12 inch maximum size.
- B. Geotextile Fabric: Non-biodegradable, non-woven . Provide FX-40HS manufactured by Carthage Mills or equal.

PART 3 EXECUTION

3.01 PLACEMENT

- A. Place geotextile fabric over substrate, lap edges and ends.
- B. Place riprap at culvert pipe ends and as indicated.

SECTION 32 1123 AGGREGATE BASE COURSES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Aggregate base course.
- B. Paving aggregates.

1.02 RELATED REQUIREMENTS

- A. Section 31 2200 Grading: Preparation of site for base course.
- B. Section 31 2323 Fill: Compacted fill under base course.
- C. Section 32 1216 Asphalt Paving: Binder and finish asphalt courses.
- D. Section 32 1313 Concrete Paving: Finish concrete surface course.

1.03 REFERENCE STANDARDS

- A. AASHTO M 147 Standard Specification for Materials for Aggregate and Soil-Aggregate Subbase, Base and Surface Courses; 1965 (2004).
- B. ASTM C136/C136M Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates; 2014.
- C. ASTM D698 Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft3 (600 kN-m/m3)); 2012.
- D. ASTM D1556 Standard Test Method for Density and Unit Weight of Soil in Place by the Sand-Cone Method; 2007.
- E. ASTM D1557 Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft3 (2,700 kN m/m3)); 2012.
- F. ASTM D2167 Standard Test Method for Density and Unit Weight of Soil in Place by the Rubber Balloon Method; 2008.
- G. ASTM D2487 Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System); 2011.
- H. ASTM D3017 Standard Test Method for Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth); 2005.
- I. ASTM D4318 Standard Test Methods for Liquid Limit, Plastic Limit, and Plasticity Index of Soils; 2010.
- J. ASTM D6938 Standard Test Method for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth); 2010.

1.04 SUBMITTALS

- A. See Section 01 3000 Administrative Requirements, for submittal procedures.
- B. Materials Sources: Submit name of imported materials source.
- C. Aggregate Composition Test Reports: Results of laboratory tests on proposed and actual materials used.
- D. Compaction Density Test Reports.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. When necessary, store materials on site in advance of need.
- B. Aggregate Storage, General:
 - 1. Separate differing materials with dividers or stockpile separately to prevent intermixing.
 - 2. Prevent contamination.
 - 3. Protect stockpiles from erosion and deterioration of materials.

PART 2 PRODUCTS

2.01 MATERIALS

- A. CoarseAggregateType Item 4: Coarse aggregate, conforming to State of New York Highway Department standard.
- B. Natural or artificial graded mixture of crushed gravel, crushed stone, and sand; ASTM D 2940; with at least 90 percent passing a 1-1/2 inch sieve and not more than 12 percent passing a No. 200 sieve.
- Materials furnished under this section shall be as specified by NYSDOT, Section 403.04, Type 3. Materials shall have the following gradations by weight: Passing 4 inch sieve size designation100%Passing 1/4 inch sieve size designation30 75%Passing No. 40 sieve size designation5 40%Passing No. 200 sieve size designation0 10%
- D. Materials furnished under this section shall be as specified by NYSDOT, Section 403.05, Type 4. Materials shall have the following gradations by weight: Passing 2 inch sieve size designation100%Passing 1/4 inch sieve size designation30 65%Passing No. 40 sieve size designation5 40%Passing No. 200 sieve size designation0 10%
- E. Geotextile Fabric: Non-biodegradable, woven 500X manufactured by Mirafi.

2.02 SOURCE QUALITY CONTROL

- A. See Section 01 4000 Quality Requirements, for general requirements for testing and analysis of aggregate materials.
- B. Where aggregate materials are specified using ASTM D2487 classification, test and analyze samples for compliance before delivery to site.
- C. If tests indicate materials do not meet specified requirements, change material and retest.
- D. Provide materials of each type from same source throughout the Work.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that survey bench marks and intended elevations for the work are as indicated.
- B. Verify substrate has been inspected, gradients and elevations are correct, and is dry.

3.02 PREPARATION

- A. Correct irregularities in substrate gradient and elevation by scarifying, reshaping, and re-compacting.
- B. Do not place aggregate on soft, muddy, or frozen surfaces.

3.03 INSTALLATION

- A. Under Bituminous Concrete Paving:
 - 1. Compact to 98 percent of maximum dry density.
- B. Under Concrete Slab on Grade:
 - 1. Compact to 97 percent of maximum dry density.
- C. Place aggregate in maximum 4 inch layers and roller compact to specified density.
- D. Level and contour surfaces to elevations and gradients indicated.
- E. Add small quantities of fine aggregate to coarse aggregate as appropriate to assist compaction.
- F. Add water to assist compaction. If excess water is apparent, remove aggregate and aerate to reduce moisture content.
- G. Use mechanical tamping equipment in areas inaccessible to compaction equipment.

3.04 TOLERANCES

- A. Flatness: Maximum variation of 1/4 inch measured with 10 foot straight edge.
- B. Scheduled Compacted Thickness: Within 1/4 inch.

C. Variation From Design Elevation: Within 1/2 inch.

3.05 FIELD QUALITY CONTROL

- A. See Section 01 4000 Quality Requirements, for general requirements for field inspection and testing.
- B. Compaction density testing will be performed on compacted aggregate base course in accordance with ASTM D1556.
- C. Results will be evaluated in relation to compaction curve determined by testing uncompacted material in accordance with ASTM D698 ("standard Proctor").
- D. If tests indicate work does not meet specified requirements, remove work, replace and retest.
- E. Frequency of Tests: Multiple daily tests in each lift as required by the testing consultant based on performance..
- F. Proof roll compacted aggregate at surfaces that will be under slabs-on-grade, pavers, and paving.

3.06 CLEANING

A. Remove unused stockpiled materials, leave area in a clean and neat condition. Grade stockpile area to prevent standing surface water.

SECTION 32 1216 ASPHALT PAVING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Double course bituminous concrete paving.

1.02 RELATED REQUIREMENTS

A. Section 32 1123 - Aggregate Base Courses: Aggregate base course.

1.03 REFERENCE STANDARDS

- A. AI MS-2 Mix Design Methods for Asphalt Concrete and Other Hot-Mix Types; 1997.
- B. AI MS-19 A Basic Asphalt Emulsion Manual; Fourth Edition.
- C. ASTM D946 Standard Specification for Penetration-Graded Asphalt Cement for Use in Pavement Construction; 2009a.

1.04 QUALITY ASSURANCE

- A. Perform Work in accordance with State of New York Highways standard.
- B. Mixing Plant: Conform to State of New York Highways standard.
- C. Obtain materials from same source throughout.

1.05 REGULATORY REQUIREMENTS

A. Conform to applicable code for paving work on public property.

1.06 FIELD CONDITIONS

- A. Do not place asphalt when ambient air or base surface temperature is less than 40 degrees F, or surface is wet or frozen.
- B. Place bitumen mixture when temperature is not more than 15 F degrees below bitumen supplier's bill of lading and not more than maximum specified temperature.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Asphalt Cement: ASTM D946.
- B. Aggregate for Base Course: In accordance with State of New York Highways standards.
- C. Aggregate for Binder Course: In accordance with State of New York Highways standards.
- D. Aggregate for Wearing Course: In accordance with State of New York Highways standards.
- E. Fine Aggregate: In accordance with State of New York Highways standards.
- F. Tack Coat: Homogeneous, medium curing, liquid asphalt.

2.02 ASPHALT PAVING MIXES AND MIX DESIGN

- A. Bituminous concrete shall be composed of mineral aggregate, mineral filler and bituminous materal and shall conform in all respects to the New York State Department of Transporation Standard Specifications for Parking Lot.
 - 1. Binder Course: Type 3 NYSDOT Item 403.13 asphalt concrete conforming to composition requirements of Table 403-1.
 - 2. Top Course: Type 6 NYSDOT Item 403.16 asphalt concrete conforming to composition requirements of Table 403-1.
- B. Submit proposed mix design of each class of mix for review prior to beginning of work.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that compacted subgrade is dry and ready to support paving and imposed loads.
- B. Verify gradients and elevations of base are correct.

3.02 PREPARATION - TACK COAT

- A. Apply tack coat in accordance with manufacturer's instructions.
- B. Apply tack coat on asphalt or concrete surfaces over subgrade surface at uniform rate of 1/3 gal/sq yd.
- C. Apply tack coat to contact surfaces of curbs, gutters and building.

3.03 PLACING ASPHALT PAVEMENT - DOUBLE COURSE

- A. Place asphalt binder course within 24 hours of applying primer or tack coat.
- B. Place wearing course anytime after placing and compacting binder course.
- C. To minimize damage to the wearing course, do not drive heavy construction equipment on paving once wearing course is installed.
 - 1. Approval from Architect/Owner must given if access is required.
- D. Compact pavement by rolling to specified density. Do not displace or extrude pavement from position. Hand compact in areas inaccessible to rolling equipment.
- E. Perform rolling with consecutive passes to achieve even and smooth finish, without roller marks.
- F. Provide or replace all pavement markings disturbed during the course of construction to the approval of the Essex County.

3.04 TOLERANCES

- A. Flatness: Maximum variation of 1/4 inch measured with 10 foot straight edge.
- B. Compacted Thickness: Within 1/4 inch of specified or indicated thickness.
- C. Variation from True Elevation: Within 1/2 inch.

3.05 FIELD QUALITY CONTROL

A. See Section 01 4000 - Quality Requirements, for general requirements for quality control.

3.06 PROTECTION

A. Immediately after placement, protect pavement from mechanical injury for two days or until surface temperature is less than 140 degrees F.

3.07 CLEANING

A. After completion of paving and surfacing operations, clean surfaces of excess or spilled asphalt, gravel or stone materials to the satisfaction of Owner.

SECTION 32 1313 CONCRETE PAVING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Concrete sidewalks.

1.02 RELATED REQUIREMENTS

- A. Section 03 3000 Cast-in-Place Concrete.
- B. Section 07 9200 Joint Sealants: Sealing joints.
- C. Section 31 2200 Grading: Preparation of site for paving and base and preparation of subsoil at pavement perimeter for planting.
- D. Section 32 1123 Aggregate Base Courses32 1123: Exterior flatwork base course.

1.03 REFERENCE STANDARDS

- A. ACI 211.1 Standard Practice for Selecting Proportions for Normal, Heavyweight, and Mass Concrete; 1991 (Reapproved 2009).
- B. ACI 301 Specifications for Structural Concrete; 2010 (Errata 2012).
- C. ACI 304R Guide for Measuring, Mixing, Transporting, and Placing Concrete; 2000.
- D. ACI 305R Hot Weather Concreting; 2010.
- E. ACI 306R Cold Weather Concreting; 2010.
- F. ASTM A615/A615M Standard Specification for Deformed and Plain Carbon Steel Bars for Concrete Reinforcement; 2015.
- G. ASTM A1064/A1064M Standard Specification for Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete; 2015.
- H. ASTM C33/C33M Standard Specification for Concrete Aggregates; 2013.
- I. ASTM C39/C39M Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens; 2015a.
- J. ASTM C94/C94M Standard Specification for Ready-Mixed Concrete; 2015.
- K. ASTM C150/C150M Standard Specification for Portland Cement; 2015.
- L. ASTM C173/C173M Standard Test Method for Air Content of Freshly Mixed Concrete by the Volumetric Method; 2014.
- M. ASTM C260/C260M Standard Specification for Air-Entraining Admixtures for Concrete; 2010a.
- N. ASTM C309 Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete; 2011.
- O. ASTM C685/C685M Standard Specification for Concrete Made by Volumetric Batching and Continuous Mixing; 2014.
- P. ASTM D1751 Standard Specification for Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Nonextruding and Resilient Bituminous Types); 2004 (Reapproved 2013).
- Q. ASTM D1752 Standard Specification for Preformed Sponge Rubber Cork and Recycled PVC Expansion Joint Fillers for Concrete Paving and Structural Construction; 2004a (Reapproved 2013).

1.04 SUBMITTALS

- A. See Section 01 3000 Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data on joint filler, admixtures, and curing compound.
- C. Design Data: Indicate pavement thickness, designed concrete strength, reinforcement, and typical details.

D. Shop Drawings: Indicate control joint and construction joint layout and dimensions.

PART 2 PRODUCTS

2.01 FORM MATERIALS

- A. Form Materials: Conform to ACI 301.
- B. Joint Filler: Preformed; non-extruding bituminous type (ASTM D1751) or sponge rubber or cork (ASTM D1752).
 - 1. Thickness: 1/4 inch.

2.02 REINFORCEMENT

- A. Reinforcing Steel: ASTM A615/A615M, Grade 80 (80,000 psi) yield strength; deformed billet steel bars; unfinished.
- B. Steel Welded Wire Reinforcement: Plain type, ASTM A1064/A1064M; in flat sheets; unfinished.

2.03 CONCRETE MATERIALS

A. Concrete Materials: As specified in Section 03 3000.

2.04 ACCESSORIES

- A. Liquid Surface Sealer: Silencure manufactured by ChemMasters.
- B. Joint Sealer: General purpose exterior sealant for use in horizontal exterior joints as specified in Section 07900.

2.05 CONCRETE MIX DESIGN

- A. Concrete Properties:
 - 1. Compressive strength, when tested in accordance with ASTM C39/C39M at 28 days; 4000 psi.
 - 2. Total Air Content: 5-7 percent, determined in accordance with ASTM C173/C173M.
 - 3. Maximum Slump: 3 inches.

2.06 MIXING

- A. On Project Site: Mix in drum type batch mixer, complying with ASTM C685/C685M. Mix each batch not less than 1-1/2 minutes and not more than 5 minutes.
- B. Transit Mixers: Comply with ASTM C94/C94M.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify compacted subgrade is acceptable and ready to support paving and imposed loads.
- B. Verify gradients and elevations of base are correct.

3.02 SUBBASE

A. See Section 32 1123 for construction of base course for work of this Section.

3.03 PREPARATION

- A. Moisten base to minimize absorption of water from fresh concrete.
- B. Notify Architect minimum 24 hours prior to commencement of concreting operations.

3.04 FORMING

- A. Place and secure forms to correct location, dimension, profile, and gradient.
- B. Assemble formwork to permit easy stripping and dismantling without damaging concrete.
- C. Place joint filler vertical in position, in straight lines, extending from bottom of slab to 1/2 inch below top of slab surface. Secure to formwork during concrete placement.

3.05 REINFORCEMENT

A. Place reinforcement as indicated.

3.06 COLD AND HOT WEATHER CONCRETING

- A. Follow recommendations of ACI 305R when concreting during hot weather.
- B. Follow recommendations of ACI 306R when concreting during cold weather.
- C. Do not place concrete when base surface temperature is less than 40 degrees F, or surface is wet or frozen.

3.07 PLACING CONCRETE

- A. Place concrete in accordance with ACI 304R.
- B. Ensure reinforcement, inserts, embedded parts, formed joints are not disturbed during concrete placement.
- C. Place concrete continuously over the full width of the panel and between predetermined construction joints. Do not break or interrupt successive pours such that cold joints occur.

3.08 JOINTS

- A. Align curb, gutter, and sidewalk joints.
- B. Place 1/4 inch wide expansion joints at 24 foot intervals and to separate paving from vertical surfaces and other components and in pattern indicated.
 - 1. Form joints with joint filler extending from bottom of pavement to within 1/2 inch of finished surface.
 - 2. Secure to resist movement by wet concrete.

3.09 FINISHING

- A. Sidewalk Paving: Light broom, texture perpendicular to direction of travel with troweled and radiused edge 1/4 inch radius.
- B. Curbs and Gutters: Light broom, texture parallel to pavement direction.
- C. Place sealer on exposed concrete surfaces after the 28 day cure time. Apply in accordance with manufacturer's instructions.
- D. Cover and keep surface wet for 7 days.

3.10 TOLERANCES

A. Maximum Variation of Surface Flatness: 1/4 inch in 10 ft.

3.11 FIELD QUALITY CONTROL

- A. An independent testing agency secured by the Essex County will perform field quality control tests.
 - 1. Provide free access to concrete operations at project site and cooperate with appointed firm.
 - 2. Submit proposed mix design of each class of concrete to inspection and testing firm for review prior to commencement of concrete operations.
 - 3. Tests of concrete and concrete materials may be performed at any time to ensure conformance with specified requirements.
 - 4. Contractor to coordinate placement of concrete such that 48 hours notice can be given to the Owner/Architect for coordination with independent testing agency.

3.12 PROTECTION

- A. Immediately after placement, protect pavement from premature drying, excessive hot or cold temperatures, and mechanical injury.
- B. Do not permit pedestrian traffic over pavement for 7 days minimum after finishing.

SECTION 32 1723.13

PAINTED PAVEMENT MARKINGS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Parking lot markings, including parking bays and handicapped symbols.

1.02 RELATED REQUIREMENTS

A. Section 32 1216 - Asphalt Paving.

1.03 REFERENCE STANDARDS

- A. MPI (APL) Master Painters Institute Approved Products List; Master Painters and Decorators Association; current edition, www.paintinfo.com.
- B. FHWA MUTCD Manual on Uniform Traffic Control Devices for Streets and Highways; U.S. Department of Transportation, Federal Highway Administration; Current Edition.

1.04 SUBMITTALS

- A. Product Data: Manufacturer's data sheets on each product to be used, including:
 - 1. Preparation instructions and recommendations.
 - 2. Storage and handling requirements and recommendations.
 - 3. Installation methods.
- B. Certificates: Submit for each batch of paint stating compliance with specified requirements.
- C. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
 - 1. Extra Paint: 2 containers, 1 gallon size, of each type and color.

1.05 FIELD CONDITIONS

A. Do not install products under environmental conditions outside manufacturer's absolute limits.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Line and Zone Marking Paint: EF Series Fast Dry Waterborne Traffic Paint, manufactured by Ennis-Flint; color(s) as indicated.
 - 1. Parking Lots: White.
 - 2. Handicapped Symbols: Blue.
- B. Temporary Marking Tape: Preformed, reflective, pressure sensitive adhesive tape in color(s) required; Contractor is responsible for selection of material of sufficient durability as to perform satisfactorily during period for which its use is required.

PART 3 EXECUTION

3.01 EXAMINATION

A. Do not begin installation until substrates have been properly prepared.

3.02 PREPARATION

- A. Allow new pavement surfaces to cure for a period of not less than 14 days before application of marking materials.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
- C. Clean surfaces thoroughly prior to installation.
 - 1. Remove dust, dirt, and other granular surface deposits by sweeping, blowing with compressed air, rinsing with water, or a combination of these methods.
- D. Where oil or grease are present, scrub affected areas with several applications of trisodium phosphate solution or other approved detergent or degreaser, and rinse thoroughly after each application; after cleaning, seal oil-soaked areas with cut shellac to prevent bleeding through the new paint.

- E. Establish survey control points to determine locations and dimensions of markings; provide templates to control paint application by type and color at necessary intervals.
- F. Temporary Pavement Markings: When required or directed by Architect, apply temporary markings of the color(s), width(s) and length(s) as indicated or directed.
 - 1. After temporary marking has served its purpose, remove temporary marking by carefully controlled sandblasting, approved grinding equipment, or other approved method so that surface to which the marking was applied will not be damaged.
 - 2. At Contractor's option, temporary marking tape may used in lieu of temporary painted marking; remove unsatisfactory tape and replace with painted markings at no additional cost to Owner.

3.03 INSTALLATION

- A. Begin pavement marking as soon as practicable after surface has been cleaned and dried.
- B. Do not apply paint if temperature of surface to be painted or the atmosphere is less than 50 degrees F or more than 95 degrees F.
- C. Apply in accordance with manufacturer's instructions using an experienced technician that is thoroughly familiar with equipment, materials, and marking layouts.
- D. Comply with FHWA MUTCD manual (http://mutcd.fhwa.dot.gov) for details not shown.
- E. Apply markings in locations determined by measurement from survey control points; preserve control points until after markings have been accepted.
- F. Apply uniformly painted markings of color(s), lengths, and widths as indicated on the drawings true, sharp edges and ends.
 - 1. Apply paint in one coat only.
 - 2. Wet Film Thickness: 0.015 inch, minimum.
 - 3. Width & Tolerance: 4 inch width plus or minus 1/8 inch.
- G. Parking Lots: Apply parking space lines, entrance and exit arrows, access aisle hatching, and other markings indicated on drawings.
 - 1. Mark the International Handicapped Symbol at indicated parking spaces.
 - 2. Hand application by pneumatic spray is acceptable.
- H. Symbols: Use a suitable template that will provide a pavement marking with true, sharp edges and ends, of the design and size indicated.

3.04 DRYING, PROTECTION, AND REPLACEMENT

- A. Protect newly painted markings so that paint is not picked up by tires, smeared, or tracked.
- B. Provide barricades, warning signs, and flags as necessary to prevent traffic crossing newly painted markings.
- C. Allow paint to dry at least the minimum time specified by the applicable paint standard and not less than that recommended by the manufacturer.
- D. Remove and replace markings that are applied at less than minimum material rates; deviate from true alignment; exceed length and width tolerances; or show light spots, smears, or other deficiencies or irregularities.
- E. Remove markings in manner to avoid damage to the surface to which the marking was applied, using carefully controlled sand blasting, approved grinding equipment, or other approved method.
- F. Replace removed markings at no additional cost to Owner.

SECTION 32 9219 SEEDING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Preparation of subsoil.
- B. Placing topsoil.
- C. Seeding, mulching and fertilizer.
- D. Maintenance.

1.02 RELATED REQUIREMENTS

- A. Section 31 2200 Grading: Topsoil material.
- B. Section 31 2200 Grading: Preparation of subsoil and placement of topsoil in preparation for the work of this section.
- C. Section 31 2323 Fill: Topsoil material.

1.03 DELIVERY, STORAGE, AND HANDLING

- A. Deliver grass seed mixture in sealed containers. Seed in damaged packaging is not acceptable. Deliver seed mixture in containers showing percentage of seed mix, year of production, net weight, date of packaging, and location of packaging.
- B. Deliver fertilizer in waterproof bags showing weight, chemical analysis, and name of manufacturer.

PART 2 PRODUCTS

2.01 SEED MIXTURE

- A. Seed Mixture:
 - 1. Kentucky Blue Grass: 20 percent.
 - 2. Creeping Red Fescue Grass: 65 percent.
 - 3. Norlea Perennial Rye: 15 percent.

2.02 SOIL MATERIALS

- A. Topsoil: Type required as specified in Section 31 2323.
- B. Topsoil Depth: Provide a minimum finished rolled depth of 4-inches.

2.03 ACCESSORIES

- A. Mulching Material: Oat or wheat straw, free from weeds, foreign matter detrimental to plant life, and dry. Hay or chopped cornstalks are not acceptable.
- B. Lime: Agricultural grade ground limestone applied to establish a pH of 6.0.
- C. Water: Clean, fresh and free of substances or matter that could inhibit vigorous growth of grass.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that prepared soil base is ready to receive the work of this Section.

3.02 PREPARATION

- A. Prepare subgrade in accordance with Section 31 2200.
- B. Place topsoil in accordance with Section 31 2200.

3.03 FERTILIZING

- A. Apply fertilizer at a rate of 600 lbs per acre.
- B. Apply after smooth raking of topsoil and prior to roller compaction.
- C. Do not apply fertilizer at same time or with same machine as will be used to apply seed.

- D. Mix thoroughly into upper 2 inches of topsoil.
- E. Lightly water to aid the dissipation of fertilizer.

3.04 SEEDING

- A. Apply seed at a rate of that indicated on the drawings lbs per 1000 sq ft evenly in two intersecting directions. Rake in lightly.
- B. Do not seed areas in excess of that which can be mulched on same day.
- C. Do not sow immediately following rain, when ground is too dry, or during windy periods.
- D. Immediately following seeding and compacting, apply mulch to a thickness of 1/8 inches. Maintain clear of shrubs and trees.
- E. Apply water with a fine spray immediately after each area has been mulched. Saturate to 4 inches of soil.
- F. Following germination, immediately re-seed areas without germinated seeds that are larger than 4 by 4 inches.

3.05 PROTECTION

- A. A. Cover seeded areas with straw as indicated
- B. Cover seeded slopes where grade is 12 inches per foot or greater with erosion fabric. Roll fabric onto slopes without stretching or pulling.
- C. Lay fabric smoothly on surface, bury top end of each section in 6 inch deep excavated topsoil trench. Provide 12 inch overlap of adjacent rolls. Backfill trench and rake smooth, level with adjacent soil.
- D. Secure outside edges and overlaps at 36 inch intervals with stakes.
- E. Lightly dress slopes with topsoil to ensure close contact between fabric and soil.
- F. At sides of ditches, lay fabric laps in direction of water flow. Lap ends and edges minimum 6 inches.

3.06 MAINTENANCE

- A. Provide maintenance at no extra cost to Owner; Owner will pay for water.
- B. Maintain seeded areas immediately after placement until grass is well established and exhibits a vigorous growing condition.
- C. Mow grass at regular intervals to maintain at a maximum height of 2-1/2 inches. Do not cut more than 1/3 of grass blade at any one mowing.
- D. Neatly trim edges and hand clip where necessary.
- E. Immediately remove clippings after mowing and trimming.
- F. Water to prevent grass and soil from drying out.
- G. Roll surface to remove minor depressions or irregularities.
- H. Control growth of weeds. Apply herbicides in accordance with manufacturer's instructions. Remedy damage resulting from improper use of herbicides.
- I. Immediately reseed areas that show bare spots.
- J. Protect seeded areas with warning signs during maintenance period.

SECTION 32 9300 PLANTS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Preparation of subsoil.
- B. Topsoil bedding.
- C. New trees, plants, and ground cover.
- D. Mulch and Fertilizer.
- E. Tree Pruning.

1.02 RELATED REQUIREMENTS

A. Section 31 2323 - Fill: Topsoil material.

1.03 REFERENCE STANDARDS

- A. ANSI/AHIA Z60.1 American National Standard for Nursery Stock; 2014.
- B. ANSI A300 Part 1 American National Standard for Tree Care Operations -- Tree, Shrub and Other Woody Plant Maintenance -- Standard Practices; 2008 (R2014).

1.04 SUBMITTALS

- A. Product Data: Provide data on species, container sizes, caliper, etc. including any special planting instructions.
 - 1. Reference Plant Schedule on project plans.

1.05 QUALITY ASSURANCE

- A. Nursery Qualifications: Company specializing in growing and cultivating the plants with three years documented experience.
- B. Maintenance Services: Performed by installer.

1.06 REGULATORY REQUIREMENTS

- A. Comply with regulatory agencies for fertilizer and herbicide composition.
- B. Plant Materials: Certified by federal department of agriculture; free of disease or hazardous insects.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Deliver fertilizer in waterproof bags showing weight, chemical analysis, and name of manufacturer.
- B. Protect and maintain plant life until planted.
- C. Deliver plant life materials immediately prior to placement. Keep plants moist.

1.08 FIELD CONDITIONS

 Do not install plant life when ambient temperatures may drop below 35 degrees F or rise above 90 degrees F.

1.09 WARRANTY

- A. Provide one year warranty.
- B. Warranty: Include coverage for one continuous growing season; replace dead or unhealthy plants.
- C. Replacements: Plants of same size and species as specified, planted in the next growing season, with a new warranty commencing on date of replacement.

PART 2 PRODUCTS

2.01 PLANTS

A. Plants: Species and size identified in plant schedule, grown in climatic conditions similar to those in locality of the work.

2.02 SOIL MATERIALS

A. Topsoil: Type topsoil as specified in Section 31 2323.

2.03 SOIL AMENDMENT MATERIALS

- A. Fertilizer: Containing fifty percent of the elements derived from organic sources; of proportion necessary to eliminate any deficiencies of topsoil, to the following proportions:.
 - 1. Nitrogen: 2 ratio.
 - 2. Phosphoric Acid: 1 ratio.
 - 3. Soluble Potash: 1 ratio.
- B. Compost: Add 1 cubic yard for every 300 square feet to achieve 20% organic matter in top 6" of soil.
- C. Bone Meal: Raw, finely ground, commercial grade, minimum of 3 percent nitrogen and 20 percent phosphorous.
- D. Water: Clean, fresh, and free of substances or matter that could inhibit vigorous growth of plants.

2.04 MULCH MATERIALS

A. Mulching Material: Hemlock species wood shavings, free of growth or germination inhibiting ingredients.

2.05 ACCESSORIES

- A. Stakes: Softwood lumber, pointed end.
- B. Cable, Wire, Eye Bolts and Turnbuckles: Non-corrosive, of sufficient strength to withstand wind pressure and resulting movement of plant life.
- C. Plant Protectors: Rubber sleeves over cable to protect plant stems, trunks, and branches.

2.06 SOURCE QUALITY CONTROL

- A. Provide testing of imported topsoil.
- B. Analyze to ascertain percentage of nitrogen, phosphorus, potash, soluble salt and organic matter; pH value and any other notable deficiencies.

PART 3 EXECUTION

3.01 PREPARATION OF SOIL

- A. Prepare subsoil to eliminate uneven areas. Maintain profiles and contours. Make changes in grade gradual. Blend slopes into level areas.
- B. Remove foreign materials, weeds and undesirable plants and their roots. Remove contaminated subsoil.
- C. Scarify subsoil to a depth of 3 inches where plants are to be placed. Repeat cultivation in areas where equipment, used for hauling and spreading topsoil, has compacted subsoil.
- D. Grade topsoil to eliminate rough, low or soft areas, and to ensure positive drainage.
- E. Dig pits and beds 2 times wider than plant root ball and at same depth as root ball.

3.02 FERTILIZING

- A. Apply fertilizer in accordance with manufacturer's instructions.
- B. Apply after initial raking of topsoil.
- C. Mix thoroughly into upper 2 inches of topsoil.
- D. Lightly water to aid the dissipation of fertilizer.

3.03 PLANTING

- A. Place plants as indicated for review and final orientation by Architect.
- B. Set plants vertical.
- C. Remove non-biodegradable root containers.
- D. Set plants in pits or beds, partly filled with prepared plant mix, at a minimum depth of 6 inches under each plant. Remove burlap, ropes, and wires, from the root ball.
- E. Place bare root plant materials so roots lie in a natural position. Backfill soil mixture in 6 inch layers. Maintain plant life in vertical position.
- F. Saturate soil with water when the pit or bed is half full of topsoil and again when full.

3.04 PLANT SUPPORT

- A. Brace plants vertically with plant protector wrapped guy wires and stakes to the following:
 - 1. Tree Caliper: 1 to 2 inches; Tree Support Method: 2 stakes with two ties
 - 2. Tree Caliper: 2 to 4 inches; Tree Support Method: 3 guy wires with eye bolts and turn buckles

3.05 TREE PRUNING

- A. Prune trees as recommended in ANSI A300 Part 1.
- B. Prune newly planted trees as required to remove dead, broken, and split branches.

3.06 MAINTENANCE

- A. Maintain plant life immediately after placement and until plants are well established and exhibit a vigorous growing condition. Continue maintenance until termination of warranty period.
 - 1. It is the Contractor's responsibility to determine the type and quantity of soil amendments and fertilizer required.
- B. Irrigate sufficiently to saturate root system and prevent soil from drying out.
- C. Remove dead or broken branches and treat pruned areas or other wounds.
- D. Winterizing: Prepare winter sensitive plant species for winter within the 1-year warranty period as described:
 - 1. Apply structural snow barrier with burlap to all plant material needing protection from snow removal and salt exposure.

SECTION 33 0513

MANHOLES AND STRUCTURES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Modular precast concrete manhole sections with tongue-and-groove joints with masonry transition to lid frame, covers, anchorage, and accessories.

1.02 REFERENCE STANDARDS

- A. ASTM A48/A48M Standard Specification for Gray Iron Castings; 2003 (Reapproved 2012).
- B. ASTM C55 Standard Specification for Concrete Building Brick; 2011.
- C. ASTM C478 Standard Specification for Circular Precast Reinforced Concrete Manhole Sections; 2015.
- D. ASTM C478M Standard Specification for Circular Precast Reinforced Concrete Manhole Sections [Metric]; 2015.
- E. ASTM C923 Standard Specification for Resilient Connectors Between Reinforced Concrete Manhole Structures, Pipes, and Laterals; 2008 (Reapproved 2013).
- F. ASTM C923M Standard Specification for Resilient Connectors Between Reinforced Concrete Manhole Structures, Pipes, and Laterals [Metric]; 2008b (Reapproved 2013).

1.03 SUBMITTALS

A. Shop Drawings: Indicate manhole locations, elevations, piping sizes and elevations of penetrations.

1.04 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section with minimum three years documented experience.

1.05 FIELD CONDITIONS

A. Maintain materials and surrounding air temperature to minimum 50 degrees F prior to, during, and 48 hours after completion of masonry work.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Manhole Sections: Reinforced precast concrete in accordance with ASTM C478 (ASTM C478M), with resilient connectors complying with ASTM C923 (ASTM C923M).
- B. Concrete: As required to meet H20 loading criteria.
- C. Grade Rings: As required to establish proper rim elevation, constructed of precase concrete or HDPE designed to meet H20 loading criteria.
- D. Joints shall be rubber and concrete using O-ring gaskets (ASTM C443) or butyl rubber gaskets (ASTM C443), or tongue and groove buttered with 1:2 cement mortar (ASTM C270, Type M). All joints shall be sealed with cement mortar inside and out, and troweled smooth to the contour of the wall surface.

2.02 COMPONENTS

- A. Lid and Frame: ASTM A 48/A 48M, Class 30B Cast iron construction, machined flat bearing surface, removable lid, heavy duty lid design as indicated; designed for an H20 loading lid molded with identifying name ;.
 - 1. Drain Manholes: Round solid cover with "Sewer" marking, Neenah Foundry R-1557.
- B. Manhole Steps: ANSI A14.3, ASTM D2146, OSHA Formed FRP rungs; 3/4 inch 14" wide steel reinforced co-polymer polypropylene plastic rungs. Rungs shall be cast in place at 12 inches on center. Provide Tyoe PS2-PF manufactured by M.A. Industries, or equal.

2.03 CONFIGURATION

- A. Shaft Construction: Concentric with flat slab top section; lipped male/female dry joints; sleeved to receive pipe sections.
- B. Shape: Cylindrical.
- C. Clear Inside Dimensions: 48 inch diameter.
- D. Design Depth: As indicated.
- E. Clear Lid Opening: 30 inches diameter.
- F. Pipe Entry: Provide openings as required.
- G. Steps: 14 inches wide, 12 inches on center vertically, set into manhole wall.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify items provided by other sections of Work are properly sized and located.
- B. Verify that built-in items are in proper location, and ready for roughing into Work.
- C. Verify excavation for manholes is correct.

3.02 PREPARATION

A. Coordinate placement of inlet and outlet pipe or duct sleeves required by other sections.

3.03 MANHOLES

- A. Place concrete base pad, trowel top surface level.
- B. Monolithic base units shall be placed on a minimum 8" foundation of structural fill, and be set at the proper elevation and carefully leveled.
- C. Unit shall be aligned with other units to be connected together with piping, steps to be oriented in common direction with other units.
- D. Place manhole sections plumb and level, trim to correct elevations, anchor to base pad.
- E. Cut and fit for pipe where necessary.
- F. Lifting holes shall be sealed tight with a tapered solid rubber plug driven into the hole and the remaining void filled with mortar on the outside only.
- G. Grade rings placed upon the slab shall be used for all manholes as required to provide the proper rim elevation. Grade rings shall not be placed in a combined thickness greater than 20 inches or less to maintain H20 loading.
- H. Grout base of shaft sections to achieve slope to exit piping. Trowel smooth. Contour as required.
- I. Set cover frames and covers level without tipping, to correct elevations.
- J. Pipe connections shall be installed true to line and grade as shown on the drawings. Wall fittings shall be watertight, compatible with the pipe joint. Connections shall conform to the details shown on the drawings.
- K. Coordinate with other sections of work to provide correct size, shape, and location.

SECTION 33 1116

SITE WATER UTILITY DISTRIBUTION PIPING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Pipe and fittings for site water lines including domestic water lines and fire water lines.

1.02 RELATED REQUIREMENTS

- A. Section 31 2316 Excavation: Excavating of trenches.
- B. Section 31 2323 Fill: Bedding and backfilling.
- C. Section 33 1300 Disinfecting of Water Utility Distribution: Disinfection of site service utility water piping.

1.03 REFERENCES

- A. ASME B16.18 Cast Copper Alloy Solder Joint Pressure Fittings; 2012.
- B. ASME B16.22 Wrought Copper and Copper Alloy Solder-Joint Pressure Fittings; 2013.
- C. ASTM B88 Standard Specification for Seamless Copper Water Tube; 2014.
- D. ASTM D3035 Standard Specification for Polyethylene (PE) Plastic Pipe (DR-PR) Based on Controlled Outside Diameter; 2015.
- E. AWS A5.8M/A5.8 Specification for Filler Metals for Brazing and Braze Welding; 2011-AMD 1.
- F. AWWA C104/A21.4 Cement-Mortar Lining for Ductile-Iron Pipe and Fittings for Water; 2013.
- G. AWWA C111/A21.11 Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings; 2012.
- H. AWWA C151/A21.51 Ductile-Iron Pipe, Centrifugally Cast; 2009.
- I. AWWA C509 Resilient-Seated Gate Valves for Water Supply Service; 2009.
- J. AWWA C600 Installation of Ductile-Iron Water Mains and Their Appurtenances; 2010.
- K. AWWA C606 Grooved and Shouldered Joints; 2011.
- L. AWWA C900 Polyvinyl Chloride (PVC) Pressure Pipe, 4 In. Through 12 In. (100 mm Through 300 mm), for Water Transmission and Distribution; 2007.
- M. AWWA C907 Polyvinyl Chloride (PVC) Pressure Fittings for Water (4 In. Through 8 In.).

1.04 SUBMITTALS

- A. Product Data: Provide data on pipe materials, pipe fittings, valves and accessories.
- B. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.
- C. Project Record Documents: Record actual locations of piping mains, valves, connections, thrust restraints, and invert elevations. Identify and describe unexpected variations to subsoil conditions or discovery of uncharted utilities.

1.05 QUALITY ASSURANCE

A. Perform Work in accordance with municipality requirements.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Deliver and store valves in shipping containers with labeling in place.

PART 2 PRODUCTS

2.01 WATER PIPE

- A. Ductile Iron Pipe: AWWA C151 CL50:
 - 1. Fittings: Ductile iron, standard thickness.
 - 2. Joints: AWWA C111/A21.11, rubber gasket with rods.
- B. Copper Tubing: ASTM B88, Type K, annealed:
 - 1. Fittings: ASME B16.18, cast copper, or ASME B16.22, wrought copper.
 - 2. Joints: Compression connection or AWS A5.8M/A5.8, BCuP silver braze.

C. Trace Wire: Magnetic detectable conductor, clear plastic covering, imprinted with "Water Service" in large letters.

2.02 ACCESSORIES

- A. Backflow Preventer: Per the plans and as required by local municipality.
- B. Meter: Per the plans and as required by local municipality.

PART 3 EXECUTION

3.01 PREPARATION

- A. Remove scale and dirt on inside and outside before assembly.
- B. Prepare pipe connections to equipment with flanges or unions.

3.02 TRENCHING

- A. See the sections on excavation and fill for additional requirements.
- B. Hand trim excavation for accurate placement of pipe to elevations indicated.
- C. Form and place concrete for pipe thrust restraints at each change of pipe direction. Place concrete to permit full access to pipe and pipe accessories. Provide varied sq ft thrust restraint bearing on subsoil as per the Thrust Block Details.
- D. Backfill around sides and to top of pipe with cover fill, tamp in place and compact, then complete backfilling.

3.03 INSTALLATION - PIPE

- A. Establish elevations of buried piping to ensure not less than 5.5 ft of cover.
- B. Install pipe to indicated elevation to within tolerance of 1.0 inches.
- C. Route pipe in straight line, angular deflection greater than 5 degrees 21 seconds will not be permitted for 8 inch diameter pipe.
- D. Install pipe to allow for expansion and contraction without stressing pipe or joints.
- E. Prior to assembly the surfaces of the pipe shall be cleaned and lubricated.
- F. At times when pipe laying is not in progress, the open ends of the pipe shall be closed by a watertight plug or other means as approved by the Engineer.
- G. Install field lok restrained joint gaskets at pipe sections with extreme pitch as identified on project drawings.
- H. Install access fittings to permit disinfection of water system performed under Section 33 1300.
- I. Slope water pipe and position drains at low points.
- J. Install trace wire 6 inches above top of pipe; coordinate with Section 31 2323.

3.04 FIELD QUALITY CONTROL

- A. All pipe will be inspected on delivery and immediatey before being placed in the work, and such pipe not conforming to the requirements will be rejected. The Contractor shall furnish all labor necessary for handling the pipe during inspection and shall remove all rejected pipe from the Site. The Contractor shall be responsible to replace at his own expense all materials, which are defective in manufacture or damaged in handling after delivery.
- B. Pipes shall be tested for strength under a hydrostatic pressure of 150 pounds per square inch.
- C. Leakage shall be defined as the quantity of water that must be supplied into the pipe section being tested to maintain a pressure within 5 psi of the specified leakage test pressure after the pipe has been filled with water and the air in the pipeline expelled. No installation will be accepted if the leakage is greater than that determined by the formula:
 - $L = ND(P)^{(1/2)} / 7,400$
 - Where: L = allowable leakage, in gallons per hour
 - N = number of joints in the length of pipeline tested

D = nominal diameter of the pipe, in inches

- P = average test pressure during the leakage test, in pounds per square inch
- D. If tests indicate the Work does not meet specified requirements, remove defective portions of Work, place and retest at no cost to the Owner.

SECTION 33 1300

DISINFECTING OF WATER UTILITY DISTRIBUTION

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Disinfection of site domestic water lines and site fire water lines specified in Section 33 1116.
- B. Disinfection of building domestic water piping specified in Section 22 1005.

1.02 RELATED REQUIREMENTS

- A. Section 22 1005 Plumbing Piping: Disinfection of building domestic water piping system.
- B. Section 33 1116 Site Water Utility Distribution Piping.

1.03 REFERENCE STANDARDS

- A. AWWA B300 Hypochlorites; 2011.
- B. AWWA B301 Liquid Chlorine; 2010.
- C. AWWA B302 Ammonium Sulfate; 2010.
- D. AWWA B303 Sodium Chlorite; 2010.
- E. AWWA C651 Disinfecting Water Mains; 2005.

1.04 SUBMITTALS

- A. Certificate: From authority having jurisdiction indicating approval of water system.
- B. Disinfection report:
 - 1. Type and form of disinfectant used.
 - 2. Date and time of disinfectant injection start and time of completion.
 - 3. Test locations.
 - 4. Initial and 24 hour disinfectant residuals (quantity in treated water) in ppm for each outlet tested.
 - 5. Date and time of flushing start and completion.
 - 6. Disinfectant residual after flushing in ppm for each outlet tested.

1.05 QUALITY ASSURANCE

A. Testing Firm: Company specializing in testing potable water systems, approved by governing authorities of the State in which the Project is located.

PART 2 PRODUCTS

2.01 DISINFECTION CHEMICALS

A. Chemicals: AWWA B300, Hypochlorite, AWWA B301, Liquid Chlorine, AWWA B302, Ammonium Sulfate, and AWWA B303, Sodium Chlorite.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that piping system has been cleaned, inspected, and pressure tested.
- B. Schedule disinfecting activity to coordinate with start-up, testing, adjusting and balancing, demonstration procedures, including related systems.

3.02 DISINFECTION

- A. Use method prescribed by the applicable state or local codes, or health authority or water purveyor having jurisdiction, or in the absence of any of these follow AWWA C651.
- B. Provide and attach equipment required to perform the work.
- C. Inject treatment disinfectant into piping system.
- D. Maintain disinfectant in system for 24 hours.
- E. Flush, circulate, and clean until required cleanliness is achieved; use municipal domestic water.

F. Replace permanent system devices removed for disinfection.

SECTION 33 3111

SITE SANITARY UTILITY SEWERAGE PIPING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Sanitary sewerage drainage piping, fittings, and accessories.
- B. Connection of building sanitary drainage system to municipal sewers.

1.02 RELATED REQUIREMENTS

- A. Section 31 2316 Excavation: Excavating of trenches.
- B. Section 31 2323 Fill: Bedding and backfilling.
- C. Section 33 3213 Packaged Wastewater Pumping Stations.

1.03 REFERENCE STANDARDS

- A. ASTM A74 Standard Specification for Cast Iron Soil Pipe and Fittings; 2015.
- B. ASTM C564 Standard Specification for Rubber Gaskets for Cast Iron Soil Pipe and Fittings; 2014.
- C. ASTM D1785 Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Pipe, Schedules 40, 80, and 120; 2015.
- D. ASTM D2321 Standard Practice for Underground Installation of Thermoplastic Pipe for Sewers and Other Gravity-Flow Applications; 2014.
- E. ASTM D2729 Standard Specification for Poly(Vinyl Chloride) (PVC) Sewer Pipe and Fittings; 2011.
- F. ASTM D3034 Standard Specification for Type PSM Poly(Vinyl Chloride) (PVC) Sewer Pipe and Fittings; 2015.
- G. ASTM D3350 Standard Specification for Polyethylene Plastics Pipe and Fittings Material; 2014.

1.04 SUBMITTALS

- A. Product Data: Provide data indicating pipe, pipe accessories.
- B. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.
- C. Project Record Documents:
 - 1. Record location of pipe runs, connections, and invert elevations.
 - 2. Identify and describe unexpected variations to subsoil conditions or discovery of uncharted utilities.

PART 2 PRODUCTS

2.01 SEWER PIPE MATERIALS

- A. Plastic Pipe: ASTM D 2751, SDR 35, Acrylonitrile-Butadiene-Styrene (ABS) material for exterior locations as noted on plans; inside nominal diameter as indicated on plans, bell and spigot style rubber gasketed joint.
- B. Plastic Pipe: ASTM D 1785, Schedule 40, Poly(Vinyl Chloride) (PVC) material for exterior locations as noted on plans; inside nominal diameter as indicated on plans, bell and spigot style solvent sealed joint end.
- C. Plastic Pipe: ASTM D3350, SDR 11, High Density Polyethylene (HDPE) material; inside nominal diameter of indicated inches, with cell classification of 335434C or better, thermal butt fusion joints and fittings in accordance with manufacturer's recommendations; pipe and fittings same material utilizing transition fittings when connecting to existing piping.
- D. Fittings: Same material as pipe molded or formed to suit pipe size and end design, in required tee, bends, elbows, cleanouts, reducers, traps and other configurations required.

2.02 PIPE ACCESSORIES

A. Trace Wire: Magnetic detectable conductor, clear plastic covering, imprinted with "Sewer Service" in large letters.

2.03 BEDDING AND COVER MATERIALS

- A. Pipe Bedding Material: As specified in Section 31 2323.
- B. Pipe Cover Material: As specified in Section 31 2323.

PART 3 EXECUTION

3.01 GENERAL

A. Perform work in accordance with applicable code(s).

3.02 TRENCHING

- A. See Sections 312316 and 312323 for additional requirements.
- B. Hand trim excavation for accurate placement of pipe to elevations indicated.
- C. Backfill around sides and to top of pipe with cover fill, tamp in place and compact, then complete backfilling.

3.03 INSTALLATION - PIPE

- A. Verify that trench cut is ready to receive work and excavations, dimensions, and elevations are as indicated on layout drawings.
- B. Locations of existing piping shown shall be considered approximate. Contractor is responsible for determining exact location of existing piping to which he must make connections, relocate, replace or which he may disturb during earth moving operations, or which may be affected by his work in any way.
- C. Install pipe, fittings, and accessories in accordance with manufacturer's instructions. Seal watertight.
 - 1. Plastic Pipe: Also comply with ASTM D2321.
- D. Do not lay piping in water, unless approved by the Engineer. Ensure that the water level in the trench is at least 6 inches below the bottom of piping. Maintain a dry trench until jointing and backfilling are complete, unless otherwise specified in these specifications or approved by the Engineer.
- E. Lay pipe to slope gradients noted on layout drawings; with maximum variation from true slope of 1/8 inch in 10 feet.
- F. Piping shall be installed so that the barrel of the piping and not the joints, receives the bearing pressure from the trench bottom, or other bedding condition.
- G. No piping shall be brought into position until the preceding length, valve or fitting has been bedded and secured in place.
- H. Whenever pipe laying is not actively in progress, the open ends of the piping shall be closed by a temporary plug or cap to prevent soil, water and other foreign matter from entering the piping.
- I. Field cutting of piping, where required for making connections or inserting fittings, shall be made with a machine specially designed for cutting piping and in accordance with the manufacturer's instructions. Cuts shall be carefully done, without damage to piping, so as to leave a smooth end at right angles to the axis of the piping. Cut ends shall be tapered and sharp edges filed off smooth. Flame cutting will not be permitted. Piping damaged by the Contractor by improper or careless methods of cutting shall be replaced or repaired at his expense.
- J. Blocking under piping will not be permitted unless specifically approved by the Engineer for special conditions.
- K. Provide and install all necessary thrust restraint for force mains by use of concrete thrust blockes as required or directed by the engineer.
- L. Connect to municipal sewer system and pump station .

M. Install trace wire 6 inches above top of pipe; coordinate with Section 31 2323.

3.04 FIELD QUALITY CONTROL

- A. Perform field inspection and testing in accordance with Section 01 4000.
- B. If tests indicate Work does not meet specified requirements, remove Work, replace and retest at no cost to Owner.
- C. General
 - 1. Notify Engineer 48 hours in advance of testing.
 - 2. Provide all testing apparatus including pumps, hoses, gauges, fittings, temporary bulkheads, plugs, compressors and miscellaneous other required items.
 - 3. Provide temporary blocking and bracing or approved thrust and joint restraint to prevent joint separation and pipe movement during testing.
 - 4. All blind flanges, bulkheads, plugs and end caps shall be in place during testing.
 - 5. Unless otherwise approved, conduct all tests in the presence of the Engineer and in the presence of local authorities having jurisdiction, if required by them.
 - 6. Water Source:
 - a. Contractor shall make all arrangements for and bear all expenses for providing all water for testing, flushing and other water uses. The source of the water shall be subject to the approval of the Engineer.
 - b. The point of introduction of water for conducting tests shall be subject to the approval of the Engineer.
 - 7. All costs for tests shall be included in the contractor's bid for pipe items.
 - 8. Sections of piping which fail to pass the tests specified shall have defects located and repaired or replaced, and re-tested until acceptance.
- D. Required Tests for Sewers
 - 1. The following tests are to be performed after all the sewer pipe has been installed and prior to final acceptance.
 - a. Low Pressure Air Test
 - b. Corroborative Infiltration/Exfiltration Test
 - c. Television Inspection, if required based on results of (a) and (b) above
 - d. The tests shall be performed prior to placement of pavement, or other construction which may, in the opinion of the Engineer, be detrimentally effected by excavation required for repairs.
 - e. The tests shall be performed only after the backfill has been in place to its full depth for a minimum of 30 days.
 - f. Prior to making tests, the contractor shall submit details of his testing procedures with a description of methods and equipment he proposes to use to the Engineer for approval. The contractor shall furnish all necessary labor, equipment, water, water tight bulkheads, rodding machine, closed circuit television equipment, generator, pumps and all else necessary to carry out the required tests. Contractor to provide Engineer with testing records for all completed testing.
 - g. Air Test
 - 1) Air test all sewer pipe in conformance with ASTM C828.
 - Test pressures specified shall be commensurately increased for groundwater elevations above the pipe, in accordance with Uni-Bell PVC Pipe Association standards.
 - 3) Method:
 - (a) Clean and wet thoroughly the inside of the pipe before test is performed.
 - (b) Insert test plugs in ends of pipe to be tested.
 - (c) Slowly fill the pipe with air to a pressure of 4 psig. Maintain pressure between 4 and 3.5 psig for at least two minutes for temperature stabilization.
 - (d) Check all plugs for tightness.
 - (e) With a pressure of approximately 4 psig in pipe, disconnect air supply.

- (f) Allow pressure to decrease to 3.5 psig.
- (g) Determine elapsed time for pressure drop from 3.5 psig to 2.5 psig.
- (h) The line is considered acceptable if the time for the pressure to decrease from 3.5 psig to 2.5 psig is not less than the amount determined by the following table, except that reinforced concrete pipe shall be half this duration.
- 4) MINIMUM ACCEPTANCE TIMES

Pipe Diameter	Minimum Time	Length for Min	Time x Length
(in.)	for Longer (min:sec)	Time (ft.)	(sec.)
4	3:45	597	0.380L
6	5:40	398	0.854L
8	7:34	298	1.520L
10	9:26	239	2.374L
12	11:20	194	3.418L
15	14:10	159	5.342L
18	17:00	133	7.692L
21	19:50	114	10.470L
24	22:40	99	13.674L
27	25:30	88	17.306L
30	28:20	80	21.366L
33	31:10	72	25.852L
36	34:00	66	30.768L

Where L is the excess test length to be the length for minimum.

- h. If the leakage in the section tested exceeds the specified amount, the contractor shall make the necessary repairs or replacements required to reduce the leakage to within the specified limits and the test shall be repeated until the leakage requirements are met.
 - 1) The contractor may, at his option, complete infiltration/exfiltration tests on all sewer pipe in lieu of the air test.
- E. Corroborative Infiltration/Exfiltration Test
 - 1. Where air testing is used for leakage testing, corroborative infiltration/exfiltration testing shall be performed for sections that do not pass the air testing.
 - 2. The three (3) sewer sections which indicate the greatest rate of air loss shall be tested.
 - 3. If the infiltration/exfiltration tests prove acceptable, no additional testing is required. However, if the air test is not verified by the corroborative testing, complete infiltration/exfiltration testing shall be required as the basis for final acceptance.
 - 4. Infiltration Test
 - a. Use the infiltration test when ground water levels are at least two feet above the top of the pipe for the lengths of the section tested during the periods of the tests.
 - b. Measure leakage by a watertight well, weir, or other approved means installed at the lower end of each section under test.
 - c. Test for a period of at least 3 days.
 - d. Total leakage of any section tested shall not exceed the rate of 200 gallons or 50 gallons per mile of pipe per 24 hours per inch of nominal internal diameter, for concrete and PVC pipe respectively.
 - e. If the leakage in the system tested exceeds the specified amount, the contractor shall make the necessary repairs or replacements required to reduce the leakage to within the specified limits and the test shall be repeated until the leakage requirements are met.
 - 5. Exfiltration Test
 - a. Use the exfiltration test if the ground water levels are less than two (2) feet above the top of the pipe for the lengths of the section tested during the period of the test.

- b. Fill the pipe and manhole with water to provide a positive differential head of at least two feet on the top of the pipe (or the top of the groundwater) at the highest point of the pipeline under test.
- c. During exfiltration testing the maximum internal pipe pressure at the lowest end shall not exceed 25 feet of water.
- d. The amount of water added to maintain this head shall be the leakage.
- e. Test for a period of at least four hours.
- f. Total leakage of any section tested shall not exceed the rate of 200 gallons or 50 gallons per mile of pipe per 24 hours per inch of nominal internal diameter for concrete and PVC pipe respectively.
- g. If the leakage in the section tested exceeds the specified amount, the contractor shall make the necessary repairs or replacements required to reduce the leakage to within the specified limits and the test shall be repeated until the leakage requirements are met.
- 6. On steep grades it may be necessary to place plugs in the pipe between manholes to avoid excessive pressure in the sewer pipe and against the caps at the end of house and building connections.
- F. Television Inspection
 - 1. If a section of sewer has failed the air and exfiltration/infiltration tests, inspection by closed-circuit television shall be made by the contractor at no additional cost to the owner so that the defective section of sewer can be located and repaired.
 - 2. The Engineer will notify the contractor in writing, which completed sewers shall be inspected by closed-circuit television and the televising inspection shall commence within 15 days of the Engineer's written notification.
 - 3. Notify the Engineer at least 5 days prior to commencement of television inspection.
 - 4. No television inspection shall be performed without the Engineer or his representative present to witness the inspection.
 - 5. Provide the Engineer with three (3) copies of a report of the televising inspection of each section of completed sewer inspected. The report shall show the exact location and extent of all cracks, loose joints, holes, vertical and horizontal, misalignment, faulty service connections, caved-in pipe, points of infiltration, obstructions, debris and all else detrimental to the proper functioning and service of the completed sewer. Photographs of the actual television inspection shall be included in the report showing all the above conditions found, at all wyes, tees and laterals and as directed by the Engineer. The Engineer will review the report and will instruct the contractor, to repair any conditions which, in the opinion of the Engineer, are detrimental to the proper function and service of the sewer. The Engineer will select the portions of the sewer to be inspected in this manner.
- G. Visual Inspection: Prior to final acceptance, a visual inspection of all appurtenance structures, i.e. manholes, chambers, etc., will be required. Any visual leaks, regardless of their magnitude shall be repaired by the contractor.
- H. The various pipelines in which the Air and Vacuum Sewer valves and appurtenances are to be installed are shall be field tested. During these tests any defective valve or appurtenance shall be adjusted, removed and replaced, or otherwise made acceptable to the Engineer.

I.

3.05 PROTECTION

A. Protect pipe and bedding cover from damage or displacement until backfilling operation is in progress.

SECTION 33 3600 UTILITY SEPTIC TANKS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Septic grease trap tank.

1.02 RELATED REQUIREMENTS

A. Section 31 2323 - Fill: General requirements for backfilling piping trenches.

1.03 REFERENCE STANDARDS

A. ASTM D2729 - Standard Specification for Poly(Vinyl Chloride) (PVC) Sewer Pipe and Fittings; 2011.

1.04 SUBMITTALS

- A. Shop Drawings: Indicate plan, location and inverts of filter field, inverts of connecting piping.
- B. Product Data: Provide data on tank accessories.

PART 2 PRODUCTS

2.01 SEPTIC TANK AND DISTRIBUTION BOX

- A. Septic Tank: Reinforced precast concrete construction, 4,000 psi 28 day minimum strength, concrete partitioned chambers, concrete lid with lift rings, vent, inlet inspection hole, inlet turned down minimum 12 inches below effluent level.
- B. Tank Capacity: 750 gallon.

2.02 CONNECTING PIPE MATERIALS

- A. Plastic Pipe (PVC): ASTM D2729; nominal inside diameter of indicated inch, bell and spigot solvent sealed joints.
- B. Fittings: Same material as pipe, tee bends, elbows, cleanouts, reducers, ends to suit pipe joint.

2.03 BEDDING AND BACKFILL MATERIALS

- A. Provide bedding and backfill materials as specified in Section 31 2323 and as follows:
- B. Tank Bedding Material: Granular fill.
- C. Tank Backfill Material: Granular fill.
- D. Connecting Piping Bedding Material: Granular fill.
- E. Connecting Piping Backfill Material: Granular fill.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that building sanitary sewer connection, size, location and invert are as indicated.

3.02 TANK INSTALLATION

- A. Hand trim excavation for accurate placement of tank to elevations indicated.
- B. Place bedding material level in one continuous layer not exceeding 6 inches compacted depth, compact to 95 percent.
- C. Install septic tank and distribution box and related components on bedding in accordance with manufacturer's instructions.
- D. Backfill around sides of tank, tamped in place and compacted to 95 percent.

3.03 CONNECTING PIPING INSTALLATION

- A. Connect outlet between building sanitary piping and tank, and between tank and sewer manhole.
- B. Slope piping to each successive component, minimum of 1/4 inch per foot.

C. Cover pipe with backfill, sides and top. Place geotextile fabric over cover prior to backfilling.

3.04 INSTALLATION - FILTER FIELD

- A. Place field pipe header sloping down from header inlet, 1/8 inch per foot.
- B. Place filter drain bedding 18 inch thick, tamp compact firm. Establish slope of bed to suit established invert elevations.
- C. Place pipe sloping away from header minimum of 1/16 inch per foot, with perforations facing down.
- D. Wrap pipe joints with paper, cover with filter drain bedding material, sides and top. Place geotextile fabric over cover prior to backfilling.
- E. Cover entire field with filter drain backfill material, 12 inch thick, lightly compacted; level for subsequent placement of soil cover.

SECTION 33 4111

SITE STORM UTILITY DRAINAGE PIPING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Storm drainage piping, fittings, and accessories.

1.02 RELATED REQUIREMENTS

- A. Section 31 2316 Excavation: Excavating of trenches.
- B. Section 31 2323 Fill: Bedding and backfilling.

1.03 REFERENCE STANDARDS

- A. ASTM D1785 Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Pipe, Schedules 40, 80, and 120; 2015.
- B. ASTM D2729 Standard Specification for Poly(Vinyl Chloride) (PVC) Sewer Pipe and Fittings; 2011.

1.04 SUBMITTALS

- A. See Section 01 3000 Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data indicating pipe, pipe accessories.
- C. Manufacturer's Installation Instructions: Indicate special procedures required to install Products specified.
- D. Project Record Documents:
 - 1. Record location of pipe runs, connections, catch basins, cleanouts, and invert elevations.
 - 2. Identify and describe unexpected variations to subsoil conditions or discovery of uncharted utilities.

PART 2 PRODUCTS

2.01 STORM SEWER PIPE

- A. HDPE Pipe: Equal to ADS N-12 Soil Tight Pipe
 - 1. 4"-10" shall meet AASHTO M252, Type S.
 - 2. 12"-60" shall meet AASHTO M294, Type S or ASTM F2306.
- B. Pipe shall be joined by gasketed bell & spigot construction, where necessary joints may be assembled using coupling bands covering at least two full corrugations on each end of the pipe. Standard connections shall meet or exceed the soil-tight requirements of AASHTO M252, AASHTO M294, or ASTM F2306. Gasketed connections shall incorporate a closed-cell synthetic expanded rubber gasket meeting the requirements of ASTM D1056 Grade 2A2. Gaskets, when applicable, shall be installed by the pipe manufacturer.
- C. Fittings shall conform to AASHTO M252, AASHTO M294, or ASTM F2306.
- D. Virgin materials for pipe and fitting production shall be high density polyethylene conforming with the minimum requirements of cell classification 424420C for 4"-10" diameters, or 435400C for 12"-60" diameters, as defined and described in the latest version of ASTM D3350, except that carbon black content should not exceed 4%. The 12"-60" virgin pipe material shall comply with the notched constant ligament-stress (NLCS) test as specified in Section 9.5 and 5.1 of AASHTO M294 and ASTM F2306 respectively.

2.02 PIPE ACCESSORIES

- A. Pipe Joints: Mechanical clamp ring type, stainless steel expanding and contracting sleeve, neoprene ribbed gasket for positive seal.
- B. Fittings: Same material as pipe molded or formed to suit pipe size and end design, in required tee, bends, elbows, cleanouts, reducers, traps and other configurations required.
- C. Rodent Protector: Bar guard by ADS.

2.03 CATCH BASIN, TRENCH DRAIN, CLEANOUT, AND AREA DRAIN COMPONENTS

- A. Lids and Drain Covers: Cast iron with cast iron frame.
 - 1. Yard Drain:
 - a. Lid Design: Linear grill.
 - b. Nominal Lid and Frame Size: 18 inches diameter.
- B. PVC yard drain structure of 18" nominal diameter with height as required to provide 12" sump below invert elevation. Inlet fittings to be installed with waterproof joints.

2.04 BEDDING AND COVER MATERIALS

- A. Bedding: As specified in Section 31 2323 and as indicated.
- B. Cover: As specified in Section 31 2323 and as indicated.

PART 3 EXECUTION

3.01 TRENCHING

- A. See Section 31 2316 Excavation and Section 31 2323 Fill for additional requirements.
- B. Hand trim excavation for accurate placement of pipe to elevations indicated.
- C. Backfill around sides and to top of pipe with cover fill, tamp in place and compact, then complete backfilling.

3.02 INSTALLATION - PIPE

- A. Verify that trench cut is ready to receive work and excavations, dimensions, and elevations are as indicated on layout drawings.
- B. Lay pipe to slope gradients noted on layout drawings; with maximum variation from true slope of 1/8 inch in 10 feet.

3.03 INSTALLATION - CATCH BASINS, TRENCH DRAINS AND CLEANOUTS

- A. Form bottom of excavation clean and smooth to correct elevation with minimum 4" compacted layer of 3/4" to 1-1/2" crushed stone.
- B. Establish elevations and pipe inverts for inlets and outlets as indicated.
- C. Mount lid and frame level, secured to PVC structure to elevation indicated by manufacturer's recommended methods.
- D. Backfill structure with 3/4" to 1-1/2" crushed stone compacted in maximum 8" lifts.

3.04 PROTECTION

- A. Protect pipe and bedding cover from damage or displacement until backfilling operation is in progress.
- B. Protect outlet from erosive pipe discharge with installation of riprap in accordance with the project plans and details.
- C. Protect underground tank from damage and traffic until backfilling operation is completed.

SECTION 33 5111 SITE GAS DISTRIBUTION

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Pipe and fittings for propane gas distribution on site outside buildings.
- B. Propane storage tanks.

1.02 RELATED REQUIREMENTS

A. Section 03 3000 - Cast-in-Place Concrete: Foundations for storage tanks.

1.03 REFERENCE STANDARDS

- A. ASME B16.18 Cast Copper Alloy Solder Joint Pressure Fittings; 2012.
- B. ASME B16.22 Wrought Copper and Copper Alloy Solder-Joint Pressure Fittings; 2013.
- C. ASME BPVC-VIII-1 Boiler and Pressure Vessel Code, Section VIII, Division 1 Rules for Construction of Pressure Vessels; 2015.
- D. ASTM A53/A53M Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless; 2012.
- E. ASTM A234/A234M Standard Specification for Piping Fittings of Wrought Carbon Steel and Alloy Steel for Moderate and High Temperature Service; 2015.
- F. ASTM B88 Standard Specification for Seamless Copper Water Tube; 2014.
- G. ASTM B88M Standard Specification for Seamless Copper Water Tube (Metric); 2013.
- H. AWS A5.8M/A5.8 Specification for Filler Metals for Brazing and Braze Welding; 2011-AMD 1.
- I. NFPA 58 Liquefied Petroleum Gas Code; 2014.

1.04 SUBMITTALS

A. Product Data: Provide data on pipe materials, pipe fittings, valves and accessories.

PART 2 PRODUCTS

2.01 PIPE

- A. Steel Pipe Above Ground: ASTM A53/A53M, Schedule 40 black:
 - 1. Fittings: ASME B16.3 malleable iron, ASME B16.11 forged steel, or ASTM A234/A234M wrought steel welding type.
 - 2. Joints: Threaded.
- B. Copper Tube Below Ground: ASTM B88 (ASTM B88M), Type K (A), internally tinned:
 - 1. Fittings: ASME B16.18, cast copper, or ASME B16.22, wrought copper; internally tinned.
 - 2. Joint: AWS A5.8M/A5.8 BCuP silver brazed.

2.02 GAS COCKS AND VALVES

- A. Gas Cock and Pressure Regulating Valves: Manufacturer's name and pressure rating marked on valve body.
- B. Pressure Regulating Valves: Single stage, malleable iron body, corrosion-resistant, pressure regulator with atmospheric vent, elevation compensator; with threaded ends for 2 inch and smaller, flanged ends larger than 2 inch.

2.03 PROPANE STORAGE TANKS

- A. Tank: NFPA 58; Closed, welded steel, tested and stamped in accordance with ASME BPVC-VIII-1; minimum 250 psig rating; cleaned, prime coated with one coat of rust inhibitive paint and two coats of high gloss enamel; supplied with steel support saddles, pressure gage; tapping for installation of piping and accessories.
 - 1. Capacity: 1,000 gallons.
- B. Provide relief valve, shutoff valve, pressure regulator, pressure gage and removable protection cover.

PART 3 EXECUTION

3.01 TRENCHING

A. Backfill around sides and to top of pipe with cover fill, tamp in place and compact, then complete backfilling.

3.02 INSTALLATION - PIPING

- A. Group piping with other site piping work whenever practical.
- B. Route piping in straight line.
- C. Install piping to conserve space and not interfere with use of site space.
- D. Install piping to allow for expansion and contraction without stressing pipe or joints.
- E. Install cocks and other fittings.
- F. Establish elevations of buried piping to ensure not less than 24 inches of cover in non-travelled areas and 48 inches of cover in driveways and parking areas.
- G. Center and plumb valve box over valve. Set box cover flush with finished ground surface. Prevent shock or stress from being transmitted through valve box to valve.

3.03 PROPANE TANK INSTALLATION

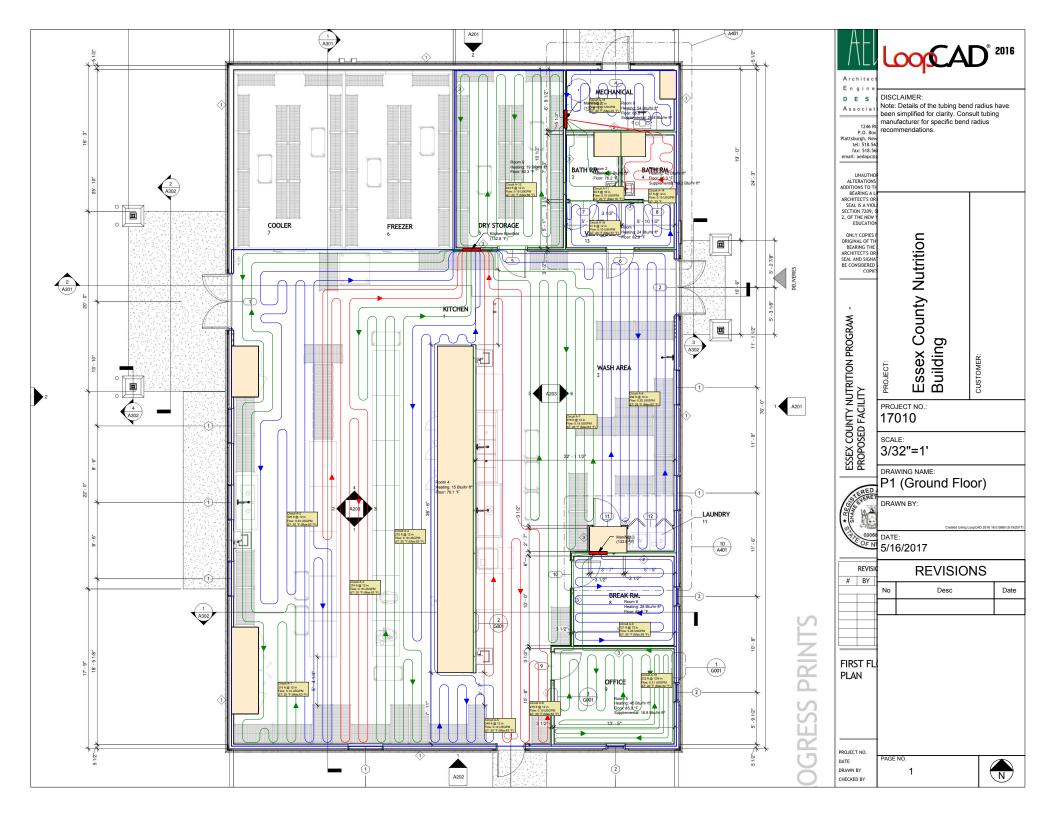
- A. Place tank legs on concrete footings, level within tolerance of 2 inches. Provide footings in accordance with Section 03 3000.
- B. Install piping, shutoff valve and pressure gage.



Architectural & Engineering **DESIGN** Associates P.C.

APPENDIX A

* LOOP CAD - RADIANT IN-FLOOR HEAT CALCULATIONS



Heating System Summary

Project #:17010 May 16, 2017

Project Information											
Project #:	17010		Not	es:							
Name:	Essex County Nutrition Building										
Location:	Westport, New York										
Project Su	ummary										
Load Calculation Method: Floorplans / Levels:		User Entered (Manual)	Total Circuit Lengths:		Component Losses:	58,415 Btu/h					
			Barrier PEX 1/2"	3,024 ft	Radiant Back Losses:	10,605 Btu/h					
Ground F	loor	3,268 ft ²			Total Heating Load:	69,020 Btu/h					
Total Area:		3,268 ft ²	Total RH Circuits:	15							
			Total Manifolds:	3	Radiant Heating:	53,085 Btu/h					
			Total Zones:	3	Radiant Back Losses:	10,605 Btu/h					
					Other:	5,330 Btu/h					
			Fluid Type:	100% Water	Total Heating Load:	69,020 Btu/h					
			Total Tubing Volume:	27.83 USG							

Zone Heating Summary

Zone #	Gross Area	Construction	Heating Types	RH ¹ Circuits	Total Tubing	Manifolds	Flowrate	Head Loss (Circuit Only)	RH Load ²	Supplemental	Zone Load ³
Zone 101	502	Embedded Slab	RH,FC	5	491	1	0.74	0.5	11,276	2,873	14,149
Zone 102	2,484	Embedded Slab	RH	8	2,180	1	1.44	1.0	43,637	0	43,637
Zone 103	282	Embedded Slab	RH,FC	2	353	1	0.57	1.1	8,776	2,457	11,233

(1) Complete circuits assigned to this zone. (2) Total Radiant heating load for rooms in zone, including all panel backloss. (3) Total load for zone including all panel backloss. Does not account for reclaimed loss within building envalope.

Room Heating Summary (By Construction Type)

Embedded Slab

Zone #	Room Name	Heating Type	Floor Area	Heated Area	Manifold #	Tube Size	RH Circuits ¹	Tube Spacing	Tubing In Room	Floor Cover RV	Required Temp.	Unit RH Load	RH Load ²	Supplemental	Total Load ³
Zone 101	Room 1	RH	61	61	Manifold 2	1/2"	1	12	63	0.5	122	28.8	1,757	0	1,757
Zone 101	Room 2	RH	43	30	Manifold 2	1/2"	1	18	20	0.5	104	13.5	411	0	411
Zone 101	Room 3	RH, FC	43	36	Manifold 2	1/2"	1	12	31	0.5	133	33.8	1,221	780	2,000
Zone 101	Room 8	RH, FC	78	73	Manifold 2	1/2"	1	12	77	0.5	132	34.7	2,530	2,093	4,623
Zone 101	Room 9	RH, FC	235	235	Manifold 2	1/2"	1	12	236	0.5	114	22.8	5,358	0	5,358
Zone 102	Room 4	RH	2,424	2,190	Kitchen Manifold	1/2"	8	12	2,101	0.5	111	19.9	43,637	0	43,637
Zone 103	Room 5	RH, FC	146	146	Manifold 3	1/2"	1	6/12	202	0.5	126	33.8	4,936	2,457	7,394
Zone 103	Room 6	RH	114	114	Manifold 3	1/2"	1	12	136	0.5	129	33.6	3,840	0	3,840

(1) Circuits assigned to this room. Leaders from other rooms may not be counted. (2) Includes panel backloss. (3) Total load including panel backloss. Does not account for reclaimed loss within building envalope.

Manifold Summary

Manifold Name	# Zones	# Circuits	Flowrate	Head Loss ¹	Required Temp.	Supplied Temp.	Temp Drop	Manifold Type	Control Type	# Actuators	S/R Length ²	S/R Pipe
Kitchen Manifold	1	8	1.44	2.0	111	133	63	None Selected	Manifold	0	-	-
Manifold 2	1	5	0.74	1.5	133	133	58	None Selected	Manifold	0	-	-
Manifold 3	1	2	0.57	2.1	129	133	34	None Selected	Manifold	0	-	-
Total	3	15	2.74	2.1	133	-	-	-	-	0	-	-

(1) Total Head loss includes manifold, circuits and supply/return piping if specified. (2) S/R Length = one way

Disclaimers

The calculated values shown in this report are based on the data input by the user of the software. Inaccurate or erroneous data input will result in inaccurate or erroneous results. You are strongly advised to review all input data carefully, and to have the calculated results reviewed by an experienced heating professional to ensure reasonableness and suitability for your application.

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Length = ft Area = ft²Temperature = °FFlowrate = USGPMHeat Loss = Btu/hrUnit Heat Loss = Btu/hrUnit Heat Loss = Btu/hrRv = hrft²·°F/btuHead Loss = ft waterRH = Radiant Floor HeatingBB = BaseboardFA = Forced AirOTH = Other HeatingSM = SnowmeltN = Not Heated

Created Using LoopCAD 2016 (5/19/2017) Version:16.0.0880 (Trial)

Heating System Detail

Project #:17010 May 16, 2017

69,020 Btu/hr

Project	Information					
Project #:	17010		Not	es:		
Name:	Essex County Nutrition Building					
Location:	Westport, New York					
-	Conditions and Summa	•				
Load Calcul Floorplans /	lation Method: / Levels:	User Entered (Manual)	Total Tubing Lengths: Barrier PEX 1/2"	3,024 ft	Component Losses: Radiant Back Losses:	58,415 Btu/h 10,605 Btu/h
Load Calcu	lation Method: / Levels:	•	00	3,024 ft 15	•	,
Load Calcul Floorplans / Ground I	lation Method: / Levels:	User Entered (Manual) 3,268 ft ²	Barrier PEX 1/2" Total RH Circuits: Total Manifolds:	15 3	Radiant Back Losses: Total Heating Load: Radiant Heating:	10,605 Btu/h 69,020 Btu/h 53,085 Btu/h
Load Calcul Floorplans / Ground I	lation Method: / Levels:	User Entered (Manual) 3,268 ft ²	Barrier PEX 1/2" Total RH Circuits:	15	Radiant Back Losses: Total Heating Load:	10,605 Btu/h 69,020 Btu/h

100% Water

27.83 USG

Total Heating Load:

Fluid Type:

Total Tubing Volume: Note that this project has rooms that may require a supplemental heat supply to meet the design load.

Zone Heating Summary

Zone #	Area	Heating Types	RH Circuits	Flowrate	Head Loss	Supplemental	Rooms
101	502	RH,FC (M)	5	0.74	1.5	2,873	Room 1, Room 2, Room 3, Room 8, Room 9
102	2,484	RH (M)	8	1.44	2.0	0	Room 4
103	282	RH,FC (M)	2	0.57	2.1	2,457	Room 5, Room 6
Total	3,268	RH,FC (M)	15	2.74	2.1	5,330	

*RH Loads include internal panel back loss that may not be included in the project total.

Room Heating Summary

Ground Floor

Room 1							
Total Area:	68 ft ²	Radiant Heating:			Load/Loss Summary:		
Heated by:	RH (M)	Heated Area:	61	ft²	Room Design Load:	1,464	Btu/hr
Room Temperature:	70 °F	Tubing in Floor:	91	ft			
Floor Covering (Rv):	0.5	Circuits in Room:	1		Radiant Load:	1,757	Btu/hr
		Tube Spacing:	12		Baseboard Load:	0	Btu/hr
		Required Surface Temp:	83	°F	Forced Air Load	0	Btu/hr
		Required Water Temp:	122	°F	Other Load:	0	Btu/hr
		Est. Peak Output:	1,535	Btu/hr			
					Radiant Back Loss:	293	Btu/hr
					Recovered Back Loss:	0	Btu/hr
					Total Heat Loss:	1,757	Btu/hr
Room 2							
Total Area:	47 ft ²	Radiant Heating:			Load/Loss Summary:		
Heated by:	RH (M)	Heated Area:	30	ft²	Room Design Load:	342	Btu/hr
Room Temperature:	70 °F	Tubing in Floor:	30	ft			
Floor Covering (Rv):	0.5	Circuits in Room:	1		Radiant Load:	411	Btu/hr
		Tube Spacing:	18		Baseboard Load:	0	Btu/hr
		Required Surface Temp:	76	°F	Forced Air Load	0	Btu/hr
		·	76 104		Forced Air Load Other Load:		Btu/hr Btu/hr
		Required Surface Temp:	104				
		Required Surface Temp: Required Water Temp:	104	°F		0	
		Required Surface Temp: Required Water Temp:	104	°F	Other Load:	0 68	Btu/hr

Length = ft Area = ft² Temperature = °F Flowrate = USGPM Heat Loss = Btu/hr Unit Heat Loss = Btu/hr·ft² Rv = hr·ft²·°F/btu Head Loss = ft water RH = Radiant Floor Heating BB = Baseboard FA = Forced Air OTH = Other Heating SM = Snowmelt N = Not Heated

Room 3						
Total Area:	49 ft ²	Radiant Heating:		Load/Loss Summary:		
Heated by:	RH,FC (M)	Heated Area:	36 ft ²	Room Design Load:	1,017	Btu/hr
Room Temperature:	70 °F	Tubing in Floor:	57 ft			
Floor Covering (Rv):	0.5	Circuits in Room:	1	Radiant Load:	1,221	Btu/hr
		Tube Spacing:	12	Baseboard Load:	0	Btu/hr
		Required Surface Temp:	85 °F	Forced Air Load	0	Btu/hr
		Required Water Temp:	133 °F	Other Load:	780	Btu/hr
		Est. Peak Output:	1,017 Btu/hr			
				Radiant Back Loss:	203	Btu/hr
		Supplemental Req'd:	780 Btu/hr	Recovered Back Loss:	0	Btu/hr
				Total Heat Loss:	2,000	Btu/hr
Room 4						
Total Area:	2,484 ft ²	Radiant Heating:		Load/Loss Summary:		
Heated by:	RH (M)	Heated Area:	2,190 ft ²	Room Design Load:	36,364	Btu/hr
Room Temperature:	70 °F	Tubing in Floor:	2,180 ft			
Floor Covering (Rv):	0.5	Circuits in Room:	8	Radiant Load:	43,637	Btu/hr
		Tube Spacing:	12	Baseboard Load:	0	Btu/hr
		Required Surface Temp:	79 °F	Forced Air Load	0	Btu/hr
		Required Water Temp:	111 °F	Other Load:	0	Btu/hr
		Est. Peak Output:	37,740 Btu/hr			
				Radiant Back Loss:	7,273	Btu/hr
				Recovered Back Loss:	0	Btu/hr
				Total Heat Loss:	43,637	Btu/hr
Room 5						
Total Area:	158 ft²	Radiant Heating:		Load/Loss Summary:		
Heated by:	RH,FC (M)	Heated Area:	146 ft ²	Room Design Load:	4,114	Btu/hr
Room Temperature:	70 °F	Tubing in Floor:	232 ft			
Floor Covering (Rv):	0.5	Circuits in Room:	1	Radiant Load:	4,936	Btu/hr
		Tube Spacing:	6/12	Baseboard Load:	0	Btu/hr
		Required Surface Temp:	85 °F	Forced Air Load	0	Btu/hr
		Required Water Temp:	126 °F	Other Load:	2,457	Btu/hr
		Est. Peak Output:	4,114 Btu/hr			
				Radiant Back Loss:	823	Btu/hr
		Supplemental Req'd:	2,457 Btu/hr	Recovered Back Loss:	0	Btu/hr
				Total Heat Loss:	7,394	Btu/hr

Length = ft Temperature = $^{\circ}F$ Flowrate = USGPM Heat Loss = Btu/hr Unit Heat Loss = Btu/hr·ft² Rv = hr·ft²· $^{\circ}F$ /btu Head Loss = ft water RH = Radiant Floor Heating BB = Baseboard FA = Forced Air OTH = Other Heating SM = Snowmelt N = Not Heated

Room 6						
Total Area:	123 ft²	Radiant Heating:		Load/Loss Summary:		
Heated by:	RH (M)	Heated Area:	114 ft ²	Room Design Load:	3,200	Btu/hr
Room Temperature:	70 °F	Tubing in Floor:	121 ft			
Floor Covering (Rv):	0.5	Circuits in Room:	1	Radiant Load:	3,840	Btu/hr
		Tube Spacing:	12	Baseboard Load:	0	Btu/hr
		Required Surface Temp:	85 °F	Forced Air Load	0	Btu/hr
		Required Water Temp:	129 °F	Other Load:	0	Btu/hr
		Est. Peak Output:	3,226 Btu/hr			
				Radiant Back Loss:	640	Btu/hr
				Recovered Back Loss:	0	Btu/hr
				Total Heat Loss:	3,840	Btu/hr
Room 8						
Total Area:	88 ft ²	Radiant Heating:		Load/Loss Summary:		
Heated by:	RH,FC (M)	Heated Area:	73 ft ²	Room Design Load:	2,119	Btu/hr
Room Temperature:	70 °F	Tubing in Floor:	70 ft			
Floor Covering (Rv):	0.5	Circuits in Room:	1	Radiant Load:	2,530	Btu/hr
		Tube Spacing:	12	Baseboard Load:	0	Btu/hr
		Required Surface Temp:	85 °F	Forced Air Load	0	Btu/hr
		Required Water Temp:	132 °F	Other Load:	2,093	Btu/hr
		Est. Peak Output:	2,119 Btu/hr			
				Radiant Back Loss:	411	Btu/hr
		Supplemental Req'd:	2,093 Btu/hr	Recovered Back Loss:	0	Btu/hr
				Total Heat Loss:	4,623	Btu/hr
Room 9						
Total Area:	251 ft ²	Radiant Heating:		Load/Loss Summary:		
Heated by:	RH,FC (M)	Heated Area:	235 ft ²	Room Design Load:	4,465	Btu/hr
Room Temperature:	70 °F	Tubing in Floor:	243 ft			
Floor Covering (Rv):	0.5	Circuits in Room:	1	Radiant Load:	5,358	Btu/hr
		Tube Spacing:	12	Baseboard Load:	0	Btu/hr
		Required Surface Temp:	80 °F	Forced Air Load	0	Btu/hr
		Required Water Temp:	114 °F	Other Load:	0	Btu/hr
		Est. Peak Output:	4,465 Btu/hr			
				Radiant Back Loss:	893	Btu/hr
		Supplemental Req'd:	0 Btu/hr	Recovered Back Loss:	0	Btu/hr
				Total Heat Loss:	5.358	Btu/hr

Length = ft Area = ft²Temperature = °FFlowrate = USGPMHeat Loss = Btu/hrUnit Heat Loss = Btu/hrHead Loss = ft waterRH = Radiant Floor HeatingBB = BaseboardFA = Forced AirOTH = Other Heating

 $Rv = hr \cdot ft^2 \cdot F/btu$ SM = Snowmelt N = Not Heated Created Using LoopCAD 2016 (5/19/2017) Version:16.0.0880 (Trial)

See end of report for important Notes and Disclaimers.

Radiant Heating Details

Manifold Summary

Manifold Name	Zones	Circuits	Flowrate	Head Loss ¹	Required Temp.	Supplied Temp.	Temp Drop	Manifold Type	Control Type	Actuators	S/R Length ²	S/R Pipe
Kitchen Manifold	1	8	1.44	2.0	111	133	20 (63)	None Selected	Manifold	0	-	-
Manifold 2	1	5	0.74	1.5	133	133	20 (58)	None Selected	Manifold	0	-	-
Manifold 3	1	2	0.57	2.1	129	133	20 (34)	None Selected	Manifold	0	-	-
Total	3	15	2.74	2.1	133	-	-	-	-	0	-	-

'Total Head loss includes manifold, circuits and supply/return piping if specified., 2S/R Length = one way

Tubing Circuit Details

Kitchen Manifold

Circuit	Rooms Served	Total Length	Tube Spacing	Area Covered	Tubing	Flowrate	Head Loss**	Temp Drop	Load	Actuator
A-1	Room 4	216	12	224	Barrier PEX 1/2"	0.14	0.3	20 (63)	4,460	No
A-2	Room 4	325	12	349	Barrier PEX 1/2"	0.23	1.0	20 (63)	6,960	No
A-3	Room 4	274	12	265	Barrier PEX 1/2"	0.18	0.5	20 (63)	5,284	No
A-4	Room 4	272	12	263	Barrier PEX 1/2"	0.18	0.5	20 (63)	5,233	No
A-5	Room 4	245	12	207	Barrier PEX 1/2"	0.14	0.3	20 (63)	4,121	No
A-6	Room 4	275	12	301	Barrier PEX 1/2"	0.19	0.6	20 (63)	5,990	No
A-7	Room 4	278	12	279	Barrier PEX 1/2"	0.18	0.6	20 (63)	5,554	No
A-8	Room 4	294	12	303	Barrier PEX 1/2"	0.20	0.7	20 (63)	6,035	No
Total	-	2,180		2,190	-	1.44	1.0		43,637	0

** Head loss for circuit tubing only

Manifold 2

Circuit	Rooms Served	Total Length	Tube Spacing	Area Covered	Tubing	Flowrate	Head Loss**	Temp Drop	Load	Actuator
A-11	Room 2	30	18	32	Barrier PEX 1/2"	0.10	0.0	20 (18)	454	No
A-12	Room 9	243	12	235	Barrier PEX 1/2"	0.19	0.5	20 (58)	5,358	No
A-13	Room 8	70	12	64	Barrier PEX 1/2"	0.20	0.2	20 (22)	2,170	No
A-14	Room 3	57	12	44	Barrier PEX 1/2"	0.15	0.1	20 (20)	1,476	No
A-16	Room 1	91	12	61	Barrier PEX 1/2"	0.10	0.1	20 (37)	1,757	No
Total	-	491		435	-	0.74	0.5		11,214	0

** Head loss for circuit tubing only

Length = ftArea = ftTemperature = °FFlowrate = USGPMHeat Loss = Btu/hrUnit Heat Loss = Btu/hrHtRv = hr·ft°F/btuHead Loss = ft waterRH = Radiant Floor HeatingBB = BaseboardFA = Forced AirOTH = Other HeatingSM = SnowmeltN = Not Heated

Created Using LoopCAD 2016 (5/19/2017) Version:16.0.0880 (Trial)

Manifold 3

Circuit	Rooms Served	Total Length	Tube Spacing	Area Covered	Tubing	Flowrate	Head Loss**	Temp Drop	Load	Actuator
A-9	Room 6	121	12	107	Barrier PEX 1/2"	0.26	0.4	20 (28)	3,599	No
A-10	Room 5	232	12/6	153	Barrier PEX 1/2"	0.31	1.1	20 (34)	5,177	No
Total	-	353		260	-	0.57	1.1		8,776	0

** Head loss for circuit tubing only

Disclaimers

The calculated values shown in this report are based on the data input by the user of the software. Inaccurate or erroneous data input will result in inaccurate or erroneous results. You are strongly advised to review all input data carefully, and to have the calculated results reviewed by an experienced heating professional to ensure reasonableness and suitability for your application.

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Water Supply Summary

Project #:17010 May 16, 2017

Note that this project has rooms that may require a supplemental heat supply to meet the design load.

Supply Summary

Project Information

17010

Project #:

Location:

Name:

Name	Temp	Total Flow	Head Loss ¹	Load	# Circuits	# Zones
Water Temperature	132.8	2.74	2.1	63,627	15	3

(1) Head loss includes manifolds, circuits, and supply/return piping if specified, may also contain control valve losses.

Manifold Summary

Manifold Name	Circuits	Flowrate	Required Temp.	Supplied Temp.	Manifold Type	S/R Length ¹	S/R Pipe	Manifold Head Loss	Circuit Head Loss	S/R Head Loss	Total Head Loss ²
Kitchen Manifold	8	1.44	111	133	None Selected	-	-	1.0	1.0	0.0	2.0
Manifold 2	5	0.74	133	133	None Selected	-	-	1.0	0.5	0.0	1.5
Manifold 3	2	0.57	129	133	None Selected	-	-	1.0	1.1	0.0	2.1
Total	15	2.74	133	-	-	-	-				2.1

(1) S/R Length = one way, (2) Total Head loss includes manifold, circuits and supply/return piping if specified.

Created Using LoopCAD 2016 (5/19/2017)



Westport, New York

Essex County Nutrition Building

Notes:

Water Temperature (133 °F)

Kitchen Manifold (133 °F, None Selected, 8 Circuits)

Circuit	Rooms Served	Total Length	Tube Spacing	Area Covered	Tubing	Flowrate	Head Loss ¹	Temp Drop²	Load ³	Actuator
A-1	Room 4	216	12	224	Barrier PEX 1/2"	0.14	0.3	20 (63)	4,460	No
A-2	Room 4	325	12	349	Barrier PEX 1/2"	0.23	1.0	20 (63)	6,960	No
A-3	Room 4	274	12	265	Barrier PEX 1/2"	0.18	0.5	20 (63)	5,284	No
A-4	Room 4	272	12	263	Barrier PEX 1/2"	0.18	0.5	20 (63)	5,233	No
A-5	Room 4	245	12	207	Barrier PEX 1/2"	0.14	0.3	20 (63)	4,121	No
A-6	Room 4	275	12	301	Barrier PEX 1/2"	0.19	0.6	20 (63)	5,990	No
A-7	Room 4	278	12	279	Barrier PEX 1/2"	0.18	0.6	20 (63)	5,554	No
A-8	Room 4	294	12	303	Barrier PEX 1/2"	0.20	0.7	20 (63)	6,035	No
Total	-	2,180		2,190	-	1.44	1.0		43,637	0

(1) Head loss for circuit tubing only. (2) Design Temp Drop (Estimated Actual Drop). (3) Load includes circuit back loss.

Manifold 2 (133 °F, None Selected, 5 Circuits)

Circuit	Rooms Served	Total Length	Tube Spacing	Area Covered	Tubing	Flowrate	Head Loss ¹	Temp Drop²	Load ³	Actuator
A-11	Room 2	30	18	32	Barrier PEX 1/2"	0.10	0.0	20 (18)	454	No
A-12	Room 9	243	12	235	Barrier PEX 1/2"	0.19	0.5	20 (58)	5,358	No
A-13	Room 8	70	12	64	Barrier PEX 1/2"	0.20	0.2	20 (22)	2,170	No
A-14	Room 3	57	12	44	Barrier PEX 1/2"	0.15	0.1	20 (20)	1,476	No
A-16	Room 1	91	12	61	Barrier PEX 1/2"	0.10	0.1	20 (37)	1,757	No
Total	-	491		435	-	0.74	0.5		11,214	0

(1) Head loss for circuit tubing only. (2) Design Temp Drop (Estimated Actual Drop). (3) Load includes circuit back loss.

Manifold 3 (133 °F, None Selected, 2 Circuits)

Circuit	Rooms Served	Total Length	Tube Spacing	Area Covered	Tubing	Flowrate	Head Loss¹	Temp Drop²	Load ³	Actuator
A-9	Room 6	121	12	107	Barrier PEX 1/2"	0.26	0.4	20 (28)	3,599	No
A-10	Room 5	232	6 - 12	153	Barrier PEX 1/2"	0.31	1.1	20 (34)	5,177	No
Total	-	353		260	-	0.57	1.1		8,776	0

(1) Head loss for circuit tubing only. (2) Design Temp Drop (Estimated Actual Drop). (3) Load includes circuit back loss.

Disclaimers

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Architectural & Engineering **DESIGN** Associates P.C.

APPENDIX B

*** KITCHEN EQUIPMENT – CUT-SHEETS**

		C ab	RANGE PROPANE	NOTHOUEN
Models: 🔀 G36-6R 📙 G36-4G12S	G36-6S G36-2G24S	G36-6T	G36-4G12R G36-4G12T	☐ G36-2G24R ☐ G36-G36R ☐ G36-2G24T ☐ G36-G36T
Model G3 (shown with optioan NOTE: Ranges suppli must be installed with restraining device.	6-6R lional casters)	 Stainless steel bastainless steel she 12" (305mm) sect w/ dimpled botte 6" (152mm) adj. s Large easy-to-us Gas regulator Standard on Apple Cabinet base In Ii Modular top (Suf stainless steel low (102mm) adjustal Ergonomic split of 33,000 Btuh/9.67 Starfire- Pro oper 5/8" (15mm) thick manual hi/lo valv working depth su right, optional or 4-1/4" (108mm) w 18,000 Btuh/5.27 griddle burner per griddle 38,000 Btuh/11.11 oven burner Snap action modi thermostat low to 	m) work top surface ont and sides (127mm) plate rail ickguard, w/removable elf tion stamped drip trays om tainless steel legs e control knobs icable Models: eu of oven, suffix S fix T) with w profile backguard & 4" ble metal legs tast iron top ring grates kW 2 piece cast iron in top burner steel griddle plate w/ re control, 23" (584mm) urface, Standard on bleft fide grease trough kW cast iron "H" style er 12" (305mm) width of 3 kW cast iron "H" style backguard a position rack guide	 standard sheet pans in both directions for standard ovens Strong, keep-cool oven door handle Convection oven w/3 nickei plated oven racks and removable rack guides in lieu of standard oven w/ 1/3HP 120v 60 Hz single phase fan motor; change suffix R to C UPTIONAL FEATURES: Convection oven motor 240v 50/60HZ single phase Snap action modulating griddle control 175° to 425° F Hot top 12" (305mm) plate in lieu of two open burners, manual valve controlled w/18,000 Btuh/5.27 kW cast iron "H" burner standard on left side Low profile 9-3/8" (238mm) backguard stainless steel front and sides Stainless steel back for high shelf, low profile backguard or range Additional oven racks 6" (152mm) levelling swivel casters (4), w/front locking Flanged deck mount legs Celsius temperature dials Piezo spark ignition for pilots on griddles

Gas restaurant series range with large capacity (standard) oven. 35 7/16" (900mm) wide, 27" (686mm) deep work top surfaces. Stainless steel front, sides and 5" wide front rail. 6" (152mm) legs with adjustable feet. Six Starfire-Pro 2 piece, 33,000 Btuh/ 9.67 kW (natural gas), cast open burners set in split cast iron ergonomic grates. Griddle or optional hot-top with cast iron "H" style burners, 18,000 Btuh/5.27 kW (natural gas), in lieu of open burners. One piece oven with porcelain interior and heavy duty, "keep cool" door handle. Heavy cast

gas) Oven controlled by even bake, fast recovery snap action modulating oven thermostat. Available with convection oven, storage base or modular top model in lieu of oven.



Garland Commercial Ranges Ltd. 1177 Kamato Road, Mississauga, Ontario L4W 1X4 CANADA

General Inquires 1-905-624-0260 USA Sales, Parts and Service 1-800-424-2411 Canadian Sales 1-868-442-7526 Canada or USA Parts/Service 1-800-427-6668



2



Model	Description	Total BTU/Hr	Shipp Inform	
Number		Natural	Lbs/Kg	Cu Ft ²
G36-6R1	Six OB w/26" Oven	236,000	430/195	37
G36-65	Six OBs w/SB	198,000	310/141	37
G36-6T	Six OB MT	198,000	190/86	17
G36-4G12R1	12" G, Four OB w/26" Oven	188,000	460/209	37
G36-4G12S	12" G Four OB w/SB	150,000	340/154	37
G36-4G12T	12" GFour OB MT	150,000	220/100	17
G36-2G24R1	24" G, Two OB w/26" Oven	140,000	495/225	37
G36-2G24S	24" G Two OB w/SB	102,000	375/170	37
G36-2G24T	24" GTwo OB MT	102,000	255/116	17
G36-G36R1	36" Gw/26" Oven	92,000	530/240	37
G36-G36S	36" G w/SB	54,000	410/186	37
G36-G36T	36" G MT	54,000	290/132	17

Burner Ratings (BTU/Hr/kW)										
Burner	Natural	Propane 26,000/7.61								
Open	33,000/9.67									
Griddle/Hot Top	18,000/5.27	18,000/5.27								
Oven	38,000/11.13	32,000/9.38								

Manifold Operating Pressure									
Natural	Propane								
4.5" WC 11 mbar	10.0" WC 25 mbar								

Gas input ratings shown for installations up to 2000 ft. (610m) above sea level. Please specify altitudes over 2000 ft.

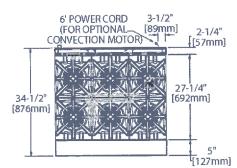
Oven Interior

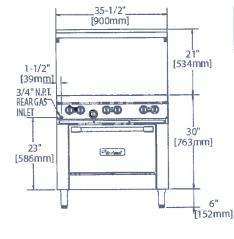
¹ Available with convection oven change R to C ² Ranges with Convention Ovens "C" are 57 Cu Ft OB = Open Burner, SS = Space Saver

SB = Storage Base MT = Modular Top G = Griddle

This product is not approved for residential use.

Note: Installation clearance reductions are applicable only where local codes permit.





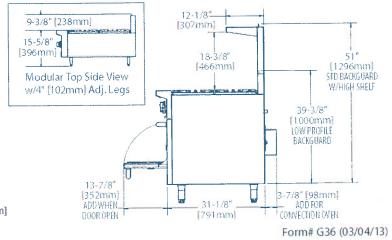
w/LPBG⁴ Width Depth⁵ Type Height 45-3/8" 26" 26-1/4" 35-1/2" 34-1/2" 13" Range (667mm) (660mm) Base (900mm) (876mm) (1153mm) (330mm) 25" Modular 35-1/2" 34-1/2" N/A N/A N/A (654mm) Тор (900mm) (876mm)

Height

³ Convection oven base models add 3 7/8" (98mm) to the depth of the unit *LPBG = Low Profile Backguard ⁵ Convection oven depth 22" (559mm)

Model	Combustible	Vall Clearance	Entry Clearances			
Туре	Sides	Rear	Crated	Uncrated		
Range	14"	6"	37"	36-1/2"		
Base	(356mm)	(152mm)	(940mm)	(927mm)		
Modular	6"	6"	16"	12"		
Top	(152 mm)	(152mm)	(406mm)	(305mm)		

Convection ovens with 120V, 60 Hz, 1 phase, 3.4 amps motors are supplied with 6/1829mm cord and plug (NEMA 5-15P); 240V, 50/60 Hz, 1 phase motors are not supplied with cord and plug and must have direct connect.



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General Inquires 1-905-624-0260 USA Sales, Parts and Service 1-800-424-2411 Canadian Sales 1-888-442-7526 Canada or USA Parts/Service 1-800-427-6668

Model

Width

Depth³





GAS STATIONARY STEAM KETTLE

20, 30, 40 OR 60 GALLON CAPACITY-GAS FIRED, **ELECTRONIC IGNITION** POPANE

Project:

Location:

Item #:

Quantity

Standard Features

- Natural Gas or Propane
- · Double wall kettle interior. Bottom kettle is hemispherical
- designed for superior heat circulation. • Supported by a 1 5/8" diameter
- stainless steel pipe legs.
- Adjustable four hole feet for securing to the floor.
- Power Switch, thermostat, pilot switch, low water light, vacuum/pressure gauge, safety relief valve and low water shut off.
- 2" Tangent draw off valve.
- Stainless steel cover (ACGL-20E, 30E & 40E).
- Spring assist hinged stainless steel cover (ACGL-60E).

Optional Features

- Type 316 stainless steel liner for high acid cooking (ACGL-60E).
- 3" (76 mm) draw-off valve (ACTVT-3).
- 3" (76 mm) dairy valve (ACDDO-3T).
- Etched gallon markings (ACGM-)
- Etched litre markings (ACLM-).
- Correctional package

Electrical Options

 115 VAC, 1 Phase, 50/60 Hz. 220 VAC, 1 Phase, 50/60 Hz.

Short Spec

Kettle shall be AccuTemp's ACGL-xxE series self-containing, gas stationary kettle. A double wall kettle interior shall form a steam jacket around the lower 2/3 of the kettle. The jacket enclosure shall contain purified water which is factory sealed. The bottom of the kettle shall be of hemispherical design for superior heat circulation.

Construction shall be all welded #4 finish stainless steel, the 60 gallon units shall be type 304 stainless steel. The kettle interior on models 20 through 40 gallon shall be standard stainless steel type 316 for high acid content cooking. The controls are integrally mounted and shall include a power switch, thermostat, pilot light, low water light, vacuum/pressure gauge, safety relief valve, and low water shut off. The kettle shall operate in a temperature range of 165°F to 285°F (74°C to 140°C) at a maximum pressure of 50 psi (345 kPa).



ACGL-xxE Model

Accessories

- Triple basket assembly (ACTBA-).
- · Perforated strainer for draw off (ACTPS-).
- · Solid disc for draw off (ACTSS-).
- Contour measuring strip (ACCMS-).
- Strainer hook (ACSH-)
- Single pantry faucet with swing spout (ACSF-12).
- Double pantry faucet with swing spout (ACDF-12).

MM6229-1105

- Draw-off valve hose kit (ACDVHK-2).
- Calibrated thermostat dial, "F"
- Calibrated thermostat dial, "C"
- Faucet Bracket.
- · Castors.



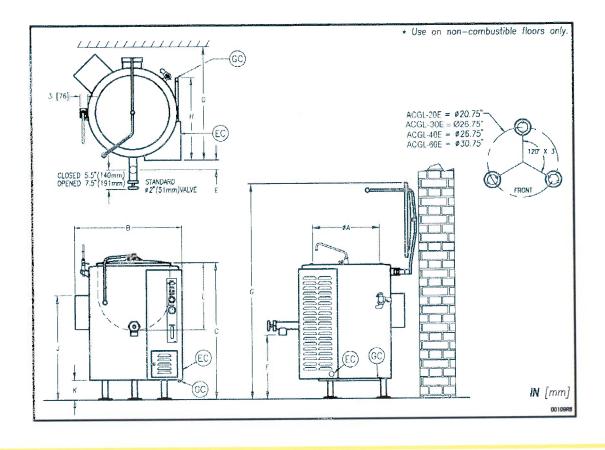
			Gas Kettle Model "ACGL-xxE	" Specifications	
Model #	BTU/HR	KW/HR	SUPPLY F	PIPE PRESSURE (W.C.)	MIN CLEARANCE*
ACGL-20E/30E/40E	100,000	29.3	Natural	Propane	SIDES 6 [152]
ACGL-60E	130,000	3B.1	6"-14" (152-356mm)	11"-14" (279-358mm)	BACK 2 [51]

	Dimensions													
MODEL	SHIPPING WEIGHT	CAPACITY	UNITS	A	в	C	D	E	F	G	Н	J	к	L_
ACGL-20E	440	20 gallons	inches	20	31.25	40	32	3	19	64	24	30.5	6.0	18.25
	[200 kgs]	76 litres	mm	508	794	1016	813	76	483	1626	610	775	152	464
ACGL-30E	575 lbs	30 gallons	inches	26	35.5	39.75	38.5	2	19	67.75	29	35	6.0	17.75
	{261 kgs}	114 litres	mm	660	905	1010	978	51	483	1721	737	889	152	451
ACGL-40E	600 lbs	40 gallons	inches	26	35.5	44	38.5	2	19	72	29	35	6.0	22
	[272 kgs]	152 litres	mm	660	902	1118	978	51	483	1829	737	889	152	559
ACGL-60E	720 lbs	60 gallons	inches	30	40	49.5	42	2.5	21.5	85	35	39	8.0	24.62
	[327 kgs]	227 litres	mm	762	1016	1257	1016	63	546	2159	889	991	203	625

Notes:

1. Supply gas through 3/4" pipe. A gas shut-off valve must be installed in supply piping convenient and adjacent to appliance.

2. Unless otherwise specified, Field Wire Electrical Connection to be 120V, 60Hz single phase with grounding wire. Max AMPS: 4.0



MM6229-1105

AccuTemp Products, Inc. 8415 North Clinton Park • Fort Wayne, IN 46825 • 800-210-5907 • 260-493-0415 • Fax 260-493-0318 • accutemp.net

INSTALLATION AND OPERATION MANUAL, GAS KETTLES, ACGL-20E, 40E, ACGL-60E

1.0 SERVICE CONNECTIONS

UTILITY INFORMATION:

GAACIL-20E-Total 100,000 BTU, One 1* male connection (for location, see drawing below.) . Natural Propane Required operating pressure: Natural Gas 4* W.C.; Propane Gas 10* W.C.

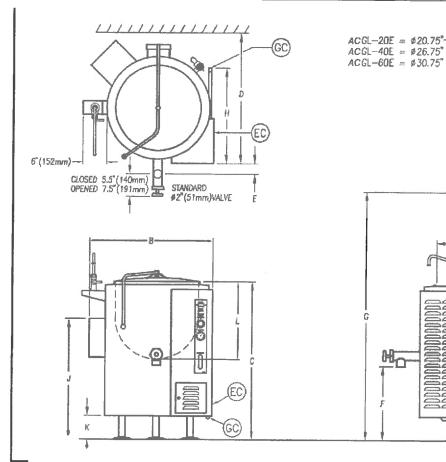
GAS ACGL 49E - Total 100,000 BTU One 1" male connection (for location, see drawing below) Natural Propane Required operating pressure: Natural Gas 4" W.C.; Propane Gas 10" W.C.

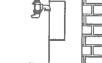
GAS ACGL-60E - Total 130,000 BTU. One 1" male connection (for location, see drawing below.) □ Natural □ Propane Required operating pressure: Natural Gas 4" W.C.; Propane Gas 10" W.C. ELECTRIC:

- STANDARD: 115/60/1 furnished with 6 ft. cord w/3-prong plug. Total maximum amps 2.0.
- OPTIONAL: 208/60/1 or for use on 3 (190 to 219 volts) supply must be wired to unit – see drawing below. Total maximum amps 1.0.
- OPTIONAL: 240/60/1 or for use on 3 (220 to 240 volts) supply must be wired to unit - see drawing below. Total maximum amps 1.0.

D	М	Eľ	NS	0	Ν	S

MODEL	CAPACITY		Α	В	С	D	E	F	G	н	J	K	L
ACGL-20E	20 gallans	inches	20	31.25	40	32	3	19	- 64-	24>	30.5	6.0	18.25
	76 litres	COM .	508	794	1016	813	76	483	1626	610	775	152	464
ACGI ANE	40 gallons	inches	26	35.5	44	38.5	2	19	72	29	35	6.0	22
	152 litres	mma	668	902	1118	978	2-51-	483	1829	- 737	889	152	559
ACGL-60E	60 gallons	inches	30	40	49.5	· ³ 42	2.5	21.5	85	35	39	8.0	24.62
	227 litres	mm	762	1016	1257	1016	63	546	2159	889	991	203	625





(GC)

(EC)

10.10

120 X

FRONT

O

00108R6

PART NUMBER 10125R2

4

REPLACES MEIKO UNIT



701 S Ridge Avenue, Troy, OH 45374 1-888-4HOBART • www.hobartcorp.com

advansýs VENTLESS TALL DISHWASHER

PIDI II

STANDARD FEATURES

- Internal condensing system minimizes water vapor
- Does not require a vent hood
- Energy recovery
- Sense-A-Temp[™] 70°F rise electric booster heater
- .74 gallons per rack final rinse water
- 40 racks per hour hot water sanitizing
- NSF pot and pan listed for 2-, 4- & 6- minute cycles plus condense time
- Timed wash cycles for 1, 2, 4 or 6 minutes plus condense time
- 27" door opening for 18" x 26" sheet pans or 60 quart mixing bowl
- Solid state, integrated controls with digital status indicators
- Self-draining, high efficiency stainless steel pump and stainless steel impeller
- Stainless steel drawn tank, tank shelf, chamber, trim panels, frame and feet
- Spring counterbalanced chamber with UHMW polyethylene guides
- Revolving, interchangeable upper and lower anticlogging wash arms
- Revolving, interchangeable upper and lower rinse arms
- Slanted, self-locating, one-piece scrap screen and basket system
- Pumped rinse for constant rinse pressure
- Cycle light
- End of cycle audible alarm (field activated)
- Automatic fill
- Door actuated start
- Automatic drain closure
- Delime cycle with notification (field activated)
- Service diagnostics
- NAFEM Data Protocol capable
- Hot water sanitation

VOLTAGE

208-240/60/1
 208-240/60/3
 400/20/2

480/60/3

MODEL

C AM15VLT

OPTIONS AT EXTRA COST

Item # ___ Quantity

Single point electrical connection (3 phase only)

ACCESSORIES

- Peg rack
- Combination rack
- Sheet pan rack
- Flanged and seismic feet
- End of cycle audible alarm (field activated)
- Drain water tempering kit

Specifications, Details and Dimensions on Inside and Back.



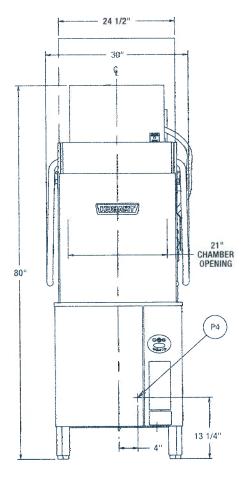


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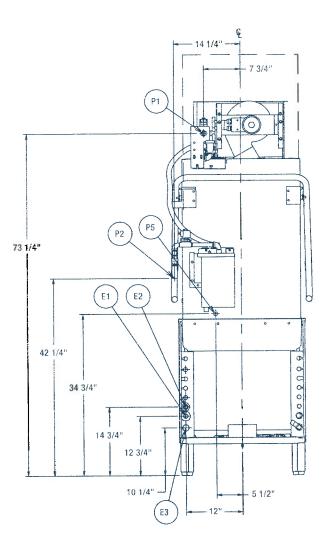
advansýs VENTLESS TALL DISHWASHER





MACHINE ELECTRICAL SPECIFICATIONS 208-240/60/1 208-240/60/3 480/60/3

AM-1	AM-15VLT WITH ELECTRIC HEAT												
ELEC. SPECS	RATED AMPS	MINIMUM SUPPLY CIRCUIT CONDUCTOR AMPACITY	MAXIMUM OVERCURRENT PROTECTIVE DEVICE										
208-240/60/1	43.0	50	50										
208-240/60/3	24.9	30	30										
480/60/3	13.4	15	15										



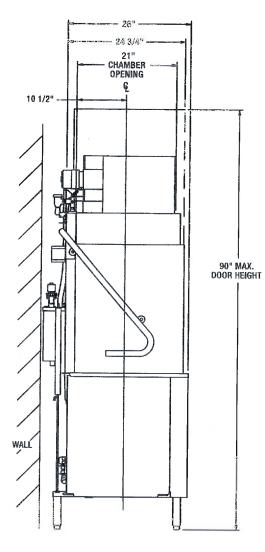
MODEL: AM-15VLT E-941177 REV B

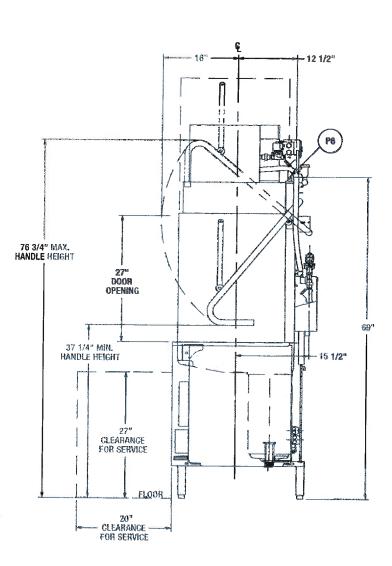
WARNING

ELECTRICAL AND GROUNDING CONNECTIONS MUST COMPLY WITH THE APPLICABLE PORTIONS OF THE NATIONAL ELECTRICAL CODE AND/OR OTHER LOCAL ELECTRICAL CODES.

PLUMBING CONNECTIONS MUST COMPLY WITH APPLICABLE SANITARY, SAFETY, AND PLUMBING CODES.







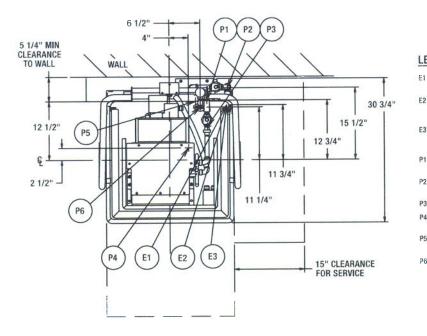
BOOSTER ELECTRICAL SPECIFICATIONS
208-240/60/1 208-240/60/3
480/60/3

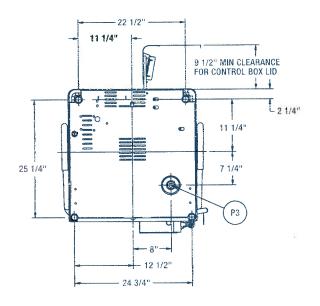
BOOST	ER AMPAC	ITY RATINGS 8	.5KW
ELEC. SPECS	RATED	MINIMUM SUPPLY CIRCUIT CONDUCTOR AMPACITY	MAXIMUM OVERCURRENT PROTECTIVE DEVICE
208-240/60/1	35,4	50	50
208-240/60/3	20.4	30	30
480/60/3	10.2	15	15

		INGLE POINT ELEC	
ELEC. SPECS	RATED AMPS	MINIMUM SUPPLY CONDUCT OR AMPACITY	MAXIMUM PROTECTIVE DEVICE
208-240/60/3	45.4	60	60
480/60/3	23.7	30	30

HOBART

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RECOMMEND	ED CONDENSE TIMES (BASED ON INCOMING	WATER TEMP.)
INCOMING TEMP. (F°)	CONDENSE TIME (SEC.)	RINSE TIME (SEC.)	RACKS PER HOUR (1 MIN. CYCLE)
60	30	10	40
65	33	11	37
70	36	12	36
75	39	13	34
80	42	14	33
85-90	45	15	32

CONNECTION INFORMATION (*AFF - ABOVE FINISHED FLOOR)

LEGEND

- ELECTRICAL CONNECTION: MOTORS & CONTROLS (INCLUDING ELECTRIC HEAT). 1" OR 3/4" CONDUIT HOLE; 12-3/4" AFF.
- E2 ELECTRICAL CONNECTION: RINSE AGENT FEEDER, 1/2" CONDUIT HOLE. (DPS1 & DPS2) 1.5 AMPS @ NAMEPLATE SUPPLY VOLTAGE. (RPS1 & RPS2) 1.5 AMPS @ NAMEPLATE SUPPLY VOLTAGE; 14-3/4" AFF.
- E3 ELECTRICAL CONNECTION: ELECTRIC BOOSTER ONLY OR SINGLE POINT ELECTRICAL CONNECTION (3PH ONLY), 1" CONDUIT HOLE; 10–1/4" AFF.
- P1 COLD WATER CONNECTION: 90°F MAX. (65°F OPTIMAL); 1/2" FPT; 73-1/4" AFF.
- P2 HOT WATER CONNECTION: 110°F WATER MIN. (HOT WATER SANITIZING); 1/2" FPT; 42-1/4" AFF;
- P3 DRAIN: 1-1/2" MPT; 7-1/4" AFF.
- P4 DETERGENT PROBE SENSOR: REMOVE CAP AND STUD ASSEMBLY TO ACCESS 7/8" HOLE; 13-1/4" AFF.
- P5 DETERGENT FEEDER: REMOVE CAP PLUG TO ACCESS 7/8" HOLE; 34-3/4" AFF
- P6 RINSE AGENT FEEDER: 1/8" NPT, REMOVE 1/8" NPT PIPE PLUG TO ACCESS TAPPED HOLE; 69" AFF.

PLUMBING NOTES:

WATER HAMMER ARRESTOR (MEETING ASSE-1010 STANDARD OR EQUIVALENT) TO BE SUPPLIED (BY OTHERS) IN COMMON WATER SUPPLY LINE AT SERVICE CONNECTION.

RECOMMENDED WATER HARDNESS TO BE 3 GRAINS OR LESS FOR BEST RESULTS.

FOR CONVENIENCE WHEN CLEANING, WATER TAP SHOULD BE INSTALLED NEAR MACHINE WITH HEAVY DUTY HOSE AND SQUEEZE VALVE.

THIS IS A PUMPED RINSE MACHINE. PRESSURE REGULATING VALVE IS NOT NECESSARY ON HOT OR COLD LINES.

MISCELLANEOUS NOTES:

ALL DIMENSIONS TAKEN FROM FLOOR LINE MAY INCREASE 3/4" OR DECREASE 1/2" DEPENDING ON LEG ADJUSTMENT.

NET WEIGHT OF MACHINE: 405 LBS. DOMESTIC SHIPPING WEIGHT: 494 LBS.

SIZE OF RACKS - 19-3/4" X 19-3/4"

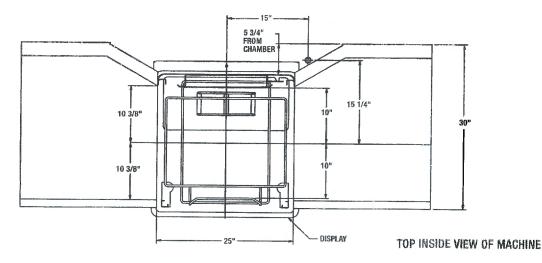
DRAIN LEVER LOCATED INSIDE TANK.

SINGLE POINT ELECTRICAL CONNECTION AVAILABLE ON 3 PH MACHINES ONLY.

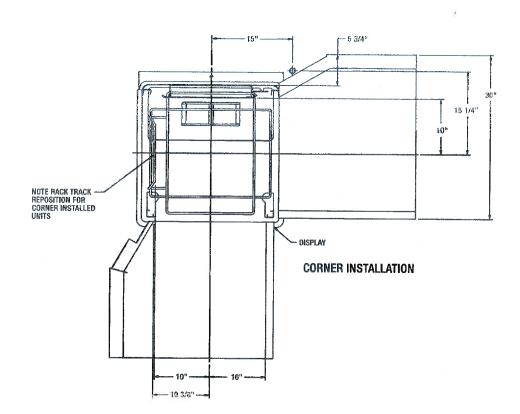
APPROXIMATE HE/ SPACE WITHOUT V	
TYPE	BTU/HR
LATENT	13,000
SENSIBLE	4,800

VENT HODD IS NOT REQUIRED DUE TO INTERNAL CONDENSING SYSTEM. CITY OF LA APPROVAL M-660004.

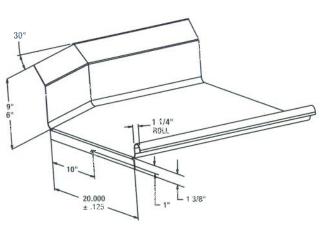




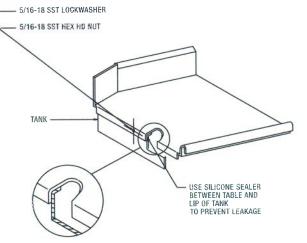
PASS THRU INSTALLATION



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SUGGESTED TABLE DESIGN



DRILL 0.344 HOLE THRU TANK WALL 5/16-18 SST TRUSS HD SCREW

	advansýs Ventless Tall Dishwasher
Machine Ratings (Mechanical) Racks per Hour (Max.)	40
Dishes per Hour (Average 25 per rack)	1,000
Glasses per Hour (Average 45 per rack)	1,800
Table to Table - Inside Tank at Table Connection (Inches)	25 ¹ /4 ⁸⁶
Overall Dimensions - (H x W x D) (Inches)	80" x 29 ³ /4" x 30"
Wash Motor H.P.	2
Wash Tank Capacity - Gallons	14
Wash Pump Capacity - Gallons per Minute - Weir Test	160
Electric Booster Heater (Kw)	8.5 Kw
Electric Heating Unit (Regulated)	5 Kw
Blower Motor H.P.	1/20
Rinse Pump Motor H.P.	1/15
Rinse - Minutes operated during hour of capacity operation	6.66
Seconds of rinse per rack	10
Rate of Rinse Flow - Gallons per Minute	4.4
Rinse Consumption - Gallons per Hour - Maximum	29.6
Rinse Cycle - Gallons per Rack	.74 - 180°F Min.
Peak Rate of Drain Flow - Gallons per Minute (Initial rate with full tank)	14
Exhaust Requirements	0
Shipping Weight Crated - Approx. lbs Unit only	494



The microcomputer-based control system is built into the AM Select Ventless dishwasher. It is available in standard electrical specifications of 208-240/60/1, 208-240/60/3, 480/60/3 and is equipped with a reduced voltage pilot circuit transformer.

Water hardness must be controlled to 3 grains of hardness or less for best results.

CONSTRUCTION: Drawn tank, tank shelf and feet constructed of 16 gauge stainless steel. Wash chamber and front trim panel above motor compartment are polished, satin finish. Frame is 12 gauge stainless steel, chamber is 18 gauge, and removable trim panels are 20 gauge.

CHAMBER: Stainless steel chamber with large 20³/₄" W x 27" H opening will accommodate 18" x 26" sheet pans or a 60-quart mixing bowl.

CHAMBER LIFT: Chamber coupled by stainless steel handle, spring counterbalanced. Chamber guided for ease of operation and long life.

WASH PUMP: With stainless steel pump and impeller, integral with motor assures alignment and quiet operation. Pump shaft seal with stainless steel parts and a carbon ceramic sealing interface. Easily removable impeller housing permits ease of inspection. Capacity 160 GPM. Pump is completely self-draining.

WASH PUMP MOTOR: Built for Hobart, 2 H.P., with inherent thermal protection, grease-packed ball bearings, splash-proof design, ventilated. Single-phase is capacitor-start, induction-run type. Three-phase is squirrel-cage, induction type.

RINSE PUMP: Powered by a ¹/₁₅ H.P. single phase motor, the rinse pump is made of high strength engineered composite material.

BLOWER: The condenser blower is an all stainless steel forward curved centrifugal wheel powered by a ¹/₂₀ H.P. TEFC single phase motor for nearly silent operation.

CONDENSER COIL: The condensing system using a tube and fin coil constructed of copper and corrosion resistant aluminum.

MICROCOMPUTER CONTROL SYSTEM: Hobart microcomputer controls, assembled within waterresistant enclosure, provide built-in performance and reliability.

The microcomputer control, relays and contactors are housed behind a stainless steel enclosure, hinged

to provide easy access for servicing. The line voltage electrical components are completely wired with 105°C, 600V thermoplastic insulated wire with stranded conductors. Electrical components are wired with type ST cord. Line disconnect switch NOT furnished.

CYCLE OPERATION: The microcomputer-timing program is started by closing the doors, which actuates the door cycle switch. The cycle light turns ON. The microcomputer energizes the wash pump motor contactor during the wash portion of the program. After the wash, a dwell permits the upper wash manifold to drain. At the end of the dwell, the final rinse pump is energized. After the final rinse pump turns off, Sani-Dwell permits sanitization to continue. The Rinse display remains on during this period. The Blower and Cold Water Valve turn on for 30 seconds to condense the vapor laden air inside of the chamber. The display shows a count down time (in seconds) during this operation. After the 30 seconds is complete the Cycle Light turns OFF, completing the program. If the microcomputer is interrupted during a cycle by the door-cycle switch, the microcomputer is reset to the beginning of the program. 40 racks per hour - 87 seconds: 38 Second Wash, 2 Second Dwell, 10 Second Rinse, 7 Second Sani-Dwell. 30 Second Condensing. Other programs can be pre-selected by your Hobart service technician.

Manual wash cycle selector also provides selection of 2-, 4- or 6-minute wash cycles plus condense time for heavier washing applications.

WASH: Hobart revolving stainless steel wash arms with unrestricted openings above and below provide thorough distribution of water jets to all dishware surfaces. Arms are easily removable for cleaning and are interchangeable. Stainless steel tubing manifold connects upper and lower spray system.

RINSE: Rotating rinse arms, both upper and lower, feature 14 rinse nozzles. The stainless steel upper and lower rinse arms are easily removable without tools for inspection and are interchangeable. The motor driven rinse pump gives constant rinse pressure regardless of water service supply pressure. Easy open brass line strainer furnished.

HOT FILL: Microcomputer controlled fill is supplied from the hot water service connection. It enters the machine through an air gap system which protects the potable water supply from contamination. Ratio fill method is used giving the correct fill at any flowing water pressure.



COLD WATER: Cold water supplied to condenser coil is heated during the condensing period at the end of each cycle. This pre-heated water is supplied to the booster for subsequent heating.

DRAIN AND OVERFLOW: Large bell type automatic overflow and drain valve controlled from inside of machine. Drain automatically closed by lowering chamber. Drain seal is large diameter, high temperature "O" ring. Cover for overflow is integral part of the standpipe.

STRAINER SYSTEM: Equipped with large, exclusive self-flushing, easily removable perforated stainless steel, one-piece strainer and large capacity scrap basket. Submerged scrap basket minimizes frequent removal and cleaning.

HEATING EQUIPMENT: Standard tank heat is 5 KW electric immersion heating element. Water temperature regulation is controlled by thermistor sensor in combination with microcomputer controls. The tank heat and positive low water protection microcomputer

circuits are automatically activated when the main power switch is turned "on". If tank is accidentally drained, low water protection device automatically turns heat off. These features are standard with the Hobart Microcomputer Control System.

ENERGY RECOVERY: Heat energy is recovered from the condensation of vapors in the chamber at the end of each cycle. This pre-heats the water for the next rinse cycle from 55°F up to 140°F.

ELECTRIC BOOSTER HEATER: 8.5 KW electric booster with Sense-A-Temp[™] technology adequately sized to raise 110°F inlet water to 180°F.

ACCESSORIES: 19³/₄" x 19³/₄" peg and combination dish racks. Splash shield for corner installations. End of cycle audible alarm (field activated). Delime notification (field activated). Desirable functional accessories can be furnished at added cost. See listed options and accessories on this specification sheet. Write to the factory for special requirements not listed above.

As continued product improvement is a policy of Hobart, specifications are subject to change without notice.



Garland Master Full-Size Standard Depth, prefix MCO-GS or Deep Depth, prefix MCO-GD, gas convection oven. 60,000 BTU (17.6 kW)/cavity, 3/4 HP fan motor with two speed fan control. Electronic spark ignition. Natural or propane gas. Master 200 solid state control with electromechanical timer. Porcelain enameled oven Interior with coved corners, Six (6) oven racks and 13-position rack guides. All model interiors are 29" (736mm) W by 24" (610mm) H, depth is 24" (610mm) for standard depth and 28" (711mm) for deep depth. Stainless steel front, sides, top, and legs. 60/40 dependent door design with double pane thermal window in both doors and interior lighting. Models with suffix -20-5 are

Hz, 1 phase. UL, CUL Gas-Fired and NSF Listed.



Garland

1333 East 179th Street Cleveland, Ohio 44110 Phone: 800-424-2411 Fax: 800-624-0218

Garland Commercial Ranges Ltd 1177 Kamato Road, Mississauga, Ontario LAW 1X4 CANADA Phone: 905-624-0260 Fax: 905-624-5669



X



SINGLE-DECK		INT. DI	MENSIONS	Inmm	E	EXT. DIMENSION	5: In mm	SHIP WT.	SHIP DIM
	DELS	W	Н	D	W	H*	D	lbs/kg	cubic Ft
Standa	rd Depth	29 (736)	24 (610)	24 (610)	38 (965)	57-1/2 (1461)	41-1/4(1048)	515/230	58.5
Deep	Depth	29 (736)	24 (610)	28 (711)	38 (965)	57-1/2 (1461)	44-1/2(1130)	545/245	58.5
DOUB	LE-DECK	INT. D	MENSIONS	:In mm		EXT. DIMENSION	Sinmm	SHIP WT.	SHIP DIA
	DELS	w	Н	D	W	H *	D	2@lbs/kg	Cubic F
Standa	rd Depth	29 (736)	24 (610)	24 (610)	38 (965)	70-1/2 (1791)	41-1/4(1048) 1030/465	117
Deep	Depth	29 (736)	24 (610)	28 (711)	38 (965)	70-1/2 (1791)	44-1/2(1130) 1090/490	117
eight wi	th or with	out stand	ard casters.	Height wi	th low pro	file casters (doub	le deck) is 68-1	/2" (1740mm).	
				UTRATIN				L SPECIFICATIO	NS
	MODE		BTU/hr	kW	Eqiv.	Gas inlet	120V/1Ph.	240V/1F	°h.
	Single D	eck	60,000	1	7.6	(1)@3/4" NPT	(1)@9.8A	(1)@5.2	A
	Double D)eck	120,000	3	5.2	(1)@1" NPT	(2)@9.8A	(2)@5.2	A
7-3/ [197r	GAS	N.P.T. NILET		2" mm]		1-1/4 [32mn			GAS INLET
17-3/4" 151mm]	ludes [6]	UE 2-3/8 0mm x 12 U/ TOP V 38"	7mm] 38 [97] 1EW [29]	-1/4" 2mm] 		H [8 6-1/ [159m	4" DOU		[816m 2-1/8" 16mm] 35-7/1 [900mi (4-3/4" 375mm]
-1/4" 2mm] 32-1, [816n	/8"	[965mm]		4" REAR AS INLET		Installation No Combustible Wa Sides: 1" (25mm) Back: 3" (76mm)	ll Clearances:	Manifold Opera Natural: 4.5" WC Propane: 10" WC Max 13.8" WC @	C (11 mbar) C (25 mbar) 9 70°F
H 25-3 [645n	nm] 	NGLE DEC			Note 1. S 2. (3. ()	Entry Clearance: Crated: 47" (1194 Uncrated: 32½" (9 es: tandard electrica 120V units) 115V, 3 240V units) 200-2 00 Hz	mm) 326mm) I specifications i 3/4 HP, 2-speed i	motor; 1140 and	quirements 1725 rpm, 6
			re for install . Specify alti		o 4. A	A 6 ft. line cord is NEMA #5-15P) plu		h 120V deck with	na
			when orde			Suland recomme		C AMAD circuit for	each 120V

Naster Las Convection Liven

- (NEMA #5-15P) plug.
- 5. Garland recommends a separate 15 AMP circuit for each 120V unit.

Form# MCO10S (01/04/11)

Garland 1333 East 179th Street Cleveland, Ohio 44110 Phone: 800-424-2411 Fax: 800-624-0218

2,000 ft. Please specie- gas type when ordering.

Garland Commercial Ranges Ltd 1177 Kamato Road, Mississauga, Ontario L4W 1X4 CANADA Phone: 905-624-0260 Fax: 905-624-5669



Item # 60 & MIXSA Quantity _____

C.S.I. Section 11400

C

BART

LEGAU I®

TLOUU WILLEN

STANDARD FEATURES

- Heavy-Duty 2.7 H.P. Motor
- Gear Transmission
- Four Fixed Speeds Plus Stir Speed

HOBART

701 S Ridge Avenue, Troy, OH 45374 1-888-4HOBART • www.hobartcorp.com

- Shift-on-the-Fly™ Controls
- Patented soft start Agitation Technology
- 20-Minute SmartTimer**
- Automatic Time Recall
- Large, Easy-To-Reach Controls
- Single Point Bowl Installation
- Ergonomic Swing-Out Bowl
- Power Bowl Lift
- #12 Taper Attachment Hub
- Open Base
- Stainless Steel Bowl Guard
- Metallic Gray Hybrid Powder Coat Finish

ACCESSORY PACKAGE - featuring Hobart Quick Release[™] Agitators

Standard Accessory Package Includes:

- 60 Quart Stainless Steel Bowl
- 60 Quart "B" Beater
- 60 Quart "D" Wire Whip
- 60 Quart "ED" Dough Hook

MODELS

 ☐ HL600 - 60-Quart All Purpose Mixer
 ☐ HL600C - 60-Quart All Purpose Mixer with Maximum Security Correctional Package

Specifications, Details and Dimensions on Inside and Back.





LEGAUI®

701 S Ridge Avenue, Troy, OH 45374 1-888-4HOBART • www.hobartcorp.com

SOLUTIONS/BENEFITS

2.7 H.P. Motor

Durability

Heavy-duty to meet the most demanding operations

Gear Transmission

- Durability, Reliability
- Ensures consistent performance and minimum downtime under heavy loads

Four Fixed Speeds plus Stir Speed

- Flexibility, Reliability, Consistency
- For incorporating, blending, mixing ingredients
- Supports consistent results and thorough mixing

Shift-on-the-Fly™ Controls

- Flexibility
- Allows operator to change speeds while mixer is running

Patented soft start Agitation Technology Sanitation

Each speed has a soft transition into a higher speed to reduce the chances of product splash-out

20-Minute SmartTimer™

- Convenience, Ease of Use, Consistency
- Supports recipe mixing times
- Provides accurate results and eliminates overmixing

Automatic Time Recall

Productivity, Consistency

- Remembers the last time set for each speed
- Great for multiple batches

Ergonomic Swing-Out Bowl

Ease of Use, Convenience

- Easy loading and unloading of products
- Single Point Bowl Installation allows for simple mounting and removal of bowl
- Bowl Lock ensures mixer bowl is properly in place for mixer to operate

Stainless Steel Bowl Guard

Protection

Safety interlock prevents operation when front portion of guard is out of position

Hobart Accessories

Durability, Flexibility, Simplicity

- Hobart Quick Release[™] agitators allow for simple installation and removal from agitator shaft
- Hobart accessories are designed for long-term usage under heavy-duty conditions
- Large array of accessories provide multiple uses for recipe and product processing

HL600 MIXER CAPACITY CHART

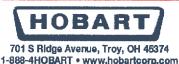
Recommended Maximum Capacities - dough capacities based on 70°F. water and 12% flour moisture.

PRODUCT	AGITATORS SUITABLE FOR OPERATION	HL600
CAPACITY OF BOWL (QTS. LIQU	JID)	60
Egg Whites	D	2 qts.
Mashed Potatoes	B&C	40 lbs.
Mayonnaise (Qts. of Oil)	B or C or D	18 qts.
Meringue (Qts. of Water)	D	1½ qts.
Waffle or Hot Cake Batter	В	24 qts.
Whipped Cream	D or C	12 qts.
Cake, Angel Food (8-10 oz. cake)	C or I	45
Cake, Box or Slab	B or C	50 lbs.
Cake, Cup	B or C	60 lbs.
Cake, Layer	B or C	60 lbs.
Cake, Pound	В	55 lbs.
Cake, Short (Sponge)	C or I	45 lbs.
Cake, Sponge	C or I	36 lbs.
Cookies, Sugar	В	40 lbs.
Dough, Bread or Roll (LtMed.) 60% AR §	ED	80 lbs.*
Dough, Heavy Bread 55% AR §	ED	60 lbs.*
Dough Pie	B&P	50 lbs.
Dough, Thin Pizza 40% AR (max. mix time 5 min.) §‡	ED	40 lbs.□
Dough, Med. Pizza 50% AR §‡	ED	70 lbs. [©]
Dough, Thick Pizza 60% AR §‡	ED	70 lbs.*
Dough, Raised Donut 65% AR	ED	30 lbs.†
Dough, Whole Wheat 70% AR	ED	70 lbs.
Eggs & Sugar for Sponge Cake	B&Corl	24 lbs.
Icing, Fondant	В	36 lbs.
Icing, Marshmallow	C or I	5 lbs.
Shortening & Sugar, Creamed	В	48 lbs.
Pasta, Basic Egg Noodle (max. mix time 5 min.)	ED	30 lbs.

NOTE: % AR (% Absorption Ratio) - Water weight divided by flour weight. Capacity depends on moisture content of dough. Above capacities based on 12% flour moisture at 70°F water temperature.

- 1st Speed
- * 2nd Speed
- † 3rd Speed
- § If high gluten flour is used, reduce above dough batch size by 10%.
- ‡ 2nd Speed should never be used on 50% AR or lower products.
- USE OF ICE REQUIRES A 10% REDUCTION IN BATCH SIZE. 1 gallon of water weighs 8.33 lbs.

NOTE: Attachment hub should not be used while mixing.



LEGAUT[®] ILOUU IVIIAEM

SPECIFICATIONS

MOTOR:

2.7 H.P. high torque motor.

200-240/50/60/3/1 380-460/50/60/3 18.0 (1 Phase) Amps 10.0 (3 Phase) Amps 6.5 Amps

ELECTRICAL:

200-240/50/60/3/1, 380-460/50/60/3 - UL Listed.

CONTROLS:

Magnetic contactor with thermal overload protection. Internally sealed "Start-Stop" and Power Bowl Lift push buttons. Reduced voltage pilot circuit transformer is supplied for 380-460/50/60/3 machines. A 20-minute SmartTimer™ is standard. SmartTimer™ includes Automatic Time Recall, which remembers the last time set for each speed.

TRANSMISSION:

A rated 5.4 H.P. poly-V belt transfers power from motor to the input shaft then geared down to desired reduction with a constant gear mesh. Gears and shafts are heat-treated hardened alloy steel along with anti-friction ball bearings. Circulating oil and grease lubricants furnished to all gears and shafts.

SPEEDS:

	Agitator (RPM)	Attachment (RPM)
Stir	36	71
First	71	138
Second	123	241
Third	206	401
Fourth	362	707

BOWL GUARD:

Heavy-duty stainless steel wire front and solid stainless steel rear portion. Front portion of guard rotates easily to add ingredients and install or remove agitator. It detaches in seconds for cleaning in dishwasher or sink. Rear portion of guard can be quickly cleaned in position. Guard must be in closed position before mixer will operate. Bowl support interlock provides further protection.

POWER BOWL LIFT:

Powered by an electric motor, the bowl may be raised or lowered by fingertip control through the conveniently located switch. Bowl will remain in position until switch is activated. **Stir-on-Lift Feature:** Allows the agitator to run in Stir Speed while the mixer bowl is being raised. Once the bowl is in the raised position, the mixer automatically shifts into the preselected speed.

FINISH:

Metallic Gray Hybrid Powder Coat finish.

FOOTPADS:

Neoprene footpads are standard.

ATTACHMENT HUB:

Comes with front-mounted Hobart standard #12 taper attachment hub for use with #12 size attachments.

ATTACHMENTS AND ACCESSORIES:

The following are available at extra cost:

Stainless Steel Bowl "B" Flat Beater "C" Wing Whip "D" Wire Whip "ED" Dough Hook "P" Pastry Knife "I" Heavy Duty Wire Whip Bowl Extension Ring

Bowl Splash Cover Bowl Scraper Bowl Truck 40 Quart Accessories Ingredient Chute 9" Vegetable Slicer Meat Chopper Attachment



Hobart Bowl Scraper

Hobart Ingredient Chute



Listed by Underwriters Laboratories Inc. and certified by NSF International.



HLOUU WINEK

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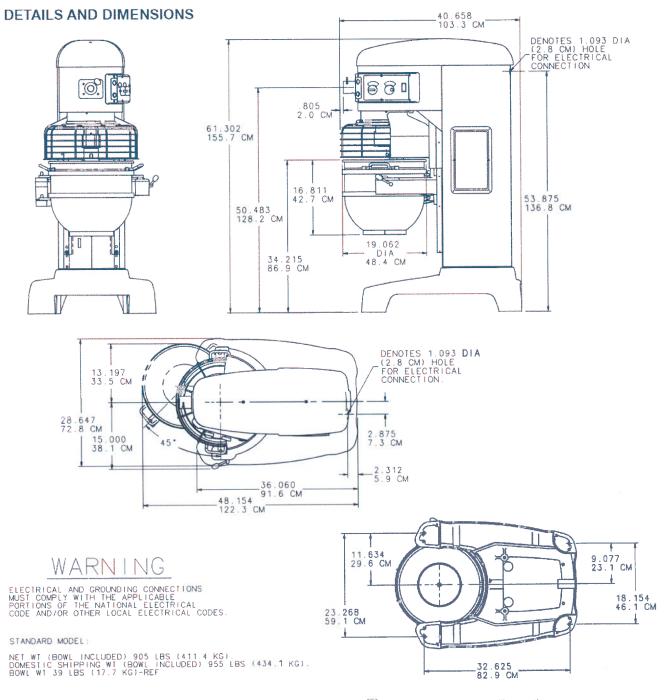
HOBART

SPECIFICATIONS

ELECTRICAL SPECIFICATIONS: 200-240/50/60/3/1, 380-460/50/60/3 - UL Listed.

WEIGHT: 866 lbs. net; 916 lbs. domestic shipping.

WARRANTY: Unit has full one-year warranty on parts, labor and mileage against manufacturer's defects. Service contracts are available.



As continued product improvement is a policy of Hobart, specil Pations are subject to change without notice.





Full-Size Standard Depth Dual Flow Gas Convection Oven



OPTIONS AND ACCESSORIES (AT ADDITIONAL CHARGE)

- Legs/casters/stands:
 - 6" (152mm) seismic legs
 - 6" (152mm) casters
 - 4" (102mm) low profile casters (double only)
 - □ 25" (635mm) stainless steel stand w/rack guides
 - 29" (737mm) stainless steel, fully welded open stand with pan supports
- Controls:
 - SSI-D Solid state infinite control w/digital timer
 - SSI-M Solid state infinite control w/manual timer
- Gas hose w/quick disconnect restraining device:
 48" (1219mm) hose
 - 36" (914mm) hose
- Stainless steel oven liner
- Extra oven racks
- Stainless steel solid back panel
- Gas manifold (for double sections)
- Prison package (includes security control panel and stainless steel back)
- Security control panel
- Flue connector

OPTIONS AND ACCESSORIES

- (AT NO CHARGE)
- Solid stainless steel doors

Project		С
Item No	PROPANE	G

SINCLE GAS CONVECTION

Quantity ____

Standard depth baking compartment - accepts five 18" x 26" standard fullsize baking pans in left-to-right positions.

All data is shown per oven section, unless otherwise indicated.

Refer to operator manual specification chart for listed model names.

EXTERIOR CONSTRUCTION

- Stainless steel front, top, and sides
- Dual pane thermal glass windows encased in stainless steel door frames
- Powder coated door handle with simultaneous door operation
- Triple-mounted pressure lock door design with turnbuckle assembly
- Modular slide out front control panel for easy cleaning
- Solid mineral fiber insulation at top, back, sides and bottom

INTERIOR CONSTRUCTION

- Full angle-iron frame
- Double-sided porcelainized baking compartment liner (14 gauge)
- Aluminized steel combustion chamber
- Dual inlet blower wheel
- Five chrome-plated racks, eleven rack positions with a minimum of 1-5/8" (41mm) spacing
- Removeable crumb trays

OPERATION

- Dual Flow Gas system combines direct and indirect heat
- Electronic spark ignition control system
- Removable dual tube burners
- Pressure regulator
- Manual gas service cut-off switch located on the front of the control panel
- Air mixers with adjustable air shutters
- Solid state thermostat with temperature control range of 200°F (93°C) to 500°F (260°C)
- Two speed fan motor (single speed in CE model)
- 1/2 horsepower blower motor with automatic thermal overload protection
- Control area cooling fan
- Interior oven lights

STANDARD FEATURES

- SSD Solid state digital control with LED display, Cook & Hold and Pulse Plus[®]
- 25" (635mm) adjustable stainless steel legs (for single units)
- 6" (152mm) adjustable stainless steel legs (for double sections)
- Draft diverter or draft hood for venting (select one)
- Three year parts and two year labor warranty
- Five year limited oven door warranty*

* For all international markets, contact your local distributor.



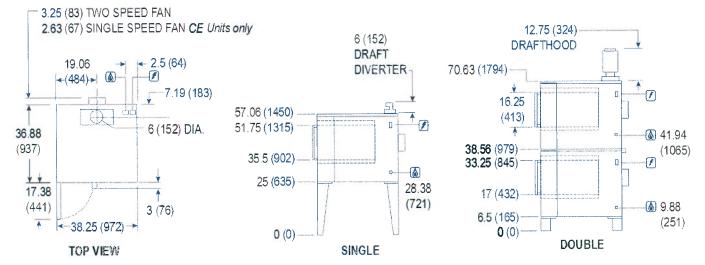
BLODGETT OVEN COMPANY www.blodgett.com 44 Lakeside Avenue, Burlington, VT 05401 • Phone: (802) 658-6600 • Fax: (802) 864-0183



WUDEL DEG-100



APPROVAL/STAMP



DIMENSIONS ARE IN INCHES (MM)

SHORT FORM SPECIFICATIONS - Provide Blodgett full-size convection oven model DFG-100, (single/double) compartment. Each compartment shall have (porcelain-ized/stainless) steel liner and shall accept five 18° x 26° standard full-size bake pans. Stainless steel front, top and sides. Doors shall be (solid stainless steel/ have dual pane thermal glass windows) with single powder coated handle and simultaneous operation. Unit shall be gas heated with electronic spark ignition and shall cook by means of a dual-flow system combining direct and indirect heat with a gas shutoff switch on the front of the control panel. Air in baking chamber distributed by dual inlet blower wheel powered by a two-speed (single speed for CE model), 1/2 HP motor with thermal overload protection. Each chamber shall be fitted with two commercial oven lamps, five chrome-plated removable racks and removable crumb trays. Control panel shall be recessed with solid state digital control with LED display. Cook & Hold and Pulse Plus. Provide three years parts, two year labor and five year door warranty. Provide options and accessories as indicated

DIMENSIONS:

Floor space Product clearance Oven Back Oven Sides Interior If oven is on casters: Single Double Double Low Profile

38-1/4" (972mm) W x 36-7/8" (937mm) D

0° from combustible and non-combustible construction 2" from combustible and non-combustible construction. 29" (737mm) W x 20" (508mm) H x 24-1/4" (616mm) D

Add 4-1/2" (114mm) to all height dimensions Height dimensions remain the same Subtract 2.5" (64mm) from all height dimensions

GAS SUPPLY:

3/4" NPT Manifold Pressure:

Inlet Pressure:

Natural - 3.5" W.C Propane - 10" W.C. Natural - 7.0" W.C. min. - 10.5" W.C. max. Propane - 11.0" W.C. min. - 13.0" W.C. max.

MAXIMUM INPUT:

Single Double 55,000 BTU/hr (16.2 Kw) 110.000 BTU/hr (32.4 Kw)

POWER SUPPLY:

115 VAC, 1 phase, 6 Amp, 60 Hz., 2-wire with ground, 1/2 H.P., 2 speed motor, 1120 and 1710 RPM

230V CE model, 1 phase, 3 Amp, 50 Hz., 2-wire with ground, 1/2 H.P., 1 speed motor, 1440 RPM

6' (1 8m) electric cord set furnished on 115 VAC ovens only.

Blodgett recommends a Pass & Seymour, model 2095, GFCI for this oven.

MINIMUM ENTRY CLEARANCE:

Uncrated 32-1/16" (814mm) Crated 37-1/2" (953mm)

SHIPPING INFORMATION:

Approx. Weight: Single 590 lbs. (268 kg) Double 1095 lbs. (497 kg) Crate sizes: 37-1/2" (952mm) x 43-1/2" (1105mm) x 51-3/4" (1315mm)

NOTE: The company reserves the right to make substitutions of components without prior notice

BLODGETT OVEN COMPANY www.blodgett.com • 44 Lakeside Avenue, Burlington, VT 05401 • Phone: (802) 658-6600 • Fax: (802) 864-0183 P 101 ITEM #7





OT	

LOCATION	
DATE	QTY.



FEATURES

CONSTRUCTION

- One-piece construction with rounded internal corners
- Stainless steel interior and exterior
- Satin Scotchbrite finish on door, side and control panels
- CFC-free polyurethane foamed-inplace insulation
- Wall thickness: 2.95"
- Hinged fan cover for easy cleaning access to the evaporator and fan
- Removable stainless steel wire racks with 1.2" vertical spacing intervals
- Plastic defrost drip tray on outer base
- Stainless steel feet height adjustable from 5.9" to 7.9"
- Standard product core probe with L-shaped handle for easy extraction

DOORS

- Self-closing door with full-height outer stainless steel handle
- Removable magnetic gasket
- Door frame heating element

RASTER-BUT

CONTROL PANEL

 LCD control board with encoder, multi-lingual, multi-sector allowing selection between time-based abatement mode or core probe mode, which acts upon various parameters

- Blast chilling with variable cycle progression
- 20 pre-set blast-chilling cycles
- Variable speed drives on evaporator fans for accurate temperature control and energy efficiency
- HACCP history
- Displays interior temperature, product temperature, ventilation speed
- Automatic setting of refrigerating phase at end of cycle
- HACCP alarms visible on display
- Alarms recorded on a list (nr. 30) including USB port

REFRIGERATION

- Refrigeration cell with rounded corners and condensation drain in base
- Cooling unit at evaporation temperature -10°F and condensation temperature 130°F rated at 3136 watt
- Max room temperature: +89°F
- Refrigerant: R-404A
- MBCF99/59-8A production per cycle: 99 lbs. of product from +194°F to +37°F in 90 minutes and 59 lbs. from +194°F to 0°F in 240 minutes
- MBCF115/55-16A production per

cycle: 114 lbs. of product from $+194^{\circ}$ F to $+37^{\circ}$ F in 90 minutes and 55 lbs. from $+194^{\circ}$ F to 0°F in 240 minutes

- MBCF220/110-16A production per cycle: 220 lbs. of product from +194°F to +37°F in 90 minutes and 110 lbs. from +194°F to 0°F in 240 minutes
- Pre-set inner cell temperature during chilling cycle: +32, +23, -13°F
- Pre-set inner temperature during freezing cycle: -13°F
- Evaporation temperature control with thermostat valve
- Internal operation: ventilated cell, ventilation not directly on foods
- Copper/aluminum corrosion-proofed evaporator
- Electric defrost

WARRANTY

- Standard limited one year parts and labor
- Additional four year coverage on compressor part

OPTIONS

- D Printer
- Additional wire shelves
- Additional support guides

908 Highway 15 North • New Albany, MS 38652

PHONE: 800-647-1284 or 662-534-9061 • FAX: 800-232-3966 or 662-534-6049 • www.master-bilt.com

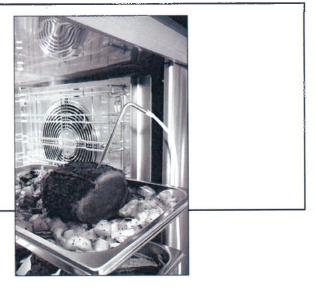


IVIAƏ I EN-UNILLTM IVIDUR ƏENIEƏ

REACH-IN BLASI CHILLERS/FREEZERS

EXCLUSIVE F.I.C. TECHNOLOGY

Master-Chill MBC models feature the newest patented technology in blast chillers/freezers with the Food Identification Controller (F.I.C.). The F.I.C. automatically adjusts blast chilling cycles with its single multi-sensor probe. The F.I.C. monitors temperatures in the core, beneath and on the surface, preventing surface freezing and degradation as well as preserving nutritional values of the food.



TECHNICAL SPECIFICATIONS

MOBEL	DIMENSIONS (in.)			DIMENSIONS (mm)							STANDARD SHELF	NG. OF SHELF	SHIP	SHIP
	L	D	H.	L	D	H×	VOLTS/ HZ/PB	AMPS	UNIT H.P.	NO. OF SHELVES	DIMENSIONS (in.)	SUPPORT RACKS	CU. FT.	WT. LB/KG
MBCF99/39-8A	311/2	331/8	74%/s	800	841	1895	220/60/3	12.5	3	3	23.6 x 15.7	8	56.6	453/206
MBCF115/55-16A	4025/10	397/8	78	1039	1011	1981	220/60/3	14.0	3	6	23.6 x 31.5	10	89.4	541/246
MBCF220/110-16A	4045/16	397/a	78	1039	1011	1981	220/60/3	17.5	5.5	10	23.6 x 31.5	10	89.4	651/296

*Height includes legs.

PAN CAPACITIES

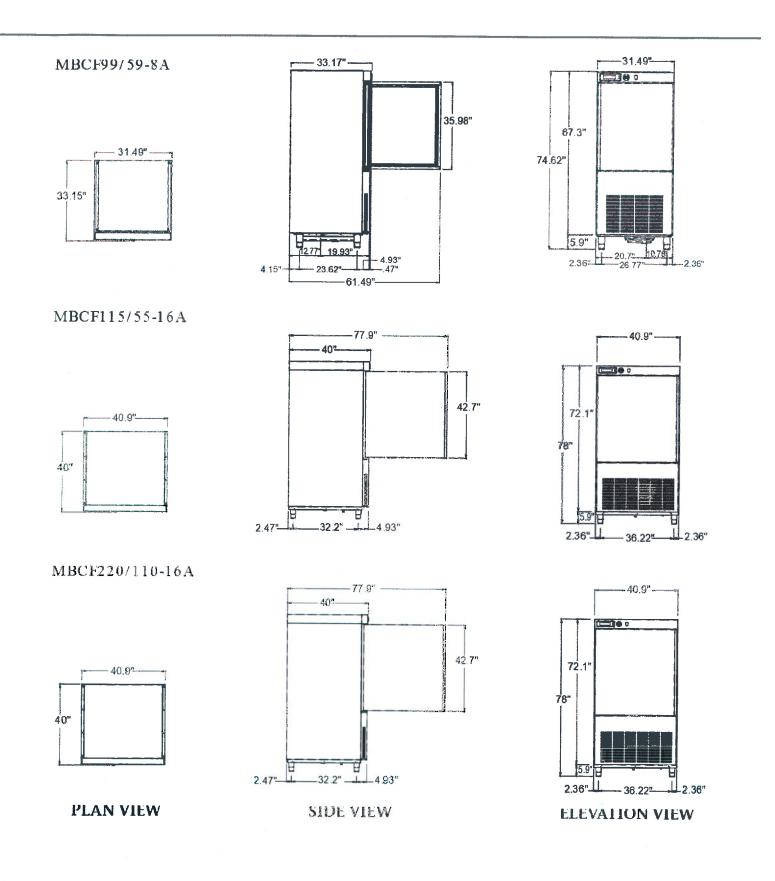
MODEL		2/1 GASTRONORM (530 x 650 x 40mm)	12" X 20" X 2.5"	12" X 20" X 1.5"	18" X 26" X 2.5"	18" X 26" X 1.5"
MBCF99/59-8A	12	N/A	8	12	N/A	N/A
MBCF115/55-16A	26	13	16	26	8	13
MBCF220/110-16A	26	13	16	26	8	13





HOOKUP

All models are hardwired (cord and plug not included)



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INIA9 I EN-CHILL MINDLE SENIES

REACH-IN BLAST CHILLERS/FREEZERS

BID SPECIFICATIONS

Item no. MBCF_____ Provide_____() Reach-In Blast Chiller/Freezer(s), Master-Bilt[®] model no. MBCF

Blast chiller/freezer will be constructed of stainless steel interior and exterior with rounded internal corners.

Blast chiller/freezer will feature patented Food Identifictation Controller with single multisensor probe.

Other features will include:

 CFC-free polyurethane foamedin-place insulation

- Hinged fan cover for easy cleaning access to the evaporator and fan
- Removable stainless steel wire rack with 1.2" vertical spacing intervals
- Plastic defrost drip tray on outer base
- Stainless steel feet heightadjustable from 5.9" to 7.9"
- Self-closing door with full-height outer stainless steel handle
- LCD control board with encoder, multi-lingual, multi-sector allowing selection between timebased abatement mode or core

probe mode, which acts upon various parameters

The refrigeration system is to be self-contained and use R-404A refrigerant. System will also feature a copper/aluminum corrosionproofed evaporator and electric defrost.

Blast chiller/freezer to have standard limited one year parts and labor with additional four year coverage on compressor part.

Blast chiller/freezer will be ETL listed in the U.S. and Canada and ETL Sanitation listed.

NOTE: Cabinet designed for optimum performance in air-conditioned area at 75°F ambient and 55% relative 🖬 midit 🎟



908 Highway 15 North • New Albany, MS 38652 PHONE: 800-647-1284 or 662-534-9061 • FAX: 800-232-3966 or 662-534-6049 • www.master-bilt.com

		Project Name	SOND DOOR R REFERE	AIA #
TILLE	TRUE FOOD SERVICE EQUIPMENT, INC.			-
	Rissouri 63366-4434 • (636)240-2400	Location:		
	325-6152 • Intl Fax# (001)636-272-7546	ltem #:		
Parts Dept. (800)424-TRUE • Parts Dep	t. Fax# (636)272-9471 • www.truemfg.com	Model #:		-
	eries:			
19-HC Rea	ch-In Solid Swing Door Refrig	gerator with Hydro	carbon Refrigerant	
			1-49-HC	
	2 2 1		True's solid door reach-i designed with enduring that protects your long investment.	quality
			Designed using the high quality materials and co to provide the user with product temperatures, li costs, exceptional food s and the best value in too service marketplace.	mponents colder ower utility safety
			Factory engineered, self capillary tube system us environmentally friendly hydro carbon refrigeran zero (0) ozone depletion (ODP), & three (3) global potential (GWP).	ing / R290 t that has i potential
			High capacity, factory bar refrigeration system that cabinet temperatures of 38°F (.5°C to 3.3°C) for the food preservation.	t maintains 33°F to
			Adjustable, heavy duty F shelves.	VC coated
			Positive seal self-closing Lifetime guaranteed doc and torsion type closure	or hinges
			Bottom mounted units f	eature:
			▶ "No stoop" lower shelf.	
W		-	Storage on top of cabine	et.
-			Compressor performs in most grease free area of	coolest, kitchen.
			Easily accessible conden	

				et Dime (inches) (mm)	nsions				NEMA	Cord Length (total ft.)	Crated Weight
Model	Doors	Shelves	W	D	H*	HP	Voltage	Amps	Config.		(lbs.) (kg)
T-49-HC	2	6	54½ 1375	29½ 750	78¾ 1991	1/2 1/3	115/60/1 230-240/50/1	5.4 2.4	5-15P	9 2.74	400 1 8 2
" Height does n <mark>ot inclu</mark>	de 5" (127 mm) for casto	rs or 6" (153 m	im) for opi	tional legs					A Plug	g type varies	by country.

	APPROVALS:	AVAILABLE AT:
3/16 Printed in U.S.A.		

Model:

1-49-HC

I-Series:

Reach-In Solid Swing Door Retrigerator with Hydrocarbon Refrigerant



DESIGN

· True's commitment to using the highest guality materials and over sized refrigeration systems provides the user with colder product temperatures, lower utility costs, exceptional food safety and the best value in today's food service marketplace.

REFRIGERATION SYSTEM

- Factory engineered, self-contained, capillary tube system using environmentally friendly R290 hydro carbon refrigerant that has zero (0) ozone depletion potential (ODP), & three (3) global warming potential (GWP).
- High capacity, factory balanced refrigeration system that maintains cabinet temperatures of 33°F to 38°F (.5°C to 3.3°C) for the best in food preservation.
- State of the art, electronically commutated evaporator and condenser fan motors. ECM motors operate at higher peak efficiencies and move a more consistent volume of air which produces less heat, reduces energy consumption and provides greater motor reliability.
- Bottom mounted condensing unit positioned for easy maintenance. Compressor runs in coolest and most grease free area of the kitchen. Allows for storage area on top of unit.

CABINET CONSTRUCTION

- Exterior Stainless steel front. Anodized guality aluminum ends, back and top.
- Interior attractive, NSF approved, clear coated aluminum liner. Stainless steel floor with coved corners.

- · Insulation entire cabinet structure and solid door are foamed-in-place using a high density, polyurethane insulation that has zero ozone depletion potential (ODP) and zero global warming potential (GWP).
- · Welded, heavy duty steel frame rail, black powder coated for corrosion protection.
- Frame rail fitted with 4" (102 mm) diameter stem castors - locks provided on front set.

DOORS

- Stainless steel exterior with clear aluminum liner to match cabinet interior. Doors extend full width of cabinet shell. Door locks standard.
- Lifetime guaranteed recessed door handles. Each door fitted with 12" (305 mm) long recessed handle that is foamed-in-place with a sheet metal interlock to ensure permanent attachment.
- · Positive seal self-closing doors. Lifetime guaranteed door hinges and torsion type closure system.
- Magnetic door gaskets of one piece construction, removable without tools for ease of cleaning.

SHELVING

- Six (6) adjustable, heavy duty PVC coated wire shelves 24 % "L x 22 % "D (624 mm x 569 mm). Four (4) chrome plated shelf clips included per shelf.
- Shelf support pilasters made of same material as cabinet interior: shelves are adjustable on 1/2" (13 mm) increments.

LIGHTING

 LED Interior lighting - safety shielded. Lights activated by rocker switch mounted above doors.

TUP

MODEL FEATURES

- Exterior temperature display.
- Evaporator is epoxy coated to eliminate the potential of corrosion.
- NSF-7 compliant for open food product.

ELECTRICAL

· Unit completely pre-wired at factory and ready for final connection to a 115/60/1 phase, 15 amp dedicated outlet. Cord and plug set included.



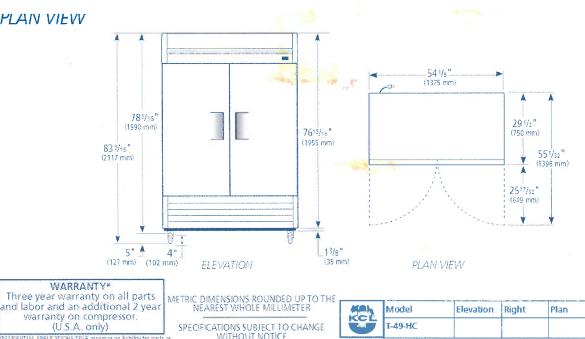
OPTIONAL FEATURES/ACCESSORIES

Upcharge and lead times may apply. 230 - 240V / 50 Hz.

- G" (153 mm) standard legs.
- 6" (153 mm) seismic/flanged legs.
- Alternate door hinging (factory installed).
- Additional shelves.
- Half door bun tray racks. Each holds up to eleven 18"L x 26"D (458 mm x 661 mm) sheet pans (sold separately).
- Evil door bun tray racks. Each holds up to twenty-two 18"L x 26"D (458 mm x 661 mm) sheet pans (sold separately).

Back

3D



PRESIDENTIAL APPLIE ATIONS/TRUE assumes no. II ability for parts on boor coverage for component failure or other damages resulting from installation in non-commercial or residential applications.

TRUE FOOD SERVICE EQUIPMENT

2001 East Terra Lane • O'Fallon, Missouri 63366-4434 • (636)240-2400 • Fax (636)272-2408 • Toll Free (800)325-6152 • Intl. Fax# (001)636-272-7546 • www.truemfg.com

PLAN VIEVV

-1-	110	TRUE FOOD SERVICE	Project Name:			AIA #
	UP		Location:			
		'Fallon, Missouri 63366)325-6152 • Intl Fax# (001)636-272-75	Location:	Q1	ty:	SIS #
Parts Dept. (800)424	-TRUE • Parts Dept. F	ax# (636)272-9471 • www.truemfg.co	m Model #:			_
Model: I-19	I-Sel	ries: In Solid Swing Door Refrigerat	or			
	- HOXCH	in some siving boor nemgerat				
	A STORE				1-19	
		0		designe	lid door reach- d with enduring tects your long ent.	g quality
				quality r to provid product utility co safety ar	d using the hig naterials and co de the user with temperatures, ists, exceptiona ind the best value ood service ma	omponents n colder lower al food ue in
	Г			refrigera 38°F (.5°	d, factory balar tion system ho C to 3.3°C) for t servation.	lds 33°F to
	L			front. Th with hig	steel solid doc e very finest st her tensile stree nts and scratch	ainless ngth for
				Adjustab coated si	ile, heavy duty helves.	PVC
				Lifetime	seal self-closing guaranteed do on type closure	or hinges
				Bottom m	ounted units	feature:
				"No stoo	p" lower shelf.	
	-			Storage	on top of ca <mark>bi</mark> n	et.
					sor performs ir ase free area of	
		C.		Easily act	cessible conder ing.	nser coll
				_		

				et Dime (inches) (mm)					NEMA	Cord Length	Crated Weight
Model	Doors	Shelves	L	D	H*	НР	Voltage	Amps		(total ft.) (total m)	(lbs.) (kg)
T-19	1	3	27 686	24½ 623	75¼ 1912	1% 1%	115/60/1 230-240/50/1	8.9 3.0	5-15P	9 2.74	235 107

* Height does not include 314" (83 mm) for castors or 6" (153 mm) for optional legs.

	NSECE	APPROVALS:	AVAILABLE AT:	
3/11	Printed in U	.S.A.		

APlug type varies by country.

Model:

1-19

I-Series: Reach-In Solid Swing Door Refrigerator

SIANDARD FEATURES

DESIGN

• True's commitment to using the highest quality materials and oversized refrigeration systems provides the user with colder product temperatures, lower utility costs, exceptional food safety and the best value in today's food service marketplace.

REFRIGERATION SYSTEM

- Factory engineered, self-contained, capillary tube system using environmentally friendly (CFC free) 134A refrigerant.
- Extra large evaporator coil balanced with higher horsepower compressor and large condenser; maintains 33°F to 38°F (.5°C to 3.3°C) for the best in food preservation.
- Sealed, cast iron, self-lubricating evaporator fan motor(s) and larger fan blades give True reach-in's a more efficient low velocity, high volume airflow design. This unique design ensures faster temperature recovery and shorter run times in the busiest of food service environments.
- Bottom mounted condensing unit positioned for easy maintenance. Compressor runs in coolest and most grease free area of the kitchen. Allows for storage area on top of unit.

CABINET CONSTRUCTION

- Exterior Stainless steel front. Anodized quality aluminum ends, back and top.
- Interior attractive, NSF approved, white aluminum liner. Stainless steel floor with coved corners.

- Insulation entire cabinet structure and solid door are foamed-in-place using Ecomate. A high density, polyure thane insulation that has zero ozone depletion potential (ODP) and zero global warming potential (GWP).
- Welded, heavy duty steel frame rail, black powder coated for corrosion protection.
- Frame rail fitted with 2 ½" (64 mm) diameter stem castors - locks provided on front set.

DOOR

- Stainless steel exterior with white aluminum liner to match cabinet interior. Door extends full width of cabinet shell. Door lock is standard.
- Lifetime guaranteed recessed door handle. Door fitted with 12" (305 mm) long recessed handle that is foamed-in-place with a sheet metal interlock to ensure permanent attachment.
- Positive seal self-closing door. Lifetime guaranteed door hinges and torsion type closure system.
- Magnetic door gasket of one piece construction, removable without tools for ease of cleaning.

SHELVING

- Three (3) adjustable, heavy duty PVC coated wire shelves 22% "L x 18¼ "D (582 mm x 464 mm). Four (4) chrome plated shelf clips included per shelf.
- Shelf support pilasters made of same material as cabinet interior; shelves are adjustable on ½" (13 mm) increments.

LIGHTING

 Incandescent interior lighting - safety shielded. Lights activated by rocker switch mounted above door.

MODEL FEATURES

- Exterior temperature display.
- Evaporator is epoxy coated to eliminate the potential of corrosion.
- NSF-7 compliant for open food product.

ELECTRICAL

 Unit completely pre-wired at factory and ready for final connection to a 115/60/1 phase, 15 amp dedicated outlet. Cord and plug set included.

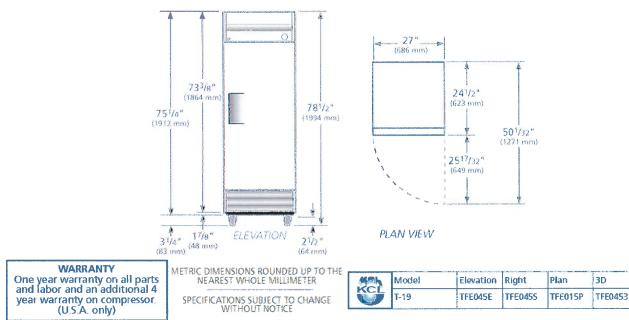


OPTIONAL FEATURES/ACCESSORIES

- Upcharge and lead times may apply.
- 230 240V / 50 Hz.
- 🗅 6" (153 mm) standard legs.
- □ 6" (153 mm) seismic/flanged legs.
- Additional shelves.
- Remote cabinets (condensing unit supplied by others; system comes standard with 404A expansion valve and requires R404A refrigerant). Consult factory technical service department for BTU information. All remote units must be hard wired during installation.

Back

PLAIN VIEVV



TRUE FOOD SERVICE EQUIPMENT

2001 East Terra Lane • O'Fallon, Missouri 63366 • (636)240-2400 • Fax (636)272-2408 • (800)325-6152 • Intl. Fax# (001)636-272-7546 • www.truemfg.com





FEATURES:

drawer installation

adjacent surfaces.

CONSTRUCTION:

Top is sound deadened.

30"

24"

36"

48" 60"

72"

84*

96"

108

120'

132"

144"

& back and square side edges.

WURR IABLES

STANUARU Series - Flat Top - UNDERSMELT Style



Top is furnished with 1-5/8" sanitary rolled rim edges on front

To reinforce and maintain a level working surface, 24° wide

tables are supplied with TWO hat channels and 30" and 36"

Pre-engineered welded angle adapters insure ease of future

Aluminum die cast "leg-to-shelf" clamp secures shelf to leg

eliminating unsightly nuts & bolts. Undershelf is adjustable.

Roll formed embossed galvanized hat channels are secured to top by means of structural adhesive and weld studs.

MS-Series:

Stainless Steel Legs & Undershelf

30"

Wide

MS-300

MS-302

MS-303

MS-304

MS-305

MS-306

MS-307

MS-308

MS-309

MS-3010

MS-3011

MS-3012

36'

Wide

MS-363

MS-364

MS-365

MS-366

MS-367

MS-368

MS-369

MS-3610

MS-3611

MS-3612

All TIG welded. Exposed weld areas polished to match

Entire top mechanically polished to a satin finish.

24"

Wide

MS-240

MS-242

MS-243

MS-244

MS-245

MS-246

MS-247

MS-248

MS-249

MS-2410

MS-2411

MS-2412

Gussets weided to support hat sections.

wide tables are supplied with THREE hat channels.

Item #: Uty #: Model #: MS - 364

Project #:



NEW Rolled Rim Edges on Front & Back and Square Side Edges



Featuring as Standard: "THE PROVEN" **ORIGINAL ADVANCE TABCO** Adjustable Undershelf with Die Cast Leg Clamp

MATERIAL:

MS-SERIES: Stainless Steel Legs & Undershelf

- TOP: 16 gauge stainless steel type "304" series.
- SHELF: 18 gauge stainless steel.
- LEGS: 1 5/8" diameter tubular stainless steel 1" adjustable stainless steel bullet feet. Stainless steel gussets.

MG-SERIES: Galvanized Legs & Undershelf

- TOP: 16 gauge stainless steel type "304" series.
- SHELF: 18 gauge galvanized steel.
- LEGS: 1 5/8" diameter tubular galvanized steel.
 - 1" adjustable plastic feet. Galvanized steel gussets.

MG-Series: Galvanized Steel Legs & Undershelf

L	24" Wide	30" Wide	36" Wide
30"	MG-240	MG-300	
24"	MG-242	MG-302	The Contraction of the Contracti
36"	MG-243	MG-303	MG-363
48"	MG-244	MG-304	MG-364
60"	MG-245	MG-305	MG-365
72"	MG-246	MG-306	MG-366
84"	MG-247	MG-307	MG-367
96"	MG-248	MG-308	MG-368
108"	MG-249	MG-309	MG-369
120"	MG-2410	MG-3010	MG-3610
132"	MG-2411	MG-3011	MG-3611
144"	MG-2412	MG-3012	MG-3612

Create Your Own Efficient Workstation with the Available Standard Accessories (Visit Section K)

ISI



Customer Service Available To Assist You 1-800-645-3166 8:30 am - 8:00 pm E.S.T. Email Orders To: customer@advancetabco.com. For Smart Fabrication™ Quotes, Email To: smartfab@advancetabco.com or Fax To: 631-586-2933

NEW YORK Fax: (631) 242-6900

GEORGIA Fax: (770) 775-5625

TEXAS Fax: (972) 932-4795

NEVADA Fax: (775) 972-1578

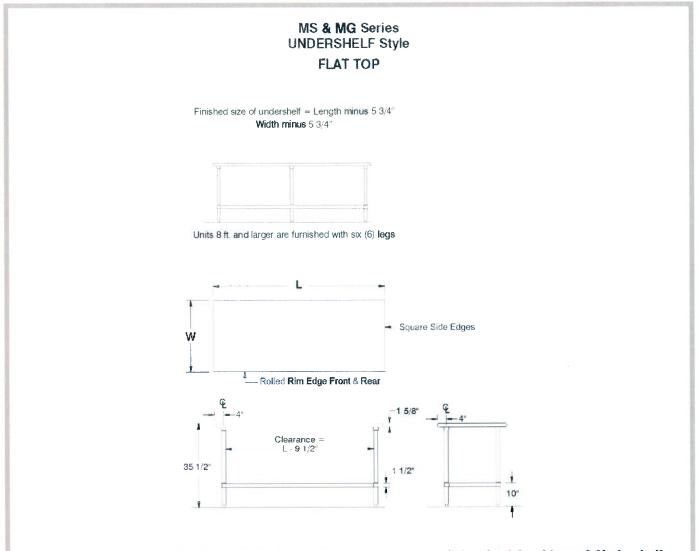
H-3



LIN ENSIGNS and SPECIFICATIONS

ALL DIMENSIONS ARE TYPICAL TOL ± 500"

All Units Shipped Unassembled (KD) for Reduced Shipping Costs.



MS-Series: Stainless Steel Legs & Undershelf

L	24" Wide	Wt.	30" Wide	Wt.	36" Wide	Wt.
30"	MS-240	49 lbs.	MS-300	65 lbs.		
24"	MS-242	31 lbs.	MS-302	55 lbs.		
36°	MS-243	64 lbs.	MS-303	72 lbs.	MS-363	88 lbs.
48"	MS-244	79 lbs.	MS-304	89 lbs.	MS-364	98 lbs.
60"	MS-245	92 lbs.	MS-305	107 lbs.	MS-365	118 lbs.
72"	MS-246	109 lbs.	MS-306	125 lbs.	MS-366	138 lbs.
84"	MS-247	130 lbs.	MS-307	148 lbs.	MS-367	164 ibs.
96"	MS-248	145 lbs.	MS-308	166 lbs.	MS-368	184 lbs
108"	MS-249	161 lbs.	MS-309	176 lbs.	MS-369	190 lbs
120"	MS-2410	261 lbs.	MS-3010	287 lbs.	MS-3610	308 lbs
132"	MS-2411	293 lbs.	MS-3011	324 lbs.	MS-3611	358 lbs.
144"	MS-2412	308 lbs.	MS-3012	339 lbs.	MS-3612	373 lbs

MG-Series: Galvanized Steel Legs & Undershelf

L	24" Wide	Wt.	30" Wide	Wt.	36" Wide	Wt.
30"	MG-240	49 lbs.	MG-300	65 lbs.		
24"	MG-242	31 lbs.	MG-302	55 lbs.		
36"	MG-243	64 lbs.	MG-303	72 lbs.	MG-363	88 lbs.
48"	MG-244	79 lbs.	MG-304	89 lbs.	MG-364	98 lbs.
60"	MG-245	92 lbs.	MG-305	107 lbs.	MG-365	118 lbs.
72"	MG-246	109 lbs.	MG-306	125 lbs.	MG-366	138 lbs.
84"	MG-247	130 lbs.	MG-307	148 lbs.	MG-367	164 lbs.
96"	MG-248	145 lbs.	MG-308	166 lbs.	MG-368	184 lbs.
108"	MG-249	161 lbs.	MG-309	176 lbs.	MG-369	190 lbs.
120"	MG-2410	261 lbs.	MG-3010	287 lbs.	MG-3610	308 lbs.
132"	MG-2411	293 lbs.	MG-3011	324 lbs.	MG-3611	358 lbs.
144"	MG-2412	308 lbs.	MG-3012	339 lbs.	MG-3612	373 lbs.



ADVANCE TABCO is constantly engaged in a program of improving our products. Therefore, we reserve the right to change specifications without prior notice. © ADVANCE TABCO, SEPTEMBER 2005

200 Heartland Boulevard, Edgewood, NY 11717-8380

H-3a

土 1) 101 ITEM





Item	#
	(Orro)
Job	

IVIELTO CO S Series Insulation Armour™ ⊓eateo Holding and Frooling Capinets

- Insulation Armour™: Patented insulation technology retains heat, saves energy, and provides a cool-to-touch exterior. Durable polymer construction is dent, impact, and stain resistant. Molded-in hand holds create vertical handles for mobile applications.
- Colors: Insulation Armour is available in Red. Blue, or Gray standard and in other colors on a promotional basis or upon request
- · Control: Three modules are available: Holding, Moisture, and Combination Proof and Hold. All feature an easy-to-read digital thermometer, recessed control dials, a master on/off switch, and power indicator lights. All are removable without tools for easy cleaning, and allow for future upgrades without replacing entire cabinet body.
- · Performance: All modules provide fast heat-up and recovery through a thermostatically controlled, forced convection system.
- Sizes: C5 3 Series cabinets are available in Full Height (71", 1803mm), 3/4 Height (59", 1499mm), and 1/2 Height (44", 1118mm) sizes.
- · Doors: Solid insulated aluminum or clear polycarbonate doors are available. Full Height cabinets can be configured with full length or dutch-style doors. Clear doors provide visibility of the contents of the cabinet without the heat loss associated with opening the door.
- Capacity: Three slide styles provide maximum holding capacity. Choose from Universal Wire, Lip Load, or Fixed Wire.
- · Reliability: Reliability and durability are designed into every C5. High-quality components provide a long life of worry free use
- Power Options: Choose between standard high wattage or low wattage models based on the specific needs of the application.







3 Series Removable Control Modules

- Holding Module: Hot holding at higher temperatures without moisture control.
- Moisture Module: Hot holding and proofing. Moisture control at any temperature.
- Combination Module: Hot holding and proofing. Moisture control at lower temperatures (proofing).



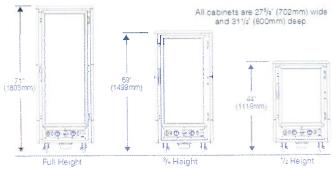
InterMetro Industries Corporation North Washington Street Wilkes-Barre, PA 18705 www.metro.com



C5 3 Series Insulation Armour™ Heated Holding and Proofing Cabinets

3.93

U5 3 Series insulation Armour™ Heated Holding and Proofing Cabinets



- Cabinet Material: .063" (1.8mm) aluminum, natural interior with .125"
- (3.2mm) aluminum chassis. Insulation Armour[™]: High Density Polyethylene (HDPE)
- Casters: Four casters with 5" (127mm) donut neoprene wheel, double ball bearing swivel, ball bearing axel, nickel plated, two with brake
- Solid Doors: Fully insulated with 1" (25.4mm) fiberglass, double panel .063" 1.8mm) aluminum, brushed exterior, natural interior.
- Clear Doors: Extruded aluminum powder coated frame with .090" (2.3mm) polycarbonate window.
- Hinges: Field reversible, double hinged, 180° swing, with long-life nylon bearings
- Gaskets: High temperature, door mounted, Santoprene gaskets.
- Latches: Polymer high-strength magnetic pull latch with lever-action release
- Hand Holds: Molded into the Insulation Armour[™] on all four corners
- Universal Slides: 1/4" (6.4mm) dia. nickel-chrome electroplated wire. adjustable on 11/2" (38mm) increments.
- Lip Load Slides: 1 1/2"x /2"x 063" (38x38x1.8mm) extruded aluminum channel slides, 11/2" (38mm) fixed spacing.
- Fixed Wire Slides: 1/4" (6.4mm) dia. nickel-chrome electroplated wire. welded on 3' (76mm) spacing.
- Drip Trough: Smooth polymer drip trough with catch pan.
- Holding Modules: Removable without tools, digital thermometer, recessed control dials, master on/off switch, "Power On" light, water pan, ball bearing blower forced air system, 71/2' cord, UL, CUL, and NSF Listed.
- **Electrical and Performance:**
- Holding Module: 2000 Watt, 120 Volts, 60 Hz., single phase, 16 7 Amps. 80°F to 200°F operating temperature range. NEMA 5-20P plug
- Moisture Module: 2000 Watt, 120 Volts, 60 Hz., single phase, 16.7 Amps. 80°F to 200°F operating temperature range. 35% RH at 160°F, 95% RH at 95°F. NEMA 5-20P plug • Proofing Module: 1440 Watt, 120 Volts, 60 Hz., single phase, 12 Amps, 80°F
- to 120^{°F} operating temperature range. 95% RH at 95^{°F} NEMA 5-15P plug. Combination Module: 2000 Watt, 120 Volts, 60 Hz., single phase, 16.7
- Amps. 80°F to 200°F operating temperature range. 95% RH at 95°F. NEMA 5-20P plug
- Clearance Requirements: 18' (46cm) away from any cooking equipment. AVOID contact with surfaces that exceed 200°F (90°C). Minimum clearance from enclosures is 11/2" (38mm) on sides, back and top.
- Slide Consolities



Slide Type 9⊨ Full Height Module Type C = Combination U = Universal Wire 4 = Fixed Wire L = Lip Load Aluminum = 3/4 Height M = Moisture H = Heated Holding 5 = 1/2 Height NEMA 5-20P Door Style FS = Full Length Solid DS = Dutch Solid * For Standard Wattage Cabinets (120V, 16A, 60Hz, 2000W) To = Full Length Clear DC = Dutch Clear * Please note: Dutch doors only available on full-height models Cabinets ordered without a color designation default to Red. Low Watt Model Number Description 5 5 П Add "L" for Lower Wattage Combination or Holding Module Cabinets (120V, 12A, 60Hz, 1440W) NEMA 5-15P Export Model Number Description ALA Γ 5 57 77 Add "X" for Export Cabinets (220-240V, 7.6-8.3A, 50/60Hz, 1681-2000W) NEMA 6-15P Blue or Gray Model Description - 0 57 **T**U DI h ** Cabinets ordered without a color designation default to Red. No Suffix = Red BU = Blue GY = Grav Models with Accessories or Options An "A" suffix indicates that accessories need to be C539-CDC-UA factory assembled to the cabinet. Order accessories 539-CDC-U-BUA separately.

Options/Accessories*

- Smail Item Shelf (C5-SHELF-S)
- Stainless Steel Legs (C5-SSLEGS)
- Universal Slide Pair, Chrome (C5-USLIDEPR-C)
- 6" Casters (C5-6CASTER)
- Rear Rigid Casters (C5-5RDGCSTR)
- Travel Latch (C5-TRVL)
- Flush Door Latch (C5-LATCHFLUSH-1)*
- Straight Plug, 20 Amp, 120V (C5-STRPLG-20)
- Straight Plug, 15 Amp, 120V (C5-STRPLG-15)
- Factory Left-Hand Hinging (DD3768)
- Stainless Steel Universal Slides (please call)

*Please note: (2) handles required for dutch door models

1		Universal Wire	Pan Capacity**		Lip Load Pan Capacity	Fixed Wire Pan Capacity		
Cabinet Size	Slide I Provided		18"x26"	12"x20"x2.5" GN 1/1	18"x26"	18"x26"	12"x20"x2.5" GN 1/1	
Full Height	18	37	18	34	35	18	34	
Full Height Dutch	18	35	17	32	34	17	32	
³ / ₄ Height	14	29	14	26	27	14	26	
1/2 Height	8	17	8	16	17	8	16	

Maximum number of slide pairs @ 11/2' spacing. Additional slide pairs ordered separately **Capacity based on standard number of slide pairs provided

Metro Heated cabinets are for hot food holding applications only.

All Metro Catalog Sheets are available on our website: www.metro.com



InterMetro Industries Corporation North Washington Street • Wilkes-Barre, PA 18705 • 570.825.2741 Fax: 800.638.9263 (East Coast/Canada) • Fax: 800.638.3292 (West Coast) FOR PRODUCT INFORMATION/CUSTOMER SERVICE: U.S./Canada/Latin America: 1.800.992.1776 • Europe: +31.76.587.7550 Asia/Pacific: +65.6567.8003 • Middle East/Africa: +971.4.811.8286 Copyright © 2012 InterMetro Industries Corp Information and specifications are subject to change without notice. Please confirm at time of order



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Specifications

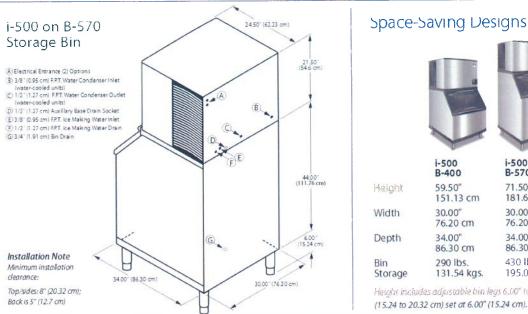


X





Indigo[™] Series 500 Ice Cube N achine



i-500 B-570 i-500 B-400 59.50" 71.50" Height 151.13 cm 181.61 cm 30.00" Width 30.00" 76.20 cm 76.20 cm 34.00" 34.00" Depth 86.30 cm 86.30 cm 290 lbs. 430 lbs. Bin 131.54 kgs. 195.04 kgs. Storage

Height includes adjustable bin legs 6.00" to 8.00", (15.24 to 20.32 cm) set at 6.00" (15.24 cm).

ecit	ications		Ice Producti	on 24 Hours	Power Usage kWh/100 lbs.@90°Air/70°F	Water Usage/100 lbs. 45.4 kgs. of Ice	ELED OV
[Model	Ice Shape	70°Air/50°F Water	90°Air/70°F Water	1 Ph	Potable Water	ENERGY STAR'
		regular	500 lbs.	370 lbs.	5.04	19.9 Gal.	*
•	IR-0500A		227 kgs.	168 kgs.	- 5.94	75.3 L	*
AIR-COOLED		dice	530 lbs.	390 lbs.	5.79	19.9 Gal.	*
같	ID-0502A	2	240 kgs.	177 kgs.	5.79	75.3 L	*
A	Nacath	half-dice	560 lbs.	410 lbs.	5.73	19.9 Gal.	*
	IY-0504A	R.	254 kgs.	186 kgs.	5.75	75.3 L	~
	ID of only	regular	500 lbs.	420 lbs.	4.58	19.9 Gal.	NA
	IR-0501W	1	227 kgs.	191 kgs.		75.3 L	
	ID occolini	dice	550 lbs.	430 lbs.	4.58	19.9 Gal.	NA
ğ	ID-0503W	۵	249 kgs.	195 kgs.	4.30	75.3 L	
WATER-COOLED	N/ of of M	half-dice	550 lbs.	440 lbs.	4.52	19.9 Gal.	NA
MA	IY-0505W	le le	249 kgs.	200 kgs.	4.52	75.3 L	
	* Water-cooled G	Condenser Water Usa	age / 100 lbs. /45.4 kgs. of	Ice: 165 gal/625 L *V	/ater-cooled models are exclude	d from ENERGY STAR qual	ification.
		dice	480 lbs.	430 lbs.	5,79	19.9 Gal.	*
COOLED	ID-0592N	2	218 kgs.	195 kgs.	5.79	75,3 L	×
8	D/ acathi	half-dice	510 lbs.	440 lbs.	5.73	19.9 Gal.	*
	IY-0594N	1. No. 1	231 kgs.	200 kas.		75.3 L	*

Order ice storage bin separately. Ice storage bin and UC-0495 remote condenser must be ordered separately. Consult remote condenser specification sheet for details.

Accessories

Luminice™ Growth Inhibitor reduces yeast and bacteria growth for a cleaner ice machine.



Bin Level Control Allows ice bin level to be automatically set. Built-in LED light illuminates bin.



Arctic Pure* Water Filters sediment and chlorine odors for better tasting ice. **AuCS**[®] schedules and performs routine ice machine cleaning

automatically.

4769C

2110 South 26th Street PO Box 1720 Manitowoc, WI 54221-1720 USA Tel: 1.920.682.0161 Fax: 1.920.683.7589 www.manitowocice.com



13 ITEM # 101



STAINLESS STEEL

MEAVY DULY WURK TABLES

with Adjustable Undershelf





Stainless Steel Bullet Feet are standard on MSLAG & KMSLAG Series



item #:	Qty #:	50
Model #:	MSLAG	365 - X
Project #:		

FEATURES:

MSLAG: Top is furnished with 1 5/8" square bend on sides and 1 5/8" sanitary rolled rim on front and rear & square sides.

KMSLAG: Top is furnished with 1 5/8" square bend on sides and 1 5/8" sanitary rolled rim on front with 5" Rear Splash.

Two hat-channels stud welded under tabletop to reinforce and maintain a level work surface.

Aluminum die cast "leg-to-shelf" clamp secures shelf to leg eliminating unsightly nuts and bolts. Undershelf is fully adjustable.

CONSTRUCTION:

All TIG welded, Exposed weld areas polished to match adjacent surface.

Top is sound deadened.

Roll formed embossed galvanized hat channels are secured to top by means of structural adhesive and weld studs.

Gussets weided to support hat channels.

MATERIAL:

TOP: 16 gauge stainless steel type "304" series.



					Cu.			Cu.
		L	Model #	WT.	Ft.	Model #	WT.	Ft.
			FLAT TOP			5" SPLAS	H	
		24"	MSLAG-242-X	43 lbs.	4	KMSLAG-242-X	47 lbs.	6
		30″	MSLAG-240-X	52 lbs.	4	KMSLAG-240-X	55 fbs.	6
	0	36"	MSLAG-243-X	57 lbs.	4	KMSLAG-243-X	62 lbs.	6
	5	48″	MSLAG-244-X	70 lbs.	6	KMSLAG-244-X	75 lbs.	9
	8	60 "	MSLAG-245-X	80 lbs.	7	KMSLAG-245-X	90 lbs.	11
		72″	MSLAG-246-X	96 lbs.	8	KMSLAG-246-X	103 lbs	13
	L	84"	MSLAG-247-X	109 lbs.	10	KMSLAG-247-X	118 lbs.	15
		96″	MSLAG-248-X*	130 lbs	11	KMSLAG-248-X*	139 lbs.	17
		24″	MSLAG-302-X	46 lbs.	5	KMSLAG-302-X	51 lbs.	8
		30″	MSLAG-300-X	60 lbs.	5	KMSLAG-300-X	63 lbs.	8
		36"	MSLAG-303-X	69 lbs.	5	KMSLAG-303-X	74 lbs	8
	N	48"	MSLAG-304-X	85 lbs.	7	KMSLAG-304-X	91 lbs.	11
		60″	MSLAG-305-X	103 lbs.	8	KMSLAG-305-X	109 lbs.	13
	30"	72"	MSLAG-306-X	120 lbs.	10	KMSLAG-306-X	127 ibs.	16
	6.9	84″	MSLAG-307-X	136 lbs.	12	KMSLAG-307-X	139 lbs.	18
		96″	MSLAG-308-X*	161 lbs.	13	KMSLAG-308-X*	166 lbs.	20
	111	36″	MSLAG-363-X	75 lbs.	6	KMSLAG-363-X	79 lbs.	10
		48″	MSLAG-364-X	94 lbs.	9	KMSLAG-364-X	98 lbs.	13
C	5	60″	MSLAG-365-X	112 lbs.	10	KMSLAG-365-X	119 los.	15
	io.	72″	MSLAG-366-X	132 lbs.	12	KMSLAG-366-X	139 lbs.	18
	ŝ	96*	MSLAG-368-X*	179 lbs.	16	KMSLAG-368-X*	190 lbs.	24

*All 8 ft. Tables Provided With 6 Legs



5" BACKSPLASH KMSLAG-X Series

FLAT TOP MSLAG-X Series

Customer Service Available To Assist You 1-800-645-3166 8:30 am - 8:00 pm E.S.T.

For Orders & Customer Service:

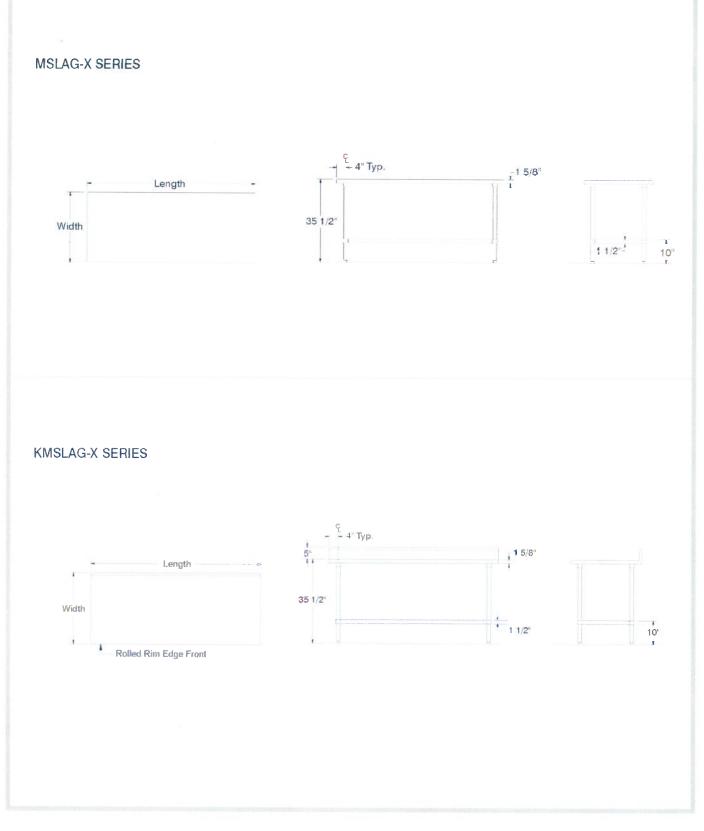
For Smart Fabrication™ Quotes:

Email: customer@advancetabco.com or Fax: 631-242-6900

Email: smartfab@advancetabco.com or Fax: 631-586-2933

TOL ± .500"

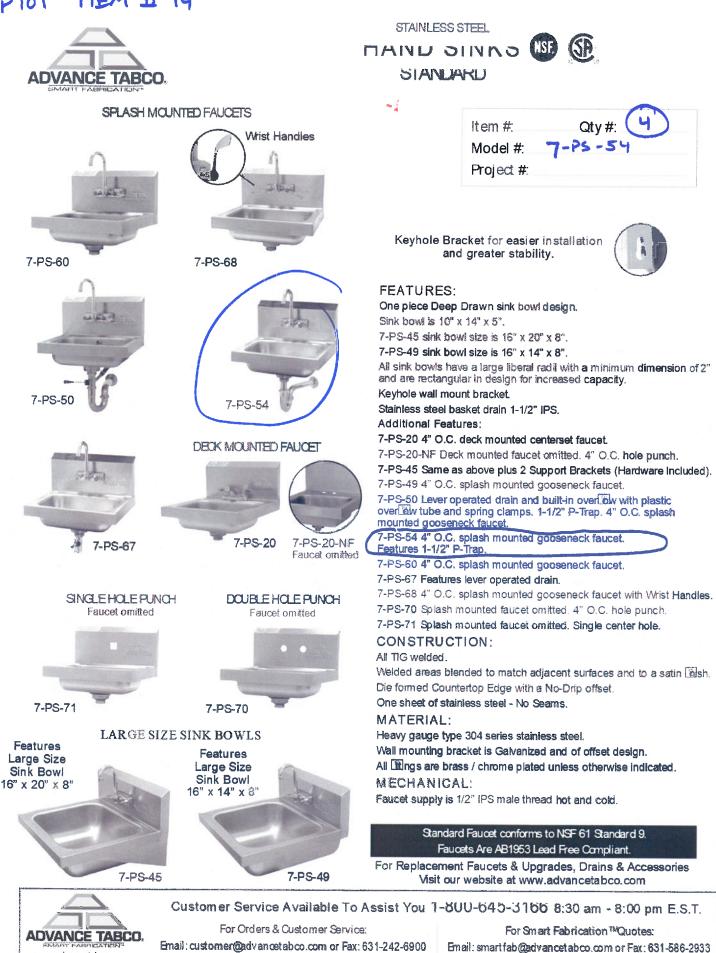
ALL DIMENSIONS ARE TYPICAL

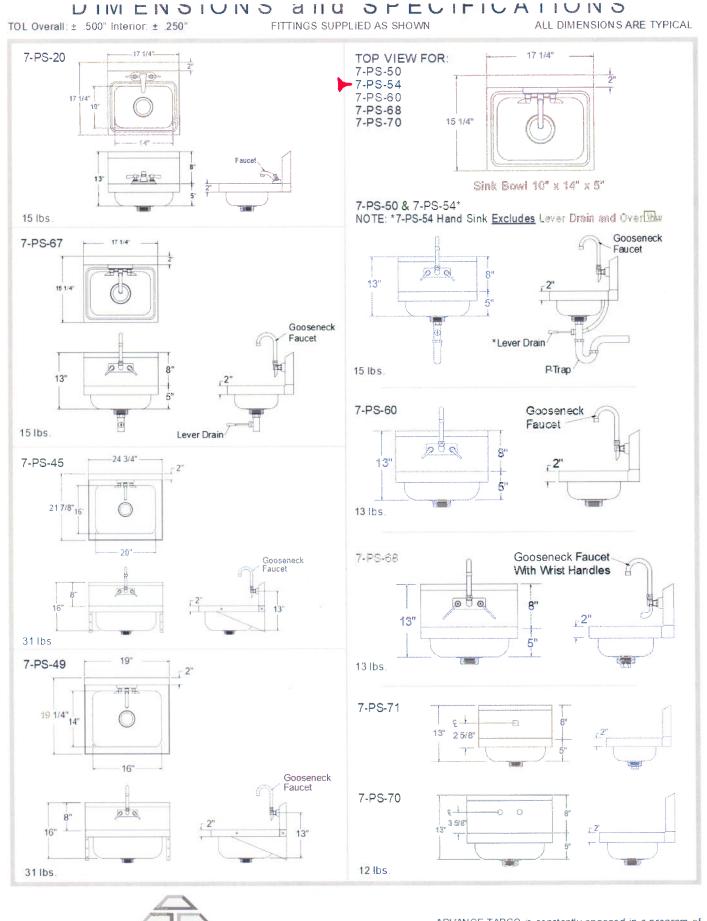




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Item # _____ Quantity ____

16

PIOL ITEM



C

C A R



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NI/CU//CU

SLICER

5

JLIVER

STANDARD FEATURES

KNIFE

- 13" CleanCut" Knife
- Removable Ring Guard Cover
- Zero Knife Exposure
- Heavy-Gauge Stainless Steel Knife Cover
- Top-Mounted Borazon Stone Sharpener

OPERATION

- ½ H.P. Knife Drive Motor
- Timing Belt for Automatic Drive System
- Variable Four-Speed Automatic Carriage with Front Mounted Controls
- Three Stroke Lengths

INTERLOCKS

- Home-Start Position
- No-Volt Release

HOUSING AND BASE

- Burnished Aluminum Base
- Machine Grooves on Gauge Plate and Knife Cover
- Exclusive Tilting, Removable Carriage System
- Electroless Nickel Plated Single Slide Rod with Reservoir Wick in Transport
- Double-Action Indexing Cam
- Lift Assist Cleaning Leg
- Ergonomic-Style Handle
- Rear-Mounted, Removable Meat/Vegetable Grip Arm

MODELS

- HS7 Automatic Slicer/Burnished Finish
- HS7N Automatic Slicer/Burnished Finish with Non-Removable Knife Feature

ACCESSORIES

- Full Fence
- Food Chute
- Debris Deflector

Specifications, Details and Dimensions on Inside and Back.





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JLIVEK

701 S Ridge Avenue, Troy, OH 45374 1-888-4HOBART • www.hobartcorp.com

SOLUTIONS / BENEFITS

PRECISION SLICING

13" CleanCut[™] Knife

- Super alloy edge stays sharp longer
- Lasts two to three times longer than carbon coated or stainless steel knives

Top Mounted Borazon Stone Sharpener

- Single-action sharpens and hones in just 15 seconds
- Removable and warewasher safe for easy cleaning and sanitation – can be used wet or dry
- Lifetime guaranteed Borazon sharpening stones provide maximum performance with reduced maintenance costs

Machined Grooves on Gauge Plate and Knife Cover

Reduces drag for smoother slicing motion

Double-Action Indexing Cam

- The first full revolution of the indexing knob provides
- precise control of shaving, chipping and thin slicingThe second revolution opens the gauge plate quickly
- for thicker slicing
 Gauge plate holds position for consistent, precision slicing

EASY TO USE

1/2 H.P. Knife Drive Motor

Reserve power runs at 430 rpm for optimum results

Timing Belt Automatic Drive System

- Extends belt life while producing optimum slicing results
- Quieter operating slicer
- Four carriage speeds including 28, 38, 48 and 58 strokes per minute

Three Stroke Lengths

Three stroke lengths ideal for a variety of products

Electroless Nickel Plated Single Slide Rod with Reservoir Wick in Transport

Smooth operation with continous lubrication of carriage rod

Zero Knife Exposure*

- Knife edge is covered when sharpener is both mounted and removed, making cleaning easier
- Gauge plate remains closed during operation of sharpener

Home Start Position

Carriage must be in 'home position' before the slicer will start

No Volt Release

Slicer must be restarted if power fails or slicer is unplugged

EASY TO CLEAN

Removable Knife Option* - HS7

- Knife easily removes with patented removal tool
- Area within ring guard is open for faster cleaning
- Knife and tool are warewasher safe for easy cleaning and sanitation

Removable Ring Guard Cover*

- Catches product debris around the knife for easy removal during cleaning
- Reduces time to 'floss' during cleaning

Exclusive Tilting, Removable Carriage System*

- Tilt design allows for ease of mid-day cleaning
- Removable for complete cleaning and sanitation

Rear-Mounted, Removable Meat Grip Arm

- Opens up front of product tray for unobstructed loading
- Removable meat grip allows for easy cleaning

Lift Assist Cleaning Leg

Gas assisted leg helps operator easily lift machine for cleaning underneath

Sanitary Burnished Aluminum Base

- Limited cracks/crevices or bolt holes where product can lodge and bacteria may grow
- Easy clean up and durable finish

*Feature unique to Hobart

1-888-4HOBART + www.hobartcorp.com

JLIVER

SPECIFICATIONS

KNIFE

13" CleanCut Knife: The knife is approximately 13 inches, constructed of 304L stainless steel and high performance Stellite alloy. Knife cover is retained magnetically, and is quickly removed by pulling straight back on the top cover knob.

Removable Knife Option HS7: The patented knife removal tool covers the knife edge and safely removes knife from gauge plate to allow for thorough cleaning.

Removable Ring Guard Cover: Fits on top of ring guard to catch food debris. When removed, reveals a 0.12^d space between knife and guard for easier flossing. Ring guard is made with Zytel[™] plastic and can be washed in warewasher or three compartment sink.

Zero Knife Exposure: Knife edge is not exposed during cleaning or sharpening procedures.

Top Mounted Borazon Stone Sharpener: Single action operation utilizing two Borazon stones to sharpen and hone in five seconds. Removable, top mounted and warewasher safe. When sharpener is removed for cleaning, knife edge is completely shielded. Borazon stones have a lifetime guarantee.

MOTOR

Poly V-Belt Knife Drive System: Knife is driven by a Hobart Poly V belt and runs at 430 rpm for optimal performance.

Four Stroke Speeds: Stroke speed can be set to 28, 38, 48 and 58 strokes per minute.

1/2 H.P. Knife Drive Motor: 1/2 H.P. permanently lubricated ball bearings. Single phase capacitor-start, induction run.

INTERLOCKS

Home Start Position: Home-start ensures carriage is in a convenient position before starting the slicer.

No Volt Release: In the event of a power loss, slicer must be restarted before operation can continue.

HOUSING AND BASE

Sanitary Burnished Aluminum Base: One-piece base has fewer places to harbor soil and is easier to clean. Limits holes or crevices in which food can lodge.

Finish: Stainless steel top cover, anodized aluminum product tray and gauge plate.

Exclusive Tilting, Removable Carriage System: Aluminum product tray tilts easily for mid-day cleaning and is removable for thorough cleaning and sanitation procedures. The carriage has 12.5" manual travel.

Electroless Nickel Plated Single Slide Rod with Reservoir Wick in Transport: Transport slide rod is E-Nickel electroless plated. Slide rod bearings feature an oil reservoir/oil wick.

Double-Action Indexing Cam: A solid construction index knob moves the gauge plate via a barrel cam ensuring consistent slice thickness across machine and over time. First revolution of index cam for precision slicing; second revolution for thicker slicing selection.

Lift Assist Cleaning Leg: Gas assisted leg helps operator easily lift machine for cleaning underneath.

Ergonomic Style Handle: Specially shaped and positioned for ease of use during manual operation.

Rear Mounted, Removable Meat Grip Arm: Rear mounted grip is high strength thermoplastic. Swings out of way when not in use.

Electrical Specification: 120/60/1; 5.6 Amps.

Switch: Moisture protected push button switch.

Cord & Plug: 6-foot, three-wire power supply cord and plug. Plug not furnished on export models.

Capacity: The carriage will take food up to 5³/₄" x 10³/₄" rectangle or 7.5" in diameter.

Gauge Plate: Gauge plate is a heavy aluminum extrusion with machined grooves for smooth feeding. Adjustable to cut any thickness of slice up to 1".

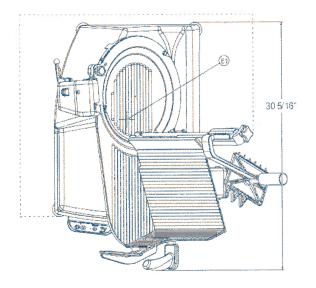
Warranty: All parts and service coverage for one year including knife. Lifetime guarantee on Borazon stones in the sharpening system.

Shipping Weight: 138 lbs.

SLIVER



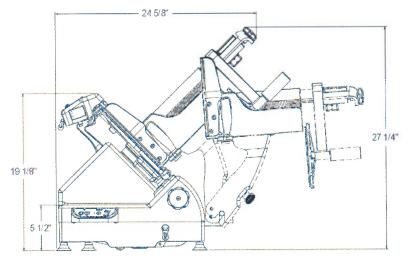
DETAILS AND DIMENSIONS

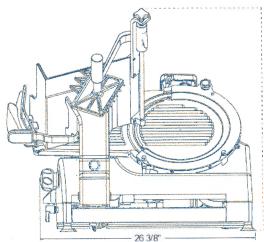




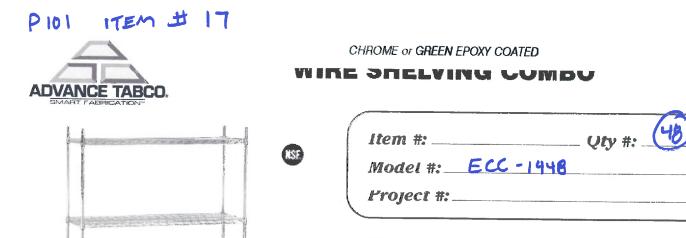
ELECTRICAL AND GROUNDING CONNECTIONS MUST COMPLY WITH THE APPLICABLE PORTIONS OF THE NATIONAL ELECTRICAL CODE AND/OR OTHER LOCAL ELECTRICAL CODES

E1 - ELECTRICAL CONNECTIONS





As continued product improvement is a policy of Hobart, specifications are subject to change without notice.



FEATURES:

Each shelf holds up to 800 lbs. evenly distributed weight. NSF approved.

Posts are numbered for easy assembly and are included.

CONSTRUCTION:

Unit assembles using tapered split sleeves.

MATERIAL:

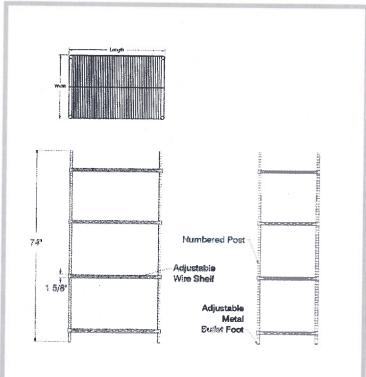
Chrome plated or green epoxy coating.



Includes 4 Shelves

and 4 - 74" Posts

CALCOLOGICALE



	Customer Service Ava	ilable To Assist You 1-80	0-645-3166 8:30 am - 8	1:00 pm E.S.T.
	Email Orders To: customer@adv	vancetabco.com. For Smart Fabrication	™ Quotes, Email To: smartlab@advance	tabco.com or Fax To: 631-586-2933
ADVANCE TABCO,	NEW YORK	GEORGIA	TEXAS	NEVADA
	Fax: (631) 242-6900	Fax: (770) 775-5625	Fax: (972) 932-4795	Fax: (775) 972-1578

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CHROME COATED Shelf MODEL # MODEL # Weight Size ECC-1436 EGG-1436 14" x 36" 64 lbs. EGG-1442 ECC-1442 14" x 42" 69 lbs ECC-1448 EGG-1448 14" x 48" 75 lbs. **EGG-1460** ECC-1460 14" x 60" 93 lbs. EGG-1472 ECC-1472 14" x 72" 107 lbs. ECC-1836 EGG-1836 18" x 36" 68 lbs. EGG-1842 ECC-1842 18" x 42" 73 lbs. ECC-1848 **EGG-1848** 18" x 48" 81 lbs.

18" x 54"

18" x 60"

18" x 72"

24" x 36"

24" x 42"

24" x 48"

24" X 54"

24" x 60"

24" x 72"

88 lbs.

99 lbs.

115 lbs.

75 lbs.

81 lbs.

89 lbs.

97 lbs.

111 lbs.

127 lbs.

GREEN EPOXY

EGG-1854

EGG-1860

EGG-1872

EGG-2436

EGG-2442

EGG-2448

EGG-2454

EGG-2460

EGG-2472

ECC-1854

ECC-1860

ECC-1872

ECC-2436

ECC-2442

ECC-2448

ECC-2454

ECC-2460

ECC-2472

DIMENSIONS

and SPECIFICATIONS

TOL \pm .500"

ALL DIMENSIONS ARE TYPICAL

P101 ITEN # 18

O QT MIXER

Quantity _____



701 S Ridge Avenue, Troy, OH 45374 1-888-4HOBART • www.hobartcorp.com

C.S.I. Section 11400

C

BA

LEVAUI®

TLZUU WIIAER

STANDARD FEATURES

- Heavy-Duty ½ H.P. Motor
- Gear Transmission
- Three Fixed Speeds Plus Stir Speed
- Shift-on-the-Fly™ Controls
- Patented soft start Agitation Technology
- 15-Minute SmartTimer[™]
- Automatic Time Recall
- Large, Easy-To-Reach Controls
- Single Point Bowl Installation
- Ergonomic Swing-Out Bowl
- 🗰 #12 Taper Attachment Hub
- Open Base
- Stainless Steel Bowl Guard
- Metallic Gray Hybrid Powder Coat Finish

ACCESSORY PACKAGE - featuring Hobart Quick Release[™] Agitators

Standard Accessory Package Includes:

- 20 Quart Stainless Steel Bowl
- 20 Quart "B" Beater
- 20 Quart "D" Wire Whip

MODELS

 HL200 – 20-Quart All Purpose Mixer
 HL200C – 20-Quart All Purpose Mixer with Maximum Security Correctional Package

Specifications, Details and Dimensions on Inside and Back





.EGACY® HL200 MIXE

J

LEGAUI®

TILZUU WIINEK

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SOLUTIONS/BENEFITS

1/2 H.P. Motor

- Durability
- Heavy-duty to meet the most demanding operations

Gear Transmission

- Durability, Reliability
- Ensures consistent performance and minimum downtime under heavy loads

Three Fixed Speeds plus Stir Speed

- Flexibility, Reliability, Consistency
- For incorporating, blending, mixing ingredients
- Supports consistent results and thorough mixing

Shift-on-the-Fly™ Controls

- Flexibility
- Allows operator to change speeds while mixer is running

Patented soft start Agitation Technology Sanitation

Each speed has a soft transition into a higher speed to reduce the chances of product splash-out

15-Minute SmartTimer™

- Convenience, Ease of Use, Consistency
- Supports recipe mixing times
- Provides accurate results and eliminates overmixing

Automatic Time Recall

- Productivity, Consistency
- Remembers the last time set for each speed
- Great for multiple batches

Ergonomic Swing-Out Bowl

Ease of Use, Convenience

- Easy loading and unloading of products
- Single Point Bowl Installation allows for simple mounting and removal of bowl
- Bowl Interlock ensures mixer bowl is properly in place for mixer to operate

Stainless Steel Bowl Guard

Protection

Safety interlock prevents operation when front portion of guard is out of position

Hobart Accessories

Durability, Flexibility, Simplicity

- Hobart Quick Release[™] agitators allow for simple installation and removal from agitator shaft
- Hobart accessories are designed for long-term usage under heavy-duty conditions
- Large array of accessories provide multiple uses for recipe and product processing

HL200 MIXER CAPACITY CHART

Recommended Maximum Capacities - dough capacities based on 70°F. water and 12% flour moisture.

PRODUCT	AGITATORS SUITABLE FOR OPERATION	HL200
CAPACITY OF BOWL (QTS. LIQI	JID)	20
Egg Whites	D	1 qt.
Mashed Potatoes	B&C	15 lbs.
Mayonnaise (Qts. of Oil)	B or C or D	10 qts.
Meringue (Qts. of Water)	D	1½ pts.
Waffle or Hot Cake Batter	В	8 qts.
Whipped Gream	D or C	4 qts.
Cake, Angel Food (8-10 oz. cake)	C or I	15
Cake, Box or Slab	B or C	20 lbs.
Cake, Cup	B or C	20 lbs.
Cake, Layer	BorC	20 lbs.
Cake, Pound	В	21 lbs.
Cake, Short (Sponge)	C or I	15 lbs.
Cake, Sponge	C or I	12 lbs.
Cookies, Sugar	В	15 lbs.
Dough, Bread or Roll (LtMed.) 60% AR §	ED	25 lbs."
Dough, Heavy Bread 55% AR §	ED	15 lbs.
Dough Pie	B&P	18 lbs.
Dough, Thin Pizza 40% AR (max. mix time 5 min.) §‡	ED	9 lbs.
Dough, Med. Pizza 50% AR §‡	ED	10 lbs.
Dough, Thick Pizza 60% AR §‡	ED	20 lbs.
Dough, Raised Donut 65% AR	ED	9 lbs.*
Dough, Whole Wheat 70% AR	ED	20 lbs.
Eggs & Sugar for Sponge Cake	B&Corl	8 lbs.
Icing, Fondant	В	12 lbs.
Icing, Marshmallow	C or I	2 lbs.
Shortening & Sugar, Creamed	B	16 lbs.
Pasta, Basic Egg Noodle (max. mix time 5 min.)	ED	5 lbs.

NOTE: % AR (% Absorption Ratio) - Water weight divided by flour weight. Capacity depends on moisture content of dough. Above capacities based on 12% flour moisture at 70°F water temperature.

- 1st Speed
- * 2nd Speed
- † 3rd Speed
- § If high gluten flour is used, reduce above dough batch size by 10%.
- ‡ 2nd Speed should never be used on 50% AR or lower products.

USE OF ICE REQUIRES A 10% REDUCTION IN BATCH SIZE. 1 gallon of water weighs 8.33 lbs.

NOTE: Attachment hub should not be used while mixing.



LEGAUT[®] TL2UU IVIIAEM

SPECIFICATIONS

MOTOR:

1/2 H.P. high torque motor.

100-120/50/60/1	8.0 Amps
200-240/50/60/1	5.0 Amps

ELECTRICAL:

100-120/50/60/1, 200-240/50/60/1 - UL Listed.

CONTROLS:

Magnetic contactor with thermal overload protection. Internally sealed "Start-Stop" push buttons. A 15-minute SmartTimer™ is standard. SmartTimer™ includes **Automatic Time Recall**, which remembers the last time set for each speed.

TRANSMISSION:

Gear-driven. Gears are constant mesh heat-treated hardened alloy steel along with anti-friction ball bearings. Grease lubricants furnished to all gears and shafts.

SPEEDS:

	Agitator (RPM)	Attachment (RPM)
Stir	59	33
First (Low)	107	61
Second (Intermediate)	198	113
Third (High)	365	207

BOWL GUARD:

Heavy-duty stainless steel wire front and solid rear portion. Front portion of guard rotates easily to add ingredients and install or remove agitator. It detaches in seconds for cleaning in dishwasher or sink. Rear portion of guard can be quickly cleaned in position. Guard must be in closed position before mixer will operate. Bowl support interlock provides further protection.

BOWL LIFT:

Ergonomic style, hand crank operated, self-locking in top and bottom position.

FINISH:

Metallic Gray Hybrid Powder Coat finish.

ATTACHMENT HUB:

Comes with front-mounted Hobart standard #12 taper attachment hub for use with Hobart #12 size attachments.

ATTACHMENTS AND ACCESSORIES:

The following are available at extra cost:

Stainless Steel Bowl "B" Flat Beater "C" Wing Whip "D" Wire Whip "E" Dough Hook "ED" Dough Hook "ED" Dough Hook "P" Pastry Knife Bowl Splash Cover Bowl Scraper Ingredient Chute 12 Quart Accessories 9" Vegetable Slicer Meat Chopper Attachment Rubber Foot Pads Attachment Tray Support



Hobart Bowl Scraper

Hobart Ingredient Chute



Listed by Underwriters Laboratories Inc. and certified by NSF International.



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HOBART

SPECIFICATIONS

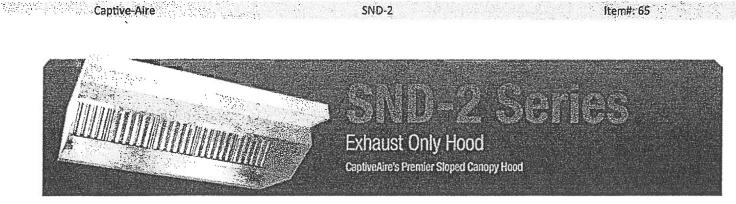
ELECTRICAL SPECIFICATIONS: 100-120/50/60/1, 200-240/50/60/1 - UL Listed.

WEIGHT: 189 lbs. net; 204 lbs. domestic shipping.

WARRANTY: Unit has full one-year warranty on parts, labor and mileage against manufacturer's defects. Service contracts are available.

DETAILS AND DIMENSIONS E EGOT POVER CORD STRUBADO 22-378* [58] 84 29 74-1/81 8 11-172 9 15-378 (391 59186 3-15-17-3/8* 1453 12 1 20 OUART STAINLESS BOWE-OUTSIDE DIAMETER: 13-1/2* 1344 INSIDE DIAMETER: 12-5/8* BOLT BOWR HOLES 3/8-16 BRC THREAD 4 PLACES WARNING 18-5/91 ELECTRICAL AND GROUNDING CONNECTIONS MUSI COMPLY WITH THE APPLICABLE PORITONS OF THE NATIONAL ELECTRICAL CODE AND/OR OTHER CODES IN FORCE 18/172* NOTE 10-1/2 (29) (29) 6 FOOT POWER CORD STANDARD 24-5/8* 66 25-1/4* 8643 44-174* ð 12 11-1 R 15-3/8" [39] SWING 40-1/8* -20 OUART STAINLESS BODL OUTSIDE DIAMETER: 13-172" 1341 INSIDE DIAMETER: 12-578" 1321 30-3/81 23-1/2* 16,750 (42,55) 123 ĝ WARNING ELECTRICAL AND GROUNDING CONNECTIONS MUST COMPLY WITH THE APPLICABLE PORTIONS OF THE NATIONAL ELECTRICAL CODE AND/OR 03%EP CODES IN FORCE BOLT DOWN HOLES 3/8-16 UNC THREAD 4 PLACES 21.625 NOTE 14.812 23-1716* ----

As continued product improvement is a policy of Hobart, specifications are subject to change without notice.



20 & 21

The SND-2 Series is a Type I, Sloped Wall Canopy Hood for use over 450°F and 600°F cooking surface temperatures. The Sloped Canopy is the ideal hood choice for low ceiling heights.

Fully Integrated Package

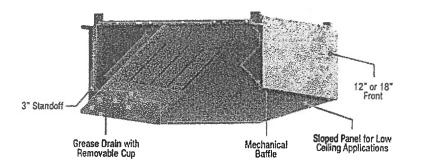
CaptiveAire sells this hood as a stand-alone appliance to be integrated into a kitchen ventilation application, or provided as part of a FULLY INTEGRATED PACKAGE designed by CaptiveAire and pre-engineered for optimum performance. The package consists of the hood, an integral utility cabinet, factory pre-wired electrical controls, and a listed fire suppression system. Other options include a listed exhaust fan, a listed make-up air unit and listed, factory-built ductwork.

Advantages

- Exhaust Flow Rates: Superior exhaust flow rates.
- ETL Listed: ETL Listed for use over 450°F and 600°F cooking surface temperatures, which provides flexibility in designing kitchen ventilation systems. ETL Listed to US and Canadian safety standards, ETL Sanitation Listed and built in accordance with NFPA 96.
- Capture and Containment: Insulated, double-wall rigid front has aerodynamic design that reduces radiant heat into kitchen, prevents condensation and provides exceptional capture and containment of cooking vapors. The signature "mechanical baffle" on the front of the hood's capture area is available on 18" Front Model only. The mechanical baffle provides a built-in wiring chase for optimal positioning of electrical controls and outlets on the front face of the hood without penetrating capture area or requiring external chase way.
- Convenient Design: Factory pre-wired lighting to illuminate the cooking surface is accessible from the bottom of the hood.
 Fitted with UL Listed, pre-wired, incandescent light fixtures and tempered glass globes to hold up to a standard 100 watt bulb.
 Pre-punched hanging angles on each end of hood and additional set provided for hoods longer than 12'.
- Construction: Polished stainless steel on the interior and exterior of the front enhance aesthetics. Fully welded and polished front corners. Fabricated from Type 430 stainless steel with option of Type 304 available. Sloped front for low ceiling applications.
- Grease Extraction: All hoods come standard with stainless steel baffle filters and a deep grease trough which allows for easy
 cleaning. Captrate Combo® and Captrate Solo® filters are optional. Grease drain system with removable 1/2 pint cup for easy
 cleaning. Standard filter stops eliminate gaps between filters.
- Reduced Lead Times and Shipping Costs: Produced on a high volume assembly line at one of five manufacturing facilities to reduce lead times and shipping costs.
- Controls: Hoods can be equipped with modular utility cabinets and end standoffs. Optional listed light and fan control switches flush mounted and pre-wired through electrical chase way.
- · Reduced Weight: Rigid single wall end panels reduce weight.
- Optional Make-Up Air: Up to 80% make-up air can be supplied through optional front and/or side plenums (ND-2 Series with PSP or AC-PSP Accessory).
- Optional Self Cleaning Technology: The Self Cleaning Hood option adds a spray bar that extends the full length of the hood immediately behind the filters. The system cleans grease from the plenum and portion of the duct with the daily hot water spray cycle.
- Optional CORE Protection Fire System: The Self Cleaning Hood option adds a spray bar that extends the full length of the hood immediately behind the filters. The system cleans grease from the plenum and portion of the duct with the daily hot water spray cycle.

SND-2

Features



Performance

AVG. COOKING SURFACE TEMP.(°F)	CONFIGURATION	MIN EXHAUST CFM/FT.
400°F - Ovens, Steamers, Kettles, Open-Burner Ranges, Griddles, Fryers	Single Wall Hood 2 Wall Hoods Back-to- Back	228 456
600°F - Gas Charbroilers, Electric Charbroilers	Single Wall Hood 2 Wall Hoods Back-to- Back	294 588

Recommended Duct Sizing: Exhaust - Based on 1500 FPM

Options

Utility Cabinet: Listed for integral side mount and fabricated of same material as hood. Cabinet can house listed fire suppression system and listed, pre-wired electrical controls.

Front Perforated Supply Plenum: Provides low velocity make-up air for the kitchen and is discharged in front of the hood. Perforated diffuser plates allow for even air distribution and supply riser includes a volume damper for easy balancing. Side Perforated Supply Plenums can be added to optimize the air flow if necessary.

Rear Make-Up Air Plenum: Provides make-up air for the kitchen and is discharged below cooking equipment. Provides required clearance from limited combustibles per NFPA 96 Standards.

Enclosure Panels: Constructed of stainless steel. Sized to extend from hood top to ceiling, enclosing pipe and hanging parts.

End Panels: Should be used to maximize hood performance and eliminate the effects of cross drafts in kitchen. units constructed of stainless steel and sized according to hood width and cooking equipment. Exposed edges hemmed for safety and rigidity.

Roof Top Package: Combination ETL Listed exhaust/supply air unit with factory prewired and mounted motors, trunkline and curb vented on exhaust side.

Separate Exhaust and/or Make-Up Air Fans: ETL Listed single exhaust fans and supply-air fans and curbs available.

Fire Suppression System: UL 300 fire suppression system.

Lighting: Recessed Incandescent, Recessed Fluorescent, Compact Fluorescent, LED, Recessed LED, Halogen

Carlin Manufacturing LLC

Certifications

The SND-2 Model has been certified by ITS. This certification mark indicates that the product has been tested to and has met the minimum requirements of a widely recognized (consensus) U.S. and Canadian products safety standard, that the manufacturing site has been audited, and that the applicant has agreed to a program of periodic factory follow-up inspections to verify continued performance.

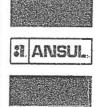
Models SND-2 are ETL Listed under file number 3054804-001 and complies wwith UL710, ULC710 and ULC-S646 Standards.



Item#: 66

R-102™ RESTAURANT FIRE SUPPRESSION SYSTEMS

R-102



FEATURES

Ansul

- Low pH Agent
- Proven Design
- Reliable Cartridge Operated
- Aesthetically Appealing
- UL Listed Meets Requirements of UL 300
- ULC Listed Meets Requirements of ULC/ORD-C1254.6
- CE Marked

APPLICATION

The ANSUL® R-102[™] Restaurant Fire Suppression System is an automatic, pre-engineered, fire suppression system designed to protect the following areas associated with cooking equipment; ventilating equipment including hoods, ducts, plenums, and filters; fryers; griddles and range tops; upright, natural charcoal, or chain-type broilers; electric, lava rock, mesquite or gas-radiant char-broilers and woks.

The system is ideally suitable for use in restaurants, hospitals, nursing homes, hotels, schools, airports, and other similar facilities.

Use of the R-102 system is limited to interior applications only. The regulated release and tank assemblies must be mounted in an area where the air temperature will not fall below 32 °F (0 °C) or exceed 130 °F (54 °C). The system must be designed and installed within the guide-lines of the UL/ULC Listed Design, Installation, Recharge, and Maintenance Manual.

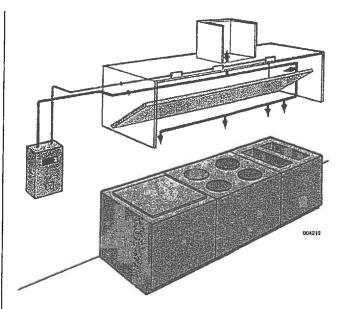
SYSTEM DESCRIPTION

The restaurant fire suppression system is a pre-engineered, wet chemical, cartridge-operated, regulated pressure type with a fixed nozzle agent distribution network. It is listed with Underwriters Laboratories, Inc. (UL/ULC).



The system is capable of automatic detection and actuation and/or remote manual actuation. Additional equipment is available for mechanical or electrical gas line shut-off applications.

The detection portion of the fire suppression system allows for automatic detection by means of specific alloy rated fusible links, which, when the temperature exceeds the rating of the link, the link separates, allowing the regulated release to actuate.



Data/Specifications

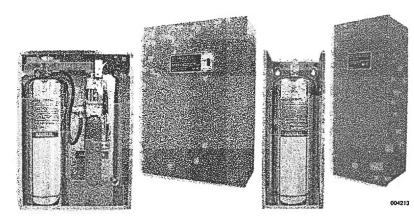
A system owner's guide is available containing basic information pertaining to system operation and maintenance. A detailed technical manual is also available including system description, design, installation, recharge, and maintenance procedures, plus additional equipment installation and resetting instructions.

The system is installed and serviced by authorized distributors that are trained by the manufacturer.

The basic system consists of an ANSUL AUTOMAN® regulated release assembly which includes a regulated release mechanism and a wet chemical storage tank housed within a single enclosure. Nozzle blow-off caps, detectors, cartridges, agent, fusible links, and pulley elbows are supplied in separate packages in the quantities needed for fire suppression system arrangements.

Additional equipment includes remote manual pull station, mechanical and electrical gas valves, pressure switches, and electrical switches for automatic equipment and gas line shut-off. Accessories can be added such as alarms, warning lights, etc., to installations where required.

Tanks can be used in multiple arrangements to allow for larger hazard coverage. Each tank is limited to a listed maximum amount of flow numbers.



R-102

COMPONENT DESCRIPTION

Ansul

Wet Chemical Agent – The extinguishing agent is a mixture of organic salts designed for rapid flame knockdown and foam securement of grease related fires. It is available in plastic containers with instructions for wet chemical handling and usage.

Agent Tank - The agent tank is installed in a stainless steel enclosure or wall bracket. The tank is constructed of stainless steel.

Tanks are available in two sizes: 1.5 gallon (5.7 L) and 3.0 gallon (11.4 L). The tanks have a working pressure of 110 psi (7.6 bar), a test pressure of 330 psi (22.8 bar), and a minimum burst pressure of 600 psi (41.4 bar).

The tank includes an adaptor/tube assembly. The adaptor is chromeplated steel with a 1/4 in. NPT female gas inlet and a 3/8 in. NPT female agent outlet. The adaptor also contains a bursting disc seal which prevents the siphoning of agent up the pipe during extreme temperature variations.

Regulated Release Mechanism – The regulated release mechanism is a spring-loaded, mechanical/pneumatic type capable of providing the expellant gas supply to one or two agent tanks, depending on the capacity of the gas cartridge used. It contains a factory installed regulator deadset at 110 psi (7.6 bar) with an external relief of approximately 180 psi (12.4 bar). It has automatic actuation capabilities by a fusible link detection system and remote manual actuation by a mechanical pull station.

The regulated release mechanism contains a release assembly, regulator, expellant gas hose, and agent storage tank housed in a stainless steel enclosure with cover. The enclosure contains knock-outs for 1/2 in. conduit. The cover contains an opening for a visual status indicator.

It is compatible with mechanical gas shut-off devices; or, when equipped with a field or factory-installed switch, it is compatible with electric gas line or appliance shut-off devices.

Regulated Actuator Assembly – When more than two agent tanks are required, the regulated actuator is available to provide expellant gas for additional tanks. It is connected to the cartridge receiver outlet of the regulated release mechanism providing simultaneous agent discharge. It contains a regulated actuator deadset at 110 psi (7.6 bar) with an external relief of approximately 180 psi (12.4 bar). It has automatic actuation capabilities by a fusible link detection system and remote manual actuation by a mechanical pull station.

The regulated actuator assembly contains a regulated actuator, regulator, expellant gas hose, and agent tank housed in a stainless steel enclosure with cover. The enclosure contains knockouts to permit installation of the expellant gas line.

Discharge Nozzles – Each discharge nozzle is tested and listed with the R-102 system for a specific application. Nozzle tips are stamped with the flow number designation (1/2, 1, 2, and 3). Each nozzle must have a metal or rubber blow-off cap to keep the nozzle tip orifice free of cooking grease build-up.

APPROVALS

Applicable Standards: ULI listed under EX-3470; ULC listed under CEX-747; meets requirements of NFPA 96 (Standard for the Installation of Equipment for the Removal of Smoke and Grease-Laden Vapors from Commercial Cooking Equipment); NFPA 17A (Standard on Wet Chemical Extinguishing Systems); CE Marked.

ORDERING INFORMATION

Order all system components through your local authorized ANSUL Distributor.

SPECIFICATIONS

An ANSUL R-102 Fire Suppression System shall be furnished. The system shall be capable of protecting all hazard areas associated with cooking equipment.

1.0 GENERAL

- 1.1 References
 - 1.1.1 Underwriters Laboratories, Inc. (UL)
 - 1.1.1.1 UL Standard 1254 1.1.1.2 UL Standard 300
 - 1.1.2 Underwriters Laboratories of Canada (ULC) 1.1.2.1 ULC/ORD-C 1254.6
 - 1.1.3 National Fire Protection Association (NFPA) 1.1.3.1 NFPA 96 1.1.3.2 NFPA 17A
- 1.2 Submittals
 - 1.2.1 Submit two sets of manufacturer's data sheets
 - 1.2.2 Submit two sets of piping design drawings

1.3 System Description

- 1.3.1 The system shall be an automatic fire suppression system using a wet chemical agent for grease related fires.
- 1.3.2 The system shall be capable of suppressing fires in the following areas associated with cooking equipment: ventilating equipment including hoods, ducts, plenums, and filters; fryers; griddles and range tops; upright, natural charcoal, or chain-type broilers; electric, lava rock, mesquite or gas-radiant char-broilers.
- 1.3.3 The system shall be the pre-engineered type having minimum and maximum guidelines established by the manufacturer and listed by Underwriters Laboratories, inc. (UL).
- 1.3.4 The system shall be installed and serviced by personnel trained by the manufacturer.

Page: 30

1.3.5 The system shall be capable of protecting cooking appliances by utilizing either dedicated appliance protection and/or overlapping appliance protection. SPECIFICATIONS

1.17

1.4 Quality Control

- 1.4.1 Manufacturer: The R-102 Restaurant Fire Suppression System shall be manufactured by a company with at least thirty years experience in the design and manufacture of pre-engineered fire suppression systems. The manufacturer shall be ISO 9001 registered.
- 1.4.2 Certificates: The wet agent shall be a specially formulated, aqueous solution of organic salts with a pH range between 7.7 – 8.7, designed for flame knockdown and foam securement of grease-related fires.

1.5 Warranty, Disclaimer, and Limitations

- 1.5.1 The pre-engineered restaurant fire suppression system components shall be warranted for five years from date of delivery against defects in workmanship and material.
- 1.6 Delivery
 - 1.6.1 Packaging: All system components shall be securely packaged to provide protection during shipment.
- 1.7 Environmental Conditions
 - 1.7.1 The R-102 system shall be capable of operating in a temperature range of 32 °F to 130 °F (0 °C to 54 °C).

2.0 PRODUCT

- 2.1 Manufacturer
 - 2.1.1 Ansul Fire Protection, One Stanton Street, Marinette, Wisconsin 54143-2542, Telephone (715) 735-7411.
- 2.2 Components
 - 2.2.1 The basic system shall consist of an ANSUL AUTOMAN regulated release assembly which includes a regulated release mechanism and a wet chemical storage tank housed within a single enclosure. Nozzles, blow-off caps, detectors, cartridges, agent, fusible links, and pulley elbows shall be supplied in separate packages in the quantities needed for fire suppression system arrangements. Additional equipment shall include remote manual pull station, mechanical and electrical gas valves, pressure switches, and electrical switches for automatic equipment and gas line shut-off.
 - 2.2.2 Wet Chemical Agent: The extinguishing agent shall be a specially formulated, aqueous solution of organic salts with a pH range between 7.8 – 8.2, designed for flame knockdown and foam securement of grease related fires.
 - 2.2.3 Agent Tank: The agent tank shall be installed in a stainless steel enclosure or wall bracket. The tank shall be constructed of stainless steel. Tanks shall be available in two sizes; 1.5 gallon (5.7 L) and 3.0 gallon (11.4 L). The tanks shall have a working pressure of 110 psi (7.6 bar), a test pressure of 330 psi (22.8 bar), and a minimum burst pressure of 600 psi (41.4 bar). The tank shall include an adaptor/tube assembly containing a burst disc union.
 - 2.2.4 Regulated Release Mechanism: The regulated release mechanism shall be a spring-loaded, mechanical/pneumatic type capable of providing the expellant gas supply to one or two agent tanks depending on the capacity of the gas cartridge used. It shall contain a factory installed regulator deadset at 110 psi (7.6 bar) with an external relief of approximately 180 psi (12.4 bar).

It shall have the following actuation capabilities: automatic actuation by a fusible link detection system and remote manual actuation by a mechanical pull station.

The regulated release mechanism shall contain a release assembly, regulator, expellant gas hose, and agent storage tank housed in a stainless steel enclosure with cover. The enclosure shall contain knockouts for 1/2 in, conduit. The cover shall contain an opening for a visual status indicator.

It shall be compatible with mechanical gas shut-off devices; or, when equipped with a field or factoryinstalled switch, it shall be compatible with electric gas line or appliance shut-off devices.

- 2.2.5 Regulated Actuator Assembly: When more than two agent tanks are required, the regulated actuator shall be available to provide expellant gas for additional tanks. It shall be connected to the cartridge receiver outlet of the regulated release mechanism providing simultaneous agent discharge. The regulator shall be deadset at 110 psi (7.6 bar) with an external relief of approximately 180 psi (12.4 bar). The regulated actuator, regulator, expellant gas hose, and agent tank housed in a stainless steel enclosure with cover. The enclosure shall contain knockouts to permit installation of the expellant gas line.
- 2.2.6 Discharge Nozzles: Each discharge nozzle shall be tested and listed with the R-102 system for a specific application. Nozzles tips shall be stamped with the flow number designation (1/2, 1, 2, and 3). Each nozzle shall have a metal or rubber blow-off cap to keep the nozzle tip orifice free of cooking grease build-up.
- 2.2.7 Distribution Piping: Distribution piping shall be Schedule 40 black iron, chrome-plated, or stainless steel pipe conforming to ASTM A120, A53, or A106.
- 2.2.8 Detectors: The detectors shall be the fusible link style designed to separate at a specific temperature.
- 2.2.9 Cartridges: The cartridge shall be a sealed steel pressure vessel containing either carbon dioxide or nitrogen gas. The cartridge seal shall be designed to be punctured by the releasing device supplying the required pressure to expel wet chemical agent from the storage tank.

3.0 IMPLEMENTATION

- 3.1 Installation
 - 3.1.1 The R-102 fire suppression system shall be designed, installed, inspected, maintained, and recharged in accordance with the manufacturer's listed instruction manual.
- 3.2 Training
 - 3.2.1 Training shall be conducted by representatives of the manufacturer.

Ansul R-102



ANSUL. Essex County Bid (D1-R2 Bldg Equip)

Ansul Incorporated 715-735-7411 Marinette, WI 54143-2542 www.ansul.com Carlin Manufacturing LLC

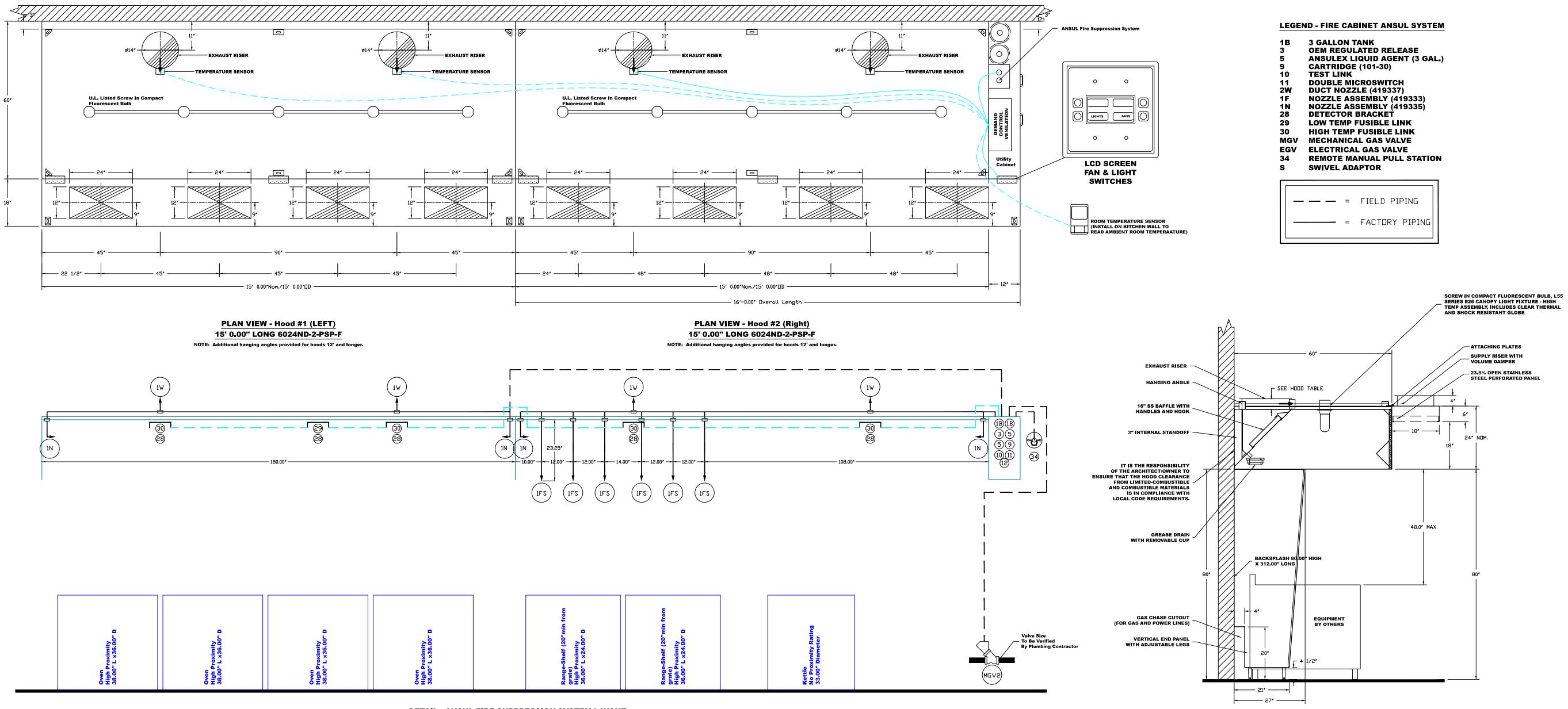
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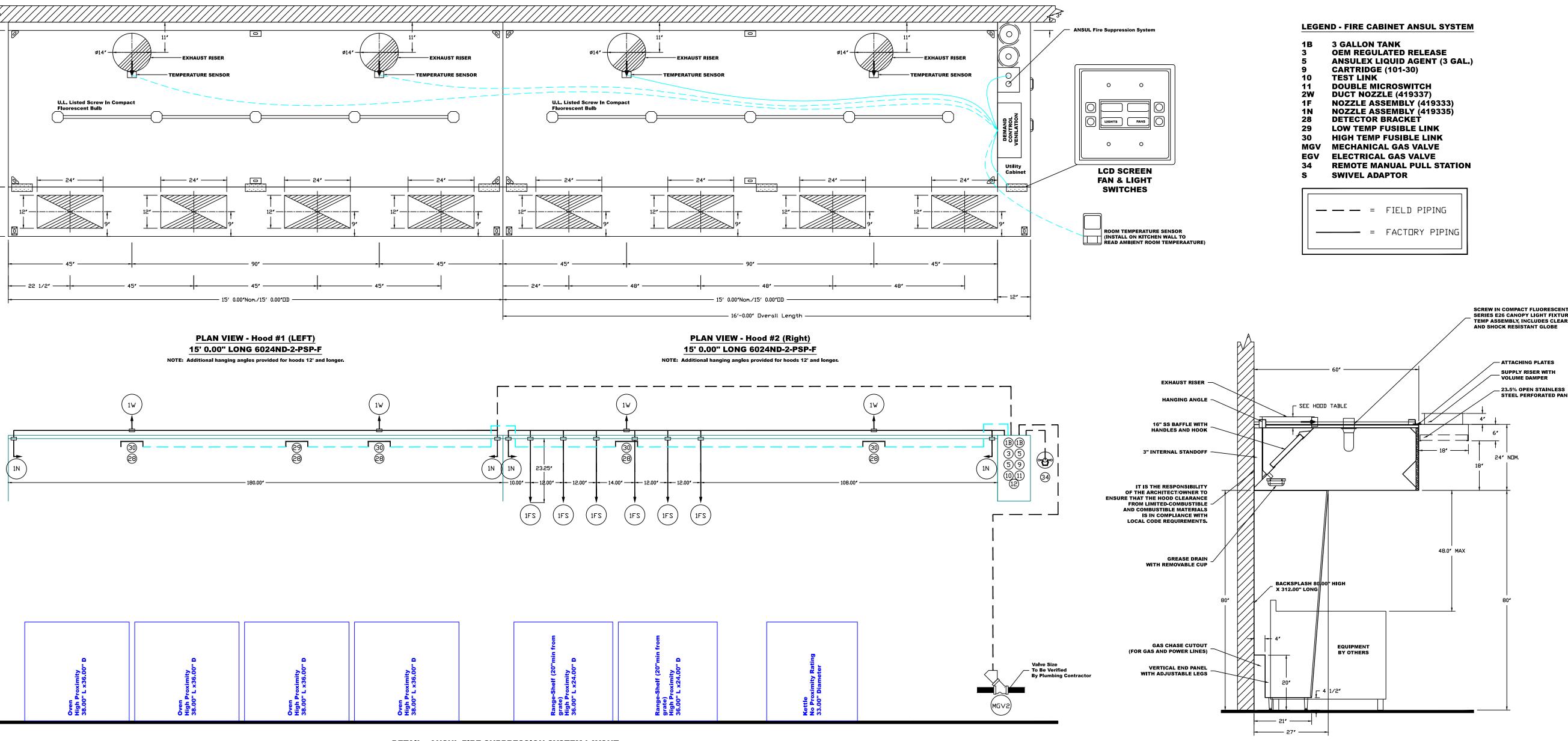
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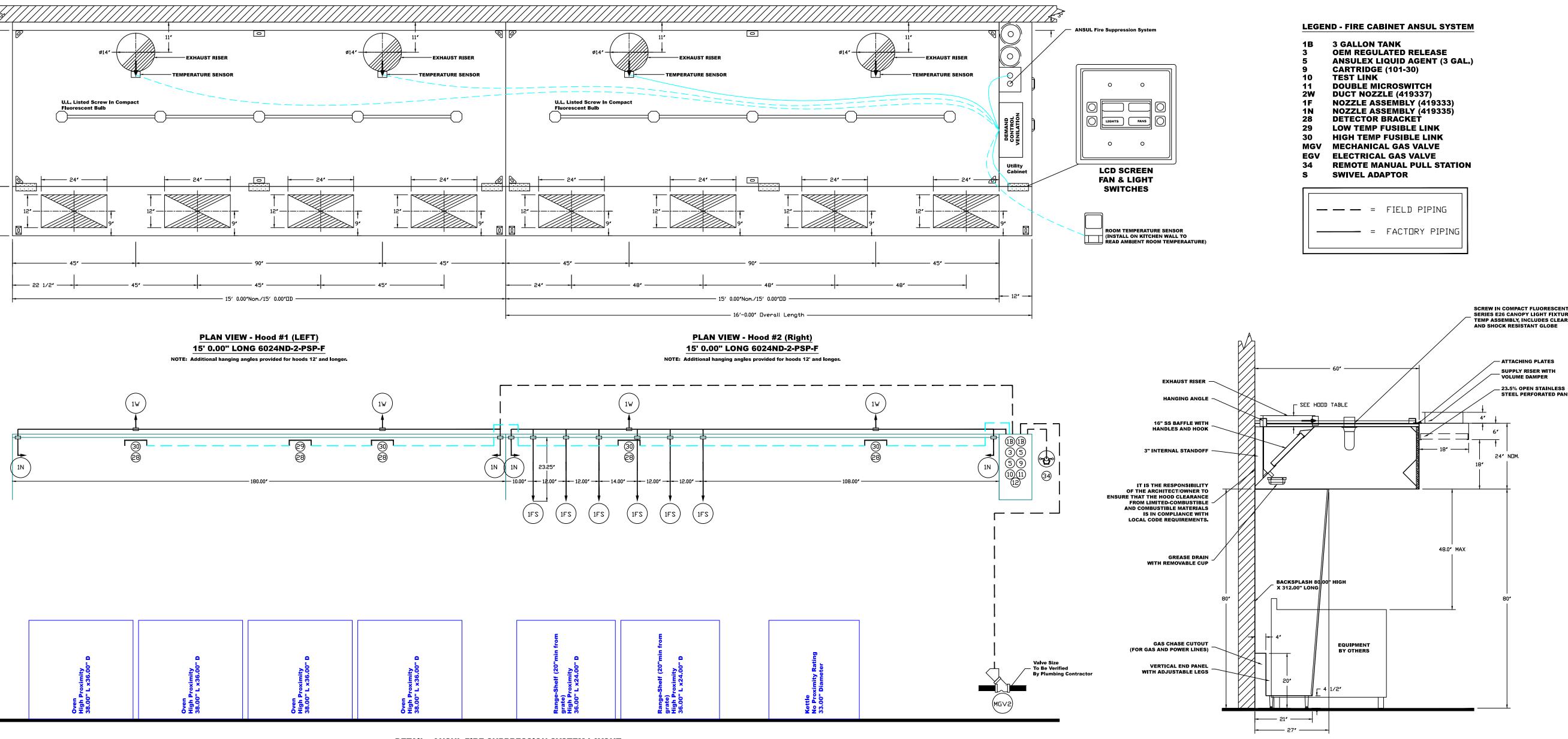
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OOD NO.	TAG	MODEL	. LEI	NGTH	COOKING		AL CFM WIDTH				S) CFM	VEL. S	— si	SUPPLY CFM		DOD Ruction	END TO END	ROW									
		6024			600			LENG.	4"		1762		95"	CFIN	43	0 \$\$	END										
1	LEFT	ND-2-PSP	P-F	0.00"	Deg.	352	:5		4"	14"	1762		95"	2820		Exposed	LEFT	ALONE									
2	Right	6024 ND-2-PSP	P-F 15'	0.00"	600 Deg.	352	:5		4" 4"	14" 14"	1762 1762		95" 95"	2820		0 SS Exposed	RIGHT	ALONE									
00) INFO	RMATIO	N	I		1			II			ΙΙ	I						1								
	-				FI	LTER(S	5)				_		IGHT(S)	5)						ILITY CABIN	ET(S)			0.00		FIRE	нос
IOOD NO.	TAG		ТҮРЕ		QTY. Н	EIGHT		FICIENC	CY @ 7 M	ICRON	S QTY.		ГҮРЕ		WIRE GUARD	LOCATIO	on s	SIZE	TYPE	<u>SYSTEM</u> SIZE		ELECTI MODI			ANTITY	-SYSTEN PIPING	
1	LEFT	SS Baff	le with Ha	andles	11	16"	16"		30%		5	Screw	In Comp	npact	NO											YES	740 LB
2	Right	SS Baff	le with Ha	andles	11	16"	16"		30%		5	Screw	In Comp	npact	NO	Right	12"x	(60"x24"	Ansul R102	3.0/3.0		DCV-2	2111		Light 1 Fan	YES	908 LB
																	I		1						- i un		
100L) OPTI															7											
NO.	TAG							ΟΡΤΙ	ON																		
		BACKSD																									
		DACASFI	LASH 80	0.00" Hi	gh X 37	2.00" I	Long 430	SS Vert	ical																		
1	LEFT				•		•			80" Hi	gh In	sulated 430															
1	LEFT Right	LEFT VE SS	RTICAL E	END PAN	UEL 27"	Тор W	idth, 21"	Bottom	Width,			sulated 430 Insulated 43)			_											
2	Right	LEFT VE SS RIGHT V	RTICAL E	END PAN . END PA	NEL 27"	Тор W	idth, 21"	Bottom	Width,			Insulated 43		m Info	rmatio	 n - Job#	303151	16									
2 ERF	Right ORATE	LEFT VE SS RIGHT V SS ED SUPP	RTICAL E	END PAN . END PA ENUM(NEL 27"	Тор W " Тор \	Width, 21"	Bottom ' Botton	Width,	80" F		Insulated 43	Systen	m Info	rmatio	<u>-</u> <u>n - Job#</u>	<u>303151</u>	16			1		INS	TALLATIO	DN		
2	Right	LEFT VE SS RIGHT V SS ED SUPP	RTICAL E	END PAN . END PA ENUM(NEL 27"	Тор W " Тор \ Т Т ТҮР	Vidth, 21" Width, 21" PE WIDTH	Bottom Botton F LENG.	Width, h Width, RISER(S) DIA.	80" H	ligh I S.P.	Fire S Fire S FIRE SYSTE NO.	5ysten		rmatioi TYP		<u>303151</u>		SIZE	FLOW POINT		SYS	INS [:] STEM		DN LOCATION O	N HOOD	
2 ERF	Right ORATE	LEFT VE SS RIGHT V SS ED SUPP	RTICAL E	END PAN . END PA ENUM(NEL 27"	Тор W " Тор \ Т Түр 	Vidth, 21" Width, 21" VE WIDTH A 12"	Bottom Botton F LENG. 24"	Width, n Width, RISER(S) DIA.	80" F	ligh I S.P. 0.219"	Fire S Fire S FIRE SYSTE NO.	Systen M Tag	ag	ТҮР	E	303151	:		POINT			STEM	L			
2 ERF	Right ORATE	LEFT VE SS RIGHT V SS ED SUPP	RTICAL E	END PAN . END PA ENUM(NEL 27"	Тор W " Тор \ Т ТҮР МО, МО,	Vidth, 21" Width, 21" PE WIDTH A 12" A 12"	Bottom Botton LENG. 24" 24"	Width, n Width, RISER(S) DIA.	80" F	ligh I S.P. 0.219" 0.219"	Fire S Fire S FIRE SYSTE NO.	5ysten	ag		E	303151	:	SIZE .0/3.0					L			
2 ERF 100D NO.	Right ORATE TAG	LEFT VE SS RIGHT V SS ED SUPP POS.	RTICAL E	END PAN END PA	NEL 27" S)	Тор W " Тор \ Т ТҮР МО, МО,	Vidth, 21" Width, 21" PE WIDTH A 12" A 12" A 12"	Bottom Botton LENG. 24" 24"	Width, n Width, RISER(S) DIA.	80" H	ligh I S.P. 0.219" 0.219"	Fire S Fire S FIRE SYSTE NO. 1	Systen M Tag FSS	ag S-1	ТҮР	E	303151	:		POINT			STEM	L			
2 ERF 100D NO.	Right ORATE TAG	LEFT VE SS RIGHT V SS ED SUPP POS.	RTICAL E	END PAN END PA	NEL 27" S)	Тор W " Тор \ Т ТҮР МО, МО, МО,	Vidth, 21" Width, 21" PE WIDTH A 12" A 12" A 12" A 12"	Bottom Botton LENG. 24" 24" 24" 24"	Width, n Width, RISER(S) DIA.	80" H	ligh I S.P. 0.219" 0.219" 0.219" 0.219"	Fire S Fire S FIRE SYSTE NO. 1 GAS	Systen M Tag FSS VALVE	ag S-1 E(S)	TYP Ansul R	E 102		:	.0/3.0	POINT			STEM	L			
2 ERF 100D NO.	Right ORATE TAG LEFT	ED SUPP POS.	RTICAL E	END PAN END PA ENUM(WIDTH 18"	ANEL 27" (S) I HEIGH 6"	Тор W " Тор \ Т ТҮР МО, МО, МО,	Vidth, 21" Width, 21" PE WIDTH A 12" A 12" A 12" A 12" A 12" A 12"	Bottom Botton LENG. 24" 24" 24" 24" 24"	Width, N Width, NISER(S) DIA.	80" F	ligh S.P. 0.219" 0.219" 0.219" 0.219" 0.219"	Fire S Fire S Fire S FIRE SYSTE NO. 1 1 GAS FIR SYST	Systen M Tag FSS VALVE E 1	ag S-1	ТҮР	E 102	303151 	:		POINT			STEM	L			
2 ERF IOOD NO.	Right ORATE TAG	ED SUPP POS.	RTICAL E	END PAN END PA	NEL 27" S)	Top W " Top \ T TYP MU, MU, MU, MU, MU, MU, MU, MU,	Vidth, 21" Width, 21" PE WIDTH A 12" A 12" A 12" A 12" A 12" A 12" A 12"	Bottom Botton LENG. 24" 24" 24" 24" 24" 24"	Width, Nidth, NISER(S) DIA.	80" F	ligh S.P. 0.219" 0.219" 0.219" 0.219" 0.219" 0.219"	Fire Systen NO. 1 GAS FIRE SYSTE NO. 1 NO. 1 NO. 1 NO. NO. 1	Systen M Tag FSS VALVE E 1	ag S-1 E(S)	TYP Ansul R	E 102		:	.0/3.0	POINT			STEM	L			
2 ERF 100D NO. 1	Right ORATE TAG LEFT	ED SUPP POS.	RTICAL E	END PAN END PA ENUM(WIDTH 18"	ANEL 27" (S) I HEIGH 6"	Тор W " Тор \ Т ТҮР МО, МО, МО,	Vidth, 21" Width, 21" PE WIDTH A 12" A 12" A 12" A 12" A 12" A 12" A 12" A 12" A 12"	Bottom Botton LENG. 24" 24" 24" 24" 24"	Width, N Width, NISER(S) DIA.	80" F	ligh S.P. 0.219" 0.219" 0.219" 0.219" 0.219"	Fire Systen GAS FIRE SYSTE NO. 1 GAS FIR SYSTE NO. 1 1 1 1 1 1 1 1 1 1 1 1 1	Systen M Tag FSS VALVE E EM 1 -	ag S-1 E(S)	TYP Ansul R	E R102 PE		:	.0/3.0	POINT			STEM	L			
2 ERF 1000 NO. 1	Right ORATE TAG LEFT Right	LEFT VE SS RIGHT V SS ED SUPP POS. Front	RTICAL E	END PAN END PA ENUM(WIDTH 18"	IL 27" NEL 27 S) HEIGH 6" 6"	Top W " Top I T TYP MU, MU, MU, MU, MU, MU, MU, MU,	Vidth, 21" Width, 21" PE WIDTH A 12" A 12" A 12" A 12" A 12" A 12" A 12" A 12" A 12"	Bottom Botton LENG. 24" 24" 24" 24" 24" 24" 24" 24"	Width, N Width, NISER(S) DIA.	80" F	ligh I S.P. 0.219" 0.219" 0.219" 0.219" 0.219" 0.219" 0.219" 0.219"	Fire Systen GAS FIRE SYSTE NO. 1 GAS FIR SYSTE NO. 1 1 1 1 1 1 1 1 1 1 1 1 1	Systen M Tag FSS VALVE E EM 1 -	ag S-1 E(S) TAG	TYP Ansul R TY	E R102 PE	SIZE	:	.0/3.0 SUPPLIED BY	POINT			STEM	L			
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2 ERF 1000 NO. 1	Right ORATE TAG LEFT Right	ED SUPP POS. Front Front	RTICAL E	END PAN END PA ENUM(WIDTH 18" 18"	IL 27" NEL 27 S) HEIGH 6" 6"	Top W " Top I T TYP MU, MU, MU, MU, MU, MU, MU, MU,	Vidth, 21" Width, 21" YE WIDTH A 12"	Bottom Botton LENG. 24" 24" 24" 24" 24" 24" 24" 24" 24" 24"	Width, N Width, NISER(S) DIA.	80" F	ligh I S.P. 0.219" 0.219" 0.219" 0.219" 0.219" 0.219" 0.219" 0.219"	Insulated 43 Fire S SYSTE NO. 1 GAS FIR SYST NO. 1 1	Systen M Tag FSS VALVE E EM 1 -	ag S-1 E(S) TAG FSS-1	TYP Ansul R TY	E R102 PE	SIZE	:	.0/3.0 SUPPLIED BY Distributor	POINT 14	5 		STEM	L			
2 ERF 1000 NO. 1 2 LEC	Right ORATE TAG LEFT Right TRICA	ED SUPP POS. Front Front	RTICAL E	END PAN END PA ENUM(WIDTH 18" 18"	IL 27" NEL 27 S) HEIGH 6" 6"	Top W " Top I T TYP MU, MU, MU, MU, MU, MU, MU, MU,	Vidth, 21" Width, 21" VE WIDTH A 12" A 12"	Bottom Botton LENG. 24" 24" 24" 24" 24" 24" 24" 24" 24" 24"	Width, Niser(s) DIA. C DIA. C C C C C C C C C C C C C	80" F	ligh I S.P. 0.219" 0.219" 0.219" 0.219" 0.219" 0.219" 0.219"	Insulated 43 Fire S SYSTE NO. 1 GAS FIR SYST NO. 1 1	Systen M Tag FSS VALVE E EM 1 -	ag S-1 E(S) TAG FSS-1	TYP Ansul R TY Mecha	E R102 PE	SIZE	:	.0/3.0 SUPPLIED BY Distributor FANS	CONTROLLE	S	Fire Cab	STEM	L			

1 Fan

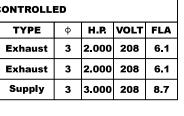
Hood # 2





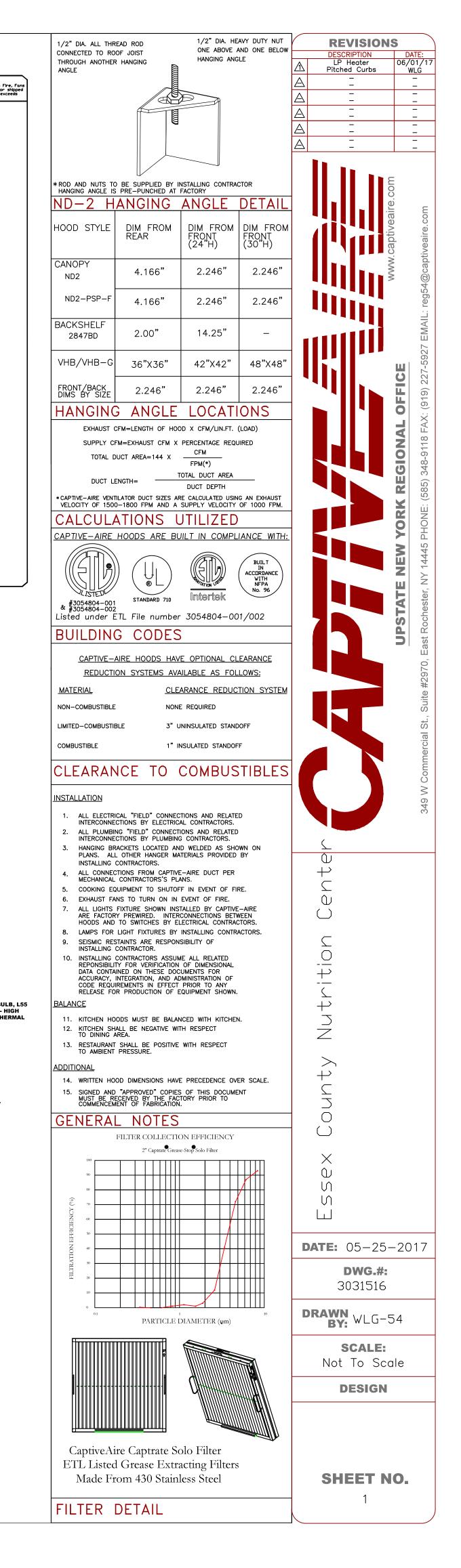


DETAIL - ANSUL FIRE SUPPRESSION SYSTEM LAYOUT



HMUA-1

	MODEL NUMBER DCV-2111	l	DRAWN BY	SCHEMATIC TYPE INSTALL	DESCRIPTI Demond Control	ON OF OPERATION:	haust Fans, 1 Supply Fan. Exhaust on i	n Fire, Liohts o
3031516	JOB NAME Essex County Nu	trition Center	DATE 6/1/2017	DWG NO ECP #1-1	modulate based o loose for field in 50 feet.	n duct temperature. INVERTER hstallation.Verify distance betwe	haust Fans, 1 Supply Fan, Exhaust on ir DUTY THREE PHASE MUTUR REQUIREDI Roo ren VFD and Motor, additional cost coul	m temperature : d apply if dista
			1	FAN: 03				
BREAKER PANEL TO CO		Load Wining U3		BLACK	HMUA-1 FLA:8.7 	HODD PANEL <u>T2AO</u> - TD <u>T2BO</u> -	FACTURY WIRED TEMPERATURE	
Responsibility: Ele BREAKER SIZE SHOWN IS THE		SM-3 <u>V3</u> Wire to <u>V3</u>		BLACK		DUCT SENSOR	SENSOR. MOUNTED IN EXHAUST DUCT	RISER 1
BREAKER PANEL	CONTROL PANEL	VFD QUICK OSF1C CONNECTOR ON1C			NIO	HODD PANEL T3AO-		
	<u>#ot</u> 0H10					TD T3BO-	FACTORY WIRED TEMPERATURE	, НООД 2
120 V	<u>Neutral</u> <u>0 N1 0</u>		MUST HAVE ITS DWN DD NDT SHARE COND			DUCT SENSOR	SENSOR. MOUNTED IN EXHAUST DUCT	RISER 2
	<u>Ground</u> <u>CGNDO</u>		DO NOT SHAKE COND	5111		HODD PANEL T4AO-		
1ST HOOD LIGHT BREAKER SHA	1	MAKE UP AIR DN PCB	REMOVE JUMPER	TN	MUA #1	то <u>Т4ВО</u> -	VIRE TO CONTROL BOARD.	HOD 1
CONTROL POWER. SWITCH #1		DAMPER ILIAC	+	<u>-</u> 0	D30	DUCT SENSOR	SENSOR MOUNTED IN EXHAUST DUCT	RISER 1
BREAKER 3PH		PROVING <u>IL1BC</u> INTERLOCK	LDW VOLTAGE CONNEC		<u>D70</u> MINAL NAMES	HODD PANEL T5AO		
208 ∨			DAMPER INTERLOCK, SI HAVE CONTINUITY WHI IS PROVEN OPEN.	HUULD	MINAL NAMES NDT APPLY JA BY DTHERS	TD T5BO- DUCT SENSOR		HODD 1 RISER 2
15 A EXH-1 SM-1	<u>Ground</u> <u>OGNDO</u>		NDT REQUIRED FOR AL	L UNITS.			SENSOR MOUNTED IN EXHAUST DUCT	
WIRE TO VFD QUICK CONNE IF 1 PH 240 VAC INPUT, USE						CONTROL PANEL TOAO		
BREAKER 3PH IF LPH 120 VAC INPUT, USE		L		L		TD <u>T6BO</u> - PSP SENSDR	WIRE TO CONTROL BOARD.	HOOD 1 PSP TEMP
208 V								
<u>7.6 A</u> 15 A EXH-2 SM-2	<u>Ground</u> <u>OGNDO</u>	CONTROL	PANEL TO ACCES	SSORY ITEN	15		THE FOLLOWING CONNECTIONS MAY OR MAY NOT BE	
WIRE TO VED QUICK CONNE	CTOR	Re	sponsibility: Elect	rician			REQUIRED BASED ON JOBSITE SPECIFICATIONS	
IF 1 PH 240 VAC INPUT, USE IF 1 PH 120 VAC INPUT, USE BREAKER 3PH		CONTROL PANEL	-		MPONENT			SHUNT COIL
208 V	— — — <u>LINE</u> — <u>I</u> <u>I</u>			MICRI	ISWITCH 1	HODD PANEL OSTO- SIGNAL FOR ONIO-	NEUTRAL_FROM_SHUNT_COIL	
MCA: 10.9 A	Ground OINDO		3	1:C		EXTERNAL	ST TERMINAL IS ENERGIZED	
MUCP: 20 A HMUA-1 SM-3						SHUNT TRIP	IN FIRE CONDITION.	
		MICKUSWITCH	WIRE AR1 TO NORMALLY C1 TO AR1 SHOULD HAVE			HODD PANEL OC2O-		
		C1	CONTINUITY WHEN ARMED			SPARE FIRE OAR2O- SYSTEM DRY	SPARE CONTACTS USED WHEN FIRE	
CONTROL PANEL	D FANS	IF MORE THAN ON	E			CONTACT	EQUIPMENT OR PROVIDE SIGNALS. (NOT FOR BUILDING FIRE ALARM)	
Responsibility: Ele		FIRE SYSTEM, WIRE IN SERIES AS SHOW	E					
CONTROL PANEL	FANS	AR1	+				1	
Load Wiring U1 - LOAD LEG 1 F	FAN: 01 EXH-1					HODD PANEL OSFCIO-	<u>Common</u>	
SM-1	HP: 2.000 VDLT: 208 V	HOOD PANEL	ALL SWITCHES FACTORY CAT-5 CONNECTION	WIRED	-{			
		SWITCHES				DRY CUNTACT OSFUIC- DN/DFF WITH SUPPLY FAN GROUP 1		
	WIRE TO WN CONDUIT DISCONNECT			Наа	D LIGHTS 1	GROUP 1	SPARE CONTACTS WILL MAKE COMMON TO NORMALLY OPEN WHEN SUPPLY FAN IS DN.	
DD NDT SHARE CD	NDUIT!	HODD PANEL OBIC	}	<u>BLACK</u>	-Ø		WHEN SOFFET FAN IS UN.	
Load Wiring $\boxed{\begin{array}{c} U2 \\ V2 \\ \end{array}}$ $- \underline{\begin{array}{c} LOAD \ LEG \ 1 \\ LOAD \ LEG \ 2 \\ \end{array}}$	FAN: 02 EXH-2 FLA:6.1	TO <u>OVIC</u> HOD LIGHTS <u>OGND</u>	H			EMS SPEED VI+O	¦ []]	+ TO BMS
		1400 W MAX	WIRE TO J-BOX ON TOP			0-10∨ DUTPUT <u>VD-O</u> - DN PCB	WIRE TO ECPM03 TERMINALS.	-
			CAT-5 ETHERNET CONNE			(TOTAL)	SEE ECPM03 DWNERS MANUAL.	
MUST HAVE ITS D DD NDT SHARE CD	WN CONDUIT DISCONNECT	CONTROL PANEL			-(-			
I		WORLD WIDE	WIRE DIRECTLY TO COMM MODULE. SEE CASLINK D	JWNERS		0-10V DUTPUT 20- IN VFD	WIRE TO VFD TERMINAL STRIP. PROPORTIONAL TO FREQUENCY.	
		WEB	MANUAL FOR FURTHER IN	STRUCTIONS.		(EACH VFD)	SEE ∨FD DWNERS MANUAL.	BMS SWITCH
		HODD PANEL TIAC	J			HODD PANEL OHO		
		TD T1BC	VIRE TO CONTROL BOARI			TD <u>DID10</u> - EXTERNAL	SIGNAL SWITCH WILL ACTIVATE	
ELECTRICAL CONT	ROL PACKAGE	KITCHEN TEMP SENSOR	SENSOR MOUNTED IN ROO FROM HEAT SOURCES, SE	MAWAY ``		SWITCH	FANS & LIGHTS.	
				.	I			



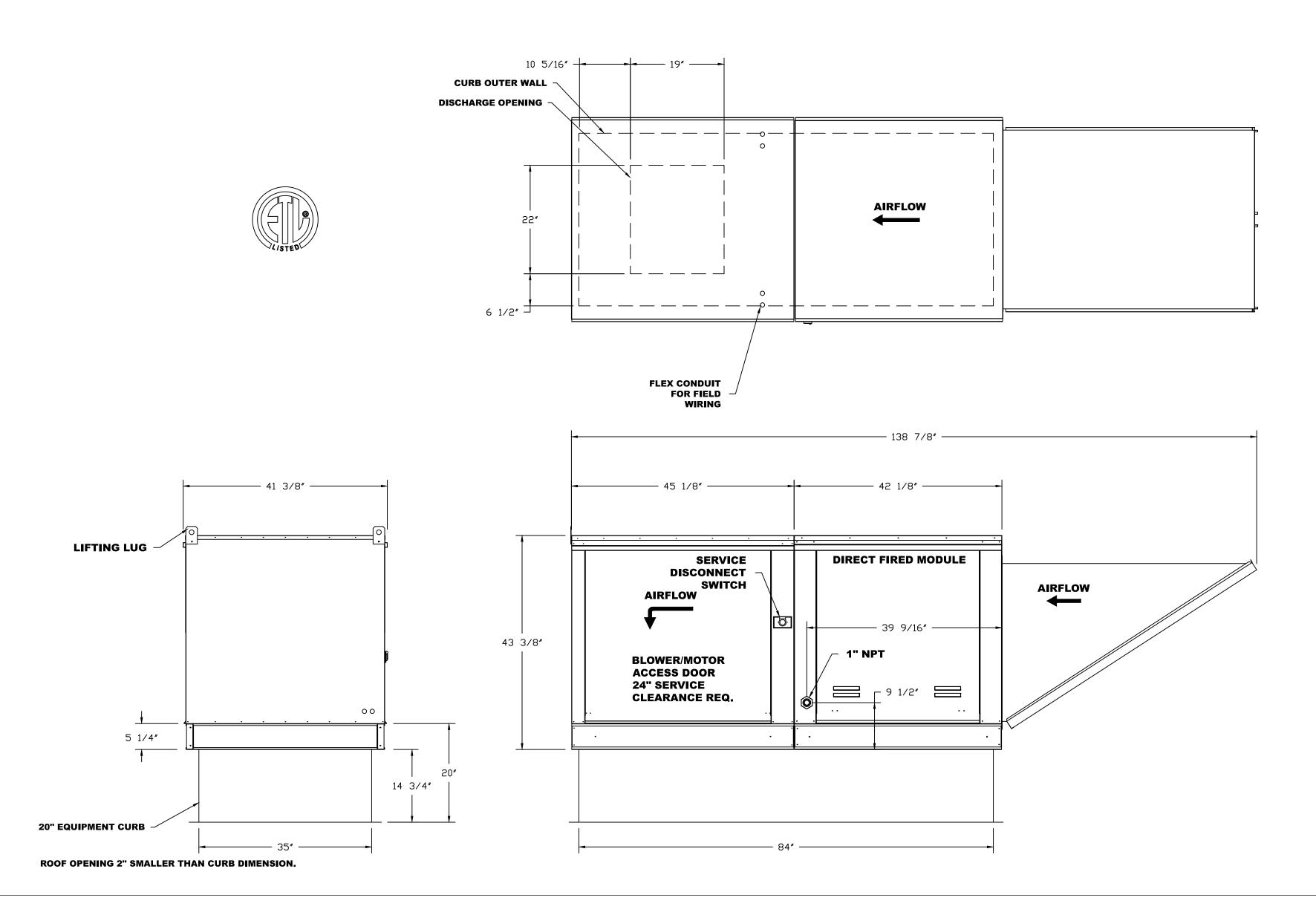
FAN UNIT NO.	TAG	FA	AN UNIT MO	DEL #	CFN	1 ESP.	RPM	H.P.	B.H.P.	Ø	VOLT	FLA		EIGH LBS.		ONES			
1	EF-LEFT		DU180HF	Α	352	5 0.750	1252	2.000	0.9870	3	208	6.1		156		20			
2	EF-RIGHT		DU180HF	A	352	5 0.750	1252	2.000	0.9870	3	208	6.1		156		20			
AUN	FAN INF	ORMATI	ON - Job#	#303151	5										·				
FAN UNIT NO.	TAG	FAN	UNIT MODE	L #	BLOWER	HOUSING	MIN CFM	DESIGN CFM	ESP.		RPM	H.P.	B.H.P.	Ø	VOLT	FLA	WEIGHT (LBS.)	SONES	BURNER EFFICIENCY(%
3	HMUA-1	Α	3-D.500-G18		G18-PB	A3-D.500	3500	5640	0.500		712	3.000	2.2140	3	208	8.7	997	11.5	92
GAS	FIRED M	AKE-UP		T(S)												_	1		
FAN UNIT NO.	TAG	INPUT BTUs	OUTPUT BTUs	TEMP. RIS	E		IRED INPUT GAS PRESSURE GAS TYPE												
3	HMUA-1	463461	426384	70 deg F		7 in. w.c 1	4 in. w.c.		LP										
	OPTIONS		-		I														
FAN UNIT NO.	TAG				C	OPTION (Qty.	- Descr.)												
1	EF-LEFT	1 - Gre	ase Box																
2	EF-RIGH1	۲ 1 - Gre	ase Box																
		1 - AC	Interlock Re	lay - 24VAC	Coil														
		1 - Mot	orized Back	draft Damp	er for A3-D	Housing													
		1 - Con less th		nclosure he	ater. Reco	ommended fo	or winter	design te	mperatı	ire									
		Include	venience Ou es receptacl			Requires Sep	oarate 12	0V Conne	ection.										
3	HMUA-1	1 - Low	/ Fire Start																
		1 - Inle	t Pressure C	Gauge, 0-35	•														
		1 - Mar	nifold Pressu	ıre Gauge, -	5 to 15" w	/C													
		4 0	h Duct Hand																

1 - Curb Duct Hanger

1 - Separate 120V Wiring Package (Required and used only for DCV or Prewire with VFD) - Three Phase Only

CURB ASSEMBLIES

NO.	ON FAN	WEIGHT	ITEM	SIZE
1	# 1	41 LBS	Curb	26.500"W x 26.500"L x 20.000"H 5.000:12.000 Pitch Vented Hinged
2	# 2	41 LBS	Curb	26.500"W x 26.500"L x 20.000"H 5.000:12.000 Pitch Vented Hinged
3	# 3	82 LBS	Curb	35.000"W x 84.000"L x 20.000"H 5.000:12.000 Pitch Along Width, Right Insulated



FANS #1 (EF-LEFT), #2 (EF-RIGHT) - DU180HFA EXHAUST FAN

FEATURES:

- DIRECT DRIVE CONSTRUCTION (NO BELTS/PULLEYS) - ROOF MOUNTED FANS - RESTAURANT MODEL - UL705 AND UL762 - VARIABLE SPEED CONTROL
- INTERNAL WIRING - WEATHERPROOF DISCONNECT - THERMAL OVERLOAD PROTECTION (SINGLE PHASE)
- HIGH HEAT OPERATION 300°F (149°C) - GREASE CLASSIFICATION TESTING
- NORMAL TEMPERATURE TEST EXHAUST FAN MUST OPERATE CONTINUOUSLY WHILE EXHAUSTING AIR AT 300°F (149°C) UNTIL ALL FAN PARTS HAVE REACHED THERMAL EQUILIBRIUM, AND WITHOUT ANY **DETERIORATING EFFECTS TO THE FAN WHICH** WOULD CAUSE UNSAFE OPERATION.
- ABNORMAL FLARE-UP TEST **EXHAUST FAN MUST OPERATE CONTINUOUSLY** WHILE EXHAUSTING BURNING GREASE VAPORS AT 600°F (316°C) FOR A PERIOD OF **15 MINUTES WITHOUT THE FAN BECOMING** DAMAGED TO ANY EXTENT THAT COULD CAUSE AN UNSAFE CONDITION.
- OPTIONS **GREASE BOX**

26 1/2"

VENTED CURB

20 GAUGE STEEL

ROOF OPENING

DIMENSIONS

23°

12'

— 3" FLANGE

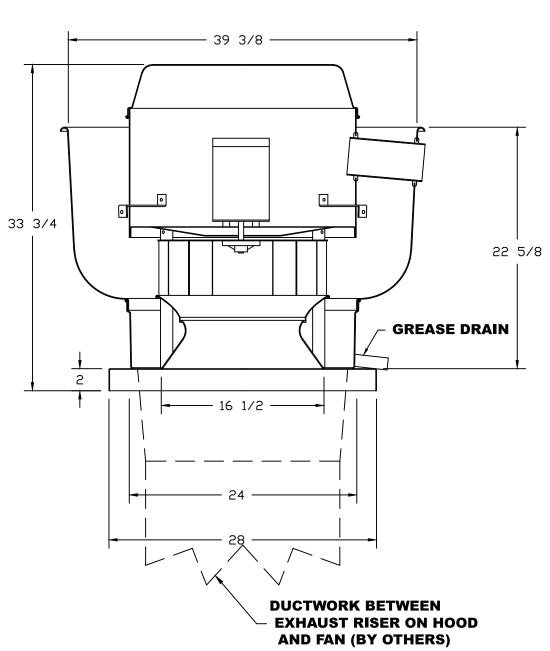
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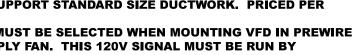
CONSTRUCTION

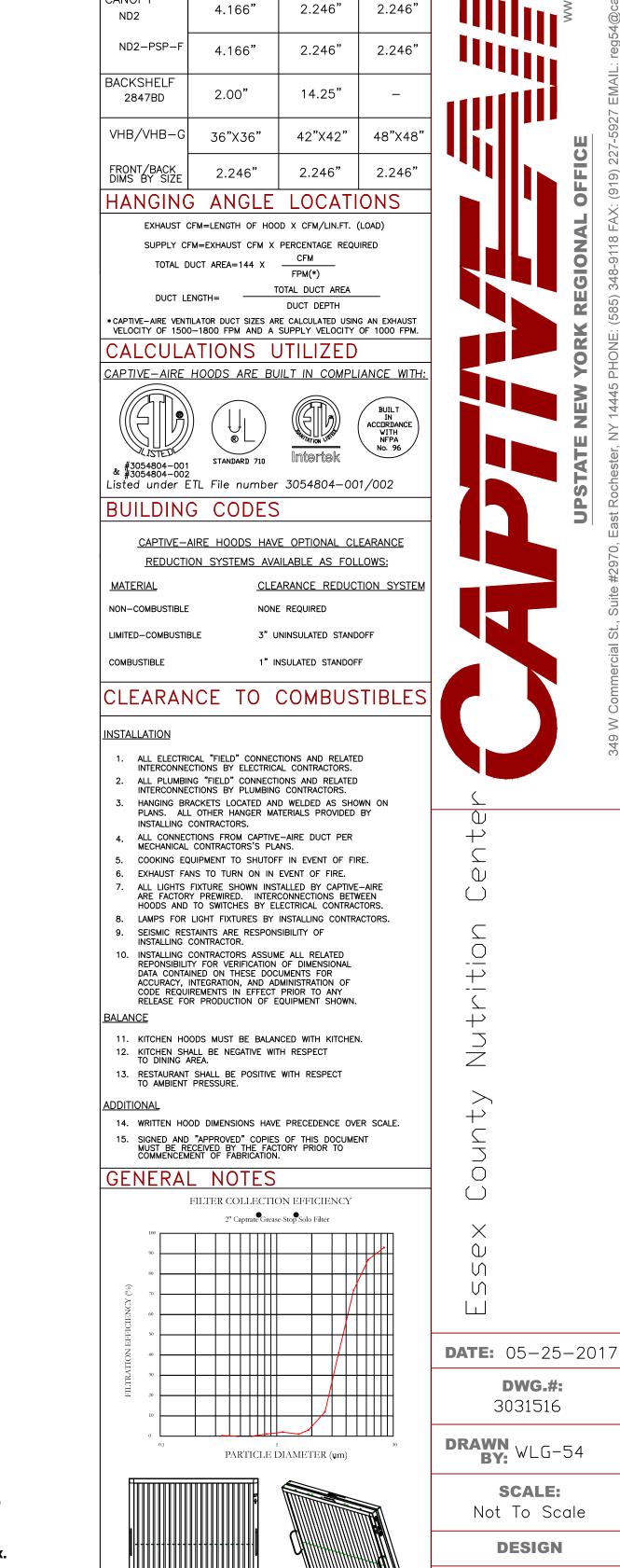
- 26 1/2" 20" 24
 - PITCHED CURBS ARE AVAILABLE FOR PITCHED ROOFS.
 - **SPECIFY PITCH:** EXAMPLE: 7/12 PITCH = 30° SLOPE



- 1. DIRECT GAS FIRED HEATED MAKE UP AIR UNIT WITH 18" BLOWER AND 12" BURNER. 2. INTAKE HOOD WITH EZ FILTERS
- 3. DOWN DISCHARGE AIR FLOW RIGHT -> LEFT
- 4. COOLING INTERLOCK RELAY. 24VAC COIL. 120V CONTACTS. LOCKS OUT BURNER CIRCUIT WHEN AC IS ENERGIZED. 5. MOTORIZED BACK DRAFT DAMPER 30" X 30" FOR SIZE 3 STANDARD & MODULAR HEATER AND UNTEMPERED UNITS W/EXTENDED SHAFT, STANDARD GALVANIZED CONSTRUCTION, 3/4" REAR FLANGE, NFBUP-S ACTUATOR INCLUDED 6. CONTROL PANEL ENCLOSURE HEATER, INCLUDES 200W, 120V HEATER AND THERMOSTAT (10 DEGREE SETTING). REQUIRES CONVENIENCE OUTLET OPTION (POWER BY OTHERS). RECOMMENDED FOR WINTER DESIGN TEMPERATURE LESS THAN 0°F. 7. GFCI 15 AMP CONVENIENCE OUTLET FOR HEATER ENCLOSURE. POWER SUPPLY BY OTHERS - INCLUDES RECEPTACLE AND J BOX. 8. LOW FIRE START. ALLOWS THE BURNER CIRCUIT TO ENERGIZE WHEN THE MODULATION CONTROL IS IN A LOW FIRE POSITION.
- 9. GAS PRESSURE GAUGE, 0-35", 2.5" DIAMETER, 1/4" THREAD SIZE 10. GAS PRESSURE GAUGE, -5 TO +15 INCHES WC., 2.5" DIAMETER, 1/4" THREAD SIZE 11. CURB DUCT HANGER - 1-1/4" ANGLE IRON FRAME WELDED TO CURB TO SUPPORT STANDARD SIZE DUCTWORK. PRICED PER
- CURB. ONLY AVAILABLE WHEN CURB ASSEMBLY IS ORDERED. 12. SEPARATE 120VAC WIRING PACKAGE FOR MAKE-UP AIR UNITS. OPTION MUST BE SELECTED WHEN MOUNTING VFD IN PREWIRE PANEL OR WITH DCV PACKAGE. PROVIDES SEPARATE 120VAC INPUT TO SUPPLY FAN. THIS 120V SIGNAL MUST BE RUN BY ELECTRICIAN FROM DCV TO MUA SWITCH.







Made From 430 Stainless Steel

FILTER DETAIL

1/2" DIA. HEAVY DUTY NUT

ONE ABOVE AND ONE BELOW

DIM FROM DIM FROM

FRONT (24"H)

FRONT (30"H)

HANGING ANGLE

REVISIONS

WLG

ESCRIPTION LP Heater

Pitched Curbs

1/2" DIA. ALL THREAD ROD CONNECTED TO ROOF JOIST

THROUGH ANOTHER HANGING

* ROD AND NUTS TO BE SUPPLIED BY INSTALLING CONTRACTOR HANGING ANGLE IS PRE-PUNCHED AT FACTORY

HOOD STYLE DIM FROM REAR

ND-2 HANGING ANGLE DETAII

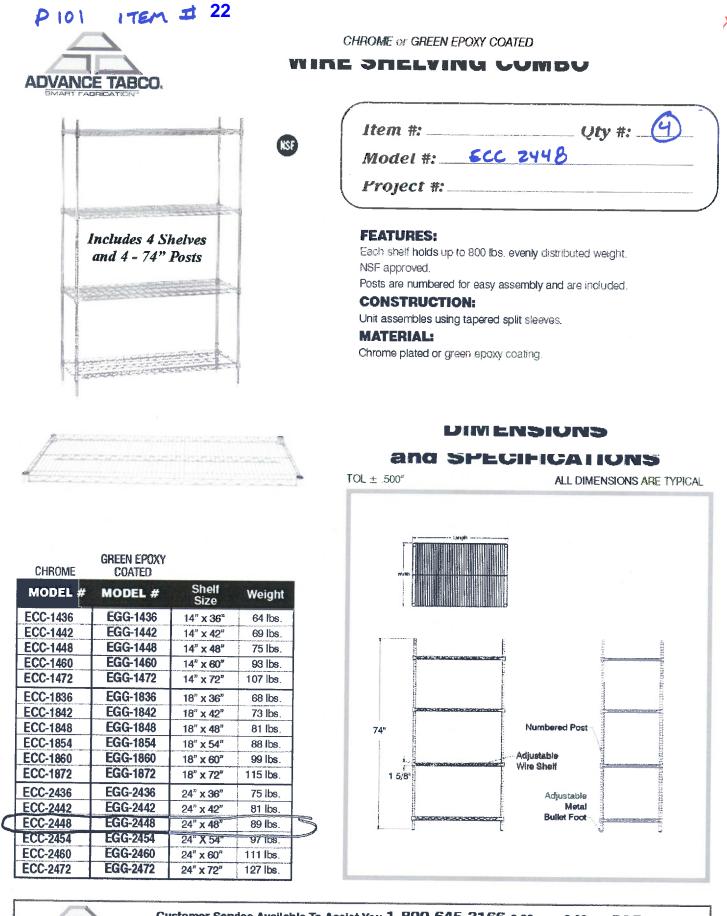
ANGLE

CANOPY





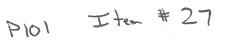




A	Customer Service Ava Email Orders To: customer@adv	illable To Assist You 1-80 vancetabco.com. For Smart Fabrication	0-645-3166 8:30 am - 8 ™ Quotes, Email To: smartfab@advance	tabco.com or Fax To: 631-586-2933
ADVANCE TABCO.	NEW YORK	GEORGIA	TEXAS	NEVADA
	Fax: (631) 242-6900	Fax: (770) 775-5625	Fax: (972) 932-4795	Fax: (775) 972-1578

ADVANCE TABCO is constantly engaged in a program of improving our products. Therefore, we reserve the right to change specifications without prior notice. © ADVANCE TABCO, MAY 2014 5-3

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Recessed Bowl Surface Accommodates "940" Series -Vance Cutting Boards Poly shown & Sink Covers

FEATURES:

Tile edge for ease of installation.

One piece Deep Drawn sink bowls with integral drainboards with splash.

Featuring the single bowl unit design.

All sink bowls have a large liberal 3" radius.

Placement of the welded leg assembly ensures stability and furnishes direct support of the column load requirement for the entire sink unit.

"940" series is supplied with adjustable front and rear cross brace featuring leg casting to secure left to right cross bracing.

CONSTRUCTION:

All TIG welded.

Welded areas blended to match adjacent surfaces and to a satin finish.

Gussets welded to a die-embossed reinforcing channel.

STAINLESS STEEL **REGALINE SINKS Three Compartments - Two Drainboards**

ltem #:	Qty #:
Model #:	
Project #:	

MATERIALS:

Super Saver (900 Series):	18 gauge type 304 stainless steel 8" High Splash.
Standard (930 Series):	16 gauge type 304 stainless steel 8" High Splash.
Spec-Line (940 Series).	11" High Splash.
Spec-Line (940 Series):	14 gauge type 304 stainless steel

1 1 1 1 1 A A A A

• 1 5/8" diameter tubular stainless steel. LEGS:

- Stainless steel gussets & channels.
- Stainless Steel 1" adjustable bullet feet.

YES! It's SeaMLess!

SUPER SAVER 900 Series STANDARD 930 Series SPEC-LINE 940 Series 18 Ga. 304 S/S 16 Ga. 304 S/S 14 Ga. 304 S/S 12" Water Level 12" Water Level 14" Water Level Approx. Wt. Cubic Approx. Wt. O.A. LENGTH Approx. Wt. DRBD. SIZE MODEL # (lbs.) Feet **MODEL #** (lbs.) BOWL SIZE (inches) (mm) MODEL # (lbs.) (inches) (mm) 9-3-54-18RL 182 49 93-3-54-18RL 189 230 94-3-54-18RL 457 18' **91**" 2311 55 9-3-54-24RL 190 93-3-54-24RL 197 16 x 20 94-3-54-24RL 248 24" 610 103" 2616 9-3-54-36RL 208 96 (406 x 508) 239 275 93-3-54-36RL 94-3-54-36RL 914 *36" 127" 3226 9-23-60-18RL 198 59 203 93-23-60-18RL 94-23-60-18RL 248 457 18" 103" 2616 9-23-60-24RL 195 65 220 93-23-60-24RL 276 20 x 20 94-23-60-24RL 610 2921 24" 115' 89 387 9-23-60-36RL 364 (508 x 508) 93-23-60-36RL 408 94-23-60-36RL 914 139" *36" 3531 62 9-63-54-18RL 226 289 323 93-63-54-18RL 94-63-54-18RL 18" 457 2457 97" 85 304 9-63-54-24RL 233 93-63-54-24RL 334 18 x 24 94-63-54-24RL 109" 2762 24" 610 96 9-63-54-36RL 325 367 (457 x 610) 418 93-63-54-36RL 94-63-54-36RL 914 133" 3372 *36" 9-43-72-24RL 98 331 318 93-43-72-24RL 94-43-72-24RL 390 610 24" t127" 3226 24 x 24 9-43-72-36RL 110 345 393 93-43-72-36RL 448 94-43-72-36RL (610 x 610) 914 *36" **†15**1" 3835 9-83-60-18RL 277 83 315 93-83-60-18RL 94-83-60-18RL 356 457 18" 103" 2616 9-83-60-24RL 95 305 346 93-83-60-24RL 94-83-60-24RL 394 20 x 28 24" 610 115" 2921 9-83-60-36RL 109 398 350 (508 x 711) 93-83-60-36RL 94-83-60-36RL 451 914 139" *36"

† Requires Two Faucets

Regalines with 36" Drainboards are Supplied with Two Sets of Legs for Support.

3531



Customer Service Available To Assist You 1-800-645-3166 8:30 am - 8:00 pm E.S.T.

12" Water Level

15" Flood Level

For Orders & Customer Service:

Email: customer@advancetabco.com or Fax: 631-242-6900

14" Water Level 17" Flood Level

For Smart Fabrication[™] Quotes: Email: smartfab@advancetabco.com or Fax: 631-586-2933

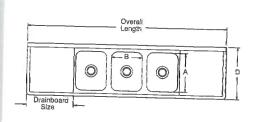
12" Water Level 15" Flood Level

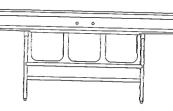
DIMENSIONS and SPECIFICATIONS

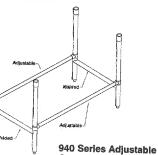
TOL Overall: ± .500" Interior: ± .250"

± .500 ⊦ 250"

ALL DIMENSIONS ARE TYPICAL







940 Series Adjustable Cross Bracing

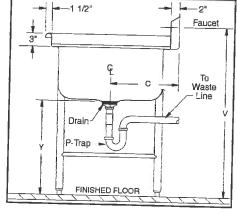
DESCRIPTION

POM/ O I DESE					Contraction of the local division of the loc				940	SE	RIES	;	900 & 930 SERIE				IES
(SIZE)	Length	DRBD (SIZE)	Recommended Use	A	в	C	D	v	w	x	Y	z	v	w	x	v	z
	91"	18"															1
16x20	103"	24"	DISH	20"	16"	13 5/8"	27"	38"	11"	-1.472	00"						
	127"	*36"	SINKS			10 0/0	21	30	111	14"	20"	45"	38"	8"	12"	22"	42"
	103"	18"							-	1							
20x20	115"	24"	DISH &	20"	20"	13 5/8"	27"	38"	4 4 22	1" 14"	20"	45"	38"	8"	12"	22"	42"
	139"	*36"	POT SINKS				21		11"								
	97"	18"				<u> </u>											1
18x24	109"	24"	POT & PAN	24"	18"	15 5/8"	31"	38"	11"	14"	20"	45"	38"	8"	12"	22"	
	133"	*36"	SINKS					50									42"
24-24	'127 <i>"</i>	24"	POT SINKS	-		15 5/8"	-			14"	20"	45"	38"	8"	12"	22"	42"
24x24	*151"	*36"		24"	24"		31"	38"	11 "								
	103"	18"															<u> </u>
20x28	115"	24"	PAN SINKS	28"	20"	17 5/8"	35"	38"	11"	14"	20"	45"	38"	0.7	12"	22"	42"
	139"	*36"								1.4	20			8"			
Bequire					L3					_			_				1 -

† Requires Two Faucets

* Regalines with 36" Drainboards are Supplied with Two Sets of Legs for Support.

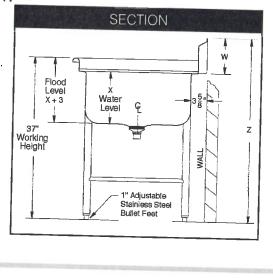
PLUMBING ROUGH-IN



MECHANICAL:

- Supply is 1/2" IPS hot & cold.
- Faucet holes on 8" centers.
- Faucets are not included (see accessories).
- Waste drains are 1 1/2" IPS S/S basket type, located in center of sink bowi, and are included.







ADVANCE TABCO is constantly engaged in a program of improving our products. Therefore, we reserve the right to change specifications without prior notice.

P101 Item # 28



"940" Series

shown

Recessed Bowl Surface Accommodates Poly-Vance Cutting Boards & Sink Covers

FEATURES:

Tile edge for ease of installation.

One piece **Deep Drawn** sink bowls with integral drainboards with splash.

Featuring the single bowl unit design.

All sink bowls have a large liberal 3" radius.

Placement of the welded leg assembly ensures stability and furnishes direct support of the column load requirement for the entire sink unit.

"940" series is supplied with adjustable front and rear cross brace featuring leg casting to secure left to right cross bracing.

CONSTRUCTION:

All TIG weided.

Welded areas blended to match adjacent surfaces and to a satin finish.

Gussets welded to a die-embossed reinforcing channel.

STAINLESS STEEL

REGALINE SINKS (1) Three Compartments - Two Drainboards

ltem #:	Qty #:	
Model #:		
Project #:		

MATERIALS:

Spec-Line (940 Series):	14 gauge type 304 stainless steel
	11" High Splash.
Standard (930 Series):	16 gauge type 304 stainless steel 8" High Splash.
Super Saver (900 Series):	18 gauge type 304 stainless steel 8" High Splash.

LEGS: • 1 5/8" diameter tubular stainless steel. • Stainless steel gussets & channels.

Stainless Steel 1" adjustable bullet feet.

YES! It's SeaMLess!

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OTANDADD

				SPEC-LINE	940 Series	STANDARI	930 Series	SUPER SAV	ER 900 Series		
					14 Ga. 304 S 14" Water Lev		16 Ga. 304 12" Water I		18 Ga. 304 12" Water L		
BOWL SIZE	O.A. LENGTH (inches) (mm)		DRBD. SIZE (inches) (mm)		MODEL #	Approx. Wt. (lbs.)	MODEL #	Approx. Wt. (lbs.)	MODEL #	Approx. Wt. (lbs.)	Cubi Fee
10 00	91"	2311	18"	457	94-3-54-18RL	230	93-3-54-18RL	189	9-3-54-18RL	182	49
16 x 20 (406 x 508)	103"	2616	24"	610	94-3-54-24RL	248	93-3-54-24RL	197	9-3-54-24RL	190	55
(127"	3226	*36"	914	94-3-54-36RL	275	93-3-54-36RL	239	9-3-54-36RL	208	96
	103"	2616	18"	457	94-23-60-18RL	248	93-23-60-18RL	203	9-23-60-18RL	198	59
20 x 20 (508 x 508)	115"	2921	24"	610	94-23-60-24RL	276	93-23-60-24RL	220	9-23-60-24RL	195	65
(000 x 000)	139"	3531	*36"	914	94-23-60-36RL	408	93-23-60-36RL	387	9-23-60-36RL	364	89
18 x 24 (457 x 610)	97"	2457	18"	457	94-63-54-18RL	323	93-63-54-18RL	289	9-63-54-18RL	226	62
	109"	2762	24"	610	94-63-54-24RL	334	93-63-54-24RL	304	9-63-54-24RL	233	85
(457 x 010)	133"	3372	*36"	914	94-63-54-36RL	418	93-63-54-36RL	367	9-63-54-36RL	325	96
24 x 24 (610 x 610)	†127 "	3226	24"	610	94-43-72-24RL	390	93-43-72-24RL	331	9-43-72-24RL	318	98
	†151 "	3835	*36"	914	94-43-72-36RL	448	93-43-72-36RL	393	9-43-72-36RL	345	110
20 x 28 (508 x 711)	103"	2616	18"	457	94-83-60-18RL	358	93-83-60-18RL	315	9-83-60-18RL	277	83
	115"	2921	24"	610	94-83-60-24RL	394	93-83-60-24RL	346	9-83-60-24RL	305	95
	139"	3531	*36"	914	94-83-60-36RL	451	93-83-60-36RL	398	9-83-60-36RL	350	109
† Requires Two Faucets * Regalines with 36" Drainboards are Supplied with Two Sets of Legs for Support.				plied	14" Water I 17" Flood I		12" Wate 15" Floo		12" Wate 15" Floo		



Customer Service Available To Assist You 1-800-645-3166 8:30 am - 8:00 pm E.S.T.

For Orders & Customer Service:

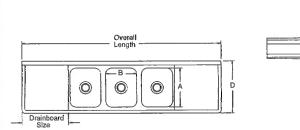
ODEO LINE

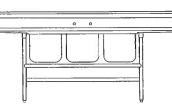
Email: customer@advancetabco.com or Fax: 631-242-6900

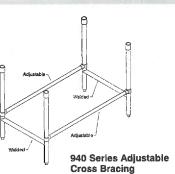
For Smart Fabrication™ Quotes: Email: smartfab@advancetabco.com or Fax: 631-586-2933

DIMENSIONS and SPECIFICATIONS

TOL Overall: ± .500" Interior: ± .250" ALL DIMENSIONS ARE TYPICAL



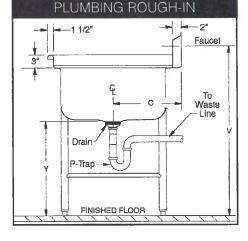




DESC	RIPTI	ON							940	SEF	RIES		900	& 9	930	SERI	ES
BOWL (SIZE)	Overall Length	DRBD (SIZE)	Recommended Use	A	в	C	D	v	w	x	Y	z	v	w	x	Y	z
16x20	91" 103" 127"	18" 24" *36"	DISH SINKS	20"	16"	13 5/8"	27"	38"	11"	14"	20"	45"	38"	8"	12"	22"	42"
20x20	103" 115" 139"	18" 24" *36″	DISH & POT SINKS	20"	20"	13 5/8"	27"	38"	11"	14"	20"	45"	38"	8"	12"	22"	42"
18x24	97" 109" 133"	18" 24" *36"	POT & PAN SINKS	24"	18"	15 5/8"	31"	38"	11"	14"	20"	45"	38"	8"	12"	22"	42"
24x24	†127" †151″	24" *36"	POT SINKS	24"	24"	15 5/8"	31"	38"	11"	14"	20"	45"	38"	8"	12"	22"	42"
20x28	103" 115" 139"	18" 24" *36"	PAN SINKS	28"	20"	17 5/8"	35"	38"	11"	14"	20"	45"	38"	8"	12"	22"	42"

† Requires Two Faucets

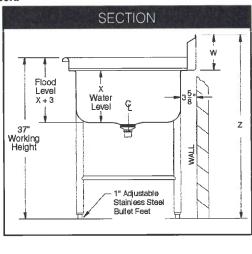
* Regalines with 36" Drainboards are Supplied with Two Sets of Legs for Support.



MECHANICAL:

- Supply is 1/2" IPS hot & cold.
- Faucet holes on 8" centers.
- Faucets are not included (see accessories).
- Waste drains are 1 1/2" IPS S/S basket type, located in center of sink bowl, and are included.







Items 29 & 30

1





	ject:	From:
Ess	ex County: NUTRITION BLDG-	
Wa	lk-In Cooler/Freezer	CKEPUSA
		Ron Hansen
		6077 North Travel Center Drive
		Tucson, AZ 85741
		Toll Free: 844-826-4500
		Cell: 315-886-1136
		Fax: 720-367-5451
		ron@ckepusa.com
	Joh Reference Number: 643	

Project Code: ESSEX_CO

Job Reference Number: 643

National IPA Master Contract # R131201

NYS Contract # PC67630

ltem	Qty	Description	Sell	Sell Total
1	1 ea	WALK-IN COOLER/FREEZER (INDOOR)	\$47,878.28	\$47,878.28
		Kolpak Model No. NSF/FM4820		
		24'-0" x 20'-0" x 8'-0 1/4" OA w/ floor and 100% redundant refrigeration		
		system. *NOT a Parallel Rack System (PER ATTACHED SPECIFICATIONS		
		QUOTATION #A102108 Rev.2 dated 5/12/2017) Cooler Int. Dim. 11'-6" x 19'-4" x 7'4 5/8"		
		Freezer Int. Dim. 11'6" x 19'-4" x 7'4 5/8"		
	2 ea	1 1/2 HP 2-5 YR EXTENDED COOLER COMP WARRANTY	\$144.00	\$288.00
		3 HP 2-5 YR EXTENDED FREEZER COMP WARRANTY	\$233.00	\$466.00
			TOTAL:	\$48,632.28
2	1 ea	FREIGHT PROGRAM	\$4,981.71	\$4,981.71
		CKEPUSA Model No. FREIGHT		
		Freight charges for delivery to receiving dock for customer unloading and installation.		
			TOTAL:	\$4,981.71
		Total		\$53,613.99
		This quote is valid for thirty (30) days.		
		Invoice terms are net 30 days, unless noted otherwise.		
	3.	Prices exclude applicable sales tax, unless noted otherwise. The current tax	x rate at the	
		time of billing will be applied to the invoice.		
	4.	Pricing does not include freight or shipping charges, unless noted otherwise	. Any freight	
		quoted is an estimate only. Because of trucking company fuel surcharges the	nat are not	
		known until the time of delivery, actual freight charges will be added to the	invoice. N/A	
	5	for NYS and AR.		
	5.	All shipments are FOB Origin. NYS and AR shipments are FOB Destinati customer is responsible for the goods when the carrier signs the bill of ladin		
sex Count	v: NUTR		ig at the point	Initial

of origin. The customer assumes the risk of transportation and is responsible for filing claims for loss or damage.

- 6. The customer is responsible to inspect shipments at time of delivery. Damage of any sort to the packaging or item(s) must be noted on the bill of lading before signing. Heavily damaged goods should be refused for delivery. Contact your sales representative if these conditions occur.
- 7. Delivery and/or installation is not included, unless specifically noted. All final connections of utilities, unless specifically noted to be provided, are the responsibility of the customer.
- 8. Any item ordered and refused by the customer will be subject to a restocking charge and two-way freight. Custom items and special order items are not returnable.
- 9. Customer is responsible for free and easy access for delivery and/or installation. Seller, his agent, or delivery person is in no way obligated to perform any services to secure such access.
- 10. Additional charges may apply for any changes in field conditions, additional services requested but not specified, and additional work mandated by authorities having jurisdiction but not included in the original scope of work.
- 11. Any reconditioned or used equipment quoted is currently available and is offered on a first come basis.
- 12. New equipment carries the standard manufacturer's warranty. Reconditioned equipment includes a ninety (90) day parts and labor warranty. Used equipment is sold "as is".
- 13. Payment terms are fifty percent (50%) with order and fifty percent (50%) upon delivery. Certain contracts may have special payment terms. Mohave (MESC), National IPA, NYS, AR, and public institutions that provide properly executed purchase orders are Net 30 day invoice terms.
- 14. Credit card payments will be subject to a 3% handling fee. Handling fee not applicable if NYS Procurement Card is used for payment up to \$2500.00.
- 15. Pricing does not include any stainless, utility, or mechanical upgrades or modifications unless noted. Capacity and integrity of the existing mechanical, utility, and structural systems is by others.
- 16. Permits, inspections, architectural and/or mechanical plans/drawings, and the cost of obtaining such, is the responsibility of the customer.
- 17. Removal and disposal of any existing equipment is the responsibility of the customer, unless other specific arrangements are noted.
- 18. Any systems or work required to make equipment operational, i.e. alarm connections, fire protection, site specific requirements, construction costs, air balancing, etc., unless specifically noted to be provided, are the responsibility of the customer.
- 19. Title to merchandise included in this quote shall remain the property of the seller until payment in full for the items and any other related charges are paid in full. N/A for Mohave (MESC), National IPA, NYS, AR, and public institutions that provide properly executed purchase orders.

Acceptance:

_____Date:

Printed Name: ______ Project Grand Total: \$53,613.99

Kolpak



Quotation #: A102108 Rev. 2 Date: 5/12/2017 Project: Essex County Nutrition Building

Ship to:

Install Address:

ELIZABETHTOWN, NY 12932

ELIZABETHTOWN, NY 12932

Rep: THE REDSTONE GROUP

Item Qty Item Description

1 Cooler Freezer with Floor (NSF/FM4820) 1 Overall Dimensions: 24'-0" x 20'-0" x 8'-0 1/4"

2 Freight

1 1/2 HP 2 - 5 YR Extended Compressor Warranty

1 1/2 HP 2 - 5 YR Extended Compressor Warranty

3 HP 2 - 5 YR Extended Compressor Warranty

3 HP 2 - 5 YR Extended Compressor Warranty

**Services are not subject to additional discounting

FOB: Origin

Quoted freight is an estimate only and subject to change at time of shipment based on customer instruction. Manitowoc will invoice actual freight at the time of shipment, including any additional surcharges. Freight exceeding 1000 ftz will become dedicated truck and the freight charge will

All quotations and orders shall be subject to Walk-ins standard terms and conditions notwithstanding any additional or contrary terms and conditions of Buyer. Such additional or contrary terms shall not bind unless accepted in writing even though such terms do not materially alter the terms hereof. No oral statements, warranties, stipulations, representations or terms shall have binding effect or be any part of the contract whatsoever. All orders must be in writing and will be binding when our order acknowledgement is mailed, faxed or emailed. If customer does not have a copy of these terms and conditions, please contact the customer service department.

Terms: subject to credit approval.

Quoted price DOES NOT include any applicable sales tax. If item is resale, a copy of your resale exemption certificate must be on file with prior to shipping, otherwise sales tax may be charged.

All quotes are in US dollars unless otherwise noted.

THANK YOU FOR THIS OPPORTUNITY TO QUOTE.

5

Kolpak



Quotation #: A102108 Rev. 2 Date: 5/12/2017 Project: Essex County Nutrition Building

Item Qty Item Description

1 1 Cooler Freezer with Floor

Compartments:

+34 Cooler

Interior Dimensions: 11'-6" x 19'-4" x 7'-4 5/8"

Walls:

4" Class 1 - Foamed in place Urethane

Exterior: Galvalume - Embossed 26 Ga - Except Where Noted

4" Class 1 - Foamed in place Urethane

Interior: Galvalume - Embossed White 26Ga.

Ceiling:

Type: Standard

Attachment: Lock Down

Exterior: Galvalume - Embossed 26 Ga

Interior: Galvalume - Embossed White 26Ga.

Floor Application: 4" Class 1 - Foamed in place Urethane

Finish: Stainless Steel - T304 2B 16Ga.

Compartment Accessories:

<u>Qty</u>	<u>UoM</u>	Description
2	еа	PC149MOP-3, 208-230/60/3, 1 1/2 HP, Medium Temp Pre Charged Air Cooled Hermetic Condensing Unit
2	ea	AM36-145-1EC-PR-4, 115/60/1, Medium Temp Air Defrost Standard Unit Cooler
3	ea	Light Fixture, Fluorescent 48-inch T5 (-20°) - bulbs by others
1	ea	Alternator Relay Asy for Cooler
2	ea	LAC-4-210-3/8 X 3/8 X 3/8 ODF Headmaster Ctrl
2	ea	1 1/2 HP 2 - 5 YR Extended Compressor Warranty
48	sf	Closure Panel Stainless 304 22ga
1	ea	Trim Angled 3" x 3" x 8ft Stainless 304 22ga
1	ea	Trim Flat 6" x 8ft Stainless 304 22ga
24	lf	Bumper Rail Hat Shape 16ga Stainless
		ng Out 0" Leveling Sand and 0" Tile & Grout.
Exterior:	Stainle	ess Steel - 22Ga 304
Interior:	Galval	ume - Embossed White 26Ga.
Exterior:	Stainle	ss Steel - 22Ga 304
Interior:	Galval	ume - Embossed White 26Ga.
ning Acces	sories:	
Qty	<u>UoM</u>	Description
1	ea	Handle - Kason 27C Brushed Chrome
	2 3 1 2 4 3 1 2 4 8 1 1 2 4 34" x 78" L Recessed Exterior: Interior: Exterior: Interior: Interior:	2 ea 2 ea 3 ea 1 ea 2 ea 2 ea 2 ea 48 sf 1 ea 48 sf 1 ea 48 sf 1 ea 24 If 34" x 78" Left Swin Recessed 0" with Exterior: Stainlee Interior: Galval Exterior: Stainlee Interior: Galval interior: Galval C



-10



Quotation #: A102108 Rev. 2

Date: 5/12/2017

Project: Essex County Nutrition Building

			Building
	1	ea	Door Closer - Kason 1094 Brushed Chrome
	1	ea	Thermometer - 2 inch Dial w/6' Lead (STD)
	1	ea	Viewport - 14X14 Cooler, Heated Frame (4" Door)
	1	ea	Strip Curtain - Kason 36x78
	1	ea	Switch - Pilot Light Included UL (STD)
	1	ea	Ramp - Exterior 34x36
	2.83	lf	Threshold, Stainless Steel 14 ga
	1	ea	Heater Wire, 2.5 Watt / FT
	3	ea	Hinge - Kason 1346 Brushed Chrome Adjustable (Spring Assisted)
	1	ea	Light Fixture - Kason 1803LED w/Bulb & Globe (STD)
0 Freezer			
Interior [Dimensions	: 11'-6"	x 19'-4" x 7'-4 5/8"
Walls:		4" Cla	ss 1 - Foamed in place Urethane
	Exterior	: Galva	ume - Embossed 26 Ga - Except Where Noted
	Interior	: Galval	ume - Embossed White 26Ga.
Ceiling:		4" Cla	ss 1 - Foarned in place Urethane
	Туре	: Standa	ard
	Attachment		
			ume - Embossed 26 Ga
		Galval	ume - Embossed White 26Ga.
Floor Ap	plication:		ss 1 - Foamed in place Urethane
			ess Steel - T304 2B 16Ga.
Compart	ment Acces	sories:	
	Qty	<u>UoM</u>	Description
	2	ea	PC299LOP-3, 208-230/60/3, 3 HP, Low Temp Pre Charged Air Cooled Hermetic Condensing Unit
	2	ea	EL36-120-2EC-PR-4, 208-230/60/1, Low Temp Electric Defrost Standard Unit Cooler
	3	ea	Light Fixture, Fluorescent 48-inch T5 (-20°) - bulbs by others
	2	ea	LAC-4-210-3/8 X 3/8 X 3/8 ODF Headmaster Ctrl
	2	ea	3 HP 2 - 5 YR Extended Compressor Warranty
	1	ea	Alternator Asy Freezer/Large Room
Door:	34" x 78" R Recessed	tight Sw 0" with (ing Out)" Leveling Sand and 0" Tile & Grout.
Frame:	Exterior:	Stainle	ss Steel - 22Ga 304

Interior: Galvalume - Embossed White 26Ga.

Plug: Exterior: Stainless Steel - 22Ga 304

Interior: Galvalume - Embossed White 26Ga.





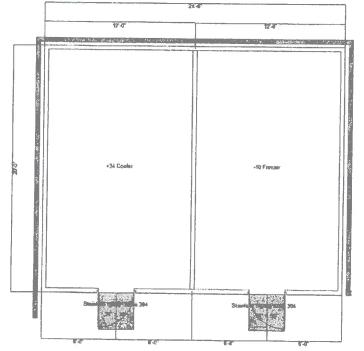
 Quotation #:
 A102108 Rev. 2

 Date:
 5/12/2017

Project: Essex County Nutrition Building

Door/Opening Accessories:

<u>Qty</u>	UoM	Description
1	ea	Handle - Kason 27C Brushed Chrome
1	ea	Door Closer - Kason 1094 Brushed Chrome
1	ea	Thermometer - 2 inch Dial w/6' Lead (STD)
1	ea	Viewport - 14X14 Freezer, Heated Frame and Glass (4" Door)
1	ea	Strip Curtain - Kason 36x78
1	ea	Switch - Pilot Light Included UL (STD)
1	ea	Vent - Pressure Relief, Heated Kason 1825 (STD)
1	ea	Ramp - Exterior 34x36
2.83	lf	Threshold, Stainless Steel 14 ga
1	ea	Heater Wire, 2.5 Watt / FT
3	ea	Hinge - Kason 1346 Brushed Chrome Adjustable (Spring Assisted)
1	ea	Light Fixture - Kason 1803LED w/Bulb & Globe (STD)



Final Notes:

REV 2 - HAS REFRIGERATION AS REQUESTED BY REP. 1798 SF

REV 1 - Refrigeration is by others (Parallel Rack);

2	
Ko	lpak



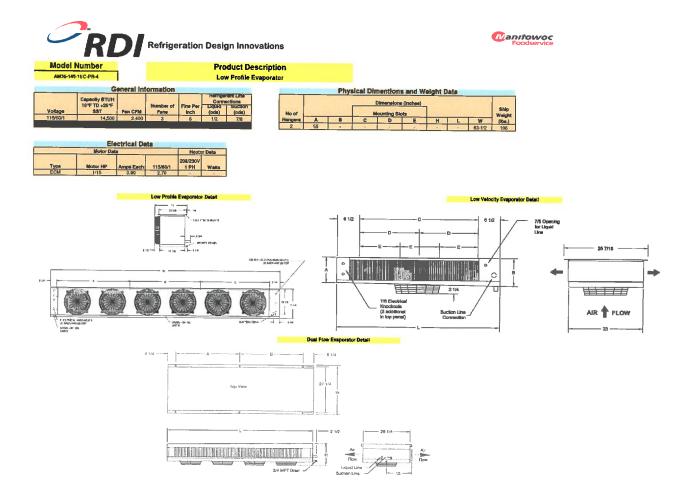
Quotation #: A102108 Rev. 2

Date: 5/12/2017

Project: Essex County Nutrition Building

Please	complete	and	sign	to	schedule	this	order!
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Accepted by (print):	Date:	Desired Installation Date:
Purchase Order #:	Signature:	





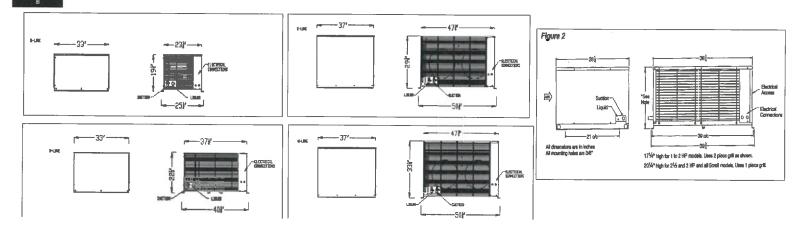
			meaium lem	p 404A	Hermeti	(Air Cool	iption ed) Con	densing	Units		~	1	
		Compressor	Compressor		Comp								5
Refrigerant 404A	208 - 230	Type Hermetic	Model CF04K6E	HP 1-1/2	Phase								
	33	25-1/2 Electrical D	19-1/4 ata	1	63			OD Re	c'r @90% LBS 10.4	-	1	4	
Compres	LRA	Cond FLA	Total CU	MCA	MOPD								differ the second
6.4	52	1.1	7.7	9.3	15							-	

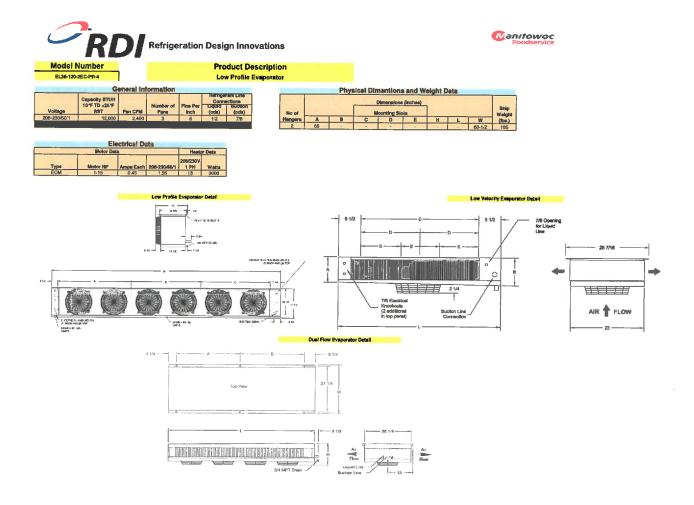


Build Specification
(standard installed components)
Refrigerant Charge
Orier
Sight Glass
Pressure Control
Low Ambient Controls (Outdoor)
Oversized Receiver
Valve at Receiver
Break Down weatherproof housing
Grankcase Heater
Base Valves
Warranty
Parts Labor
1 year 1 year

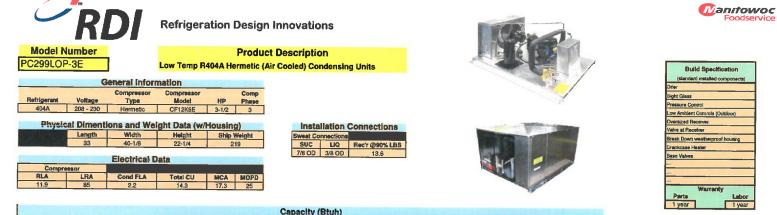
Suction Temperature																	
Model	Nominal HP	Capacity (Btuh) @ 90 degree F	-40	-30	-25	-20	15	-10	-5	OF	5F	10F	15F	20F	25F	30F	406
7		ambient										10,100	11,558	12,902	14,717	16,680	
	Capacity (Btuh)	-40	-30	-25:	-20	-15	-10	-5	OF	SF	10F	15F	20F	25F	30F	401	
Q		ambient			***					***		8,893	10,120	11,480	13,142	14,918	14
PC149M0P	1-1/2	Capacity (Btuh) @ 110 degree F	40	-30	-25	-20	-15	-10	-5	OF	SF	10F	15F	20F	25F	30F	40
		amblent										7,665	8,750	9,874	11,437	13,298	
	-	Capacity (Btuh)	-40	-30	-25	-20	-15	-10	-5	OF	5F	10F	15F	20F	25F	3DF	40
	1000000000	ambient			-	-			-			6,339	7,329	8,459	9,879	11,534	-

Reference Drawing B Drawing B





3,2%

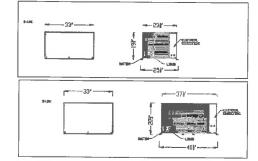


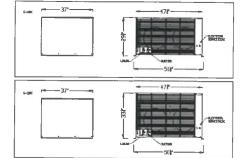
			-			00	puony	Diany									
									Suction 1	Temperatu	re		Sec. 1		and the second	Cardes	
Model	Nominal HP	Capacity (Btuh)	-40	-30	25	-20	15	10	5	OF	SF	10F				30F	
	3-1/2	@ 90 degree F ambient			10,034	11,810	13,828	15,793	18,400	20,672							
щ		Capacity (Btuh)	40	30	25	20	15	10	5	OF	5E	10F	15F	20F	25F		
PC299LOP.		@ 100 degree I ² ambient	-		8.530	10,100	11,990	13,976	16,060	18,550					+++		
		Capacity (Btuh)	-40	-30	-25	-20	-15	-10	-5	OF	5F	TOP	15F	20F	25F		
		@ 110 degree i ² ambient			6,833	8,399	10,100	11,620	13,296	15,940	0	0	0	0	0		-
		Capacity (Btuh)	40	30	25	20	-15	10	5	OF	5F	10E	15F	20F			40
		@ 120 degree F embient	-	-		6,492	8,336	9,762	11,379	12,900	_				-	_	-

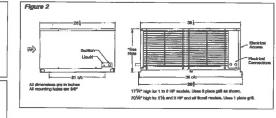
Drawing

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Reference Drawing D







Foodservice Gas Appliance Safety

Cleanliness in a commercial kitchen is an important issue that affects the health and safety of the public consuming the food being cooked and the workers preparing it as well. To properly clean equipment, appliance mobility is required to ease movement, servicing, and positioning; thus, equipment with permanent casters in lieu of fixed legs has become a standard practice in most kitchens. The casters have brakes to prevent accidental movement while cooking, and restraint cables are installed to limit the amount of appliance movement to prevent stress and damage to the gas connector. Quick-disconnect couplings are used to rapidly disconnect and reconnect connectors.

GAS CONNECTORS

Codes and product standards have been updated to include commercial-grade flexible gas connectors for all gas appliances in a commercial foodservice kitchen. The connector is often a forgotten specification

item that goes unnoticed until cited by the code official at the final inspection and startup of the kitchen. If the designer or the foodservice consultant doesn't specify the connector, a residential appliance connector or a fixed, hard-piped installation may occur.

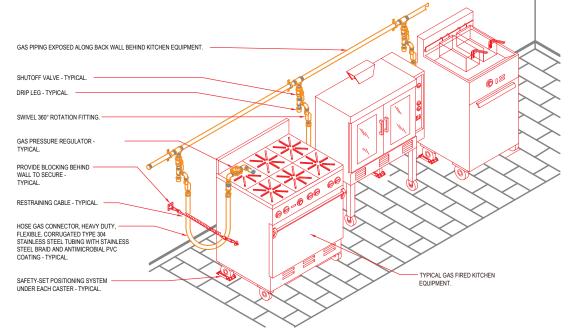
Commercial vs. Hard-piped and Residential Connectors

Heavy-duty, commercialgrade, flexible appliance gas connectors are used where the gas connection is located at the rear of the appliance and flexibility is required to hook up the unit (see Figure 1). They are designed to stand up to the demands of a commercial kitchen and allow a more hygienic environment by providing easy access around the equipment. Their use increases efficiency and reduces operating costs, allows appliances to be set closer to the wall, and provides ease of mobility for cleaning and maintenance. They also meet updated code requirements, including ANSI Z21.69/CSA 6.16: *Connectors for Movable Gas Appliances* and CAN/CSA B149.1: *Natural Gas and Propane Installation Codes*.

Rigid or hard-piped connections are made to withstand physical damage; however, they are not practical for movement, and this immobility increases the chance of fire due to the buildup of oil, grease, and other flammable materials. Equipment with hardpiped connections is difficult to clean and maintain on a regular basis, which presents the potential for food contamination. Also, hard-piped connections do not comply with NSF certification. Noncommercial (residential) flexible connectors are intended to be installed once and not be reinstalled, which could cause the metal to wear out and the connection to leak. These connectors are not intended to be repeatedly bent and twisted and can fail due to repeated movement. They are not NSF certified, and their use in a commercial kitchen may compromise and violate current ANSI/CSA and NSF standards and codes depending on the piece of equipment to which they are attached.

Connector Installation

Flexible connectors should not be hidden from view, enclosed in chases, or located behind walls in case leakage occurs. They should be accessible for replacement, if needed. For a commercial range, a 6-foot maximum length is permitted. Connectors are not allowed to be ganged together to get around the maximum length requirement.



DETAIL OF KITCHEN GAS PIPING REQUIREMENTS

Figure 2 Commercial kitchen gas piping requirements



Figure 1 Gas ranges with flexible connectors. Photos courtesy of Dormont Co.

Connectors must be selected to provide the gas demand at the minimum pressure of the appliance. Figure 2 provides a detail of commercial kitchen gas piping requirements. **PSD**

RESOURCES

- 1. NSF International
- 2. ANSI Z21.69/CSA 6.16: Connectors for Movable Gas Appliances
- 3. ANSI Z223.1/NFPA 54: National Fuel Gas Code
- 4. CSA B149.1: Natural Gas and Propane Installation Codes
- 5. International Fuel Gas Code
- 6. Local codes and standards



James Stenqvist, CPD, LEED AP, is a project engineer with Diversified Technology Consultants in Hamden, Conn. For more information or to comment on this article, e-mail articles@psdmagazine.org. This article is meant to provide some basic guidelines. Always check all relevant codes and resources for a particular project.

CHECKLIST FOR FOODSERVICE GAS APPLIANCE SAFETY

Kitchen Safety and Cleanliness Principles

- □ Appliances must be cleaned.
- □ Appliances must be able to be moved.
- Appliances need flexible connectors.
- □ Flexible gas connectors must be durable.
- **D** Flexible gas connector should be certified by NSF International.

Flexible Appliance Connectors

- □ Lengths shall not exceed 6 feet.
- **O** Connectors shall be located in the same room as the appliance.
- Connectors shall enter a motor-operated appliance with a protected knockout opening.
- □ Listed and labeled connectors shall be in accordance with the manufacturer's installation instructions.
- Listed and labeled quick-disconnect devices shall be used with listed and labeled appliance connectors.
- Listed and labeled appliance connectors shall comply with ANSI Z21.69 and be listed for use with foodservice equipment having casters, or equipment that otherwise is subject to movement for cleaning, and other large movable equipment.

Gas Equipment Connection Compliancy

- Utilize a commercial-grade flexible gas connector for all commercial foodservice gas-fired cooking equipment.
- Don't use residential-grade flexible connectors in commercial kitchens.
- **□** Ensure that the gas connector is installed in a U shape.
- **D** Don't hard-pipe the appliance to the gas supply line.
- □ Use a restraining cable for all flexible commercial-grade gas connector installations.
- □ The restraining cable must be connected at all times except when the cable and gas connector are disconnected for cleaning.

Gas Connector Installation Items

- Ensure that the gas supply and all appliance control knobs are turned off before making connections.
- □ The connector must not be concealed within or run through any wall, floor, or partition.
- □ Connectors shall not come into contact with surfaces at temperatures in excess of 230°F, sharp edges, or wiring.
- □ The final assembly shall be tested for leaks.
- An accessible manual shutoff valve must be installed at the outlet of the gas supply piping system upstream of the connector.
- Connectors are for use only on piping systems having a fuel gas pressure of 0.5 psi or less.
- **D** Each piece of equipment must have its own shutoff valve.

EXHIBIT C

INSURANCE REQUIREMENTS – PUBLIC WORKS CONTRACTORS

I. The Contractor <u>and each of its subcontractors</u> shall procure and maintain during the entire term of the contract the following required insurance:

- Commercial General Liability Insurance
 \$1,000,000 per occurrence / \$2,000,000 aggregate, including coverage for liability assumed by contract, completed operations, explosion, collapse, underground hazard and products liability.

 Automobile Liability
 \$1,000,000 combined single limit for owned, hired and borrowed and non-owned motor vehicles.
- → Workers' Compensation
 Statutory Workers' Compensation and Employers' Liability Insurance for all employees.
- → Owners & Contractors Protective Liability Insurance \$2,000,000 per occurrence / \$2,000,000 aggregate.
- → Excess/Umbrella Liability Insurance \$1,000,000 per occurrence / \$2,000,000 aggregate.

II. Notwithstanding any terms, conditions or provisions, in any other writing between the parties, the Contractor hereby agrees to name the County as:

- (a) an <u>additional insured</u> on the Contractor's Commercial General Liability, Automobile Liability and Excess/Umbrella Liability insurance policies, and
- (b) a <u>named insured</u> on the Owners & Contractors Protective Liability Insurance Policy.

III. The policy/policies of insurance furnished by the Contractor shall:

- be from an A.M. Best rated "A" New York State licensed insurer; and
- → contain a 30-day notice of cancellation
- IV. The Contractor agrees to indemnify the County for any applicable deductibles.

V. Contractor acknowledges that failure to obtain such insurance on behalf of the County constitutes a material breach of contract and subjects it to liability for damages, indemnification and all other legal remedies available to the County. Prior to commencement of work or use of facilities, the Contractor shall provide to the County proof that such requirements have been met by furnishing certificate(s) of such insurance, and the declarations pages from the policies of such insurance. The failure of the County to object to the contents of the certificate(s) and/or declarations pages, or the absence of same, shall not be deemed a waiver of any and all rights held by the County.

VI. All certificates of insurance will provide 30 days notice to the county of cancellation or non-renewal.

VII. Contractor and subcontractor waives all rights of subrogation against the owner and will have the General Liability, Umbrella Liability Workers' Compensation policies endorsed setting forth this Waiver of Subrogation.

VII. All policies will also contain no exclusions with respect to Section 240 and 241 of the NYS Labor Law.

IX. The County shall be listed as an additional insured on a primary and non-contributory basis.

APPENDIX D - STANDARD CLAUSES FOR ESSEX COUNTY CONTRACTS

1. Independent Contractor Status

The parties each acknowledge, covenant and agree that the relationship of the Contractor to the County shall be that of an independent contractor. The Contractor, in accordance with its status as an independent contractor, further covenants and agrees that it:

- (a) will conduct itself in accordance with its status as an independent contractor;
- (b) will neither hold itself out as nor claim to be an officer or employee of the County; and
- (c) will not make any claim, demand or application for any right or privilege applicable to an officer or employee of the County, including but not limited to workers' compensation benefits, unemployment insurance benefits, social security coverage or retirement membership or credits.

2. Contractor To Comply With Laws/Regulations

The Contractor shall at all times comply with all applicable state and federal laws, rules and regulations governing the performance and rendition of the services to be furnished under this agreement.

3. Licenses, Permits, Etc.

The Contractor shall, during the term of this agreement, obtain and keep in full force and effect any and all licenses, permits and certificates required by any governmental authority having jurisdiction over the rendition and performance of the services to be furnished by the Contractor under this agreement.

4. <u>Termination</u>

This agreement may be terminated without cause by either party upon 30 days prior written notice, and upon such termination neither party shall have any claim or cause of action against the other except for services actually performed and mileage expenses actually incurred prior to such termination. Notwithstanding the foregoing, this agreement may be immediately terminated by the County:

- (a) for the Contractor's breach of this agreement, by serving written notice of such termination stating the nature of the breach upon the Contractor by personal delivery or by certified mail, return receipt requested, and upon such termination either party shall have such rights and remedies against the other as provided by law; or
- (b) upon the reduction or discontinuance of funding by the State or Federal governments to be used in furnishing some or all of the work, labor and/or services provided for under this agreement, and upon such termination neither party shall have any claim or cause of action against the other except for services actually performed and expenses (if the same are to be paid under this agreement) actually incurred prior to such termination.

5. **Defense & Indemnification**

The Contractor shall defend, indemnify and hold harmless the County to the fullest extent allowed by law, and notwithstanding any insurance requirements, from and against any and all liability, losses, claims, actions, demands, damages, expenses, suits, judgments, orders, causes of action and claims, including but not limited to attorney's fees and all other costs of defense, by reason of any liability whatsoever imposed by law or otherwise upon the County for damages to person, property or of any other kind in nature, including but not limited to those for bodily injury, property damage, death arising out of or in connection with its officers, employees, agents, contractors, sub-contractors, guests or invitees negligence or

its/their performance or failure to perform this agreement.

6. Discrimination Prohibited

The services to be furnished and rendered under this agreement by the Contractor shall be available to any and all residents of Essex County without regard to race, color, creed, sex, religion, national or ethnic origin, handicap, or source of payment; and under no circumstances shall a resident's financial ability to pay for the services provided be considered unless such consideration is allowed by State and/or Federal law, rule or regulation.

7. Non-Discrimination In Employment

The Contractor will not discriminate against any employee or applicant for employment because of race, creed, color, sex, national origin, age, disability or marital status. In the event that this is a contract to be performed in whole or in part within the State of New York for (a) the construction, alteration or repair of any public building or public work, (b) for the manufacture, sale or distribution of materials, equipment or supplies, (c) for building service, the Contractor agrees that neither it nor its subcontractors shall, by reason of race, creed, color, disability, sex or national origin:

- (1) discriminate in hiring against any citizen who is qualified and available to perform the work; or
- (2) discriminate against or intimidate any employee hired for the performance of work under this contract.

The Contractor agrees to be subject to fines of \$50.00 per person per day for any violation of this paragraph, as well as to possible termination of this contract or forfeiture of all moneys due hereunder for a second or subsequent violation.

8. Damage/Injury To Persons & Property

The Contractor shall promptly advise the County of all damages to property of the County or of others, or of injuries incurred by persons other than employees of the Contractor, in any manner relating, either directly or indirectly, to the performance of this agreement.

9. *Records*

The Contractor shall establish and maintain complete and accurate books, records, documents, accounts and other evidence directly pertinent to performance under this contract (hereinafter collectively "the Records") in accordance with the following requirements:

- (a) the Records must be kept for the balance of the calendar year in which they were made and for six (6) additional years thereafter;
- (b) the County Auditor, State Comptroller, the Attorney General or any other person or entity authorized to conduct an examination, as well as the agency or agencies involved in this contract, shall have access to the Records during normal business hours at an office of the Contractor within the State of New York, or, if no such office is available, at a mutually agreeable and reasonable venue within the State, for the term specified above for the purposes of inspection, auditing and copying.

The County shall take reasonable steps to protect from public disclosure any of the records which are exempt from disclosure under Section 87 of the Public Officers Law (the "Statute") provided that: (i) the Contractor shall timely inform an appropriate County official, in writing, that said records should not be disclosed; and (ii) said records shall be sufficiently identified and designation of said records as exempt under the statute is reasonable. Nothing

contained herein shall diminish, or in any way adversely affect, the County's right to discovery in any pending or future litigation.

10. Claims For Payment

All invoices or claims for which payment is sought from the County must be submitted in accordance with the following:

- (a) each claim for payment must include
 - (1) an invoice detailing the claim,
 - (2) copies of all documentation supporting the claim,
 - (3) a properly completed County standard voucher, which includes
 (i) the County contract number under which payment is being claimed, <u>AND</u>
 (ii) the payee's Federal employer identification number or Federal social security number, or both such numbers when the payee has both such numbers. [Failure to include this number or numbers will prevent and preclude payment by the County; except that where the payee does not have such number or numbers, the payee, on the invoice or County voucher, must give the reason or reasons why the payee does not have such number or numbers and such reasons constitute a valid excuse under law.]
- (b) Unless otherwise provided in this agreement, each claim for payment must be submitted to the County no later than 30 days after the work, labor, materials, and/or services for which payment is claimed were rendered or furnished.
- (c) Notwithstanding any other provision of this agreement, no claim for payment shall be valid, and the County shall not be liable for payment thereof, unless it is submitted to the County within 30 days of the close of the calendar year in which the work, labor, materials, and/or services for which payment is claimed were rendered or furnished.
- (d) Unless otherwise provided in this agreement, the requirements of this paragraph 10, and/or of any other provisions of this agreement which supersede the same, shall constitute conditions precedent to the County's payment obligation, and failure to comply with any or all of said requirements shall entitle the County to deny payment.
- (e) As a further condition of payment, each claim of payment shall be accompanied by a Contractor and Sub-Contractor Progress Payment Waiver, Release and Discharge, and each Final Payment shall be accompanied by a Contractor and Sub-Contractor Final Payment, Waiver and Release form. As well as a Contractor Affidavit relative to Final Payment. Copies of these forms are attached and made a part hereof.

11. <u>Consent</u>

In the event that State or Federal law requires the recipient of services to be furnished and rendered under this agreement to give his/her prior consent thereto, the contractor shall obtain such person's consent and furnish proof thereof to the County.

12. Executory Clause

The County shall have no liability under this contract to the Contractor or to anyone else beyond the funds appropriated and available for this contract.

13. Public Work & Building Service Contract Requirements

If this is a public work contract covered by Article 8 of the Labor Law or a building service contract covered by Article 9 thereof:

(a) neither the Contractor's employees nor the employees of its subcontractors may be required or permitted to work more than the number of hours or days stated in said

statutes, except as otherwise provided in the Labor Law and as set forth in prevailing wage and supplement schedules issued by the State Labor Department; and

(b) the Contractor and its subcontractors must pay at least the prevailing wage rate and pay or provide the prevailing supplements, including the premium rates for overtime pay, as determined by the State Labor Department in accordance with the Labor Law.

14. Public Work Contracts – Hazardous Substances

If this is a contract for public work, the Contractor agrees as follows:

- (a) the Contractor acknowledges that the County uses and/or produces various substances which may be classified as hazardous under OSHA's Hazard Communication Standard;
- (b) the Contractor recognizes the use of said substances by the County and acknowledges that the County has provided, or upon request will provide, the Contractor with a description of such substances which may be present in the area of the County's facility/facilities to which the Contractor may have accessed during the performance of this contract;
- (c) the Contractor acknowledges that the County has provided, or upon request will provide, suggestions for appropriate protective measures which should be observed when the Contractor is in the area of any such hazardous substances;
- (d) the Contractor agrees to be solely responsible for providing training and information to its employees regarding any such hazardous substances, as well as of any protective measures suggested by the County;
- (e) the Contractor agrees to be solely responsible to ensure that the Contractor's employees observe protective measures during the performance of their duties in the performance of the contract, and that all such protective measures will be at least as stringent as those suggested or which would have been suggested by the County;
- (f) in the event that the Contractor's performance of the work under this contract requires the use of any hazardous substances, the Contractor shall notify the County in advance of bringing in and/or using such substances in or upon County property and suggest to the County appropriate measures to be observed by the County, its officers and employees, and/or the public; and
- (g) in the event the Contractor fails in whole or in part to comply with the terms of this paragraph, the County shall have the right to interrupt the Contractor's work and/or terminate this contract, and the Contractor shall be prohibited from renewing such work until all applicable safety and health procedures and practices are implemented by the Contractor.

15. Disputes

Disputes involving this contract, including the breach or alleged breach thereof, may not be submitted to binding arbitration, but must, instead, be heard in the Essex County Supreme Court or any other court of competent jurisdiction within Essex County, New York.

16. Non-Assignment

This agreement may not be assigned, subcontracted, transferred, conveyed, sublet or otherwise disposed of in whole or in part, by the Contractor, without the prior written consent of the County, and any attempts to assign the contract without the County's written consent are null and void.

17. No Collusion

If this contract was awarded based upon the submission of bids, the Contractor

warrants, under penalty of perjury, that:

- (a) its bid was arrived at independently and without collusion aimed at restricting competition; and
- (b) at the time Contractor submitted its bid, an authorized and responsible person executed and delivered to the County a non-collusive bidding certification on Contractor's behalf.

18. International Boycott

In accordance with Section 220-f of the Labor Law, if this contract exceeds \$5,000.00, the Contractor agrees, as a material condition of the contract, that neither the Contractor nor any substantially owned or affiliated person, firm, partnership or corporation, has participated, is participating, or shall participate in an International boycott in violation of the federal Export Administration Act of 1979, or regulations thereunder. If such contractor, or any of the aforesaid affiliates of Contractor, is convicted, or is otherwise found to have violated said laws or regulations upon the final determination of the United States Commerce Department or any other appropriate agency of the United States subsequent to the contract's execution, such contract, amendment or modification thereto shall be rendered forfeit and void. The Contractor shall so notify the County Manager within five (5) business days of such conviction, determination or disposition of appeal.

19. County's Rights of Set-Off

The County shall have all of its common law, equitable and statutory rights of set-off. These rights shall include, but not be limited to, the County's option to withhold for the purposes of set-off any moneys due to the Contractor under this agreement up to any amounts due and owing to the County with regard to this contract, any other contract with any County department or agency, including any contract for a term commencing prior to the term of this contract, plus any amounts due and owing to the County for any other reason, including, without limitation, tax delinquencies, fee delinquencies or monetary penalties relative thereto. The County shall exercise its set-off rights in accordance with normal County practices, including, in cases of set-off pursuant to an audit, the acceptance of such audit by the County Board of Supervisors or its designated representative.

20. Contractor Defined

Whenever the term "Contractor" is used in this agreement, such term shall include and apply to all employees, all officers, directors and agents, if any, of the Contractor.

21. Amendment

This agreement may not be amended, modified or renewed except by written agreement signed by the Contractor and the County.

22. Ownership Of Work Products

All final and written or tangible work products completed by the Contractor shall belong to the County. In the event of premature discontinuance of performance, the Contractor agrees to deliver all existing products and data files to the County.

23. Executive Order Debarment/Suspension

In the event that this contract involves the Contractor furnishing goods and services in excess of \$100,000.00, or constitutes a subaward to subrecipients, under any Federal program, grant or other funding source, then by executing this agreement the Contractor certifies that neither it nor any of its principals are suspended or debarred within the scope or

meaning of Executive Orders 12549 and 12689, any Federal or State regulation implementing or codifying the same, or any other Federal or State law, rule or regulation.

24. Health Insurance Portability and Accountability Act of 1996 (HIPAA)

In the event that this contract involves the use or disclosure of protected health information within the meaning or application of the Health Insurance Portability and Accountability Act of 1996 (HIPAA), and the regulations thereunder, the following provisions of this paragraph shall apply.

(a) <u>Definitions.</u> The terms used, but not otherwise defined, in this Agreement shall have the same meaning as given such terms in 45 CFR §160.103 and §164.501, as the same may be amended from time to time, including but not limited to the following.

(1) "Business Associate" shall mean the Contractor, its officers, employees, agents and subcontractors.

(2) "Covered Entity" shall mean Essex County (the "County"), its departments, agencies, officers and employees.

(3) "Individual" shall have the same meaning as given such term in 45 CFR §164.501 and shall also include a person who qualifies as a personal representative in accordance with 45 CFR §164.502(g).

(4) "Privacy Rule" shall mean the Standards for Privacy of Individually Identifiable Health Information at 45 CFR Part 160 and Part 164, subparts A and E.

(5) "Protected Health Information" shall have the same meaning as given such term in 45 CFR §164.501, limited to the information created or received by Contractor from or on behalf of the County.

(6) "Required by law" shall have the same meaning as given such term in 45 CFR §164.501.

(7) "Secretary" shall mean the Secretary of the Department of Health and Human Services or his/her designee.

(b) Obligations and Activities of Contractor.

Contractor agrees to:

(1) not use or disclose Protected Health Information other than as permitted or required by this Agreement or as required by law;

(2) use appropriate safeguards to prevent use or disclosure of the Protected Health Information other than as provided for by this Agreement;

(3) mitigate, to the extent practicable, any harmful effect that is known, should have been known, and/or discovered to/by Contractor of a use or disclosure of Protected Health Information by Contractor in violation of the requirements of this Agreement;

(4) report to the County any use or disclosure of the Protected Health Information not provided for by this Agreement of which it becomes aware;

(5) ensure that any agent, including a subcontractor, to whom it provides Protected Health Information received from, or created or received by Contractor on behalf of the County agrees to the same restrictions and conditions that apply through this Agreement to Contractor with respect to such information;

(6) provide access, at the request of the County, and in the time and manner designated by the County or the Secretary, to Protected Health Information in a Designated Record Set, to the County or, as directed by the County, to an Individual in order to meet the requirements under 45 CFR §164.524;

(7) make any amendment(s) to Protected Health Information in a Designated Record

Set that the County directs or agrees to pursuant to 45 CFR §164.526 at the request of the County or an Individual, and in the time and manner designated by the County or the Secretary;

(8) make internal practices, books, and records, including policies and procedures and Protected Health Information, relating to the use and disclosure of Protected Health Information received from, or created or received by Contractor on behalf of, the County available to the County, and/or to the Secretary, in a time and manner designated by the County or by the Secretary, for purposes of the Secretary determining the County's compliance with the Privacy Rule;

(9) document such disclosures of Protected Health Information and information related to such disclosures as would be required for the County to respond to a request by an Individual for an accounting of disclosures of Protected Health Information in accordance with 45 CFR §164.528;

(10) provide to the County or an Individual, in time and manner designated by the County or the Secretary, information collected in accordance with the above subparagraph (b)(9) of this Agreement, to permit the County to respond to a request by an Individual for an accounting of disclosures of Protected Health Information in accordance with 45 CFR §164.528.

(c) <u>Permitted Uses and Disclosures by Contractor.</u>

Except as otherwise limited in this Agreement, Contractor may use or disclose Protected Health Information on behalf of, or to provide services to, the persons entitled to services under this Agreement:

(1) solely for the purposes of performing Contractor's obligations under this Agreement, if such use or disclosure of Protected Health Information would not violate the Privacy Rule if done by the County or the minimum necessary policies and procedures of the County; or

(2) provided that such use or disclosures are required by law; or

(3) Contractor

(A) obtains written authorization(s) from the individual to which the information pertains permitting the specific uses or disclosures of such information to third persons,

(B) represents and agrees in writing with such individual that the information to be used and/or disclosed will remain confidential and used or further disclosed only as required by law or for the purposes specified in the written authorization(s), and

(C) such third persons agree in writing to notify the County as soon as practicable and in writing of any instances of which such third person(s) is/are aware in which the confidentiality of the information has been breached; or

(4) provide Data Aggregation services to the County as permitted by 42 CFR §164.504(e)(2)(i)(B); or

(5) report violations of law to appropriate Federal and State authorities, consistent with §164.502(j)(1).

(d) <u>County To Inform Contractor of Privacy Practices and Restrictions.</u>

The County agrees to notify the Contractor of any

(1) limitation(s) in its notice of privacy practices of the County in accordance with 45 CFR §164.520, to the extent that such limitation may affect the Contractor's use or disclosure of Protected Health Information;

(2) changes in, or revocation of, permission by Individual to use or disclose Protected Health Information, to the extent that such changes may affect the Contractor's use or disclosure of Protected Health Information; and/or

(3) restriction to the use or disclosure of Protected Health Information that the County has agreed to in accordance with 45 CFR §164.522, to the extent that such restriction may affect Contractor's use or disclosure of Protected Health Information.

(e) <u>Permissible Requests by County.</u>

The County shall not request Contractor to use or disclose Protected Health Information in any manner that would not be permissible under the Privacy Rule if done by the County; except that in the event that the services to be furnished by the Contractor under this Agreement requires data aggregation by the Contractor, the Contractor may use or disclose protected health information for such data aggregation or management and administrative activities of Contractor.

(f) Survival of Provisions.

The obligations of the Contractor under this paragraph 24 shall survive the expiration of the term of this Agreement and/or the termination of this Agreement, and said obligations shall remain effective and shall not terminate until all of the Protected Health Information provided by the County to Contractor, or created or received by Contractor on behalf of the County, is destroyed or returned to the County, or, if it is infeasible to return or destroy Protected Health Information, protections are extended to such information, in accordance with the termination provisions in subparagraph (g) below.

(g) <u>Return or Destruction of Protected Health Information.</u>

Except as otherwise provided below, upon termination of this Agreement for any reason, Contractor shall return or destroy all Protected Health Information received from the County, or created or received by Contractor on behalf of the County. This provision shall apply to Protected Health Information that is in the possession of subcontractors or agents of Contractor. Contractor shall retain no copies of the Protected Health Information.

In the event that Contractor determines that returning or destroying the Protected Health Information is infeasible, Contractor shall provide to the County notification of the conditions that make return or destruction infeasible. Upon determination by the County that return or destruction of Protected Health Information is infeasible, Contractor shall extend the protections of this Agreement to such Protected Health Information and limit further uses and disclosures of such Protected Health Information to those purposes that make the return or destruction infeasible, for so long as Contractor maintains such Protected Health Information.

(h) <u>Termination for Cause.</u>

Upon the County's knowledge of a material breach of this paragraph by Contractor, the County shall:

(1) either:

(A) provide an opportunity for Contractor to cure the breach or end the violation and terminate this Agreement within the time specified by the County, or
 (B) immediately terminate this Agreement if cure is not possible; and

(2) report the violation to the Secretary.

(I) <u>Miscellaneous.</u>

(1) Regulatory References. A reference in this Agreement to a section in the Privacy

Rule means the section as in effect or as amended.

(2) Amendment. The Parties agree to take such action as is necessary to amend this Agreement from time to time as is necessary for the County to comply with the requirements of the Privacy Rule and the Health Insurance Portability and Accountability Act of 1996, Pub. L. No. 104-191.

(3) Survival. The respective rights and obligations of Contractor under this paragraph 24 of this Agreement shall survive the termination of this Agreement.
 (4) Interpretation. Any ambiguity in this Agreement shall be resolved to permit the County to comply with the Privacy Rule.

25. <u>Severability</u>

If any term or provision of this agreement or the application thereof to any person or circumstance shall to any extent be held invalid or unenforceable, the remainder of this agreement or the application of such term or provision to persons or circumstances other than those as to which it is held invalid or unenforceable, shall not be affected thereby and every other term and provision of this agreement shall be valid and be enforced to the fullest extent permitted by law.

26. Entire Agreement

This agreement is the entire agreement between the parties, and the same shall be construed in accordance with the laws of the State of New York.

27. For Medicaid/Federal Health Care Related Work

Excluded/Debarred Party Clause

The Vendor/Contractor represents and warrants that it, nor its employees or contractors, are not excluded from participation, and is not otherwise ineligible to participate, in a "federal health care program" as defined in 42 U.S.C. § 1320a-7b(f) or in any other government payment program.

In the event Vendor/Contractor, or one of it employees or contractors, is excluded from participation, or becomes otherwise ineligible to participate in any such program during the Term, Vendor/Contractor will notify Essex County in writing within three (3) days after such event. Upon the occurrence of such event, whether or not such notice is given to the Vendor/Contractor, Essex County reserves the right to immediately cease contracting with the Vendor/Contractor.

If Vendor/Contractor is an Employment Agency, the Vendor/Contractor represents and warrants that its employees and contractors are not excluded from participation in a "federal health care program" as defined in 42 U.S.C. § 1320a-7b(f) or debarred from participation in any federal or other program.

The Vendor/Contractor further represents and warrants it will, at a minimum, check monthly all of it employees and subcontractors against:

- The General Services Administration's Federal Excluded Party List System (or any successor system,
- The United States Department of Health and Human Service's Office of the Inspector General's Lists of Excluded Individuals and Entities or any successor list,
- The New York State Department of Health's Office of the Medicaid Inspector General's list of Restricted, Terminated or Excluded Individuals or Entities.

In the event an excluded party is discovered the Vendor/Contractor will notify Essex County in

writing within three (3) days after such event. Upon the occurrence of such event, whether or not such notice is given to the Vendor/Contractor, Essex County reserves the right to immediately cease contracting with the Vendor/Contractor.

28. Cooperative Purchasing (Piggybacking)

Pursuant to General Municipal Law §103 and County Law §408-a, any political subdivision or fire company (as both are defined in Section 100 of the GML) or district authorized to make purchases of apparatus, materials, equipment or supplies, or to contract for services related to the installation, maintenance or repair of apparatus, materials, equipment and supplies may make said purchases under this existing contract (Piggybacking) provided, and on condition that this present contract was **LET TO THE LOWEST RESPONSIBLE BIDDER**. Therefore all terms and condition under this contract are extended to other political subdivisions and governmental entities.

Purchases under this contract by any other political sub-division other than Essex County shall be pursuant to the terms and conditions of Resolution No. 207 of 2013 dated July 1, 2013.

CONTRACTOR PROGRESS PAYMENT WAIVER, RELEASE AND DISCHARGE

WITNESSETH:

The above-named Contractor, hereinafter referred to as the "Releasor", does, for and on behalf of itself, its' successors, assigns and all parties claiming any interest or right through the Releasor, hereby warrant, covenant and agree as follows:

1. Releasor is/was a Contractor relative to the above-referenced Project pursuant to a contract or other relationship for the performing and/or furnishing of work, labor, services, materials and/or equipment at the Project site or to be incorporated in said Project.

2 Whenever the term "Releasor" is used in this instrument such term shall mean: (a) the above-named Contractor, its, successors and assigns; (b) any and all sureties and all other guarantors of the Releasor on any payment, performance, labor and/or material bond or other undertaking; (c) all parties claiming any interest or right through the Releasor, including but not limited to subcontractors and suppliers; and (d) the respective officers, directors, principals, shareholders, agents, employees and attorneys of (a), (b) and (c).

3. Whenever the term "Releasees" is used in this instrument such term shall mean: (a) the above-named Owner, its' successors and assigns; (b) the Project Architect/Engineer; and (c) the respective officers, directors, principals, shareholders, agents, employees and attorneys of (a) and (b).

4. For and in consideration of the sum of \$_____, and other good and valuable consideration, which sum is acknowledged as being the full and total amount due or allegedly due or owing from the Releasees to the Releasor <u>as of the date hereof</u>, and the receipt of such payment being hereby acknowledged, the Releasor does waive, release and discharge the Releasees from any and all causes of action, suits, debts, claims, liens, accounts, bonds, contracts, damages, encumbrances, judgments and demands whatsoever and of every kind and nature, in law or in equity, which against the Releasees, jointly and/or severally, the Releasor ever had, now has, or might hereafter have, relating directly or indirectly to the work, labor, services, materials and/or equipment furnished and/or performed at the Project site, or incorporated or to be incorporated in said Project, <u>as of the date hereof</u>, including but not in any manner limited to the right of the Releasor to assert, file or claim any lien or other security interest in or upon the real and/or personal property of the Releasees.

5. The Releasor hereby agree to defend, indemnify, and hold harmless the Releasees from any and all damages, costs, expenses, demands, suits, liens and legal fees, directly or indirectly relating to any claim for compensation by any other party for work, labor, services, materials and/or equipment furnished and/or performed at the Project site, or which should have been so furnished or performed, or incorporated or to be incorporated in said Project, as of the

date hereof, by the Releasor or by any other party claiming any interest or right through the Releasor.

6. The Releasor hereby certifies and warrants that it has fully paid for all work, labor, services, materials and/or equipment provided to it in connection with the Project and/or any contract relating thereto.

7. The Releasor hereby grants to the Releasees the right to review and audit any and books and records of the Releasor at any time for verification.

IN WITNESS WHEREOF this instr , 20	rument has been executed this day of
	Releasor
	Ву:
	(Print Name)
	(Title)
STATE OF NEW YORK)) SS:	
) SS: COUNTY OF)	
the of the Releasor identified herein; I am	duly sworn, depose and say that: I reside at reby sign this instrument under penalty of perjury; I am fully authorized to execute this instrument on behalf of statements contained in this instrument are true and
	Vendor/Releasor Agent Sign Here
Sworn to before me this day of, 20	

Notary Public

CONTRACTOR FINAL PAYMENT WAIVER, RELEASE AND DISCHARGE

PROJECT:		
OWNER:	ESSEX COUNTY	
CONTRACTOR:		

WITNESSETH:

The above-named Contractor, hereinafter referred to as the "Releasor", does, for and on behalf of itself, its' successors, assigns and all parties claiming any interest or right through the Releasor, hereby warrants, covenants and agrees as follows:

1. Releasor is/was a Contractor relative to the above-referenced Project pursuant to a contract or other relationship for the performing and/or furnishing of work, labor, services, materials and/or equipment at the Project site or to be incorporated in said Project.

2 Whenever the term "Releasor" is used in this instrument such term shall mean: (a) the above-named Contractor, its, successors and assigns; (b) any and all sureties and all other guarantors of the Releasor on any payment, performance, labor and/or material bond or other undertaking; (c) all parties claiming any interest or right through the Releasor, including but not limited to subcontractors and suppliers; and (d) the respective officers, directors, principals, shareholders, agents, employees and attorneys of (a), (b) and (c).

3. Whenever the term "Releasees" is used in this instrument such term shall mean: (a) the above-named Owner, its' successors and assigns; (b) Essex County, its agencies and departments (including but not limited to its Office for the Aging); and (c) the respective officers, directors, principals, shareholders, agents, employees and attorneys of (a) and (b).

4. For and in consideration of the sum of <u>\$</u>, and other good and valuable consideration, which sum is acknowledged as being the full, final and total amount due or allegedly due or owing from the Releasees to the Releasor as of the date hereof, and the receipt of such payment being hereby acknowledged, the Releasor does waive, release and discharge the Releasees from any and all causes of action, suits, debts, claims, liens, accounts, bonds, contracts, damages, encumbrances, judgments and demands whatsoever and of every kind and nature, in law or in equity, which against the Releasees, jointly and/or severally, the Releasor ever had, now has, or might hereafter have, relating directly or indirectly to the work, labor, services, materials and/or equipment furnished and/or performed at the Project site, or incorporated or to be incorporated in said Project, as of the date hereof, including but not in any manner limited to the right of the Releasor to assert, file or claim any lien or other security interest in or upon the real and/or personal property of the Releasees.

5. The Releasor hereby agree to defend, indemnify, and hold harmless the Releasees from any and all damages, costs, expenses, demands, suits, liens and legal fees, directly or indirectly relating to any claim for compensation by any other party for work, labor, services, materials and/or equipment furnished and/or performed at the Project site, or which should have been so furnished or performed, or incorporated or to be incorporated in said Project, as of the date hereof, by the Releasor or by any other party claiming any interest or right through the Releasor.

6. The Releasor hereby certifies and warrants that it has fully paid for all work, labor, services, materials and/or equipment provided to it in connection with the Project and/or any contract relating thereto.

7. The Releasor hereby grants to the Releasees the right to review and audit any and books and records of the Releasor at any time for verification.

IN WITNESS WHEREOF this instrument has been executed this _____ day of _____, 20___.

	Contractor	
	Ву:	
	(Print Name)	
	(Title)	
STATE OF NEW YORK		
COUNTY OF ESSEX) SS:)	
	, being duly sworn, depose and say that: I reside at, and I hereby sign this instrument under penalty of perjury;	_ . I am
the of the Releasor identif the Releasor; and I hereby correct.	, and I hereby sign this instrument under penalty of perjury; d herein; I am fully authorized to execute this instrument on be affirm that the statements contained in this instrument are true	half of

Vendor/Releasor Agent Sign Here

Sworn to before me this _____, 20___.

Notary Public

CONTRACTORS AFFIDAVIT RELATIVE TO FINAL PAYMENT

PROJECT:		
OWNER:	ESSEX COUNTY	
CONTRACTOR:		

WITNESSETH:

The herein below designated representative of the Contractor being duly sworn deposes and states:

1. He is duly authorized to sign this Affidavit on behalf of the Contractor.

2. That all payrolls, bills for materials and equipment, and other indebtedness connection with the work for which the County or the County's property might be responsible or encumbered have been paid or otherwise satisfied and there remain no further indebtedness or bills outstanding.

3. Attached hereto and made a part hereof is a valid certificate of insurance evidencing that insurance required by the contract documents will remain in full force after final payment is currently in effect and will not be cancelled or allowed to expire until at least 30 days prior written notice has been given to the owner.

4. Contractor knows of no substantial reason that the insurance will not be renewable to cover the period required by the contract documents.

5. Attached hereto and made a part hereof at Schedule B is a detailed list of all subcontractors and material suppliers.

6. Contractor warrants and represents that all sub-contractors, material suppliers and fringe benefit trust funds for employees of contractor and sub-contractors on the portion of the project encompassed by the work, as well as all workers and persons employed in connection therewith have been paid in full for all labor and work and materials furnished.

7. Contractor releases and waives any and all public improvement lien rights which contractor has against the County.

IN WITNESS WHEREOF, deponent has executed this document on ____ day of _____

_____, 20____.

Contractor

Ву:_____

(Print Name)

(Title)

STATE OF NEW YORK)) SS: COUNTY OF ESSEX)

I, _____, being duly sworn, depose and say that: I reside at _____, and I hereby sign this instrument under penalty of perjury; I

am the of the Releasor identified herein; I am fully authorized to execute this instrument on behalf of the Releasor; and I hereby affirm that the statements contained in this instrument are true and correct.

Vendor/Releasor Agent Sign Here

Sworn to before me this _____ day of _____, 20___.

Notary Public

SUBCONTRACTOR/SUPPLIER PROGRESS PAYMENT WAIVER, RELEASE AND DISCHARGE

PROJECT:				
OWNER:	ESSEX COUNTY			
CONTRACTO	DR:			
SUBCONTRACTOR/SUPPLIER:				

WITNESSETH:

The above-named Subcontractor/Supplier, hereinafter referred to as the "Releasor", does, for and on behalf of itself, its, successors, assigns and all parties claiming any interest or right through the Releasor, hereby warrants, covenants and agrees as follows:

1. Releasor is/was a subcontractor/supplier to the Contractor above-named relative to the above-referenced Project pursuant to a contract or other relationship for the performing and/or furnishing of work, labor, services, materials and/or equipment at the Project site or to be incorporated in said Project.

2. Whenever the term "Releasor" is used in this instrument such term shall mean: (a) the above-named Subcontractor/Supplier, its' successors and assigns; (b) any and all sureties and all other guarantors of the Releasor on any payment, performance, labor and/or material bond or other undertaking; (c) all parties claiming any interest or right through the Releasor; and (d) the respective officers, directors, principals, shareholders, agents, employees and attorneys of (a), (b) and (c).

3. Whenever the term "Releasees" is used in this instrument such term shall mean: (a) the above-named Contractor and all of its, sureties and other guarantors on any payment, performance, labor and/or material bond or other undertaking; (b) the abovenamed Owner, its, successors and assigns; (c) the Project Architect/Engineer; and (d) the respective officers, directors, principals, shareholders, agents, employees and attorneys of (a), (b) and (c).

4. For and in consideration of the sum of \$______, and other good and valuable consideration, which sum is acknowledged as being the full and total amount due or allegedly due or owing from the Releasees to the Releasor <u>as of the date hereof</u>, and the receipt of such payment being hereby acknowledged, the Releasor does waive, release and discharge the Releasees from any and all causes of action, suits, debts, claims, liens, accounts, bonds, contracts, damages, encumbrances, judgments and demands whatsoever and of every kind and nature, in law or in equity, which against the Releasees, jointly and/or severally, the Releasor ever had, now has, or might hereafter have, relating directly or indirectly to the work, labor, services, materials and/or equipment furnished and/or performed at the Project site, or incorporated or to be incorporated in said Project, <u>as of the date hereof</u>, including but not in any manner limited to the right of the Releasor to assert, file or claim any lien or other security interest in or upon the real and/or personal property of the Releasees.

5. The Releasor hereby agree to defend, indemnify, and hold harmless the Releasees from any and all damages, costs, expenses, demands, suits, liens and legal fees, directly or indirectly relating to any claim for compensation by any other party for work, labor, services, materials and/or

equipment furnished and/or performed at the Project site, or which should have been so furnished or performed, or incorporated or to be incorporated in said Project, as of the date hereof, by the Releasor or by any other party claiming any interest or right through the Releasor.

6. The Releasor hereby certifies and warrants that it has fully paid for all work, labor, services, materials and/or equipment provided to it in connection with the Project and/or any contract relating thereto.

7. The Releasor hereby grants to the Releasees the right to review and audit any and books and records of the Releasor at any time for verification.

IN WITNESS WHEREOF this instrument has been executed this _	day of	
, 20		

Releasor

Ву:_____

(Print Name)

(Title)

STATE OF NEW YORK)) SS: COUNTY OF ESSEX)

I, _____, being duly sworn, depose and say that: I reside at _____, and I hereby sign this instrument under penalty of perjury; I am the of the Releasor identified herein; I am fully authorized to execute this instrument on behalf of the Releasor; and I hereby affirm that the statements contained in this instrument are true and correct.

Vendor/Releasor Agent Sign Here

Sworn to before me this _____ day of _____, 20____

Notary Public

SUBCONTRACTOR/SUPPLIER FINAL WAIVER, RELEASE AND DISCHARGE

PROJECT:				
OWNER:	ESSEX COUNTY			
CONTRACTOR:				
SUBCONTRACTOR/SUPPLIER:				

WITNESSETH:

The above-named Subcontractor/Supplier, hereinafter referred to as the "Releasor", does, for and on behalf of itself, its, successors, assigns and all parties claiming any interest or right through the Releasor, hereby warrants, covenants and agrees as follows:

1. Releasor is/was a subcontractor/supplier to the Contractor above-named relative to the above-referenced Project pursuant to a contract or other relationship for the performing and/or furnishing of work, labor, services, materials and/or equipment at the Project site or to be incorporated in said Project.

2. Whenever the term "Releasor" is used in this instrument such term shall mean: (a) the above-named Subcontractor/Supplier, its' successors and assigns; (b) any and all sureties and all other guarantors of the Releasor on any payment, performance, labor and/or material bond or other undertaking; (c) all parties claiming any interest or right through the Releasor; and (d) the respective officers, directors, principals, shareholders, agents, employees and attorneys of (a), (b) and (c).

3. Whenever the term "Releasees" is used in this instrument such term shall mean: (a) the above-named Contractor and all of its, sureties and other guarantors on any payment, performance, labor and/or material bond or other undertaking; (b) the abovenamed Owner, its, successors and assigns; (c) the Project Architect/Engineer; and (d) the respective officers, directors, principals, shareholders, agents, employees and attorneys of (a), (b) and (c).

4. For and in consideration of the sum of \$______, and other good and valuable consideration, which sum is acknowledged as being the full, final and total amount due or allegedly due or owing from the Releasees to the Releasor as of the date hereof, and the receipt of such payment being hereby acknowledged, the Releasor does waive, release and discharge the Releasees from any and all causes of action, suits, debts, claims, liens, accounts, bonds, contracts, damages, encumbrances, judgments and demands whatsoever and of every kind and nature, in law or in equity, which against the Releasees, jointly and/or severally, the Releasor ever had, now has, or might hereafter have, relating directly or indirectly to the work, labor, services, materials and/or equipment furnished and/or performed at the Project site, or incorporated or to be incorporated in said Project, as of the date hereof, including but not in any manner limited to the right of the Releasor to assert, file or claim any lien or other security interest in or upon the real and/or personal property of the Releasees.

5. The Releasor hereby agree to defend, indemnify, and hold harmless the Releasees from any and all damages, costs, expenses, demands, suits, liens and legal fees, directly or indirectly relating to any claim for compensation by any other party for work, labor, services, materials and/or equipment furnished and/or performed at the Project site, or which should have been so furnished or performed, or incorporated or to be incorporated in said Project, as of the date hereof, by the Releasor or by any other party claiming any interest or right through the Releasor.

6. The Releasor hereby certifies and warrants that it has fully paid for all work, labor, services, materials and/or equipment provided to it in connection with the Project and/or any contract relating thereto.

7. The Releasor hereby grants to the Releasees the right to review and audit any and books and records of the Releasor at any time for verification.

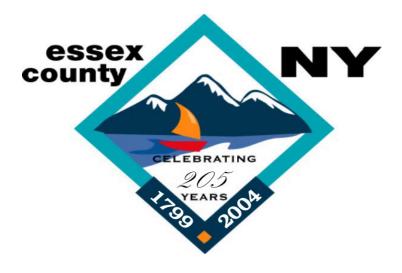
IN WITNESS WHEREOF this instrument has been executed this ____ day of _____

_____, _____.

	Releasor
	By:
	(Print Name)
	(Title)
STATE OF NEW YORK)	
) SS: COUNTY OF ESSEX)	
penalty of perjury; I am the of the Rel	, being duly sworn, depose and say that: I , and I hereby sign this instrument under easor identified herein; I am fully authorized to execute isor; and I hereby affirm that the statements contained
	Vendor/Releasor Agent Sign Here
Sworn to before me this day of, 20	

Notary Public

APPENDIX E



ESSEX COUNTY Office of the Purchasing Agent

7551 Court Street, P.O. Box 217 Elizabethtown, NY 12932 518-873-3330/Fax 518-873-3339

GENERAL SPECIFICATIONS FOR PROCUREMENT CONTRACTS

Adopted May 20, 1999.

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PART I General Provisions

1. APPLICABILITY The terms and conditions set forth herein are expressly incorporated in and applicable to all procurements and resulting procurement contracts let by the Office of the Essex County Purchasing Agent where incorporated by reference in its Bid Documents. The provisions herein shall govern such procurement or contract unless expressly modified or amended by the terms of a Bid Specifications, or a negotiated Contract/Clarification document, if any. Captions are intended as descriptive and are not intended to limit or otherwise restrict the terms and conditions set forth herein.

2. GOVERNING LAW The laws of the State of New York shall govern and apply to the procurement, any resulting contract and for determinations in a court of competent jurisdiction in New York of any and all disputes, litigation or interpretations arising from or connected with the procurement or contract, except where expressly superseded in a specific contract letting or where the Federal supremacy clause requires otherwise. These specifications are modeled after and upon the specifications developed and used by the New York State Office of General Services for procurements by New York State.

3. APPENDIX A / **INSURANCE** The mandatory terms for all Essex County contracts are expressly incorporated herein and in all bid documents and/or resulting contracts, such terms being set forth in Appendix A (*Standard Clauses for Essex County Contracts*). Insurance requirements are also attached and incorporated herein.

4. ETHICS COMPLIANCE All Bidders/Contractors and their employees must comply with the requirements of the *General Municipal Law*, the *Public Officers Law*, and other State codes, rules and regulations establishing ethical standards for the conduct of business with New York State and/or municipalities. In signing the bid, Bidder certifies full compliance with those provisions for any present or future dealings, transactions, sales, contracts, services, offers, relationships, etc., involving Essex County and/or its employees. Failure to comply with those provisions may result in disqualification from the bidding process, termination of contract, and/or other civil or criminal proceedings as required by law.

5. CONFLICT OF CLAUSES Conflicts between procurement or contract documents shall be resolved in the following order of precedence:

(a) Appendix A (Standard Clauses for Essex County Contracts)

(b) Contract/Clarification Documents Writing(s) setting forth the final agreements, clarifications, terms, statement of work and/or modifications between the Bid Documents and Contractors Bid or Mini-bid.

- (c) Bid Documents Bid Specifications prepared by Essex County
- (d) Contractors Bid or Proposal

6. **DEFINITIONS**

Terms used in this document shall have the following meanings:

AGENCY OR AGENCIES Essex County, New York, acting by or through one or more departments, boards, commissions, offices or institutions of Essex County.

ANCILLARY PRODUCT: Product which is purchased or licensed on a restricted use basis in conjunction with the principal manufacturers Product being acquired (e.g. may be used only in combination, or by educational institutions for research use).

AUTHORIZED USER(S) Agencies, or any other entity authorized by Essex County to participate in Essex County procurement contracts (including but not limited to political subdivisions, public authorities, school districts and public benefit corporations), provided that each such Agency or other entity shall be held solely responsible for liabilities or payments due as a result of its participation. The term "Authorized User" shall include "Licensees."

BID OR BID PROPOSAL An offer or proposal submitted by a Bidder to furnish a described product or a solution or means of achieving a practical end, at a stated price for the stated contract term.

BIDDER Any individual or other legal entity, (including but not limited to partnership, firm or corporation) which submits a bid in response to a Bid Solicitation. The term Bidder shall also include "offeror" and/or "contractor".

BID DOCUMENTS Writings setting forth the scope, terms, conditions and technical specifications for a procurement of Product. Such writings typically include, but are not limited to: Invitation for Bids (IFB), Request for Quotation (RFQ), Request for Proposals (RFP), addenda or amendments thereto, and terms and conditions which are incorporated by reference, e.g. Appendix A (*Standard Clauses for NYS Contracts*), Appendix B, (*General Specifications*). Where these General Specifications are incorporated in negotiated contracts which have not been competitively bid, the term "Bid Documents" shall be deemed to refer to the terms and conditions set forth in the negotiated contract.

BID SOLICITATION The notice or advertisement of an intent to purchase a specified Product by or on behalf of Authorized User(s).

BID SPECIFICATION A written description drafted by Essex County or an authorized user setting forth the specific terms of the intended procurement, which may include: physical or functional characteristics, the nature of a commodity or construction item, any description of the work to be performed, Products to be provided, the necessary qualifications of the Bidder, the capacity and capability of the Bidder to successfully carry out the proposed contract, or the process for achieving specific results and/or anticipated outcomes or any other requirement necessary to perform work. Where these *General Specifications* are incorporated in negotiated contracts which have not been competitively bid, the term "Bid Specifications" shall be deemed to refer to the terms and conditions set forth in the negotiated contract.

CONTRACT The writing(s) which contain the agreement of the Commissioner and the Bidder/Contractor setting forth the total legal obligation between the parties as determined by applicable rules of law.

CONTRACT AWARD NOTIFICATION An announcement to Authorized Users that a contract has been established.

CONTRACTOR Any successful Bidder(s) to whom a contract has been awarded by the Purchasing Agent. The term "Contractor" includes Licensors.

COUNTY Essex County, New York.

EMERGENCY An urgent and unexpected requirement where health and public safety or the conservation of public resources is at risk.

ERROR CORRECTIONS Machine executable software code furnished by Contractor which corrects the Product so as to conform to the applicable warranties, performance standards and/or obligations of the Contractor.

GROUP A classification of Product (commodities, services or technology).

INVITATION FOR BIDS (IFB) A type of Bid Document which is most typically used where requirements can be stated and award will be made to the lowest responsive bid submitted by the most responsible Bidder(s).

LATE BID For purposes of bid openings held and conducted by the Essex County Purchasing Agent, a bid not received in such place as may be designated on the Bid Specifications or in the Office of the Essex County Purchasing Agent, at or before the date and time established in the Bid Specifications for the bid opening.

LETTER OF ACCEPTANCE A letter to the successful Bidder(s) indicating acceptance of its bid in response to a solicitation. Unless otherwise specified, the issuance of a Letter of Acceptance forms a contract but is not an order for Product, and Contractor should not take any action with respect to actual contract deliveries except on the basis of Purchase Orders sent from Authorized User(s).

LICENSED SOFTWARE Software transferred upon the terms and conditions set forth in the Contract. "Licensed Software" includes ancillary products, error corrections, upgrades, enhancements or new releases, and any deliverables due under a maintenance or service contract (e.g. patches, fixes, PTFs, programs, code or data conversion, or custom programming).

LICENSEE The County, or one or more Agencies or Authorized Users who acquire Product from Contractor by execution of a license in accordance with the terms and conditions of the Contract; provided that, for purposes of compliance with an individual license, the term "Licensee" shall be deemed to refer separately to the individual Authorized User(s) on whose behalf the license was executed who took receipt of the Product, and who shall be solely responsible for performance and liabilities incurred.

LICENSOR A Contractor who transfers rights in proprietary Product to Authorized Users in accordance with the rights and obligations specified in the Contract.

MULTIPLE AWARD A determination and award of a contract in the discretion of the Purchasing Agent to more than one responsive and responsible Bidder who meets the requirements of a specification, where the multiple award is made on the grounds set forth in the Bid Document in order to satisfy multiple factors and needs of Authorized Users (e.g., complexity of items, various manufacturers, differences in performance required to accomplish or produce required end results, production and distribution facilities, price, compliance with delivery requirements, geographic location or other pertinent factors).

NEW PRODUCT RELEASES (Product Revisions) Any commercially released revisions to the version of a Product as may be generally offered and available to Authorized Users. New releases involve a substantial revision of functionality from a previously released version of the Product.

PROCUREMENT RECORD Documentation by the Essex County Purchasing Agent of the decisions made and approach taken during the procurement process.

PRODUCT A deliverable under any Bid or Contract which may include commodities (including printing), services and/or technology. The term "Product" includes Licensed Software.

PURCHASE ORDER The County's fiscal form or format which is used when making a purchase.

REQUEST FOR PROPOSALS (RFP) A type of Bid Document which is used for procurements where factors in addition to cost are considered and weighted in awarding the contract and where the method of award is "best value", as defined by the County's Procurement Policy and New York Law.

REQUEST FOR QUOTATION (RFQ) A type of Bid Document which can be used when a formal bid opening is not required (e.g. discretionary, sole source, single source or emergency purchases).

RESPONSIBLE BIDDER A Bidder that is determined to have skill, judgment and integrity, and that is found to be competent, reliable, experienced and qualified financially, as determined by the Purchasing Agent.

RESPONSIVE BIDDER A Bidder meeting the specifications or requirements prescribed in the Bid Document or solicitation, as determined by the Purchasing Agent.

SINGLE SOURCE A procurement where two or more offerors can supply the required Product, and the Purchasing Agent may award the contract to one Bidder over the other.

SOLE SOURCE A procurement where only one offeror is capable of supplying the required Product.

Bid Submission

7. BID LANGUAGE & CURRENCY All offers (tenders), and all information and Product documentation required by the solicitation or provided as explanation thereof, shall be submitted in English. All prices shall be expressed, and all payments shall be made, in United States Dollars (\$ US). Any offers (tenders) submitted which do not meet the above criteria will be rejected.

8. BID OPENING Bids may, as applicable, be opened publicly. The Purchasing Agent reserves the right at anytime to postpone or cancel a scheduled bid opening.

9. BID SUBMISSION The submission of a bid will be construed to mean that the bidder is fully informed as to the extent and character of the supplies, material, or equipment required and a representation that the bidder can furnish the supplies, materials, or equipment satisfactorily in complete compliance with the specifications.

All bids shall comply with the following:

(a) Bids are to be packaged, sealed and submitted to the location stated in the Bid Specifications. Bidders are solely responsible for timely delivery of their bids to the location set forth in the Bid Specifications prior to the stated bid opening date/time.

(b) A bid return envelope, if provided with the Bid Specifications, should be used with the bid sealed inside. If the bid response does not fit into the envelope, the bid envelope should be taped onto the outside of the sealed box or package with the bid inside. If using a commercial delivery company which requires use of their shipping package or envelope, Bidders sealed bid, labeled as detailed below, should be placed within the shippers sealed envelope to ensure that the bid is not prematurely opened. All bids must have a label on the outside of the package or shipping container outlining the following information:

"BID ENCLOSED" (bold print, all capitals) IFB or RFP Number Bid Submission date and time

In the event that a Bidder fails to provide such information on the return bid envelope or shipping material, the County reserves the right to open the shipping package or envelope to determine the proper bid number or Product group, and the date and time of bid opening. Bidder shall have no claim against the receiving entity arising from such opening and such opening shall not affect the validity of the bid or the procurement. Notwithstanding the County's right to open a bid to ascertain the foregoing information, Bidder assumes all risk of late delivery associated with the bid not being identified, packaged or labeled in accordance with the foregoing requirements.

10. FACSIMILE SUBMISSIONS Unless specifically authorized by the terms of the Bid Specifications,

facsimile bids ARE PROHIBITED AND SHALL NOT BE ACCEPTED. Where the bid specifications are silent as to the submission of bids by facsimile, no fax bids shall be permitted or accepted. Where specifically authorized, the following rules and conditions apply:

(a) FAX number(s) indicated in the Bid Specifications must be used.

(b) Access to the facsimile machine(s) is on a "first come, first serve" basis, and the Purchasing Agent bears no liability or responsibility and makes no guarantee whatsoever with respect to the Bidders access to such equipment at any specific time.

(c) Bidders are solely responsible for submission and receipt of the entire facsimile bid by the Essex County Purchasing Agent prior to bid opening and must include on the first page of the transmission the total number of pages transmitted in the bid, including the cover page. Incomplete, ambiguous or unreadable transmissions in whole or in part may be rejected at the sole discretion of the Purchasing Agent.

(d) Facsimile bids are fully governed by all conditions outlined in the Bid Documents and must be submitted on forms or in the format required in the Bid Specifications, including the executed signature page and acknowledgment.

11. AUTHENTICATION OF FACSIMILE BIDS The act of submitting a bid by facsimile transmission, when, as and if specifically authorized, including an executed signature page, shall be deemed a confirming act by Bidder which authenticates the signing of the bid.

12. LATE BIDS Any bid received at the specified location after the time specified will be considered a late bid. A late bid shall not be considered for award unless acceptance of the late bid is in the best interests of Essex County and either (a) no timely bids meeting the requirements of the Bid Documents are received, or (b) in the case of a multiple award, an insufficient number of timely bids were received to satisfy the multiple award. Delays in United States mail deliveries or any other means of transmittal, including couriers or agents of Essex County, shall not excuse late bid submissions. Otherwise, all late bids will not be considered and will be returned unopened to the bidder. The bidder assumes the risk of any delay in the mail or in the handling of the mail by employees of the County. Whether sent by mail or by means of personal delivery, the bidder assumes responsibility for having his bid deposited on time at the place specified.

13. BID CONTENTS Bids must be complete and legible. All bids must be signed. All information required by the Bid Specifications must be supplied by the Bidder on the forms or in the format specified in the Bid Specifications. No alteration, erasure or addition is to be made to the Bid Documents. Changes may be ignored by the Purchasing Agent or may be grounds for rejection of the bid. Changes, corrections and/or use of white-out in the bid or Bidders response portion of the Bid Document must be initialed by an authorized representative of the Bidder. Bidders are cautioned to verify their bids before submission, as amendments to bids or requests for withdrawal of bids received by the Purchasing Agent after the time specified for the bid opening, may not be considered. All lines must have an indication of bidders response whether it be "o", "N/A" or a dollar figure. All lines must be filled in to indicate bidder acknowledgment of the request. Bids that do not have all applicable lines filled in on bid sheet may be disqualified as a non-responsive bid. The Purchasing Agent shall not assume there is "no charge" when lines are left empty.

Bidders must submit with bid detailed specifications, circulars, warranties and all necessary data on items he proposes to furnish. This information must show clearly that the item offered meets all detailed specifications herein. The Purchasing Agent reserves the right to reject any bid if its compliance with the specifications is not clearly evident. If item offered differs from the provisions contained in these specifications such differences must be explained in detail, and bid will receive careful consideration if such deviations do not depart from the intent of these specifications and are to the best interests of Essex County as interpreted by the Purchasing Agent of Essex County.

It is the responsibility of the bidder to offer a product that meets the specifications of the manufacturer model as listed.

All stock electrical items must be listed and approved by Underwriters' Laboratories, Inc.

14. EXTRANEOUS TERMS Bids must conform to the terms set forth in the Bid Documents, as extraneous terms or material deviations (including additional, inconsistent, conflicting or alternative terms) may render the bid non-responsive and may result in rejection of the bid.

Extraneous term(s) submitted on standard, pre-printed forms (including but not limited to: product literature, order forms, license agreements, contracts or other documents) which are attached or referenced with the submission shall not be considered part of the bid, but shall be deemed included for informational or promotional purposes only.

Only those extraneous terms which meet all the following requirements will be considered as having been submitted as part of the Bid:

(a) Each proposed extraneous term (addition, counter-offer, deviation, or modification) must be specifically enumerated in a writing which is not part of a pre-printed form; and

(b) The writing must identify the particular specification requirement (if any) which Bidder rejects or proposes to modify by inclusion of the extraneous term; and

(c) The Bidder shall enumerate the proposed addition, counteroffer, modification or deviation from the Bid Document, and the reasons therefore.

No extraneous term(s), whether or not deemed "material," shall be incorporated into a contract unless the Purchasing Agent expressly accepts each such term(s) in writing. Acceptance and/or processing of the Bid shall not constitute such written acceptance of Extraneous Term(s).

15. CONFIDENTIAL / TRADE SECRET MATERIALS Confidential, trade secret or proprietary materials as defined by the laws of the State of New York must be clearly marked and identified as such upon submission. Bidders/Contractors intending to seek an exemption from disclosure of these materials under the *Freedom of Information Law* must request the exemption in writing, setting forth the reasons for the claimed exemption, at the time of submission. Acceptance of the claimed materials does not constitute a determination on the exemption request, which determination will be made in accordance with statutory procedures.

16. PREVAILING WAGE RATES - **Public Works and Building Services Contracts** If any portion of work being bid is subject to the prevailing wage rate provisions of Labor Law, the following shall apply:

(a) "Public Works" and "Building Services" – Definitions

i. Public Works *Labor Law* Article 8 applies to contracts for public improvement in which laborers, workers or mechanics are employed on a "public works" project (distinguished from public "procurement" or "service" contracts). The State, a public benefit corporation, a municipal corporation (including a school district), or a commission appointed by law must be a party to the contract. The wage and hours provision applies to any work performed by contractor or subcontractors.

ii. Building Services *Labor* Law Article 9 applies to contracts for building service work over \$1,500 with a public agency, which 1) involve the care or maintenance of an existing building, or 2) involve the transportation of office furniture or equipment to or from such building, or 3) involve the transportation and delivery of fossil fuel to such building, and 4) the principal purpose of which is to furnish services through use of building service employees.

(b) Prevailing Wage Rate Applicable to Bid Submissions A copy of the applicable prevailing wage rates to be paid or provided are attached to this solicitation. Bidders must submit bids which are based upon the prevailing hourly wages, and supplements in cash or equivalent benefits (i.e., fringe benefits and any cash or non-cash compensation which are not wages, as defined by law) that equal or exceed the applicable prevailing wage rate(s) for the location where the work is to be performed. Where the Bid Documents require the Bidder to enumerate hourly wage rates in the bid, Bidders may not submit bids based upon hourly wage rates and supplements below the applicable prevailing wage rates as established by the New York State Department of Labor. Bids which fail to comply with this requirement will be disqualified.

(c) Wage Rate Payments / Changes During Contract Term The wages to be paid under any resulting contract shall not be less than the prevailing rate of wages and supplements as set forth by law. It is required that the Contractor keep informed of all changes in the Prevailing Wage Rates during the contract term that apply to the classes of individuals supplied by the contractor on any projects which result from this contract which are subject to the provisions of the *Labor Law*. Contractor is solely liable for and must pay such required prevailing wage adjustments during the contract term as required by law.

(d) **Public Posting & Certified Payroll Records** In compliance with Article 8, Section 220 of the *Labor Law,* as amended by Chapter 565 of the Laws of 1997:

i. Posting The Contractor must publicly post on the work site, in a prominent and accessible place, a legible schedule of the prevailing wage rates and supplements.

ii. Payroll Records Contractors and sub-contractors must keep original payrolls or transcripts subscribed and affirmed as true under the penalties of perjury as required by law. For public works contracts over \$25,000 where the contractor maintains no regular place of business in New York State, such records must be kept at the work site. For building services contracts, such records must be kept at the work site.

iii. Submission of Certified Payroll Transcripts for Public Works Contracts Only Contractors and sub-contractors on public works projects must submit monthly payroll transcripts to Essex County which has prepared or directs the preparation of the plans and specifications for a public works project, as set forth in the Bid Specifications. For mini-bid solicitations, the payroll records must be submitted to the entity preparing the agency mini-bid project specification. For "agency specific" bids, the payroll records should be submitted to the entity issuing the purchase order. For all other Essex County procurement contracts, such records should be submitted to the individual agency issuing the purchase order(s) for the work. Upon mutual agreement of the Contractor and Essex County, the form of submission may be submitted in a specified disk format acceptable to the Department of Labor so long as: 1) the contractor/subcontractor retains the original records; and, (2) an original signed letter by a duly authorized individual of the contractor or subcontractor attesting to the truth and accuracy of the records accompanies the disk. This provision does not apply to building services contracts.

iv. Records Retention Contractors and subcontractors must preserve such certified transcripts for a period of three years from the date of completion of work on the awarded contract.

(e) Days Labor - Defined for Article 8, Public Works (For Purposes of Article 8 of the *Labor Law*) No laborer, worker or mechanic in the employ of the contractor, subcontractor or other person doing or contracting to do all or part of the work contemplated by the contract shall be permitted or required to work more than eight hours in any one calendar day or more than five days in any one week except in cases of extraordinary emergency including fire, flood or danger to life or property. "Extraordinary emergency" shall be deemed to include situations in which sufficient laborers, workers and mechanics cannot be employed to carry on public work expeditiously as a result of such

restrictions upon the number of hours and days of labor and the immediate commencement or prosecution or completion without undue delay of the public work is necessary in the judgment of the Essex County Purchasing Agent for the preservation of the contract site or for the protection of the life and limb of the persons using the contract site.

17. TAXES

(a) Unless otherwise specified in the Bid Specifications or set forth in this clause, the quoted bid price includes all taxes applicable to the transaction.

(b) Purchases made by Essex County and certain non-County Authorized Users are exempt from New York State and local sales taxes and, with certain exceptions, federal excise taxes. To satisfy the requirements of the New York State Sales tax exemption, either the Purchase Order issued by a County Agency or the invoice forwarded to authorize payment for such items will be sufficient evidence that the sale by the Contractor was made to the County, an exempt organization under Section 1116 (a) (1) of the *Tax Law*. Non-County Authorized Users must offer their own proof of exemption where required. No person, firm or corporation is, however, exempt from paying the State Truck Mileage and Unemployment Insurance or Federal Social Security taxes, which remain the sole responsibility of the Bidder/Contractor. For tax free transactions under the Internal Revenue Code, the Essex County Registration Number is 14 6002889.

(c) Purchases by Authorized Users other than Essex County may be subject to such taxes, and in those instances the tax should be computed based on the bid price and added to the invoice submitted to such entity for payment.

18. EXPENSES PRIOR TO AWARD Essex County is not liable for any costs incurred by a Bidder in the preparation and production of a bid or for any work performed prior to contract award and/or issuance of an approved Purchase Order.

19. ADVERTISING BID RESULTS A Bidder in submitting a bid agrees not to use the results therefrom as a part of any commercial advertising without the prior written approval of the Purchasing Agent. In addition to any other sanctions or remedies available to it in law or equity, the Purchasing Agent may suspend from bidding on its requirements or terminate a contract of any Bidder/Contractor who violates the terms of this clause.

20. PRODUCT REFERENCES

(a) "Or Equal" On all Bid Specifications the words "or equal" are understood to apply where a copyright brand name, trade name, catalog reference, or patented Product is referenced. References to such specific Product are intended as descriptive, not restrictive, unless otherwise stated. Comparable Product will be considered if proof of compatibility is provided, including appropriate catalog excerpts, descriptive literature, specifications and test data, etc. The Purchasing Agents decision as to acceptance of the Product as equal shall be final.

(b) **Discrepancies in References** In the event of a discrepancy between the model number referenced in the Bid Specifications and the written description of the Products therein which cannot be reconciled, with respect to such discrepancy, then the written description shall prevail.

21. RECYCLED OR RECOVERED MATERIALS Upon the conditions specified in the Bid Specifications and in accordance with the laws of the State of New York, Contractors are encouraged to use recycled or recovered materials in the manufacture of Products and packaging to the maximum extent practicable without jeopardizing the performance or intended end use of the Product or packaging unless such use is precluded due to health, welfare, safety requirements or in the Bid

Specifications. Where such use is not practical, suitable, or permitted by the Bid Specifications, Contractor shall deliver new materials in accordance with the "Warranties & Guaranties" set forth below.

Refurbished or remanufactured components or items may only be accepted at the discretion of the Purchasing Agent, or upon the conditions set forth in the Bid Specifications.

Items with recycled, recovered, refurbished or remanufactured content must be identified in the bid or will be deemed new Product.

22. PRODUCTS MANUFACTURED IN PUBLIC INSTITUTIONS Bids offering Products which are manufactured or produced in public institutions will be rejected.

23. PRICING

(a) Unit Pricing If required by the Bid Specifications, the Bidder should insert the price per unit specified and the price extensions in decimals, not to exceed four places for each item, in the bid. In the event of a discrepancy between the unit price and the extension, the unit price shall govern unless, in the sole judgment of the Purchasing Agent, such unit pricing is obviously erroneous.

(b) Net Pricing Prices must be net, including transportation, customs, tariff, delivery and other charges fully prepaid by the Contractor to the destination(s) indicated in the Bid Specifications, subject only to the cash discount. If the award is to be made on another basis, transportation and other charges must be prepaid by the Contractor and added to the invoice as a separate item, unless otherwise required in the Bid Specifications.

(c) "No Charge" Bid When bids are requested on a number of Products as a group or Lot, a Bidder desiring to bid "no charge" on a Product in the grouping or Lot must clearly indicate such. Otherwise, such bid may be considered incomplete and be rejected, in whole or in part, at the discretion of the Purchasing Agent.

If a price is written in numbers and alpha, the alpha will govern.

Prices shall be net FOB any point in Essex County, New York. Price quoted shall include all delivery costs. Prices shall be net, including transportation and delivery charges fully prepaid by the successful bidder to destination indicated in the proposal. If award is made on any other basis, transportation charges must be prepaid by the successful bidder and added to the invoice as a separate item. In any case, title shall not pass until items have been delivered and accepted by the County.

24. DRAWINGS

(a) **Drawings Submitted With Bid** When the Bid Specifications require the Bidder to furnish drawings and/or plans, such drawings and/or plans shall conform to the mandates of the Bid Documents and shall, when approved by the Purchasing Agent, be considered a part of the bid and of any resulting contract. All symbols and other representations appearing on the drawings shall be considered a part of the drawing.

(b) Drawings Submitted During the Contract Term Where required by the Bid Specifications to develop, maintain and deliver diagrams or other technical schematics regarding the scope of work, Contractor shall be required to develop, maintain, deliver and update such drawings on an ongoing basis at no additional charge. Contractor shall be responsible for updating drawings and plans during the contract term to reflect additions, alterations, and deletions. Such drawings and diagrams shall be delivered to the Authorized

Users representative as required by the Bid Specifications. Where required, Contractor shall furnish to Authorized User in a timely manner the required drawings representing the then current, "as modified" condition of all product included in the scope of work.

(c) Accuracy of Drawings Submitted All drawings shall be neat and professional in manner and shall be clearly labeled as to locations and type of product, connections and components. Drawings and diagrams are to be in compliance with accepted drafting standards. Acceptance or approval of such plans shall not relieve the Contractor from responsibility for design or other errors of any sort in the drawings or plans, or from its responsibility for performing as required, furnishing product, services or installation, or carrying out any other requirements of the intended scope of work.

25. SITE INSPECTION Where Bidder is required by the Bid Specifications to deliver or install Product, or to service installed product(s) or equipment, Bidder shall be given an opportunity and shall be required to inspect the site prior to submission of the Bid, including environmental or other conditions or pre-existing deficiencies in the installed product, equipment or environment, which may affect Bidders ability to deliver, install or otherwise provide the required product. All inquiries regarding such conditions may only be made in writing. Bidder shall be deemed to have knowledge of any deficiencies or conditions which such inspection or inquiry might have disclosed, and to have included the costs of repair in its bid. Bidder must provide a detailed explanation of work intended to be performed under this clause. Bidder shall be required to remedy any pre-existing deficiencies or conditions at the commencement of the contract term. Reimbursement for the cost of repairing the conditions or deficiencies shall be separately enumerated in the bid.

26. SAMPLES

(a) **Standard Samples** Bid Specifications may indicate that the Product to be purchased must be equal to a standard sample on display in a place designated by the Purchasing Agent and such sample will be made available to the Bidder for examination prior to the opening date. Failure by the Bidder to examine such sample shall not entitle the Bidder to any relief from the conditions imposed by the Bid Documents.

(b) Bidder Supplied Samples The Purchasing Agent reserves the right to request from the Bidder/Contractor a representative sample(s) of the Product offered at any time prior to or after award of a contract. Unless otherwise instructed, samples shall be furnished within the time specified in the request. Untimely submission of a sample may constitute grounds for rejection of bid or cancellation of the Contract. Samples must be submitted free of charge and be accompanied by the Bidders name and address, any descriptive literature relating to the Product and a statement indicating how and where the sample is to be returned. Where applicable, samples must be properly labeled with the appropriate bid or Essex County contract reference.

A sample may be held by the Purchasing Agent during the entire term of the contract and for a reasonable period thereafter for comparison with deliveries. At the conclusion of the holding period the sample, where feasible, will be returned as instructed by the Bidder, at the Bidders expense and risk. Where the Bidder has failed to fully instruct the Purchasing Agent as to the return of the sample (i.e. mode and place of return, etc.) or refuses to bear the cost of its return, the sample shall become the sole property of the receiving entity at the conclusion of the holding period.

(c) Enhanced Samples When an approved sample exceeds the minimum specifications, all Product delivered must be of the same enhanced quality and identity as the sample. Thereafter, in the event of a Contractors default, the Purchasing Agent may procure a commodity substantially equal to the enhanced sample from other sources, charging the Contractor for any additional costs incurred.

(d) Conformance with Sample(s) Submission of a sample (whether or not such sample is tested by, or for, the Purchasing Agent) and approval thereof shall not relieve the Contractor from full compliance with all conditions and terms, performance related and otherwise, specified in the Bid Documents. If in the judgment of the Purchasing Agent the sample or product submitted is not in accordance with the specifications or testing requirements prescribed in the Bid Documents, the Purchasing Agent may reject the bid. If an award has been made, the Purchasing Agent may cancel the contract at the expense of the Contractor.

(e) **Testing** All samples are subject to tests in the manner and place designated by the Purchasing Agent, either prior to or after contract award. Unless otherwise stated in the Bid Specifications, Bidder Samples consumed or rendered useless by testing will not be returned to the Bidder.

27. ADDENDA / INTERPRETATION No verbal interpretation of the intent of any of the specifications or other Contract Documents will be made before receipt of bids. Requests for interpretations prior to receipt of bids must be presented, in writing, to the Purchasing Agent, 100 Court Street, P.O. Box 217, Elizabethtown, NY 12932, and to be given consideration must be received by the Purchasing Agent at least seven (7) days prior to the date set for the opening of bids.

Any interpretation, and any additional information or instruction will, if issued, be in the form of a written Addendum or Addenda sent to all holders of Contract Documents at the addresses furnished therefor, at least five (5) days prior to the date of the opening of bids.

Failure of any bidder to receive any Addenda shall not relieve such bidder from any obligation under this bid as submitted. All Addenda so issued shall become a part of the Contract Documents.

Bid Evaluation

28. BID EVALUATION The Purchasing Agent reserves the right to accept or reject any and all bids, or separable portions of offers, and waive technicalities, irregularities, and omissions if the Purchasing Agent determines the best interests of the County will be served. The Purchasing Agent, in his/her sole discretion, may accept or reject illegible, incomplete or vague bids and his/her decision shall be final. A conditional or revocable bid which clearly communicates the terms or limitations of acceptance may be considered and contract award may be made in compliance with the Bidders conditional or revocable terms in the offer.

Where a bidder is requested to submit a bid on individual items and/or on a total sum or sums, the right is reserved to award bids on individual items or on total sums. The County reserves the right to award in whole or in part based on the lowest responsible bid.

The following three items will automatically render a bid unacceptable to Essex County:

- a. Failure to sign bid proposal page.
- b. Failure to include necessary bid deposit (as required).
- c. Failure to sign and submit non-collusive bidding certificate.

It shall be fully understood that any deviations from the inclusion of the above items will be grounds to see the bid as non-compliant and will not be considered for award.

The Purchasing Agent reserves the right to reject such bids, as in his opinion, are incomplete, conditional, obscure, or which contain irregularities of any kind including unbalanced bids. One in which the amount bid for one or more separate items is substantially out of line with the current market prices for the materials and/or work covered thereby.

29. CONDITIONAL BID Unless the Bid Specifications provides otherwise, a bid is not rendered nonresponsive if the Bidder specifies that the award will be accepted only on all or a specified group of items or Product included in the specification. It is understood that nothing herein shall be deemed to change or alter the method of award contained in the Bid Documents.

30. CLARIFICATIONS / REVISIONS Prior to award, the Purchasing Agent reserves the right to seek clarifications, request bid revisions, or to request any information deemed necessary for proper evaluation of bids from all Bidders deemed to be eligible for contract award. Failure to provide requested information may result in rejection of the bid.

31. PROMPT PAYMENT DISCOUNTS While prompt payment discounts will not be considered in determining the low bid, the Purchasing Agent may consider any prompt payment discount in resolving bids which are otherwise tied. However, any notation indicating that the price is net, (e.g. net 30 days), shall be understood to mean only that no prompt payment discount is offered by the Bidder. The imposition of service, interest, or other charges, except pursuant to the provisions of Article 11_A of the *State Finance Law,* which are applicable in any case, may render the bid non-responsive and may be cause for its rejection.

32. EQUIVALENT OR IDENTICAL BIDS In the event two offers are found to be substantially equivalent, price shall be the basis for determining the award recipient. If two or more Bidders submit substantially equivalent bids as to pricing or other factors, the decision of the Purchasing Agent to award a contract to one or more of such Bidders shall be final.

33. PERFORMANCE QUALIFICATIONS The Purchasing Agent reserves the right to investigate or inspect at any time whether or not the Product, qualifications or facilities offered by the Bidder/Contractor meet the requirements set forth in the Bid Documents. Contractor shall at all times during the contract term remain responsible and responsive. A Bidder/Contractor must be prepared, if requested by the Purchasing Agent, to present evidence of experience, ability and financial standing, as well as a statement as to plant, machinery and capacity of the manufacturer for the production, distribution and servicing of the Product bid. If the Purchasing Agent determines that the conditions and terms of the Bid Documents or Contract are not complied with, or that items or Product proposed to be furnished do not meet the specified requirements, or that the qualifications, financial standing or facilities are not satisfactory, or that performance is untimely, the Purchasing Agent may reject such bid or terminate the contract. Nothing in the foregoing shall mean or imply that it is obligatory upon the Purchasing Agent to make an investigation either before or after award of a contract, but should such investigation be made, it in no way relieves the Bidder/Contractor from fulfilling all requirements and conditions of the contract.

34. DISQUALIFICATION FOR PAST PERFORMANCE Bidder may be disqualified from receiving awards if Bidder, or anyone in Bidders employment, has previously failed to perform satisfactorily in connection with public bidding or contracts.

35. QUANTITY CHANGES PRIOR TO AWARD The Purchasing Agent reserves the right, at any time prior to the award of a specific quantity contract, to alter in good faith the quantities listed in the Bid Specifications to conform with requirements. In the event such right is exercised, the lowest responsible Bidder meeting specifications will be advised of the revised requirements and afforded an opportunity to extend or reduce its bid price in relation to the changed quantities. Refusal by the low Bidder to so extend or reduce its bid price may result in the rejection of its bid and the award of such contract to the lowest responsible Bidder who accepts the revised requirements.

36. RELEASE OF BID EVALUATION MATERIALS Requests concerning the evaluation of bids may be submitted under the *Freedom of Information Law*. Information, other than the Bid Tabulation, shall be released as required by law after contract award. Written requests should be directed to the Purchasing Agent.

37. TIME FRAME FOR OFFERS The Purchasing Agent reserves the right to make awards within sixty (60) days after the date of the bid opening, during which period, bids must remain firm and cannot be withdrawn. If, however, an award is not made within the sixty (60) day period, bids shall remain firm until such later time as either a contract is awarded or the Bidder delivers to the Purchasing Agent written notice of the withdrawal of its bid. Any bid which expressly states therein that acceptance must be made within a shorter specified time, may at the sole discretion of the Purchasing Agent, be accepted or rejected.

TERMS & CONDITIONS

38. CONTRACT CREATION / EXECUTION Except as may be otherwise provided by law or by the Purchasing Agent, upon receipt of all required approvals a Contract shall be deemed executed and created with the successful Bidder(s) upon the Purchasing Agent's mailing or electronic communication to the address on the bid of (a) a Letter of Acceptance and (b) a fully executed contract, or (c) a Purchase Order authorized by the Purchasing Agent.

39. COMPLIANCE WITH LAWS, ETC. The Bidder shall comply with all the provisions of the laws of the State of New York and of the United States of America which affect municipalities and municipal contracts, and any and all State and Federal rules and regulation, and of amendments and additions thereto, insofar as the same shall be applicable to any contract awarded hereunder with the same force and effect as if set forth at length herein. The Bidder's special attention is called to the following laws: *General Municipal Law* Section 1 03-d, *State Finance* Law Section 167-b prohibiting the purchase of tropical hardwood products, and the New York State Public Employee Safety & Health Act of 1980.

40. MODIFICATION OF TERMS The terms and conditions set forth in the Contract shall govern all transactions by Authorized User(s) under this Contract. The Contract may only be modified or amended upon mutual written agreement of the Purchasing Agent and Contractor.

The Contractor may, however, offer Authorized User(s) more advantageous pricing, payment, or other terms and conditions than those set forth in the Contract. In such event, a copy of such terms shall be furnished to the Authorized User(s) and Purchasing Agent by the Contractor.

Other than where such terms are more advantageous for the Authorized User(s) than those set forth in the Contract, no alteration or modification of the terms of the Contract, including substitution of Product, shall be valid or binding against Authorized User(s) unless authorized by the Purchasing Agent or specified in the Contract Award Notification. No such alteration or modification shall be made by unilaterally affixing such terms to Product upon delivery (including, but not limited to, attachment or inclusion of standard pre-printed order forms, product literature, "shrink wrap" terms accompanying software upon delivery, or other documents) or by incorporating such terms onto order forms, purchase orders or other documents forwarded by the Contractor for payment, notwithstanding Authorized Users subsequent acceptance of Product, or that Authorized User has subsequently processed such document for approval or payment.

41. SCOPE CHANGES The Purchasing Agent reserves the right, unilaterally, to require, by written order, changes by altering, adding to or deducting from the contract specifications, such changes to be within the general scope of the contract. The Purchasing Agent may make an equitable adjustment in the contract price or delivery date if the change affects the cost or time of performance.

With respect to any specific quantity stated in the contract, the Purchasing Agent reserves the right after award to order up to 20% more or less (rounded to the next highest whole number) than the specific quantities called for in the contract. Notwithstanding the foregoing, the Purchasing Agent may purchase greater or lesser percentages of contract quantities should the Purchasing Agent and Contractor so agree.

42. ESTIMATED QUANTITY CONTRACTS Estimated quantity contracts are expressly agreed and

understood to be made for only the quantities, if any, actually ordered during the contract term. No guarantee of any estimated quantity(s) is implied or given. Unless otherwise set forth in the Bid Specifications, contracts for services and technology are completely voluntary as to use, and therefore no quantities are guaranteed.

43. BEST PRICING OFFER During the contract term, if substantially the same or a smaller quantity of a Product is sold by the Contractor outside of this contract vehicle upon the same or similar terms and conditions as that of this contract at a lower price, the price under this contract shall be immediately reduced to the lower price.

44. PURCHASE ORDERS Unless otherwise authorized in writing by the Purchasing Agent, no Products are to be delivered or furnished by Contractor until transmittal of an official Purchase Order from the Authorized User requiring the Product. Unless terminated or canceled pursuant to the authority vested in the Purchasing Agent, Purchase Orders shall be effective and binding upon the Contractor when placed in the mail or electronically transmitted prior to the termination of the contract period, addressed to the Contractor at the address set forth in the Contract for receipt of orders, or in the Contract Award Notification.

All Purchase Orders issued pursuant to contracts let by the Purchasing Agent must bear the appropriate contract number and, if necessary, required State approvals. Unless otherwise specified, all Purchase Orders against centralized contracts will be placed by Authorized Users directly with the Contractor and any discrepancy between the terms stated on the vendors order form, confirmation or acknowledgment, and the contract terms shall be

resolved in favor of the terms most favorable to the Authorized User.

If, with respect to an agency specific contract, a Purchase Order is not received within two weeks after the issuance of a Contract Award Notification, it is the responsibility of the Contractor to request in writing that the appropriate Authorized User forward a Purchase Order. If, thereafter, a Purchase Order is not received within a reasonable period of time, the Contractor shall promptly notify the appropriate purchasing officer in Essex County. Failure to timely notify such officer may, in the discretion of the Purchasing Agent and without cost to the State, result in the canceling of such requirement by the Purchasing Agent with, at the Purchasing Agents discretion, a corresponding reduction in the contract quantity and price.

45. PRODUCT DELIVERY It shall be understood that with respect to contract deliveries, time is of the essence. Delivery must be made as ordered and in accordance with the terms of the contract. Unless otherwise specified in the Bid Specifications, delivery shall be made within thirty calendar days after receipt of a purchase order by the Contractor. The decision of the Purchasing Agent as to compliance with delivery terms shall be final. The burden of proof for delay in receipt of Purchase Order shall rest with the Contractor. In all instances of a potential or actual delay in delivery, the Contractor shall immediately notify the Purchasing Agent and the Authorized User, and confirm in writing the explanation of the delay, and take appropriate action to avoid any subsequent late deliveries. Any extension of the time for delivery must be requested in writing by the Contractor and approved in writing by the Purchasing Agent. Failure to meet such time schedule may be grounds for cancellation of the order or, in the Purchasing Agents discretion, the Contract.

The County must be notified twenty-four (24) hours in advance of delivery. The County reserves the right to deny acceptance of delivery if this notice is not given, at no cost to the County.

The successful bidder shall be responsible for delivery of items in good condition at point of destination, and shall file with the carrier all claims for breakage, imperfections, and other losses, which will be deducted from invoices. The Purchasing Agent will note for the benefit of successful bidder when packages are not received in good condition. Carton shall be labeled with purchase order or contract number, successful bidders name and general statement of contents. Failure to comply with this condition shall be considered sufficient reason for refusal to accept the goods.

Unless otherwise stated in the specifications, all items must be delivered into and placed at a point within the building as directed by the shipping instructions or the Purchasing Agent. The successful bidder will be required to furnish proof of delivery in every instance.

Unloading and placing of equipment and furniture is the responsibility of the successful bidder, and the County accepts no responsibility for unloading and placing of equipment Any costs incurred due to the failure of the successful bidder to comply with this requirement will be charged to him. No help for unloading will be provided by the County, and suppliers should notify their truckers accordingly.

All deliveries shall be accompanied by delivery tickets or packing slips. Ticket shall contain the following information for each item delivered:

Contract Number and/or Purchase Order Number Name of Article Item Number (if applicable) Quantity Name of the Successful Bidder

46. SATURDAY & HOLIDAY DELIVERIES Unless otherwise specified in the Bid Specifications or by an Authorized User, deliveries will not be scheduled for Saturdays, Sundays or legal holidays observed by the State of New York except of Product for daily consumption or where an emergency exists or the delivery is a replacement or is late, in which event the convenience of the Authorized User shall govern.

47. SHIPPING / RECEIPT OF PRODUCT

(a) **Packaging** Tangible Product shall be securely and properly packed for shipment, storage and stocking in appropriate, clearly labeled shipping containers and according to accepted commercial practice, without extra charge for packing materials, cases or other types of containers. The container shall become and remain the property of the receiving entity unless otherwise specified in the contract documents.

(b) Shipping Charges Contractor shall be responsible for insuring that the Bill of Lading states "charges prepaid" for all shipments. Unless otherwise stated in the Bid Specifications, all deliveries shall be deemed to be FOB Destination tailgate delivery at the dock of the Authorized User. Unless otherwise agreed, items purchased at a price F.O.B. Shipping point plus transportation charges are understood to not relieve the contractor from responsibility for safe and proper delivery notwithstanding the Authorized Users payment of transportation charges.

(c) **Receipt of Product** The Contractor shall be solely responsible for assuring that deliveries are made to personnel authorized to accept delivery on behalf of the Authorized User. Any losses resulting from the Contractors failure to deliver Product to authorized personnel shall be borne exclusively by the Contractor.

48. TITLE AND RISK OF LOSS Notwithstanding the form of shipment, title and risk of loss shall not pass from the Contractor to the Authorized User until the Products have been received, inspected and accepted by the receiving entity. Acceptance shall occur within a reasonable time or in accordance with such other defined acceptance period as may be specified in the Bid Specifications. Mere acknowledgment by Authorized User personnel of the delivery or receipt of goods (e.g. signed bill of lading) shall not be deemed or construed as acceptance of the Products received. Any delivery of Product which is substandard or does not comply with the Contract terms, may be rejected or accepted on an adjusted price basis, as determined by the Purchasing Agent.

49. RE-WEIGHING PRODUCT Deliveries are subject to re-weighing at the point of destination by the receiving entity. If shrinkage occurs which exceeds that normally allowable in the trade, the receiving

entity shall have the option to require delivery of the difference in quantity, or to reduce the payment accordingly.

50. PRODUCT SUBSTITUTION In the event a specified manufacturers Product listed in the Contractors Bid becomes unavailable or cannot be supplied by the Contractor for any reason (except as provided for in the Force Majeure Clause below) a Product deemed by the Purchasing Agent to be the equal or better of the specified commodity or service must be substituted by the Contractor at no additional cost or expense to the Authorized User. Unless otherwise specified, any substitution of Product prior to the Purchasing Agents approval may be cause for cancellation of contract.

51. REJECTED PRODUCT When Products are rejected, they must be removed by the Contractor from the premises of the receiving entity within ten days of notification of rejection by Authorized User. Upon rejection notification, risk of loss of rejected or non-conforming Product shall remain on Contractor. Rejected items not removed by the Contractor within ten days of notification shall be regarded as abandoned by the Contractor, and the Authorized User shall have the right to dispose of the items as its own property. The Contractor shall promptly reimburse the Authorized User for any and all costs and expenses incurred in storage or effecting removal or disposition.

52. INSTALLATION Where installation is required, Bidder shall be responsible for placing and installing the equipment in the required locations. All materials used in the installation shall be of good quality and shall be free from any and all defects which would mar the appearance of the equipment or render it structurally unsound. Installation includes the furnishing of any equipment, rigging and materials required to install or replace the Product in the proper location. The Contractor shall protect the site from damage for all its work and shall repair damages or injury of any kind caused by the Contractor, its employees, officers or agents. If any alteration, dismantling or excavation, etc. is required to effect installation, the Contractor shall thereafter promptly restore the structure or site to its original condition. Work shall be performed so as to cause the least inconvenience to the Authorized User(s) and with proper consideration for the rights of other contractors or workers. The Contractor shall promptly perform its work and shall coordinate its activities with those of other contractors. The Contractor shall promptly perform its work and shall coordinate its activities with those of other contractors. The Contractor shall clean up and remove all debris and rubbish from its work as required or directed. Upon completion of the work, the building and surrounding area of work shall be left clean and in a neat, unobstructed condition, and everything in satisfactory repair and order.

53. REPAIRED OR REPLACED PRODUCT / COMPONENTS Where the Contractor is required to repair, replace or substitute Product or components under the Contract, the repaired, replaced or substituted Product shall be subject to all terms and conditions for new Product set forth in the contract, including product warranties.

54. ON-SITE STORAGE Materials, equipment or supplies may be stored at the County/s or Authorized User's site at the Contractors sole risk and only with the approval of, as the case may be, the County or the Authorized User.

55. EMPLOYEES / **SUBCONTRACTORS** / **AGENTS** All employees, subcontractors or agents performing work under the contract must be trained technicians who meet or exceed the technical and training qualifications set forth in the Bid Specifications or the Bid, whichever is greater, and must comply with all rules and requirements of the Contract. The Purchasing Agent reserves the right to conduct a security background check or otherwise approve any employee or agent furnished by Contractor and to refuse access to or require replacement of any personnel for cause, including but not limited to, technical or training qualifications, quality of work or change in security status or non-compliance with Authorized Users security or other requirements. Such approval shall not relieve the Contractor of the obligation to perform all work in compliance with the contract terms. The Purchasing Agent reserves the right to reject and/or bar from the facility for cause any employee, subcontractor, or agents of the Contractor.

56. ASSIGNMENT / SUBCONTRACTORS The Contractor shall not assign, transfer, convey, sublet, or otherwise dispose of the contract or its right, title or interest therein, or its power to execute such contract to any other person, company, firm or corporation in performance of the contract, other than the assignment of the right to receive moneys due, without the prior written consent of Essex County. Prior to an assignment of the right to receive moneys becoming effective, Contractor shall file a written notice of such assignment simultaneously with Essex County and participating Authorized User(s).

The Purchasing Agent reserves the right to reject any proposed subcontractor, assignee or supplier for bona fide business reasons, which may include, but are not limited to: that the proposed transferee is on the Department of Labors list of companies with which New York State cannot do business; the Purchasing Agent determines that the company is not qualified; unsatisfactory contract performance or service has been previously provided; or attempts were not made to solicit minority and womens business enterprises (M/WBE) bidders for the subcontract.

57. PERFORMANCE / BID BOND Essex County reserves the right to require the Bidder/Contractor to furnish without additional cost, a performance, payment or bid bond or negotiable irrevocable letter of credit or other form of security for the faithful performance of the contract, whenever the Purchasing Agent in his/her sole discretion deems such bond or security to be in Essex County's best interest. Where required, such bond or other security shall be in the form prescribed by the Purchasing Agent.

58. STOP / SUSPENSION OF WORK

(a) **Stop Work Order** The Purchasing Agent reserves the right to stop the work covered by this contract at any time that the successful Contractor becomes unable or incapable of performing the work or meeting any requirements or qualifications set forth in the contract. In the event of such stopping, the Purchasing Agent shall have the right to arrange for the completion of the work in such manner as it may deem advisable and if the cost thereof exceeds the amount of the bid, the successful Contractor shall be liable for any such cost on account thereof.

(b) **Suspension of Work Order** The Purchasing Agent, in his/her sole discretion, reserves the right to suspend any or all activities under this contract, at anytime, in the best interests of the State or Issuing Entity. In the event of such suspension, the contractor will be given a formal written notice outlining the particulars of such suspension. Examples of the reason for such suspension include, but are not limited to, a budget freeze on County spending, declaration of emergency, or other such circumstances. Upon issuance of such suspension Order. Activity may resume at such time as the Purchasing Agent issues a formal written notice authorizing a resumption of work.

59. CANCELLATION A contract may be canceled by the Purchasing Agent, and/or an Authorized User may cancel its participation, license or service order under the contract, at the Contractors expense upon non-performance, or upon a determination that Contractor is non-responsive, or non-responsible.

60. FORCE MAJEURE The Contractor shall not be responsible for delay resulting from its failure to perform if neither the fault nor negligence of the Contractor, its officers, employees or agents contributed to such delay and the delay is due directly to acts of God, wars, acts of public enemies, strikes, fires or floods, or other similar cause beyond the control of the Contractor, or for any of the foregoing which affect subcontractors or suppliers and no alternate source of supply is available to the Contractor. In such event, Contractor shall notify the Purchasing Agent, by certified or registered mail, of the delay or potential delay and the cause(s) thereof either (a) within ten (10) calendar days after the cause which creates or will create the delay first arose if the Contractor could reasonably foresee that a delay could occur by reason thereof, or (b), if delay is not reasonably foreseeable, within five (5) calendar days after the date the Contractor first had reason to believe a delay could result. The foregoing shall constitute the Contractors sole remedy or excuse with respect to such delay. In the

event performance is suspended or delayed, in whole or in part, by reason of any of the aforesaid causes or occurrences and proper notification is given the Purchasing Agent, any performance so suspended or delayed shall be performed by the Contractor at no increased cost, promptly after such disabilities have ceased to exist unless it is determined in the sole discretion of the Purchasing Agent that the delay will significantly impair the value of the contract to the County or to Authorized Users, whereupon the Purchasing Agent may:

(a) Accept allocated performance or deliveries from the Contractor. The Contractor, however, hereby agrees to grant preferential treatment to County Agencies with respect to Product subjected to allocation; and/or

(b) Purchase from other sources (without recourse to and by the Contractor for the costs and expenses thereof) to replace all or part of the Products which are the subject of the delay, which purchases may be deducted from the contract quantity; or

(c) Terminate the contract or the portion thereof which is subject to delivery delays, and thereby discharge any unexecuted portion of the contract or the relative part thereof.

61. CONTRACT BILLINGS Contractor shall provide complete and accurate billing invoices to each Authorized User in order to receive payment. Billings for Agencies must contain all information required by the County Treasurer and/or Auditor. The County Treasurer shall render payment for Agency purchases, and such payment shall be made in accordance with ordinary County procedures and practices. Payment of contract purchases made by Authorized Users other than Agencies shall be billed directly by Contractor on invoices/vouchers, together with complete and accurate supporting documentation as required by the Authorized User.

Submission of an invoice and payment thereof shall not preclude the Purchasing Agent from reimbursement or demanding a price adjustment in any case where the Product delivered is found to deviate from the terms and conditions of the bid and award documents.

62. DEFAULT - **AUTHORIZED USER** An Authorized Users breach shall not be deemed a breach of the centralized contract. In the event a participating Authorized User fails to make payment to the Contractor for Products delivered, accepted and properly invoiced, within 60 days of such delivery and acceptance, the Contractor may, upon 10 days advance written notice to both the Purchasing Agent and the Authorized Users purchasing official, suspend additional shipments of Product or provision of services to such entity until such time as reasonable arrangements have been made and assurances given by such entity for current and future contract payments.

Notwithstanding the foregoing, the Contractor shall, at least 10 days prior to declaring a breach of contract by any Authorized User, by certified or registered mail, notify both the Purchasing Agent and the purchasing official of the breaching Authorized User of the specific facts, circumstances and grounds upon which a breach will be declared. It is understood, however, that if the Contractors basis for declaring a breach is insufficient, the Contractors declaration of breach and failure to service an Authorized User shall constitute a breach of its contract and the County or Authorized User may thereafter utilize any remedy available at law or equity.

63. INTEREST ON LATE PAYMENTS

(a) **County Agencies** The payment of interest on certain payments due and owed by a County agency may be made in accordance with Section 3-a of the *General Municipal Law* at the rate of three percent (3%) per annum.

(b) By Non-County Agencies The terms of Article 11-A apply only to procurements by and the consequent payment obligations of the County. Neither expressly nor by any implication is the County responsible for payments on any purchases made by a Non-County Agency

Authorized User.

(c) By Contractor Should the Contractor be liable for any payments to the County hereunder, interest, late payment charges and collection fee charges will be determined and assessed pursuant to Section 18 of the *State Finance Law to* the same extent as though the contract was with the State of New York rather than the County.

64. REMEDIES FOR BREACH It is understood and agreed that all rights and remedies afforded below shall be in addition to all remedies or actions otherwise authorized or permitted by law:

(a) **Cover / Substitute Performance** Upon the failure of the Contractor to properly perform within the time specified, failure to provide acceptable service, to make immediate replacement of rejected Product when so requested, or upon the revocation of the Contract by the Purchasing Agent for cause, or upon repudiation of the contract by the Contractor, the Purchasing Agent may, with or without formally bidding same:

i. Purchase from other sources to replace the Product rejected, revoked, not timely delivered or repudiated; or

ii. If after making reasonable attempts, under the circumstances then existing, to timely provide acceptable service or acquire replacement product of equal or comparable quality, the Purchasing Agent is unsuccessful, the Purchasing Agent may acquire acceptable service or replacement product of lesser or greater quality.

Such purchases may, in the discretion of the Purchasing Agent, be deducted from the contract quantity.

(b) Withhold Payment In any case where a question of non-performance by Contractor arises, payment may be withheld in whole or in part at the discretion of the Purchasing Agent. Should the amount withheld be finally paid, a cash discount originally offered may be taken as if no delay in payment had occurred.

(c) Reimbursement of Costs Incurred The Contractor agrees to reimburse the County and/or Authorized User promptly for any and all additional costs and expenses incurred for acquiring acceptable services, and/or replacement Product. Should the cost of cover be less than the contract price, the Contractor shall have no claim to the difference. The Contractor covenants and agrees that in the event suit is successfully prosecuted for any default on the part of the Contractor, all costs and expenses expended or incurred by the County or Authorized User in connection therewith, including reasonable attorneys fees, shall be paid by the Contractor.

Where the Contractor fails to timely deliver pursuant to the guaranteed delivery terms of the contract, the Purchasing Agent may authorize an ordering Authorized User to rent substitute equipment temporarily. Any sums expended for such rental shall, upon demand, be reimbursed to the Authorized User promptly by the Contractor or deducted by the Authorized User from payments due or to become due the Contractor on the same or another transaction.

(d) **Deduction / Credit** Sums due as a result of these remedies may be deducted or offset by the County or Authorized User from payments due, or to become due, the Contractor on the same or another transaction. If no deduction or only a partial deduction is made in such fashion the Contractor shall pay to the County or Authorized User the amount of such claim or portion of the claim still outstanding, on demand. The Purchasing Agent reserves the right to determine the disposition of any rebates, settlements, restitution, liquidated damages, etc. which arise from the administration of the contract. **65. ASSIGNMENT OF CLAIM** Contractor hereby assigns to the County any and all its claims for overcharges associated with this contract which may arise under the antitrust laws of the United States, 15 U.S.C. Section 1, *et seq.* and the antitrust laws of the State of New York, *General Business Law* Section 340, *et seq.*

66. TOXIC SUBSTANCES Each Contractor furnishing a toxic substance as defined by Section 875 of the *Labor Law,* shall provide such Authorized User with not less than two copies of a material safety data sheet, which sheet shall include for each such substance the information outlined in Section 876 of the *Labor Law.*

Before any chemical product is used or applied on or in any building, a copy of the product label and Material Safety Data Sheet must be provided to and approved by the user agency representative.

67. INDEPENDENT CONTRACTOR It is understood and agreed that the legal status of the Contractor, its agents, officers and employees under this Contract is that of an independent contractor, and in no manner shall they be deemed employees of the County or Authorized User, and therefore are not entitled to any of the benefits associated with such employment. The Contractor agrees, during the term of this contract, to maintain at Contractors expense those benefits to which its employees would otherwise be entitled by law, including health benefits, and all necessary insurance for its employees, including workers compensation, disability and unemployment insurance, and to provide the Authorized User with certification of such insurance upon request. The Contractor remains responsible for all applicable federal, state and local taxes, and all FICA contributions.

68. SECURITY / CONFIDENTIALITY Contractor warrants, covenants and represents that it will comply fully with all security procedures of the County and any Authorized User(s) in performance of the Contract.

Contractor further warrants, covenants and represents that any confidential information obtained by Contractor, its agents, subcontractors, officers, or employees in the course of performing its obligations, including without limitation, security procedures, business operations information, or commercial proprietary information in the possession of the County or any Authorized User hereunder or received from another third party, will not be divulged to any third parties. Contractor shall not be required to keep confidential any such confidential material which is publicly available through no fault of Contractor, independently developed by Contractor without reliance on confidential information of the County or Authorized User, or otherwise obtained under the Freedom of Information Act or other applicable New York State Laws and Regulations. This warranty shall survive termination of this Contract for a period of five (5) years. Contractor further agrees to take appropriate steps to instruct its personnel, agents, officers and any subcontractors regarding the obligations arising under this clause to insure such confidentiality.

69. COOPERATION WITH THIRD PARTIES The Contractor shall be responsible for fully cooperating with any third party agents, including but not limited to subcontractors of the Authorized User, relating to delivery of product or coordination of services.

70. CONTRACT TERM - EXTENSION In addition to any stated renewal periods in the Contract, any contract or unit portion thereof let by the Purchasing Agent may be extended by the Purchasing Agent for an additional period(s) of up to one year (cumulatively) with the written concurrence of the Contractor.

71. WARRANTIES & GUARANTEES Contractor hereby warrants and guarantees:

(a) To fully defend, indemnify and save harmless the County, Authorized Users and their respective officers, agents and employees from suits, actions, damages and costs of every name and description arising out of the acts or omissions of Contractor, its officers, employees,

subcontractors, partners, or agents, in any performance under this contract including: i) personal injury, damage to real or personal tangible or intangible property, without limitation; ii) negligence, either active or passive, without limitation, or iii) infringement of any law or of a United States Letter Patent with respect to the Products furnished, or of any copyright, trademark, trade secret or other third party intellectual proprietary rights, without limitation, provided that the County or Authorized User shall give Contractor: (a) prompt written notice of any action, claim or threat of infringement suit, or other suit, promptness of which shall be established by Authorized User upon the furnishing of written notice and verified receipt, (b) the opportunity to take over, settle or defend such action, claim or suit at Bidders sole expense, and (c) assistance in the defense of any such action at the expense of Contractor. Where a dispute or claim arises relative to a real or anticipated infringement, the County or Authorized User may require Bidder/Contractor, at its sole expense, to submit such information and documentation, including formal patent attorney opinions, as the Purchasing Agent shall require.

(b) Contractor warrants full ownership, clear title free of all liens, or perpetual license rights to any Products transferred to Authorized User under this Contract, and Contractor shall be solely liable for any costs of acquisition associated therewith without limitation. Contractor warrants that Authorized User will have undisturbed, peaceful use of the Products, including, without limitation, software, object or source codes, custom programming or third party intellectual property rights incorporated or embedded therein, and training modules or Documentation. Contractor fully indemnifies the County and Authorized User for any loss, damages or actions arising from a breach of said warranty without limitation.

(c) To pay, at its sole expense, all applicable permits, licenses, tariffs, tolls and fees and give all notices and comply with all laws, ordinances, rules and regulations of any governmental entity in conjunction with the performance of obligations under the contract.

Unless recycled or recovered materials are available in accordance with the "Recycled & (d) Recovered Materials" clause, Product offered shall be standard new equipment, current model of regular stock product with all parts regularly used with the type of equipment offered; and no attachment or part has been substituted or applied contrary to the manufacturers recommendations and standard practice. Every Product, including any substituted or replacement unit delivered, must be guaranteed against faulty material and workmanship for a period of one year from and after the date the unit is accepted unless otherwise specified by the County or Authorized User. Notwithstanding the foregoing, when the manufacturers standard guarantee for Product or any component thereof exceeds one year, the longer guarantee period shall apply to such unit or component thereof delivered under this contract. Furthermore, the Contractor agrees to extend its warranty period with regard to any Product delivered by the cumulative periods of time, after notification, during which the Product requires servicing or replacement (down time) or is in the possession of the Contractor, its agents, officers or employees. If during the regular or extended warranty periods faults develop, the Contractor shall promptly repair or, upon demand, replace the defective unit or component part affected. All costs for labor and material and transportation incurred to repair or replace defective goods during the warranty periods shall be borne solely by the Contractor, and the County or Authorized User shall in no event be liable or responsible therefore. This warranty shall survive any termination of the contract in accordance with the warranty term.

(e) Where the provision of services requires the replacement or repair of Product, any replaced or repaired component, part or Product shall be new and shall, if available, be replaced by the original manufacturers component, part or Product. All proposed substitutes for the original manufacturers installed Product must be approved by the Authorized User before installation. The Product or part shall be equal to or of better quality than the original Product being replaced. Any Product replaced by the Contractor under the contract shall be guaranteed for one (1) year from the date of replacement and replaced at no cost to the Authorized User if found defective during that time.

(f) Prior to award and during the Contract term and any renewals thereof, Contractor must establish to the satisfaction of the Purchasing Agent that it meets or exceeds all requirements of the bid and any applicable laws, including but not limited to, permits, insurance coverage, licensing, proof of coverage for workman's compensation, and shall provide such proof as required by the Purchasing Agent. Failure to do so may constitute grounds for the County to cancel or suspend this contract, in whole or in part, or to take any other action deemed necessary by the Purchasing Agent.

The Contractor further warrants and guarantees:

i. His/Her/Its products against defective material or workmanship and to repair or replace any damages or marring occasioned in transit.

ii. To furnish adequate protection from damage for all work and repair damages of any kind for which he or his workmen are responsible, to the building or equipment, to his own work, or to the work of other successful bidders.

iii. To carry adequate insurance to protect the County from loss in case of accident, fire, theft, etc.

iv. That all deliveries will be equal to the accepted bid sample.

v. That the equipment delivered is standard, new, latest model of regular stock product or as required by the specifications; also that no attachment or part has been substituted or applied contrary to manufacturer's recommendations and standard practice. Every unit delivered must be guaranteed against faulty material and workmanship for a period of at least one year from date of delivery. If during this period such faults develop, the successful bidder agrees to replace the unit or the part affected without cost to the County. Any merchandise provided under the contract which is or becomes defective during the guarantee period shall be replaced by the successful bidder free of charge with the specific understanding that all replacements shall carry the same guarantee as the original equipment The successful bidder shall make any such replacement immediately upon receiving notice from the County.

vi. That all manufacturers product warranties and guarantees shall be furnished to the County, and that the County's rights thereunder shall not be in any way impaired or limited.

GENERAL

72. APPLICABILITY In addition to the terms contained in **Part I** (*General - All Procurements*), the terms contained in **Part II** (*Software & Technology Procurements*) apply to software and technology procurements.

73. DEFINITIONS - Part II

DOCUMENTATION The complete set of manuals (e.g. user, installation, instruction or diagnostic manuals) in either hard or electronic copy, necessary to enable an Authorized User to properly test, install, operate and enjoy full use of the Product in accordance with the license rights.

ENTERPRISE The business operations in the United States of a Licensee or Enterprise Participant, without regard to geographic location where such operations are performed or the entity actually performing such operations on behalf of Licensee or Enterprise Participant. For the County of New York, "business operations" shall be defined as the business operations of all Agencies, as defined in Part I.

ENTERPRISE LICENSE A contract which grants Enterprise Participants unlimited license rights to access, use and/or execute Product within the Enterprise.

ENTERPRISE PARTICIPANTS One or more Licensees, as defined in Part I, participating in an Enterprise License.

LICENSE EFFECTIVE DATE The date Product is delivered to an Authorized User. Where a License involves Licensees right to copy a previously licensed and delivered Master Copy of a Program, the license effective date for additional copies shall be deemed to be the date on which the Purchase Order is executed.

LOGICAL PARTITION A subset of the processing power within a CEC which has been divided through hardware and/or software means (i.e. *Processor Resources/System Manager* [PR/SM]) so as to limit the total processing power which is accessible by an operating system image by individual users or individual software products.

OBJECT CODE The machine executable code that can be directly executed by a computers central processing unit(s).

PHYSICAL PARTITION A subset of the processing power within a CEC which has been derived through hardware means so as to limit the total processing power accessible by an operating system image by individual users or individual Products.

SITE The location (street address) where Product will be executed.

SOURCE CODE The programming statements or instructions written and expressed in any language understandable by a human being skilled in the art which are translated by a language compiler to produce executable machine Object Code.

TERMS OF LICENSE The terms and conditions set forth in the Contract which are in effect and applicable to a Product order at the time of order placement, and only such additional terms as are consistent therewith or more advantageous to the Authorized User as are set forth on the individual Product order form executed and approved by both Authorized User and Contractor.

VIRUS Any computer code, whether or not written or conceived by Contractor, which disrupts, disables, harms, or otherwise impedes in any manner the operation of the Product, or any other associated software, firmware, hardware, or computer system (such as local area or wide-area networks), including aesthetic disruptions or distortions, but does not include security keys or other such devices installed by Product manufacturer.

TERMS AND CONDITIONS

74. SOFTWARE LICENSE GRANT Unless otherwise set forth in the Bid Specifications or Contract, where Product is acquired on a licensed based the following shall constitute the license grant:

(a) License Scope Licensee is granted a non-exclusive, perpetual license to use, execute, reproduce, display, perform, or merge the Product with other product within its business enterprise in the United States. Licensee shall ha\~e the right to use and distribute modifications or customizations of the Product to and for use by any Authorized Users otherwise licensed to use the product, provided that any modifications, however extensive, shall not diminish manufacturers proprietary title or interest. No license, right or interest in any trademark, trade name, or service mark is granted hereunder.

(b) License Term The license term shall commence upon the License Effective Date. Where the terms of license permit licensing on a non-perpetual basis, the license term stated in

the Contract shall be extended by the time periods allowed for testing and acceptance.

(c) Licensed Documentation Contractor hereby grants to Licensee a perpetual license right to make, reproduce (including downloading electronic copies of the Product) and distribute, either electronically or otherwise, copies of Product Documentation as necessary to enjoy full use of the Product. If commercially available, Licensee shall have the option to require the Contractor to deliver, at Contractors expense: a) One (1) hard copy and One (1) Master Electronic Copy of the Documentation in diskette or CD-ROM format; or b) hard copies of the Product Documentation by type of license in the following amounts, unless otherwise mutually agreed:

- Individual/Named User License 1 copy per License
- Concurrent Users 8 copies per site
- Processing Capacity 8 copies per site

(d) **Product Use** Product may be accessed, used, executed, reproduced, displayed, performed by Licensee to service all Authorized Users of the machine on which Product is installed, up to the capacity measured by the applicable licensing unit stated in the terms of license (i.e. payroll size, number of employees, CPU, MIPS, MSU, concurrent user, workstation).

(e) Permitted License Transfers As Licensee's business operations may be altered, expanded or diminished, licenses granted hereunder may be transferred or combined for use at an alternative or consolidated Authorized User site not originally specified in the license, including transfers between Agencies ("permitted license transfers"). Licensee(s) do not have to obtain the approval of Contractor for permitted license transfers, but must give thirty (30) days prior written notice to Contractor of such move(s) and certify in writing that the Product is not in use at the prior site. There shall be no additional license or other transfer fees due Contractor, provided that: i) the maximum capacity of the consolidated machine is equal to the combined individual license capacity of all licenses running at the consolidated or transferred site. (e.g., named users, seats, or MIPS); and ii) that, if the maximum capacity of the consolidated machine is greater than the individual license capacity being transferred, a logical or physical partition or other means of restricting access will be maintained within the computer system so as to restrict use and access to the Product to that unit of licensed capacity solely dedicated to beneficial use for Licensee.

(f) Restricted Use By Outsourcers / Facilities Management, Service Bureaus / or Other Third Parties Outsourcers, facilities management or service bureaus retained by Licensee shall have the right to use the Product to maintain Licensee's business operations, including data processing, for the time period that they are engaged in such activities, provided that: 1) Licensee gives notice to Contractor of such party, site of intended use of the Product, and means of access; and 2) such party has executed, or agrees to execute, the Product manufacturers standard nondisclosure or restricted use agreement which executed agreement shall be accepted by the Contractor ("NonDisclosure Agreement"); and 3) if such party is engaged in the business of facility management, outsourcing, service bureau or other services, such third party will maintain a logical or physical partition within its computer system so as to restrict use and access to the program to that portion solely dedicated to beneficial use for Licensee. In no event shall Licensee assume any liability for third partys compliance with the terms of the Non-Disclosure Agreement, nor shall the Non-Disclosure Agreement create or impose any liabilities on the County or Licensee.

Any third party with whom a Licensee has a relationship for a state function or business operation, shall have the temporary right to use Product (using, for example, but not limited to, JAVA Applets), provided that such use shall be limited to the time period during which the third party is using the Product for the stated function or business activity.

(g) Archival Back-Up and Disaster Recovery Licensee may use and copy the Product and related Documentation in connection with: 1) reproducing a reasonable number of copies of the Product for archival backup and disaster recovery procedures in the event of destruction or corruption of the Product or disasters or emergencies which require Licensee to restore backup(s) or to initiate disaster recovery procedures for its platform or operating systems; 2) reproducing a reasonable number of copies of the Product and related documentation for cold site storage. "Cold Site" storage shall be defined as a restorable back-up copy of the Product not to be installed until and alter the declaration by the Licensee of a disaster; 3) reproducing a back-up copy of the Product to run for a reasonable period of time in conjunction with a documented consolidation or transfer otherwise allowed under paragraph (F) above. "Disaster Recovery" shall be defined as the installation and storage of Product in ready-to-execute, backup computer systems prior to disaster or breakdown which is not used for active production or development.

(h) **Confidentiality Restrictions** The Product is a trade secret and proprietary product. Licensee and its employees will keep the Product strictly confidential, and Licensee will not disclose or otherwise distribute or reproduce any Product to anyone other than as authorized under the terms of license. Licensee will not remove or destroy any proprietary markings of Contractor.

(i) **Restricted Use by Licensee** Except as expressly authorized by the terms of license, Licensee shall not:

a. Copy the Product;

b. Cause or permit reverse compilation or reverse assembly of all or any portion of the Product;

c. Distribute, disclose, market, rent, lease or transfer to any third party any portion of the Product or the Documentation, or use the Product or Documentation in any service bureau arrangement;

d. Disclose the results of Product performance benchmarks to any third party who is not an Authorized User without prior notice to Contractor;

e. Export the Licensed Software in violation of any U.S. Department of Commerce export administration regulations.

75. ENTERPRISE LICENSE OPTION FOR SOFTWARE Multiple Authorized Users may license any Product offered under the Contract on behalf of their collective business operations. An Enterprise License shall incorporate the terms set forth in this Part II and the pricing set forth in the Contract, and additionally the following terms:

(a) Enterprise – Defined Any Authorized User may be an Enterprise Participant. Enterprise Participants will be enumerated in the Enterprise License, including: i) contact name, ship to and main billing address of each Enterprise Participant, ii) street address of the included End User sites of each Enterprise Participant. The originally defined Enterprise may be modified at any time thereafter, including deletion or addition of Enterprise Participants, sites ownership to" locations, provided that Contractor is given written notice and that any additional capacity required by such addition is licensed in accordance with the Enterprise License terms.

(b) **Product Use** Product licensed under this Enterprise Option shall be licensed with the rights set forth in this Part II, without reference to a specific designated system or Licensee, up to the maximum licensed capacity. Product may be used and freely transferable anywhere

within the defined Enterprise, including higher or lower performance machines, and Enterprise Participants will not incur an increase in license, support or other charges provided that the aggregate utilization of the Product does not exceed the aggregate Enterprise Licensed capacity.

(c) Submission of Orders, Billing and Usage Reporting An Enterprise may be established for order placement and billing as either a "single" or "multiple" point of contact, at Licensees option. Where designated as a "single", one Enterprise Participant shall be designated as the lead agency and central point for submission of Purchase Orders, usage reporting and billing. Where designated as "multiple" point of contact, each designated Enterprise Participant shall be responsible for submission of Purchase Orders, reporting and billing with regard to its use of Enterprise Licensed Product. For either single or multiple point of contact Enterprises, a) Contractor agrees to hold each Enterprise Participant solely responsible for payment and performance; and b) Contractor shall be responsible for furnishing an annual report to each designated point of contact summarizing overall Enterprise License activity for the preceding twelve months.

(d) **Shipping** / **Delivery** Contractor shall be responsible for delivery of Master Copies of Enterprise Licensed Product and documentation to Enterprise Participants. Within either "Single" or "Multiple" Enterprise Licenses, shipping and delivery of Master Copies of Product and Documentation shall be the responsibility of Contractor to each "ship to" location specified on the Purchase Order(s). Distribution and installation of Enterprise Licensed Product to End Users at a site shall be the responsibility of the Licensee.

(e) Enterprise Operating Systems Unless otherwise specified by the parties, up to ten (10) hardware/operating system combinations for Product shall be included at no additional charge. The initial ten hardware/operating systems may be specified at any time within five (5) years of the Enterprise License effective date. Additional hardware/operating systems beyond the initial ten (10) may be specified at anytime by the Enterprise, however if additional copies of Product are required for hardware/operating systems beyond the initial ten, the cost for such systems will be as mutually agreed between the parties.

(f) **Product Acceptance** Each Enterprise Participant shall have a right of acceptance, as set forth above in this Part II, only for the first copy of Product for its site(s).

(g) Enterprise Fees Enterprise License Fees shall be set forth in the Contract. Notwithstanding the foregoing, the Product license fees for additional copies or units of capacity for Enterprise licensed Product shall not increase by more than six percent (6%) annually each year during the Enterprise License term. Contractor may offer additional discounts/incentives for Enterprise Participants as may be mutually agreed between the parties. Enterprise Participants shall be entitled to aggregate the volume of all Enterprise Participants for purposes of establishing any applicable discounts under the Contract, and Enterprise Licensed Volume shall be aggregated with volume of non-Enterprise Licensed Product otherwise purchased under the centralized Contract. Upon termination of the Enterprise, Enterprise Participants have the right to acquire additional capacity or users at the Enterprise License price for twelve months after the termination of the Enterprise License.

(h) **Technical Support** Unless otherwise mutually agreed, technical support is optional and may be elected individually by Product by each Enterprise Participant. Where an Enterprise Participant is under a current maintenance or technical support contract, such Enterprise Participant shall be entitled to credit any support paid covering any portion of the Enterprise License Term to the fees due under the Enterprise license.

Enterprise Participants shall have the right to partially or wholly de-support a subset of unused Enterprise licensed capacity upon written notice to Contractor at the end of any then -

current technical support term without penalty or charge. The capacity for a Program license which has been de-supported must remain inactive and may not be used within the Enterprise unless technical support for such capacity has been reinstated. In the event of de-support, Contractor reserves the right to reasonably determine compatibility of future releases or new programs prior to shipment.

(i) Merger of Two or More Enterprises Two or more Enterprises may be merged to form a larger Enterprise for the purpose of sharing and exchanging data at no additional license fee provided that participants give Contractor notice of such merger and that the combined capacity does not exceed the maximum capacity of the individual licenses.

(j) "Nested" Enterprises Individual Enterprise License participant(s) may license additional capacity or products for the specific use of a subset of the larger enterprise. Said participant(s) must certify in writing to Contractor that such use is only by the enumerated subset of participants.

(k) **Default** A default by any Enterprise Participant shall entitle the Contractor to the remedies against such participant under the Contract, but shall not be deemed a default by the remaining non-defaulting Enterprise Participants.

76. PRODUCT ACCEPTANCE Unless otherwise provided in the Bid Specifications, the County and/or Authorized User(s) shall have sixty (60) days from delivery to accept Product. Failure to provide notice of acceptance or rejection by the end of the period provided for under this clause would constitute acceptance by the County or Authorized User(s) as of the expiration of that period.

Unless otherwise provided in the Bid Specifications, The County or Authorized User shall have the option to run acceptance testing on the Product prior to acceptance, such tests and data sets to be specified by User. Where using its own data or tests, The County or Authorized User must have the tests or representative set of data available upon delivery. This demonstration will take the form of a documented installation test, capable of observation by the County or Authorized User, and shall be made part of the Contractors standard documentation. The test data shall remain accessible to the County or Authorized User after completion of the test.

In the event that the documented installation test cannot be completed successfully within sixty (60) days from delivery, and the Contractor or Product is responsible for the delay, The County or Authorized User shall have the option to cancel the order in whole or in part, or to extend the testing period for another sixty (60) day increment. The County or Authorized User shall notify Contractor of acceptance upon successful completion of the documented installation test. Such cancellation shall not give rise to any cause of action against the County or Authorized User for damages, loss of profits, expenses, or other remuneration of any kind.

Costs and liabilities associated with a failure of the Product to perform in accordance with the functionality tests or product specifications during the acceptance period shall be borne fully by Contractor to the extent that said costs or liabilities shall not have been caused by negligent or willful acts or omissions of the The County or Authorized Users agents or employees. Said costs shall be limited to fees paid to Contractor, if any, or any liability for costs incurred at the direction or recommendation of Contractor.

77. AUDIT OF LICENSED PRODUCT USAGE Contractor shall have the right to periodically audit, at its expense, use of licensed Product at any site where a copy of the Product resides provided that: i) Contractor gives Licensee or Enterprise Participants at least thirty (30) days advance notice, ii) such audit is conducted during such party's normal business hours iii) each Licensee or Enterprise Participant is entitled to designate a representative who shall be entitled to participant and simultaneously review all information obtained by the audit, and shall be entitled to copies of all reports, data or information obtained by the Contractor; and iv) if the audit shows that such party is not in

compliance such party shall be liable for the unlicensed capacity and shall be required to purchase the additional units or rights necessary to bring it into compliance.

78. OWNERSHIP / TITLE TO CUSTOM PRODUCTS OR PROGRAMMING Where contract deliverables include custom products or programming, title, rlghts and interests to such Product(s) shall be determined as follows:

(a) Definitions

Product For purposes of this section, the term "Product" shall have the meaning set forth in Part I of these *General Specifications*, which includes, but is not limited to: software applications or programming, programming tools, documentation ~including user or training manuals), modules, interfaces, templates, and other elements such as utilities, subroutines, algorithms, formulas, source code, object code, reports, drawings, or data.

"Existing Product" is defined as any proprietary material(s) existing or developed independently and not at the expense of Licensee.

"**Custom Product**" is defined as any material(s), exclusive of Existing Product, created, prepared, written, compiled or developed by Contractor, or anyone acting on his behalf for The County or Authorized User pursuant to the Contract.

(b) Contractor or Third Party Manufacturers Title to Existing Product Title to Existing Product(s) does not transfer. With respect to such Existing Product(s), whether embedded in or operating in conjunction with Custom Product, Contractor warrants: a) all right, title and interest in Contractors Existing Product(s); or b) all license rights, title and interest in third party Existing Product(s), which include the right to grant to The County or Authorized User an irrevocable, non-exclusive, worldwide, paid-up license to use, execute, reproduce, display, perform, and distribute Existing Product(s). Contractor hereby grants a irrevocable, non-exclusive, worldwide, paid-up license to use, execute, reproduce, display, perform, and distribute Existing Product(s) embedded in or transferred for use in conjunction with Custom Product(s). The Licensee agrees to reproduce the copyright notice and any other legend of ownership on any copies made under the license granted under this paragraph prior to distribution or use.

(c) Title to Custom Product Title to Custom Product(s), excluding Existing Product, shall be deemed the sole and exclusive property of the County or Authorized User, who shall have all right, title and interest (including ownership and copyrights). For the purposes of the federal copyright law, execution of this contract shall constitute an assignment of all right, title and interest in the Custom Product(s) by Contractor to the County or Authorized User. The County or Authorized User, in its sole discretion, reserves the right to sell Custom Product or to license them on an exclusive or non-exclusive basis to Contractor or other Third Parties. Contractor hereby agrees to take all necessary and appropriate steps to ensure that Custom Product is protected against unauthorized use, execution, reproduction, display, performance, or distribution by or through Contractor, its partners or agents. Notwithstanding this reservation of title, Contractor shall not be precluded from using the related or underlying general knowledge, skills and experience developed in the course of providing the Custom Product in the course of Contractor's business.

(d) Acquisitions Funded By Tax Exempt Financing In addition to the foregoing rights under a, b and c, the sale or licensing of Custom Product or rights therein shall not occur until such Product or rights are or become useable, and shall be at fair market value which shall be determined at the time of sale or licensing. Any such transfer shall be pursuant to a separate written agreement. If the Contract deliverables are to be funded through tax exempt financing, the County or Authorized User may assign to a Trustee or other entity for security purposes County or Authorized Users ownership and license rights in Custom and Existing Products. Contractor will cooperate with the County or Authorized User to execute such other documents as may be appropriate to achieve the objectives of this paragraph.

(e) Other Acquisitions (Not Funded by Tax Exempt Financing) In addition to the rights set forth above (paragraphs "a", "b" and "c"), the County or Authorized User reserves the right to transfer any or all rights to Custom Materials on an exclusive or non-exclusive basis. Where such transfer (sale or licensing) is provided in the Bid Specifications, Contractor shall include a purchase price for such rights in its bid. Such price shall be offered as a deduction from Contractor's overall Bid or Project Bid price, and shall be weighted as set forth in the bid evaluation criteria, if any. Such rights shall transfer to the successful Bidder/Contractor upon successful completion and acceptance by the County or Authorized User of all contract deliverables. Contractor will cooperate with the County or Authorized User to execute such other documents as may be appropriate to achieve the objectives of this paragraph.

79. PROOF OF LICENSE The Contractor must provide to each Licensee who places a Product order either: a) the Product manufacturer's certified License Confirmation Certificates in the name of each such Licensee; or b) a written confirmation from the Product manufacturer accepting Contractors Product invoice as proof of license. Bidder or Contractor shall submit a sample manufacturers certificate, or alternatively such written confirmation from the manufacturer, with the Bid or Contract. Such certificates must be in a form acceptable to the Licensee.

80. PRODUCT VERSION Product orders shall be deemed to reference Manufacturers most recently released model or version of the Product at time of delivery, unless an earlier model or version is specifically requested in writing by the County or Authorized User and Contractor is willing to provide such version.

81. MIGRATION TO CENTRALIZED CONTRACT The County or Authorized User may obtain additional Product authorized under this contract, (e.g., licensed capacity upgrades, new releases, documentation, maintenance, consulting or training) whether or not Product was initially obtained independently of this contract. The County or Authorized Users election to obtain additional Product shall not operate to diminish, alter or extinguish rights previously granted.

82. NOTICE OF PRODUCT DISCONTINUANCE In the event that a Product manufacturer proposes to discontinue maintenance or support for Product, Contractor shall (1) notify the County and each Authorized User in writing of the intended discontinuance, and (2) continue to provide maintenance and support for the greater of: a) the best terms offered by Contractor to any other customer, or b) not less than eighteen (18) months from the date of notice, and (3) at The County or Authorized Users option, either a) provided that the County or Authorized User is under maintenance, provide the County or Authorized User with equivalent functionality at no additional charge, or b) provide County or Authorized User with the source code for Licensed Product at no additional charge to enable it to continue use and maintenance of the Product.

83. REINSTATEMENT OF MAINTENANCE The County or Authorized User shall not be required to purchase maintenance for use of Product, and may discontinue maintenance at the end of any current maintenance term upon written notice to Contractor. In the event that The County or Authorized User discontinues maintenance of licensed Product, it may, at any time thereafter, reinstate maintenance for Product without any additional penalties or other charges, by paying Contractor at rates which would have been due under the contract for the period of time that such maintenance had lapsed, or for twelve months, whichever is less.

84. NO HARDSTOP / PASSIVE LICENSE MONITORING Contractor hereby represents, warrants and covenants that the Product and all Upgrades do not and will not contain any computer code that would disable the Product or Upgrades or impair in any way its operation based on the elapsing of a period of time, exceeding an authorized number of copies, advancement to a particular date or other numeral, or other similar self-destruct mechanisms (sometimes referred to as "time bombs", "time locks", or "drop dead" devices) or that would permit Contractor to access the Product to cause such disablement or

impairment (sometimes referred to as a "trap door" device). Contractor agrees that in the event of a breach or alleged breach of this provision that The County or Authorized User shall not have an adequate remedy at law, including monetary damages, and that The County or Authorized User shall consequently be entitled to seek a temporary restraining order, injunction, or other form of equitable relief against the continuance of such breach, in addition to any and all remedies to which The County or Authorized User shall be entitled.

85. ADDITIONAL WARRANTIES / GUARANTEES Where Contractor or Product manufacturer offers additional or more advantageous warranties than set forth herein, Contractor shall offer or pass through any additional or more advantageous warranties to The County or Authorized Users. In addition to the 'Warranties/Guarantees' set forth in Part I, Contractor makes the following warranties.

(a) **Product Performance Warranty** Contractor represents and warrants that the Products delivered pursuant to this contract conform to the manufacturers specifications, performance standards, and documentation and that the documentation fully describes the proper procedure for using the Products in an efficient manner. Contractor does not warrant that software is error-free.

In the event that Contractor does not remedy a substantial breach of this warranty within the cure period, Licensee shall also have the right to terminate any payments due Contractor, with a refund of the any fees prospectively paid from the date of breach.

(b) Year 2000 Warranty For all procurements of Product, Contractor must furnish a warranty statement in accordance with the NYS Standard Year 2000 Warranty Compliance Statement set forth in Part I at the time of bid for agency specific contracts or product order for centralized contracts.

(c) Virus Warranty Contractor represents and warrants that Licensed Software contains no known viruses. Bidder is not responsible for viruses introduced at Licensees site. For purposes of this provision, "Virus" shall have the meaning set forth in Part II, "Definitions".

A breach of any of the foregoing shall be deemed a material breach of the Contract or any License granted thereunder. The defaulting party shall be given written notice of a warranty breach under this section and shall have a thirty (30) day period to cure such breach.

86. INDEMINIFICATION THE WARRANTIES SET FORTH IN THESE *GENERAL SPECIFICATIONS* (PARTS I and II) ARE IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTIBILITY AND FITNESS FOR A PARTICULAR PURPOSE.

Contractor shall defend, indemnify and save harmless the County and Authorized Users from suits, actions, claims, damages and costs arising under or connected to Contractors actions, and except where express loss liabilities set forth elsewhere in the Contract provide for a higher loss limitation liability than as set forth in this paragraph, or where such express provisions impose Contractor liability on "without limitation", the total liability of Contractor for such claim(s), regardless of the nature and basis for the claim, shall not exceed two (2) times the fees paid for the applicable Product. For any suit, action, claim, damages or costs arising under or are connected to personal injury or property damage, or breach of the title, patent and copyright warranties, Contractor shall be fully liable without limitation.

The County or Authorized User may retain such moneys from the amount due Contractor as may be necessary to satisfy any claim for damages, costs and the like asserted by or against the County or Authorized User, provided however, that Contractor shall not indemnify each such entity to the extent that any claim, loss or damages arising hereunder is caused by the negligence act or failure to act of said entity.

87. SOURCE CODE ESCROW FOR LICENSED PRODUCTS If source code or source code escrow is offered by either Contractor or Product manufacturer/developer to any other commercial customers, Contractor either: i) will provide Licensee with the Source Code for the Product; or ii) place the Source Code in a third party escrow arrangement with a designated escrow agent who shall be named and identified to the County, and who shall be directed to release the deposited Source Code in accordance with a standard escrow agreement acceptable to the County, or iii) will certify to the County that the Product manufacturer/developer has named the County, and the Licensee, as a named beneficiary of an established escrow arrangement with its designated escrow agent who shall be named and identified to the County and Licensee, and who shall be directed to release the deposited Source Code in accordance with the terms of escrow. Source Code, as well as any corrections or enhancements to such source code, shall be updated for each new release of the Product in the same manner as provided above. Contractor shall identify the escrow agent upon commencement of the contract term and shall certify annually that the escrow remains in effect in compliance with the terms of this paragraph.

The County may release the Source Code to Licensees under this Contract who have licensed Product or obtained services, who may use such copy of the Source Code to maintain the Product.

APPENDIX F

Clarifications and Questions and Answers regarding original Bid

Clarifications

General Construction Contract

• PVC exterior trim - does not need to be painted

• Wood siding - Prefinished utilizing manufacturers standard colors is preferred / however pre- primed and painted on site is acceptable

QUESTIONS in Regular Font - ANSWERS in Bold Italics

1. Piping schedule on C102 does not include underdrain or gutter down spout collector piping, hence there are no inverts given. Please clarify.

Roof gutter downspout underdrain collection piping size and invert is indicated on C102 within the building footprint.

2. No trench detail for the down spout collector piping was provided. Please clarify.

See typical trench details, storm sewer pipe for downspout underdrain collection pipe installation

3. For Spec Section 07 4113 – METAL ROOF PANELS, are Petersen/Pac-Clad's Snap-Clad panel and Firestone's UC-14 panel acceptable roof panels in lieu of the 3 Manufacturer's panels indicated?

Petersen/Pac-Clad's Snap-Clad panel and Firestone's UC-14 panel are acceptable products provide they meet all specification requirements.

4. Please clarify if Soffit Panels by Petersen and Firestone are acceptable, as no Manufacturers are indicated?

Soffit Panels by Petersen and Firestone are acceptable manufactures, soffits must meet all specification requirements.

5. Are there any details for the metal roofing at the finials with details at the finial post, at the transitions between the curved panels and the straight panels, and at the curved panels to the ridge transition.

See the attached sketch SK-01 and Picture of an existing building on premises for reference.

6. Are the finial curved roofs not actually joining the flat roof, but to be raised on cupolas?

See the attached sketch SK-01 and Picture of an existing building on premises for reference.

7. Section 3 for the specifications is listed for both the GC and the Site Work/Concrete scope (in section 011000), please specify which contract is to cover section 03 3511 or provide a specific breakdown.

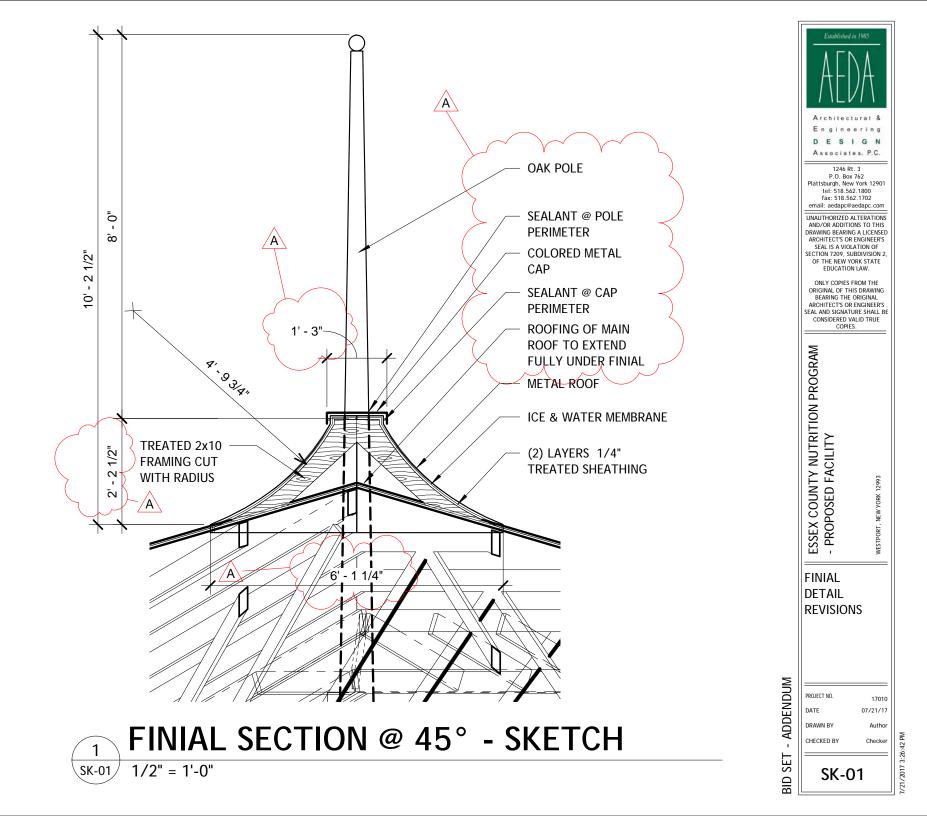
Delete Section 03 3511 Concrete Floor Finishes and replace with attached Section 09 9600 High-Performance Coatings.

8. Is furnishing and installing the anchor bolts required under the Site Work/Concrete contract or the GC contract?

The sitework/concrete contractor should furnish and install anchor bolts

9. The S drawings are listed for both the GC scope and the Site Work/Concrete scope (in section 011000), are drawings S101 and S102 completely associated with the concrete scope and drawings S103 and S121 associated with the GC contract?

YES





ESSEX COUNTY NUTRITION PROGRAM PROPOSED FACILITY

SECTION 09 9600

HIGH-PERFORMANCE COATINGS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. High performance coatings.
- B. Surface preparation.

1.02 REFERENCE STANDARDS

- A. MPI (APSM) Master Painters Institute Architectural Painting Specification Manual; Current Edition, www.paintinfo.com.
- B. SSPC-SP 13 Surface Preparation of Concrete; (Reaffirmed 2015); 2003.

1.03 SUBMITTALS

- A. Product Data: Provide complete list of all products to be used, with the following information for each:
 - 1. Manufacturer's name, product name and/or catalog number, and general product category (e.g. "alkyd enamel").
 - Cross-reference to specified coating system(s) product is to be used in; include description of each system.
 - 3. Manufacturer's installation instructions.
- B. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
 - 1. Extra Coating Materials: 1 gallon of each type and color.
 - 2. Label each container with manufacturer's name, product number, color number, and room names and numbers where used.

1.04 QUALITY ASSURANCE

- A. Maintain one copy of each referenced document that applies to application on site.
- B. Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with minimum three years documented experience.
- C. Applicator Qualifications: Company specializing in performing the work of this section with minimum three years documented experience.

PART 2 PRODUCTS

2.01 TOP COAT MATERIALS

- A. Coatings General: Provide complete multi-coat systems formulated and recommended by manufacturer for the applications indicated, in the thicknesses indicated; number of coats specified does not include primer or filler coat.
- B. Epoxy Floor Coating:
 - 1. Number of Coats: As needed to acheive full coverage.
 - 2. Product Characteristics:
 - a. Percentage of solids by volume, 100%, minimum.
 - 3. Top Coat(s): Epoxy Polysiloxane, Two-Component.
 - a. Sheen: Gloss.
 - b. Color: Selected from manufacturer's standard colors.
 - c. Products:
 - 1) Sparten Chemical Company, Inc.; New Generation 100: www.spartanchemical.com.
 - 2) Substitutions: Section 01 6000 Product Requirements.
 - 4. Primer: As recommended by coating manufacturer for specific substrate.

2.02 ACCESSORY MATERIALS

A. Accessory Materials: Provide all primers, sealers, cleaning agents, cleaning cloths, sanding materials, and clean-up materials as required for final completion of coated surfaces.

ESSEX COUNTY NUTRITION PROGRAM PROPOSED FACILITY

B. Plastic Aggregate: Finely ground polymer for addition to coatings for slip resistance.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify existing conditions before starting work.
- B. Do not begin application of coatings until substrates have been properly prepared.
- C. Verify that substrate surfaces are ready to receive work as instructed by the coating manufacturer. Obtain and follow manufacturer's instructions for examination and testing of substrates.
- D. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially affect proper application.

3.02 PREPARATION

- A. Clean surfaces of loose foreign matter.
- B. Remove substances that would bleed through finished coatings. If unremovable, seal surface with shellac.
- C. Remove finish hardware, fixture covers, and accessories and store.
- D. Concrete:
 - 1. Remove release agents, curing compounds, efflorescence, and chalk. Do not coat surfaces if moisture content or alkalinity of surfaces to be coated exceeds that permitted in manufacturer's written instructions.
 - 2. Prepare surface as recommended by coating manufacturer and according to SSPC-SP 13.
- E. Protect adjacent surfaces and materials not receiving coating from spatter and overspray; mask if necessary to provide adequate protection. Repair damage.

3.03 PRIMING

A. Apply primer to all surfaces, unless specifically not required by coating manufacturer. Apply in accordance with coating manufacturer's instructions.

3.04 COATING APPLICATION

- A. Apply coatings in accordance with manufacturer's written instructions, to thicknesses specified.
- B. Apply in uniform thickness coats, without runs, drips, pinholes, brush marks, or variations in color, texture, or finish. Finish edges, crevices, corners, and other changes in dimension with full coating thickness.

END OF SECTION

General Decision Number: NY170080 06/09/2017 NY80

Superseded General Decision Number: NY20160080

State: New York

Construction Type: Building

County: Essex County in New York.

BUILDING CONSTRUCTION PROJECTS (does not include single family homes or apartments up to and including 4 stories).

Note: Under Executive Order (EO) 13658, an hourly minimum wage of \$10.20 for calendar year 2017 applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least \$10.20 (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in calendar year 2017. The EO minimum wage rate will be adjusted annually. Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Modification	Number	Publication D	ate
0		01/06/2017	
1		02/03/2017	
2		02/10/2017	
3		03/03/2017	
4		03/17/2017	
5		04/28/2017	
6		05/12/2017	
7		06/02/2017	
8		06/09/2017	

ASBE0040-004 05/01/2017

	Rates	Fringes
ASBESTOS WORKER/HEAT & FROST INSULATOR Includes application of all insulating materials, protective coverings, coatings and finishings to all types of mechnical systems		21.47
BOIL0197-003 01/01/2017		
	Rates	Fringes
BOILERMAKER	\$ 34.54	24.78
BRNY0002-003 07/01/2016		
PLATTSBURGH CHAPTER		
	Rates	Fringes
BRICKLAYER, Includes Pointing, Caulking, and Cleaning CEMENT MASON/CONCRETE FINISHER TILE FINISHER TILE SETTER	.\$ 29.87 .\$ 25.59	18.72 18.72 16.34 18.67
ELEC0910-004 04/01/2017		
	Rates	Fringes
ELECTRICIAN (Including Low Voltage Wiring and Installation of Alarms, Computers, Phones, & HVAC Temperature Controls Including Teledata & Sound Technicians) ENGI0106-009 07/01/2016	.\$ 33.50	3%+19.98

Rates Fringes

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POWER EQUIPMENT OPERATOR:		· · · ·
Bobcat/Skid Loader;		
Bulldozer; Core & Well Drill (One Drum)	\$ 39.65	24.40+a
Concrete Pump, Truck Mounted; Crane Oiler	\$ 36 92	24.40+a
Excavator; Tractor Mounted	¥ 50.52	21.10.0
Drill; Self Contained Crawler Drill; Hydraulic		
Rock Drill	\$ 40.61	24.40+a
COOTNOTE: a. PAID HOLIDAYS: New Years L Day, Labor Day, Thanksgiving Da	Day, Memorial Da Ny, Christmas Da	ay, Independence ay
IRON0012-020 05/01/2016		
	Rates	Fringes
RONWORKER, REINFORCING	\$ 30.05	23.14
LAB01822-003 06/01/2016		
	Rates	Fringes
		·····
ABORER Common or General; Grade		
Checker; Landscape; Brick Mason Tender; Mortar Mixer	\$ 21.88	20.35+a
	Y 21.00	20.33.a
COOTNOTE: a. PAID HOLIDAYS: New Year's D	Day, Memorial Da	ay, Independence
Day, Labor Day, Thanksgiving Da		
DETRICORD 000 05/01/2016		
PAIN0009-020 05/01/2016		
	Rates	Fringes
Painters: Brush, Roller & Spray; Drywall Finishing/Taping	\$ 29.00	12.49
PLUM0773-006 05/01/2017		
	Rates	Fringes
	112000	
PIPEFITTER, Includes HVAC Pipe Installation	\$ 37.35	28.83
PLUMBER	\$ 37.35	28.83
ROOF0241-002 06/01/2017		
	Rates	Fringes
ROOFER, Includes Roof Tear		
Modified Bitumen, Rubber, Shake & Shingle, and Single		
ly Roofs		17.72
SFNY0669-006 04/01/2017	,	
	Rates	Fringes
SPRINKLER FITTER (Fire		
prinklers)	\$ 33.76	15.84
SHEE0083-004 06/01/2015		
	Rates	Fringes
NICED MEMORI DADADD T1-4		*
SHEET METAL WORKER, Includes	\$ 32.35 .	28.05+a
a. PAID HOLIDAYS: New Year's E Day, Labor Day, Thanksgiving Da of these holidays fall on a Sat		

SUNY2009-019 09/30/2009

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https:/	/www.wo	lol.gov/	'wdol/scafi	les/davisb	acon/NY80	.dvb?v=8
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	Rates	Fringes
CARPENTER, Includes Drywall Hanging, and Form Work	\$ 24.18	7.16
IRONWORKER, ORNAMENTAL	\$ 20.75	15.29
IRONWORKER, STRUCTURAL	\$ 22.00	13.60
LABORER: Asbestos Abatement (Removal from Ceilings, Floors, Walls, and		
Mechanical Systems)	\$ 19.76	9.45
LABORER: Asphalt Shoveler	\$ 20.89	8.95
LABORER: Mason Tender - Cement/Concrete	\$ 18.72	9.51
LABORER: Pipelayer	\$ 21.06	14.30
OPERATOR: Auger	\$ 21.19	15.85
OPERATOR: Backhoe	\$ 25.05	7.45
OPERATOR: Crane	\$ 23.94	11.40
OPERATOR: Forklift	\$ 22.45	9.34
OPERATOR: Loader	\$ 18.00	0.00
OPERATOR: Paver (Asphalt, Aggregate, and Concrete)	\$ 23.59	9.95
OPERATOR: Roller	\$ 17.75	5.89
TRUCK DRIVER: Dump Truck	\$ 16.00	2.62

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of "identifiers" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than "SU" or "UAVG" denotes that the union classification and rate were prevailing for that classification in the survey. Example:

7/5/17, 11:57 AM

PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the "SU" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

* an existing published wage determination

- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

> Branch of Construction Wage Determinations Wage and Hour Division U.S. Department of Labor 200 Constitution Avenue, N.W. Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request

review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator U.S. Department of Labor 200 Constitution Avenue, N.W. Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board U.S. Department of Labor 200 Constitution Avenue, N.W. Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISION

of 5

Roberta Reardon, Commissioner



Andrew M. Cuomo, Governor

County of Essex

Linda Wolf, Purchasing Agent 7551 Court Street Elizabethtown NY 12932

Schedule Year 2017 Date Requested 07/03/2017 PRC#

2017007059

Location Essex County Fairgrounds Project ID# All General Construction Work, including but not limited to superstructure, roofing, interior partitions. Project Type finishes, and other associated work as necessary to provide a complete and functioning

PREVAILING WAGE SCHEDULE FOR ARTICLE 8 PUBLIC WORK PROJECT

Attached is the current schedule(s) of the prevailing wage rates and prevailing hourly supplements for the project referenced above. A unique Prevailing Wage Case Number (PRC#) has been assigned to the schedule(s) for your project.

The schedule is effective from July 2017 through June 2018. All updates, corrections, posted on the 1st business day of each month, and future copies of the annual determination are available on the Department's website www.labor.state.ny.us. Updated PDF copies of your schedule can be accessed by entering your assigned PRC# at the proper location on the website.

It is the responsibility of the contracting agency or its agent to annex and make part, the attached schedule, to the specifications for this project, when it is advertised for bids and /or to forward said schedules to the successful bidder(s), immediately upon receipt, in order to insure the proper payment of wages.

Please refer to the "General Provisions of Laws Covering Workers on Public Work Contracts" provided with this schedule, for the specific details relating to other responsibilities of the Department of Jurisdiction.

Upon completion or cancellation of this project, enter the required information and mail **OR** fax this form to the office shown at the bottom of this notice. **OR** fill out the electronic version via the NYSDOL website.

NOTICE OF COMPLETION / CANCELLATION OF PROJECT

Date Completed:

Date Cancelled:

Name & Title of Representative:

Phone: (518) 457-5589 Fax: (518) 485-1870 W. Averell Harriman State Office Campus, Bldg. 12, Room 130, Albany, NY 12240

General Provisions of Laws Covering Workers on Article 8 Public Work Contracts

Introduction

The Labor Law requires public work contractors and subcontractors to pay laborers, workers, or mechanics employed in the performance of a public work contract not less than the prevailing rate of wage and supplements (fringe benefits) in the locality where the work is performed.

Responsibilities of the Department of Jurisdiction

A Department of Jurisdiction (Contracting Agency) includes a state department, agency, board or commission: a county, city, town or village; a school district, board of education or board of cooperative educational services; a sewer, water, fire, improvement and other district corporation; a public benefit corporation; and a public authority awarding a public work contract.

The Department of Jurisdiction (Contracting Agency) awarding a public work contract MUST obtain a Prevailing Rate Schedule listing the hourly rates of wages and supplements due the workers to be employed on a public work project. This schedule may be obtained by completing and forwarding a "Request for wage and Supplement Information" form (PW 39) to the Bureau of Public Work. The Prevailing Rate Schedule MUST be included in the specifications for the contract to be awarded and is deemed part of the public work contract.

Upon the awarding of the contract, the law requires that the Department of Jurisdiction (Contracting Agency) furnish the following information to the Bureau: the name and address of the contractor, the date the contract was let and the approximate dollar value of the contract. To facilitate compliance with this provision of the Labor Law, a copy of the Department's "Notice of Contract Award" form (PW 16) is provided with the original Prevailing Rate Schedule.

The Department of Jurisdiction (Contracting Agency) is required to notify the Bureau of the completion or cancellation of any public work project. The Department's PW 200 form is provided for that purpose.

Both the PW 16 and PW 200 forms are available for completion online.

Hours

No laborer, worker, or mechanic in the employ of a contractor or subcontractor engaged in the performance of any public work project shall be permitted to work more than eight hours in any day or more than five days in any week, except in cases of extraordinary emergency. The contractor and the Department of Jurisdiction (Contracting Agency) may apply to the Bureau of Public Work for a dispensation permitting workers to work additional hours or days per week on a particular public work project. There are very few exceptions to this rule. Complete information regarding these exceptions is available on the "4 Day / 10 Hour Work Schedule" form (PW 30.1).

Wages and Supplements

The wages and supplements to be paid and/or provided to laborers, workers, and mechanics employed on a public work project shall be not less than those listed in the current Prevailing Rate Schedule for the locality where the work is performed. If a prime contractor on a public work project has not been provided with a Prevailing Rate Schedule, the contractor must notify the Department of Jurisdiction (Contracting Agency) who in turn must request an original Prevailing Rate Schedule form the Bureau of Public Work. Requests may be submitted by: mail to NYSDOL, Bureau of Public Work, State Office Bldg. Campus, Bldg. 12, Rm. 130, Albany, NY 12240; Fax to Bureau of Public Work (518) 485-1870; or electronically at the NYSDOL website www.labor.state.ny.us.

Upon receiving the original schedule, the Department of Jurisdiction (Contracting Agency) is REQUIRED to provide complete copies to all prime contractors who in turn MUST, by law, provide copies of all applicable county schedules to each subcontractor and obtain from each subcontractor, an affidavit certifying such schedules were received. If the original schedule expired, the contractor may obtain a copy of the new annual determination from the NYSDOL website www.labor.state.ny.us.

The Commissioner of Labor makes an annual determination of the prevailing rates. This determination is in effect from July 1st through June 30th of the following year. The annual determination is available on the NYSDOL website www.labor.state.ny.us.

Payrolls and Payroll Records

Every contractor and subcontractor MUST keep original payrolls or transcripts subscribed and affirmed as true under penalty of perjury. Payrolls must be maintained for at least Five (5) years from the project's date of completion. See Spota Bill Notice. At a minimum, payrolls must show the following information for each person employed on a public work project: Name, Address, Last 4 Digits of Social Security Number, Classification(s) in which the worker was employed, Hourly wage rate(s) paid, Supplements paid or provided, and Daily and weekly number of hours worked in each classification.

The filing of payrolls to the Department of Jurisdiction is a condition of payment. Every contractor and subcontractor shall submit to the Department of Jurisdiction (Contracting Agency), within thirty (30) days after issuance of its first payroll and every thirty (30) days thereafter, a transcript of the original payrolls, subscribed and affirmed as true under penalty of perjury. The Department of Jurisdiction (Contracting Agency) shall collect, review for facial validity, and maintain such payrolls.

In addition, the Commissioner of Labor may require contractors to furnish, with ten (10) days of a request, payroll records sworn to as their validity and accuracy for public work and private work. Payroll records include, by are not limited to time cards, work description sheets, proof that supplements were provided, cancelled payroll checks and payrolls. Failure to provide the requested information within the allotted ten (10) days will result in the withholding of up to 25% of the contract, not to exceed \$100,000.00. If the contractor or subcontractor does not maintain a place of business in New York State and the amount of the contract exceeds \$25,000.00, payroll records and certifications must be kept on the project worksite.

The prime contractor is responsible for any underpayments of prevailing wages or supplements by any subcontractor.

All contractors or their subcontractors shall provide to their subcontractors a copy of the Prevailing Rate Schedule specified in the public work contract as well as any subsequently issued schedules. A failure to provide these schedules by a contractor or subcontractor is a violation of Article 8, Section 220-a of the Labor Law.

All subcontractors engaged by a public work project contractor or its subcontractor, upon receipt of the original schedule and any subsequently issued schedules, shall provide to such contractor a verified statement attesting that the subcontractor has received the Prevailing Rate Schedule and will pay or provide the applicable rates of wages and supplements specified therein. (See NYS Labor Laws, Article 8. Section 220-a).

Determination of Prevailing Wage and Supplement Rate Updates Applicable to All Counties

The wages and supplements contained in the annual determination become effective July 1st whether or not the new determination has been received by a given contractor. Care should be taken to review the rates for obvious errors. Any corrections should be brought to the Department's attention immediately. It is the responsibility of the public work contractor to use the proper rates. If there is a question on the proper classification to be used, please call the district office located nearest the project. Any errors in the annual determination will be corrected and posted to the NYSDOL website on the first business day of each month. Contractors are responsible for paying these updated rates as well, retroactive to July 1st.

When you review the schedule for a particular occupation, your attention should be directed to the dates above the column of rates. These are the dates for which a given set of rates is effective. To the extent possible, the Department posts rates in its possession that cover periods of time beyond the July 1st to June 30th time frame covered by a particular annual determination. Rates that extend beyond that instant time period are informational ONLY and may be updated in future annual determinations that actually cover the then appropriate July 1st to June 30th time period.

Withholding of Payments

When a complaint is filed with the Commissioner of Labor alleging the failure of a contractor or subcontractor to pay or provide the prevailing wages or supplements, or when the Commissioner of Labor believes that unpaid wages or supplements may be due, payments on the public work contract shall be withheld from the prime contractor in a sufficient amount to satisfy the alleged unpaid wages and supplements, including interest and civil penalty, pending a final determination.

When the Bureau of Public Work finds that a contractor or subcontractor on a public work project failed to pay or provide the requisite prevailing wages or supplements, the Bureau is authorized by Sections 220-b and 235.2 of the Labor Law to so notify the financial officer of the Department of Jurisdiction (Contracting Agency) that awarded the public work contract. Such officer MUST then withhold or cause to be withheld from any payment due the prime contractor on account of such contract the amount indicated by the Bureau as sufficient to satisfy the unpaid wages and supplements, including interest and any civil penalty that may be assessed by the Commissioner of Labor. The withholding continues until there is a final determination of the underpayment by the Commissioner of Labor or by the court in the event a legal proceeding is instituted for review of the determination of the Commissioner of Labor.

The Department of Jurisdiction (Contracting Agency) shall comply with this order of the Commissioner of Labor or of the court with respect to the release of the funds so withheld.

Summary of Notice Posting Requirements

The current Prevailing Rate Schedule must be posted in a prominent and accessible place on the site of the public work project. The prevailing wage schedule must be encased in, or constructed of, materials capable of withstanding adverse weather conditions and be titled "PREVAILING RATE OF WAGES" in letters no smaller than two (2) inches by two (2) inches.

The "Public Work Project" notice must be posted at the beginning of the performance of every public work contract, on each job site.

Every employer providing workers. compensation insurance and disability benefits must post notices of such coverage in the format prescribed by the Workers. Compensation Board in a conspicuous place on the jobsite.

Every employer subject to the NYS Human Rights Law must conspicuously post at its offices, places of employment, or employment training centers, notices furnished by the State Division of Human Rights.

Employers liable for contributions under the Unemployment Insurance Law must conspicuously post on the jobsite notices furnished by the NYS Department of Labor.

Apprentices

Employees cannot be paid apprentice rates unless they are individually registered in a program registered with the NYS Commissioner of Labor. The allowable ratio of apprentices to journeyworkers in any craft classification can be no greater than the statewide building trade ratios promulgated by the Department of Labor and included with the Prevailing Rate Schedule. An employee listed on a payroll as an apprentice who is not registered as above or is performing work outside the classification of work for which the apprentice is indentured, must be paid the prevailing journeyworker's wage rate for the classification of work the employee is actually performing.

NYSDOL Labor Law, Article 8, Section 220-3, require that only apprentices individually registered with the NYS Department of Labor may be paid apprenticeship rates on a public work project. No other Federal or State Agency of office registers apprentices in New York State.

Persons wishing to verify the apprentice registration of any person must do so in writing by mail, to the NYSDOL Office of Employability Development / Apprenticeship Training, State Office Bldg. Campus, Bldg. 12, Albany, NY 12240 or by Fax to NYSDOL Apprenticeship Training (518) 457-7154. All requests for verification must include the name and social security number of the person for whom the information is requested.

The only conclusive proof of individual apprentice registration is written verification from the NYSDOL Apprenticeship Training Albany Central office. Neither Federal nor State Apprenticeship Training offices outside of Albany can provide conclusive registration information.

It should be noted that the existence of a registered apprenticeship program is not conclusive proof that any person is registered in that program. Furthermore, the existence or possession of wallet cards, identification cards, or copies of state forms is not conclusive proof of the registration of any person as an apprentice.

Interest and Penalties

In the event that an underpayment of wages and/or supplements is found:

- Interest shall be assessed at the rate then in effect as prescribed by the Superintendent of Banks pursuant to section 14-a of the Banking Law, per annum from the date of underpayment to the date restitution is made.
- A Civil Penalty may also be assessed, not to exceed 25% of the total of wages, supplements, and interest due.

Debarment

Any contractor or subcontractor and/or its successor shall be ineligible to submit a bid on or be awarded any public work contract or subcontract with any state, municipal corporation or public body for a period of five (5) years when:

- Two (2) willful determinations have been rendered against that contractor or subcontractor and/or its successor within any consecutive six (6) year period.
- There is any willful determination that involves the falsification of payroll records or the kickback of wages or supplements.

Criminal Sanctions

Willful violations of the Prevailing Wage Law (Article 8 of the Labor Law) may be a felony punishable by fine or imprisonment of up to 15 years, or both.

Discrimination

No employee or applicant for employment may be discriminated against on account of age, race, creed, color, national origin, sex, disability or marital status.

No contractor, subcontractor nor any person acting on its behalf, shall by reason of race, creed, color, disability, sex or national origin discriminate against any citizen of the State of New York who is qualified and available to perform the work to which the employment relates (NYS Labor Law, Article 8, Section 220-e(a)).

No contractor, subcontractor, nor any person acting on its behalf, shall in any manner, discriminate against or intimidate any employee on account of race, creed, color, disability, sex, or national origin (NYS Labor Law, Article 8, Section 220e(b)). The Human Rights Law also prohibits discrimination in employment because of age, marital status, or religion.

There may be deducted from the amount payable to the contractor under the contract a penalty of \$50.00 for each calendar day during which such person was discriminated against or intimidated in violation of the provision of the contract (NYS Labor Law, Article 8, Section 220-e(c)).

The contract may be cancelled or terminated by the State or municipality. All monies due or to become due thereunder may be forfeited for a second or any subsequent violation of the terms or conditions of the anti-discrimination sections of the contract (NYS Labor Law, Article 8, Section 220-e(d)).

Every employer subject to the New York State Human Rights Law must conspicuously post at its offices, places of employment, or employment training centers notices furnished by the State Division of Human Rights.

Workers' Compensation

In accordance with Section 142 of the State Finance Law, the contractor shall maintain coverage during the life of the contract for the benefit of such employees as required by the provisions of the New York State Workers' Compensation Law.

A contractor who is awarded a public work contract must provide proof of workers' compensation coverage prior to being allowed to begin work.

The insurance policy must be issued by a company authorized to provide workers' compensation coverage in New York State. Proof of coverage must be on form C-105.2 (Certificate of Workers' Compensation Insurance) and must name this agency as a certificate holder.

If New York State coverage is added to an existing out-of-state policy, it can only be added to a policy from a company authorized to write workers' compensation coverage in this state. The coverage must be listed under item 3A of the information page.

The contractor must maintain proof that subcontractors doing work covered under this contract secured and maintained a workers' compensation policy for all employees working in New York State.

Every employer providing worker's compensation insurance and disability benefits must post notices of such coverage in the format prescribed by the Workers' Compensation Board in a conspicuous place on the jobsite.

Unemployment Insurance

Employers liable for contributions under the Unemployment Insurance Law must conspicuously post on the jobsite notices furnished by the New York State Department of Labor.

DE NERVERIE

Andrew M. Cuomo, Governor

County of Essex

Linda Wolf, Purchasing Agent 7551 Court Street Elizabethtown NY 12932 Schedule Year2017Date Requested07/03/2017PRC#2017007059

Roberta Reardon, Commissioner

 Location
 Essex County Fairgrounds

 Project ID#
 All General Construction Work, including but not limited to superstructure, roofing, interior partitions, finishes, and other associated work as necessary to provide a complete and functioning

Notice of Contract Award

New York State Labor Law, Article 8, Section 220.3a requires that certain information regarding the awarding of public work contracts, be furnished to the Commissioner of Labor. One "Notice of Contract Award" (PW 16, which may be photocopied), **MUST** be completed for **EACH** prime contractor on the above referenced project.

Upon notifying the successful bidder(s) of this contract, enter the required information and mail **OR** fax this form to the office shown at the bottom of this notice, **OR** fill out the electronic version via the NYSDOL website.

Federal Employer Identification N	umber:		
Name:			
City:		State:	Zip:
Amount of Contract:	\$		Contract Type:
Approximate Starting Date:	/_/_		 [] (01) General Construction [] (02) Heating/Ventilation [] (03) Electrical
Approximate Completion Date:	//		 [] (03) Electrical [] (04) Plumbing [] (05) Other :

Contractor Information All information must be supplied

Phone: (518) 457-5589 Fax: (518) 485-1870 W. Averell Harriman State Office Campus, Bldg. 12, Room 130, Albany, NY 12240

IMPORTANT NOTICE

FOR

CONTRACTORS & CONTRACTING AGENCIES

Social Security Numbers on Certified Payrolls

The Department of Labor is cognizant of the concerns of the potential for misuse or inadvertent disclosure of social security numbers. Identity theft is a growing problem and we are sympathetic to contractors' concerns with regard to inclusion of this information on payrolls if another identifier will suffice.

For these reasons, the substitution of the use of the <u>last four digits</u> of the social security number on certified payrolls submitted to contracting agencies on public work projects is now acceptable to the Department of Labor.

NOTE: This change does not affect the Department's ability to request and receive the entire social security number from employers during the course of its public work / prevailing wage investigations.

To all State Departments, Agency Heads and Public Benefit Corporations IMPORTANT NOTICE REGARDING PUBLIC WORK ENFORCEMENT FUND

Budget Policy & Reporting Manual

B-610

Public Work Enforcement Fund

effective date December 7, 2005

1. Purpose and Scope:

This Item describes the Public Work Enforcement Fund (the Fund, PWEF) and its relevance to State agencies and public benefit corporations engaged in construction or reconstruction contracts, maintenance and repair, and announces the recently-enacted increase to the percentage of the dollar value of such contracts that must be deposited into the Fund. This item also describes the roles of the following entities with respect to the Fund:

- New York State Department of Labor (DOL),
- The Office of the State of Comptroller (OSC), and
- State agencies and public benefit corporations.

2. Background and Statutory References:

DOL uses the Fund to enforce the State's Labor Law as it relates to contracts for construction or reconstruction, maintenance and repair, as defined in subdivision two of Section 220 of the Labor Law. State agencies and public benefit corporations participating in such contracts are required to make payments to the Fund.

Chapter 511 of the Laws of 1995 (as amended by Chapter 513 of the Laws of 1997, Chapter 655 of the Laws of 1999, Chapter 376 of the Laws of 2003 and Chapter 407 of the Laws of 2005) established the Fund.

3. Procedures and Agency Responsibilities:

The Fund is supported by transfers and deposits based on the value of contracts for construction and reconstruction, maintenance and repair, as defined in subdivision two of Section 220 of the Labor Law, into which all State agencies and public benefit corporations enter.

Chapter 407 of the Laws of 2005 increased the amount required to be provided to this fund to .10 of one-percent of the total cost of each such contract, to be calculated at the time agencies or public benefit corporations enter into a new contract or if a contract is amended. The provisions of this bill became effective August 2, 2005.

To all State Departments, Agency Heads and Public Benefit Corporations IMPORTANT NOTICE REGARDING PUBLIC WORK ENFORCEMENT FUND

OSC will report to DOL on all construction-related ("D") contracts approved during the month, including contract amendments, and then DOL will bill agencies the appropriate assessment monthly. An agency may then make a determination if any of the billed contracts are exempt and so note on the bill submitted back to DOL. For any instance where an agency is unsure if a contract is or is not exempt, they can call the Bureau of Public Work at the number noted below for a determination. Payment by check or journal voucher is due to DOL within thirty days from the date of the billing. DOL will verify the amounts and forward them to OSC for processing.

For those contracts which are not approved or administered by the Comptroller, monthly reports and payments for deposit into the Public Work Enforcement Fund must be provided to the Administrative Finance Bureau at the DOL within 30 days of the end of each month or on a payment schedule mutually agreed upon with DOL.

Reports should contain the following information:

- Name and billing address of State agency or public benefit corporation;
- State agency or public benefit corporation contact and phone number;
- Name and address of contractor receiving the award;
- Contract number and effective dates;
- Contract amount and PWEF assessment charge (if contract amount has been amended, reflect increase or decrease to original contract and the adjustment in the PWEF charge); and
- Brief description of the work to be performed under each contract.

Checks and Journal Vouchers, payable to the "New York State Department of Labor" should be sent to:

Department of Labor Administrative Finance Bureau-PWEF Unit Building 12, Room 464 State Office Campus Albany, NY 12240

Any questions regarding billing should be directed to NYSDOL's Administrative Finance Bureau-PWEF Unit at (518) 457-3624 and any questions regarding Public Work Contracts should be directed to the Bureau of Public Work at (518) 457-5589.

Construction Industry Fair Play Act

Required Posting For Labor Law Article 25-B § 861-d

Construction industry employers must post the "Construction Industry Fair Play Act" notice in a prominent and accessible place on the job site.

Failure to post the notice can result in penalties of up to \$1,500 for a first offense and up to \$5,000 for a second offense.

The posting is included as part of this wage schedule. Additional copies may be obtained from the NYS DOL website, <u>www.labor.ny.gov</u>.

If you have any questions concerning the Fair Play Act, please call the State Labor Department toll-free at 1-866-435-1499 or email us at: dol.misclassified@labor.state.ny.us. New York State Department of Labor Required Notice under Article 25-B of the Labor Law



ATTENTION ALL EMPLOYEES, CONTRACTORS AND SUBCONTRACTORS: YOU ARE COVERED BY THE CONSTRUCTION INDUSTRY FAIR PLAY ACT

The law says that you are an employee unless:

- You are free from direction and control in performing your job AND
- You perform work that is not part of the usual work done by the business that hired you AND
- You have an independently established business

Your employer cannot consider you to be an independent contractor unless all three of these facts apply to your work.

IT IS AGAINST THE LAW FOR AN EMPLOYER TO MISCLASSIFY EMPLOYEES AS INDEPENDENT CONTRACTORS OR PAY EMPLOYEES OFF-THE-BOOKS.

Employee rights. If you are an employee:

- You are entitled to state and federal worker protections such as
 - unemployment benefits, if unemployed through no fault of your own, able to work, and otherwise qualified
 - o workers' compensation benefits for on-the-job injuries
 - o payment for wages earned, minimum wage, and overtime (under certain conditions)
 - o prevailing wages on public work projects
 - o the provisions of the National Labor Relations Act and
 - o a safe work environment
- It is a violation of this law for employers to retaliate against anyone who asserts their rights under the law. Retaliation subjects an employer to civil penalties, a private lawsuit or both.

Independent Contractors: If you are an independent contractor:

• You must pay all taxes required by New York State and Federal Law.

Penalties for paying off-the-books or improperly treating employees as independent contractors:

- **Civil Penalty** First Offense: up to \$2,500 per employee. Subsequent Offense(s): up to \$5,000 per employee.
- Criminal Penalty
 First Offense: Misdemeanor up to 30 days in jail, up to a \$25,000 fine and debarment from performing Public Work for up to one year. Subsequent Offense(s): Misdemeanor - up to 60 days in jail, up to a \$50,000 fine and debarment from performing Public Work for up to 5 years.

If you have questions about your employment status or believe that your employer may have violated your rights and you want to file a complaint, call the Department of Labor at 1(866)435-1499 or send an email to <u>dol.misclassified@labor.state.ny.us</u>. All complaints of fraud and violations are taken seriously and you can remain anonymous.

Employer Name:

IA 999 (09/10)

WORKER NOTIFICATION

(Labor Law §220, paragraph a of subdivision 3-a)

Effective February 24, 2008

This provision is an addition to the existing prevailing wage rate law, Labor Law §220, paragraph a of subdivision 3-a. It requires contractors and subcontractors to provide written notice to all laborers, workers or mechanics of the prevailing wage rate for their particular job classification on each pay stub*. It also requires contractors and subcontractors to *post a notice* at the beginning of the performance of every public work contract on each job site that includes the telephone number and address for the Department of Labor and a statement informing laborers, workers or mechanics of their right to contact the Department of Labor if he/she is not receiving the proper prevailing rate of wages and/or supplements for his/her particular job classification. The required notification will be provided with each wage schedule, may be downloaded from our website *www.labor.state.ny.us* or made available upon request by contacting the Bureau of Public Work at 518-457-5589.

^{*} In the event that the required information will not fit on the pay stub, an accompanying sheet or attachment of the information will suffice.

New York State Department of Labor Bureau of Public Work

Attention Employees

THIS IS A:

PUBLIC WORK PROJECT

If you are employed on this project as a **worker, laborer, or mechanic** you are entitled to receive the **prevailing wage and supplements rate** for the classification at which you are working.

Chapter 629 of the Labor Laws of 2007: These wages are set by law and must be posted at the work site. They can also be found at: <u>www.labor.ny.gov</u>

If you feel that you have not received proper wages or benefits, please call our nearest office.*

Albany Binghamton Buffalo Garden City New York City Newburgh

(518) 457-2744 (607) 721-8005 (716) 847-7159 (516) 228-3915 (212) 932-2419 (845) 568-5156 Patchogue Rochester Syracuse Utica White Plains

(631) 687-4882 (585) 258-4505 (315) 428-4056 (315) 793-2314 (914) 997-9507

 For New York City government agency construction projects, please contact the Office of the NYC Comptroller at (212) 669-4443, or <u>www.comptroller.nyc.gov</u> – click on Bureau of Labor Law.

Contractor Name:

Project Location:

OSHA 10-hour Construction Safety and Health Course – S1537-A

Effective July 18, 2008

This provision is an addition to the existing prevailing wage rate law, Labor Law §220, section 220-h. It requires that on all public work projects of at least \$250,000.00, all laborers, workers and mechanics working on the site, be certified as having successfully completed the OSHA 10-hour construction safety and health course. It further requires that the advertised bids and contracts for every public work contract of at least \$250,000.00, contain a provision of this requirement.

NOTE: The OSHA 10 Legislation only applies to workers on a public work project that are required, under Article 8, to receive the prevailing wage.

Where to find OSHA 10-hour Construction Course

- NYS Department of Labor website for scheduled outreach training at: www.labor.state.ny.us/workerprotection/safetyhealth/DOSH_ONSITE_CONSULTATION.shtm
- 2. OSHA Training Institute Education Centers:

Rochester Institute of Technology OSHA Education Center Rochester, NY Donna Winter Fax (585) 475-6292 e-mail: <u>dlwtpo@rit.edu</u> (866) 385-7470 Ext. 2919 www.rit.edu/~outreach/course.php3?CourseID=54

Atlantic OSHA Training Center

UMDNJ – School of Public Health Piscataway, NJ Janet Crooks Fax (732) 235-9460 e-mail: <u>crooksje@umdnj.edu</u> (732) 235-9455 https://ophp.umdnj.edu/wconnect/ShowSchedule.awp?~~GROUP~AOTCON~10~

Atlantic OSHA Training Center

University at Buffalo Buffalo, New York Joe Syracuse Fax (716) 829-2806 e-mail:<u>mailto:japs@buffalo.edu</u> (716) 829-2125 http://www.smbs.buffalo.edu/CENTERS/trc/schedule_OSHA.php

Keene State College

Manchester, NH Leslie Singleton e-mail: <u>lsingletin@keene.edu</u> (800) 449-6742 www.keene.edu/courses/print/courses_osha.cfm

3. List of trainers and training schedules for OSHA outreach training at:

www.OutreachTrainers.org

Requirements for OSHA 10 Compliance

Chapter 282 of the Laws of 2007, codified as Labor Law 220-h took effect on July 18, 2008. The statute provides as follows:

The advertised specifications for every contract for public work of \$250,000.00 or more must contain a provision requiring that every worker employed in the performance of a public work contract shall be certified as having completed an OSHA 10 safety training course. The clear intent of this provision is to require that all employees of public work contractors, required to be paid prevailing rates, receive such training "prior to the performing any work on the project."

The Bureau will enforce the statute as follows:

All contractors and sub contractors must attach a copy of proof of completion of the OSHA 10 course to the first certified payroll submitted to the contracting agency and on each succeeding payroll where any new or additional employee is first listed.

Proof of completion may include but is not limited to:

- Copies of bona fide course completion card (*Note: Completion cards do not have an expiration date.*)
- Training roster, attendance record of other documentation from the certified trainer pending the issuance of the card.
- Other valid proof
- **A certification by the employer attesting that all employees have completed such a course is not sufficient proof that the course has been completed.

Any questions regarding this statute may be directed to the New York State Department of Labor, Bureau of Public Work at 518-485-5696.

WICKS Reform 2008

(For all contracts advertised or solicited for bid on or after 7/1/08)

- Raises the threshold for public work projects subject to the Wicks Law requiring separate specifications and bidding for the plumbing, heating and electrical work. The total project's threshold would increase from \$50,000 to: \$3 million in Bronx, Kings, New York, Queens and Richmond counties; \$1.5 million in Nassau, Suffolk and Westchester counties; and \$500,000 in all other counties.
- For projects below the monetary threshold, bidders must submit a sealed list naming each subcontractor for the plumbing, HVAC and electrical work and the amount to be paid to each. The list may not be changed unless the public owner finds a legitimate construction need, including a change in specifications or costs or use of a Project Labor Agreement (PLA), and must be open to public inspection.
- Allows the state and local agencies and authorities to waive the Wicks Law and use a PLA if it will provide the best work at the lowest possible price. If a PLA is used, all contractors shall participate in apprentice training programs in the trades of work it employs that have been approved by the Department of Labor (DOL) for not less than three years. They shall also have at least one graduate in the last three years and use affirmative efforts to retain minority apprentices. PLA's would be exempt from Wicks, but deemed to be public work subject to prevailing wage enforcement.
- The Commissioner of Labor shall have the power to enforce separate specification requirements on projects, and may issue stop-bid orders against public owners for non-compliance.
- Other new monetary thresholds, and similar sealed bidding for non-Wicks projects, would apply to certain public authorities including municipal housing authorities, NYC Construction Fund, Yonkers Educational Construction Fund, NYC Municipal Water Finance Authority, Buffalo Municipal Water Finance Authority, Westchester County Health Care Association, Nassau County Health Care Corp., Clifton-Fine Health Care Corp., Erie County Medical Center Corp., NYC Solid Waste Management Facilities, and the Dormitory Authority.
- Reduces from 15 to 7 days the period in which contractors must pay subcontractors.

IMPORTANT INFORMATION

Regarding Use of Form PW30.1 (Previously 30R)

"Employer Registration for Use of 4 Day / 10 Hour Work Schedule"

To use the '4 Day / 10 Hour Work Schedule':

There MUST be a *Dispensation of Hours (PW30)* in place on the project

AND

You MUST register your intent to work 4 / 10 hour days, by completing the PW30.1 Form.

REMEMBER

The '4 Day / 10 Hour Work Schedule' applies ONLY to Job Classifications and Counties listed on the PW30.1 Form.

Do not write in any additional Classifications or Counties.

(**Please note** : For each Job Classification check the individual wage schedule for specific details regarding their 4/10 hour day posting.)

Instructions for Completing Form PW30.1

(Previously 30R)

"Employer Registration for Use of 4 Day / 10 Hour Work Schedule"

Before completing Form PW30.1 check to be sure ...

- There is a *Dispensation of Hours* in place on the project.
- The 4 Day / 10 Hour Work Schedule applies to the Job Classifications you will be using.
- The 4 Day / 10 Hour Work Schedule applies to the County / Counties where the work will take place.

Instructions (Type or Print legibly):

Contractor Information:

- Enter the Legal Name of the business, FEIN, Street Address, City, State, Zip Code; the Company's Phone and Fax numbers; and the Company's email address (if applicable)
- Enter the Name of a Contact Person for the Company along with their Phone and Fax numbers, and the personal email address (if applicable)

Project Information:

- Enter the Prevailing Rate Case number (PRC#) assigned to this project
- Enter the Project Name / Type (i.e. Smithtown CSD Replacement of HS Roof)
- Enter the Exact Location of Project (i.e. Smithtown HS, 143 County Route #2, Smithtown,NY; Bldgs. 1 & 2)
- If you are a Subcontractor, enter the name of the Prime Contractor for which you work
- On the Checklist of Job Classifications -
 - Go to pages 2 and 3 of the form
 - Place a checkmark in the box to the right of the Job Classification you are choosing
 - Mark all Job Classifications that apply
 - ***Do not write in any additional Classifications or Counties.***

Requestor Information:

• Enter the name of the person submitting the registration, their title with the company , and the date the registration is filled out

Return Completed Form:

- Mail the completed PW30.1 form to: NYSDOL Bureau of Public Work, SOBC Bldg.12 Rm.130, Albany, NY 12240 -OR -
- Fax the completed PW30.1 form to: NYSDOL Bureau of Public Work at (518)485-1870



Bureau of Public Work Harriman State Office Campus Building 12, Room 130 Albany, New York 12240 Phone: (518) 457-5589 | Fax: (518) 485-1870 www.labor.ny.gov

Employer Registration for Use of 4 Day / 10 Hour Work Schedule

Before completing this form, make sure that:

- There is a **Dispensation of Hours** in place on the project.
- The 4 Day / 10 Hour Work Schedule applies to the Job Classifications you will be using.
- The 4 Day / 10 Hour Work Schedule applies to the County / Counties where the work will take place.

Please type or print the requested information and then mail or fax to the address above.

Contractor Information

Company Name:			FEIN:
Address:			
		State:	Zip Code:
Phone No:	Fax No:	Email:	
Contact Person:			
Phone No:	Fax No:	Email:	
Project Information	ı		
Project PRC#:		Project Name/Type:	
Exact Location of Project:		County:	
(If you are Subcontractor) Prime Contractor Na	ame:		
Job Classification(s) to	o Work 4/10 Schedule:	(Choose all that apply on Job Class *** Do not write in any additional Cl	
Requestor Information	tion		
Name:			
Title:		Date:	

Please use the list below with the number assigned to each county as a reference to the corresponding numbers listed in the following pages under **Entire Counties & Partial Counties**.

1.	Albany County	33.	Oneida County
2.	Allegany County	34.	Onondaga County
3.	Bronx County	35.	Ontario County
4.	Broome County	36.	Orange County
5.	Cattaraugus County	37.	Orleans County
6.	Cayuga County	38.	Oswego County
7.	Chautauqua County	39.	Otsego County
8.	Chemung County	40.	Putnam County
9.	Chenango County	41.	Queens County
10.	Clinton County	42.	Rensselaer County
11.	Columbia County	43.	Richmond County (Staten Island)
12.	Cortland County	44.	Rockland County
13.	Delaware County	45.	Saint Lawrence County
14.	Dutchess County	46.	Saratoga County
15.	Erie County	47.	Schenectady County
16.	Essex County	48.	Schoharie County
17.	Franklin County	49.	Schuyler County
18.	Fulton County	50.	Seneca County
19.	Genesee County	51.	Steuben County
20.	Greene County	52.	Suffolk County
21.	Hamilton County	53.	Sullivan County
22.	Herkimer County	54.	Tioga County
23.	Jefferson County	55.	Tompkins County
24. 25.	Kings County (Brooklyn) Lewis County	56.	Ulster County
25. 26.	Livingston County	57.	Warren County
20. 27.	Madison County	58.	Washington County
28.	Monroe County	59.	Wayne County
29.	Montgomery County	60.	Wayne County Westchester County
30.	Nassau County	61.	Wyoming County
31.	New York County (Manhattan)	62.	Yates County
32.	Niagara County	02.	
	č		

Job Classification Checklist

(Place a checkmark by all classifications that will be using the 4/10 schedule)

*** Do not write in any additional Classifications or Counties***

Job Classification	Tag #	Entire Counties	Partial Counties	Check Box
Carpenter – Building	276B-All	7	2 ,5	
Carpenter – Building	276B-Cat	15	5	
Carpenter – Building	276-B-LIV	26, 28, 35, 59	61	
Carpenter – Building	276B-Gen	19, 32, 37	61	
Carpenter – Heavy & Highway	276HH-All	2, 5, 7		
Carpenter – Heavy & Highway	276HH-Erie	15		
Carpenter – Heavy & Highway	276HH- Gen	19, 32, 37, 61		
Carpenter – Heavy & Highway	276HH-Liv	26, 28, 35, 59		
Carpenter – Residential	276R-All	7	2, 5	
Carpenter – Building	277B-Bro	4, 54		
Carpenter – Building	277B-CAY	6, 50, 62		
Carpenter – Building	277B-CS	8, 12, 49, 51, 55	2	
Carpenter – Building	277 JLS	23, 25, 45		
Carpenter – Building	277 omh	22, 27, 33		
Carpenter – Building	277 On	34		
Carpenter – Building	277 Os	38		
Carpenter – Building	277CDO Bldg	9, 13, 39		
Carpenter – Heavy & Highway	277CDO HH	9, 13, 39		
Carpenter – Heavy & Highway	277HH-BRO	4, 6, 8, 12, ,22, 23, 25, 27, 33, 34, 38, 45, 49, 50, 51, 54, 55, 62		
Carpenter – Building	291B-Alb	1, 18, 20, 29, 42, 47, 48		
Carpenter – Building	291B-Cli	10, 16, 17		
Carpenter – Building	291B-Ham	21, 57, 58		
Carpenter – Building	291B-Sar	46		
Carpenter – Heavy & Highway	291HH-Alb	1, 10, 16, 17,18, 20, 21, 29, 42, 46, 47, 48, 57, 58		
Electrician	25m	30, 52		
Electrician – Teledata Cable Splicer	43	12, 22, 27, 33, 38	6, 9, 34, 39, 55, 59	

Job Classification Checklist

(Place a checkmark by all classifications that will be using the 4/10 schedule)

*** Do not write in any additional Classifications or Counties***

Job Classification	Tag #	Entire Counties	Partial Counties	Check Box
Electrician	86	26, 28	19, 35, 37, 59, 61	
Electrician	840 Teledata and 840 Z1	62	6, 34, 35, 50, 59	
Electrician	910	10, 16, 17, 23, 25, 45		
Electrical Lineman	1049Line/Gas	30, 41, 52		
Electrical Lineman	1249a	1, 2, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 25, 26, 27, 28, 29, 32, 33, 34, 35, 36, 37, 38, 39, 40, 42, 44, 46, 47, 48, 49, 50, 45, 51, 53, 54, 55, 56, 57, 58, 59, 61, 62		
Electrical Lineman	1249a West	60		
Electrical Lineman	1249a-LT	1, 2, 4, 5, 6, 7, 8, 9, 10, 12, 13, 15, 16, 17, 18, 19, 20, 21, 22, 23, 25, 26, 27, 28, 29, 32, 33, 34, 35, 37, 38, 39, 42, 46, 47, 48, 49, 50, 45, 51, 53, 54, 55, 57, 58, 59, 61, 62		
Electrical Lineman	1249aREG8LT	11, 14, 36, 40, 44, 56		
Electrical Lineman	1249aWestLT	60		
Elevator Constructor	138	11, 14, 20, 36, 40, 53, 56	13, 44, 60	
Elevator Constructor	14	2, 5, 7, 15, 19, 32, 37, 61		
Elevator Constructor	27	8, 26, 28, 35, 49, 50, 51, 59, 62		
Elevator Constructor	35	1, 10, 16, 18, 21, 22, 29, 39, 42, 46, 47, 48, 57, 58		
Elevator Constructor	62.1	4, 6, 9, 12, 23, 25, 27, 33, 34, 38, 45, 54, 55	13	
Glazier	201	1, 10, 11, 16, 17, 18, 20, 21, 29, 42, 46, 47, 48, 57, 58		
Glazier	660r	2, 5, 7, 15, 19, 32, 37, 61		
Glazier	660	2, 5, 7, 15, 19, 32, 37, 61		
Glazier	677.1	23, 25, 26, 28, 35, 45, 50, 59, 62		
Glazier	677Z-2	6, 12, 22, 27, 33, 34, 38		
Glazier	677z3	4, 8, 9, 13, 39, 49, 51, 54, 55		
Glazier	677r.2	6, 12, 22, 27, 33, 34, 38		
Insulator – Heat & Frost	30-Syracuse	4, 6, 8, 9, 12, 22, 23, 25, 27, 33, 34, 38, 39, 49, 50, 45, 54, 55		
Laborer – Building	621b	2, 7	5	
Laborer – Building	633 bON	34		

Job Classification Checklist

(Place a checkmark by all classifications that will be using the 4/10 schedule)

*** Do not write in any additional Classifications or Counties***

Job Classification	Tag #	Entire Counties	Partial Counties	Check Box
Laborer – Building	633b Cay	6		
Laborer – Building	633bOS	38		
Laborer – Building	785(7)	4	9, 13, 54	
Laborer – Building	785B-CS	8, 51	49	
Laborer – Building	7-785b	12, 55	49, 54	
Laborers – Heavy & Highway	157h/h	47	18, 29, 46	
Laborers – Heavy & Highway	190 h/h	1, 42, 58	11, 20, 46	
Laborers – Heavy & Highway	35/2h	21, 22, 27, 33	18, 29	
Laborer – Residential	621r	2, 7	5	
Laborers – Tunnel	157	47	18, 29, 46	
Laborers – Tunnel	35T	21, 22, 27, 33	18, 29	
Laborers – Tunnel	190	1, 42, 58	11, 20, 46	
Mason – Building	2TS.1	1, 10,11, 16, 17, 18, 20, 21, 29, 42, 46, 47, 48, 57, 58		
Mason – Building	2TS.2	22, 23, 25, 33, 45	27	
Mason – Building	2TS.3	6, 34, 38	27	
Mason – Building	2b-on	34		
Mason – Building	2b.1	1, 11, 18, 20, 21, 29, 42, 46, 47, 48, 58	57	
Mason – Building	2b.2	22, 33	25	
Mason – Building	2b.3	6, 34	27	
Mason – Building	2b.4	38		
Mason – Building	2b.5	23	25	
Mason – Building	2b.6	45		
Mason – Building	2b.8	10, 16, 17	57	
Mason – Building	3b-Co-Z2	8, 49, 51	2	
Mason – Building	3B-Z1	19, 26, 28, 35, 50, 59, 61, 62		
Mason – Building – Residential	3B-Z1R	19, 26, 28, 35, 50, 59, 61, 62		
Mason – Building	3B-Bing-Z2	4, 9, 13, 39, 54		
Mason – Building	3B-Ith-Z2	12, 55		

Job Classification Checklist

(Place a checkmark by all classifications that will be using the 4/10 schedule)

*** Do not write in any additional Classifications or Counties***

Job Classification	Tag #	Entire Counties	Partial Counties	Check Box
Mason – Building	3B-Jam-Z2	7	2, 5	
Mason – Building – Residential	3B-Jam-Z2R	2, 4, 8, 7, 9, 12, 39, 13, 49, 51, 54, 55	5	
Mason – Building	3B-Z3	15, 32	5	
Mason – Building	3B-Z3.Orleans	37		
Mason – Residential	3B-Z3R	15, 32	5	
Mason – Residential	3B- z3R.Orleans	37		
Mason - Heavy & Highway	3h	2, 4, 8, 7, 9, 12, 13, 19, 26, 28, 35, 37, 39, 49, 50, 51, 54, 55, 59, 61, 62	5, 15, 32	
Mason – Tile Finisher	3TF-Z1	19, 26, 28, 35, 50, 59, 61, 62		
Mason – Tile Finisher	3TF-Z2	2, 4, 8, 7, 9, 12, 13, 39, 49, 51, 54, 55	5	
Mason – Tile Finisher	3TF-Z3	15, 32, 37	5	
Mason – Tile Finisher	3TF-Z1R	19, 26, 28, 35, 50, 59, 61, 62		
Mason – Tile Finisher	3TF-Z2R	2, 4, 7, 9, 12, 13, 39, 49, 51, 54, 55	5	
Mason – Tile Finisher	3TF-Z3R	15, 32, 37	5	
Mason – Tile Setter	3TS-Z1	19, 26, 28, 35, 50, 59, 61, 62		
Mason – Tile Setter Residential	3TS-Z1R	19, 26, 28, 35, 50, 59, 61, 62		
Mason – Tile Setter	3TS-Z2	2, 4, 7, 8, 9, 12, 13, 39, 49, 51, 54, 55	5	
Mason – Tile Setter Residential	3TS-Z2R	2, 4, 7, 8, 9, 12, 13, 39, 49, 51, 54, 55	5	
Mason – Tile Setter	3TS-Z3	15, 32, 37	5	
Mason – Tile Setter Residential	3TS-Z3R	15, 32, 37	5	
Mason – Building/Heavy & Highway	780	3, 24, 30, 31, 41, 43, 52		
Operating Engineer - Heavy & Highway	137H/H	40, 60	14	
Operating Engineer – Heavy & Highway	158-832H	2, 8, 26, 28, 35, 49, 51, 59, 62	19	
Operating Engineer – Heavy & Highway	158-H/H	1, 4, 9, 10, 11, 14, 16, 17, 18, 20, 21, 22, 29, 39, 42, 46, 47, 48, 54, 57, 58		
Operating Engineer – Heavy & Highway	158-545h	6, 12, 23, 25, 27, 33, 38, 45, 50, 55		
Painter	1456-LS	1, 3, 10, 11, 14, 16, 17, 18, 20, 21, 24, 29, 30, 31, 36, 40, 41, 42, 43, 44, 46, 47, 48, 52, 53, 56, 57, 58, 60		
Painter	150	28, 59, 62	26, 35	

Job Classification Checklist

(Place a checkmark by all classifications that will be using the 4/10 schedule)

*** Do not write in any additional Classifications or Counties***

Job Classification	Tag #	Entire Counties	Partial Counties	Check Box
Painter	178 B	4, 9, 54		
Painter	178 E	8, 49	51	
Painter	178 I	12, 55		
Painter	178 O	13, 39		
Painter	31	6, 22, 27, 33, 34, 50	25, 35, 38	
Painter	38.O		38	
Painter	38.W	23, 45	25	
Painter	4- Buf,Nia,Olean	2, 15, 19, 32, 37, 61	5, 7, 26, 51	
Painter	4-Jamestown		5, 7	
Sheetmetal Worker	46	26, 28, 35, 50, 59, 62		
Sheetmetal Worker	46r	26, 28, 35, 50, 59, 62		
Teamsters – Heavy & Highway	294h/h	1, 11, 18, 20, 29, 42, 46, 47, 48, 58	57	
Teamsters – Heavy & Highway	317bhh	6, 12, 50, 51, 55, 62	2	
Teamsters - Building/Heavy & Highway	456	40, 60		

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Introduction to the Prevailing Rate Schedule

Information About Prevailing Rate Schedule

This information is provided to assist you in the interpretation of particular requirements for each classification of worker contained in the attached Schedule of Prevailing Rates.

Classification

It is the duty of the Commissioner of Labor to make the proper classification of workers taking into account whether the work is heavy and highway, building, sewer and water, tunnel work, or residential, and to make a determination of wages and supplements to be paid or provided. It is the responsibility of the public work contractor to use the proper rate. If there is a question on the proper classification to be used, please call the district office located nearest the project. District office locations and phone numbers are listed below.

Prevailing Wage Schedules are issued separately for "General Construction Projects" and "Residential Construction Projects" on a countyby-county basis.

General Construction Rates apply to projects such as: Buildings, Heavy & Highway, and Tunnel and Water & Sewer rates.

Residential Construction Rates generally apply to construction, reconstruction, repair, alteration, or demolition of one family, two family, row housing, or rental type units intended for residential use.

Some rates listed in the Residential Construction Rate Schedule have a very limited applicability listed along with the rate. Rates for occupations or locations not shown on the residential schedule must be obtained from the General Construction Rate Schedule. Please contact the local Bureau of Public Work office before using Residential Rate Schedules, to ensure that the project meets the required criteria.

Paid Holidays

Paid Holidays are days for which an eligible employee receives a regular day's pay, but is not required to perform work. If an employee works on a day listed as a paid holiday, this remuneration is in addition to payment of the required prevailing rate for the work actually performed.

Overtime

At a minimum, all work performed on a public work project in excess of eight hours in any one day or more than five days in any workweek is overtime. However, the specific overtime requirements for each trade or occupation on a public work project may differ. Specific overtime requirements for each trade or occupation are contained in the prevailing rate schedules.

Overtime holiday pay is the premium pay that is required for work performed on specified holidays. It is only required where the employee actually performs work on such holidays.

The applicable holidays are listed under HOLIDAYS: OVERTIME. The required rate of pay for these covered holidays can be found in the OVERTIME PAY section listings for each classification.

Supplemental Benefits

Particular attention should be given to the supplemental benefit requirements. In most cases the payment or provision of supplements is for each hour worked (noted in the schedule as 'Per hour worked'). Some classifications require the payment or provision of supplements for each hour paid (noted in the schedule as 'Per hour paid'), which require supplements to be paid or provided at a premium rate for premium hours worked. Some classifications may also require the payment or provision of supplements for paid holidays on which no work is performed.

Effective Dates

When you review the schedule for a particular occupation, your attention should be directed to the dates above the column of rates. These are the dates for which a given set of rates is effective. The rate listed is valid until the next effective rate change or until the new annual determination which takes effect on July 1 of each year. All contractors and subcontractors are required to pay the current prevailing rates of wages and supplements. If you have any questions please contact the Bureau of Public Work or visit the New York State Department of Labor website (www.labor.state.ny.us) for current wage rate information.

Apprentice Training Ratios

The following are the allowable ratios of registered Apprentices to Journey-workers.

For example, the ratio 1:1,1:3 indicates the allowable initial ratio is one Apprentice to one Journeyworker. The Journeyworker must be in place on the project before an Apprentice is allowed. Then three additional Journeyworkers are needed before a second Apprentice is allowed. The last ratio repeats indefinitely. Therefore, three more Journeyworkers must be present before a third Apprentice can be hired, and so on.

Please call Apprentice Training Central Office at (518) 457-6820 if you have any questions.

Title (Trade)	Ratio
Boilermaker (Construction)	1:1,1:4
Boilermaker (Shop)	1:1,1:3
Carpenter (Bldg.,H&H, Pile Driver/Dockbuilder)	1:1,1:4
Carpenter (Residential)	1:1,1:3

Electrical (Outside) Lineman	1:1,1:2
Electrician (Inside)	1:1,1:3
Elevator/Escalator Construction & Modernizer	1:1,1:2
Glazier	1:1,1:3
Insulation & Asbestos Worker	1:1,1:3
Iron Worker	1:1,1:4
Laborer	1:1,1:3
Mason	1:1,1:4
Millwright	1:1,1:4
Op Engineer	1:1,1:5
Painter	1:1,1:3
Plumber & Steamfitter	1:1,1:3
Roofer	1:1,1:2
Sheet Metal Worker	1:1,1:3
Sprinkler Fitter	1:1,1:2

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If you have any questions concerning the attached schedule or would like additional information, please contact the nearest BUREAU of PUBLIC WORK District Office or write to:

New York State Department of Labor Bureau of Public Work State Office Campus, Bldg. 12 Albany, NY 12240

District Office Locations:	Telephone #	FAX #
Bureau of Public Work - Albany	518-457-2744	518-485-0240
Bureau of Public Work - Binghamton	607-721-8005	607-721-8004
Bureau of Public Work - Buffalo	716-847-7159	716-847-7650
Bureau of Public Work - Garden City	516-228-3915	516-794-3518
Bureau of Public Work - Newburgh	845-568-5287	845-568-5332
Bureau of Public Work - New York City	212-932-2419	212-775-3579
Bureau of Public Work - Patchogue	631-687-4882	631-687-4902
Bureau of Public Work - Rochester	585-258-4505	585-258-4708
Bureau of Public Work - Syracuse	315-428-4056	315-428-4671
Bureau of Public Work - Utica	315-793-2314	315-793-2514
Bureau of Public Work - White Plains	914-997-9507	914-997-9523
Bureau of Public Work - Central Office	518-457-5589	518-485-1870

Essex County General Construction

Boilermaker

JOB DESCRIPTION Boilermaker

ENTIRE COUNTIES

Albany, Broome, Chenango, Columbia, Delaware, Essex, Fulton, Greene, Hamilton, Herkimer, Montgomery, Otsego, Rensselaer, Saratoga, Schenectady, Schoharie, Tioga, Warren, Washington

WAGES

Per hour

Boilermaker \$ 34.54

SUPPLEMENTAL BENEFITS

Per hour worked

Journeymen	\$ 24.03*
	+ 1.24

* This portion of the benefit is subject to the SAME PREMIUM as shown for overtime.

OVERTIME PAY

See (B, E, Q) on OVERTIME PAGE

HOLIDAY

Paid:

See (1) on HOLIDAY PAGE

Overtime: See (5, 6, 15, 25) on HOLIDAY PAGE

Note: When a holiday falls on Sunday, the day observed by the State or Nation shall be observed, and when Christmas Day and New Year's fall on Saturday, Friday will be observed as the holiday.

21.49*

+1.24

22.34*

+1.24

23.19*

+1.24

REGISTERED APPRENTICES

18.11*

+1.24

Wages per hour

18.11*

+1.24

(1/2) year terms at the following percentage of Journeyman's wage.

18.97*

+1.24

1st 65%	2nd 65%	3rd 70%	4th 75%	5th 80%	6th 85%	7th 90%	8th 95%
Supplemer	ntal Benefits p	per hour worke	d				
1st	2nd	3rd	4th	5th	6th	7th	8th

19.81*

+1.24

* This portion of the benefit is subject to the SAME PREMIUM as shown for overtime.

Carpenter - Building 07/01/2017 **DISTRICT** 2 JOB DESCRIPTION Carpenter - Building **ENTIRE COUNTIES** Clinton, Essex, Franklin WAGES 01/01/2018 07/01/2018 07/01/2019 Per hour: 07/01/2017 Additional Additional Additional \$ 0.40 \$ 1.00 \$ 1.00 Carpenter \$ 26.32 Floor Coverer 26.32 0.40 1.00 1.00 Carpet Layer 26.32 0.40 1.00 1.00 Dry-Wall 26.32 0.40 1.00 1.00 Lather 26.32 0.40 1.00 1.00 **Diver-Wet Day** 61.25 0.00 0.00 0.00 1.00 1.00 Diver -Dry Day 27.32 0.40 **Diver Tender** 27.32 1.00 0.40 1.00

20.65*

+1.24

NOTE ADDITIONAL AMOUNTS PAID FOR THE FOLLOWING WORK LISTED BELOW (not subject to overtime premiums):

- Pile Drivers shall receive \$0.25 per hour over the journeyman's rate of pay when performing piledriving work.

- Certified welders shall receive \$1.00 per hour over the journeyman's rate of pay when the employee is required to be certified and performs DOT or ABS specified welding work

07/01/2017

DISTRICT 1

1-197

- When an employee performs work within a contaminated area on a State and/or Federally designated hazardous waste site, and where relevant State and/or Federal regulations require employees to be furnished and use or wear required forms of personal protection, then the employee shall receive his regular hourly rate plus \$1.50 per hour.

- Depth pay for Divers based upon deepest depth on the day of the dive:

- 0' to 80' no additional fee
- 81'to 100' additional \$.50 per foot
- 101'to 150' additional \$0.75 per foot
- 151'and deeper additional \$1.25 per foot

- Penetration pay for Divers based upon deepest penetration on the day of the dive:

0' to 50' no additional fee

51' to 100' additional \$.75 per foot

101' and deeper additional \$1.00 per foot

Four (4), ten (10) hour days may be worked at straight time during a week, Monday thru Thursday. Friday may be used as a make-up day.

NOTE - In order to use the '4 Day/10 Hour Work schedule', as your normal schedule, you must submit an 'Employer Registration for Use of 4 Day/10 Hour Work Schedule,' form PW30.1; and there must be a dispensation of hours in place on the project. If the PW30.1 is not submitted you may be liable for overtime payments for work over 8 hours per day.

SUPPLEMENTAL BENEFITS

Per hour worked:

Journeyman

\$ 19.34

OVERTIME PAY

See (B, E, *E2, Q) on OVERTIME PAGE

* Note - Saturday is payable at straight time if the employee misses work, except where a doctor's or hospital verification of illness is produced Monday through Friday when work was available to the employee.

HOLIDAY

Paid: Overtime: See (1) on HOLIDAY PAGE See (5, 6) on HOLIDAY PAGE

Note: Any holiday which occurs on Sunday shall be observed the following Monday. If Christmas falls on a Saturday, it shall be observed on the prior Friday.

REGISTERED APPRENTICES

Wages per hour

FOR APPRENTICES INDENTURED PRIOR TO JANUARY 1, 2016

One year terms at the following percentage of Journeyman's base wage

1st	2nd	3rd	4th
50%	60%	70%	80%
Supplemental	Benefits per ho	our worked p	olus paid holidays:
1st year term		\$ 10.91	
2nd year term	1	10.91	
3rd year term		13.51	
4th year term		13.51	

FOR APPRENTICES INDENTURED AFTER JANUARY 1, 2016

1,300 hour terms at the following percentage of Journeyman's base wage

1st	2nd	3rd	4th	5th
50%	60%	65%	70%	80%
Supplement	al Benefits per hou	r worked	plus paid ł	iolidays:
1st term		\$ 10.91		
2nd term		10.91		
3rd term		13.51		
4th term		13.51		
5th term		13.51		

ADDITIONAL AMOUNTS PAID TO APPRENTICES FOR SPECIFIC TYPES OF WORK PERFORMED (not subject to overtime premiums):

- Pile Driving apprentices shall receive \$0.25 per hour when performing piledriving work.

- Certified welders shall receive \$1.00 per hour over the apprentices rate of pay when the apprentice is required to be certified and performs DOT or ABS specified welding work

- When an apprentice performs work within a contaminated area on a State and/or Federally designated hazardous waste site, and where relevant State and/or Federal regulations require the apprentice to be furnished and use or wear required forms of personal protection, then the apprentice shall receive his regular hourly rate plus \$1.50 per hour.

2-291B-Cli

DISTRICT 2

JOB DESCRIPTION Carpenter - Building / Heavy&Highway

ENTIRE COUNTIES

Albany, Allegany, Broome, Cattaraugus, Cayuga, Chautauqua, Chemung, Chenango, Clinton, Columbia, Cortland, Delaware, Erie, Essex, Franklin, Fulton, Genesee, Greene, Hamilton, Herkimer, Jefferson, Lewis, Livingston, Madison, Monroe, Montgomery, Niagara, Oneida, Onondaga, Ontario, Orleans, Oswego, Otsego, Rensselaer, Saratoga, Schenectady, Schoharie, Schuyler, Seneca, St. Lawrence, Steuben, Sullivan, Tioga, Tompkins, Ulster, Warren, Washington, Wayne, Wyoming, Yates

PARTIAL COUNTIES

Orange: The area lying on Northern side of Orange County demarcated by a line drawn from the Bear Mountain Bridge continuing east to the Bear Mountain Circle, continue North on 9W to the town of Cornwall where County Road 107 (also known as Quaker Rd) crosses under 9W, then east on County Road 107 to Route 32, then north on Route 32 to Orrs Mills Rd, then west on Orrs Mills Rd to Route 94, continue west and south on Route 94 to the Town of Chester, to the intersection of Kings Highway, continue south on Kings Highway to Bellvale Rd, west on Bellvale Rd to Bellvale Lakes Rd, then south on Bellvale Lakes Rd to Kain Rd, southeast on Kain Rd to Route 17A, then north and southeast along Route 17A to Route 210, then follow Route 210 to NJ Border.

WAGES

Wages per hour

wages per nour.	07/01/2017	07/01/2018
Carpenter - ONLY for Artificial Turf/Synthetic		Additional
Sport Surface	\$ 29.88	\$ 1.50

Note - Does not include the operation of equipment. Please see Operating Engineers rates.

SUPPLEMENTAL BENEFITS

Per hour worked plus paid holidays:

Journeyman	\$ 21.45
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OVERTIME PAY See (B, E, Q) on OVERTIME PAGE

HOLIDAY

Paid:See (2, 17) on HOLIDAY PAGEOvertime:See (5, 6, 16) on HOLIDAY PAGE

Notes: When a holiday falls upon a Saturday, it shall be observed on the preceding Friday. Whan a holiday falls upon a Sunday, it shall be

observed on the following Monday.

An employee taking an unexcused day off the regularly scheduled day before or after a paid Holiday shall not receive Holiday pay.

REGISTERED APPRENTICES

Wages per hour:

One year terms at the following percentage of Journeyman's wage:

1st	2nd	3rd	4th
50%	60%	70%	80%

Supplemental Benefits per hour worked plus paid holidays:

1st year term	\$ 11.00
2nd year term	11.00
3rd year term	13.60
4th year term	13.60

Carpenter - Heavy&Highway

JOB DESCRIPTION Carpenter - Heavy&Highway

ENTIRE COUNTIES

Albany, Clinton, Essex, Franklin, Fulton, Greene, Hamilton, Montgomery, Rensselaer, Saratoga, Schenectady, Schoharie, Warren, Washington

WAGES

Per hour		
	07/01/2017	07/01/2018
		Additional
Carpenter	\$ 30.78	\$ 1.50
Piledriver	30.78	1.50
Diver-Wet Day	55.78	1.50
Diver-Dry Day	31.78	1.50
Diver-Tender	31.78	1.50

NOTE ADDITIONAL AMOUNTS PAID FOR THE FOLLOWING WORK LISTED BELOW (not subject to overtime premiums): - When Millwright work is performed, the employee will receive an additional \$1.50 per hour for all hours worked on the day the millwright work was performed.

DISTRICT 2

2-42AtSS 07/01/2017 - When project owner mandates a single irregular work shift, the employee will receive an additional \$2.00 per hour. A single irregular work shift can start any time from 5:00 p.m. to 1:00 a.m.

- State or Federal designated hazardous site, requiring protective gear shall be an additional \$2.00 per hour.

- Certified welders when required to perform welding work will receive an additional \$1.50 per hour.

ADDITIONAL NOTES PERTAINING TO DIVERS/TENDERS:

Divers and Tenders shall receive one and one half (1 1/2) times their regular diver and tender rate of pay for Effluent and Slurry diving.
 Divers and tenders being paid at the specified rate for Effluent and Slurry diving shall have all overtime rates based on the specified rate plus the appropriate overtime rates (one and one half or two times the specified rate for Slurry and Effluent divers and tenders).

- The pilot of an ADS or submersible will receive one and one-half (1 1/2) times the Diver-Wet Day Rate for time submerged.

- Depth pay for Divers based upon deepest depth on the day of the dive:

0' to 50' no additional fee

51'to 100' additional \$.50 per foot

101'to 150' additional \$0.75 per foot

151'and deeper additional \$1.25 per foot

- Penetration pay for Divers based upon deepest penetration on the day of the dive:

- 0' to 50' no additional fee
 - 51' to 100' additional \$.75 per foot
 - 101' and deeper additional \$1.00 per foot

- Diver rates applies to all hours worked on dive day.

Four (4), ten (10) hour days may be worked at straight time during a week, Monday thru Friday, provided the project duration is more than forty (40) hours.

NOTE - In order to use the '4 Day/10 Hour Work schedule', as your normal schedule, you must submit an 'Employer Registration for Use of 4 Day/10 Hour Work Schedule,' form PW30.1; and there must be a dispensation of hours in place on the project. If the PW30.1 is not submitted you may be liable for overtime payments for work over 8 hours per day.

SUPPLEMENTAL BENEFITS

Per hour worked plus paid holidays:

Journeyman

\$ 20.55

OVERTIME PAY See (B, E, Q) on OVERTIME PAGE

HOLIDAY

Paid: See (2, 17) on HOLIDAY PAGE Overtime: See (5, 6) on HOLIDAY PAGE In the event a Holiday falls on a Saturday, the Eriday before will be observed as a

In the event a Holiday falls on a Saturday, the Friday before will be observed as a Holiday. If a Holiday falls on a Sunday, then Monday will be observed as a Holiday.

REGISTERED APPRENTICES

Wages per hour

FOR APPRENTICES INDENTURED PRIOR TO JANUARY 1, 2016 One year terms at the following percentage of Journeyman's base wage				
1st	2nd	3rd	4th	
50%	60%	70%	80%	
Supplemental Benefits per hour worked plus paid holidays:				
1st year term			\$ 10.87	
2nd year tern	า		10.87	
3rd year term	I		13.47	
4th year term			13.47	

FOR APPRENTICES INDENTURED AFTER JANUARY 1, 2016

1,300 hour terms at the following percentage of Journeyman's base wage1st2nd3rd4th50%60%60%65%70%80%Supplemental Benefits per hour worked plus paid holidays:

1st term	\$ 10.87
2nd term	10.87
3rd term	13.47
4th term	13.47
5th term	13.47

NOTE ADDITIONAL AMOUNTS PAID TO APPRENTICES FOR THE FOLLOWING WORK LISTED BELOW (not subject to overtime premiums):

- When Millwright work is performed, the employee will receive an additional \$1.50 per hour for all hours worked on the day the millwright work was performed.

DISTRICT 6

- When project owner mandates a single irregular work shift, the employee will receive an additional \$2.00 per hour. A single irregular work shift can start any time from 5:00 p.m. to 1:00 a.m.

- State or Federal designated hazardous site, requiring protective gear shall be an additional \$2.00 per hour.

- Certified welders when required to perform welding work will receive an additional \$1.50 per hour.

2-291HH-Alb

07/01/2017

Electrician

JOB DESCRIPTION Electrician

ENTIRE COUNTIES

Clinton, Essex, Franklin, Jefferson, Lewis, St. Lawrence

WAGES	
Per hour:	07/01/2017
Electrician	\$ 33.50
Teledata	33.50
Cable Splicer	35.00
Welder	35.00

NOTE: Additional premiums for the following work listed:

-Additional \$1.50 per hour for work performed underground such as tunnels and mine shafts. Excludes manholes and walkway tunnels between buildings.

-Additional \$1.50 per hour for working 35 feet or more on scaffolds, ladders, towers, steeples, structural steel, or mechanical lifts over 65 feet.

Shift Work: The following rates will apply on all Contracting Agency mandated multiple shifts worked between the hours listed below. The employer may be permitted to adjust the starting hours of the shift by up to two (2) hours if required by the agency. If a shift begins outside of the stated shift hours, the rate paid would be determined by what shift the majority of the hours were worked.

When two (2) or three (3) shifts are worked:

1st shift:	8:00 AM to 4:30 PM regular wage rate
2nd shift:	4:30 PM to 1:00 AM regular wage rate plus 17.3%
3rd shift:	12:30 AM to 9:00 AM regular wage rate plus 31.4%

** IMPORTANT NOTICE - EFFECTIVE 07/01/2012 **

Four (4), ten (10) hour days may be worked at straight time during a week, Monday thru Thursday. Friday may be used as a make-up day. NOTE - In order to use the '4 Day/10 Hour Work schedule', as your normal schedule, you must submit an 'Employer Registration for Use of 4 Day/10 Hour Work Schedule,' form PW30.1; and there must be a dispensation of hours in place on the project. If the PW30.1 is not submitted you may be liable for overtime payments for work over 8 hours per day.

SUPPLEMENTAL BENEFITS

Per hour:

\$ 19.98 * plus 3% of gross wage

* NOTE: THE 3% IS BASED ON THE HOURLY WAGE PAID, STRAIGHT TIME RATE OR PREMIUM TIME RATE.

OVERTIME PAY

See (B, E, Q) on OVERTIME PAGE

NOTE: WAGE CAP...Double the straight time hourly base wage shall be the maximum hourly wage compensation for any hour worked. Contractor is still responsible to pay the hourly benefit amount for each hour worked.

HOLIDAY

Paid:	See (1) on HOLIDAY PAGE
Overtime:	See (5, 6) on HOLIDAY PAGE

REGISTERED APPRENTICES

WAGES: Hourly terms at the following percentage of Journeyman's wage.

,	1-1000 40%	to 2000 45%	to 3500 50%	to 5000 60%	to 6500 70%	to 8000 80%
Electrician	\$13.40	\$15.08	\$16.75	\$20.10	\$23.45	\$26.80
Cable Splicer, Tunnel	\$14.90	\$16.58	\$18.25	\$21.60	\$24.95	\$28.30

SUPF	PLEMENTAL BENEFITS per hour:	
Appr	1st & 2nd term	

\$ 10.17 * plus 3% of gross wage

DISTRICT 1

Appr All other terms

\$ 19.98 * plus 3% of gross wage

* NOTE: THE 3% IS BASED ON THE HOURLY WAGE PAID, STRAIGHT TIME RATE OR PREMIUM TIME RATE.

6-910

07/01/2017

Elevator Constructor

JOB DESCRIPTION Elevator Constructor

ENTIRE COUNTIES

Albany, Clinton, Essex, Fulton, Hamilton, Herkimer, Montgomery, Otsego, Rensselaer, Saratoga, Schenectady, Schoharie, Warren, Washington

PARTIAL COUNTIES

Madison: Madison Only the towns of: Brookfield, Hamilton, Lincoln, Madison, Smithfield, Stockbridge and the City of Oneida Oneida: Entire county except the towns of: Camden, Florence, and Vienna.

WAGES

Per hour	07/01/2017	01/01/2018	01/01/2019
Mechanic	\$ 43.24	\$ 45.40	\$ 47.56
Helper	70% of Mechanic Wage Rate	70% of Mechanic Wage Rate	70% of Mechanic Wage Rate

**** IMPORTANT NOTICE - EFFECTIVE 04/01/2009 ****

Four (4), ten (10) hour days may be worked at straight time during a week, Monday thru Thursday or Tuesday thru Friday.

NOTE - In order to use the '4 Day/10 Hour Work schedule', as your normal schedule, you must submit an 'Employer Registration for Use of 4 Day/10 Hour Work Schedule,' form PW30.1; and there must be a dispensation of hours in place on the project. If the PW30.1 is not submitted you may be liable for overtime payments for work over 8 hours per day.

SUPPLEMENTAL BENEFITS

Per hour worked

Journeyman/Helper	07/01/2017	01/01/2018	01/01/2019
Journeyman/heiper	\$ 31.585*	\$ 32.705*	\$ 33.825*

(*)Plus 6% of regular hourly rate.

OVERTIME PAY

See (D, O) on OVERTIME PAGE

HOLIDAY

Paid: See (5, 6, 15, 16) on HOLIDAY PAGE Overtime: See (5, 6, 15, 16) on HOLIDAY PAGE Note: When a paid holiday falls on Saturday, it shall be observed on Friday. When a paid holiday falls on Sunday, it shall be observed on Monday.

REGISTERED APPRENTICES

Wages per hour 0-6 mo* 50% *No supplemental benefits

6-12 mo	2nd yr	3rd yr	4th yr
55 %	65 %	70 %	80 %

Supplemental Benefits per hour worked

Same as Journeyman/Helper

1-35

07/01/2017

Glazier

JOB DESCRIPTION Glazier ENTIRE COUNTIES Albany, Clinton, Columbia, Essex, Franklin, Fulton, Greene, Hamilton, Montgomery, Rensselaer, Saratoga, Schenectady, Schoharie, Warren, Washington

WAGES

Per hour

	07/01/2017	05/01/2018 Additional
Glazier base wage	\$ 27.05 + additional \$2.00 per hour for all hours	\$ 1.50 worked
*High Work Base Wage	30.50 + additional \$3.52 per hour for all hours	worked

(*)When working on Swing Stage or Lift 100 feet or more in height, measured from the ground level up.

Four (4), ten (10) hour days may be worked at straight time during a week, Monday thru Thursday. Friday may be used as a make-up day. NOTE - In order to use the '4 Day/10 Hour Work schedule', as your normal schedule, you must submit an 'Employer Registration for Use of 4 Day/10 Hour Work Schedule,' form PW30.1; and there must be a dispensation of hours in place on the project. If the PW30.1 is not submitted you may be liable for overtime payments for work over 8 hours per day.

SUPPLEMENTAL BENEFITS

Per hour worked

Journeyman	\$ 19.11
Journeyman	
High Work	23.94

OVERTIME PAY

See (B, E, E2, Q) on OVERTIME PAGE Premium is applied to the respective base wage only.

HOLIDAY

Paid: See (1) on HOLIDAY PAGE Overtime: See (5, 6) on HOLIDAY PAGE

Note: If any of the holidays are designated by federal law to be celebrated on a day other than that on which they regularly fall, then the holiday shall be celebrated on the day set by said federal law as if the day on which the holiday is celebrated was actually the holiday date.

REGISTERED APPRENTICES

Wages per hour

Apprentice Glazier One Half Year (750 hr) terms at the following percentage of Journeyman's base wage.

1st	2nd	3rd	4th	5th	6th	7th	8th
35%	45%	55%	65%	75%	85%	90%	95%
+ additiona	I \$2.00 per l	hour for all hou	rs worked for	all terms			

Apprentice Glazier Hi-Work One Half Year (750 hr) terms at the following percentage of Journeyman's Hi-Work base wage.

1st	2nd	3rd	4th	5th	6th	7th	8th
35%	45%	55%	65%	75%	85%	90%	95%
+ additional	\$3.52 per hou	r for all hours v	worked for all t	erms			

Supplemental Benefits per hour worked

Apprentice	
1st-4th term	\$ 15.64
5th-8th term	19.11
Apprentice High Work	
1st-4th term	\$ 17.94
5th-8th term	23.94

1-201

07/01/2017

Insulator - Heat & Frost

JOB DESCRIPTION Insulator - Heat & Frost

DISTRICT 1

ENTIRE COUNTIES

Albany, Columbia, Delaware, Essex, Fulton, Greene, Hamilton, Montgomery, Rensselaer, Saratoga, Schenectady, Schoharie, Sullivan, Ulster, Warren, Washington

Wages per hour	07/01/2017	05/01/2018 Additional
Asbestos Worker*	\$ 34.10	\$ 1.25
Insulator*	34.10	
Firestopping Worker*	28.99	

(*)On Mechanical Systems only.

On government mandated shift work additional 12% of wage for all shifts starting after 3:30 P.M.

SUPPLEMENTAL BENEFITS

Per hour worked

Journeyman

\$ 21.49

OVERTIME PAY

See (*B1, **Q) on OVERTIME PAGE *B1=Double time begins after 10 hours on Saturday **Q=Triple time on Labor Day if worked.

HOLIDAY

Paid:	See (1) on HOLIDAY PAGE
Overtime:	See (5, 6) on HOLIDAY PAGE
When a beliday falls on Su	inday the following Menday shall be observed as the beliday

When a holiday falls on Sunday the following Monday shall be observed as the holiday.

REGISTERED APPRENTICES

Wages per hour

one year terms at the following percentage of Journeyman's wage.

1st	2nd	3rd	4th
60 %	70 %	80 %	90 %

Supplemental Benefits per hour worked:

Apprentices \$21.49

1-40

07/01/2017

DISTRICT 1

Ironworker

JOB DESCRIPTION Ironworker

ENTIRE COUNTIES

Albany, Clinton, Columbia, Delaware, Essex, Greene, Rensselaer, Saratoga, Schenectady, Schoharie, Warren, Washington

PARTIAL COUNTIES

Fulton: Only the Townships of Broadalbin, Mayfield, Northampton, Bleecker and Johnstown. Hamilton: Only the Townships of Hope, Benson and Wells. Montgomery: Only the Townships of Florida, Amsterdam, Charleston, Glen, Mohawk and Root. Otsego: Only the Towns of Unadilla, Butternuts, Morris, Otego, Oneonta, Laurens, Millford, Maryland and Worchester.

WAGES

Wages	07/01/2017
Per hour	
Ornamental	\$ 30.50
Reinforcing	30.50
Rodman	30.50
Structural & Precast	30.50
Mover/Rigger	30.50
Fence Erector	30.50
Stone Derrickman	30.50
Sheeter	30.75
Curtain Wall Installer	30.50
Metal Window Installer	30.50

SUPPLEMENTAL BENEFITS

Per hour worked

JOURNEYMAN

OVERTIME PAY

\$ 27.36

Page 39

See (B, E, Q) on OVERTIME PAGE

 HOLIDAY

 Paid:
 See (1) on HOLIDAY PAGE

 Overtime:
 See (5, 6) on HOLIDAY PAGE

 Note:
 Any holiday which occurs on Sunday shall be observed the following Monday.

REGISTERED APPRENTICES

Wages per hour

ONE YEAR TERMS AT THE FOLLOWING WAGE RATES:

	07/01/2017
1st year 2nd year 3rd year 4th year	\$ 16.50 18.50 20.50 22.50
Supplemental Benefits per hour worked 1st year 2nd year 3rd year 4th year	\$ 10.75 21.28 22.79 24.30

Laborer - Building

JOB DESCRIPTION Laborer - Building

ENTIRE COUNTIES Clinton, Essex, Warren

WAGES

GROUP #A: All Laborers (except as noted)

GROUP #B: Asbestos & Hazardous Waste Work.

WAGES per hour

	07/01/2017	07/01/2018	07/01/2019
		Additional	Additional
Group # A	\$ 22.88	\$ 1.50	\$ 1.50
Group # B	24.38	1.50	1.50

SUPPLEMENTAL BENEFITS

Per hour worked

Journeymen

\$ 20.90

OVERTIME PAY See (B, E, *E2, Q) on OVERTIME PAGE

*Inclement weather makeup day may be provided November 15 to May 15.

HOLIDAY Paid:

See (1) on HOLIDAY PAGE See (5, 6) on HOLIDAY PAGE

REGISTERED APPRENTICES

Wages per hour

Overtime:

Terms are at the following percentage of Group Rate A.

0-1,000 Hrs	1,001-2,000 Hrs	2,001-3,000 Hrs	3,001-4,000 Hrs
60%	70%	80%	90%

SUPPLEMENTAL BENEFITS per hour worked:

All Terms: Same as Journeyman

Laborer - Heavy&Highway

7-1822ew

07/01/2017

DISTRICT 7

1-12

07/01/2017

Clinton, Essex, Warren

WAGES

Per hour:

GROUP A: Drill Helper on drilling equipment listed below in Group C, Flagmen, Outboard and Hand Boats.

GROUP B: BASIC RATE: Bull Float (where used for strike off only), Chain Saw, Concrete Aggregate Bin, Concrete Bootman, Gin Buggy, Hand or Machine Vibrator, Jack Hammer, Mason Tender, Mortar Mixer, Pavement Breaker, Handlers of All Steel Mesh, Small Generators for Laborers' Tools, Installation of Bridge Drainage Pipe, Pipe Layers, Vibrator Type Rollers, Tamper, Drill Doctor, Water Pump Operator (1-1/2" and Single Diaphragm) Nozzle (Asphalt, Gunite, Seeding, and Sand Blasting), Laborers on Chain Link Fence Erection, Rock Splitter & Power Unit. Pusher Type Concrete Saw and All Other Gas, Electric, Oil, and Air Tool Operators, Wrecking Laborer.

GROUP C: Drilling Equipment - only where a separate air compressor unit supplies power, Acetylene Torch Operators, Asphalt Raker, Powder Man, Tail or Screw Operator on Asphalt Paver.

GROUP D: Blasters, Form Setters, Stone or Granite Curb Setters.

GROUP E: Hazardous Waste Removal Work when designated by State/Federal as hazardous waste site and regulations require employees wear required personal protection.

WAGES per hour	07/01/2017	07/01/2018
		Additional
Group # A	\$ 24.97	\$ 1.60
Group # B	25.17	1.60
Group # C	25.37	1.60
Group # D	25.57	1.60
Group # E	27.17	1.60

NOTE: A single irregular work shift starting any time between 5:00 PM and 1:00 AM on governmental mandated night work shall be paid an additional \$2.00 per hour.

IMPORTANT NOTE: Operation of equipment (i.e. forklift, skid steer) is the work of the Operating Engineers, please see appropriate rates.

SUPPLEMENTAL BENEFITS

Per hour worked

Journeymen \$22.75

OVERTIME PAY

See (B, E, Q) on OVERTIME PAGE

HOLIDAY

See (5, 6) on HOLIDAY PAGE Paid: Overtime:

See (5, 6) on HOLIDAY PAGE

NOTE: If a holiday falls on Sunday, it will be celebrated on Monday. In the event that men work on this Sunday holiday, they shall be paid double time. In the event that men work on Monday, they shall be compensated at double time plus the holiday pay. Accordingly, the Monday following the Sunday is treated as the holiday.

REGISTERED APPRENTICES

WAGES: 1000 hour terms at the following percentage of Journeyman's wage.

1st	2nd	3rd	4th
60%	70%	80%	90%

SUPPLEMENTAL BENEFITS per hour worked:

All Terms: Same as Journeyman

7-1822/2h

Laborer - Tunnel

07/01/2017

JOB DESCRIPTION Laborer - Tunnel

ENTIRE COUNTIES Clinton, Essex, Warren

WAGES

GROUP A: General Laborer

GROUP B: Change Houseman, Miners and all Machine Men, Safety Miner, all Shaft-work, Caisson work, Drilling, Blow Pipe, all Air Tools, Tugger, Scaling, Nipper, Guniting pot to nozzle, Bit Grinder, Signal Man (top and bottom), Concrete Men, Shield driven tunnels, mixed face and soft ground, liner plate tunnels in free air.

DISTRICT 7

GROUP C: Hazardous/Waste Work

WAGES (per hour)	07/01/2017	07/01/2018 Additional
Tunnel Laborer:		
Group A	\$ 28.15	\$ 1.60
Group B	27.95	1.60
Group C*	30.15	1.60

(*)Work site required to be designated by State/Federal as hazardous waste site and relevant regulations require employees to use personal protection.

SUPPLEMENTAL BENEFITS

Per hour worked:

Journeyman \$22.75

OVERTIME PAY

See (B, E, Q) on OVERTIME PAGE

HOLIDAY

Paid: See (5, 6) on HOLIDAY PAGE See (5, 6) on HOLIDAY PAGE Overtime: If the holiday falls on Saturday, it will be celebrated on Friday. If the holiday falls on Sunday, it will be celebrated on Monday.

REGISTERED APPRENTICES

Wages per hour

Terms are at the following percentage of Group B rate.

0-1000 Hrs	1001-2000 Hrs	2001-3000 Hrs	3001-4000 Hrs
60%	70%	80%	90%

SUPPLEMENTAL BENEFITS

All Terms: Same as Journeyman

7-1822T

07/01/2017

Lineman Electrician

JOB DESCRIPTION Lineman Electrician

ENTIRE COUNTIES

Albany, Allegany, Broome, Cattaraugus, Cayuga, Chautauqua, Chemung, Chenango, Clinton, Columbia, Cortland, Delaware, Dutchess, Erie, Essex, Franklin, Fulton, Genesee, Greene, Hamilton, Herkimer, Jefferson, Lewis, Livingston, Madison, Monroe, Montgomery, Niagara, Oneida, Onondaga, Ontario, Orange, Orleans, Oswego, Otsego, Putnam, Rensselaer, Rockland, Saratoga, Schenectady, Schoharie, Schuyler, Seneca, St. Lawrence, Steuben, Sullivan, Tioga, Tompkins, Ulster, Warren, Washington, Wayne, Wyoming, Yates

WAGES

Per hour:

NOTE: Includes Teledata Work within ten (10) feet of High Voltage Transmission Lines

Below rates applicable on all overhead and underground distribution and maintenance work, and all overhead and underground transmission line work and the installation of fiber optic cable where no other construction trades are or have been involved. (Ref #14.01.01)

	07/01/2017	05/07/2018	05/06/2019	05/04/2020
Lineman, Technician	\$ 49.20	\$ 50.60	\$ 52.05	\$ 53.50
Crane, Crawler Backhoe	49.20	50.60	52.05	53.50
Welder, Cable Splicer	49.20	50.60	52.05	53.50
Digging Mach. Operator	44.28	45.54	46.85	48.15
Tractor Trailer Driver	41.82	43.01	44.24	45.48
Groundman, Truck Driver	39.36	40.48	41.64	42.80
Equipment Mechanic	39.36	40.48	41.64	42.80
Flagman	29.52	30.36	31.23	32.10

Additional \$1.00 per hour for entire crew when a helicopter is used.

DISTRICT 6

Below rates applicable on all electrical sub-stations, switching structures, fiber optic cable and all other work not defined as "Utility outside electrical work". (Ref #14.02.01-A)

Lineman, Technician	\$ 49.20	\$ 50.60	\$ 52.05	\$ 53.50
Crane, Crawler Backhoe	49.20	50.60	52.05	53.50
Cable Splicer	54.12	55.66	57.26	58.85
Certified Welder -				
Pipe Type Cable	51.66	53.13	54.65	56.18
Digging Mach. Operator	44.28	45.54	46.85	48.15
Tractor Trailer Driver	41.82	43.01	44.24	45.48
Groundman, Truck Driver	39.36	40.48	41.64	42.80
Equipment Mechanic	39.36	40.48	41.64	42.80
Flagman	29.52	30.36	31.23	32.10

Additional \$1.00 per hour for entire crew when a helicopter is used.

Below rates apply on switching structures, maintenance projects, railroad catenary install/maintenance third rail installation, bonding of rails and pipe type cable and installation of fiber optic cable. (Ref #14.02.01-B)

Lineman, Tech, Welder	\$ 50.52	\$ 51.92	\$ 53.37	\$ 54.82
Crane, Crawler Backhoe	50.52	51.92	53.37	54.82
Cable Splicer	55.57	57.11	58.71	60.30
Certified Welder -				
Pipe Type Cable	53.05	54.52	56.04	57.56
Digging Mach. Operator	45.47	46.73	48.03	49.34
Tractor Trailer Driver	42.94	44.13	45.36	46.60
Groundman, Truck Driver	40.42	41.54	42.70	43.86
Equipment Mechanic	40.42	41.54	42.70	43.86
Flagman	30.31	31.15	32.02	32.89

Additional \$1.00 per hour for entire crew when a helicopter is used.

Below rates applicable on all overhead and underground transmission line work & fiber optic cable where other construction trades are or have been involved. This applies to transmission line work only, not other construction. (Ref #14.03.01)

Lineman, Tech, Welder	\$ 51.71	\$ 53.11	\$ 54.56	\$ 56.01
Crane, Crawler Backhoe	51.71	53.11	54.56	56.01
Cable Splicer	51.71	53.11	54.56	56.01
Digging Mach. Operator	46.54	47.80	49.10	50.41
Tractor Trailer Driver	43.95	45.14	46.38	47.61
Groundman, Truck Driver	41.37	42.49	43.65	44.81
Equipment Mechanic	41.37	42.49	43.65	44.81
Flagman	31.03	31.87	32.74	33.61

Additional \$1.00 per hour for entire crew when a helicopter is used.

NOTE: THE FOLLOWING RATES WILL APPLY ON ALL CONTRACTING AGENCY MANDATED MULTIPLE SHIFTS OF AT LEAST FIVE (5) DAYS DURATION WORKED BETWEEN THE HOURS LISTED BELOW:

1ST SHIFT	8:00 AM to 4:30 PM REGULAR RATE
2ND SHIFT	4:30 PM to 1:00 AM REGULAR RATE PLUS 17.3 %
3RD SHIFT	12:30 AM to 9:00 AM REGULAR RATE PLUS 31.4 %

** IMPORTANT NOTICE **

Four (4), ten (10) hour days may be worked at straight time during a week, Monday thru Thursday. Friday may be used as a make-up day. *Effective 05/06/2013, Tuesday thru Friday may be worked with no make-up day.

NOTE - In order to use the '4 Day/10 Hour Work schedule', as your normal schedule, you must submit an 'Employer Registration for Use of 4 Day/10 Hour Work Schedule,' form PW30.1; and there must be a dispensation of hours in place on the project. If the PW30.1 is not submitted you may be liable for overtime payments for work over 8 hours per day.

SUPPLEMENTAL BENEFITS

Per hour worked (also required on non-worked holidays):

The following SUPPLEMENTAL BENEFITS apply to all classification categories of CONSTRUCTION, TRANSMISSION and DISTRIBUTION.

Journeyman	
oounicymun	

\$ 22.65

*plus	6.75% of *	plus 6.75% of *	*plus 6.75% of *	plus 6.75% of
hourly	wage h	ourly wage ł	nourly wage	hourly wage

*The 6.75% is based on the hourly wage paid, straight time rate or premium rate.

OVERTIME PAY

See (B, E, Q,) on OVERTIME PAGE. *Note* Double time for all emergency work designated by the Dept. of Jurisdiction. NOTE: WAGE CAP...Double the straight time hourly base wage shall be the maximum hourly wage compensation for any hour worked. Contractor is still responsible to pay the hourly benefit amount for each hour worked.

HOLIDAY

Paid	See (5, 6, 8, 13, 25) on HOLIDAY PAGE plus Governor of NYS Election Day.
Overtime	See (5, 6, 8, 13, 25) on HOLIDAY PAGE plus Governor of NYS Election Day.

NOTE: All paid holidays falling on Saturday shall be observed on the preceding Friday. All paid holidays falling on Sunday shall be observed on the following Monday. Supplements for holidays paid at straight time.

REGISTERED APPRENTICES

WAGES: 1000 hour terms at the following percentage of the applicable Journeyman Lineman wage.

1st	2nd	3rd	4th	5th	6th	7th
60%	65%	70%	75%	80%	85%	90%

SUPPLEMENTAL BENEFITS: Same as Journeyman

6-1249a

07/01/2017

Lineman Electrician - Teledata

JOB DESCRIPTION Lineman Electrician - Teledata

ENTIRE COUNTIES

Albany, Allegany, Broome, Cattaraugus, Cayuga, Chautauqua, Chemung, Chenango, Clinton, Columbia, Cortland, Delaware, Dutchess, Erie, Essex, Franklin, Fulton, Genesee, Greene, Hamilton, Herkimer, Jefferson, Lewis, Livingston, Madison, Monroe, Montgomery, Niagara, Oneida, Onondaga, Ontario, Orange, Orleans, Oswego, Otsego, Putnam, Rensselaer, Rockland, Saratoga, Schenectady, Schoharie, Schuyler, Seneca, St. Lawrence, Steuben, Sullivan, Tioga, Tompkins, Ulster, Warren, Washington, Wayne, Westchester, Wyoming, Yates

WAGES

Per hour:

FOR OUTSIDE WORK.

Cable Splicer	\$ 30.90
Installer, Repairman	29.33
Teledata Lineman	29.33
Technician, Equipment Operator	29.33
Groundman	15.56

NOTE: EXCLUDES Teledata work within ten (10) feet of High Voltage (600 volts and over) transmission lines. For this work please see LINEMAN.

07/01/2017

NOTE: THE FOLLOWING RATES WILL APPLY ON ALL CONTRACTING AGENCY MANDATED MULTIPLE SHIFTS OF AT LEAST FIVE (5) DAYS DURATION WORKED:

1ST SHIFT	REGULAR RATE
2ND SHIFT	REGULAR RATE PLUS 10%
3RD SHIFT	REGULAR RATE PLUS 15%

SUPPLEMENTAL BENEFITS

Per hour: Journeyman

\$ 4.43 *plus 3% of wage paid

*The 3% is based on the hourly wage paid, straight time rate or premium rate.

OVERTIME PAY See (B, E, Q) on OVERTIME PAGE

DISTRICT 6

NOTE: WAGE CAP...Double the straight time hourly base wage shall be the maximum hourly wage compensation for any hour worked. Contractor is still responsible to pay the hourly benefit amount for each hour worked.

HOLIDAY Paid: Overtime:

See (1) on HOLIDAY PAGE See (5, 6, 16) on HOLIDAY PAGE

6-1249LT - Teledata

Lineman Electrician - Traffic Signal, Lighting 07/01/2017

JOB DESCRIPTION Lineman Electrician - Traffic Signal, Lighting

ENTIRE COUNTIES

Albany, Allegany, Broome, Cattaraugus, Cayuga, Chautauqua, Chemung, Chenango, Clinton, Cortland, Delaware, Erie, Essex, Franklin, Fulton, Genesee, Greene, Hamilton, Herkimer, Jefferson, Lewis, Livingston, Madison, Monroe, Montgomery, Niagara, Oneida, Onondaga, Ontario, Orleans, Oswego, Otsego, Rensselaer, Saratoga, Schenectady, Schoharie, Schuyler, Seneca, St. Lawrence, Steuben, Sullivan, Tioga, Tompkins, Warren, Washington, Wayne, Wyoming, Yates

WAGES

Lineman/Technician shall perform all overhead aerial work. A Lineman/Technician on the ground will install all electrical panels, connect all grounds, install and connect all electrical conductors which includes, but is not limited to road loop wires; conduit and plastic or other type pipes that carry conductors, flex cables and connectors, and to oversee the encasement or burial of such conduits or pipes.

A Groundman/Groundman Truck Driver shall: Build and set concrete forms, handle steel mesh, set footer cages, transport concrete in a wheelbarrow, hand or machine concrete vibrator, finish concrete footers, mix mortar, grout pole bases, cover and maintain footers while curing in cold weather, operate jack hammer, operate hand pavement breaker, tamper, concrete and other motorized saws, as a drill helper, operate and maintain generators, water pumps, chainsaws, sand blasting, operate mulching and seeding machine, air tools, electric tools, gas tools, load and unload materials, hand shovel and/or broom, prepare and pour mastic and other fillers, assist digger operator equipment operator in ground excavation and restoration, landscape work and painting. Only when assisting a lineman technician, a groundman/groundman truck driver may assist in installing conduit, pipe, cables and equipment.

A flagger's duties shall consist of traffic control only.

(Ref #14.01.01)

Per hour:

	07/01/2017	05/07/2018	05/06/2019	05/04/2020
Lineman, Technician	\$ 42.65	\$ 43.80	\$ 45.00	\$ 46.20
Crane, Crawler Backhoe	42.65	43.80	45.00	46.20
Certified Welder	44.78	45.99	47.25	48.51
Digging Machine	38.39	39.42	40.50	41.58
Tractor Trailer Driver	36.25	37.23	38.25	39.27
Groundman, Truck Driver	34.12	35.04	36.00	36.96
Equipment Mechanic	34.12	35.04	36.00	36.96
Flagman	25.59	26.28	27.00	27.72

Above rates applicable on all Lighting and Traffic Signal Systems with the installation, testing, operation, maintenance and repair of all traffic control and illumination projects, traffic monitoring systems, road weather information systems and the installation of Fiber Optic Cable.

NOTE: THE FOLLOWING RATES WILL APPLY ON ALL CONTRACTING AGENCY MANDATED MULTIPLE SHIFTS OF AT LEAST FIVE (5) DAYS DURATION WORKED BETWEEN THE HOURS LISTED BELOW:

1ST SHIFT	8:00 AM TO 4:30 PM	REGULAR RATE
2ND SHIFT	4:30 PM TO 1:00 AM	REGULAR RATE PLUS 17.3%
3RD SHIFT	12:30 AM TO 9:00 AM	REGULAR RATE PLUS 31.4%

** IMPORTANT NOTICE **

Four (4), ten (10) hour days may be worked at straight time during a week, Monday thru Thursday. Friday may be used as a make-up day. *Effective 05/06/2013, Tuesday thru Friday may be worked with no make-up day.

NOTE - In order to use the '4 Day/10 Hour Work schedule', as your normal schedule, you must submit an 'Employer Registration for Use of 4 Day/10 Hour Work Schedule,' form PW30.1; and there must be a dispensation of hours in place on the project. If the PW30.1 is not submitted you may be liable for overtime payments for work over 8 hours per day.

SUPPLEMENTAL BENEFITS

Per hour worked (but also required on non-worked holidays):

\$ 22.65 *plus 6.75% of hourly wage \$ 23.40 *plus 6.75% of hourly wage

\$ 24.15 *plus 6.75% of hourly wage \$ 24.90 *plus 6.75% of hourly wage

DISTRICT 6

DISTRICT 6

*The 6.75% is based on the hourly wage paid, straight time rate or premium rate. Supplements paid at STRAIGHT TIME rate for holidays.

OVERTIME PAY

See (B, E, Q) on OVERTIME PAGE. *Note* Double time for all emergency work designated by the Dept. of Jurisdiction. NOTE: WAGE CAP...Double the straight time hourly base wage shall be the maximum hourly wage compensation for any hour worked. Contractor is still responsible to pay the hourly benefit amount for each hour worked.

HOLIDAY

Paid: See (5, 6, 8, 13, 25) on HOLIDAY PAGE plus Governor of NYS Election Day. Overtime: See (5, 6, 8, 13, 25) on HOLIDAY PAGE plus Governor of NYS Election Day.

NOTE: All paid holidays falling on Saturday shall be observed on the preceding Friday. All paid holidays falling on Sunday shall be observed on the following Monday. Supplements for holidays paid at straight time.

REGISTERED APPRENTICES

WAGES: Per hour. 1000 hour terms.

	07/01/2017	05/07/2018	05/06/2019	05/04/2020
1st term	\$ 25.59	\$ 26.28	\$ 27.00	\$ 27.72
2nd term	27.72	28.47	29.25	30.03
3rd term	29.86	30.66	31.50	32.34
4th term	31.99	32.85	33.75	34.65
5th term	34.12	35.04	36.00	36.96
6th term	36.25	37.23	38.25	39.27
7th term	38.39	39.42	40.50	41.58

SUPPLEMENTAL BENEFITS: Same as Journeyman

6-1249a-LT

Lineman Electrician - Tree Trimmer	07/01/2017

JOB DESCRIPTION Lineman Electrician - Tree Trimmer

ENTIRE COUNTIES

Albany, Allegany, Broome, Cattaraugus, Cayuga, Chautauqua, Chemung, Chenango, Clinton, Columbia, Cortland, Delaware, Dutchess, Erie, Essex, Franklin, Fulton, Genesee, Greene, Hamilton, Herkimer, Jefferson, Lewis, Livingston, Madison, Monroe, Montgomery, Niagara, Oneida, Onondaga, Ontario, Orange, Orleans, Oswego, Otsego, Putnam, Rensselaer, Rockland, Saratoga, Schenectady, Schoharie, Schuyler, Seneca, St. Lawrence, Steuben, Sullivan, Tioga, Tompkins, Ulster, Warren, Washington, Wayne, Wyoming, Yates

WAGES

Per hour:

Applies to line clearance, tree work and right-of-way preparation on all new or existing energized overhead or underground electrical, telephone and CATV lines. This also would include stump removal near underground energized electrical lines, including telephone and CATV lines.

	07/01/2017
Tree Trimmer	\$ 23.95
Equipment Operator	21.13
Equipment Mechanic	21.13
Truck Driver	17.52
Groundman	14.36
Flag person	10.23

SUPPLEMENTAL BENEFITS

Per hour worked (but also required on non-worked holidays):

Journeyman	\$ 9.98
	*plus 3% of
	hourly wage

* The 3% is based on the hourly wage paid, straight time rate or premium rate.

6-1249TT

NOTE: WAGE CAP...Double the straight time hourly base wage shall be the maximum hourly wage compensation for any hour worked. Contractor is still responsible to pay the hourly benefit amount for each hour worked.

HOLIDAY	
Paid:	See (5, 6, 8, 15, 16, 25) on HOLIDAY PAGE
Overtime:	See (5, 6, 8, 15, 16, 25) on HOLIDAY PAGE
1 5	lling on a Saturday shall be observed on the preceding Friday. a Sunday shall be observed on the following Monday.

Mason - Building 07/01/2017

JOB DESCRIPTION Mason - Building

DISTRICT 12

ENTIRE COUNTIES

Albany, Clinton, Columbia, Essex, Franklin, Fulton, Greene, Hamilton, Montgomery, Rensselaer, Saratoga, Schenectady, Schoharie, Warren, Washington

Per hour	07/01/2017
Tile/Marble/Terrazzo	
Setter Finisher	\$ 33.65 26.40

Four (4), ten (10) hour days may be worked at straight time during a week, Monday thru Thursday. Friday may be used as a make-up day.

NOTE - In order to use the '4 Day/10 Hour Work Schedule,' as your normal schedule, you must submit an 'Employer Registration for Use of 4 Day/10 Hour Work Schedule,' form PW30.1; and there must be a dispensation of hours in place on the project. If the PW30.1 is not submitted you may be liable for overtime payments for work over 8 hours per day.

SUPPLEMENTAL BENEFITS

Per hour worked

Journeyman Setter	\$ 19.29
Journeyman Finisher	16.57

OVERTIME PAY

See (B, E, E2, Q) on OVERTIME PAGE

HOLIDAY Paid: Overtime:

See (1) on HOLIDAY PAGE See (5, 6) on HOLIDAY PAGE

REGISTERED APPRENTICES

Wages per hour

Hour Terms at the following percentage of Journeyman's wage

Setter:	
1st term 0-500 hrs	60%
2nd term 501-1500 hrs	70%
3rd term 1501-2500 hrs	80%
4th term 2501-3500 hrs	85%
5th term 3501-4500 hrs	90%
6th term 4501-6000 hrs	95%
Finisher:	
1st term 0-500 hrs	70%
2nd term 501-1500 hrs	80%
3rd term 1501-2500 hrs	90%
4th term 2501-3700 hrs	95%
Supplemental Papafita par bour worked	
Supplemental Benefits per hour worked	07/01/2017
Setter:	07/01/2017
1st term 0-500 hrs	\$ 11.24
2nd term 501-1500 hrs	φ 11.24 11.24
3rd term 1501-2500 hrs	15.26
4th term 2501-3500 hrs	15.26
5th term 3501-4500 hrs	17.28

DISTRICT 12

07/01/2017

6th term 4501-6000 hrs	19.29
Finisher: 1st term 0-500 hrs	\$ 10.72
2nd term 501-1500 hrs	10.72
3rd term 1501-2500 hrs 4th term 2501-3700 hrs	13.64 13.64

Mason - Building

JOB DESCRIPTION Mason - Building

ENTIRE COUNTIES

Clinton, Essex, Franklin

PARTIAL COUNTIES

Warren: Only the Townships of Chester, Hague, Horicon and Johnsburg.

WAGES Per hour	07/01/2017
Bricklayer	\$ 30.95
Cement Finisher	30.95
Plasterer/Fireproofer*	30.95
Pointer/Caulker/Cleaner	30.95
Stone Mason	30.95
Acid Brick	31.45

(*)Fireproofer on Structural only.

Four (4), ten (10) hour days may be worked at straight time during a week, Monday thru Thursday. Friday may be used as a make-up day.

NOTE - In order to use the '4 Day/10 Hour Work Schedule,' as your normal schedule, you must submit an 'Employer Registration for Use of 4 Day/10 Hour Work Schedule,' form PW30.1; and there must be a dispensation of hours in place on the project. If the PW30.1 is not submitted you may be liable for overtime payments for work over 8 hours per day.

SUPPLEMENTAL BENEFITS

Per hour worked

Journeyman \$ 18.95

OVERTIME PAY See (B, E, E2, Q) on OVERTIME PAGE

HOLIDAY

Paid: See (1) on HOLIDAY PAGE Overtime: See (5, 6) on HOLIDAY PAGE Note: Any holiday which occurs on Sunday shall be observed the following Monday.

REGISTERED APPRENTICES

Wages per hour

750 hr terms at the following percentage of Journeyman's wage

1st 55%	2nd 60%	3rd 65%	4th 70%	5th 75%	6th 80%	7th 85%	8th 90%
Supplementa	al Benefits per	hour worked					
0-500 Hours All others			\$ 11.27 \$ 18.72				

12-2b.8

Mason - Heavy&Highway

JOB DESCRIPTION Mason - Heavy&Highway

DISTRICT 12

ENTIRE COUNTIES

Albany, Cayuga, Clinton, Columbia, Essex, Franklin, Fulton, Greene, Hamilton, Herkimer, Jefferson, Lewis, Madison, Montgomery, Oneida, Oswego, Rensselaer, Saratoga, Schenectady, Schoharie, St. Lawrence, Warren, Washington

PARTIAL COUNTIES

07/01/2017

Onondaga: For Heavy & Highway Cement Mason or Plaster Work in Onondaga County, refer to Mason-Heavy&Highway tag 1-2h/h on.

WAGES

Per hour

07/01/2017 Mason &

Bricklayer

\$36.06

Additional \$1.00 per hour for work on any swing scaffold or staging suspended by means of ropes or cables.

SUPPLEMENTAL BENEFITS

Per hour worked

Journeyman

\$ 19.23

OVERTIME PAY See (B, E, E2, Q) on OVERTIME PAGE

HOLIDAY

Paid: Overtime:

See (1) on HOLIDAY PAGE See (5, 6) on HOLIDAY PAGE

Note: If a holiday falls on Sunday, the Monday following shall constitute the day of the legal holiday.

REGISTERED APPRENTICES

Wages per hour

750 HR TERMS at the following percent of Journeyman's wage

1st	2nd	3rd	4th	5th	6th	7th	8th
55%	60%	65%	70%	75%	80%	85%	90%

Supplemental Benefits per hour worked

\$ 19.23

12-2hh.1

07/01/2017

DISTRICT 2

JOB DESCRIPTION Millwright - Building

ENTIRE COUNTIES

Millwright - Building

Clinton, Essex, Franklin, Hamilton

WAGES

Per hour:	07/01/2017
Millwright*	\$ 27.15

NOTE ADDITIONAL PREMIUMS PAID FOR THE FOLLOWING WORK LISTED BELOW (amount subject to any overtime premiums): - Certified Welders shall receive \$1.25 per hour in addition to the current Millwright's rate provided he/she is directed to perform certified welding.

- If a work site has been declared a hazardous site by the Owner and the use of protective gear (including, as a minimum, air purifying canister-type chemical respirators) are required, then that employee shall receive a \$1.25 premium per hour.

- An employee performing the work of a machinist shall receive \$1.25 per hour in addition to the current Millwright's rate. For the purposes of this premium to apply, a "machinist" is a person who uses a lathe, Bridgeport, milling machine or similar type of tool to make or modify parts.

*Regarding treatment plants water or sewer, the Millwright Building rate is applicable for millwrights only performing maintenance and upkeep of existing equipment. For new work at treatment plants water or sewer, refer to the Heavy Highway Millwright rates listed under Carpenter Heavy Highway.

SUPPLEMENTAL BENEFITS

Per hour worked:

Journeyman

\$ 21.64

OVERTIME PAY See (B, E, *E2, Q) on OVERTIME PAGE

*Note - Saturday may be used as a make-up day and worked at the straight time rate of pay during a work week when conditions such as weather, power failure, fire, or natural disaster prevent the performance of work on a regular scheduled work day.

Paid:

See (1) on HOLIDAY PAGE See (5, 6) on HOLIDAY PAGE

Overtime: See (5, 6) on HOLIDAY PAGE Note: Any holiday that falls on Sunday shall be observed the following Monday. Any holiday that falls on Saturday shall be observed the preceding Friday.

REGISTERED APPRENTICES

Wages per hour:

(1)year terms at the following percentage of journeyman's rate.				
1st	2nd	3rd	4th	
60%	70%	80%	90%	

Supplemental Benefits per hours worked:

Apprentices:

1st term	\$ 10.05
2nd term	18.17
3rd term	19.32
4th term	20.49

2-1163.2

07/01/2017

Operating Engineer - Building

JOB DESCRIPTION Operating Engineer - Building

DISTRICT 1

ENTIRE COUNTIES

Albany, Clinton, Columbia, Essex, Franklin, Fulton, Greene, Hamilton, Herkimer, Montgomery, Otsego, Rensselaer, Saratoga, Schenectady, Schoharie, Warren, Washington

PARTIAL COUNTIES

Dutchess: Defined as north of the northern boundary line of City of Poughkeepsie then due east to Route 115 to Bedelt Road then east along Bedelt Road to VanWagner Road then north along VanWagner Road to Bower Road then east along Bower Road to Rte. 44 east to Route 343 then along Route 343 east to the northern boundary of Town of Dover Plains and east along the northern boundary of Town of Dover Plains to Connecticut.

WAGES

CLASS A1:

Crane, hydraulic cranes, tower crane, locomotive crane, piledriver, cableway, derricks, whirlies, dragline, boom trucks over 5 tons.

CLASS A:

Shovel, all Excavators (including rubber tire full swing), Gradalls, power road grader, all CMI equipment, front-end rubber tire loader, tractormounted drill (quarry master), mucking machine, concrete central mix plant, concrete pump, belcrete system, automated asphalt concrete plant, and tractor road paver, boom trucks 5 tons and under, maintenance engineer, self-contained crawler drill-hydraulic rock drill.

CLASS B:

Backhoes (rubber tired backhoe/loader combination), bulldozer, pushcat, tractor, traxcavator, scraper, LeTourneau grader, form fine grader, self-propelled soil compactor (fill roller), asphalt roller, blacktop spreader, power brooms, sweepers, trenching machine, Barber Green loader, side booms, hydro hammer, concrete spreader, concrete finishing machine, one drum hoist, power hoisting (single drum), hoist two drum or more, three drum engine, power hoisting (two drum and over), two drum and swinging engine, three drum swinging engine, hod hoist, A-L frame winches, core and well drillers (one drum), post hole digger, model CHB Vibro-Tamp or similar machine, batch bin and plant operator, dinky locomotive, skid steer loader, track excavator 5/8 cubic yard or smaller, front end rubber tired loader under four cubic yards, vacum machine (mounted or towed).

CLASS C:

Fork lift, high lift, all terrain fork lift: or similar, oiler, fireman and heavy-duty greaser, boilers and steam generators, pump, vibrator, motor mixer, air compressor, dust collector, welding machine, well point, mechanical heater, generators, temporary light plants, electric submersible pumps 4" and over, murphy type diesel generator, conveyor, elevators, concrete mixer, beltcrete power pack (belcrete system), seeding, and mulching machines, pumps.

* In the event that equipment listed above is operated by robotic control, the classification covering the operation will be the same as if manually operated.

WAGES per hour

	07/01/2017	07/01/2018
Class # A1	\$ 42.66	\$ 44.29
Class # A	42.18	43.80
Class # B	41.18	42.78
Class # C	38.37	39.88

Additional \$0.50 per hr for Tower Cranes.

Additional \$1.00 per hr for Cranes with Boom length & jib 150ft. and over. Additional \$2.00 per hr for Cranes with Boom length & jib 200ft. and over. Additional \$2.00 per hr over B rate for Nuclear Leader work. Additional \$0.40 per hr for tunnel or excavation of shaft 40' or more deep.

Additional \$2.50 per hour if work requires Personal Protective Equipment for hazardous waste site activities with a level C or over rating.

SUPPLEMENTAL BENEFITS

Per hour worked

Journeyman \$ 25.00 \$ 25.40

OVERTIME PAY

See (B, E, Q) on OVERTIME PAGE

HOLIDAY

Paid: See (1) on HOLIDAY PAGE Overtime: See (5, 6) on HOLIDAY PAGE

Note: If a holiday falls on Sunday, it will be celebrated on Monday. If the holiday falls on Saturday, it will be celebrated on Friday. Employees who work a Saturday holiday shall be paid double time plus the holiday pay.

REGISTERED APPRENTICES

Wages per hour

1000 hours terms at the following percentage of Journeyman's wage Class B

1st	2nd	3rd	4th
60%	70%	80%	90%

Supplemental Benefits per hour worked

	07/01/2017	07/01/2018	
All terms	\$ 20.30	\$ 20.70	1-158 Alb

	Operating Engineer - Heavy&Highway	07/01/2017
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JOB DESCRIPTION Operating Engineer - Heavy&Highway

DISTRICT 1

ENTIRE COUNTIES

Albany, Broome, Chenango, Clinton, Columbia, Essex, Franklin, Fulton, Greene, Hamilton, Herkimer, Montgomery, Otsego, Rensselaer, Saratoga, Schenectady, Schoharie, Tioga, Warren, Washington

PARTIAL COUNTIES

Dutchess: Defined as north of the northern boundary line of City of Poughkeepsie then due east to Route 115 to Bedelt Road then east along Bedelt Road to VanWagner Road then north along VanWagner Road to Bower Road then east along Bower Road to Rte. 44 east to Route 343 then along Route 343 east to the northern boundary of Town of Dover Plains and east along the northern boundary of Town of Dover Plains to Connecticut.

WAGES

CLASSIFICATION A:

Asphalt Curb Machine (Self Propelled, Slipform), Asphalt Paver, Automated Concrete Spreader (CMI Type), Automatic Fine Grader, Backhoe (Except Tractor Mounted, Rubber Tired), Backhoe Excavator Full Swing (CAT 212 or similar type), Back Filling Machine, Belt Placer (CMI Type), Blacktop Plant (Automated), Boom truck, Cableway, Caisson Auger, Central Mix Concrete Plant (Automated), Concrete Curb Machine (Self Propelled, Slipform), Concrete Pump, Crane, Cherry Picker, Derricks (steel erection), Dragline, Overhead Crane (Gantry or Straddle type), Pile Driver, Truck Crane, Directional Drilling Machine, Dredge, Dual Drum Paver, Excavator (All PurposeHydraulically Operated) (Gradall or Similar), Front End Loader (4 cu. yd. and Over), Head Tower (Sauerman or Equal), Hoist (Two or Three Drum), Holland Loader, Maintenance Engineer, Mine Hoist, Mucking Machine or Mole, Pavement Breaker(SP) Wertgen; PB-4 and similar type, Power Grader, Profiler (over 105 H.P.), Quad 9, Quarry Master (or equivalent), Scraper, Shovel, Side Boom, Slip Form Paver (If a second man is needed, he shall be an Oiler), Tractor Drawn BeltType Loader, Truck or Trailer Mounted Log Chipper (Self Feeder), Tug Operator (Manned Rented Equipment Excluded), Tunnel Shovel

CLASSIFICATION B:

Backhoe (Tractor Mounted, Rubber Tired), Bituminous Recycler Machine, Bituminous Spreader and Mixer, Blacktop Plant (NonAutomated), Blast or Rotary Drill (Truck or Tractor Mounted), Boring Machine, Cage Hoist, Central Mix Plant [(NonAutomated) and All Concrete Batching Plants], Concrete Paver (Over 16S), Crawler Drill (Self-contained), Crusher, Diesel Power Unit, Drill Rigs, Tractor Mounted, Front End Loader (Under 4 cu. yd.), Greaseman/Lubrication Engineer, HiPressure Boiler (15 lbs. and over), Hoist (One Drum), Hydro-Axe, Kolman Plant Loader and Similar Type Loaders (If Employer requires another man to clean the screen or to maintain the equipment, he shall be an Oiler), L.C.M. Work Boat Operator, Locomotive, Material handling knuckle boom, Mixer (for stabilized base selfpropelled), Monorail Machine, Plant Engineer, Profiler (105 H.P. and under), Pug Mill, Pump Crete, Ready Mix Concrete Plant, Refrigeration Equipment (for soil stabilization), Road Widener, Roller (all above subgrade), Sea Mule, Self-contained Ride-on Rock Drill(Excluding Air-Track Type Drill), Skidder, Tractor with Dozer and/or Pusher, Trencher, Tugger Hoist, Vacum machine (mounted or towed), Vermeer saw (ride on, any size or type), Welder

CLASSIFICATION C:

A Frame Winch Hoist on Truck, Articulated Heavy Hauler, Aggregate Plant, Asphalt or Concrete Grooving Machine (ride on), Ballast Regulator(Ride-on), Boiler (used in conjunction with production), Bituminous Heater (self-propelled), Boat (powered), Cement and Bin Operator, Concrete Pavement Spreader and Finisher Concrete Paver or Mixer (16' and under), Concrete Saw (self-propelled), Conveyor, Deck Hand, Directional Drill Machine Locator, Drill (Core and Well), Farm Tractor with accessories, Fine Grade Machine, Fireman, Fork Lift, Form Tamper, Grout Pump, Gunite Machine, Hammers (Hydraulic self-propelled), Hydra-Spiker (ride-on), Hydraulic Pump (jacking system), Hydro-Blaster (Water), Mulching Machine, Oiler, Parapet Concrete or Pavement Grinder, Post Hole Digger and Post Driver, Power Broom (towed), Power Heaterman, Power Sweeper, Revinius Widener, Roller (Grade and Fill), Scarifier (ride-on), Shell Winder, Skid steer loader (Bobcat or similar), Span-Saw (ride-on), Steam Cleaner, Tamper (ride-on), Tie Extractor (ride-on), Tie Handler (ride-on), Tie Inserter (rideon), Tie Spacer (ride-on), Tire Repair, Track Liner (ride-on), Tractor, Tractor (with towed accessories), Vibratory Compactor, Vibro Tamp, Well Point, and the following hands-off equipment: Compressors, Dust Collectors, Generators, Pumps, Welding Machines, Light Plants and Heaters

- Note for all above classifications of Operating Engineer - In the event that equipment listed above is operated by robotic control, the classification covering the operation will be the same as if manually operated.

	07/01/2017	07/01/2018
Master Mechanic	\$ 43.79	\$ 45.58
Class A*	42.18	43.97
Class B	41.27	43.06
Class C	38.70	40.49

Additional \$2.00 per hour for All Employees who work a single irregular work shift starting from 5:00 PM to 1:00 AM that is mandated by the Contracting Agency.

Additional \$2.50 per hr. for hazardous waste removal work on State and/or Federally designated waste site which require employees to wear Level C or above forms of personal protection.

(*) Premiums for CRANES is based upon Class A rates with the following premiums:

- Additional \$4.00 per hr for Tower Cranes, including self erecting.

- Additional \$3.00 per hr for Lattice Boom Cranes and all other cranes with a manufacturers rating of fifty (50) tons and over.

- Additional \$2.00 per hr for all Hydraulic Cranes and Derricks with a manufacturer's rating of 49 ton and below, including boom trucks.

Four (4), ten (10) hour days may be worked at straight time during a week, Monday thru Thursday. Friday may be used as a make-up day.

NOTE - In order to use the '4 Day/10 Hour Work schedule', as your normal schedule, you must submit an 'Employer Registration for Use of 4 Day/10 Hour Work Schedule,' form PW30.1; and there must be a dispensation of hours in place on the project. If the PW30.1 is not submitted you may be liable for overtime payments for work over 8 hours per day.

SUPPLEMENTAL BENEFITS

Per hour worked

Operating Engineer - M	larine Dredging		07/01/	2(
All Terms	07/01 \$ 20	1/2017).60	07/01/2018 \$ 21.00 1-158H/	Ή
Supplemental Benefits per	hour worked			
1st 2nd 60% 70%	3rd 4th 80% 90%			
1000 hours terms at the fol	lowing percentage of	Journeyman's wage	Class B	
REGISTERED APPREN Wages per hour	-	ebrated off Monday.	in the holiday fails on a Saturday, it will be celebrated on Saturday	•
HOLIDAY Paid: Overtime: Note: If the holiday falls on	See (5, 6) on HOLID See (5, 6) on HOLID Sunday, it will be cele	AY PAGE	If the holiday falls on a Saturday, it will be celebrated on Saturday	,
OVERTIME PAY See (B, E, Q) on OVERTIM	IE PAGE			
Journeyman	\$ 25	5.20	\$ 25.60	

DISTRICT 4

1-158H/H Alb

07/01/2017

ENTIRE COUNTIES

Albany, Bronx, Cayuga, Chautauqua, Clinton, Columbia, Dutchess, Erie, Essex, Franklin, Greene, Jefferson, Kings, Monroe, Nassau, New York, Niagara, Orange, Orleans, Oswego, Putnam, Queens, Rensselaer, Richmond, Rockland, St. Lawrence, Suffolk, Ulster, Washington, Wayne, Westchester

WAGES

These wages do not apply to Operating Engineers on land based construction projects. For those projects, please see the Operating Engineer Heavy/Highway Rates. The wage rates below for barge mounted cranes and other equipment are only for marine dredging work in navigable waters found in the counties listed above.

Per Hour: DREDGING OPERATIONS CLASS A Operator, Leverman, Lead Dredgeman	07/01/2017 \$ 37.25	10/01/2017 \$ 38.18
CLASS A1 Dozer,Front Loader Operator	To conform to Opera Prevailing Wage in li is being performed in	ocality where work
CLASS B Barge Operator Spider/Spill Tug Operator(over1000hp), OperatorII, Fill Placer, Derrick Operator, Engineer, Chief Mate, Electrician, Chief Welder, Maintenance Engineer	\$ 32.21	\$33.02
Certified Welder, Boat Operator(licensed)	\$ 30.33	\$ 31.09
CLASS C Drag Barge Operator, Steward, Mate, Assistant Fill Placer,	\$ 29.50	\$ 30.24
Welder (please add)\$ 0.06		
Boat Operator	\$ 28.54	\$ 29.26
CLASS D Shoreman, Deckhand, Rodman, Scowman, Cook, Messman, Porter/Janitor	\$ 23.71	\$ 24.30
Oiler(please add)\$ 0.09 SUPPLEMENTAL BENEFITS		

זטכ Per Hour:

THE FOLLOWING SUPPLEMENTAL BENEFITS APPLY TO ALL CATEGORIES

All Classes A & B	07/01/2017 \$10.75 plus 8% of straight time wage, Overtime hours add \$ 0.63	10-01-2017 \$11.23 plus 8% of straight time wage, Overtime hours add \$ 0.63
All Class C	\$10.45 plus 8% of straight time wage, Overtime hours add \$ 0.48	\$10.93 plus 8% of straight time wage, Overtime hours add \$ 0.48

of straight time wage, Overtime hours add \$ 0.33

OVERTIME PAY

See (B, F, R) on OVERTIME PAGE

HOLIDAY

See (1) on HOLIDAY PAGE Paid: See (5, 6, 8, 15, 26) on HOLIDAY PAGE Overtime:

of straight time

add \$ 0.33

wage, Overtime hours

Operating Engineer - Survey Crew

JOB DESCRIPTION Operating Engineer - Survey Crew

ENTIRE COUNTIES

Albany, Allegany, Broome, Cayuga, Chemung, Chenango, Clinton, Columbia, Cortland, Essex, Franklin, Fulton, Greene, Hamilton, Herkimer, Jefferson, Lewis, Livingston, Madison, Monroe, Montgomery, Niagara, Oneida, Onondaga, Ontario, Oswego, Otsego, Rensselaer, Saratoga, Schenectady, Schoharie, Schuyler, Seneca, St. Lawrence, Steuben, Tioga, Tompkins, Warren, Washington, Wayne, Yates

PARTIAL COUNTIES

Dutchess: The northern portion of the county from the northern boundary line of the City of Poughkeepsie, north. Genesee: Only the portion of the county that lies east of a line down the center of Route 98 to include all area that lies within the City of Batavia.

WAGES

These rates apply to Building and Heavy Highway.

Per hour: SURVEY CLASSIFICATIONS:

Party Chief - One who directs a survey party. Instrument Person - One who operates the surveying instruments. Rod Person - One who holds the rods and assists the Instrument Person.

Party Chief	\$ 39.46
Instrument Person	37.25
Rod Person	25.91

Additional \$3.00 per hr. for work in a Tunnel.

Additional \$2.50 per hr. for EPA or DEC certified toxic or hazardous waste work.

07/01/2017

SUPPLEMENTAL BENEFITS

Per hour worked:

Journeyman \$ 24.70

OVERTIME PAY See (B, E, P, T) on OVERTIME PAGE

HOLIDAY

Paid: See (5, 6) on HOLIDAY PAGE See (5, 6) on HOLIDAY PAGE Overtime:

REGISTERED APPRENTICES

WAGES: 1000 hour terms based on the Percentage of Rod Persons Wage:

	07/01/2017
0-1000	60%
1001-2000	70%
2001-3000	80%

SUPPLEMENTAL BENIFIT per hour worked:

0-1000	\$ 15.55
1001-2000	\$ 18.14
2001-3000	\$ 20.73

12-158-545 D.H.H.

4-25a-MarDredge

07/01/2017

DISTRICT 12

DISTRICT 12

JOB DESCRIPTION Operating Engineer - Survey Crew - Consulting Engineer

ENTIRE COUNTIES

Albany, Allegany, Broome, Cayuga, Chemung, Chenango, Clinton, Columbia, Cortland, Essex, Franklin, Fulton, Greene, Hamilton, Herkimer, Jefferson, Lewis, Livingston, Madison, Monroe, Montgomery, Niagara, Oneida, Onondaga, Ontario, Oswego, Otsego, Rensselaer, Saratoga, Schenectady, Schoharie, Schuyler, Seneca, St. Lawrence, Steuben, Tioga, Tompkins, Warren, Washington, Wayne, Yates

PARTIAL COUNTIES

Dutchess: The northern portion of the county from the northern boundary line of the City of Poughkeepsie, north. Genesee: Only the portion of the county that lies east of a line down the center of Route 98 to include all area that lies within the City of Batavia.

WAGES

These rates apply to feasibility and preliminary design surveying, line and grade surveying for inspection or supervision of construction when performed under a Consulting Engineer Agreement.

Per hour: SURVEY CLASSIFICATIONS:

Party Chief - One who directs a survey party. Instrument Person - One who operates the surveying instruments. Rod Person - One who holds the rods and assists the Instrument Person.

	07/01/2017
Party Chief Instrument Person Rod Person	\$ 39.46 37.25 25.91

Additional \$3.00 per hr. for work in a Tunnel. Additional \$2.50 per hr. for EPA or DEC certified toxic or hazardous waste work.

07/04/0047

SUPPLEMENTAL BENEFITS

Per hour worked:

Journeyman	\$ 24.70
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OVERTIME PAY

See (B, E, P, T) on OVERTIME PAGE

HOLIDAY

Paid:	See (5, 6) on HOLIDAY PAGE
	See (5, 6) on HOLIDAY PAGE

REGISTERED APPRENTICES

WAGES: 1000 hour terms based on percentage of Rod Persons Wage:

	07/01/2017
0-1000	60%
1001-2000	70%
2001-3000	80%

SUPPLEMENTAL BENIFIT per hour worked:

0-1000	\$ 15.55
1001-2000	\$ 18.14
2001-3000	\$ 20.73

Operating Engineer - Tunnel

JOB DESCRIPTION Operating Engineer - Tunnel

ENTIRE COUNTIES

Albany, Allegany, Broome, Cayuga, Chemung, Chenango, Clinton, Columbia, Cortland, Essex, Franklin, Fulton, Greene, Hamilton, Herkimer, Jefferson, Lewis, Livingston, Madison, Monroe, Montgomery, Oneida, Onondaga, Ontario, Oswego, Otsego, Rensselaer, Saratoga, Schenectady, Schoharie, Schuyler, Seneca, St. Lawrence, Steuben, Tioga, Tompkins, Warren, Washington, Wayne, Yates

PARTIAL COUNTIES

Dutchess: Northern part of Dutchess to the northern boundary line of the City of Poughkeepie then due east to Route 115 to Bedelt Road then east along Bedelt Road to VanWagner Road then north along VanWagner Road to Bower Road then east along Bower Road to Rte. 44 east to Rte. 343 then along Rte. 343 east to the northern boundary of the Town of Dover Plains and east along the northern boundary of the Town of Dover Plains to Connecticut.

Genesee: Only that portion of the county that lies east of a line drawn down the center of Route 98 and the entirety of the City of Batavia.

12-158-545 DCE

07/01/2017

DISTRICT 7

WAGES

CLASS A: Automatic Concrete Spreader (CMI Type); Automatic Fine Grader; Backhoe (except tractor mounted,rubber tired); Belt Placer (CMI Type); Blacktop Plant (automated); Cableway; Caisson Auger; Central Mix Concrete Plant (automated); Concrete Curb Machine (self-propelled slipform); Concrete Pump (8" or over); Dredge; Dual Drum Paver; Excavator; Front End Loader (4 cu. yd & over); Gradall; Head Tower (Sauerman or Equal); Hoist (shaft); Hoist (two or three Drum); Log Chipper/Loader (self-feeder); Maintenance Engineer (shaft and tunnel); any Mechanical Shaft Drill; Mine Hoist; Mining Machine(Mole and similar types); Mucking Machine or Mole; Overhead Crane (Gantry or Straddle Type); Pile Driver; Power Grader; Remote Controlled Mole or Tunnel Machine; Scraper; Shovel; Side Boom; Slip Form Paver (If a second man is needed, they shall be an Oiler); Tripper/Maintenance Engineer (shaft & tunnel); Tractor Drawn Belt-Type Loader; Tug Operator (manned rented equipment excluded); Tunnel Shovel

CLASS B: Automated Central Mix Concrete Plant; Backhoe (topside); Backhoe (track mounted, rubber tired); Backhoe (topside); Bituminous Spreader and Mixer, Blacktop Plant (non-automated); Blast or Rotary Drill (truck or tractor mounted); Boring Machine; Cage Hoist; Central Mix Plant(non-automated); all Concrete Batching Plants; Compressors (4 or less exceeding 2,000 c.f.m. combined capacity); Concrete Pump; Crusher; Diesel Power Unit; Drill Rigs (tractor mounted); Front End Loader (under 4 cu. yd.); Grayco Epoxy Machine; Hoist (One Drum); Hoist (2 or 3 drum topside); Knuckle Boom material handler; Kolman Plant Loader & similar type Loaders (if employer requires another person to clean the screen or to maintain the equipment, they shall be an Oiler); L.C.M. Work Boat Operator; Locomotive; Maintenance Engineer (topside); Maintenance Grease Man; Mixer (for stabilized base-self propelled); Monorail Machine; Plant Engineer; Personnel Hoist; Pump Crete; Ready Mix Concrete Plant; Refrigeration Equipment (for soil stabilization); Road Widener; Roller (all above sub-grade); Sea Mule; Shotcrete Machine; Shovel (topside); Tractor with Dozer and/or Pusher; Trencher; Tugger Hoist; Tunnel Locomotive; Welder; Winch; Winch Cat

CLASS C: A Frame Truck; All Terrain Telescoping Material Handler; Ballast Regulator (ride-on); Compressors (4 not to exceed 2,000 c.f.m. combined capacity; or 3 or less with more than 1200 c.f.m. but not to exceed 2,000 c.f.m.); Compressors ((any size, but subject to other provisions for compressors), Dust Collectors, Generators, Pumps, Welding Machines, Light Plants (4 or any type combination)); Concrete Pavement Spreaders and Finishers; Conveyor; Drill (core); Drill (well); Electric Pump used in conjunction with Well Point System; Farm Tractor with Accessories; Fine Grade Machine; Fork Lift; Grout Pump (over 5 cu. ft.); Gunite Machine; Hammers (hydraulic-self-propelled); Hydra-Spiker (ride-on); Hydra-Blaster (water); Hydro-Blaster; Motorized Form Carrier; Post Hole Digger and Post Driver; Power Sweeper; Roller grade & fill); Scarifer (ride-on); Span-Saw (ride-on); Submersible Electric Pump (when used in lieu of well points); Tamper (ride-on); Tie-Extractor (ride-on), Tie Handler (ride-on), Tie Inserter (ride-on), Tie Spacer (ride-on); Track Liner (ride-on); Tractor with towed accessories; Vibratory Compactor; Vibro Tamp, Well Point

CLASS D: Aggregate Plant; Cement & Bin Operator; Compressors (3 or less not to exceed 1,200 c.f.m. combined capacity); Compressors ((any size, but subject to other provisions for compressors), Dust Collectors, Generators, Pumps, Welding Machines, Light Plants (3 or less or any type or combination)); Concrete Saw (self-propelled); Form Tamper; Greaseman; Hydraulic Pump (jacking system); Junior Engineer; Light Plants; Mulching Machine; Oiler; Parapet Concrete or Pavement Grinder; Power Broom (towed); Power Heaterman (when used for production); Revinius Widener; Shell Winder; Steam Cleaner; Tractor

	07/01/2017	07/01/2018
Master Mechanic	45.49	47.15
CLASS A	43.15	44.74
CLASS B	41.93	43.52
CLASS C	39.14	40.73
CLASS D	36.13	37.72

Additional \$5.00 per hour for Hazardous Waste Work on a state or federally designated hazardous waste site where the Operating Engineer is in direct contact with hazardous material and when personal protective equipment is required for respiratory, skin and eye protection. Fringe benefits will be paid at the hourly wage premium.

CRANES:

WAGES per hour

Crane 1: All cranes, including self-erecting to be paid \$4.00 per hour over the Class A rate.

Crane 2: All Lattice Boom Cranes and all cranes with a manufacturer's rating of fifty (50) ton and over to be paid \$3.00 per hour over Class A rate.

Crane 3: All hydraulic cranes and derricks with a manufacturer's rating of forty nine (49) ton and below, including boom trucks, to be paid \$2.00 per hour over Class A rate.

Crane 1	\$ 47.15	\$ 48.74
Crane 2	46.15	47.74
Crane 3	45.15	46.74
SUPPLEMENTAL BENEFITS Per hour paid:	A 07 00	* • - - • •
	\$ 27.20	\$ 27.90
OVERTIME PAY		

See (B, B2, E, Q) on OVERTIME PAGE

HOLIDAY

Paid:See (5, 6) on HOLIDAY PAGEOvertime:See (5, 6) on HOLIDAY PAGEIf a holiday falls on Sunday, it shall be observed on Monday.

REGISTERED APPRENTICES

WAGES:(1000) hours terms at the following percentage of Journeyman's wage.

1st term	60% of Class B
2nd term	65% of Class B
3rd term	70% of Class B
4th term	75% of Class B

SUPPLEMENTAL BENEFITS per hour paid: Same as Journeyman

7-158-832TL.

				7-158-8321L.
Painter				07/01/2017
JOB DESCRIPTION	Painter		DISTRICT 1	
ENTIRE COUNTIES				
Essex, Hamilton, Warren	n, Washington			
WAGES				
Per hour				
	07/01/2017	05/01/2018	05/01/2019	
		Additional	Additional	
Painter\Wallcover	\$ 29.00	\$ 1.40	\$1.40	
Drywall Finishers	29.00	1.40	1.40	
Spray Rate	29.00	1.40	1.40	
Structural Steel*	30.00	1.40	1.40	
Lead Abatement	30.00	1.40	1.40	
Lead Abatement on				
structural Steel	31.00	1.40	1.40	
Bridge Painter See Bridge Painter rates All Bridges and Tanks SUPPLEMENTAL BE Per hour worked	NEFITS	ooatswain chair, pick and cal	bles only will be paid at Struct	ural Steel rate.
Journeyman	\$ 14.08			
OVERTIME PAY See (B, E2, H) on OVER	TIME PAGE			
HOLIDAY				
Paid:	See (1) on HOLIDAY PAGE			
Overtime:	See (5, 6) on HOLIDAY PAGE			
Note: If the holiday falls	on Sunday, it shall be observed on Mo	onday.		

REGISTERED APPRENTICES

Wages per hour

1000 hour terms at the following percentage of Journeyman's wage.

1st	2nd	3rd	4th	5th	6th
45%	50%	60%	70%	80%	90%

Supplemental Benefits per hour worked

All terms \$14.08

1-466-Z2

07/01/2017

Painter - Bridge & Structural Steel

ENTIRE COUNTIES

Albany, Bronx, Clinton, Columbia, Dutchess, Essex, Franklin, Fulton, Greene, Hamilton, Kings, Montgomery, Nassau, New York, Orange, Putnam, Queens, Rensselaer, Richmond, Rockland, Saratoga, Schenectady, Schoharie, Suffolk, Sullivan, Ulster, Warren, Washington, Westchester

WAGES

Per Hour Worked:			
STEEL:			
Bridge Painting:	07/01/2017	10/01/2017	10/01/2018
From May 1st to Nov. 15th -			
-	\$ 49.50	\$ 50.00	\$ 51.00
	+ 6.38*	+ 6.63*	+ 6.63*
From Nov. 16th to April 30th -			
·	\$ 49.50	\$ 50.00	\$ 51.00
	+ 6.38*	+ 6.63*	+ 6.63*

*Not subject to overtime and limited to first 40 hours

NOTE: All premium wages are to be calculated on base rate per hour only.

EXCEPTION: During the period of May 1st to November 15th, for the first and last week of employment on the project, and for the weeks of Memorial Day, Independence Day and Labor Day, this rate shall be paid for the actual number of hours worked.

Power Tool/Spray is an additional \$6.00 per hour above hourly rate, whether straight time or overtime

NOTE: Generally, for Bridge Painting Contracts, ALL WORKERS on and off the bridge (including Flagmen) are to be paid Painter's Rate; the contract must be ONLY for Bridge Painting.

SUPPLEMENTAL BENEFITS

··· \ \ / - ··· |

Per Hour Worked: Journeyworker:	07/01/2017	10/01/2017	10/01/2018
From May 1st to Nov. 15th -			
Hourly Rate up to 40 hours	\$ 30.90	\$ 31.90	\$ 33.60
Hourly Rate after 40 hours	7.50	7.50	7.50
From Nov. 16th to April 30th -			
Hourly Rate up to 50 hours	\$ 29.70	\$ 31.90	\$ 33.60
Hourly Rate after 50 hours	7.50	7.50	7.50

EXCEPTION: During the period of May 1st to November 15th, for the first and last week of employment on the project, and for the weeks of Memorial Day, Independence Day and Labor Day, this rate shall be paid for the actual number of hours worked.

OVERTIME PAY

See (A, F, R) on OVERTIME PAGE

HOLIDAY

Paid:	See (1) on HOLIDAY PAGE
Overtime:	See (4, 6) on HOLIDAY PAGE

REGISTERED APPRENTICES

Wage - Per hour worked:

Apprentices: (1) year terms

	07/01/2017	10/01/2017	10/01/2018
1st year	\$ 22.35	\$ 22.65	\$ 23.13
2nd year	33.53	33.98	34.73
3rd year	44.70	45.30	46.30
Supplemental Benefits - Per hour worked:			
1st year	\$ 12.36	\$ 12.76	\$ 13.44
2nd year	18.54	19.14	20.16
3rd year	24.72	25.52	26.88

8-DC-9/806/155-BrSS

07/01/2017

Painter - Line Striping

ENTIRE COUNTIES

Albany, Bronx, Clinton, Columbia, Dutchess, Essex, Franklin, Fulton, Greene, Hamilton, Kings, Montgomery, Nassau, New York, Orange, Putnam, Queens, Rensselaer, Richmond, Rockland, Saratoga, Schenectady, Schoharie, Suffolk, Sullivan, Ulster, Warren, Washington, Westchester

WAGES

Per	hour:
L CI	nour.

Painter (Striping-Highway):	07/01/2017
Striping-Machine Operator*	\$ 27.11
Linerman Thermoplastic	\$ 32.37

Note: * Includes but is not limited to: Positioning of cones and directing of traffic using hand held devices. Excludes the Driver/Operator of equipment used in the maintenance and protection of traffic safety.

Four (4), ten (10) hour days may be worked at straight time during a week, Monday thru Thursday. Friday may be used as a make-up day.

NOTE - In order to use the '4 Day/10 Hour Work Schedule,' as your normal schedule, you must submit an 'Employer Registration for Use of 4 Day/10 Hour Work Schedule,' form PW30.1; and there must be a dispensation of hours in place on the project. If the PW30.1 is not submitted you may be liable for overtime payments for work over 8 hours per day.

SUPPLEMENTAL BENEFITS

Per hour paid:	07/01/2017
Journeyworker:	
Striping-Machine operator	\$ 14.18
Linerman Thermoplastic	\$ 14.55

OVERTIME PAY

See (B, E, E2, F, S) on OVERTIME PAGE

HOLIDAY	
Paid:	See (5, 20) on HOLIDAY PAGE
Overtime:	See (5, 8, 11, 12, 15, 16, 17, 20, 21, 22) on HOLIDAY PAGE

8-1456-LS

07/01/2017

Painter - Metal Polisher

JOB DESCRIPTION Painter - Metal Polisher

ENTIRE COUNTIES

Albany, Allegany, Bronx, Broome, Cattaraugus, Cayuga, Chautauqua, Chemung, Chenango, Clinton, Columbia, Cortland, Delaware, Dutchess, Erie, Essex, Franklin, Fulton, Genesee, Greene, Hamilton, Herkimer, Jefferson, Kings, Lewis, Livingston, Madison, Monroe, Montgomery, Nassau, New York, Niagara, Oneida, Onondaga, Ontario, Orange, Orleans, Oswego, Otsego, Putnam, Queens, Rensselaer, Richmond, Rockland, Saratoga, Schenectady, Schoharie, Schuyler, Seneca, St. Lawrence, Steuben, Suffolk, Sullivan, Tioga, Tompkins, Ulster, Warren, Washington, Wayne, Westchester, Wyoming, Yates

WAGES

	07/01/2017	06/01/2018
Metal Polisher	\$ 29.73	\$ 30.58
Metal Polisher**	30.68	31.53
Metal Polisher***	33.23	34.08

Note: Applies on New Construction & complete renovation * Note: Applies when working on scaffolds over 34 feet.

SUPPLEMENTAL BENEFITS Per Hour:	07/01/2017	06/01/2018
Journeyworker: All classification	\$ 7.55	\$ 7.65

OVERTIME PAY

See (B, E, E2, P, T) on OVERTIME PAGE

HULIDAY	
Paid:	See (5, 6, 11, 15, 16, 25, 26) on HOLIDAY PAGE
Overtime:	See (5, 6, 9, 11, 15, 16, 25, 26) on HOLIDAY PAGE

REGISTERED APPRENTICES

DISTRICT 8

Wages per hour:

One (1) year term at the following wage rates:

	07/01/2017	06/01/2018
1st year	\$ 12.14	\$ 14.25
2nd year	13.44	15.50
3rd year	16.29	18.25
Supplentals benefits: Per hour paid:		
1st year	\$ 5.62	\$ 5.62
2nd year	5.62	5.62
3rd year	5.62	5.62
Siù year	5:62	5.02

8-8A/28A-MP

Plumber				07/01/2017
JOB DESCRIPTIO	N Plumber		DISTRICT 1	
ENTIRE COUNTIES Essex, Franklin	8			
PARTIAL COUNTIL Hamilton: The Towns	E S ships of Long Lake and Indi	an Lake		
WAGES Per hour				
	07/01/2017	05/01/2018	05/01/2019	
Plumber & Steamfitter	\$ 37.35	+\$1.65	+\$1.65	

SUPPLEMENTAL BENEFITS

Per hour worked

Journeyman	\$ 18.80
	+10.03*

* This portion of the benefit is subject to the SAME PREMIUM as shown for overtime.

* This portion per hour paid.

OVERTIME PAY See (B, E, Q) on OVERTIME PAGE

HOLIDAY

Paid:	See (22) on HOLIDAY PAGE
Overtime:	See (5, 6, 16, 23) on HOLIDAY PAGE
Note: Whenever a Holida	y falls on a Saturday, the preceding day, Friday, shall be observed as the Holiday. If a Holiday falls on a Sunday,
the following day, Monday	shall be observed as the Holiday.

REGISTERED APPRENTICES

Wages per hour

One year terms at the following percentage of Journeyman's wage

1st yr	50%
2nd yr	60%
3rd yr	70%
4th yr	80%
5th yr	90%

Supplemental Benefits per hour worked

1st yr	\$ 16.48 + 5.02*
2nd yr	16.94 + 6.02*
3rd yr	17.41 + 7.02*
4th yr	17.87 + 8.02*

1-773EF-SF

5th yr

18.34 + 9.03*

* This portion of the benefit is subject to the SAME PREMIUM as shown for overtime.

* This portion per hour paid.

Roofer 07/01/2017

JOB DESCRIPTION Roofer

ENTIRE COUNTIES

Albany, Clinton, Columbia, Essex, Fulton, Greene, Hamilton, Montgomery, Rensselaer, Saratoga, Schenectady, Warren, Washington WAGES

Per hour

	07/01/2017
Roofer/Waterproofer	\$ 29.05
Asphalt Cold Process	29.55
Pitch & Asbestos	31.05

SUPPLEMENTAL BENEFITS

Per hour worked

Journeyman	\$ 18.77
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OVERTIME PAY

See (B, E*, Q) on OVERTIME PAGE. * Saturday may be used as a make up day at straight time if employee misses 8 hrs or more during that week due to inclement weather.

HOLIDAY

Paid: Overtime:

See (1) on HOLIDAY PAGE See (5, 6) on HOLIDAY PAGE

Note: When any Holiday falls on Saturday, the Friday before such Holiday shall be recognized as the legal Holiday. When a Holiday falls on Sunday, it shall be observed the following Monday.

REGISTERED APPRENTICES

Wages per hour

(1/2) year terms at the following per cent of the Roofer/Waterproofer rate. For Pitch & Asbestos work, an additional \$2.00 must be paid in wages. For Asphalt Cold Process work, an additional \$0.50 must be paid in the wages.

1st yr 1st half	50%
1st yr 2nd half	58%
2nd yr 1st half	66%
2nd yr 2nd half	74%
3rd yr 1st half	82%
3rd yr 2nd half	90%

Supplemental Benefits per hour worked

1st yr 1st half	\$ 17.00
1st yr 2nd half	17.19
2nd yr 1st half	17.42
2nd yr 2nd half	17.62
3rd yr 1st half	17.90
3rd yr 2nd half	18.10

Sheetmetal Worker

JOB DESCRIPTION Sheetmetal Worker

ENTIRE COUNTIES

Albany, Clinton, Columbia, Essex, Franklin, Fulton, Greene, Hamilton, Montgomery, Rensselaer, Saratoga, Schenectady, Schoharie, Warren, Washington

WAGES

Per hour

07/01/2017

06/01/2018 Additional

DISTRICT 1

DISTRICT 1

07/01/2017

1-241

Sheetmetal Worker	\$31.80	\$1.60
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All work requiring HAZWOPER Training additional \$1.00 per hour

SUPPLEMENTAL BENEFITS

Per hour worked

Journeyman \$31.15

OVERTIME PAY

See (B,E*,Q,) on OVERTIME PAGE

* Time and one half 1st 8 hours on Saturday. Double the hourly rate all additional Saturday hours.

HOLIDAY

Paid: See (1) on HOLIDAY PAGE Overtime: See (5, 6) on HOLIDAY PAGE

When any holiday falls on Saturday, the Friday before such holiday shall be recognized as the legal holiday. Any holiday falling on Sunday, the following Monday shall be recognized as the legal holiday.

REGISTERED APPRENTICES

Wages per hour

6 Month Terms at the following rate:

1st term	\$17.61
2nd term	\$19.08
3rd term	\$19.82
4th term	\$20.56
5th term	\$19.52
6th term	\$20.49
7th term	\$22.10
8th term	\$23.72
9th term	\$25.34
10th term	\$26.95

Supplemental Benefits per hour worked

1st term 2nd term	\$18.92 19.50
3rd term	19.79
4th term	20.21
5th term	25.69
6th term	26.12
7th term	26.84
8th term	27.56
9th term	28.28
10th term	29.00

Sprinkler Fitter

JOB DESCRIPTION Sprinkler Fitter

DISTRICT 1

ENTIRE COUNTIES

Allegany, Broome, Cattaraugus, Cayuga, Chautauqua, Chemung, Chenango, Clinton, Columbia, Cortland, Delaware, Erie, Essex, Franklin, Fulton, Genesee, Greene, Hamilton, Herkimer, Jefferson, Lewis, Livingston, Madison, Monroe, Montgomery, Niagara, Oneida, Onondaga, Ontario, Orleans, Oswego, Otsego, Schoharie, Schuyler, Seneca, St. Lawrence, Steuben, Tioga, Tompkins, Washington, Wayne, Wyoming, Yates

WAGES			
Per hour	07/01/2017	01/01/2018	04/01/2018
Sprinkler	\$ 33.76	33.76	34.91
Fitter			
SUPPLEMENTAL E	BENEFITS		
Journeyman	\$ 22.14	22.84	23.14
OVERTIME PAY See (B, E, Q) on OVE	RTIME PAGE		
HOLIDAY			

1-83

07/01/2017

Paid: See (1) on Overtime: See (5, 6)

See (1) on HOLIDAY PAGE See (5, 6) on HOLIDAY PAGE

Note: When a holiday falls on Sunday, the following Monday shall be considered a holiday and all work performed on either day shall be at the double time rate. When a holiday falls on Saturday, the preceding Friday shall be considered a holiday and all work performed on either day shall be at the double time rate.

REGISTERED APPRENTICES

Wages per hour

For Apprentices HIRED ON OR AFTER 04/01/2010:

One Half Year terms at the following percentage of journeyman's wage.

1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th
45%	50%	55%	60%	65%	70%	75%	80%	85%	90%
Supplement	al Benefits per	hour worked							
1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th
\$ 8.73	\$ 8.77	\$ 16.34	\$ 16.38	\$ 16.93	\$ 16.97	\$ 17.02	\$ 17.06	\$ 17.11	\$ 17.15

For Apprentices HIRED ON OR AFTER 04/01/2013:

One Half Year terms at the following percentage of journeyman's wage.

1st 45%	2nd 50%	3rd 55%	4th 60%	5th 65%	6th 70%	7th 75%	8th 80%	9th 85%	10th 90%
Suppleme	ental Benefits	per hour work	ed						
4 - 4	Quard) مراجع	446	C 46	Cth	744	046	046	1046

1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th
\$ 8.07	\$ 8.07	\$ 16.24	\$ 16.24	\$ 16.49	\$ 16.49	\$ 16.49	\$ 16.49	\$ 16.49	\$ 16.49

Teamster - Building

DISTRICT 7

1-669

07/01/2017

JOB DESCRIPTION Teamster - Building

ENTIRE COUNTIES

Clinton, Essex, Franklin, Jefferson, St. Lawrence

PARTIAL COUNTIES

Lewis: Only the Townships of Croghan, Denmark, Diana, New Bremen, Harrisburg, Montague, Osceola and Pinckney. Oswego: Only the Towns of Boylston, Redfield, and Sandy Creek. Warren: Only the Townships of Hague, Horicon, Chester and Johnsburg.

WAGES

GROUP # 1: Fuel Trucks, Fork Lift (Warehouse & Storage Area Only), Bus, Warehouse, Yardman, Truck Helper, Pickups, Panel Truck, Flatbody Material Trucks (straight Jobs), Single axle Dump Trucks, Dumpsters, Material Checkers & Receivers, Greasers, Tiremen, Mechanic Helpers and Parts Chasers.

GROUP # 2: Tandems, Mechanics & Batch Trucks.

GROUP # 3: Semi Trailers, Low Boys, Asphalt Distributor Trucks, and Agitator Mixer Truck, Dump Crete Type Vehicles and 3 axle Dump trucks.

GROUP # 4: Asbestos Removal, Special earth moving Euclid type or similar off highway equip.(non self load.) Articulated and all-track dump trucks.

Wages per hour

0	07/01/2017
Building:	
Group #1	\$ 23.58
Group #2	24.58
Group #3	24.68
Group #4	23.84

SUPPLEMENTAL BENEFITS

Per hour worked:

All groups	\$ 21.51
OVERTIME PAY	

See (B, E, Q) on OVERTIME PAGE

HOLIDAY	
	See (1) on HOLIDAY PAGE
Overtime:	See (5, 6) on HOLIDAY PAGE

7-687B

07/01/2017

JOB DESCRIPTION Teamster - Heavy&Highway

DISTRICT 7

ENTIRE COUNTIES Clinton, Essex, Franklin, Jefferson, St. Lawrence

PARTIAL COUNTIES

Lewis: Only the Townships of Croghan, Denmark, Diana, New Bremen, Harrisburg, Montague, Osceola and Pinckney. Oswego: Only the Towns of Boylston, Redfield, and Sandy Creek. Warren: Only the Townships of Hague, Horicon, Chester and Johnsburg.

WAGES

GROUP 1: Warehousemen, Yardmen, Truck Helpers, Pickups, Panel Trucks, Flatboy Material Trucks(straight jobs), Single Axle Dump Trucks, Dumpsters, Material Checkers and Receivers, Greasers, Truck Tiremen, Mechanics Helpers and Parts Chasers. Fork Lift (storage & warehouse areas only) Tandems and Batch Trucks, Mechanics, Dispatcher. Semi-Trailers, Low-boy Trucks, Asphalt Distributor Trucks, and Agitator, Mixer Trucks and dumpcrete type vehicles, Truck Mechanic, Fuel Truck.

GROUP 2: Specialized Earth Moving Equipment, Euclid type, or similar off-highway where not self-loading, Straddle (Ross) Carrier, and selfcontained concrete mobile truck. Off-highway Tandem Back-Dump. Twin Engine Equipment and Double-Hitched Equipment where not selfloading.

Per hour:

	07/01/2017
Heavy/Highway:	
Group #1	\$ 25.82
Group #2	26.04

Additional \$1.50 per hour for hazardous waste removal work on a City, County, and/or Federal Designated waste site and regulations require employee to use or wear respiratory protection.

For work bid on or after April 1, 1982 there shall be a 12 month carryover of the negotiated rate in effect at the time of the bid.

SUPPLEMENTAL BENEFITS

Per hour worked:

All classes \$23.52

OVERTIME PAY See (B, E, Q) on OVERTIME PAGE

HOLIDAY

See (5, 6) on HOLIDAY PAGE Paid: Overtime: See (5, 6) on HOLIDAY PAGE NOTE: If a holiday falls on a Sunday, it will be celebrated on Monday.

Welder

7-687

07/01/2017

JOB DESCRIPTION Welder

DISTRICT 1

ENTIRE COUNTIES

Albany, Allegany, Bronx, Broome, Cattaraugus, Cayuga, Chautauqua, Chemung, Chenango, Clinton, Columbia, Cortland, Delaware, Dutchess, Erie, Essex, Franklin, Fulton, Genesee, Greene, Hamilton, Herkimer, Jefferson, Kings, Lewis, Livingston, Madison, Monroe, Montgomery, Nassau, New York, Niagara, Oneida, Onondaga, Ontario, Orange, Orleans, Oswego, Otsego, Putnam, Queens, Rensselaer, Richmond, Rockland, Saratoga, Schenectady, Schoharie, Schuyler, Seneca, St. Lawrence, Steuben, Suffolk, Sullivan, Tioga, Tompkins, Ulster, Warren, Washington, Wayne, Westchester, Wyoming, Yates

WAGES

Per hour

07/01/2017

Welder: To be paid the same rate of the mechanic performing the work.*

*EXCEPTION: If a specific welder certification is required, then the 'Certified Welder' rate in that trade tag will be paid.

OVERTIME PAY HOLIDAY

Overtime Codes

Following is an explanation of the code(s) listed in the OVERTIME section of each classification contained in the attached schedule. Additional requirements may also be listed in the HOLIDAY section.

NOTE: Supplemental Benefits are 'Per hour worked' (for each hour worked) unless otherwise noted

- (AA) Time and one half of the hourly rate after 7 and one half hours per day
- (A) Time and one half of the hourly rate after 7 hours per day
- (B) Time and one half of the hourly rate after 8 hours per day
- (B1) Time and one half of the hourly rate for the 9th & 10th hours week days and the 1st 8 hours on Saturday.
 Double the hourly rate for all additional hours
- (B2) Time and one half of the hourly rate after 40 hours per week
- (C) Double the hourly rate after 7 hours per day
- (C1) Double the hourly rate after 7 and one half hours per day
- (D) Double the hourly rate after 8 hours per day
- (D1) Double the hourly rate after 9 hours per day
- (E) Time and one half of the hourly rate on Saturday
- (E1) Time and one half 1st 4 hours on Saturday; Double the hourly rate all additional Saturday hours
- (E2) Saturday may be used as a make-up day at straight time when a day is lost during that week due to inclement weather
- (E3) Between November 1st and March 3rd Saturday may be used as a make-up day at straight time when a day is lost during that week due to inclement weather, provided a given employee has worked between 16 and 32 hours that week
- (E4) Saturday and Sunday may be used as a make-up day at straight time when a day is lost during that week due to inclement weather
- (E5) Double time after 8 hours on Saturdays
- (F) Time and one half of the hourly rate on Saturday and Sunday
- (G) Time and one half of the hourly rate on Saturday and Holidays
- (H) Time and one half of the hourly rate on Saturday, Sunday, and Holidays
- (I) Time and one half of the hourly rate on Sunday
- (J) Time and one half of the hourly rate on Sunday and Holidays
- (K) Time and one half of the hourly rate on Holidays
- (L) Double the hourly rate on Saturday
- (M) Double the hourly rate on Saturday and Sunday
- (N) Double the hourly rate on Saturday and Holidays
- (O) Double the hourly rate on Saturday, Sunday, and Holidays
- (P) Double the hourly rate on Sunday
- (Q) Double the hourly rate on Sunday and Holidays
- (R) Double the hourly rate on Holidays
- (S) Two and one half times the hourly rate for Holidays, if worked

- (S1) Two and one half times the hourly rate the first 8 hours on Sunday or Holidays One and one half times the hourly rate all additional hours.
- (T) Triple the hourly rate for Holidays, if worked
- (U) Four times the hourly rate for Holidays, if worked
- (V) Including benefits at SAME PREMIUM as shown for overtime
- (W) Time and one half for benefits on all overtime hours.

Holiday Codes

PAID Holidays:

Paid Holidays are days for which an eligible employee receives a regular day's pay, but is not required to perform work. If an employee works on a day listed as a paid holiday, this remuneration is in addition to payment of the required prevailing rate for the work actually performed.

OVERTIME Holiday Pay:

Overtime holiday pay is the premium pay that is required for work performed on specified holidays. It is only required where the employee actually performs work on such holidays. The applicable holidays are listed under HOLIDAYS: OVERTIME. The required rate of pay for these covered holidays can be found in the OVERTIME PAY section listings for each classification.

Following is an explanation of the code(s) listed in the HOLIDAY section of each classification contained in the attached schedule. The Holidays as listed below are to be paid at the wage rates at which the employee is normally classified.

- (1) None
- (2) Labor Day
- (3) Memorial Day and Labor Day
- (4) Memorial Day and July 4th
- (5) Memorial Day, July 4th, and Labor Day
- (6) New Year's, Thanksgiving, and Christmas
- (7) Lincoln's Birthday, Washington's Birthday, and Veterans Day
- (8) Good Friday
- (9) Lincoln's Birthday
- (10) Washington's Birthday
- (11) Columbus Day
- (12) Election Day
- (13) Presidential Election Day
- (14) 1/2 Day on Presidential Election Day
- (15) Veterans Day
- (16) Day after Thanksgiving
- (17) July 4th
- (18) 1/2 Day before Christmas
- (19) 1/2 Day before New Years
- (20) Thanksgiving
- (21) New Year's Day
- (22) Christmas
- (23) Day before Christmas
- (24) Day before New Year's
- (25) Presidents' Day
- (26) Martin Luther King, Jr. Day
- (27) Memorial Day

	ilding Campus - Room 130 York 12240 JPPLEMENT INFORMATION
Submitted By: (Check Only One) Contracting Agency Architect or Engineering I	Firm Public Work District Office Date:
A. Public Work Contract to be let by: (Enter Data Pertaining to C	
1. Name and complete address [(Check if new or change) Telephone: () Fax: () E-Mail:	2. NY State Units (see Item 5) 07 City 01 DOT 08 Local School District 02 OGS 09 Special Local District, i.e., Fire, Sewer, Water District 03 Dormitory Authority 10 Village 04 State University 11 Town 05 Mental Hygiene 12 County Facilities Corp. 13 Other Non-N.Y. State 06 OTHER N.Y. STATE UNIT (Describe)
 3. SEND REPLY TO □ check if new or change) Name and complete address: Telephone:() Fax: () 	 4. SERVICE REQUIRED. Check appropriate box and provide project information. New Schedule of Wages and Supplements. APPROXIMATE BID DATE : Additional Occupation and/or Redetermination PRC NUMBER ISSUED PREVIOUSLY FOR OFFICE USE ONLY THIS PROJECT :
B. PROJECT PARTICULARS	
5. Project Title Description of Work	Eocation of Project: Location on Site Route No/Street Address Village or City Town County
 7. Nature of Project - Check One: 1. New Building 2. Addition to Existing Structure 3. Heavy and Highway Construction (New and Repair) 4. New Sewer or Waterline 5. Other New Construction (Explain) 6. Other Reconstruction, Maintenance, Repair or Alteration 7. Demolition 8. Building Service Contract 9. Has this project been reviewed for compliance with the Wick 	 8. OCCUPATION FOR PROJECT : Construction (Building, Heavy Highway/Sewer/Water) Tunnel Residential Landscape Maintenance Elevator maintenance Exterminators, Fumigators Fire Safety Director, NYC Only S Law involving separate bidding? YES NO
10.Name and Title of Requester	Signature



NEW YORK STATE DEPARTMENT OF LABOR Bureau of Public Work - Debarment List

LIST OF EMPLOYERS INELIGIBLE TO BID ON OR BE AWARDED ANY PUBLIC WORK CONTRACT

Under Article 8 and Article 9 of the NYS Labor Law, a contractor, sub-contractor and/or its successor shall be debarred and ineligible to submit a bid on or be awarded any public work or public building service contract/sub-contract with the state, any municipal corporation or public body for a period of five (5) years from the date of debarment when:

- Two (2) final determinations have been rendered within any consecutive six-year
 (6) period determining that such contractor, sub-contractor and/or its successor has
 WILLFULLY failed to pay the prevailing wage and/or supplements
- One (1) final determination involves falsification of payroll records or the kickback of wages and/or supplements

NOTE: The agency issuing the determination and providing the information, is denoted under the heading 'Fiscal Officer'. DOL = NYS Dept. of Labor; NYC = New York City Comptroller's Office; AG = NYS Attorney General's Office; DA = County District Attorney's Office.

A list of those barred from bidding, or being awarded, any public work contract or subcontract with the State, under section 141-b of the Workers' Compensation Law, may be obtained at the following link, on the NYS DOL Website:

https://dbr.labor.state.ny.us/EDList/searchPage.do

AGENCY	Fiscal Officer	FEIN	EMPLOYER NAME	EMPLOYER DBA NAME	ADDRESS	DEBARMENT START DATE	DEBARMENT END DATE
DOL	DOL		4618 FOSTER AVE LLC		C/O KAHAN & KAHAN 225 BROADWAY-SUITE 715NEW YORK NY 10007	02/05/2013	02/05/2018
DOL	DOL	*****0996	A-1 CONSTRUCTION & RENOVATION INC		1973 81ST ST - SUITE A-5 BROOKLYN NY 11214	01/08/2015	01/08/2020
DOL	NYC	****4486	ABBEY PAINTING CORP		21107 28TH AVENUE BAYSIDE NY 11360	07/02/2012	07/02/2017
DOL	DOL	*****9095	ABDO TILE CO		6179 EAST MOLLOY ROAD EAST SYRACUSE NY 13057	06/25/2010	07/02/2017
DOL	DOL	*****9095	ABDO TILE COMPANY		6179 EAST MOLLOY ROAD EAST SYRACUSE NY 13057	06/25/2010	07/02/2017
DOL	NYC		ABDUL KARIM		C/O NORTH AMERICAN IRON W 1560 DECATUR STREETRIDGEWOOD NY 11385	05/15/2015	05/15/2020
DOL	DOL	*****8488	ABELCRAFT OF NEW YORK CORP		640 ASHFORD AVENUE ARDSLEY NY 10502	08/27/2013	08/27/2018
DOL	DOL	*****1219	ABSOLUTE GENERAL CONTRACTING INC		1229 AVENUE U BROOKLYN NY 11229	01/28/2013	01/28/2018
DOL	DOL	*****4539	ACCOMPLISHED WALL SYSTEMS INC		112 OSCAWANA HEIGHTS ROAD PUTNAM VALLEY NY 10542	08/27/2013	08/27/2018
DOL	DOL	*****8018	ACCURATE MECHANICAL LLC		9547 BUSTLETON AVENUE PHILADELPHIA PA 19115	02/05/2014	02/05/2019
DOL	DOL		ACCURATE MECHANICAL OF PHILADELPHIA LLC		9547 BUSTLETON AVENUE PHILADELPHIA PA 19115	02/05/2014	02/05/2019
DOL	DOL	*****3344	ACT INC		6409 LAND O LAKES BLVD LAND O LAKES FL 34638	11/10/2015	11/10/2020
DOL	NYC		ADRIANA SELA	C/O COLONIAL ROOFING COMPANY INC	247 48TH STREET BROOKLYN NY 11220	02/05/2014	02/05/2019
DOL	DOL	*****6367	ADVANCED METALS		387 RIVERSIDE DRIVE JOHNSON CITY NY 13790	10/01/2012	10/01/2017
DOL	DOL	*****1687	ADVANCED SAFETY SPRINKLER INC		261 MILL ROAD P O BOX 296EAST AURORA NY 14052	07/29/2015	07/29/2020
DOL	DOL	*****2538	AGG MASONRY INC		160 72ND ST - SUITE 721 BROOKLYN NY 11209	03/19/2013	03/19/2018
DOL	DOL		AJ TORCHIA		10153 ROBERTS RD SAUQUOIT NY 13456	08/09/2016	08/09/2021
DOL	DOL		ALISHER KARIMOV		C/O AGG MASONRY INC 7105 3RD AVENUEBROOKLYN NY 11209	03/19/2013	03/19/2018
DOL	DOL	*****3344	ALL CATASTROPHE CONSTRUCTION TEAM INC	ACT INC	6409 LAND O LAKES BLVD LAND O LAKES FL 34638	11/10/2015	11/10/2020
DOL	DOL	*****8740	ALLSTATE ENVIRONMENTAL CORP		C/O JOSE MONTAS 27 BUTLER PLACEYONKERS NY 10710	03/18/2011	03/19/2020
DOL	DOL		AMADEO J TORCHIA	TORCHIA'S HOME IMPROVEMEN T	10153 ROBERTS RD SAUQUOIT NY 13456	08/09/2016	08/09/2021
DOL	DOL	****4274	AMERICAN STEEL MECHANICAL INC		693 PAINTER STREET MEDIA PA 19063	02/20/2013	02/20/2018
DOL	DOL		ANDREW DIPAUL		C/O CONSOLIDATED INDUSTRI 2051 ROUTE 44/55MODENA NY 12548	12/11/2012	12/11/2017
DOL	NYC		ANDRZEJ WROBEL		24 CONGRESS LANE SOUTH RIVER NJ 08882	05/01/2013	05/01/2018
DOL	NYC		ANISUL ISLAM		C/O RELIANCE GENERAL CONS 644 OCEAN PARKWAYBROOKLYN NY 11230	09/02/2015	09/02/2020
DOL	DOL	****7004	ANNEX CONTRACTING LTD		3005 WYNSUM AVENUE MERRICK NY 11566	08/18/2014	08/18/2019
DOL	DOL	*****7004	ANNEX GENERAL CONTRACTING INC		3005 WYNSUM AVENUE MERRICK NY 11566	08/18/2014	08/18/2019
DOL	DA		ANTHONY CARDINALE		58-48 59TH STREET MASPETH NY 11378	05/16/2012	05/08/2020
DOL	DOL		ANTHONY J MINGARELLI JR		C/O T & T CONCRETE INC 2560 HAMBURG TURNPIKELACKAWANNA NY 14218	07/08/2015	07/08/2020
DOL	DOL		ANTHONY PERGOLA		3 WEST MAIN ST/SUITE 208 ELMSFORD NY 10323	01/23/2017	01/23/2022

DOL	DOL	****3020	APCO CONTRACTING CORP		24 SOUTH MARYLAND AVENUE PORT WASHINGTON NY 11050	09/24/2012	09/02/2020
DOL	DOL	*****3219	APOLLO CONSTRUCTION SERVICES CORP	APOLLO PAINTING CO	157 TIBBETTS ROAD YONKERS NY 10705	03/12/2014	03/12/2019
DOL	DOL		APOLLO PAINTING CO		157 TIBBETTS ROAD YONKERS NY 10705	03/12/2014	03/12/2019
DOL	DOL	****3295	APOLLO PAINTING CORP		3 ALAN B SHEPART PLACE YONKERS NY 10705	03/12/2014	03/12/2019
DOL	AG	*****0194	APPLIED CONSTRUCTION INC		46 RUGBY ROAD WESTBURY NY 11590	11/20/2013	11/20/2018
DOL	NYC	****8403	AQUA JET PAINTING CORP		10 VIKING DRIVE WEST ISLIP NY 11795	04/16/2014	04/16/2019
DOL	NYC	****9232	ARKAY CONSTRUCTION INC		102-104 GREYLOCK AVENUE BELLEVILLE NJ 07109	07/15/2015	07/15/2020
DOL	DOL	*****3953	ASCAPE LANDSCAPE & CONSTRUCTION CORP		634 ROUTE 303 BLAUVELT NY 10913	07/26/2012	11/19/2018
DOL	NYC	****4779	ASTORIA GENERAL CONTRACTING CORP		35-34 31ST STREET LONG ISLAND CITY NY 11106	09/02/2015	09/02/2020
DOL	NYC	****7217	ASTRO COMMUNICATIONS OF NY CORP		79 ALEXANDER AVE- STE 36A BRONX NY 10454	10/30/2015	10/30/202
DOL	NYC	*****6046	ATLANTIC SUN CONTRUCTION CORP		58-46 59TH AVENUE MASPETH NY 11378	05/08/2015	05/08/2020
DOL	NYC		AUDLEY O'BRIEN		1273 NORTH AVENUE/#1 CP NEW ROCHELLE NY 10804	04/07/2015	04/07/2020
DOL	DOL		AVIS R HILL		3510 HICKORY WALK LANE ELLENWOOD GA 32094	01/22/2015	01/22/2020
DOL	AG		AVTAR SINGH		116-24 127TH STREET SOUTH OZONE PARK NY 11420	12/22/2015	12/22/2020
DOL	AG		BALDEV SINGH		116-24 127TH STREET SOUTH OZONE PARK NY 11420	12/22/2015	12/22/2020
DOL	DOL		BARBARA CASSIDY		7 BLENIS PLACE VALHALLA NY 10595	04/02/2015	04/02/202
DOL	DOL		BARRY KINNEY		6409 LAND O LAKES BLVD LAND O LAKES FL 34638	11/10/2015	11/10/202
DOL	NYC	*****3915	BEACON RESTORATION INC		SUITE B-8 782 PELHAM PARKWAY SOUTHBRONX NY 10462	04/21/2016	04/21/202
DOL	DOL		BEVERLY F WILLIAMS		1238 PRESIDENT STREET BROOKLYN NY 11225	11/18/2013	11/18/201
DOL	DOL	*****8551	BRANDY'S MASONRY		216 WESTBROOK STREET P O BOX 304SAYRE PA 18840	08/09/2016	08/09/202
DOL	NYC	*****6555	BROOKLYN WELDING CORP		1273 NORTH AVENUE/ #1 CP NEW ROCHELLE NY 10804	04/07/2015	04/07/202
DOL	DOL	****1449	BRRESTORATION NY INC		140 ARCADIA AVENUE OSWEGO NY 13126	09/12/2016	09/12/202
DOL	DOL		BRUCE MORSEY		C/O KENT HOLLOW SIDING LL 29A BRIDGE STREETNEW MILFORD CT 06776	01/15/2016	01/15/202
DOL	DOL	****6156	C & J LANDSCAPING & MAINTENANCE INC		520 PINE HILL ROAD CHESTER NY 10940	06/23/2014	06/23/201
DOL	DOL		CARIBBEAN POOLS		C/O DOUGLAS L MALARKEY 64 VICTORIA DRIVEBINGHAMTON NY 13904	02/04/2016	02/04/202
DOL	NYC	*****9172	CASSIDY EXCAVATING INC		14 RAILROAD AVENUE VALHALLA NY 10595	05/15/2014	04/02/202
DOL	DOL	****6745	CATSKILL FENCE INSTALLATIONS INC		5445 ROUTE 32 CATSKILL NY 12414	08/22/2014	08/22/201
DOL	DOL	*****8530	CAZ CONTRACTING CORP		37-11 35TH AVENUE LONG ISLAND CITY NY 11101	08/26/2013	08/26/201
DOL	DOL	*****8809	CBE CONTRACTING CORP		142 EAST MARKET STREET LONG BEACH NY 11561	03/07/2017	03/07/202
DOL	DOL	*****5556	CERTIFIED INSTALLERS INC		113 N MAPLE AVENUE GREENSBURG PA 15601	02/21/2013	02/21/201
DOL	DOL	*****7655	CHAMPION CONSTRUCTION SERVICES CORP		2131 SCHENECTADY AVENUE BROOKLYN NY 11234	11/18/2015	11/18/202
DOL	NYC		CHARLES CASSIDY JR		14 RAILROAD AVENUE VALHALLA NY 10595	05/15/2014	04/02/202
DOL	DOL		CHARLES ZIMMER JR		216 WESTBROOK STREET P O BOX 304SAYRE PA 18840	08/09/2016	08/09/202
DOL	DOL		CHRISTINE J HEARNE		C/O CJ-HEARNE CONSTRUCTIO 131 PONCE DE LEON AVE NEATLANTA GA 30308	12/01/2015	12/01/202

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DOL	DOL	*****3360	CITY LIMITS GROUP INC		2279 HOLLERS AVENUE BRONX NY 10475	01/07/2014	06/23/2019
DOL	DOL	*****0671	CJ-HEARNE CONSTRUCTION CO		SUITE 204 131 PONCE DE LEON AVENUEATLANTA GA 30308	12/01/2015	12/01/2020
DOL	NYC	*****2905	COLONIAL ROOFING COMPANY INC		247 48TH STREET BROOKLYN NY 11220	02/05/2014	02/05/2019
DOL	NYC	*****3182	COLORTECH INC		5990 58TH AVENUE MASPETH NY 11378	11/18/2013	11/18/2018
DOL	DOL	*****2703	CONKLIN'S TECH- MECHANICAL INC		5 PARKER AVENUE POUGHKEEPSIE NY 12601	03/25/2014	03/25/2019
DOL	DOL	*****4175	CONSOLIDATED INDUSTRIAL SERVICES INC		2051 ROUTE 44/55 MODENA NY 12548	12/11/2012	01/28/2018
DOL	DOL		CONSTANTINOS ZERVAS		37-11 35TH AVENUE LONG ISLAND CITY NY 11101	08/26/2013	08/26/2018
DOL	NYC	****4468	CRAFT CONTRACTING GROUP INC		3256 BRUNER AVENUE BRONX NY 10469	07/29/2014	07/29/2019
DOL	NYC	****8507	CRAFT FENCE INC		3256 BRUNER AVENUE BRONX NY 10469	07/29/2014	07/29/2019
DOL	NYC	****2164	CREATIVE TRUCKING INC		58-83 54TH STREET MASPETH NY 11378	02/26/2016	02/26/2021
DOL	DOL	****7761	D L MALARKEY CONSTRUCTION		64 VICTORIA DRIVE BINGHAMTON NY 13904	02/04/2016	02/04/2021
DOL	DOL	****7888	D L MALARKEY CONSTRUCTION INC		64 VICTORIA DRIVE BINGHAMTON NY 13904	02/04/2016	02/04/2021
DOL	DOL	****5629	DAKA PLUMBING AND HEATING LLC		2561 ROUTE 55 POUGHQUAG NY 12570	02/19/2016	02/19/2021
DOL	DOL		DARYL T RIEKS		C/O RIEKS CONTRACTING LLC 4804 GAHWILER ROADAUBURN NY 13021	05/01/2015	05/01/2020
DOL	NYC	****7707	DASSLE CONTRACTING INC		213-37 39TH AVE/SUITE 120 BAYSIDE NY 11360	05/08/2015	05/08/2020
DOL	DOL		DAVID MARTINEZ		C/O EMPIRE TILE INC 6 TREMONT COURTHUNTINGTON STATION NY 11746	03/08/2016	03/08/2021
DOL	NYC		DAWN AVILA AKA DAWN BECHTOLD		1ST FLOOR STORE FRONT 88-10 LITTLE NECK PARKWAYFLORAL PARK NY 11001	06/24/2014	06/24/2019
DOL	NYC		DAWN BECHTOLD AKA DAWN AVILA		1ST FLOOR STORE FRONT 88-10 LITTLE NECK PARKWAYFLORAL PARK NY 11001	06/24/2014	06/24/2019
DOL	DOL		DEAN ROBBINS III		212 OXFORD WAY SCHENECTADY NY 12309	12/11/2012	09/16/2018
DOL	DOL		DEBBIE STURDEVANT		29 MAPLEWOOD DRIVE BINGHAMTON NY 13901	02/21/2017	02/21/2022
DOL	NYC	*****3865	DECOMA BUILDING CORPORATION		134 EVERGREEN PL/STE 101 EAST ORANGE NJ 07018	12/30/2013	12/30/2018
DOL	DOL		DEDA GAZIVODAN		C/O DAKA PLUMBING AND H 2561 ROUTE 55POUGHQUAG NY 12570	02/19/2016	02/19/2021
DOL	DOL	****1446	DELTA CONTRACTING PAINTING AND DECORATING INC		437 SUNRISE HIGHWAY WEST BABYLON NY 11707	08/12/2013	08/12/2018
DOL	DOL	*****3538	DELTA CONTRACTING PAINTING AND DESIGN INC		75 MCCULLOCH DRIVE DIX HILLS NY 11746	10/19/2010	08/12/2018
DOL	DOL		DEMETRIOS KOUTSOURAS		530 BEECH STREET NEW HYDE PARK NY 11040	07/02/2012	07/02/2017
DOL	DOL		DENNIS SCHWANDTNER		C/O YES SERVICE AND REPAI 145 LODGE AVEHUNTINGTON STATION NY 11476	08/09/2016	08/09/2021
DOL	DOL	*****9868	DESANTIS ENTERPRISES		161 OSWEGO RIVER ROAD PHOENIX NY 13135	09/24/2013	11/18/2018
DOL	NYC	*****8234	DEWATERS PLUMBING AND HEATING LLC		30 COLUMBUS CIRCLE EASTCHESTER NY 10709	08/21/2012	08/21/2017
DOL	DOL	*****9252	DI BERNARDO TILE AND MARBLE CO INC		15 WALKER WAY ALBANY NY 12205	03/21/2014	03/21/2019
DOL	DOL		DIANE DEAVER		731 WARWICK TURNPIKE HEWITT NJ 07421	06/25/2012	12/11/2017
DOL	NYC		DIMITRIOS KOUTSOUKOS		C/O ASTORIA GENERAL CONTR 35-34 31ST STREETLONG ISLAND CITY NY 11106	09/02/2015	09/02/2020
DOL	DA	****6789	DOL	DBA NAME	BUILDING 12	12/01/2017	12/01/2018

DOL	DOI					00/04/0040	00/00/0000
DOL	DOL		DORIS SKODA		C/O APCO CONTRACTING CORP 24 SOUTH MARYLAND AVENUEPORT WASHINGTON NY 11050	09/24/2012	09/02/2020
DOL	NYC	*****7404	DOSANJH CONSTRUCTION CORP		9439 212TH STREET QUEENS VILLAGE NY 11428	02/25/2016	02/25/2021
DOL	DOL		DOUGLAS L MALARKEY	MALARKEY CONSTRUCTI ON	64 VICTORIA DRIVE B INGHAMTON NY 13904	02/04/2016	02/04/2021
DOL	DOL	*****6982	DUFOUR GROUP INC	DUFOUR MASONRY	353 WEST 56TH STREET #7M NEW YORK NY 10019	06/10/2014	06/10/2019
DOL	DOL		DUFOUR MASONRY		353 WEST 56TH ST #7M NEW YORK NY 10019	06/10/2014	06/10/2019
DOL	DOL		DUFOUR MASONRY & RESTORATION INC		353 WEST 56TH STREET #7M NEW YORK NY 10019	06/10/2014	06/10/2019
DOL	DOL	****5840	DYNA CONTRACTING INC		363 88TH STREET BROOKLYN NY 11209	11/18/2013	11/18/2018
DOL	DOL		E C WEBB		6409 LAND O LAKES BLVD LAND O LAKES FL 34638	11/10/2015	11/10/2020
DOL	DOL		EARL GALBREATH		640 ASHFORD AVENUE ARDSLEY NY 10502	08/27/2013	08/27/2018
DOL	DOL		EARL L WILSON	WILSON BROTHER DRYWALL CONTRACTOR S	36 ABERSOLD STREET ROCHESTER NY 14621	08/31/2015	08/31/2020
DOL	DOL	****1496	EAST COAST DRYWALL INC		1238 PRESIDENT STREET BROOKLYN NY 11225	11/18/2013	11/18/2018
DOL	DOL		EDWARD L GAUTHIER		C/O IMPERIAL MASONRY REST 141 ARGONNE DRIVEKENMORE NY 14217	10/03/2012	10/03/2017
DOL	NYC		EDWARD MENKEN		C/O AQUA JET PAINTING 10 VIKING DRIVEWEST ISLIP NY 11795	04/16/2014	04/16/2019
DOL	NYC	*****0900	EF PRO CONTRACTING INC		147 BROOME AVENUE ATLANTIC BEACH NY 11509	03/03/2014	03/03/2019
DOL	NYC		EFSTRATIOS BERNARDIS		23-73 48TH STREET LONG ISLAND CITY NY 11103	04/24/2014	04/24/2019
DOL	DOL		ELIZABETH RAMADANI		C/O RAMADA CONSTRUCTION 80 SAVO LOOPSTATEN ISLAND NY 10309	01/07/2014	01/07/2019
DOL	DOL		ELLEN DESANTIS	DESANTIS ENTERPRISES	161 OSWEGO RIVER ROAD PHOENIX NY 13135	09/24/2013	11/18/2018
DOL	DOL	*****0780	EMES HEATING & PLUMBING CONTR		5 EMES LANE MONSEY NY 10952	01/20/2002	01/20/3002
DOL	AG		EMILIO FRANZA		90 JUNIUS STREET BROOKLYN NY 11212	01/23/2014	01/23/2019
DOL	DOL		EMPIRE CONCRETE SERVICES LLC		101 SULLYS TRAIL/SUITE 20 PITTSFORD NY 14534	11/18/2013	01/07/2019
DOL	DOL	*****0511	EMPIRE CONCRETE SYSTEMS LLC		101 SULLYS TRAIL/ SUITE 2 PITTSFORD NY 14534	11/18/2013	01/07/2019
DOL	DOL	****2353	EMPIRE CONSTRUCTORS LLC		101 SULLYS TRAIL/SUITE 20 PITTSFORD NY 14534	11/18/2013	01/07/2019
DOL	DOL		EMPIRE PRECAST LLC		101 SULLYS TRAIL/SUITE 20 PITTSFORD NY 14534	11/18/2013	01/07/2019
DOL	DOL	*****3270	EMPIRE TILE INC		6 TREMONT COURT HUNTINGTON STATION NY 11746	03/08/2016	03/08/2021
DOL	DOL		ERIKA BARNETT		253 BEACH BREEZE LANE UNIT BARVERNE NY 11692	02/05/2013	02/05/2018
DOL	DOL		ESTEVES & FRAGA CONSTRUCTION CO INC		986 MADISON AVENUE PATERSON NJ 07501	01/03/2013	01/03/2018
DOL	DOL		ESTEVES & FRAGA INC		986 MADISON AVENUE PATERSON NJ 07501	01/03/2013	01/03/2018
DOL	DOL		EVELIO ELLEDIAS		114 PEARL STREET PORT CHESTER NY 10573	08/15/2012	08/15/2017
DOL	NYC		EVERTON CARLESS		134 EVERGREEN PL/STE 101 EAST ORANGE NJ 07018	12/30/2013	12/30/2018
DOL	DOL	*****7403	F & B PAINTING CONTRACTING INC		2 PARKVIEW AVENUE HARRISON NY 10604	09/26/2016	09/26/2021
DOL	DOL		F KALAFATIS		2279 HOLLERS AVENUE BRONX NY 10475	01/07/2014	06/23/2019
DOL	DOL		FANTASTIC PAINTING		493 LANSING ROAD FULTONVILLE NY 12072	11/18/2013	11/18/2018

DOL	DOL		FAY MATTHEW		C/O CHAMPION CONSTRUCTION 2131 SCHENECTADY AVENUEBROOKLYN NY 11234	11/18/2015	11/18/2020
DOL	DOL		FAZIA GINA ALI-MOHAMMED	C/O CHAMPION CONSTRUCTI ON	2131 SCHENECTADY AVENUE BROOKLYN NY 11234	11/18/2015	11/18/2020
DOL	DOL	****1311	FLOZ-ON PAINTING & DECORATING INC		12 DUNDERBERG ROAD TOMKINS NY 10986	10/16/2013	10/16/2018
DOL	DOL	*****8961	FLOZ-ON PAINTING INC		12 DUNDERBERG ROAD TOMKINS NY 10986	10/16/2013	10/16/2018
DOL	DOL		FMS		4 LEGHORN COURT NEW YORK NY 11746	11/28/2012	11/28/2017
DOL	DOL	*****8067	FORTH SPORT FLOORS INC		P O BOX 74 EAST GREENBUSH NY 12061	02/28/2012	10/01/2017
DOL	DOL		FRAN MICELI		2279 HOLLERS AVENUE BRONX NY 10475	01/07/2014	06/23/2019
DOL	DOL		FRANCES KALAFATIS		2279 HOLLERS AVENUE BRONX NY 10475	01/07/2014	06/23/2019
DOL	DOL		FRANCES KALAFATIS-MICELI		2279 HOLLERS AVENUE BRONX NY 10475	01/07/2014	06/23/2019
DOL	DOL		FRANK BENEDETTO		C/O F & B PAINTING CONTRA 2 PARKVIEW AVENUEHARRISON NY 10604	09/26/2016	09/26/2021
DOL	DOL		FRANK DEMARTINO		101-61 99TH STREET OZONE PARK NY 11416	02/15/2017	02/15/2022
DOL	DOL		FRANK J MERCANDO		134 MURRAY AVENUE YONKERS NY 10704	12/11/2009	02/03/2019
DOL	DOL		FRANK MICELI JR	C/O FRANK MICELI JR CONTRACTIN G INC	19 CLIFF STREET NEW ROCHELLE NY 10801	10/16/2013	10/16/2018
DOL	DOL	*****1321	FRANK MICELI JR CONTRACTING INC		19 CLIFF STREET NEW ROCHELLE NY 10801	10/16/2013	10/16/2018
DOL	DOL		FRED ABDO	ABDO TILE COMPANY AKA ABDO TILE CO	6179 EAST MOLLOY ROAD EAST SYRACUSE NY 13057	06/25/2010	07/02/2017
DOL	DOL	*****2724	FRESH START PAINTING CORP		157 TIBBETS ROAD YONKERS NY 10705	03/12/2014	03/12/2019
DOL	DOL		G FUCCI CONSTRUCTION SERVICES		3 ALAN B SHEPARD PLACE YONKERS NY 10705	03/12/2014	03/12/2019
DOL	DOL	****6767	G FUCCI PAINTING INC		C/O SPIEGEL & UTRERA 1 MAIDEN LANE - 5TH FLNEW YORK NY 10038	03/12/2014	03/12/2019
DOL	DOL	****4546	GAF PAINTING LLC		157 TIBBETS ROAD YONKERS NY 10705	03/12/2014	03/12/2019
DOL	DOL		GALINDA ROTENBERG		C/O GMDV TRANS INC 67-48 182ND STREETFRESH MEADOWS NY 11365	06/24/2016	06/24/2021
DOL	DOL		GARDEN STATE PAINTING		157 TIBBETTS ROAD YONKERS NY 10705	03/12/2014	03/12/2019
DOL	DOL		GARY MCDOWELL	GM CONSTRUCTI ON & LAWN CARE SERVICE	76 PLEASANT STREET WELLSVILLE NY 14895	06/11/2013	06/11/2018
DOL	DOL		GEORGE DI BERNARDO		C/O DI BERNARDO TILE 15 WALKER WAYALBANY NY 12205	03/21/2014	03/21/2019
DOL	DA		GEORGE LUCEY		150 KINGS STREET BROOKLYN NY 11231	01/19/1998	01/19/2998
DOL	DOL	****1075	GLOBAL TANK CONSTRUCTION LLC		P O BOX 1238 SALINA OK 74365	11/28/2012	11/28/2017
DOL	DOL	*****0878	GM CONSTRUCTION & LAWN CARE SERVICE		76 PLEASANT STREET WELLSVILLE NY 14895	06/11/2013	06/11/2018
DOL	DOL	****5674	GMDV TRANS INC		67-48 182ND STREET FRESH MEADOWS NY 11365	06/24/2016	06/24/2021
DOL	DOL	*****0090	GOLDS FLOORING INSTALLATIONS INC		25 HAMILTON ROAD MONTICELLO NY 12701	10/16/2013	10/16/2018
DOL	DOL		GREGORY A FUCCI		C/O PAF PAINTING SERVICES 157 TIBBETTS ROADYONKERS NY 10705	03/12/2014	03/12/2019
DOL	DOL		GREGORY FUCCI JR		C/O APOLLO CONSTRUCTION 157 TIBBETTS ROADYONKERS NY 10705	03/12/2014	03/12/2019
DOL	DOL	*****9456	GUILLO CONTRACTING CORP		P O BOX 229 CALVERTON NY 11933	07/08/2013	07/08/2018

DOL	NYC	*****0346	H N H CONTRACTORS CORP	4558 BROADWAY # 6 NEW YORK NY 10040	08/04/2014	08/04/2019
DOL	DOL		HALSSAM FOSTOK	5 HANSEN PLACE WAYNE NJ 07470	09/18/2013	09/18/2018
DOL	NYC		HAMEEDUL HASAN	240 HOME STREET TEANECK NJ 07666	08/04/2014	08/04/2019
DOL	AG	*****9918	HARA ELECTRIC CORP	2461 47TH STREET ASTORIA NY 11103	09/26/2013	09/26/2018
DOL	NYC		HARMEL SINGH	15 CLINTON LANE HICKSVILLE NY 11801	02/25/2016	02/25/2021
DOL	NYC		HAROLD KUEMMEL	58-83 54TH STREET MASPETH NY 11378	02/26/2016	02/26/2021
DOL	AG		HARVINDER SINGH PAUL	90 JUNIUS STREET BROOKLYN NY 11212	01/23/2014	01/23/2019
DOL	DOL		HENRY VAN DALRYMPLE	2663 LANTERN LANE ATLANTA GA 30349	12/01/2015	12/01/2020
DOL	DOL		HI-TECH CONTRACTING CORP	114 PEARL STREET PORT CHESTER NY 10573	08/15/2012	08/15/2017
DOL	DOL	*****6370	HILLIANO CONSTRUCTION & ELECTRICAL INC	354 MAGNOLIA STREET ROCHESTER NY 14611	01/22/2015	01/22/2020
DOL	DOL	*****8282	IDEMA DEVELOPMENT INC	91 COLLEGE AVENUE POUGHKEEPSIE NY 12603	12/04/2015	12/04/2020
DOL	DOL	*****8282	IDEMA GENERAL CONTRACTORS INC	91 COLLEGE AVENUE POUGHKEEPSIE NY 12603	12/04/2015	12/04/2020
DOL	DOL	*****8426	IMPERIAL MASONRY RESTORATION INC	141 ARGONNE DRIVE KENMORE NY 14217	10/03/2012	10/03/2017
DOL	DOL	*****7001	INTEGRATED CONSTRUCTION & POWER SYSTEMS INC	SUITE 100 2105 W GENESEE STREETSYRACUSE NY 13219	01/06/2016	01/06/2021
DOL	DOL		ISABEL FRAGA	C/O THREE FRIENDS CONSTR 986 MADISON AVENUEPATERSON NJ 07501	01/03/2013	01/03/2018
DOL	AG	*****0000	J A M CONSTRUCTION CORP	SUITE 125 265 SUNRISE HIGHWAYROCKVILLE CENTRE NY 10457	04/07/2016	04/07/2021
DOL	DOL	*****7598	J M RICH LLC	P O BOX 268 STILLWATER NY 12170	09/16/2013	03/21/2019
DOL	DOL	*****3478	J N P CONSTRUCTION CORP	50 LOUIS COURT P O BOX 1907SOUTH HACKENSACK NY 07606	03/21/2014	03/21/2019
DOL	DOL		J N RICH LLC	P O BOX 268 STILLWATER NY 12170	09/16/2013	03/21/2019
DOL	DOL	****9368	J TECH CONSTRUCTION	PO BOX 64782 ROCHESTER NY 14624	09/24/2012	09/24/2017
DOL	DOL		J THE HANDYMAN		09/24/2012	09/24/2017
DOL	DOL	****4910	J V MAGIC TOUCH CORPORATION	94-25 57TH AVENUE, APT 5G ELMHURST NY 11373	01/12/2015	01/12/2020
DOL	DOL		JACQUELINE HOWE	C/O FLOZ-ON PAINTING INC 12 DUNDERBERG ROADTOMKINS NY 10986	10/16/2013	10/16/2018
DOL	DOL	*****8627	JAG I LLC	635 LUZERNE ROAD QUEENSBURY NY 12804	09/16/2013	09/16/2018
DOL	DOL	*****2868	JAG INDUSTRIES INC	175 BROAD ST - SUITE 320 GLENS FALLS NY 12801	09/16/2013	09/16/2018
DOL	DOL		JAMES B RHYNDERS	91 COLLEGE AVENUE POUGHKEEPSIE NY 12603	12/04/2015	12/04/2020
DOL	DOL		JAMES BOYCE	C/O EMPIRE CONCRETE SYST 101 SULLYS TRAIL/SUITE 20PITTSFORD NY 14534	11/18/2013	01/07/2019
DOL	DOL		JAMES E RHYNDERS	91 COLLEGE AVENUE POUGHKEEPSIE NY 12603	12/04/2015	12/04/2020
DOL	AG		JAMES FALCONE	SUITE 125 265 SUNRISE HIGHWAYROCKVILLE CENTRE NY 10457	04/07/2016	04/07/2021
DOL	DOL		JAMES RHYNDERS SR	91 COLLEGE AVENUE POUGHKEEPSIE NY 12603	12/04/2015	12/04/2020
DOL	DOL		JAMES SICKAU	3090 SHIRLEY ROAD NORTH COLLINS NY 14111	04/19/2011	07/08/2020
DOL	DOL		JASON M RICH	P O BOX 268 STILLWATER NY 12170	09/16/2013	03/21/2019
DOL	DOL		JASON W MILLIMAN	C/O ROCHESTER ACOUSTICAL P O BOX 799HILTON NY 14468	02/19/2016	02/19/2021

DOL	DOL		JAY PRESUTTI		C/O CONSOLIDATED INDUSTRI 2051 ROUTE 44/55MODENA NY 12548	01/28/2013	01/28/2018
DOL	DOL		JEFF P BRADLEY		520 PINE HILL ROAD CHESTER NY 10940	06/23/2014	06/23/2019
DOL	NYC		JEFFREY CASSIDY		14 RAILROAD AVENUE VALHALLA NY 10595	05/15/2014	04/02/2020
DOL	DOL		JERALD HOWE		C/O FLOZ-ON PAINTING INC 12 DUNDERBERG ROADTOMKINS NY 10986	10/16/2013	10/16/2018
DOL	DOL		JEROME LACITIGNOLA		C/O CATSKILL FENCE INSTAL 5445 ROUTE 32 CATSKILL NY 12414	08/22/2014	08/22/2019
DOL	NYC		JERRY DEWATERS		30 COLUMBUS CIRCLE EASTCHESTER NY 10709	08/21/2012	08/21/2017
DOL	DOL		JESSICA WHITESIDE		C/O BRRESTORATION NY INC 140 ARCADIA AVENUEOSWEGO NY 13126	09/12/2016	09/12/2021
DOL	DOL		JOHN DESCUL		437 SUNRISE HIGHWAYA WEST BABYLON NY 11704	08/12/2013	08/12/2018
DOL	DOL		JOHN H LEE	JOHN LEE QUALITY PAVING	67 WILER ROAD HILTON NY 14468	01/28/2013	01/28/2018
DOL	DOL	*****1749	JOHN LEE QUALITY PAVING		67 WILER ROAD HILTON NY 14468	01/28/2013	01/28/2018
DOL	DOL		JON E DEYOUNG		261 MILL ROAD P O BOX 296EAST AURORA NY 14052	07/29/2015	07/29/2020
DOL	DOL	****9368	JORGE I DELEON	J TECH CONSTRUCTI ON	PO BOX 64782 ROCHESTER NY 14624	09/24/2012	09/24/2017
DOL	DOL		JORGE VILLALOBOS		94-25 57TH AVENUE - APT 5 ELMHURST NY 11373	01/12/2015	01/12/2020
DOL	DOL		JOSE MONTAS		27 BUTLER PLACE YONKERS NY 10710	03/18/2011	03/19/2020
DOL	AG		JOSEPH FALCONE		SUITE 125 265 SUNRISE HIGHWAYROCKVILLE CENTRE NY 10457	04/07/2016	04/07/2021
DOL	DOL	****9273	JOSEPH M LOVETRO		P O BOX 812 BUFFALO NY 14220	08/09/2016	08/09/2021
DOL	DOL		JOSEPH MARTONE		112 OSCAWANA HEIGHTS ROAD PUTNAM VALLEY NY 10542	08/27/2013	08/27/2018
DOL	DOL		JOSHUA DEBOWSKY		9547 BUSTLETON AVENUE PHILADELPHIA PA 19115	02/05/2014	02/05/2019
DOL	DOL		JOYA MUSCOLINO		10 ST CHARLES STREET THORNWOOD NY 10594	09/03/2013	09/03/2018
DOL	DOL		JUANA MARTINEZ		C/O LEAD CONSTRUCTION 27 BUTLER PLACEYONKERS NY 10710	03/19/2015	03/19/2020
DOL	DOL	*****4340	JUBCO SITE DEVELOPMENT		462 LAKEVIEW AVENUE VALHALLA NY 10595	12/16/2013	12/16/2018
DOL	DOL		JULIUS AND GITA BEHREND		5 EMES LANE MONSEY NY 10952	11/20/2002	11/20/3002
DOL	DOL	****5062	K R F SITE DEVELOPMENT INC		375 LAKE SHORE DRIVE PUTNAM VALLEY NY 10579	01/23/2017	01/23/2022
DOL	DOL		KAREN HARTMAN		C/O GUILLO CONTRACTING P O BOX 229CALVERTON NY 11933	07/08/2013	07/08/2018
DOL	NYC		KATHLEEN SELA	C/O COLONIAL ROOFING COMPANY INC	247 48TH STREET BROOKLYN NY 11220	02/05/2014	02/05/2019
DOL	DOL		KEITH SCHEPIS		C/O KJS HAULING AND HOME 95 MAPLE AVENUENEW CITY NY 10956	04/15/2013	04/15/2018
DOL	DOL		KEN DEAVER		731 WARWICK TURNPIKE HEWITT NJ 07421	06/25/2012	12/11/2017
DOL	DOL		KENNETH FIORENTINO		375 LAKE SHORE DRIVE PUTNAM VALLEY NY 10579	01/23/2017	01/23/2022
DOL	DOL	****9732	KENT HOLLOW SIDING LLC		29A BRIDGE STREET NEW MILFORD CT 06776	01/15/2016	01/15/2021
DOL	DOL		KEVIN BABCOCK JR		P O BOX 46 THOMPSON RIDGE NY 10985	08/22/2014	08/22/2019
DOL	DOL		KEVIN M BABCOCK		P O BOX 46 THOMPSON RIDGE NY 10985	08/22/2014	08/22/2019
DOL	DOL		KIM SOROCENSKI		C/O SOLUTION MATTERS INC 198 NORWOOD ROADPORT JEFFERSON NY 11776	11/19/2015	11/19/2020

DOL	DOL	*****2463	KJS HAULING AND HOME IMPROVEMENT INC		95 MAPLE AVENUE NEW CITY NY 10956	04/15/2013	04/15/2018
DOL	AG		KOSTAS "GUS" ANDRIKOPOULOS		2461 47TH STREET ASTORIA NY 11103	09/26/2013	09/26/2018
DOL	DOL	****6033	KUSNIR CONSTRUCTION		2677 ANAWALK ROAD KATONAH NY 10536	08/03/2012	08/03/2017
DOL	DA	*****8816	LAKE CONSTRUCTION AND DEVELOPMENT CORPORATION		150 KINGS STREET BROOKLYN NY 11231	08/19/1998	08/19/2998
DOL	DOL	*****6224	LAKESIDE FIRE SPRINKLERS		125 CHAUTAUQUA AVENUE LAKEWOOD NY 14750	06/24/2015	06/24/2020
DOL	DOL	****4505	LARAPINTA ASSOCIATES INC		29 MAPLEWOOD DRIVE BINGHAMTON NY 13901	02/21/2017	02/21/2022
DOL	DOL		LARRY DOMINGUEZ		114 PEARL STREET PORT CHESTER NY 10573	08/15/2012	08/15/2017
DOL	DOL		LAURA A. GAUTHIER		C/O IMPERIAL MASONRY REST 141 ARGONNE DRIVEKENMORE NY 14217	10/03/2012	10/03/2017
DOL	DOL		LAURI MARTONE		112 OSCAWANA HEIGHTS ROAD PUTNAM VALLEY NY 10542	08/27/2013	08/27/2018
DOL	DOL		LAVERN GLAVE		C/O RAW POWER ELECTRIC 3 PARK CIRCLEMIDDLETOWN NY 10940	09/15/2014	09/15/2019
DOL	DOL		LAWRENCE J RUGGLES		P O BOX 371 ROUND LAKE NY 12151	05/12/2014	05/12/2019
DOL	DOL	*****1364	LEAD CONSTRUCTION SERVICES INC		3 ALAN B SHEPARD PLACE YONKERS NY 10705	03/19/2015	03/19/2020
DOL	DOL	*****0597	LEED INDUSTRIES CORP	HI-TECH CONTRACTIN G CORP	114 PEART STREET PORT CHESTER NY 10573	08/15/2012	08/15/2017
DOL	DOL	****4388	LEN J CONSTRUCTION LLC		P O BOX 10007 ALBANY NY 12201	06/24/2016	01/30/2022
DOL	AG		LEONID FRIDMAN		APT 5 200 BRIGHTON, 15TH STBROOKLYN NY 11235	01/23/2014	01/23/2019
DOL	DOL		LEROY NELSON JR		C/O LEN J CONSTRUCTION LL P O BOX 10007ALBANY NY 12201	06/24/2016	01/30/2022
DOL	DOL		LINDSEY R CRILL		143 FILLMORE AVENUE BUFFALO NY 14210	01/08/2015	01/08/2020
DOL	DOL	****8453	LINPHILL ELECTRICAL CONTRACTORS INC		523 SOUTH 10TH AVENUE MOUNT VERNON NY 10553	01/07/2011	04/15/2018
DOL	DOL		LINVAL BROWN		523 SOUTH 10TH AVENUE MOUNT VERNON NY 10553	01/07/2011	04/15/2018
DOL	NYC	*****2850	M A 2 FLAGS CONTRACTING CORP		25-18 100TH STREET EAST ELMHURST NY 11369	08/21/2013	08/21/2018
DOL	DOL		M ANVER BEIG		142 EAST MARKET STREET LONG BEACH NY 11561	03/07/2017	03/07/2022
DOL	AG	*****6957	M B DIN CONSTRUCTION INC		8831 20TH AVENUE/SUITE 6E BROOKLYN NY 11214	11/17/2015	11/17/2020
DOL	NYC	*****6317	M S QUALITY CONSTRUCTION LLC		27 MAPLEWOOD AVENUE COLONIA NJ 07067	02/04/2015	02/04/2020
DOL	NYC		MACIEJ SONTOWSKI		27 MAPLEWOOD AVENUE COLONIA NJ 07067	02/04/2015	02/04/2020
DOL	NYC	****9590	MACK GLASSNAUTH IRON WORKS INC		137 LIBERTY AVENUE BROOKLYN NY 11212	12/21/2015	12/21/2020
DOL	NYC	*****3141	MACKEY REED ELECTRIC INC		1ST FLOOR STORE FRONT 88-10 LITTLE NECK PARKWAYFLORAL PARK NY 11001	06/24/2014	06/24/2019
DOL	DOL	*****1784	MADISON AVE CONSTRUCTION CORP		39 PENNY STREET WEST ISLIP NY 11795	11/02/2016	11/02/2021
DOL	DOL		MALARKEY'S BAR & GRILL LLC		64 VICTORIA DRIVE BINGHAMTON NY 13904	02/04/2016	02/04/2021
DOL	DOL	*****0705	MALARKEY'S PUB & GRUB LLC		64 VICTORIA DRIVE BINGHAMTON NY 13904	02/04/2016	02/04/2021
DOL	DA		MANUEL P TOBIO		150 KINGS STREET BROOKLYN NY 14444	08/19/1998	08/19/2998
DOL	DA		MANUEL TOBIO		150 KINGS STREET BROOKLYN NY 11231	08/19/1998	08/19/2998
DOL	DOL		MAR CONTRACTING CORP		620 COMMERCE STREET THORNWOOD NY 10594	09/24/2012	09/24/2017
DOL	DOL		MARGARET FORTH		P O BOX 74 EAST GREENBUSH NY 12061	02/28/2012	10/01/2017

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DOL	DOL		MARIA ESTEVES AKA MARIA MARTINS		C/O THREE FRIENDS CONSTR 986 MADISON AVENUEPATERSON NJ 07501	01/03/2013	01/03/2018
DOL	DOL		MARIA MARTINS AKA MARIA ESTEVES		C/O THREE FRIENDS CONSTR 986 MADISON AVENUEPATERSON NJ 07501	01/03/2013	01/03/2018
DOL	DOL		MARIACHI'S PIZZERIA		C/O DOUGLAS L MALARKEY 64 VICTORIA DRIVEBINGHAMTON NY 13904	02/04/2016	02/04/2021
DOL	DOL		MARIO LUIS		31 DURANT AVENUE BETHEL CT 06801	07/02/2012	07/02/2017
DOL	DOL		MARK MIONIS		6409 LAND O LAKES BLVD LAND O LAKES FL 34638	11/10/2015	11/10/2020
DOL	DOL	****5533	MARQUISE CONSTRUCTION & DEVELOPMENT CORP		10 ST CHARLES STREET THORNWOOD NY 10594	09/03/2013	09/03/2018
DOL	DOL	*****8810	MARQUISE CONSTRUCTION ASSOCIATES INC		20 BOSWELL ROAD PUTNAM VALLEY NY 10579	09/03/2013	09/03/2018
DOL	DOL	*****1134	MARQUISE CONSTRUCTION CORP		10 ST CHARLES STREET THORNWOOD NY 10594	09/03/2013	09/03/2018
DOL	DOL		MARVIN A STURDEVANT		29 MAPLEWOOD DRIVE BINGHAMTON NY 13901	02/21/2017	02/21/2022
DOL	DOL		MATTHEW IDEMA GENERAL CONTRACTORS INC		91 COLLEGE AVENUE POUGHKEEPSIE NY 12603	12/04/2015	12/04/2020
DOL	DOL	****6416	MCCALL MASONRY		P O BOX 304 SAYRE PA 18840	08/09/2016	08/09/2021
DOL	DOL	****9028	MCINTOSH INTERIORS LLC		8531 AVENUE B BROOKLYN NY 11236	02/05/2013	02/05/2018
DOL	DOL	****4259	MERCANDO CONTRACTING CO INC		134 MURRAY AVENUE YONKERS NY 10704	12/11/2009	02/03/2019
DOL	DOL	*****0327	MERCANDO INDUSTRIES LLC		134 MURRAY AVENUE YONKERS NY 10704	12/11/2009	02/03/2019
DOL	NYC	****5330	METRO DUCT SYSTEMS INC		1219 ASTORIA BOULEVARD LONG ISLAND CITY NY 11102	04/16/2014	11/19/2020
DOL	DOL	****3368	MICEK CONSTRUCTION CO		20 CROSS STREET FALCONER NY 14733	12/02/2014	12/02/2019
DOL	DOL		MICHAEL A PASCARELLA		SUITE 100 2105 WEST GENESEE STREET SYRACUSE NY 13219	01/06/2016	01/06/2021
DOL	DOL	*****9198	MICHAEL CZECHOWICZ	OCTAGON CO	37-11 35TH AVENUE-2ND FL LONG ISLAND CITY NY 11101	01/08/2013	01/08/2018
DOL	DOL		MICHAEL F LEARY JR		3813 SNOWDEN HILL ROADNEW HARTFORD NY 13413	06/19/2013	06/19/2018
DOL	DOL		MICHAEL F LEARY JR METAL STUD & DRYWALL		3813 SNOWDEN HILL ROAD NEW HARTFORD NY 13413	06/19/2013	06/19/2018
DOL	NYC		MICHAEL HIRSCH		C/O MZM CORP 163 S MAIN STREETNEW CITY NY 10956	01/28/2016	01/28/2021
DOL	DOL		MICHAEL KTISTAKIS		363 88TH STREET BROOKLYN NY 11209	11/18/2013	11/18/2018
DOL	DOL	*****6033	MICHAEL KUSNIR	KUSNIR CONSTRUCTI ON	2677 ANAWALK ROAD KATONAH NY 10536	08/03/2012	08/03/2017
DOL	DOL		MICHAEL MARGOLIN		4 LEGHORN COURT NEW YORK NY 11746	11/28/2012	11/28/2017
DOL	DOL		MICHAEL WILSON	WILSON BROTHER DRYWALL CONTRACTOR S	36 ABERSOLD STREET ROCHESTER NY 14621	08/31/2015	08/31/2020
DOL	DOL		MICHELLE L BARBER	-	635 LUZERNE ROAD QUEENSBURY NY 12804	09/16/2013	09/16/2018
DOL	NYC		MIGUEL ACOSTA		25-18 100TH STREET EAST ELMHURST NY 11369	08/21/2013	08/21/2018
DOL	NYC		MILANCE HADZIC		22 CALIFORNIA AVE - STE 1 PATERSON NJ 07503	03/11/2015	03/11/2020
DOL	AG		MOHAMMAD RIAZ		46 RUGBY ROAD WESTBURY NY 11590	11/20/2013	11/20/2018
DOL	AG		MOHAMMED N CHATHA		8831 20TH AVENUE/SUITE 6E BROOKLYN NY 11214	11/17/2015	11/17/2020
DOL	DOL	****2737	MOUNTAIN'S AIR INC		2471 OCEAN AVENUE- STE 7A BROOKLYN NY 11229	09/24/2012	09/18/2020
DOL	DOL		MUHAMMAD BEIG		142 EAST MARKET STREET LONG BEACH NY 11561	03/07/2017	03/07/2022
DOL	DOL		MUHAMMAD PERVAIZ		C/O CHAMPION CONSTRUCTION 2131 SCHENECTADY AVENUEBROOKLYN NY 11234	11/18/2015	11/18/2020

DOL	DOL		MURRAY FORTH		P O BOX 74 EAST GREENBUSH NY 12061	02/28/2012	10/01/2017
DOL	DOL		MUZAFFAR HUSSAIN		C/O ABSOLUTE GENERAL CONT 1129 AVENUE UBROOKLYN NY 11229	01/28/2013	01/28/2018
DOL	NYC	****3613	MZM CORP		163 S MAIN STREET NEW CITY NY 10956	01/28/2016	01/28/2021
DOL	NYC	*****1284	NEW AMERICAN RESTORATION INC		22 CALIFORNIA AVE - STE 1 PATERSON NJ 07503	03/11/2015	03/11/2020
DOL	DA	*****6988	NEW YORK INSULATION INC		58-48 59TH STREET MASPETH NY 11378	05/16/2012	05/08/2020
DOL	NYC	*****4839	NEW YORK RIGGING CORP		58-83 54TH STREET MASPETH NY 11378	02/26/2016	02/26/2021
DOL	DOL		NICHOLAS DEGREGORY JR	NJ DEGREGORY & COMPANY	1698 ROUTE 9 GLENS FALLS NY 12801	05/23/2013	05/23/2018
DOL	NYC		NICHOLAS PROVENZANO		147 BROOME AVENUE ATLANTIC BEACH NY 11509	03/03/2014	03/03/2019
DOL	NYC		NICHOLAS PROVENZANO		147 BROOME AVENUE ATLANTIC BEACH NY 11509	03/03/2014	03/03/2019
DOL	DOL	****5279	NJ DEGREGORY & COMPANY		1698 ROUTE 9 GLENS FALLS NY 12801	05/23/2013	05/23/2018
DOL	DOL		NJ DEGREGORY & SONS CONSTRUCTION		1698 ROUTE 9 GLENS FALLS NY 12801	05/23/2013	05/23/2018
DOL	NYC	*****1968	NORTH AMERICAN IRON WORKS INC		1560 DECATUR STREET RIDGEWOOD NY 11385	05/15/2015	05/15/2020
DOL	DOL	*****6966	NORTH COUNTRY DRYWALL AND PAINT		23167 COUNTY ROUTE 59 DEXTER NY 13634	10/24/2016	10/24/2021
DOL	DOL	*****0065	NORTHEAST LANDSCAPE AND MASONRY ASSOC		3 WEST MAIN ST/SUITE 208 ELMSFORD NY 10523	01/23/2017	01/23/2022
DOL	DOL	*****9198	OCTAGON CO		37-11 35TH AVENUE-2ND FL LONG ISLAND CITY NY 11101	01/08/2013	01/08/2018
DOL	NYC	*****8337	OPTIMUM CONSTRUCTION INC		23-73 48TH STREET LONG ISLAND CITY NY 11103	04/24/2014	04/24/2019
DOL	NYC		ORSON ARROYO		C/O METRO DUCT SYSTEMS 12-19 ASTORIA BOULEVARDLONG ISLAND CITY NY 11102	04/16/2014	11/19/2020
DOL	DOL	****4546	PAF PAINTING CORP		161 TIBBETTS ROAD YONKERS NY 10705	03/12/2014	03/12/2019
DOL	DOL	*****5242	PAF PAINTING SERVICES INC	GARDEN STATE PAINTING	157 TIBBETTS ROAD YONKERS NY 10103	03/12/2014	03/12/2019
DOL	DOL		PAF PAINTING SERVICES OF WESTCHESTER INC		C/O SPIEGEL & UTRERA 1 MAIDEN LANE - 5TH FLNEW YORK NY 10038	03/12/2014	03/12/2019
DOL	DOL	*****8802	PAT'S HEATING AND AIR CONDITIONING LTD		P O BOX 371 ROUND LAKE NY 12151	05/12/2014	05/12/2019
DOL	DOL		PATRICIA M RUGGLES		P O BOX 371 ROUND LAKE NY 12151	05/12/2014	05/12/2019
DOL	DOL		PAUL VERNA		C/O AMERICAN STEEL MECHA 693 PAINTER STREETMEDIA PA 19063	02/20/2013	02/20/2018
DOL	DOL	*****9569	PERFORM CONCRETE INC		31 DURANT AVENUE BETHEL CT 06801	07/02/2012	07/02/2017
DOL	NYC		PETER LUSTIG		30 COLUMBUS CIRCLE EASTCHESTER NY 10709	08/21/2012	08/21/2017
DOL	DOL		PETER M PERGOLA		3 WEST MAIN ST/SUITE 208 ELMSFORD NY 10523	01/23/2017	01/23/2022
DOL	NYC		PETER TRITARIS		5990 58TH AVENUE MASPETH NY 11378	11/18/2013	11/18/2018
DOL	DOL	****2989	PROFESSIONAL ESTIMATING & BUSINESS CORP		157 TIBBETS ROAD YONKERS NY 10705	03/12/2014	03/12/2019
DOL	DOL	****6895	PROLINE CONCRETE OF WNY		3090 SHIRLEY ROAD NORTH COLLINS NY 14111	04/19/2011	07/08/2020
DOL	DA	*****6817	QUADRANT METAL BUILDINGS LLC		2740 SW MARTIN DOWNS BLVD PALM CITY FL 34990	08/25/2016	08/25/2021
DOL	DOL	*****0015	RAMADA CONSTRUCTION CORP		80 SAVO LOOP STATEN ISLAND NY 10309	01/07/2014	01/07/2019
DOL	NYC		RAMESHWAR ASU		137 LIBERTY AVENUE BROOKLYN NY 11212	12/21/2015	12/21/2020
DOL	DOL		RANA A KAHN		1973 81ST ST - SUITE A-5 BROOKLYN NY 11214	01/08/2015	01/08/2020
DOL	NYC		RANTIK PARIKH		13 LORIANN ROAD WARREN NJ 07059	07/15/2015	07/15/2020

DOL	DOL	*****2633	RAW POWER ELECTRIC CORP		3 PARK PLACE MIDDLETOWN NY 10940	09/16/2013	09/15/2019
DOL	NYC		RAYMOND PEARSON		P O BOX 957 PORT JEFFERSON STA NY 11776	03/12/2014	03/12/2019
DOL	DOL		REBECCA THORNE		113 N MAPLE AVENUE GREENSBURG PA 15601	02/21/2013	02/21/2018
DOL	DOL		REGINALD WARREN		C/O RAW POWER ELECTRIC 3 PARK CIRCLEMIDDLETOWN NY 10940	09/15/2014	09/15/2019
DOL	NYC	****3461	RELIANCE GENERAL CONSTRUCTION INC		644 OCEAN PARKWAY BROOKLYN NY 11230	09/02/2015	09/02/2020
DOL	DOL		REVOLUTIONARY FLOORS		P O BOX 268 STILLWATER NY 12170	09/16/2013	03/21/2019
DOL	DOL		RHINO CONCRETE LLC		101 SULLYS TRAIL/SUITE 20 PITTSFORD NY 14534	11/18/2013	01/07/2019
DOL	DA		RIANN MULLER		2740 SW MARTIN DOWNS BLVD PALM CITY FL 34990	08/25/2016	08/25/2021
DOL	DOL		RICHARD WILSON		C/O DUFOUR GROUP INC 353 WEST 56TH STREET #7MNEW YORK NY 10019	06/10/2014	06/10/2019
DOL	DOL	*****8618	RIEKS CONTRACTING LLC		4804 GAHWILER ROAD AUBURN NY 13021	05/01/2015	05/01/2020
DOL	DOL		ROBBYE BISSESAR		89-51 SPRINGFIELD BLVD QUEENS VILLAGE NY 11427	01/11/2003	01/11/3003
DOL	DOL	****1855	ROBERT D BISHOP JR	ROBERT D BISHOP JR	P O BOX 112 MORRISSONVILLE NY 12962	07/15/2014	07/15/2019
DOL	DOL		ROBERT D BISHOP JR		P O BOX 112 MORRISONVILLE NY 12962	07/15/2014	07/15/2019
DOL	NYC		ROBERT GUIDO		3256 BRUNER AVENUE BRONX NY 10469	07/29/2014	07/29/2019
DOL	DOL		ROBERT L EVANS		128A NORTH STAMFORD ROAD STAMFORD CT 06903	05/23/2013	05/23/2018
DOL	DOL		ROBERT TORDELLA		125 CHAUTAUQUA AVENUE LAKEWOOD NY 14750	06/24/2015	06/24/2020
DOL	DOL		ROCCO ESPOSITO		C/O ROCMAR CONTRACTING CO 620 COMMERCE STREETTHORNWOOD NY 10594	09/24/2012	09/24/2017
DOL	DOL	*****3859	ROCHESTER ACOUSTICAL CORP		P O BOX 799 HILTON NY 14468	02/19/2016	02/19/2021
DOL	DOL		ROCMAR CONSTRUCTION CORP		620 COMMERCE STREET THORNWOOD NY 10594	09/24/2012	09/24/2017
DOL	DOL	****7083	ROCMAR CONTRACTING CORP		620 COMMERCE STREET THORNWOOD NY 10594	09/24/2012	09/24/2017
DOL	NYC		RODNEY SCOTT		201 HEMPSTEAD AVENUE WEST HEMPSTEAD NY 11552	10/30/2015	10/30/2020
DOL	DOL		ROMEO WARREN		C/O RAW POWER ELECTR CORP 3 PARK PLACEMIDDLETOWN NY 10940	09/16/2013	09/15/2019
DOL	DOL		ROSS J MUSCOLINO		10 ST CHARLES STREET THORNWOOD NY 10594	09/03/2013	09/03/2018
DOL	DOL		RYAN ALBIE		21 S HOWELLS POINT ROAD BELLPORT NY 11713	02/21/2017	02/21/2022
DOL	DOL	****3347	RYAN ALBIE CONTRACTING		21 S HOWELLS POINT ROAD BELLPORT NY 11713	02/21/2017	02/21/2022
DOL	DOL		S & S ELECTRIC		235 BROADWAY SCHENECTADY NY 12306	06/19/2013	06/19/2018
DOL	NYC		SABIR MUHAMMED		SUITE B-8 782 PELHAM PARKWAY SOUTHBRONX NY 10462	04/21/2016	04/21/2021
DOL	NYC		SAEED HASAN		4558 BROADWAY #6 NEW YORK NY 10040	08/04/2014	08/04/2019
DOL	DOL	****4923	SCHENLEY CONSTRUCTION		731 WARWICK TURNPIKE HEWITT NJ 07421	06/25/2012	12/11/2017
DOL	NYC	****2117	SCOTT ELECTRICAL LLC		201 HEMPSTEAD AVENUE WEST HEMPSTEAD NY 11552	10/30/2015	10/30/2020
DOL	DOL		SCOTT LEONARD	GLOBAL TANK CONSTRUCTI ON LLC	P O BOX 1238 SALINA OK 74365	11/28/2012	11/28/2017
DOL	DOL	*****9751	SCW CONSTRUCTION		544 OLD ROUTE 23 ACRE NY 12405	02/14/2017	02/14/2022
DOL	DOL		SEAKCO CONSTRUCTION COMPANY LLC		128A NORTH STAMFORD ROAD STAMFORD CT 06903	05/23/2013	05/23/2018

DOL	DOL	*****9030	SEAKCO NEW YORK LLC	SEAKCO CONSTRUCTI ON COMPANY	128A NORTH STAMFORD ROAD STAMFORD CT 06903	05/23/2013	05/23/2018
DOL	DOL		SEAN BURBAGE	C/O SEAN BURBAGE CORP	445 ROOSA GAP ROAD BLOOMINGBURG NY 12721	04/14/2014	04/14/2019
DOL	DOL	****6586	SEAN BURBAGE CORP		445 ROOSA GAP ROAD BLOOMINGBURG NY 12721	04/14/2014	04/14/2019
DOL	NYC		SHAHZAD ALAM		21107 28TH AVE BAYSIDE NY 11360	07/02/2012	07/02/2017
DOL	DOL	*****6904	SIGNING STAR LIMITED LIABILITY COMPANY		5 HANSEN PLACE WAYNE NJ 07470	09/18/2013	09/18/2018
DOL	DOL	*****4025	SOLUTION MATTERS INC		198 NORWOOD ROAD PORT JEFFERSON NY 11776	11/19/2015	11/19/2020
DOL	NYC	*****4934	SPHINX CONTRACTING CORP		240 HOME STREET TEANECK NJ 07666	08/04/2014	08/04/2019
DOL	DOL		SPORTSCRAFTERS INC		113 N MAPLE AVENUE GREENSBURG PA 15601	02/21/2013	02/21/2018
DOL	DOL	****3496	STAR INTERNATIONAL INC		89-51 SPRINGFIELD BLVD QUEENS VILLAGE NY 11427	08/11/2003	08/11/3003
DOL	DOL		STEPHEN BIANCHI		462 LAKEVIEW AVENUE VALHALLA NY 10595	12/16/2013	12/16/2018
DOL	DOL	*****9751	STEPHEN C WAGAR		544 OLD ROUTE 23 ACRE NY 12405	02/14/2017	02/14/2022
DOL	DOL		STEPHEON SHELDON	FANTASTIC PAINTING	493 LANSING ROAD FULTONVILLE NY 12072	11/18/2013	11/18/2018
DOL	DOL		STEVEN P SUCATO		15-68 208TH STREET BAYSIDE NY 11360	06/23/2016	06/23/2021
DOL	DOL		STEVEN SAGGESE		3005 WYNSUM AVENUE MERRICK NY 11566	08/18/2014	08/18/2019
DOL	DOL		STEVEN TESTA		50 SALEM STREET - BLDG B LYNNFIELD MA 01940	01/23/2017	01/23/2022
DOL	DOL		STUART CHAITIN		634 ROUTE 303 BLAUVET NY 10913	07/26/2012	11/19/2018
DOL	NYC	****9432	SUBLINK LTD		346 THIRD AVENUE PELHAM NY 10803	11/19/2015	11/19/2020
DOL	DOL	*****3210	SUPER SWEEP	FMS	4 LEGHORN COURT NEW YORK NY 11746	11/28/2012	11/28/2017
DOL	DOL		SUZANNE G GOLD	C/O GOLDS FLOORING INSTALLATION S INC	25 HAMILTON ROAD MONTICELLO NY 12701	10/16/2013	10/16/2018
DOL	DOL	****7441	T & T CONCRETE INC		2560 HAMBURG TURNPIKE P O BOX 367LACKAWANNA NY 14218	07/08/2015	07/08/2020
DOL	DOL	****9676	T D CONTRACTORS CORP	T D CONTRACTOR S INC	113 N MAPLE AVENUE GREENSBURG PA 15601	02/21/2013	02/21/2018
DOL	DOL		T D CONTRACTORS INC		113 N MAPLE AVENUE GREENSBURG PA 15601	02/21/2013	02/21/2018
DOL	DOL		TADCO CONSTRUCTION		101-61 99TH STREET OZONE PARK NY 11416	02/15/2017	02/15/2022
DOL	DOL	****7417	TADCO CONSTRUCTION CORP		101-61 99TH STREET OZONE PARK NY 11416	02/15/2017	02/15/2022
DOL	DOL		TAMMY LACITIGNOLA		C/O CATSKILL FENCE INSTAL 5445 ROUTE 32CATSKILL NY 12414	08/22/2014	08/22/2019
DOL	DOL	*****9852	TAP STEEL INC		ROUTE 26 3101 P O BOX 457CONSTABLEVILLE NY 13325	01/28/2016	01/28/2021
DOL	DOL		TECH-MECHANICAL FAB DC INC		5 PARKER AVENUE POUGHKEEPSIE NY 12601	03/25/2014	03/25/2019
DOL	DOL	****5570	TESTA CORP		50 SALEM STREET - BLDG B LYNNFIELD MA 01940	01/23/2017	01/23/2022
DOL	DOL	*****0887	THE BRINSON PAINTING CORPORATION		72 TAUNTON PLACE BUFFALO NY 14216	04/14/2015	04/14/2020
DOL	DOL	*****8174	THE DALRYMPLE CORPORATION		UNIT 278 541 10TH STREET NWATLANTA GA 30318	12/01/2015	12/01/2020
DOL	DOL	*****8174	THE DALRYMPLE GROUP LLC		289 JONESBORO RD/ STE 216 MCDONOUGH GA 30253	12/01/2015	12/01/2020
	DOL		THE THORNE GROUP INC		113 N MAPLE AVENUE GREENSBURG PA 15601	02/21/2013	02/21/2018
DOL							
DOL	DOL	*****2070	THE UNIVERSAL GROUP OF NEW YORK INC		212 OXFORD WAY SCHENECTADY NY 12309	12/11/2012	09/16/2018

DOL	DOL		THOMAS DESANTIS	DESANTIS ENTERPRISES	161 OSWEGO RIVER ROAD PHOENIX NY 13135	09/24/2013	11/18/2018
DOL	NYC		THOMAS SCARINCI		130-43 92ND AVENUE RICHMOND HILLS NY 11418	11/27/2013	11/27/2018
DOL	DOL	****2734	THREE FRIENDS CONSTRUCTION CORP		986 MADISON AVENUE PATERSON NJ 07501	01/03/2013	01/03/2018
DOL	NYC	*****6253	THUNDER BROTHERS CORP		24 CONGRESS LANE SOUTH RIVER NJ 08882	05/01/2013	05/01/2018
DOL	DOL		TIMOTHY A PALUCK		C/O TAP STEEL INC RTE 26 3101/ P O BOX 457CONSTABLEVILLE NY 13325	01/28/2016	01/28/2021
DOL	DOL		TIMOTHY F BARBER		635 LUZERNE ROAD QUEENSBURY NY 12804	09/16/2013	09/16/2018
DOL	NYC	****1523	TM MECHANICAL CORP		130-43 92ND AVENUE RICHMOND HILLS NY 11418	11/27/2013	11/27/2018
DOL	DOL	*****0600	TOMSON ALLOYS RECYCLING INC		143 FILLMORE AVENUE BUFFALO NY 14210	01/08/2015	01/08/2020
DOL	DOL	*****3453	TORCHIA'S HOME IMPROVEMENT		10153 ROBERTS RD SAUQUOIT NY 13456	08/09/2016	08/09/2021
DOL	DOL	*****6914	TRI-COUNTY RESTORATIONS & CONSTRUCTION INC		13 SUMMERSET DRIVE WALLKILL NY 12589	08/22/2014	08/22/2019
DOL	DOL		TRI-COUNTY RESTORATIONS INC		392 ROCK CUT ROAD WALDEN NY 12586	08/22/2014	08/22/2019
DOL	DOL		TROY D CLARKE	ADVANCED METALS	387 RIVERSIDE DRIVE JOHNSON CITY NY 13790	10/01/2012	10/01/2017
DOL	DOL	*****9407	TURBO GROUP INC		15-68 208TH STREET BAYSIDE NY 11360	06/23/2016	06/23/2021
DOL	AG	****6490	UNIVERSAL STEEL FABRICATORS INC		90 JUNIUS STREET BROOKLYN NY 11212	01/23/2014	01/23/2019
DOL	NYC	****7174	V&R CONTRACTING		P O BOX 957 PORT JEFFERSON STA NY 11776	03/12/2014	03/12/2019
DOL	NYC		VALERIE VISCONTI		346 THIRD AVENUE PELHAM NY 10803	11/19/2015	11/19/2020
DOL	NYC		VEAP SELA	C/O COLONIAL ROOFING COMPANY INC	247 48TH STREET BROOKLYN NY 11220	02/05/2014	02/05/2019
DOL	DOL	****3270	VEZANDIO CONTRACTING CORP		530 BEECH STREET NEW HYDE PARK NY 11040	07/02/2012	07/02/2017
DOL	NYC		VICK CONSTRUCTION		21 DAREWOOD LANE VALLEY STREAM NY 11581	12/31/2013	12/31/2018
DOL	NYC		VICKRAM MANGRU	VICK CONSTRUCTI ON	21 DAREWOOD LANE VALLEY STREAM NY 11581	12/31/2013	12/31/2018
DOL	DOL		VICTOR ROTENBERG		C/O GMDV TRANS INC 67048 182ND STREETFRESH MEADOWS NY 11365	06/24/2016	06/24/2021
DOL	NYC		VINCENT PIZZITOLA		P O BOX 957 PORT JEFFERSON STA NY 11776	03/12/2014	03/12/2019
DOL	DOL		WAYNE LIVINGSTON JR	NORTH COUNTRY DRYWALL AND PAINT	23167 COUNTY ROUTE 59 DEXTER NY 13634	10/24/2016	10/24/2021
DOL	DOL		WESLEY J STAROBA		206 TALLY HO COURT SCHENECTADY NY 12303	06/19/2013	06/19/2018
DOL	DOL	*****0078	WESLEY J STAROBA INC	S & S ELECTRIC	235 BROADWAY SCHENECTADY NY 12306	06/19/2013	06/19/2018
DOL	DOL		WILLIAM CONKLIN		5 PARKER AVENUE POUGHKEEPSIE NY 12601	03/25/2014	03/25/2019
DOL	DOL		WILLIAM DEAK		C/O MADISON AVE CONSTR CO 39 PENNY STREETWEST ISLIP NY 11795	11/02/2016	11/02/2021
DOL	DOL		WILLIAM MAZZELLA		134 MURRAY AVENUE YONKERS NY 10704	02/03/2014	02/03/2019
DOL	DOL		WILLIAM THORNE		113 N MAPLE AVENUE GREENSBURG PA 15601	02/21/2013	02/21/2018
DOL	DOL		WILLIE BRINSON		72 TAUNTON PLACE BUFFALO NY 14216	04/14/2015	04/14/2020
DOL	DOL	*****6195	WILSON BROTHER DRYWALL CONTRACTORS		36 ABERSOLD STREET ROCHESTER NY 14621	08/31/2015	08/31/2020
DOL	DOL	****7345	YES SERVICE AND REPAIRS CORPORATION		145 LODGE AVE HUNTINGTON STATION NY 11476	08/09/2016	08/09/2021
DOL	DOL		YURIY IVANIN		C/O MOUNTAIN'S AIR INC 2471 OCEAN AVENUE-STE 7ABROOKLYN NY 11229	09/24/2012	09/18/2020

EXHIBIT 4-1

Contract Provisions

- 1. <u>Equal Employment Opportunity</u> This construction contract award shall contain a provision requiring compliance with E.O. 11246, "Equal Employment Opportunity," as amended by E.O. 11375, "Amending Executive Order 11246 Relating to Equal Employment Opportunity," and as supplemented by regulations at 41 CFR part 60, "Office of Federal Contract Compliance Programs, Equal Employment Opportunity, Department of Labor."
- 2. <u>Copeland "Anti-Kickback" Act (18 U.S.C. 874 and 40 U.S.C. 276c)</u> The contracts and subcontracts for construction or repair shall include a provision for compliance with the Copeland "Anti-Kickback" Act (18 U.S.C. 874), as supplemented by Department of Labor regulations (29 CFR part 3, "Contractors and Subcontractors on Public Building or Public Work Financed in Whole or in Part by Loans or Grants from the United States"). The Act provides that each contractor or subrecipient shall be prohibited from inducing, by any means, any person employed in the construction, completion, or repair of public work, to give up any part of the compensation to which he is otherwise entitled. The suspected or reported violations shall be reported to the Federal awarding agency.
- 3. **Davis-Bacon Act. as amended (40 U.S.C. 276a to a-7)** All construction contracts awarded shall include a provision for compliance with the Davis-Bacon Act (40 U.S.C. 276a to a-7) and as supplemented by Department of Labor regulations (29 CFR part 5, "Labor Standards Provisions Applicable to Contracts Governing Federally Financed and Assisted Construction"). Under this Act, contractors shall be required to pay wages to laborers and mechanics at a rate not less than the minimum wages specified in a wage determination made by the Secretary of Labor. In addition, contractors shall be required to pay wages not less than once a week. The Recipient shall place a copy of the current prevailing wage determination issued by the Department of Labor in each solicitation and the award of a contract shall be conditioned upon the acceptance of the wage determination. All suspected or reported violations shall be reported to the Federal awarding agency.
- 4. Contract Work Hours and Safety Standards Act (40 U.S.C. 327-330) All construction contracts awarded shall include a provision for compliance with Sections 103 and 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 327-330), as supplemented by Department of Labor regulations (29 CFR part 5). Under Section 102 of the Act, each contractor shall be required to compute the wages of every mechanic and laborer on the basis of a standard work week of 40 hours. Work in excess of the standard work week is permissible provided that the worker is compensated at a rate of not less than 1 ½ times the basic rate of pay for all hours worked in excess of 40 hours in the work week. Section 107 of the Act is applicable to construction work and provides that no laborer or mechanic shall be required to work in surroundings or under working conditions which are unsanitary, hazardous or dangerous on federal and federally financed and assisted construction projects. These requirements do not apply to the purchases of supplies or materials or articles ordinarily available on the open market, or contracts for transportation or transmission of intelligence.

- 5. <u>Patent Rights to Inventions Made Under a Contract or Agreement</u> Contract agreements for the performance of experimental, developmental, or research work shall provide for the patent rights of the Federal Government and the Recipient in any resulting invention in accordance with 37 CFR part 401, "Rights to Inventions Made by Nonprofit Organizations and Small Business Firms Under Government Grants, Contracts and Cooperative Agreements," and any implementing regulations issued by the awarding agency.
- 6. <u>Clean Air Act (42 U.S.C. 7401 et seq.) and the Federal Water Pollution Control Act (33 U.S.C. 1251 et sea.)</u>, as amended All contractors shall contain a provision that requires compliance with all applicable standards, orders or regulations issued pursuant to the Clean Air Act (42 U.S.C. 7401 et seq.) and the Federal Water Pollution Control Act as amended (33 U.S.C. 1251 et seq.), Violations shall be reported to the Federal awarding agency and the Regional Office of the Environmental Protection Agency (EPA).
- Section 3 12 U.S.C. 1701u of The Housing and Community Development Act of 1968, as amended - The contracts subject to Section 3 shall include the clause set forth at 24 CFR 135.38 as provided in the Section 3 Rider.
- 8. The following provisions shall also be included in the contracts.
 - a. Contracts in excess of the small purchase threshold shall contain contractual provisions or conditions that allow for administrative, contractual, or legal remedies in instances by which a contractor violates or breaches the contract terms, and provides for such remedial actions as may be appropriate.
 - b. The contracts in excess of \$10,000 shall contain suitable provisions for termination by the Recipient, including the manner by which such termination shall be effected and the basis for settlement.
 - c. Except as otherwise required by statute, an award that requires the contracting (or subcontracting) for construction or facility improvements shall provide for the Recipient to follow its own requirements relating to bid guarantees, performance bonds, and payment bonds unless the construction contract or subcontract exceeds \$100,000. For those contracts or subcontracts exceeding \$100,000, the OCR may accept the bonding policy and requirements of the Recipient, provided the OCR has made a determination that the Federal Government's interest is adequately protected. If such a determination has not been made, the minimum requirements shall be as follows:

i. A bid guarantee from each bidder equivalent to five percent of the bid price. The "bid guarantee" shall consist of a firm commitment such as a bid bond, certified check, or other negotiable instrument accompanying a bid as assurance that the bidder shall, upon acceptance of this bid, execute such contractual documents as may be required within the time specified.

ii. A performance bond on the part of the contractor for 100 percent of the contract price. A "performance bond" is one executed in connection with a contract to secure fulfillment of all the contractor's obligations under such contract.

iii. A payment bond on the part of the contractor for 100 percent of the contract price. A "payment bond" is one executed in connection with a contract to assure payment as required by statute of all persons supplying labor and material in the execution of the work provided for in the contract.

iv. Where bonds are required in the situations described herein, the bonds shall be obtained from companies holding certificates of authority as acceptable sureties pursuant to 31 CFR part 223, "Surety Companies Doing Business with the United States."

- d. The negotiated contracts awarded by Recipients or subrecipients shall include a provision to the effect that the Recipient or subrecipient, the OCR, the Comptroller General of the United States, or any of their duly authorized representatives, shall have access to any books, documents, papers and records of the contractor which are directly pertinent to a specific program for the purpose of making audits, examinations, excerpts and transcriptions.
- e. The contracts shall contain a provision indemnifying the Housing Trust Fund Corporation, its agents and employees, from and against any and all claims, actions, damages, losses, expenses and costs of every nature and, including reasonable attorney's fees, incurred by or assessed or imposed against the Housing Trust Fund Corporation, to the fullest extent permitted by law, arising out of the project being funded with NYS CDBG funds.
- f. The contracts shall contain a provision acknowledging that all parties shall be bound by, and comply with all applicable Federal, State, and local laws and regulations, including but not limited to, 24 CFR Parts 85 and 570.

EXHIBIT 4-2

SECTION 3 RIDER

Contractor must comply with and must ensure that the following language is included in all applicable subcontracts for work related to this Contract (the term "Contractor" as used herein shall also be deemed to mean "Subcontractor"):

- 1. Section 3 Clause (24 CFR 135.38)
 - A. The work to be performed under this Agreement is subject to the requirements of Section 3 of the Housing and Urban Development Act of 1968, as amended, 12 U.S.C. 170I u (Section 3). The purpose of Section 3 is to ensure that Employment and other economic opportunities generated by HUD assistance or HUD-assisted projects covered by Section 3, shall, to the greatest extent feasible, be directed to low- and very low-income persons, particularly persons who are recipients of HUD assistance for housing.
 - B. The parties to this Agreement agree to comply with HUD's regulations in 24 CFR Part 135, which implement Section 3. As evidenced by their execution of this Agreement, the parties to this Agreement certify that they are under no contractual or other impediments that would prevent them from complying with the Part 135 regulations.
 - C. The Contractor agrees to send to each labor organization or representative of workers with which the Contractor has a collective bargaining agreement or other understand, if any, a notice advising the labor organization or workers' representative of the Contractor's commitments under this Section 3 clause, and will post copies of the notice in conspicuous places at the work site where both employees and applicants for training and employment positions can see the notice. The notice shall describe the Section 3 preference, shall set forth minimum number and job titles subject to hire, availability of apprenticeship and training positions, the qualifications for each; and the name and location of the person(s) taking applications for each of the positions; and the anticipated date the work shall begin.
 - D. The Contractor agrees to include this Section 3 clause in every subcontract subject to compliance with regulations in 24 CFR Part 135, and agrees to take appropriate action, as provided in an applicable provision of the subcontract or in this Section 3 clause, upon a finding that the Subcontractor is in violation of the regulations in 24 DFR Part 135. The Contractor will not subcontract with any Subcontractor where the Contractor has notice knowledge that the Subcontractor has been found in violation of the regulations in 24 CFR Part 135.
 - E. The Contractor will certify that any vacant employment positions, including training positions, that are filled (1) after the Contractor is selected but before the Agreement is executed, and (2) with persons other than those to whom the regulations of 24 CFR Part 135 require employment opportunities to be directed, were not filled to circumvent the Contractor's obligations under 24 CFR Part 135.

- F. Noncompliance with HUD's regulations in 24 CFR Part 135 may result in sanctions, termination of this Agreement for default, and debarment or suspension from future HUD assisted contracts.
- G. With respect to work performed in connection with Section 3 covered Indian Housing Assistance, Section 7(b) of the Indian Self-Determination and Education Assistance Act (25 U.S.C. 450e) also applies to the work to be performed under this Agreement. Section 7(b) requires that to the greatest extent feasible (i) preference and opportunities for training and employment shall be given to Indians, and (ii) preference in the award of contracts and subcontracts shall be given to Indian organizations and Indian-owned Economic Enterprises. Parties to this Agreement that are subject to the provisions of Section 3 and Section 7(b) agree to comply with Section 3 to the maximum extent feasible, but not in derogation of compliance with Section 7(b).
- 2. Contractor shall maintain such records, and complete and submit forms as may be amended from time to time, as required by the NYS Office of Community Renewal ("OCR") and/or HUD including but not limited to the Section 3 New Hires Report and the Section 3 Business Certification Package. Such forms shall be submitted in accordance with the directions contained therein and at such other times as the OCR and/or HUD may direct.

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CHAPTER 5 GENERAL PROVISIONS

I. LABOR STANDARDS

A. Introduction

Depending on the type of activity to be undertaken with New York State Community Development Block Grant (NYS CDBG) funding, Recipients may need to comply with either the State Labor Standards required by Article 8 of the New York State Labor Law and/or the Federal Labor Standards as required by the Davis-Bacon Act. It is the **Recipients' sole responsibility to fully understand and comply with the requirements of the labor laws that impact their project prior to implementation of their NYS CDBG Program.** Recipients should contact the appropriate State or Federal agency concerning any issues related to State and/or Federal Labor Standards.

<u>Article 8 of the New York State Labor Law</u> requires Department of Jurisdictions awarding a public work contract to request a state wage rate determination prior to the bidding of a contract. The wage rate determination must be included as part of the bid document.

A "Department of Jurisdiction" includes a state department agency, board or commission; a county, city, town or village; a school district, board of education or board of cooperative educational services; a sewer, water, fire, improvement and other district corporations; a public benefit corporation; and a public authority awarding a public work contract.

"Public work" is construction, reconstruction or maintenance conducted on behalf of the public. The project's primary objective must be to benefit the public and the Department of Jurisdiction is party to a contract involving the employment of laborers, workers or mechanics.

Davis-Bacon Act (40 USC 276a-276a-5) requires that workers receive no less than the prevailing wages being paid for similar work in their locality. Prevailing wages are computed by the Department of Labor and are issued in the form of federal wage decisions for each classification of work. The law is applicable to all construction contracts awarded by Recipients or sub-recipients in excess of \$2,000. Residential rehabilitation contracts involving structures that contain fewer than eight (8) units are exempt from this requirement. Multi- unit structures that contain eight (8) or more units within the structure regardless of the number of units being rehabilitated and mixed-use properties must comply with the Davis-Bacon Act (i.e. façade work).

For projects subject to the requirements of both Federal and State Labor Standards, both state and federal wage rate determinations must be obtained and included in the bid document for the project. In this case, the contractor is required to pay the higher of the two rates for the particular job classification.

B. Recipient Responsibility

Recipients should fully understand what is required for construction contracts before starting the implementation process for your NYS CDBG project:

- Recipients must ensure that all construction contracts in excess of \$2,000 comply with all applicable Federal Labor Standards and provisions.
- Recipients must ensure that all public works contracts awarded by a Department of Jurisdiction comply with all applicable State Labor Standards and provisions.

Recipients must include a copy of the current prevailing wage rate determination in each Request for Bids. A copy of the bid specifications, proposed contract provisions and evidence that wage rates have been incorporated into the contract must be forwarded to the Recipient's OCR Community/Economic Developer prior to issuing the bids for construction.

- Recipients may only award contracts to eligible contractors and subcontractors which have accepted the wage rate determination and signed a certification to pay wages on that basis and comply with other labor standards.
- Contractors and sub-contractors must pay the wage rate determined by the Secretary of Labor to be the prevailing rate in that labor market.
- Recipients are required to report all suspected, reported or confirmed violations of over \$1,000 and must require the contractor to prepare a supplemental payroll and make appropriate restitution to affected employees.
- Recipients must conduct confidential interviews with employees to assure compliance with the terms of the Copeland Anti-Kickback Act.
- Recipients must develop compliance and enforcement procedures that ensure all applicable labor standards requirements are met.
- Recipients must complete all required Federal and State Labor Standards compliance reports.
- Recipients must send a copy of the wage schedule and other related documents that were included in the construction contracts (for all prime contractors) to their Office of Community Renewal (OCR) Community/Economic Developer.
- Recipients must submit Semi-Annual Labor Standard Enforcement Reports to OCR. OCR is required to submit these reports to HUD for projects subject to Davis-Bacon.

C. Labor Standards Administration

In order to comply with labor standard requirements, Recipients must develop a compliance and enforcement procedure that ensures all applicable labor standard requirements are met. The following steps will assist Recipients in ensuring compliance with applicable labor standards provisions:

Step 1 - Determine Applicability

The first and sometimes most difficult step is determining whether and to what extent the NYS Labor Law and/or Davis-Bacon wage standards apply to a particular contract or project. Most HUD-assisted construction work is covered by Davis-Bacon but there are some exceptions. The best and safest approach is whenever the contract project involves construction work that is valued in excess of \$2,000 to assume that Davis-Bacon rates will be applicable and then look more closely to see if there's any reason for non-coverage.

Step 2 - Designate a Labor Standards Compliance Officer

Recipients must designate a Labor Standards Compliance Officer who will be responsible for prevailing wage compliance. This person will serve as liaison between the contractor, the project engineer, and OCR and have overall responsibility for coordinating and ensuring compliance with all appropriate labor standards regulations and ensuring that an accurate filing system is maintained. The officer's name must appear on all requests, notices and correspondence related to labor standards regulations and project compliance.

Step 3 - Request Wage Rate Determination

State Prevailing Rate Schedule

The Bureau of Public Works of the NYS Department of Labor issues New York State Prevailing Rate Schedules annually on July 1 for each locality within New York State. Recipients must request a Prevailing Wage Schedule for their project from the appropriate regional office of the NYS Bureau of Public Works (www.labor.state.ny.us/workerprotection/publicwork/PWContactUs.shtm). Request for wage determinations should be submitted to the NYS Department of Labor, Bureau of Public Works within 90 days prior to the scheduled bid opening date. Prevailing Rate Schedules list the hourly rates for the trades and occupations of the workers to be employed on the public work project. The Bureau of Public Works can provide additional guidance on the process and procedures required for compliance with NYS Labor Law.

Federal Wage Determinations – Davis-Bacon

Federal wage rate determinations are issued by the U.S. Department of Labor for each State by means of a general wage decision issued early each January and subsequent periodic modifications throughout the balance of the year, in the four basic categories within the construction industry: Heavy, Highway, Building, and Residential. These determinations are meant to be all-inclusive and representative of an area's (the area in which the project is located) prevailing basic wage and fringe benefits for every type of job classification of laborers and mechanics within their respective industry category. The bid specifications and/or the contract for each project subject to Davis-Bacon wage rates must contain both a Davis-Bacon wage decision and its own labor standards clauses. These are usually bound into the contract specifications.

Recipients must obtain a wage determination from the U.S. Department of Labor.

To obtain a wage determination from the U.S. Department of Labor, Recipients must access the Government Printing Office website at <u>http://www.wdol.gov/</u>. Recipients **must send a copy of the wage determination to their OCR Community/Economic Developer** <u>including evidence that the wage determination was verified prior to the bid opening.</u>

In most cases, NYS CDBG projects will only use the heavy prevailing wage rates. However, in certain cases, more than one wage determination should be included in the bid document by the project engineer. A guideline from the HUD Labor Relations Office, referred to as the 25% Test, can generally be followed to determine when more than one wage determination should be used for NYS CDBG-funded construction contracts. For instance, this "rule of thumb" provides that if building construction is a "significant component" of the project (the budget for building construction exceeds 25% of the total anticipated construction contract amount), then the project engineer should include both Heavy and Building rates in the bid document. The same 25% Test concept would apply to a public facility project which is principally building construction, such as a sewage treatment plant, but which also includes more than 25% of non-building and Heavy prevailing wage rates in the bid document. This is a guideline, not a rigid requirement. If your project appears to fall under this 25% Test, consult your OCR Community/ Economic Developer for guidance.

For further information on this subject see: <u>http://www.hud.gov/offices/olr/olr_9603.cfm</u>

Unclassified Workers

In the event the construction project will involve laborers or mechanics with job classifications that do not appear on the wage determination provided, the recipient must make a request to OCR for an appropriate classification. The Report of Additional Classification and Wage Rate Form, HUD Form 4230A (www.hud.gov/offices/olr/olrform.cfm) must be used for this request.

Step 4 - Prepare the bid documents/contract

Both the federal and state labor standard regulations require specific language be included in all solicitations for bids and contracts for projects that must comply with labor standard regulations. Exhibit 5-12 provides a link to the Federal Labor Standards provisions and the State Labor Standards provisions. Additionally, each bidder and the contractor selected are required to provide specific certifications assuring the Recipient compliance with the prescribed labor standards requirements. In addition to the required labor provisions, all contracts must also include the required contract provisions as outlined in Chapter 4, Exhibit 4-1 and must comply with all required bonding provisions.

Step 4a. - Verify the Wage Rate in the Solicitation for Bids

A copy of the current wage rate determinations must be included in any solicitation for bids. **Recipients must verify that the determination is the most current available from the Department of Labor.**

Federal Wage Determinations have the following time limitations:

- a. If a contract is not executed within 90 days of the bid opening, any applicable later modifications to the original wage determination must be included in the contract; or
- b. If construction has not commenced within 90 days of the bid opening, any applicable later modifications to the original wage determination must be included in the contract.

According to the HUD Labor Relations Office, a Change Order, rather than rebidding, can incorporate the modifications under items a) and b) above.

Step 4b. - Verify Bidder Eligibility

Debarment, Suspended or Ineligible Contractors

Persons who have been declared debarred or suspended from participation in federally funded programs by a federal government agency are ineligible for participation in the NYS CDBG program. The U.S. General Services Administration maintains the List of Parties Excluded from Federal Procurement and Non procurement Programs for the federal government (www.epls.gov/). This list includes contractors who have been found in serious violation of Federal Labor Standards or other requirements, and therefore have been debarred, suspended, or otherwise declared ineligible for participation in federally assisted construction projects. Use of this list is required for all HUD-financed programs to verify eligibility status of contractors.

Once bids are received for a project, Recipients must verify a contractor's eligibility by reviewing the List of Parties Excluded from Federal Procurement and Non procurement Programs to verify the eligibility status of the contractors. Persons who have been declared debarred or suspended from participation in New York State public works projects by the Bureau of Public Works are listed in the NYS Bureau of Public Work's List of Employers Ineligible to Bid on or Be Awarded Any Public Work Contract. This list can be obtained at http://www.labor.state.ny.us. All proposed prime contractors and consultants must be verified for eligibility, by the Recipient, prior to awarding any NYS CDBG-funded contracts. In addition, participants in contracts associated with a NYS CDBG project must certify they and their principals are not debarred, suspended, voluntarily excluded, or otherwise ineligible. This step should take place as soon as possible following the bid opening, and before awarding any construction or consultant contract.

Recipients must not make any contract award or permit any contract award to any party which is debarred or suspended or is otherwise excluded from or ineligible for participation in NYS public works projects or federal assistance programs.

Step 4c. - Reverify the Wage Rate

For projects where Davis-Bacon is applicable, not less than 15 business days prior to the bid opening, the Recipient must contact the U.S. Department of Labor to determine whether the wage rate decisions included in the bid solicitation are still current. In those instances where the U.S. Department of Labor has issued a modification of the earlier wage determination, Recipients must provide the new rate decision to all potential bidders by addendum, if a reasonable amount of time is allowed for this procedure.

Step 5 - Evidence of Compliance

For projects where the Federal Labor Standards are applicable, Recipients must submit evidence that executed contracts for all contractors (prime and sub) contain federal labor standards provisions. A copy of the bid specifications, proposed contract provisions, and evidence that the wage rates have been incorporated into the contract must be forwarded to the Recipient's OCR Community/Economic Developer prior to issuing the bids for construction. Non-receipt of the required documents will delay and may eventually suspend the processing for request for funds.

<u>Step 6 - Inform Contractors of Labor Standard Requirements by Conducting a</u> <u>Preconstruction Conference</u>

Following the contract award for construction projects involving NYS CDBG funds, OCR recommends that the Recipient hold a pre-construction conference. The Recipient and prime contractor should include all subcontractors in the discussions to ensure that they are aware that they must also comply with the Labor Standards and equal employment opportunity provisions. The project architect and/or engineer (if applicable) should attend the conference to cover the technical or other contract related issues for the Recipients. The Recipient's project manager will cover the federal or state compliance issues.

The pre-construction conference represents a key opportunity prior to the beginning of project construction for giving instructions to the contractor. A well-planned and executed conference can help prevent problems and misunderstandings that could delay the project at a later date.

To assist Recipients in preparing for and conducting the pre-construction conferences for NYS CDBG-funded construction contracts, Federal Labor and Civil Rights Requirements Exhibit 5-2 and a Pre-construction Conference Planning Guide Exhibit 5-1, have been provided. The Guide provides a general format to be used as an agenda, supplemental information on labor standards and civil rights requirements, and a blank conference checklist and agenda, which should be followed to record minutes for the conference.

At a minimum, pre-construction conferences should include the following topics of discussion, which should outline the contractors or sub-contractors responsibilities:

- prevailing wage requirements, including posting prevailing wages continually at the job site;
- employment of apprentices or trainees;
- weekly pay for employees;
- submission of weekly payrolls Form WH-347, www.hud.gov/offices/olr/olrform.cfm;
- penalties if prevailing wage requirements and labor standards requirements are not complied with;
- payment of overtime;
- equal employment opportunity requirements;
- employment of minorities and local workers;
- Section 3 requirements;
- use of minority and women's business enterprises;
- notices that must be posted at the job site;
- the use of bona fide, registered subcontractors; and
- key responsibilities of the contractor, engineer/architect, and project manager.

In order to document discussions that occur during the pre-construction conference, the Recipient should prepare minutes of the conference. A verbatim record is not necessary, as the names of the persons who attend and a summary of the comments and issues covered is sufficient. If minutes are recorded, a copy of the minutes should be retained in the files. Recipients should provide copies of the minutes to each contractor representative who attends the pre-construction conference. This helps document that the key requirements have been covered.

Step 7 - Monitor Contractor Performance

It is the Recipient's responsibility to monitor construction activities to ensure that all required notices are posted prominently at the construction site, that the contractor's weekly payroll reports are accurate and submitted weekly as required, and that the contractor is complying with applicable labor standards. This monitoring function can be accomplished through the following activities:

- conduct on-site inspections to ensure that required notices and copies of the applicable wage rates are posted at reasonably accessible locations for the workers to review;
- compare weekly payroll reports to the prevailing wage rate decision;
- conduct interviews with construction employees to confirm job classifications and pay rates (<u>www.hud.gov/offices/olr/olrform.cfm</u>). Interviews should be conducted at least once a month throughout the construction period with a representative of each classification of laborers involved in the construction and at least 10 percent of the workforce;
- initial and date each payroll to document that the payroll review has been completed on a weekly basis;
- implement a process that authorizes payment to the contractor after specific milestones are met; and
- certify that the contractor has complied with all labor and civil rights requirements.

Use of Volunteers

The Housing and Community Development Act exempts "volunteers" from Davis-Bacon Act requirements on NYS CDBG program funded projects. Davis-Bacon wage rates shall not apply to any individual that:

- performs services for which the individual volunteered;
- does not receive compensation for such services, or is paid expenses, reasonable benefits, or a nominal fee for such services; and
- is not otherwise employed at any time in the construction work.

The Project Manager should use and obtain a signed Volunteer Certification Form, Exhibit 5-3, for each volunteer worker, other than the contractor's employees, performing work on NYS CDBG-funded project activities.

Step 8 - Investigate Labor Standards Violations

Violations of labor standards requirements may surface as the result of either monitoring or through a specific complaint by a construction worker. In either instance, the Recipient is responsible for thoroughly investigating and documenting the alleged violation.

If a violation is suspected, the Recipient should immediately notify their OCR Community/Economic Developer and work with the contractor on an informal basis to resolve the problem and allow a reasonable time for correction. Where the contractor refuses to address the violation or continues to violate labor standards provisions, your OCR Community/Economic Developer should be immediately notified in writing of the violation. The contractor should be informed that an unresolved finding of labor standards violation could result in disbarment and make the contractor ineligible for participation in NYS CDBG assisted construction projects in the future.

D. Davis-Bacon Reporting Requirements

Twice per year, Recipients undertaking activities that require compliance with Federal Labor Standards (Davis-Bacon and the related Acts) must submit a Semi-Annual Labor Standards Enforcement Report to OCR, who will notify Recipients directly if a report is due for a CDBG funded project. Reports are due within ten (10) days of the end of the reporting periods, which are October 1 through March 31 and April 1 through September 30. Information provided on this report will be submitted to HUD to demonstrate compliance with federal requirements. Recipients who fail to submit the reports in a timely manner are at risk of having funds suspended for all open grants until the report is received and approved by OCR.

II. CONFLICT OF INTEREST

In addition to the provisions of New York State General Municipal Law Article 18 Conflicts of Interest of Municipal Officers and Employees, there are two sets of federal conflict of interest provisions applicable to state administered NYS CDBG non-entitlement funds. The first set, applicable to the procurement of goods and services, is located at 24 CFR 570.489 (g). This section states:

"When procuring property or services to be paid for in whole or in part with NYS CDBG funds, the State shall follow its procurement policies and procedures. The State shall establish requirements for procurement policies and procedures for units of general local government, based on full and open competition. Methods of procurement (e.g., small purchase, sealed bids/formal advertising, competitive proposals, and noncompetitive proposals) and their applicability shall be specified by the State. Cost plus a percentage of cost and percentage of construction costs methods of contracting shall not be used. The policies and procedures shall also include standards of conduct governing employees engaged in the award or administration of contracts (Other conflicts of interest are covered by Sec. 570.489(h)). The State shall ensure that all purchase orders and contracts include any clauses required by Federal statutes, executive orders and implementing regulations."

OCR has elected to adopt the federal procurement standards implemented at 24 CFR part 85. Regarding conflict of interest issues, 24 CFR 85.36(b)(3) provides:

"Grantees and subgrantees will maintain a written code of standards of conduct governing the performance of their employees engaged in the award and administration of contracts. No employee, officer or agent of the grantee or subgrantee shall participate in selection, or in the award or administration of a contract supported by Federal funds if a conflict of interest, real or apparent, would be involved. Such a conflict would arise when:

- (i) The employee, officer or agent,
- (ii) Any member of his immediate family,
- (iii) His or her partner, or
- (iv) An organization which employs, or is about to employ, any of the above, has a financial or other interest in the firm selected for award.

The grantee's or subgrantee's officers, employees or agents will neither solicit nor accept gratuities, favors or anything of monetary value from contractors, potential contractors, or parties to subagreements. Grantee and subgrantees may set minimum rules where the financial interest is not substantial or the gift is an unsolicited item of nominal intrinsic value. To the extent permitted by State or local law or regulations, such standards or conduct will provide for penalties, sanctions, or other disciplinary actions for violations of such standards by the grantee's and subgrantee's officers, employees, or agents, or by contractors or their agents. The awarding agency may in regulation provide additional prohibitions relative to real, apparent, or potential conflicts of interest."

These provisions prohibiting conflicts arising out of procurement activities permit no exceptions and therefore, must be avoided. The second set of provisions applicable to state administered NYS CDBG non entitlement funds is found at 24 CFR 570.489(h), which provides:

- (1) Applicability
 - (i) In the procurement of supplies, equipment, construction, and services by the States, units of local general governments, and Subrecipients, the conflict of interest provisions in paragraph (g) of this section shall apply.
 - (ii) In all cases not governed by paragraph (g) of this section, this paragraph (h) shall apply. Such cases include the acquisition and disposition of real property and the provision of assistance with NYS CDBG funds by the unit of general local government or its Subrecipients, to individuals, businesses and other private entities.
- (2) Conflicts prohibited. Except for eligible administrative or personnel costs, the general rule is that no persons described in paragraph (3) of this section who exercise or have exercised any functions or responsibilities with respect to NYS CDBG activities assisted under this subpart or who are in a position to participate in a decision making process or gain inside information with regard to such activities, may obtain a financial interest or benefit from the activity, or have an interest or benefit from the activity, or have an interest or benefit from the activity, or have an interest in any contract, subcontract or agreement with respect thereto, or the proceeds there under, either for themselves or those with whom they have family or business ties, during their tenure or for one year thereafter.

- (3) Persons covered. The conflict of interest provisions for paragraph (h)(2) of this section apply to any person who is an employee, agent, consultant, officer, or elected official or appointed official of the state, or of a unit of general local government, or of any designated public agencies, or Subrecipients which are receiving NYS CDBG funds.
- (4) Exceptions: Thresholds requirements. Upon written request by the State, an exception to the provisions of paragraph (h)(2) of this section involving an employee, agent, consultant, officer, or elected official or appointed official of the state may be granted by HUD on a case-by-case basis. In all other cases, the state may grant such an exception upon written request of the unit of general local government provided the state shall fully document its determination in compliance with all requirements of paragraph (h)(4) of this section including the state's position with respect to each factor at paragraph (h)(5) of this section and such documentation shall be available for review by the public and by HUD. An exception may be granted after it is determined that such an exception will serve to further the purpose of the Act and the effective and efficient administration of the program or project of the state or unit of general local government, as appropriate, has provided the following:
 - (i) A disclosure of the nature of the conflict, accompanied by an assurance that there has been public disclosure of the conflict and a description of how the public disclosure was made; and
 - (ii) An opinion of the attorney for the state or the unit of general local government, as appropriate, that the interest for which the exception is sought would not violate state or local law.
- (5) Factors to be considered for exceptions. In determining whether to grant a requested exception after the requirements of paragraph (h)(4) of this section have been satisfactorily met, the cumulative effect of the following factors, where applicable, shall be considered:
 - Whether the exception would provide a significant cost benefit or an essential degree of expertise to the program or project which would otherwise not be available;
 - (ii) Whether an opportunity was provided for open competitive bidding or negotiation;
 - (iii) Whether the person affected is a member of a group or class of low- or moderateincome persons intended to be the beneficiaries of the assisted activity, and the exception will permit such person to receive generally the same interests or benefits as are being made available or provided to the group or class;
 - (iv) Whether the affected person has withdrawn from his or her functions or responsibilities, or the decision-making process with respect to the specific assisted activity in question;
 - (v) Whether the interest or benefit was present before the affected person was in a position as described in paragraph (h)(3) of this section;
 - (vi) Whether undue hardship will result either to the State or the unit of general local government or the person affected when weighed against the public interest served by avoiding the prohibited conflict; and
 - (vii)Any other relevant considerations.

To request an exception as authorized under 24 CFR 570.589(h)(4), the Recipient must submit the following documents to OCR:

- 1. A written request which:
 - a. Details the nature of the conflict; and
 - b. Specifically addresses each applicable factor enumerated in subparagraph (5) of 24 CFR 570.489(h); and
 - c. Is signed by the Recipient's chief elected official.
- 2. An opinion letter signed by the Recipient's legal counsel stating that the interest for which the exception is sought would not violate state or local law.
- 3. Minutes of the public meeting at which disclosure of the conflict was made. The public hearing must be held by the legislative body of the Recipient. This responsibility cannot be delegated to an agency or committee.
- 4. Conflict of Interest Disclosure (Refer to Exhibit 5-16)

Refer to Exhibit 5-17 for further guidance on the requirements for Conflict of Interest Submissions.

Upon the receipt and review of the forgoing documents, OCR will issue a written determination either granting or denying the requested exception.

III. PROJECT SIGNS

OCR requires a project sign at the site of all construction projects which involve more than \$50,000 in NYS CDBG funds. The expense associated with meeting this requirement is an eligible expense and may be charged as a construction or an administrative expense.

A. Sign Specifications

Installation

- 1. Install sign at the site within one week of the start of construction.
- 2. Erect sign in a prominent location, secure from vandalism.

Materials

- 1. Signboard: 4' X 8', 3/4" plywood, MDO B-B EXT-APA.
- 2. Primer: As recommended by finish coat manufacturer for the substrate and finish material.
- 3. Lettering and striping shall be uniform with sharp, neat profiles.
- 4. "Optional Information" included on sign shall be visually subordinate to other information provided.
- 5. Supports: Treated D.F. posts.

Maintenance and Removal

- 1. Maintain the sign plumb and level for the duration of the work.
- 2. The sign must be removed from the property 60 days after final payment or project completion, whichever is later.

B. Sign Design

The sign design layout must follow the specifications available on the HCR website, <u>http://www.nyshcr.org/Funding/SignSpec/</u>

C. Sign Placement

- With respect to placement, traffic control signs, regulatory, warning, and guide signs have a higher priority than OCR signage
- In no case shall these signs be placed such that they obscure road users' view of other traffic control devices.
- OCR signs should be placed where they can be easily identified with the corresponding projects.
- If the placement of OCR signs conflicts with newly installed higher priority signs, or traffic signals, or temporary traffic control devices, or other priority devices, the sign should be relocated.
- Due to public safety concerns, OCR signs should not be allowed at the following locations:
 - On the front, back, adjacent to or around any traffic control device, including traffic signs, signals, changeable message signs, traffic control device posts or structures, or bridge piers.
 - At key decision points where a driver's attention is more appropriately focused on traffic control devices, roadway geometry, or traffic conditions. These locations include, but are not limited to exit and entrance ramps, intersections controlled by traffic signals or by stop or yield signs, highway-rail grade crossings, and areas of limited sight distance.

IV. DISPLACEMENT, RELOCATION AND ACQUISITION

Recipients who undertake NYS CDBG-assisted activities that involve displacement, permanent relocation, demolition or conversion of residential units occupied by lowincome households are responsible for complying with all regulations under the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended (Uniform Act), and Section 104(d) of the Housing and Community Development Act of 1974, as amended, and all implementing regulations.

The primary purpose of these laws is to ensure that when NYS CDBG-funded projects result in the demolition or conversion of units, all affected persons receive the proper relocation assistance and benefits. The acquisition requirements of the federal relocation and acquisition regulations apply in most instances, including when a property is acquired by a nonprofit or for-profit entity that has received a loan or grant from your NYS CDBG project.

To ensure compliance with the URA, recipients should reference the HUD Handbook 1378, Tenant Assistance, Relocation and Real Property Acquisition (<u>www.hud.gov/offices/cpd/library/relocation/policyandguidance/handbook1378.cfm</u>) and 49 CFR Part 24 for detailed information on the specific displacement, relocation and acquisition requirements.

V. LEAD BASED PAINT

EFFECTIVE MAY 6, 2014, THE PRESUMPTION OF LEAD ON ANY NYS CDBG PROGRAM FUNDED HOUSING ACTIVITY WILL NO LONGER BE PERMITTED.

A. Renovation, Repair and Painting Rule

Common renovation activities like sanding, cutting, and demolition can create hazardous lead dust and chips by disturbing lead-based paint, which can be harmful to adults and children. To protect against this risk, on April 22, 2008, EPA issued a <u>rule (40CFR745.80)</u> requiring the use of lead-safe practices and other actions aimed at preventing lead poisoning. Under the rule, beginning April 22, 2010, and updated October2011: firms performing renovation, repair, and painting projects that disturb lead-based paint in pre-1978 homes, child care facilities and schools must be <u>certified by the EPA and that they</u> <u>use certified renovators who are trained by EPA-approved training providers to follow lead-safe work practices.</u> Recipients must include the firm's EPA certification in the general program files and be made accessible for verification.

EPA and HUD rules apply to all housing rehabilitation activities.

B. Lead Safe Housing Rule

All NYS CDBG-funded housing rehabilitation and home ownership projects must adhere to the Residential Lead-Based Paint Hazard Reduction Act of 1992 (24 CFR Part 35). These regulations must be carefully followed to ensure that exposure to lead hazards is reduced in any residential property to be rehabilitated or purchased. The regulations can be found at http://www.hud.gov/offices/lead/enforcement/lshr.cfm.

HUD has created an Interpretive Guidance that can be used to address many of the questions that have arisen as a result of the implementation of these new regulations. The Interpretive Guidance can be found at: http://www.hud.gov/utilities/intercept.cfm?/offices/lead/library/enforcement/LSHRGuidancee21June04.pdf

For questions that cannot be answered through the regulations or Interpretive Guidance, Recipients should submit their questions in writing to their OCR Community/Economic Developer. OCR will respond in writing.

EPA and the HUD rules apply to all housing rehabilitation activities.

C. Types of Housing Covered

- Any private housing that is receiving CDBG housing rehabilitation assistance
- Federally-owned housing being sold
- Housing receiving a federal subsidy that is associated with the property, rather than with the occupants (project-based assistance)
- Public housing
- Housing occupied by a family receiving a tenant-based subsidy (such as a voucher or
- certificate)
- Multifamily housing for which mortgage insurance is being sought
- Housing receiving federal assistance for rehabilitation, reducing homelessness, and other special needs

D. Types of Housing Not Covered

- Housing built since January 1, 1978, when lead paint was banned for residential use
- Housing exclusively for the elderly or people with disabilities, unless a child under age 6 is expected to reside there

- Zero-bedroom dwellings, including efficiency apartments, single-room occupancy housing, dormitories, or military barracks
- Property that has been found to be free of lead-based paint by a certified lead-based paint inspector
- Property where all lead-based paint has been removed
- Unoccupied housing that will remain vacant until it is demolished
- Non-residential property
- Any rehabilitation or housing improvement that does not disturb a painted surface

E. Notices and Pamphlets

As per 24CFR Part 35, Recipients undertaking housing rehabilitation and homeownership activities are required to provide appropriate lead hazard information pamphlets and notices to the owners and occupants of the residential structure. The <u>Protect Your</u> <u>Family From Lead in Your Home</u> pamphlet <u>http://www.hud.gov/offices/lead/library/enforcement/pyf_eng.pdf</u> and the <u>EPA Renovate</u> <u>Right</u> pamphlet <u>http://www2.epa.gov/lead/lead-safe-certified-guide-renovate-right</u> must be provided to all owners, potential owners, and occupants of the residential structure to be purchased or that is undergoing rehabilitation.

In addition to the lead hazard information pamphlet, Recipients are also required to provide specific notices when lead based paint evaluation and/or hazard reduction activities are being undertaken. Recipients must provide the appropriate notice(s) (Exhibit 5-8) to all owners and occupants of the residential structure where the activities are being undertaken.

F. Calculating Federal Rehabilitation Assistance

Prior to beginning any lead hazard evaluation or reduction activities, Recipients must determine the level of Federal assistance being provided to a specific unit. Lead-based paint requirements for rehabilitation vary based on the amount of federal rehabilitation assistance (as defined in 24 CFR 35.915), and the calculation can affect (1) the requirement for a risk assessment and (2) the type of lead hazard controls required.

The three categories are:

- Assistance of up to and including \$5,000 per unit;
- Assistance of more than \$5,000 per unit up to and including \$25,000 per unit; and
- Assistance of more than \$25,000 per unit.

The amount of federal rehabilitation assistance is based on two calculations, and the lesser of the two is used to determine the category. The two calculations are:

 <u>The average Federal housing assistance per assisted dwelling unit</u> – Federal assistance includes all Federal funds that are assisting the project, regardless of the use of the funds. Federal funds being used for acquisition, construction and project soft costs are included.

The following are examples of programs that are considered Federal assistance:

- > HUD grant programs, including CDBG, HOME, HOPE
- Special Needs programs such as HOPWA, ESG, Supportive Housing, Shelter Plus Care and other McKinney programs

- > Section 8 and other HUD rental assistance programs
- > Dept. of Agriculture's Rural Development funds

The following are examples that are not considered Federal assistance for the purpose of this calculation:

- Proceeds from the sale of Low-Income Housing Tax Credits
- > Proceeds from FHA mortgage insurance, including rehab funds such as 203(k)
- > Weatherization Assistance Program (separate guidance has been issued)
- Fannie Mae and Freddie Mac programs
- Federal Home Loan Bank programs

If you are using Federal funds on a project and the program is not clearly identified as included or excluded by these lists, contact OCR to determine applicability before proceeding.

2. <u>The average hard costs of rehabilitation per unit</u> – The hard costs of rehabilitation include all hard costs, regardless of source, except for the costs associated with lead-based paint hazard evaluation and hazard reduction activities (as explained below). All other hard costs of rehabilitation are to be included, regardless of whether the source of funds is Federal or non-Federal, public or private.

The following are not hard costs and need not be included in this calculation:

- Soft costs, including financing fees, credit reports, title binders and insurance, recordation fees, transaction taxes, impact fees, legal and accounting, appraisals, architectural and engineering fees
- Administrative costs
- Relocation costs
- Environmental review costs
- Acquisition costs
- Also, the costs of complying with the LBP Rule that are not normally incurred as part of rehabilitation may be excluded from this calculation, including such things as:
- Lead evaluation costs (risk assessments, visual assessments or inspections)
- Worksite preparation
- > Occupant protection, including relocation, storage or protection of belongings
- Interim controls, standard treatments, or abatement activities that are being done only for purposes of lead hazard control and would not be done in the normal course of the rehabilitation except for the LBP requirements
- The incremental costs of a rehab activity that are the result of safe work practice requirements (e.g., if the standard window replacement cost is \$275 per window without LBP, but \$310 when using safe work practices in an interim control job, the incremental cost of \$35 per window may be treated as an additional LBPH reduction cost and excluded from the calculation of rehabilitation hard costs)
- > Waste handling attributable to lead-based paint hazard reduction.

- > Specialized cleaning designed to remove LBP dust
- > Clearance activities, including visual assessments, dust wipes, and reports

These LBP hazard reduction costs may be excluded from the calculation of rehabilitation hard costs (the second of the two required calculations), but are not excluded from the calculation of Federal housing assistance (the first of the two calculations) if they are paid with Federal funds.

For a residential property that includes both federally assisted and non-assisted units, these calculations apply only to the federally assisted units. The rehabilitation costs and Federal assistance associated with non-assisted units are not included in the calculations of the average per unit hard costs of rehabilitation and the average Federal assistance per unit, but the pro rata share of the exterior, common area, and common systems costs are included. For multi-unit projects with both federally-assisted and non-assisted units, rehabilitation hard costs per unit are calculated as follows:

- 1. In-unit rehabilitation hard costs for assisted units divided by the number of federallyassisted units in the project; plus
- 2. Rehabilitation hard costs for common areas and exterior surfaces divided by the total number of units in the project.

Exhibit 5-9 is provided as the form for documenting the amount of Federal Rehabilitation Assistance and evidence of this calculation must be contained in every project file.

G. Lead Based Paint Evaluation and Hazard Reduction Requirements

For all residential properties receiving Federal housing rehabilitation assistance up to and including \$25,000, Recipients must complete the following activities:

- 1. Conduct lead based paint testing on the entire dwelling unit including surfaces to be disturbed, deteriorated surfaces and friction and impact surfaces and all surfaces expected to be disturbed or replaced during rehabilitation activities.
- Perform a lead based paint risk assessment in the dwelling units receiving Federal assistance and in associated common areas and exterior painted surfaces in accordance with 24CFR35.1320(b) and EPA Renovator, Repair and Painting rules at 40 CFR Part 745 before rehabilitation begins.
- 3. Risk assessors must use standards for determining dust-lead hazards and soil-lead hazards that are at least as protective as those promulgated by the EPA at 40 CFR 745.227(h).
- 4. If lead testing indicates the presence of lead based paint hazards, implement safe work practices during rehabilitation work in accordance with 24CFR35.1350 and EPA Renovator, Repair and Painting rules at 40 CFR Part 745 and repair any paint that is disturbed and all lead based paint hazards.
- 5. After completion of any rehabilitation disturbing painted surfaces, perform a clearance examination of the housing unit(s) in accordance with 24CFR35.1340.

For Residential property receiving more than \$25,000 per unit in Federal rehabilitation assistance, Recipients must complete the following:

- 1. Conduct lead based paint testing on the <u>entire</u> dwelling unit including deteriorated surfaces, friction and impact surfaces and all surfaces expected to be disturbed or replaced during rehabilitation activities.
- Perform a lead based paint risk assessment in the dwelling units receiving Federal assistance and in associated common areas and exterior painted surfaces in accordance with 24CFR35.1320(b) and EPA Renovator, Repair and Painting rules at 40 CFR Part 745 before rehabilitation begins.
- 3. Risk assessors must use standards for determining dust-lead hazards and soil-lead hazards that are at least as protective as those promulgated by the EPA at 40 CFR 745.227(h).
- 4. If lead testing indicates the presence of lead based paint hazards, implement safe work practices during rehabilitation work in accordance with 24CFR35.1350 and EPA Renovator, Repair and Painting rules at 40 CFR Part 745 and abate any paint that is disturbed and all lead based paint hazards.
- 5. After completion of any rehabilitation disturbing or abating painted surfaces, perform a clearance examination of the housing unit(s) in accordance with 24CFR35.1340.

H. Lead Based Paint Inspections and Paint Testing

For projects requiring lead-based paint inspections and paint testing, Recipients must ensure that lead-based paint inspections and paint testing are performed in accordance with 40 CFR 745.324 or 40 CFR 745.227(b) and (h). For any paint inspections and paint testing on deteriorated paint surfaces or surfaces to be disturbed or replaced, Recipients must ensure that the paint inspection and paint testing is performed by an **EPA certified lead-based paint inspector or risk assessor**. Recipients must include the inspector or risk assessor's EPA certifications in the general program files and be made accessible for review by HUD and the Office of Community Renewal.

I. Risk Assessments

For projects requiring risk assessments, Recipients must ensure that risk assessments and lead-hazard screenings are performed in accordance with 40 CFR 745.227(c), (d), and (h). Risk assessors must use standards for determining dust-lead hazards and soil-lead hazards that are at least as protective as those promulgated by the EPA at 40 CFR 745.227(h). Recipients must ensure that lead-hazard screens are performed in accordance with 40 CFR 745.227(c). HUD strongly recommends that lead-based paint inspectors, risk assessors, and sampling technicians provide a plain-language summary of the results suitable for posting or distribution to occupants. Recipients must also be in compliance with HUD Risk Assessment requirements at 24 CFR 35.1320(b).

Recipients are responsible for reviewing the risk assessment report.

J. Interim controls.

Interim control measures include paint stabilization of deteriorated paint, treatments for friction and impact surfaces, dust control, and lead-contaminated soil control. When conducting interim controls, Recipients must ensure the following:

- 1. Only those interim control methods identified as acceptable methods in a current risk assessment report shall be used to control identified hazards.
- 2. Occupants of dwelling units where interim controls are being performed shall be protected during the course of the work in accordance with 24CFR35.1345.
- 3. Clearance testing shall be performed at the conclusion of interim control activities in accordance with 24CFR35.1340.
- 4. A person performing interim controls must be trained in accordance with the hazard communication standard for the construction industry issued by the Occupational Safety and Health Administration of the U.S. Department of Labor at 29 CFR 1926.59, and either be supervised by an individual certified as a lead-based paint abatement supervisor or have completed successfully an approved lead-safe work practices course.

K. Abatement

If a project meets the level of assistance that requires abatement of all interior lead hazards, abatement must be performed in accordance with 40 CFR 745.227(e) and must be completed by achieving clearance in accordance with 24CFR35.1340. If encapsulation or enclosure is used as a method of abatement, ongoing lead-based paint maintenance activities shall be performed in accordance with 24CFR35.1355. Abatement of an intact, factory-applied prime coating on metal surfaces is not required unless the surface is a friction surface.

L. Clearance

Recipients that conduct any form of lead hazard control work must ensure that the work is completed, cleaned, and that the unit meets the clearance requirements as outlined in 40CFR745.227 and 24CFR35.1340.

M. Allowances for presumption of lead

For Recipients which are undertaking well and septic replacement programs and that is the only activity that is undertaken, the OCR will allow presumption based on the following:

- Under 35.115(a)(8), "Any rehabilitation that does not disturb a painted surface" is exempt from the Rule. If no painted surface is disturbed by the scope of work, the Rule does not apply and no risk assessment is triggered, regardless of the cost.
- Well and septic activities and lateral connection assistance activities may qualify under this exemption, unless plumbing connections through painted surfaces are included in the scope of work.
- The "de minimis" exception in 35.1350(d) does <u>not</u> qualify the project as "exempt". If any painted surface is disturbed or repaired, the Rule is triggered.
- Projects that involve well and septic or lateral connections only must clearly address this exception to the presumption standard in the approved Lead Based Paint Compliance Plan.

For Recipients which are undertaking any single housing rehabilitation project which results in a total project cost of less than \$5,000, the OCR <u>MAY</u> allow the presumption standard,

- > In consultation with the OCR **PRIOR** to undertaking the activity.
- Further consultation with the assigned Community Developer may be warranted on a case-by-case basis.

N. Lead Based Paint Compliance Plan and Certification

Effective June 1, 2014, the OCR will require Recipients of any CDBG housing assistance to submit Lead Based Paint Compliance Plan and a Lead Based Paint Compliance Plan Certification that will assist to further assure compliance with all applicable lead based paint regulations at 24 CFR Part 35 and 40 CFR Part 745, EPA rules as adopted by HUD.

To assist with this, the OCR has provided two Certification Forms:

- 1. Form 5-1 CDBG LBP Compliance Plan Certification Rehabilitation or Homeownership/Acquisition Assistance with Rehabilitation
- 2. Form 5-2 CDBG LBP Compliance Plan Certification Homeownership/Acquisition Assistance (no rehabilitation of any form)

Forms are available on the OCR website, http://www.nyshcr.org/Forms/NYS-CDBG/.

Lead Based Paint Plan and Certifications must be submitted prior to undertaking any housing activity that is subject to lead based paint compliance.

VI. PROPERTY MANAGEMENT

A. Introduction

Recipients must comply with the federal requirements for the management and disposition of property acquired in whole or in part with NYS CDBG funds. The treatment and disposition of property purchased with NYS CDBG funds will depend on the type of property, personal or real.

Recipients are responsible for any property acquired in whole or in part with NYS CDBG funds. Recipients must:

- Maintain a physical inventory of all property, both real property and equipment;
- Reconcile property records at least once every two years;
- Maintain a control system to ensure safeguards to prevent loss, damage, or theft of property. Any loss, damage, or theft must be investigated;
- Develop adequate maintenance procedures to keep property in good condition; and
- Establish proper sales procedures that will ensure the highest possible return when the sale of real property is necessary.

B. Real Property

Real property is the land, including improvements to the land, structures, property and appurtenances. Real property does not include moveable machinery and equipment.

The regulations governing real property apply to real property within the Recipient's control which was acquired or improved in whole or in part using NYS CDBG funds in excess of \$25,000. These standards shall apply from the date NYS CDBG funds are first spent for

the property until five years after closeout of the grant from which the assistance to the property was provided.

- 1. Title Title to real property acquired under a grant will vest in the Recipient upon acquisition.
- 2. Use Except as otherwise provided by federal statues, real property will be used for the originally authorized purpose as long as needed for that purpose, and the Recipient shall not dispose of or encumber its title or other interests.
- 3. Disposition When real property is no longer needed for the originally authorized purpose, the Recipient will request disposition instructions from the NYS CDBG program. The instructions will provide for one of the following alternatives:
 - a. Retention of Title Retain title after compensation to the NYS CDBG program. The amount due the program will be computed by applying NYS CDBG's percentage of participation in the cost of the original purchase to the fair market value of the property. However, in those situations where a Recipient is disposing of real property acquired with grant funds and acquiring replacement real property under the same program, the net proceeds from the disposition may be issued as an offset to the cost of the replacement property.
 - b. Sale of Property Sell the property and compensate the NYS CDBG program. The amount due the NYS CDBG program will be calculated by applying NYS CDBG's percentage of participation in the cost of the original purchase to the proceeds of the sale after deduction of any actual and reasonable selling and fixing-up expenses. If the grant is still active, the net proceeds from sale may be offset against the original cost of the property. When a Recipient is directed to sell property, sales procedures shall be followed that provide competition to the extent practicable and result in the highest possible return.
 - c. Transfer of Title Transfer title to the NYS CDBG program or to a third-party designated/approved by OCR. The Recipient shall be paid an amount calculated by applying the Recipient's percentage of participation in the purchased of the real property to the current fair market value of the property.

C. Equipment

Equipment is tangible, non-expendable, personal property having a useful life of more than one year and an acquisition cost of \$5,000 or more per unit.

1. Title

Title to equipment acquired under a grant will vest in the Recipient upon acquisition.

- 2. Use
 - a. Equipment shall be used by the Recipient in the program or project for which it was acquired as long as needed, whether or not the project or program continues to be supported by federal funds. When no longer needed for the original program or project, the equipment many be used in other activities currently or previously supported by a federal agency.

- b. The Recipient shall also make equipment available for use on other projects or programs currently or previously supported by the federal government, providing such use will not interfere with the work on the projects or program for which it was originally acquired. First preference for other use shall be given to other programs or projects supported by the NYS CDBG program. User fees should be considered, if appropriate.
- c. The Recipient must not use equipment acquired with grant funds to provide services for a fee to compete unfairly with private companies that provide equivalent services, unless specifically permitted or contemplated by federal statute.
- d. When acquiring replacement equipment, the Recipient may use the equipment to be replaced as a trade-in or sell the property and use the proceeds to offset the cost of the replacement property subject to approval.
- 3. Management Requirements Procedures for managing equipment (including replacement equipment), whether acquired in whole or in part with grant funds, until disposition takes place will, at a minimum, meet the following requirements:
 - a. Property records must be maintained that include a description of the property, a serial number or other identification number, the source of property, percentage of federal participation in the cost of the property, the location, use and condition of the property, and any ultimate disposition data including the date of disposal and sale price of the property, Real Property Register, Form 10-5.
 - b. A physical inventory of the property must be taken and the results reconciled with the property records at least once every two years.
 - c. A control system must be developed to ensure adequate safeguards to prevent loss, damage, or theft of property. Any loss, damage, or theft shall be investigated.
 - d. Adequate maintenance procedures must be developed to keep the property in good condition.
 - e. If the Recipient is authorized or required to sell the property, proper sales procedures must be established to ensure the highest possible return.
- 4. Disposition When original or replacement equipment acquired under a grant is no longer needed for the original project or program or for other activities currently or previously supported by a federal agency, disposition of the equipment will be made as follows:
 - a. Items of equipment with a current per-unit fair market value of less than \$5,000 may be retained, sold or otherwise disposed of with no further obligations.
 - b. Items of equipment with a current per-unit fair market value in excess of \$5,000 may be retained or sold and the NYS CDBG program shall have a right to an amount calculated by multiplying the current market value or proceeds from sale, by NYS CDBG's share of the equipment.

- c. In cases where a Recipient fails to take appropriate disposition actions, the NYS CDBG program may direct the Recipient to take excess and disposition actions.
- 5. Federal Equipment In the event a Recipient is provided federally-owned equipment:
 - a. Title will remain vested in the federal government.
 - b. Recipients will manage the equipment in accordance with federal agency rules and procedures and submit an annual inventory listing.
 - c. When the equipment is no longer needed, the Recipient will request disposition instructions from the federal agency.
- 6. Right to Transfer Title HUD may reserve the right to transfer title to the federal government or a third party named by the NYS CDBG program when such a third party is otherwise eligible under existing statues. Such transfers shall be subject to the following standards:
 - a. The property shall be identified in the grant or otherwise made known to the Recipient in writing.
 - b. The NYS CDBG program shall issue disposition instruction within 120 calendar days after the end of the federal support of the project for which it was acquired. If the NYS CDBG program fails to issue disposition instructions within the 120 calendar-day period, the Recipient shall follow Item D above, Disposition.
 - c. When title to equipment is transferred, the Recipient shall be paid an amount calculated by applying the percentage of participation in the purchase to the current fair market value of the property.

D. Supplies

Supplies are all tangible personal property other than equipment.

- 1. Title Title to supplies acquired under a grant will vest, upon acquisition, in the Recipient.
- Disposition If there is a residential inventory of unused supplies exceeding \$5,000 in total aggregate fair market upon termination or completion of the award, and if the supplies are not needed for any other federally-sponsored programs or projects, the Recipient shall compensate the NYS CDBG program for its share.

E. Change of Use of Real Property

The regulations governing the change of use of real property apply to real property within the Recipient's control (including activities undertaken by subrecipients) which was acquired or improved in whole or in part using NYS CDBG funds in excess of the threshold for small purchase procurement. These standards shall apply from the date NYS CDBG funds are first spent for the property until five years after closeout of the Recipient's grant.

1. A Recipient may not change the use or planned use of any such property (including beneficiaries of such use) from that for which the acquisition or improvement was

made, unless the Recipient provides affected citizens with reasonable notice of and opportunity to comment on any proposed change, and either:

- a. The new use of the property qualifies as meeting one of the national objectives and is not a building for the general conduct of government; or
- b. The requirements in paragraph 2 below are met.
- 2. If the Recipient determines, after consultation with affected citizens, that it is appropriate to change the use of the property to a use that does not qualify under paragraph 1(a) above, it may retain or dispose of the property for the changed use if the Recipient's NYS CDBG project is reimbursed or the NYS CDBG program is reimbursed, at the discretion of the state. The reimbursement shall be in the amount of the current fair market value of the property, less any portion of the value attributable to expenditures of non-NYS CDBG funds for acquisition of, and improvements to, the property, except that if the change in use occurs after grant closeout but within five years of such closeout, the Recipient shall make the reimbursement to the NYS CDBG program account.
- 3. Following the reimbursement of the NYS CDBG program in accordance with paragraph 2 above, the property no longer will be subject to any NYS CDBG requirements.

VII. CIVIL RIGHTS

A. Introduction

The U.S. Department of Housing and Urban Development (HUD) and the State of New York are committed to assuring that NYS CDBG Recipients take positive steps to ensure equal access to housing, employment, public facilities/services, contracting and business opportunities, NYS CDBG benefits/services, and displacement protection. In addition to equal access, Recipients must affirmatively further fair housing and accessibility for persons with disabilities.

Recipients are responsible for implementing their projects in compliance with all state and federal laws and regulations regarding civil rights, fair housing, and equal opportunity. The grant agreement itself certifies that you will actively enforce the provisions of these statutes and regulations and develop strategies for addressing these requirements. To ensure compliance, attention to the civil rights, fair housing, and equal opportunity components of your NYS CDBG projects must be all-inclusive, from the project design phase to the final progress report.

Recipients and NYS CDBG funded contractors must:

- 1. demonstrate that they afford equal employment opportunities to all persons;
- 2. take affirmative steps to ensure that minority groups are informed of grant opportunities;
- 3. demonstrate that their program benefits are not awarded in ways that discriminate; and
- 4. take affirmative steps to promote fair and equal access to housing, regardless of the type of grant.

Recipients and all contractors on NYS CDBG projects must comply with civil rights regulations in the following five areas. Compliance in these areas should be documented during implementation of your NYS CDBG project in order to demonstrate a good faith effort to comply with federal civil rights requirements:

- <u>Program Benefit (Section 3)</u>: efforts to ensure that economic opportunities arising through HUD-assisted projects are directed toward low- and very low-income residents living in the project area;
- <u>Recipient Hiring and Employment Practices</u>: the community's affirmative action plan and activities initiated to extend employment opportunities to minorities and women;
- <u>Contractor Affirmative Action</u>: actions by contractors and subcontractors to employ minorities and women;
- <u>Fair Housing</u>: compliance with the federal mandate to administer all programs so as to affirmatively further housing availability and to prevent discrimination in federally-assisted housing; and
- <u>Accessibility</u>: actions taken to ensure access by persons with physical and mental disabilities to federally assisted programs and activities.

B. Program Benefits (Section 3 of The Housing and Urban Development Act of 1968, as amended, 24CFR Part 135)

Section 3 is a provision of the Housing and Urban Development (HUD) Act of 1968 that helps foster local economic development, neighborhood economic improvement, and individual self-sufficiency. The Section 3 program requires that recipients of certain HUD financial assistance, to the great extent feasible, provide job training, employment, and contracting opportunities for low- or very-low income residents and business concerns in connection with projects and activities in their neighborhood.

Section 3 residents are defined as:

- Residents of public housing, or,
- Low- or very-low income residents of the project area.

Section 3 business concerns are businesses that can provide evidence that they meet one of the following:

- Are 51 percent or more owned by Section 3 residents; or
- At least 30 percent of its full time, permanent employees include persons that are currently Section 3 residents, or within three years of the date of first employment with the business concern were section 3 residents or
- A business who commits to award subcontracts in excess of 25 percent of the dollar award of all subcontracts to businesses that meet at least one of the qualifications for business concerns.

Section 3 requirements apply to the entire project or activity funded with NYS CDBG assistance, regardless of whether the project or activity is fully or partially funded with NYS CDBG assistance.

Section 3 requirements apply to recipients that are awarded NYS CDBG grants in excess of \$200,000 and contractors and subcontractors with construction contracts or subcontracts in excess of \$100,000 that are funded in part or whole with NYS CDBG funds.

If a recipient receives a NYS CDBG award in excess of \$200,000, but construction contracts do not exceed \$100,000, Section 3 requirements only apply to the Recipient.

Recipients whose projects do not fall under Section 3 are nonetheless encouraged to comply with the Section 3 preference requirements.

Recipients, contractors and subcontractors must demonstrate compliance with the "greatest extent feasible" requirement of Section 3 by meeting the numerical goals set forth in 24 CFR Part 135.30 which are:

- 30% of the new hires be Section 3 residents;
- 10% of the total dollar amount of all Section 3 covered contracts in housing rehabilitation, housing construction and other public construction be awarded to Section 3 business concerns.

To aid in accomplishing the Section 3 requirements, Recipients should:

- Develop a list of Section 3 businesses and residents to be advised of opportunities for participation in project contracts or job opportunities. The Chamber of Commerce or similar business association in an area can often provide the names of eligible firms;
- Demonstrate compliance with Section 3 requirements by publishing a notice in the area newspaper before, as well as include in, advertising for construction bids. Such notices should be placed in publications having a circulation in the immediate area of the project. This will ensure that potential contractors are aware that whenever possible they should be hiring and buying locally, thus extending NYS CDBG benefits into the Recipient's community;
- Include a notation of "An Equal Opportunity Employer" on your letterhead when it is used for NYS CDBG project-related correspondence;
- Include the following language in all requests for proposals, bid documents, contracts and sub-contracts: "The contractor will ensure that to the greatest extent feasible opportunities for training and employment arising in connection with this NYS CDBGassisted project will be extended to lower-income project area residents. Further, the contractor will, to the greatest extent feasible, utilize business concerns located in or substantially owned by residents of the project area, in the award of contracts and purchase of services and supplies."
- In addition to maintaining records of compliance, Recipients who meet the Section 3 thresholds, must report annually on their hiring and contracting with Section 3 residents. HCR's Office of Fair Housing and Equal Opportunity (OFHEO) is responsible for distributing and collecting the Section 3 Reporting Form (available from www.nysdhcr.gov/Forms/FairHousing/). The data collected in these forms is also used to satisfy HCR's annual reporting to HUD for compliance with Section 3 and MBE/WBE. Following the award and execution of the grant agreement, OFHEO will contact Recipients and provide the reporting instructions and forms that are intended to track Recipients efforts to comply with the Section 3 requirements.

C. Recipient Hiring and Employment Practices

Recipients are responsible for ensuring that individuals will not be discriminated against. They are required to establish affirmative action plans that promote equal employment opportunity by including data concerning the Recipient's affirmative actions for equal employment opportunity, recruitment advertising, hiring, promotions, layoffs or terminations, pay, and recruitment for training. These plans must be consistent with federal and state EEO laws when applicable.

In order to meet Title VI obligations, several steps should be taken by the Recipient to increase employment opportunities for protected groups when hiring for the NYS CDBG program. Efforts should include advertisements in minority newspapers. Any employment advertisements could include the following statement, "The (Name of Recipient) is an Equal Opportunity Employer."

Employment recruitment records should include a summary of the number of applicants for each position relating to the NYS CDBG Program, and the number of applicants who are minorities, women, and handicapped persons. There should also be documentation by race, gender, and handicap of the number of persons interviewed and the reasons for the hiring decisions. In addition to the above, Recipients with more than 100 employees are required to provide the civil rights information on the EEO4 form (https://egov.eeoc.gov/eeo4/pdf/EE04Form.pdf). This form must be maintained in the Recipients files and be available for review at the time of monitoring.

D. Minority and Women's Business Enterprises

Recipients must ensure that contractors take affirmative steps to ensure fair treatment in employment upgrading, transfer, recruitment, layoffs, rate of pay and selection for training. Recipients should encourage the prime contractors on their projects to utilize M/WBE firms to the maximum extent possible.

At a minimum, Recipients should establish and oversee a minority and women business outreach program that is designed to be:

- A good faith, comprehensive and continuing endeavor;
- Supported by a statement of public policy and commitment published in the electronic and print media of widest local circulation;
- Supported by an office and/or a key, ranking staff person with oversight responsibilities and access to the chief elected official; and
- Designed to utilize all available and appropriate public and private sector local resources.

The following guidelines should be used to provide assistance in implementing outreach programs to ensure the inclusions, to the maximum extent possible, of entities owned by minorities and women. Each participating Recipient should:

- Develop a systematic method for identifying and maintaining an inventory of certified minority and women's business enterprises (MBEs and WBEs) including their services, supplies and/or products offered;
- Utilize the local media, electronic and print, to market and promote contract and business opportunities for MBEs and WBEs;
- Develop informational and documentary materials (fact sheets, program guides, procurement forecasts, etc.) on contract/subcontract opportunities for MBEs and WBEs;
- Develop procurement procedures that facilitate opportunities for MBEs and WBEs to participate as vendors and supplies of goods and services;

- Sponsor business opportunity-related meetings, conferences, seminars, etc. with minority and women business organizations; and
- Maintain centralized records with statistical data on the utilization and participation of MBEs and WBEs as contractors/subcontractors in all HUD-assisted program contracting activities.

These above items represent basic outreach-related activities and are not all inclusive actions a participating Recipient may undertake.

Under the terms of Executive Order 11246, NYS CDBG Recipients are required to:

- 1. Include the equal opportunity clause in all non-exempt federally-assisted contracts for more than \$10,000, as set forth in 202 of Executive Order 11246; and
- Ensure that all federally-assisted construction contractors and subcontractors on a NYS CDBG-assisted construction project take affirmative actions to ensure that employees and applicants for employment are not discriminated against because of race, color, religion, sex, or national origin.

The Empire State Development Corporation publishes a directory of minority and womenowned businesses and maintains a list of firms that have been certified through the State Certification Program. You may obtain a copy by contacting: Empire State Development Corporation, Affirmative Action Unit, 633 Third Avenue, 32nd Floor, New York, NY 10017, 212-803-3226

Recipients must report if contractors and sub contractors are a Minority and Women's Business Enterprise information as part of the Section 3 reporting requirements mentioned above. As with Section 3, following the award and execution of the grant agreement OFHEO will contract you with reporting instructions and the Section 3 & M/WBE reporting form. The forms are intended to track the inclusion of M/WBE contractors on CDBG funded projects. OFHEO's Section 3 and MBE/WBE forms are available on HCR's website at http://www.nysdhcr.gov/Forms/FairHousing/. Each Recipient must submit the Utilization of Section 3 Residents and Businesses form, and the respective Section 3 and M/WBE form.

E. Fair Housing

NYS CDBG Recipients are responsible for taking specific actions to affirmatively further fair housing practices in their community. Participants in the NYS CDBG program will be required to affirmatively further fair housing related to soliciting renters, determining eligibility, and in the conduct of all transactions.

Fair housing provisions apply to the community as a whole, not just to NYS CDBGsupported housing projects, and they are an essential part of the community's responsibilities under the NYS CDBG program. No person shall be subjected to discrimination because of race, color, religion, sex, disability, age, familial status, or national origin.

Fair housing actions should increase housing opportunities and affirmatively promote fair housing throughout the entire housing market at all income levels. These activities may include independent actions by the Recipient or cooperative ventures with housing related

industries, such as mortgage lenders, home builders, and local non-profits working in housing. The Recipient is expected to take progressive actions to further fair housing with each CDBG project.

The first step in developing a local fair housing program is to look closely at the community to identify areas of particular concern. In order to analyze whether a fair housing problem might exist within a community, Recipients should ask themselves the following questions:

- Does it appear that realtors are hesitant to show minorities rental or ownership units in certain areas of town or in certain apartment buildings or subdivisions?
- Is there evidence that local banks and savings and loans consistently fail to provide mortgage money or NYS CDBG improvement loans in certain areas of town?
- Do landlords rent to single parent households with children?
- Does the community actively assist people who believe they have encountered housing discrimination?

Recipients are required to:

- Promote maximum choice within the community's total housing supply;
- Lessen racial, ethnic, and economic concentrations;
- Facilitate desegregation and racially inclusive patterns in the occupancy and use of public facilities;
- Pass a fair housing resolution that demonstrates a "good faith effort" in complying with fair housing requirements. The fair housing resolution adopted by the Recipient must also be publicized and promoted within the community; and
- Designate a Fair Housing Officer who is familiar with the fair housing regulations to be the primary point of contact for all fair housing related issues.

A "good faith effort" to affirmatively further fair housing should:

- Review project activities to ensure that they serve low and very low-income minority residents as well as non-minorities;
- Develop a public information network using local newspapers, radio stations, bulletin boards, churches, and property tax mailings to ensure that all segments of the community are aware of fair housing requirements, especially realtors, landlords, financial institutions, and minority households;
- Develop a fair housing assistance program to make housing opportunities known to minorities, to monitor compliance, and to refer discrimination complaints to the proper authorities;
- Conduct a meeting with financial institutions that serve the community to discuss the importance of providing financial assistance for housing in all geographic areas and to all residents in the community;
- Survey special housing needs of minorities and women to determine possible effects of discrimination;
- Use the "Equal Housing Opportunity" slogan and logo on Recipient letterhead; and
- Display Fair Housing Posters and distribute a Fair Housing Handout and Complaint Pamphlet to explain fair housing rights, practices and statutory requirements.

When developing a fair housing/affirmative marketing program, it is very important that the Recipient document all of the actions taken, as well as the results of those actions. If

these efforts are not documented, OCR will be unable to demonstrate to HUD that Recipients are meeting their fair housing obligations. OCR and the Recipient will assess affirmative marketing efforts of owners by comparing predetermined occupancy goals (based on the area from which potential tenants will come) to actual occupancy data the owner is required to maintain. Outreach efforts on the part of the owner will also be evaluated by reviewing marketing efforts.

F. Accessibility

Recipients are required to take affirmative steps to ensure that qualified persons with disabilities are informed of the availability of program services and activities, and the Recipient's activities or services are readily accessible to, and usable by, individuals with disabilities. Recipients must provide handicapped persons with benefits and services that are as effective as those provided to non-handicapped individuals.

Recipients must ensure that NYS CDBG programs and activities are accessible, both structurally and administratively, to handicapped and disabled persons. Recipients are responsible for providing access to handicapped/disabled persons in four areas: communications, employment opportunities, program benefits, and physically accessible housing.

- 1. Accessible Communications: In order to ensure accessibility of program services and activities to persons with disabilities, Recipients must be aware of the possibility that individuals may need to use alternative forms of communication.
- 2. Access to Employment: Make reasonable accommodation to known physical or mental limitations of an otherwise qualified individual, unless to do so would impose an undue hardship on the employer. Cost alone does not necessarily constitute undue hardship. A person with a disability is otherwise qualified if they can satisfy the requisite skill, experience and education requirements for the position and can perform the essential functions of the job with or without reasonable accommodations.
- 3. **Program Accessibility**: All services, programs and activities be accessible to everyone, including people with disabilities, regardless of the accessibility of the Recipient's facilities.

The Recipient may not provide services or benefits to disabled persons through programs that are separate or different, unless the separate programs are necessary to ensure that the benefits or services are equally effective. Even when separate programs are permitted, an individual with a disability must still have the right to choose to participate in the regular program, and the Recipient may not require an individual with a disability to accept a special accommodation or benefit if the person chooses not to accept it.

4. **Physical Accessibility to Programs:** The Recipient should be able to identify the primary access point to their office building, and ensure that parking spaces are designated for people with disabilities displaying special permits on their vehicles. In addition, the Recipient needs to ensure that the accessible entrance to the building is kept accessible (i.e., free of snow and other blockage, with unauthorized persons not allowed to park in the handicap designated areas).

The regulations for meeting handicap accessibility requirements for housing facilities are complex and cannot be described concisely in this chapter. The Americans with Disabilities Act (ADA) generally does not cover private residential facilities. These facilities are addressed in the Fair Housing Amendments Act, which prohibits discrimination on the basis of disability in selling or renting housing. However, provisions of the Fire Administration Authorization Act of 1992, which became effective October 26, 1992, require that all housing units assisted with Federal funds be equipped with a hard-wired or battery-operated smoke detector that includes appropriate wiring that makes it possible to install visual and/or sensory alarm systems if the need arises. This requirement applies to all new construction, reconstruction, and rehabilitation projects on any multifamily or single family housing assisted with NYS CDBG funds. Further, where alarms already exist in common areas, visual and sensory alarms should be provided also, as a reasonable accommodation to persons with disabilities.

The following are highlights of other handicap accessibility requirements that apply to all facilities designed, constructed or altered after July 11, 1988:

- <u>New Construction, Acquisition or Rehab of Single-Family Dwellings</u>. Single-family dwellings must be made handicap accessible upon request of the owner or prospective buyer. That cost may be included in the mortgage amount. If costs exceed the allowable mortgage limits, those costs may be passed on to the prospective NYS CDBG buyer. All handicap accessible dwelling units must be distributed throughout the housing project and the sites made available in a range of sizes and amenities. Generally, historic properties must be made accessible unless doing so would substantially impair the significant historic features of the property or result in an undue financial or administrative burden.
- 2. <u>New Construction or Substantial Rehab of Multi-Family Dwelling Units.</u> In addition to ADA requirements, residential structures (other than privately owned residential structures) are subject to requirements of the Architectural Barriers Act of 1968 [24 CFR Part 40]. Standards for the design, construction and alteration of publicly owned residential structures to ensure that physically handicapped persons have ready access to and the use of such structures can be met by following the Uniform Federal Accessibility Standards outlined in Appendix A of 24 CFR, Part 40.

HUD does not require Recipients to take actions that would result in a fundamental alteration of facilities or programs or that would impose an undue financial or administrative burden on the Recipient. However, if the public cannot access (or some group is not likely to access) the Recipient's NYS CDBG program, reasonable accommodations must be made so that the program can be brought to persons with disabilities. HUD recommends that administrative changes be considered before costly structural changes.

G. Section 504 Evaluation/Notification

Under Section 504 of the Rehabilitation Act and the ADA, state and local governments receiving federal assistance are required to make their programs, activities and services accessible to individuals with disabilities. Title II extends this requirement to all state and local governments, whether or not they receive Federal funds. Title II applies regardless of the public entity's size and seeks to ensure access to all publicly funded programs,

services and agencies. Public entities that receive Federal funds are subject to the requirements of both the ADA and Section 504.

Public entities were required to conduct a self-evaluation (an informal accessibility survey) to determine whether their facilities and programs are in compliance with ADA requirements by January 26, 1993. The self-evaluation is a comprehensive review of the public entity's policies and practices. The self-evaluation includes communication and employment, as well as the policies and practices for all services, programs, and activities. The self-evaluation must identify any services, policies, or practices that discriminate against or exclude people with disabilities. Any discriminatory policies or practices that are identified must be modified immediately.

There are two additional requirements for Section 504 compliance for Recipients with fifteen or more full or part-time employees:

1. According to 24CFR8.53, a Recipient shall designate at least one person to coordinate 504 and related compliance efforts. This shall be designated in writing and identified in any written notices. Grievance procedures must be adopted incorporating appropriate due process standards and that provide for the prompt and equitable resolution of complaints alleging any action prohibited by disability. Any individual or authorized representative who believes that they have been discriminated against may file a complaint, which may be filed as indicated.

2. According to 24CFR8.54, a Recipient shall take appropriate initial and continuing steps to provide notification to participants, beneficiaries, applicants and employees of their nondiscriminatory provisions. The notification shall state, where appropriate, that the Recipient does not discriminate in admission or access to, or treatment or employment in, its federally assisted programs and activities. Methods of notification include posting of notices, publication in newspapers and magazines, placement of notices in recipient's publications, and distribution of memoranda or other written communications

Additional information on compliance is also available from <u>www.ada.gov</u>.

H. Policy Adopted to Handle Complaints of Discrimination

Citizen complaint procedures are an integral part of civil rights activities. Every Recipient must establish a set of procedures for handling complaints of discrimination. These procedures, complaint forms, and other pertinent information should be contained within a file for public access. All complaints must remain confidential and information pertaining to the complaint cannot be disclosed to any entity except HUD.

Fair housing complaints must be submitted in writing, signed, addressed to the a responsible official (designee of the Recipient) and carbon copied to your OCR Community/Economic Developer, and filed with the Office of Fair Housing and Equal Opportunity at any HUD Office.

I. Limited English Proficiency – Executive Order 13166

Executive Order No. 13166, "Improving Access to Services for Persons with Limited English Proficiency", was created to improve access to federally conducted and federally assisted programs and activities for persons who, as a result of national origin, are limited

in their English proficiency (LEP). As a result of this Executive Order, Federal agencies were directed to provide guidance and technical assistance to recipients of Federal funds as to how they can provide meaningful access to limited English proficient users of Federal programs. In addition, Federal agencies were told to look at how they served people who were limited in their English proficiency and to see what measures they could take in their direct contacts with LEP individuals that would increase meaningful access.

The basis for Executive Order 13166 is Section 601 of Title VI of the Civil Rights Act of 1964, 42 U.S.C. 2000d, (hereinafter Title VI), which provides that no person shall "on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance." As a result, Recipients of Federal funding are required to take reasonable affirmative steps to provide non-English speakers with a meaningful opportunity to participate in the federally funded programs.

Recipients of CDBG funds are required to take reasonable steps to ensure meaningful access to their programs and activities by LEP persons. While designed to be a flexible and fact-dependent standard, the starting point is an individualized assessment that balances the following four factors: (1) The number or proportion of LEP persons eligible to be served or likely to be encountered by the program or grantee; (2) the frequency with which LEP persons come in contact with the program; (3) the nature and importance of the program, activity, or service provided by the program to people's lives; and (4) the resources available to the Recipient and costs. A sample self assessment may be found at www.lep.gov/selfassesstool.htm.

After applying the four-factor analysis, a recipient may conclude that different language assistance measures are sufficient for the different types of programs or activities in which it engages. For instance, some of a recipient's activities will be more important than others and/or have greater impact on or contact with LEP persons, and thus may require more in the way of language assistance. The flexibility that recipients have in addressing the needs of the LEP populations they serve does not diminish, and should not be used to minimize, the obligation that those needs be addressed. HUD recipients should apply the four factors to the various kinds of contacts that they have with the public to assess language needs and decide what reasonable steps they could take to ensure meaningful access for LEP persons. Each Recipient of NYS CDBG funds is required to complete this assessment and maintain a copy in their program files along with any documentation of additional actions taken to comply with the requirements.

VIII. EXHIBITS

Labor Standards

- 5-1 Preconstruction Conference Checklist
- 5-2 Federal Labor and Civil Rights Requirements
- 5-3 Volunteer Certification Form
- 5-4 Contractor's Receipt of Required Program Materials

Project Sign

5-5 Sample Project Sign Specifications

Displacement, Relocation and Acquisition

- 5-6 Request for Acquisition Exemption
- 5-7 Acquisition Checklist

Lead –Based Paint

- 5-8 Lead Based Paint Summary Notices
- 5-9 Dual Threshold Approach for Calculating Level of Rehabilitation Assistance
- 5-10 Implementing the Lead Based Paint Rule
- 5-11 Lead Based Paint References and Resources

Other Resources

- 5-12 Links to Applicable Federal and State Regulations
- 5-13 Sample Notice Under the Americans With Disabilities Act
- 5-14 Sample Grievance Procedure Under the Americans with Disabilities Act
- 5-15 Links to Outside Agency Forms
- 5-16 Conflict of Interest Disclosure
- 5-17 Conflict of Interest Waiver Request Checklist

PRECONSTRUCTION CONFERENCE CHECKLIST

PRE-CONFERENCE PLANNING

Identify and notify conference participants of the time and place of the preconstruction conference

Prepare the materials that will be needed for the conference

Organize the materials into individual packets for each conference participant

PRECONSTRUCTION MODEL AGENDA

Identify the official representatives of participating organizations and how they can be contacted for official roster

Identify the responsibilities of the architect or engineer if applicable

Identify the responsibilities of the Recipient (local government)

Identify the responsibilities of the contractor

General discussion of contract terms

Schedule for construction completion

Subcontractors

Project inspection (responsibilities of Recipient (local government), and architect or engineer)

Compliance with federal labor standards

- ✓ Contractor's Guide to Davis-Bacon Requirements and Certified Payroll Forms
- ✓ Davis-Bacon Act
- ✓ Contract Work Hours and Safety Standards Act
- ✓ Copeland "Anti-Kickback" Act

Compliance with civil rights regulations

- ✓ Executive Order 11246 as amended by Executive Order 11375
- ✓ Minority and Women-Owned Business Enterprises: Executive Order 12432
- ✓ Section 3 of the Housing and Urban Development Act of 1968

Notices that are required to be posted

- ✓ Department of Labor's Notice to Employees Working on Federal or Federally Financed Construction Projects
- ✓ Appropriate Wage Determination
- ✓ New York State Department of Commerce's Equal Employment Opportunity Poster
- ✓ Department of Labor's Job Safety and Health Protection Poster

Forms the Contractor must submit

- ✓ Certified Payroll Forms (WH-347) or equivalent
- ✓ Statement of Compliance with Labor Standards and Prevailing Wage Requirements (WH-348)
- ✓ Names of all persons authorized to sign payrolls
- ✓ Names of all subcontractors
- ✓ Semi-Annual Labor Standards Enforcement Report (HUD 4710)

Forms to be signed at pre-construction meeting

✓ Contractor's Receipt of Required Program Materials

Materials to be provided to designated Labor Standards Compliance Officer

FEDERAL LABOR AND CIVIL RIGHTS REQUIREMENTS

The Recipient should include the following information concerning federal labor standards and civil rights compliance during preconstruction conferences for construction projects involving NYS CDBG funds.

A. WAGE DETERMINATION AND EMPLOYEE CLASSIFICATION

Davis-Bacon Act is applicable to all construction contracts awarded by Recipients in excess of \$2,000. The rehabilitation of seven or fewer residential units under one contract is exempt from this requirement.

- 1. Laborers, mechanics, apprentices, and trainees must receive no less than the prevailing wages, plus fringe benefits paid for similar work in the locality.
 - a. Workers are covered by the Davis-Bacon Act while working at the site, transporting materials to and from the site and manufacturing or furnishing articles, supplies, or equipment on-site.
 - b. Apprentices or trainees may be paid less than journeyman wages if they are enrolled in an apprenticeship or training program approved by the U.S. Department of Labor (or State Apprentice Council recognized by the Department of Labor's Employment and Training Administration).
- 2. If the contractor needs laborers or mechanics whose classifications do not appear on the wage determination, Recipient's designated Labor Standards Officer must make a request for an appropriate classification to the U.S. Department of Labor.
- 3. Employees or supervisors working at other than their assigned classifications for 20 percent or more of their time must be paid and shown on the payrolls for each classification or, paid for all hours at the higher wage scale.
- 4. If the wage determination lists fringe benefits, the contractor must either provide them or pay the hourly equivalent in cash, in addition to the predetermined basic wage.
- 5. Claims and disputes including resolutions must be reported immediately to your OCR Community/Economic Developer and to the U.S Department of Housing and Urban Development (HUD), Labor Relations Office. HUD may be called upon by the State to investigate and settle claims and disputes, or may enter of their own volition if the need arises.
- 6. Laborers and mechanics must be paid no less than once per week.

B. WORK HOURS, OVERTIME, AND SAFETY STANDARDS

Contract Work Hours and Safety Standards Act, as amended, is applicable to all contracts awarded by local Recipients in excess of \$2,000 for construction projects employing mechanics or laborers.

- 1. Forty hours is the standard work week.
- 2. One and one-half times the basic hourly rate of pay, exclusive of fringe benefit payments, must be paid for all hours over forty in a work week.
- 3. No worker shall be required to work in surroundings or under working conditions that are unsanitary, hazardous, or dangerous to health and safety.

C. DEDUCTIONS

Copeland "Anti-Kickback" Act is applicable to any federally assisted contract subject to Davis-Bacon standards.

- 1. Full wages earned must be paid.
- 2. Permissible deductions include medical or hospital care, pensions on retirement or death, compensation for injuries or illness resulting from occupational activity, unemployment benefits, life insurance, or accident insurance, vacation or holiday pay, and defraying costs of apprenticeship or similar programs.

D. CONTRACTOR REPORTING REQUIREMENTS

In conjunction with the previously described labor and civil rights requirements the contractor is required to periodically submit several forms to the Recipient's designated Labor Standards Officer. The prime contractor is fully responsible for providing all reports required from subcontractors.

 Each contractor (prime and sub) must submit (through the prime contractor) Certified Payroll Forms (WH-347) for each week of work from the time the project begins through completion. If the contractor prefers to use a form other than WH-347, it must contain identical information. Weekly payrolls should be numbered sequentially, and be submitted to the Recipient no later than seven days following the end of the pay period.

Contractors are urged to use the U.S. Department of Labor (DOL), Payroll Form WH-347. Contractors may also use and furnish computerized weekly payrolls in lieu of the standard Payroll Form WH-347, if the basic information contained on the WH-347 is provided and the contractor includes signed certification for each payroll by using the "Statement of Compliance" Form WH-348. The text of the "weekly statement with respect to the payment of wages," which is required by regulations of the U.S. Secretary of Labor, appears on the reverse side of this form.

Weekly Payroll Report Forms, WH-347 and WH-348 not only contain samples of these forms but examples and instructions for the contractor to follow for completing and filing them on the project. For example, the Recipient should be aware that weekly payroll reports are also required from subcontractors identified as "working owners." A "sole-proprietor" who performs work on the project, must still submit weekly payrolls showing himself or herself as "owner," the work classification and the daily and total hours worked.

The payroll forms may be ordered from the Superintendent of Documents, Government Printing Office, Washington, D.C. 80402 or may be obtained from http://www.dol.gov/whd/forms/wh347.pdf. Contractors may also make copies of these forms and use them if they wish.

- 2. A completed Statement of Compliance with Labor Standards and Prevailing Wage Requirements must be submitted with each Certified Payroll Form. Certified payrolls must be submitted for each week that work is done on the project. Final payrolls shall be identified accordingly. If no work is performed on the project during a given period, on the next performance payroll, state: "No work performed from pay period ending <u>(date)</u> through <u>(date)</u>." The Statement of Compliance appears on the back of form WH-347 or as form WH-348 if WH-347 is not used.
- 3. For compliance with the New York State Labor Law, all contractors and subcontractors will submit to the Recipient within 30 days after issuance of its first payroll, and every thirty days thereafter, a transcript of the original payroll record.
- 4. The first week after work on the project begins the Recipient's designated Labor Standards Officer should be supplied with the names of anyone (other than owner or officer) who is authorized to sign payrolls for each contractor (prime and sub).
- 5. The prime contractor should supply the Recipient's designated Labor Standards Officer with the names of all subcontractors working on the project prior to the preconstruction conference. Each subcontractor may then be informed of the conference. The names of any new subcontractors must be supplied immediately after they begin work on the project.
- 6. In accordance with E.O. 11246 each contractor (prime and sub) engaged in work totaling \$10,000 or more is required to submit a Minority Contract Reporting Form, as well as any documentation regarding affirmative action efforts to the local Recipient (Exhibit 5-I-8 is a sample Contract Reporting Form).
- 7. Working Subcontractors Contractual relationships between contractors and alleged subcontractors (who perform mechanic's work), which are formed for the purpose of evading the application of prevailing wage requirements, are expressly prohibited and may provide a basis for debarment. Where there is any doubt as

to the bona-fide nature of a self-employed subcontractor who has no other employees, the following must be checked:

- a. Does the subcontractor have a registered trade name and is there a telephone listing under that name?
- b. Does the subcontractor have a license?
- c. Does the subcontractor have liability insurance or a subcontractor's bond?
- d. Does the subcontractor have a Federal Tax Identification Number?

Any of these criteria in conjunction with a signed contract containing HUD Federal Labor Standards Provisions from each such subcontractor should be sufficient to establish that he or she is a bona-fide subcontractor. Such a subcontractor will submit payrolls indicating only that he/she is the owner, the hours worked and the classification. The phrase "self-employed owner" shall be written under the name, address, and Social Security Number. Non-bona fide, self-employed subcontractors must be carried as employees on the payroll of the contractor who engaged him/her, and must be paid the prevailing wage rate for the classification of work performed.

Semi-annual reporting is also required for labor standard enforcement. The Recipient is required to report on the form provided in Exhibit 5-4 information regarding any/all contracts subject to Davis-Bacon, any/all reports of labor issues including; the filing of any complaints with the HUD Labor Relations Office, or the Department of Labor by employer and project name. Wage restitution and/or liquidated damaged data must be collected be reported on this form.

E. JOB SITE NOTICES

The prime contractor is required to post the following notices in a manner that is conspicuous to all workers engaged in the construction project:

1. Notice to Employees Working on Federal or Federally Financed Construction Projects (WH 1321);

Direct links to the English and Spanish versions of this new poster are:

(WH-1321) Davis-Bacon Poster (English): http://www.dol.gov/esa/whd/regs/compliance/posters/fedprojc.pdf

(WH-1321) Davis- Bacon Poster (En Español): http://www.dol.gov/esa/whd/regs/compliance/posters/davispan.pdf

2. Wage determination or a statement of all wage rates and supplements as specified in the contract. The statement of wage rates must be labeled "Prevailing Rate of Wages";

- 3. Equal Employment Opportunity poster;
- 4. Job Safety and Health Protection poster.

F. MONITORING AND SANCTIONS

The Recipient's designated Labor Standards Officer is responsible for monitoring the construction project to assure compliance with all relevant labor and civil rights requirements.

- 1. On-site inspections must be conducted by the Recipient's Labor Standards Officer to ensure that required notices are posted.
- Weekly payroll reports of the prime contractor and all subcontractors must be examined by the Recipient's Labor Standards Officer to ensure compliance with labor standards.
- 3. At least once per month the Recipient's Labor Standards Officer must conduct interviews with construction employees of the prime contractor and subcontractors. The interviews should be scheduled early into the first month of construction to assure initial compliance with labor standards, and on shorter projects, conducted midway towards completion. A representative of each classification of mechanic and laborer, and at least 10 percent of the work force should be interviewed.
- 4. Violations of the Davis-Bacon and related acts may result in restitution of wages to employees, suspension of the project payment, contract termination, and/or suspension or debarment of the contractor or subcontractor.
- 5. Violation of the Contract Work Hours and Safety Standards Act makes contractors liable for unpaid wages and for liquidated damages to the federal government in the sum of \$10.00 per worker per day for each violation. Intentional violations are a federal misdemeanor, punishable for each and every offense by a fine of not more than \$1,000 or by imprisonment for not more than 6 months, or both.
- 6. Violations of the Copeland Act could be the basis for contract termination and could result in criminal prosecution by the federal government.

G. CONTRACTOR AFFIRMATIVE ACTION

Executive Order 11246, as amended by Executive Order 11375, requires nondiscrimination in employment under federally assisted contracts and requires affirmative action to ensure equality of opportunity in all aspects of employment. The prime contractor and all subcontractors must ensure that employees and applicants for employment are not discriminated against because of race, color, religion, sex, or national origin.

Disadvantaged Business Enterprises: Executive Order 12432 establishes the development of Disadvantaged Business Enterprises (DBEs) as a national priority.

- 1. The Recipient should supply a list of area DBE's that the prime contractor can use for contacting such businesses.
- 2. In cases where subcontracts are still available, the prime contractor must make and document a good faith effort to contact qualified DBE's.

Section 3 of the Housing and Urban Development Act of 1968 provides that to the extent feasible, opportunities for training and employment must be given to lower-income residents of NYS CDBG assisted project areas, and that contracts for work in connection with such projects be awarded to business concerns which are located in, or are owned in substantial part, by "project area" residents.

The Recipient should inform the contractor of this requirement. The "project area" is defined as the county in which the project takes place.

HUD Administrative Requirements for Grants, 24 CFR part 85.36, establishes procurement standards to be followed in federal assistance programs.

Whenever possible, small, minority and women-owned businesses should be solicited as potential sources of supplies, construction and services.

VOLUNTEER CERTIFICATION FORM

FOR VOLUNTEER CONSTRUCTION WORKERS ON COMMUNITY DEVELOPMENT BLOCK GRANT PROJECTS

l,	(Print Name)	_ do hereby attest to and certify the following regarding the	
	(i microano)	located at	, in
	(Name of Project)	(Address)	,
	(City),	(State)	

- 1. I am not now receiving nor will I receive wages to perform any type of construction work on the above named project.
- 2. I agree to report to the designated official the dates, number of hours, and the work I performed on the above named project.
- 3. I understand I am volunteering my services on this project and will not receive monetary or other remuneration for my services.

(Signature)

(Date)

CONTRACTOR'S RECEIPT OF REQUIRED PROGRAM MATERIALS

(Local Government) _____ (Project) _____

Preconstruction Meeting (Date) _____

On (date) _____, we, the undersigned, attended the preconstruction meeting for the (local government's) ______(project) _____. At the meeting, we acknowledge receiving the following information:

- 1. Federal Labor Standards
 - Wage Determination and Employee Classification
 - Work Hours, Overtime and Safety Standards
- 2. Contractor Reporting Requirements
 - Contractor's Guide to Davis-Bacon Requirements and Certified Payroll Reports
 - Certified Payroll Forms
 - Payroll Information
- 3. Compliance with Civil Rights Regulations
- 4. Job Site Notices
 - Notice to Employees
 - Equal Employment Opportunity
 - Job Safety and Health Protection
 - Current Davis-Bacon Wage Determination, Decision #

5. Other

Contractor

Date

PROJECT SIGN SPECIFICATIONS

The sign design layout must follow the specifications available on the HCR website, <u>http://www.nyshcr.org/Funding/SignSpec/</u>.

Please contact your OCR Community Developer for further guidance.

REQUEST FOR ACQUISITION EXEMPTION

TO: Housing Trust Fund Corporation
Office of Community Renewal
Hampton Plaza
38 – 40 State Street, 9th Floor
Albany, New York 12207

Alba	ny, New York 12207	
FRO	M:Project #	
	(City/County)	
RE:		
	(Description of real property)	
		Uniform
This a	acquisition of real property is exempt as defined in 49 CFR 24.101 of the URA.	
		and this
	notification to this effect. A specified site is not necessary and the property to be acquired is not part of a projection of the project	
(C		
		ale, the
	amicable agreement, the property will not be acquired; and	ult in an
(3) P	roperty to be acquired is in government ownership and cannot be taken by eminent domain.	
	Property owner is	
Suppo	orting data attached	
SIGN	ATURE:	
		(Date)
NYS		
	Concurrence Signed:	
	Nonconcurrence Title: Date:	
	FRO RE: Pleas Reloc This a (1) V (a (c) (2) P bu (a (c) (2) P bu (a (c) (3) P Suppo Sign.	FROM:

ACQUISITION CHECKLIST

City/County: _____

Project No.: _____

RE: _____

(description of real property)

Owner (s)		Tenants	
Address		Address	

Procedu	re Implemented:	Date
(a)	Official determination to acquire property (usually execution of Grant Agreement)	
(b)	Preliminary Acquisition Notice mailed and owner informed of basic rights	
(C)	Enter into contract with appraiser	
(d)	Owner provided to accompany appraiser	
(e)	Property appraised	
(f)	Appraisal report received	
(g)	Enter into contract with review appraiser	
(h)	Receipt of review appraisal report	
(i)	Recipient establish purchase offer amount (offer must equal or be above approved	
	appraisal value)	
(j)	Owner provided written purchase offer and determination of offer	
(k)	Settlement cost paid	
(I)	Final contract entered (all parties)	
(m)	Payment to owner	
(n)	Title recorded/filed with court	
(0)	Condemnation dates*	
(p)	90 days notice to vacate property	
(q)	Condemnation proceeding instituted	
(r)	Estimated just compensation deposited with courts	

Comments:

SIGNIFICANT DOLLAR AMOUNTS

Appraisals	First	Second*	Third*	Review
	\$	\$	\$	\$
Compensation	Determined	Initial	Written Order	Acquisition Price
Amount: Settlement Costs * If Applicable	\$	\$	\$	\$

LEAD BASED PAINT SUMMARY NOTICES

Summary Notice of Lead-Based Paint Inspection

Address/location of property or structure(s) this summary notice applies to _____

Lead-based paint inspection description:

Date(s) of inspection:

Summary of inspection results (check all that apply)

(a) _____ No lead-based paint was found.

(b) _____ Lead-based paint was found.

(c) _____ A brief summary of the findings of the inspection is provided below (required if lead-based paint found).

Summary of where lead-based paint was found. List at least the housing unit numbers and common areas (for multi-family housing), and building components (including type of room or space, and the material underneath the paint):

Contact person for more information about the inspection:

Printed name:
Organization:
Street and city:
State:ZIP:
Phone number: ()

Person who prepared this summary notice:

Printed name:	
Signature:	
Date:	
Organization:	
Street and city:	
State: ZIP:	
Phone number: ()

Summary Notice of Lead-Based Paint Risk Assessment

Address/location of property or structure(s) this summary notice applies to _____

Lead-based paint assessment description:

Date(s) of risk assessment:

Summary of risk assessment results (check all that apply)

- (a) _____ No lead-based paint hazards were found.
- (b) _____ Lead-based paint hazards were found.
- (c) _____ A brief summary of the findings of the risk assessment is provided below (required if any lead-based paint hazards were found).

Summary of types and locations of lead-based paint hazards. List at least the housing unit numbers and common areas (for multifamily housing), bare soil locations, dust-lead locations, and/or building components (including type of room or space, and the material underneath the paint), and types of lead-based paint hazards found:

	.
Contact person for more information about the risk assessment:	
Printed name:	
Organization: Street and city:	
State: ZIP:	
Phone number: ()	_
Person who prepared this summary notice:	
Printed name:	
Signature:	-
Date:	-
Organization:	-
Street and city:	
State: ZIP:	-
Phone number: ()	
\//	-

Summary Notice of Completion of Lead-Based Paint Hazard Reduction Activity

Addrogo/logotion of	nronorty	or otructuro(o)) this summor	reation applies to	
Address/location of	DIODELLV	or structurets) mis summan	/ nonce applies to	
	p				

Summary of the hazard reduction activity:

Start and completion date(s):_____

Activity locations and types. List at least the housing unit numbers and common areas (for multi-family housing), bare soil locations, dust-lead locations, and/or building components (including type of room or space, and the material underneath the paint), and types of hazard reduction activities performed at the locations listed ______

Date(s) of clearance testing and/or soil analyses:

Locations of building components with lead-based paint remaining in the rooms, spaces or areas where activities were conducted

Summary of results of clearance testing and soil analyses

(a)	No	clearance	testing w	as performed.
-----	----	-----------	-----------	---------------

- (b) _____ Clearance testing showed clearance was achieved.
- (c) _____ Clearance testing showed clearance was not achieved.

Contact person for more information about the hazard reduction:

Printed name: _	
Organization:	
Street and city:	
State: ZIP	·
Phone number:	()

Person who prepared this summary notice:

Printed name:
Signature:
Date:
Organization:
Street and city:
State: ZIP:
Phone number: ()

CALCULATING THE LEVEL OF FEDERAL REHABILITATION ASSISTANCE

- Step 1. Determine the average Federal housing assistance per assisted unit. (For multi-family units, divide total by the number of assisted units.)
- Step 2. Determine the rehabilitation hard costs for the unit. Exclude soft costs and costs that are solely attributable to the lead hazard control work.
- Step 3. Use the lesser amount to determine the level of rehabilitation assistance for purposes of determining the lead hazard evaluation, work and clearance required.

See the Grant Administration Manual, Section V.F. for further explanation of these steps.

	Project	Average Per Assisted Unit
Step 1. Federal Housing Assistance		
CDBG Funds		
HOME Funds		
Other HUD Funds (list:		
Other Federal Housing Assistance (list:		
Average Federal Housing Assistance (per assisted u	ınit)	
Step 2. Hard Cost of Rehabilitation		
Total estimated Rehabilitation Hard Costs		
Exclude: Costs of LBP hazard control work (list items)		
Average Hard Cost of Rehabilitation (per assisted u	nit)	
Step 3. Federal Rehabilitation Assistance (per assisted unit)		
Select the lesser of Steps 1 & 2 calculations (per assisted unit) and check applicable category below		
 If less than or equal to \$5,000 per unit: Test surfaces to be disturbed or presume LBP with OCR concurrence Follow Safe Work Practices on disturbed surfaces Clean & clear immediate work site with lab-tested dust wipes 		
 If above \$5,000 but less than \$25,000 per assisted unit: Conduct risk assessment of unit Follow 35.1340 interim controls for all hazards Clean & clear entire unit 		
 If more than \$25,000 per assisted unit: Conduct risk assessment of assisted unit & common areas Abate interior hazards (interim controls permitted for exterior) Clean & clear entire unit 		

EXHIBIT 5-10 IMPLEMENTING THE LEAD BASED PAINT RULE

- 1) Are the property(ies) exempt from the regulation?
 - a) Construction completed after 1/1/78?
 - b) 0 BR unit(s)?
 - c) Elderly/disabled only?
 - d) Certified LBP Free or Abated?
 - e) Unoccupied pending demo?
 - f) Non-residential?
 - g) Rehab not disturbing paint?
 - h) Emergency action?
- 2) What kind of project is being assisted with CDBG?
 - a) Rehabilitation (Subpart J)
 - b) Homebuyer Assistance (Subpart K)
 - c) Other Acquisition Assistance (Subpart K)
- 3) What evaluation method is required?
 - a) Activity type
 - i) Rehabilitation less than \$5,000 Federal-Testing disturbed surfaces
 - ii) Rehab over \$5,000- Risk Assessment
 - iii) Homebuyer/Acquisition Assistance -Visual Assessment
 - b) Who will provide evaluation (and is training/certification needed)?
 - c) What is the estimated cost per unit?
- 4) What disclosure will be required and who is responsible?
 - a) Pamphlet
 - b) Tenant/Buyer notice of know LBP and hazards
 - c) Evaluation results (risk assessments & testing)
 - d) Hazard control results (if clearance)
- 5) If rehab, who will do the scope of work
 - a) Rehab scope
 - b) Hazard control scope
 - c) Integration of scopes (if applicable)
 - d) Is there an estimated range of cost for anticipated hazard control activities?
- 6) Who will do the hazard control work?
 - a) Work level
 - i) Paint stabilization
 - ii) Interim controls
 - iii) Abatement
 - b) Is there an adequate supply of workers/contractors qualified?
 - c) How will qualifications be determined?
 - d) What additional training is needed?

- 7) How will the hazard control work be monitored?
 - a) Type of monitoring of work practices and interim controls
 - b) Training required
- 8) Who will be responsible for clearance of hazard control work?
 - a) Contract assessors/inspectors
 - b) Staff assessors/inspectors/sampling technicians
 - c) Estimated cost of clearance per unit
- 9) What records will be maintained?
 - a) Evaluation method/results
 - b) Scope of work and contract
 - c) Hazard control work monitoring records
 - d) Clearance)
- 10) Will ongoing monitoring be required (and who will do it)?
 - a) If rental acquisition assistance, annual visual assessment
 - b) If rental rehab, annual visual assessment recommended

LEAD BASED PAINT REFERENCES AND RESOURCES

The following website links will provide additional information regarding the lead based paint regulations.

HUD, http://portal.hud.gov/hudportal/HUD?src=/program_offices/healthy_homes

Center for Healthy Housing, http://www.nchh.org/

EPA, http://www2.epa.gov/lead

Community Connections, https://www.onecpd.info

State Department of Health, http://www.health.ny.gov/

LINKS TO APPLICABLE STATE AND FEDERAL REGULATIONS

Labor Standards:

Federal Labor Standards Provisions (HUD 4010 Form): http://www.hud.gov/offices/adm/hudclips/forms/files/4010.pdf

New York State Labor Standards: <u>http://www.labor.ny.gov/workerprotection/publicwork/PWGeneralProvisions.shtm</u>

Semi Annual Labor Standard Report to be submitted by Housing Agency (HUD 4710) <u>http://portal.hud.gov/hudportal/HUD?src=/program_offices/labor_relations/olrform</u>

Conflict of Interest:

Conflict of Interest Regulations (24CFR570.611) http://edocket.access.gpo.gov/cfr 2010/aprqtr/pdf/24cfr570.611.pdf

Displacement, Relocation and Acquisition:

Uniform Relocation Act (40CFR Part 24): http://www.gpo.gov/fdsys/pkg/CFR-2010-title24-vol3/pdf/CFR-2010-title24-vol3-sec570-611.pdf

Real Estate Acquisition and Relocation Policy and Guidance (HUD Handbook 1378): <u>http://portal.hud.gov/hudportal/HUD?src=/program_offices/comm_planning/library/relocation/policyandguidance/handbook1378</u>

Lead Based Paint:

Lead Based Paint Disclosure Rule: http://www.hud.gov/offices/lead/library/enforcement/24CFR35 SubpartA.pdf

Lead Safe Housing Rule: http://www.hud.gov/offices/lead/library/enforcement/LSHRFinal21June04.pdf

Renovation Repair and Painting Rule: http://www.epa.gov/fedrgstr/EPA-TOX/2008/April/Day-22/t8141.htm

Property Management:

Property Management and Acquisition (24CFR570.505) http://www.gpo.gov/fdsys/pkg/CFR-2010-title24-vol3/pdf/CFR-2010-title24-vol3-sec570-505.pdf

Civil Rights:

Section 3 Regulations: http://www.hud.gov/offices/fheo/section3/Sect3-Regulations.pdf Equal Opportunity Requirements: Title VI of the Civil Rights Act of 1964 www.justice.gov/crt/grants_statutes/titlevi.txt Section 109 of Title I of the Housing and Community Development Act <u>http://portal.hud.gov/hudportal/HUD?src=/program_offices/fair_housing_equal_opp/FH</u> Laws/109

Minority and Women's Business Enterprises Requirements 24 CFR 85.36 <u>http://portal.hud.gov/hudportal/HUD?src=/program_offices/cpo/grantees/cfr8536</u>

Executive Order 11246 <u>http://portal.hud.gov/hudportal/HUD?src=/program_offices/fair_housing_equal_opp/FH</u> Laws/EXO11246

Fair Housing Requirements:

Fair Housing Act http://www.justice.gov/crt/housing/title8.php

Accessibility and Section 504 Requirements:

Section 504 of the Rehabilitation Act of 1979 http://www.gpo.gov/fdsys/pkg/CFR-2000-title24-vol1/content-detail.html

Title II of the American's with Disabilities Act of 1990 http://www.ada.gov/regs2010/titleII 2010/titleII 2010 fr.pdf

Architectural Barriers Act of 1968 http://www.access-board.gov/the-board/laws/architectural-barriers-act-aba

Executive Order 11063 http://portal.hud.gov/hudportal/HUD?src=/program_offices/fair_housing_equal_opp/FH Laws/EXO11063

Limited English Proficiency Requirements

Executive Order 13166 <u>http://portal.hud.gov/hudportal/HUD?src=/program_offices/fair_housing_equal_opp/FH</u> <u>Laws/EXO13166</u>

Sample NOTICE UNDER THE AMERICANS WITH DISABILITIES ACT

In accordance with the requirements of Title II of the Americans with Disabilities Act of 1990 (ADA), the [*Name of Recipient*] will not discriminate against qualified individuals with disabilities on the basis of disability in its services, program, or activities.

<u>Employment</u>: [Name of Recipient] does not discriminate on the basis of disability in its hiring or employment practices and complies with all regulations promulgated by the U.S. Equal Employment Opportunity Commission under Title I of the ADA.

<u>Effective Communication</u>: [<u>Name of Recipient</u>] will generally, upon request, provide appropriate aids and services leading to effective communication for qualified persons with disabilities so they can participate equally in [<u>Name of Recipient</u>] programs, services, and activities, including qualified sign language interpreters, documents in Braille, and other ways of making information and communications accessible to people who have speech, hearing, or vision impairments.

<u>Modifications to Policies and Procedures</u>: [<u>Name of Recipient</u>] will make all reasonable modifications to policies and programs to ensure that people with disabilities have an equal opportunity to enjoy all of its programs, services, and activities. For example, individuals with service animals are welcomed in [<u>name of public entity</u>] offices, even where pets are generally prohibited.

Anyone who requires an auxiliary aid or service for effective communication, or a modification of policies or procedures to participate in a program, service, or activity of [*Name of Recipient*], should contact the office of [*name and contact information for ADA coordinator*] as soon as possible but no later than 48 hours before the scheduled event.

The ADA does not require the [*Name of Recipient*] to take any action that would fundamentally alter the nature of its programs or services, or impose an undue financial or administrative burden.

Complaints that a program, service, or activity of [<u>Name of Recipient</u>] is not accessible to persons with disabilities should be directed to [<u>name and contact information for ADA</u> <u>coordinator</u>].

[*Name of Recipient*] will not place a surcharge on a particular individual with a disability or any group of individuals with disabilities to cover the cost of providing auxiliary aids/services or reasonable modifications of policy, such as retrieving items from locations that are open to the public but are not accessible to persons who use wheelchairs.

Sample GRIEVANCE PROCEDURE UNDER THE AMERICANS WITH DISABILITIES ACT

This Grievance Procedure is established to meet the requirements of the Americans with Disabilities Act of 1990 (ADA). It may be used by anyone who wishes to file a complaint alleging discrimination on the basis of disability in the provision of services, activities, programs, or benefits by the [*Name of Recipient*]. Employment related complaints of disability discrimination are covered elsewhere, in policies available from the human resources office of the [*Name of Recipient*].

The complaint should be in writing and contain information about the alleged discrimination such as name, address, phone number of complainant and location, date and description of the problem. No particular format of the complaint is required. Alternative means of filing complaints, such as personal interviews or a tape recording of the complaint, will be made available for persons with disabilities upon request.

The complaint should be submitted in writing by the grievant and/or his/her designee as soon as possible but no later than 60 calendar days after the alleged violation to:

[Designee for Reasonable Accommodation/ADA Coordinator's name] ADA Coordinator [and other title if appropriate] [Mailing address for Designee/ADA Coordinator]

Within 15 calendar days after receipt of the complaint, the ADA Coordinator or his/her designee will meet with the complainant to discuss the complaint and the possible resolutions. Within 15 calendar days of the meeting, the ADA Coordinator or his/her designee will respond in writing, and where appropriate, in a format accessible to the complainant, such as large print, Braille, or audio tape. The response will explain the position of the [*Name of Recipient*] and offer options for substantive resolution of the complaint.

If the response by the ADA Coordinator or his/her designee does not satisfactorily resolve the issue, the complainant and or his/her designee may appeal the decision within 15 calendar days after receipt of the response to the agency head or his/her designee.

Within 15 calendar days after receipt of the appeal, the agency head or his/her designee will respond in writing, and, where appropriate, in a format accessible to the complainant, with the agency's final resolution of the complaint, or indicating that the matter has been returned to the ADA Coordinator for further action. If further response is indicated, the complainant will be contacted within 15 calendar days.

All written complaints received by the ADA Coordinator or his/her designee, appeals to the agency head or his/her designee, and responses from these two offices will be retained by the [*Name of Recipient*] for at least three (3) years.

LINKS TO OUTSIDE AGENCY FORMS

Labor Standards

Request for Additional Classification and Wages (HUD 4230A): http://www.hud.gov/offices/adm/hudclips/forms/hud4.cfm

Record of Employee Interview (HUD 11): http://www.hud.gov/offices/adm/hudclips/forms/hud1.cfm

Payroll Forms (WH347): <u>http://www.dol.gov/whd/forms/wh347.pdf</u> and Form Instructions: <u>http://www.mdt.mt.gov/publications/docs/forms/contracting/wh347instr.pdf</u>

Davis-Bacon Poster: http://www.dol.gov/whd/regs/compliance/posters/fedprojc.pdf

Equal Employment Opportunity Poster and Required Supplement: <u>http://www1.eeoc.gov/employers/poster.cfm</u>

Occupational Health and Safety Administration Job Safety and Health Poster: http://d3.234.227.130/Publications/osha3165.pdf

Displacement, Relocation and Acquisition

"When a Public Agency Acquires Your Property" brochure: http://www.hud.gov/offices/cpd/library/relocation/publications/1041.pdf

Lead Based Paint

"Protect Your Family from Lead in Your Home" brochure: <u>http://www.epa.gov/lead/pubs/leadpdfe.pdf</u>

"EPA Renovate Right" pamphlet

http://www2.epa.gov/lead/lead-safe-certified-guide-renovate-right

Sample Lead Based Paint Disclosure Form for Sale of Housing: http://www.hud.gov/utilities/intercept.cfm?/offices/lead/library/enforcement/selr_eng.pdf

Sample Lead Based Paint Disclosure Form for Rental of Housing: <u>http://www.hud.gov/utilities/intercept.cfm?/offices/lead/library/enforcement/lesr_eng.pdf</u>

Civil Rights

Section 3

Section3 Brochure:

http://www.hud.gov/utilities/intercept.cfm?/offices/fheo/section3/Sect3-brochure.pdf

Fair Housing

Fair Housing Brochure: http://www.hud.gov/offices/adm/hudclips/forms/files/928-1.pdf Fair Housing Planning Guide http://www.hud.gov/offices/fheo/images/fhpg.pdf

Accessibility and Section 504 ADA Guide for Small Towns http://www.ada.gov/smtown.htm

ADA Title II Technical Assistance Manual: <u>http://www.ada.gov/taman2.html</u>

ADA Coordinator, Notice & Grievance Procedure: Administrative Requirements Under Title II of the ADA: <u>http://www.ada.gov/pcatoolkit/chap2toolkit.htm</u>

Limited English Proficiency Language Assistance and Self Assessment Planning Tool <u>http://www.lep.gov/selfassesstool.htm</u>

SAMPLE CONFLICT OF INTEREST DISCLOSURE

Under certain circumstances, an applicant for Community Development Block Grant (CDBG) program funds may have what is known as a "Conflict of Interest" and may need a waiver in order to participate in a CDBG funded activity. A conflict of interest may occur when if an applicant for participation in a CDBG funded activity is related to or has a business relationship with an employee, officer or elected official of the municipality that has been awarded the CDBG funds. If the municipality that has received CDBG assistance determines that a conflict of interest exists, a request for a waiver to the conflict of interest must be submitted by the local municipality that has been awarded the CDBG funds to the Office of Community Renewal prior to undertaking any activity funded with CDBG funds.

DISCLOSURE

Please answer all questions below to assist in making a determination if a potential conflict of interest exists.

1. □ Yes □ No

Are you now, or have you been an employee, agent, consultant, officer, elected official, appointed official of the

		ne of Local Municipality)			
	If yes, please identify:				
2.	□ Yes □ No				
	Are you related (including by marriage or dome or appointed official or any other local official in for of the	volved in the CDBG Program	n for which assistance is being applied		
	If yes, please identify:	(Full name of Local Mur	iicipality)		
3.	□ Yes □ No				
	Do you have a business or professional relationship with anyone identified under question #1 above?				
	If yes, please identify:				
	I/we, the undersigned, certify that the above information is true to the best of my/our knowledge:				
	Signed:		Date:		
	Typed Name:				
	Signed:		Date:		
	Typed Name:				
		For official use only			
	CDBG Project Number:		-		
	Municipality:				
	Conflict of Interest does not exist	CEO Signature:			
	A potential Conflict of Interest exists	Date:			

Exhibit 5-17

Conflict of Interest Waiver Request Checklist

All Requests for a Conflict of Interest Waiver Request must include the following:

- 1. A written request which:
 - a. Details the nature of the conflict; and
 - b. Specifically addresses each applicable factor enumerated in subparagraph (5) of 24 CFR 570.489(h); and
 - c. Is signed by the Recipient's chief elected official.
- 2. An opinion letter signed by the Recipient's legal counsel stating that the interest for which the exception is sought would not violate state or local law.
- 3. Minutes of the public meeting at which disclosure of the conflict was made. Public disclosure is considered to be a disclosure of the nature of the conflict, accompanied by an assurance that there has been public disclosure of the conflict and a description of how the public disclosure was made. The public hearing must be held by the legislative body of the Recipient. This responsibility cannot be delegated to an agency or committee.
- 4. A completed Conflict of Interest Disclosure, Exhibit 5-16