

GRAYSON COUNTY, VIRGINIA
Department of Planning & Community Development

Trailhead Bathroom
Grayson County Recreation Park
Project Manual
May 2016



IFB# 03-2016

Grayson County Administration
P.O. Box 217
129 Davis Street
Independence, VA 24348
276-773-2471

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PROJECT MANUAL – Trailhead Bathroom

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Invitation for Bid
IFB# 03-2016
Trailhead Bathroom
County of Grayson, Virginia

Sealed bids for the Trailhead Bathroom, Grayson County, Virginia in accordance with the conditions, specifications, and instructions below and on the attached sheets hereto, will be received no later than **10 a.m.**, local prevailing time, **June 28th, 2016** and will be opened and publicly read aloud at that time, at the Grayson County Courthouse, Boardroom, 129 Davis Street, Independence, VA, 24348. Sealed bids should be delivered as follows:

IN PERSON OR SPECIAL COURIER

County of Grayson
Department of Finance
Grayson County Courthouse
129 Davis Street
Independence, VA 24348

OR

U.S. POSTAL SERVICE

County of Grayson
Department of Finance
Grayson County Courthouse
P.O. Box 217
Independence, VA 24348

Worksite Address: Grayson County Recreation Park, 432 County Park Lane, Independence, VA 24348

Background: This project is partially funded by the Virginia Department of Conservation & Recreation with grant funding provided by the Federal Highway Administration and Moving Ahead for Progress in the 21st Century (MAP-21). As a local project tied to state and federal funding the locality is interested in working with contractors who are capable of meeting the state and federal requirements listed in this project manual. The project is being performed in accordance with the Recreational Trails Program- Virginia Department of Conservation and Recreation and the Compliance Guidance in the United States Department of Transportation regulations 49 CFR and applicable parts of 19.19 and 26, as amended.

Scope of Work: Construct A Trailhead Bathroom Facility

The scope of work involves the installation of a new trailhead bathroom facility. The facility shall be built in accordance with the design specifications as shown on the attached plan.

- 1) Site Details:** Location of the Trailhead Bathroom Facility will be at the Grayson County Recreation Park. The site is at the edge of the Softball Field Parking Lot in the area shown on the map and the location is marked on site.
- 2) Specifications:** In accordance with the Trailhead Bathroom Facility Plans, attached.
- 3) Project Schedule:**
 - a. Project Advertised: May 27, 2016
 - b. Bids Due: June 28, 2016
 - c. Notice of Award: June 28, 2016
 - d. Contract/Work begins: June 29, 2016
 - e. Work Complete by: November 27, 2016
 - f. Final Invoice Due by: December 02, 2016
 - g. Final Payment: After Final Inspection

Invitation for Bid
IFB# 03-2016
Trailhead Bathroom
County of Grayson, Virginia

Contractor Requirements:

- 1) Must attend Pre-Construction Conference with Project Managers prior to work.
- 2) Required to contact Miss Utility and other acts of due diligence to identify and prevent disturbance to existing utilities.
- 3) Contractor must submit the Building Permit Applications necessary for the work. The Zoning Permit has already been approved for the site. All permit fees will be provided by the County of Grayson. Contractor shall schedule building inspections in accordance with the Uniform Statewide Building Code.
- 4) Contractor is responsible for safety on the site. Areas under construction must be blocked to public access. Construction may be limited during time periods of scheduled use of the site by the Grayson County Recreation Park or the Grayson County School system/other sanctioned events. During construction, adequate protection and separation distances between work and the public must be provided.
- 5) Grading and foundation work in accordance with the Trailhead Bathroom Facility plans.
- 6) Contractor is responsible for material procurement and delivery to the site. All materials must be in accordance with the Trailhead Bathroom Facility Plans. All steel and iron products planned for the project, must be pre-approved by the Project Manager and the contractor must submit the domestic material data sheets for any materials with iron and steel at the Pre- Construction Conference or with approval prior to installation.
- 7) Contractor is responsible for the proper installation of all materials and devices listed on the Trailhead Bathroom Facility Plans.
- 8) Contractor is responsible for submitting invoices at the time periods and milestones identified in the contract. Payment for work will occur when milestones are met and work is inspected and approved by the Grayson County Building Official.
- 9) Contractor is required for the proper installation of the septic system line connection to the septic system and all required waste water plumbing. The septic system has already been installed at the site to the east of the bathroom location.
- 10) Contractor is required for the installation of the electrical connection to the AEP meter base and electrical wire/devices as shown on the building plans.
- 11) Contractor is required for the proper installation of the water supply and water plumbing. Water supply has been brought to the site from the Town Water meter location in this area of the park. Contractor is required to bring water service into the building from the connection location, approx. 50 ft from the building location.
- 12) County will provide a solid waste container for use by the contractor for solid waste disposal.
- 13) Contractor must follow local, state and federal laws as it relates to work on this project.

Contacts: Project Manager- Elaine Holeyton- 276-773-2000
 Grayson County Building Official, James Moss- 276-773-2322

Invitation for Bid
IFB# 03-2016
Trailhead Bathroom
County of Grayson, Virginia

Beginning on **May 27th, 2016**, Bid Documents/Project Manual may be obtained by visiting the Grayson County Home Page under “Informational Items” www.graysoncountyva.gov The Project Manual is provided in PDF Format, which may be shared electronically with your subcontractors, employees, and suppliers. The failure or omission of any bidder to download, receive or examine any form, instrument, addendum or other documents, or to acquaint itself with conditions existing at the site(s), shall in no way relieve any bidder from any obligations with respect to its bid or to the contract. Direct any questions, concerning the Project Manual, by e-mail. Send to eholeton@graysoncountyva.gov

Time is of the essence, and all bids received after the appointed hour for submission, whether by mail or otherwise, will be returned unopened. The time of receipt shall be noted by the clerk accepting the bid document. Bidders are responsible for insuring that their bid is stamped “received” by Purchasing Office or County Administration personnel and that the time is noted on the document. Envelopes containing bids shall be sealed and marked in the lower left-hand corner with the bid number, project name, hour and due date of the bid and the bidder’s Virginia contractor registration number. All bidders shall use the enclosed Bid Form in submitting their bid prices.

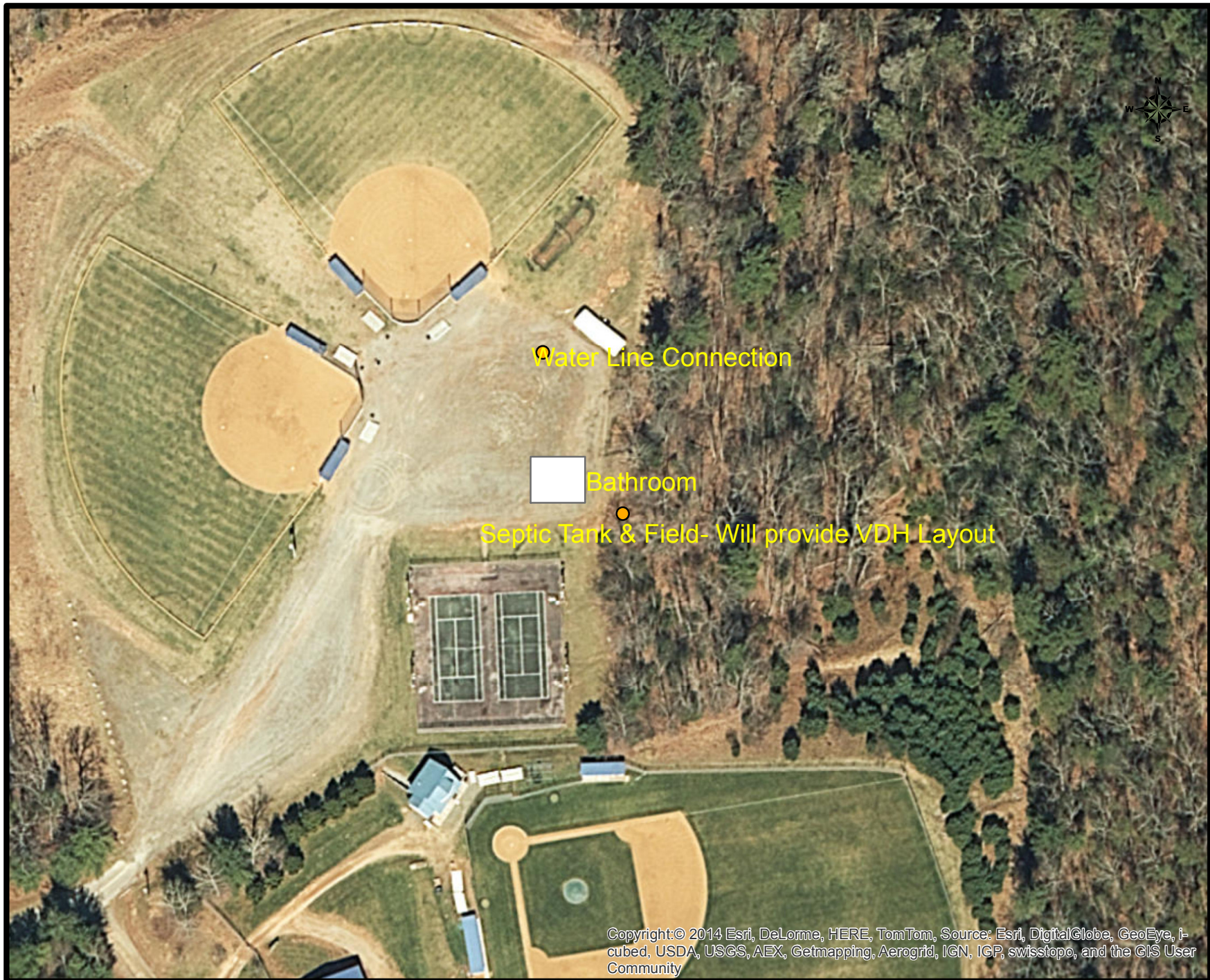
A bid may not be modified, withdrawn or cancelled by the bidder after the time and date designated for the receipt of bids and for 91 days thereafter except as provided by Section 2.2-4330, Procedure (ii), Chapter 7 of the Code of Virginia, as amended. The Owner reserves the right to waive informalities and/or reject all bids. In accordance with Va. Code, Section 2.2-4319, the Owner shall not reject all bids solely to avoid awarding a contract to a particular responsive and responsible bidder.

Subcontracting. If subcontracting, the successful contractor agrees that it will be responsible for this subcontractor and its work. Any subcontracting shall be in accordance with the General Conditions and other contract provisions. The Base Bid shall include all cost associated with the management and coordination of work performed under the Allowances. Work under this allowance shall be provided by an assigned subcontractor to the general contractor. Contractor is required to contract with the selected subcontractor within 30 days of Notice to Proceed or signed contract with the County of Grayson.

The Bidder must be a registered contractor in the Commonwealth of Virginia in accordance with Title 54.1, Chapter 11 of the Code of Virginia, as amended, at the time of bid submission, and shall possess a **Virginia Contractor’s License**.

END OF INVITATION FOR BID

Bathroom- Site Plan -Not to Scale



0 0.0075 0.015 0.03 Miles

GRAYSON COUNTY RESTROOM BUILDING

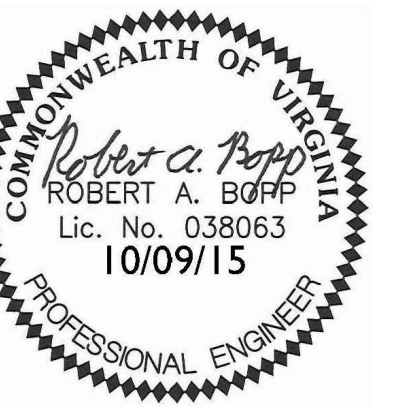
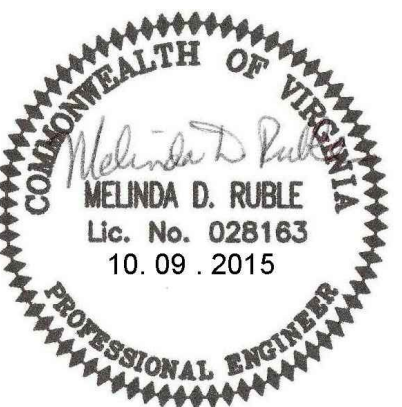
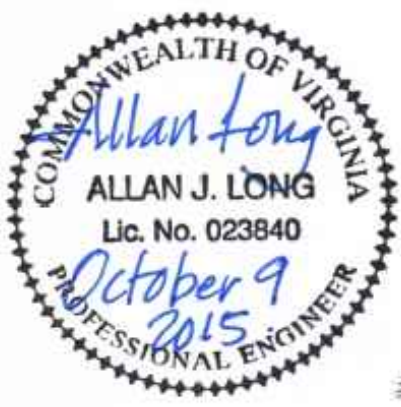
GRAYSON COUNTY RECREATION PARK

INDEPENDENCE, VIRGINIA

THE LANE GROUP

119 NORTH MAIN STREET
GALAX, VA 24333 | 276.236.4588

BIG STONE GAP, VA | ABINGDON, VA | GALAX, VA



INDEX OF DRAWINGS			
T100	TITLE SHEET	P101	PLUMBING SPECIFICATIONS
A101	FLOOR PLAN, ROOF PLAN, DETAILS AND NOTES	P201	PLUMBING LEGEND, FLOOR PLAN, AND SCHEDULES
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A401	INTERIOR ELEVATIONS AND DETAILS	M201	MECHANICAL LEGEND, FLOOR PLAN, AND SCHEDULES
A601	DOOR AND FINISH SCHEDULES, DETAILS, AND NOTES	E001	ELECTRICAL LEGEND AND ABBREVIATIONS
S000	STRUCTURAL NOTES	E002	ELECTRICAL SPECIFICATIONS
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S501	TYPICAL DETAILS	E201	ELECTRICAL DETAILS
S502	STRUCTURAL DETAIL AND NOTES	E301	ELECTRICAL SCHEDULES

ABBREVIATIONS					
AFF	ABOVE FINISHED FLOOR	EW	ELECTRIC WATER COOLER	MIN	MINIMUM
AHU	AIR HANDLING UNIT	EX	EXISTING	MTL	MATERIAL, METAL
ALUM	ALUMINUM	FD	FLOOR DRAIN	NIC	NOT IN CONTRACT
APPROX	APPROXIMATE	FEC	FIRE EXTINGUISHER CABINET	OC	ON CENTER
ASSOC	ASSOCIATED	FIN	FINISH, FINISHED	OFF	OFFICE
BTWN	BETWEEN	FV	FIELD VERIFY	OPP	OPPOSITE
CLO	CLOSET	GEN	GENERAL	PLAM	PLASTIC LAMINATE
CLR	CLEAR	GWB	GYP SUM WALL BOARD	PT OR PTD	PAINT, PAINTED
CMU	CONCRETE MASONRY UNIT	HDW	HARDWARE	PT	PRESSURE TREATED
CONC	CONCRETE	HM	HOLLOW METAL	SATC	SUSPENDED ACOUSTICAL TILE CEILING
CONT	CONTINUOUS	INSUL	INSULATION	SIM	SIMILAR
CT	CERAMIC TILE	IT	INFORMATION TECHNOLOGY	STOR	STORAGE
DIA	DIAMETER	JAN	JANITOR	TB	TACKBOARD
DIM	DIMENSION	LAV	LAVATORY	TOIL	TOILET ROOM
DR	DOOR	MAS	MASONRY	TYP	TYPICAL
DWG	DRAWING	MAX	MAXIMUM	UNO	UNLESS NOTED OTHERWISE
EA	EACH	MB	MARKER BOARD	VCT	VINYL COMPOSITION TILE
EQ	EQUAL	MECH	MECHANICAL	WC	WATER CLOSET
		MFR	MANUFACTURER	WD	WOOD

- GENERAL NOTES
1.

THE INTENT OF THE CONTRACT DOCUMENTS IS TO INCLUDE ALL WORK AND ITEMS REQUIRED FOR THE COMPLETION OF THAT WORK. ALL WORK LISTED, SHOWN, OR IMPLIED ON THE CONSTRUCTION DOCUMENTS SHALL BE PROVIDED BY THE CONTRACTOR, AS IT IS REASONABLE TO INFER THE WORK AS NECESSARY TO PROVIDE THE INTENDED RESULT. THE USE OF THE WORD "PROVIDED" IN CONNECTION WITH ANY ITEM SHOWN SHALL MEAN "FURNISHED, INSTALLED, AND CONNECTED," UNLESS NOTED OTHERWISE.
2.

CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION OF CONSTRUCTION DOCUMENTS AND SHOP DRAWINGS. CONTRACTOR SHALL NOTIFY ARCHITECT IN WRITING IMMEDIATELY OF ANY DISCREPANCIES IN PLANS, SHOP DRAWINGS AND/OR SPECIFICATIONS. SHOULD A DISCREPANCY BE FOUND, DO NOT PROCEED UNTIL CLARIFICATIONS HAVE BEEN MADE BY THE ARCHITECT/ENGINEER.
3.

CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND FIELD CONDITIONS; DO NOT SCALE DRAWINGS. IF INSUFFICIENT INFORMATION EXISTS, NOTIFY THE ARCHITECT IMMEDIATELY FOR CLARIFICATION PRIOR TO PROCEEDING WITH THE WORK.
4.

ALL WORK SHALL CONFORM TO THE STATE FIRE PREVENTION AND BUILDING CODES, AND ANY LOCAL GOVERNING CODES AND ORDINANCES.
5.

ALL PATCH AND REPAIR WORK SHALL BE DONE TO THE EXTENT THAT THE PATCH/REPAIR IS NOT DETECTABLE.
6.

UNLESS OTHERWISE NOTED, ALL DIMENSIONS ARE FROM FACE OF MASONRY OR FACE OF STUD. DOOR FRAMES SHALL BE LOCATED 4" FROM ADJACENT WALL/CORNER OR CENTERED IN WALL UNLESS OTHERWISE NOTED. ALL WINDOW, DOOR, AND CABINET SIZES SHOWN ARE NOMINAL. REFER TO MANUFACTURER'S INFORMATION FOR ROUGH OPENING SIZES AND ACTUAL GLAZING DIMENSIONS FOR DOORS AND WINDOWS. CEILING HEIGHT DIMENSIONS ARE FROM FINISHED FLOOR TO FINISH FACE OF CEILING.
7.

ITEMS MARKED "NIC" ARE "NOT IN CONTRACT." SUCH ITEMS ARE INCLUDED IN THE DOCUMENTS AND REQUIRE CONTRACTOR COORDINATION FOR CONSTRUCTION. ITEMS MARKED "OFCI" ARE "OWNER FURNISHED CONTRACTOR INSTALLED."
8.

DETAILS MARKED "TYPICAL OR TYP" SHALL APPLY IN ALL CASES UNLESS OTHERWISE NOTED.
9.

DETAILS MARKED "SIMILAR OR SIM" SHALL HAVE COMPARABLE CONDITIONS TO THAT SHOWN.
10.

GYP SUM BOARD SHALL BE 5/8" THICK UNLESS OTHERWISE NOTED. USE WATER RESISTANT GYP SUM WALLBOARD ON ALL VERTICAL FACES EXPOSED TO WATER OR MOISTURE. USE FIBERGLASS FACED EXTERIOR GYP SUM SHEATHING ON ALL EXTERIOR LOCATIONS.
11.

SEE ELECTRICAL DRAWINGS FOR FIXTURE TYPES AND LOCATION OF WALL MOUNTED FIXTURES.
12.

PROVIDE BLOCKING IN WALLS AND CEILINGS FOR ATTACHMENT OF CEILING AND WALL MOUNTED EQUIPMENT (E.G., ELECTRIC WATER COOLERS, FIRE EXTINGUISHERS, COUNTERTOP BRACKETS, AND LIGHT FIXTURES).
13.

EXTEND WALLS TIGHT TO UNDERSIDE OF FLOOR/CEILING ABOVE UNLESS OTHERWISE INDICATED.
14.

ALL ITEMS SHOWN ON DRAWINGS SHALL BE CONSIDERED PART OF THE CONTRACT UNLESS NOTED OTHERWISE.

REFERENCE LEGEND

SECTION OR DETAIL NUMBER OR LETTER

XXX-X-XXX

SHEET WHERE CUT

XXX-X-XXX

ELEVATION MARK

ENLARGED DETAIL MARK

XXX

DOOR MARK,

WINDOW MARK

NEW WORK KEYNOTE

DEMOLITION KEYNOTE

ROOM NAME

#

ROOM NAME & NUMBER MARK

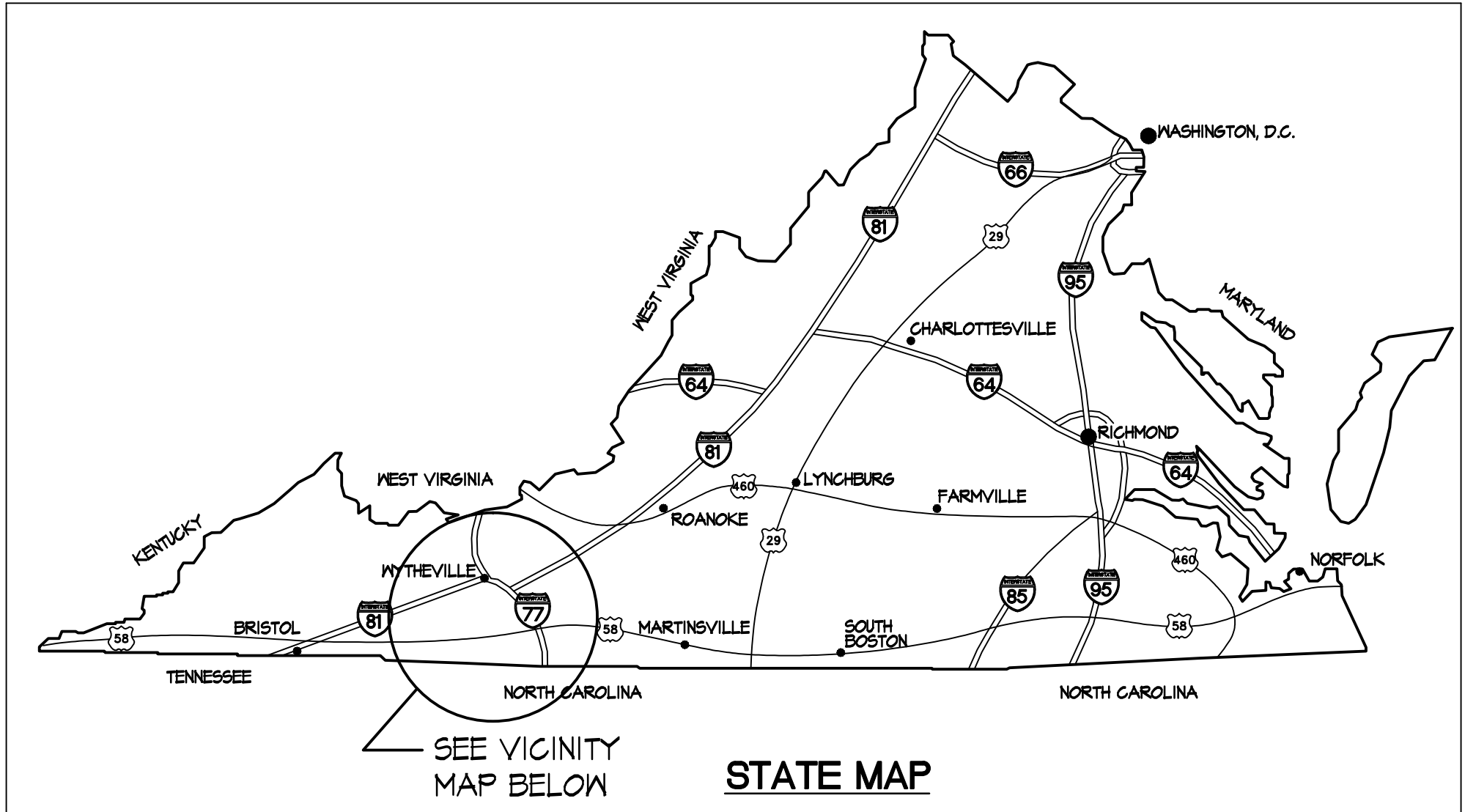
XX

PARTITION TYPE MARK

CL

CENTERLINE

UNIVERSAL ADA ACCESSIBILITY MARK



CODE INFORMATION

APPLICABLE CODES:

VIRGINIA UNIFORM STATEWIDE BUILDING CODE (USBC) 2012 EDITION, PART I, VIRGINIA CONSTRUCTION CODE ACCESSIBLE AND USABLE BUILDINGS AND FACILITIES - ICC/ANSI A117.1-2009 (BY INCLUSION IN USBC) 2010 ADA STANDARDS FOR ACCESSIBLE DESIGN PUBLISHED SEPTEMBER 15, 2010

(SECTION 304)

RESTROOM BUILDING - USE GROUP B, BUSINESS

TYPE OF CONSTRUCTION:

VB

BUILDING AREA:

854 SF

DESIGN OCCUPANCY =

PATH OF EGRESS TRAVEL SHALL NOT EXCEED A DISTANCE OF 200 FEET. (TABLE 1016.1)

PROJECT

GRAYSON COUNTY RESTROOM BUILDING

GRAYSON COUNTY RECREATION PARK

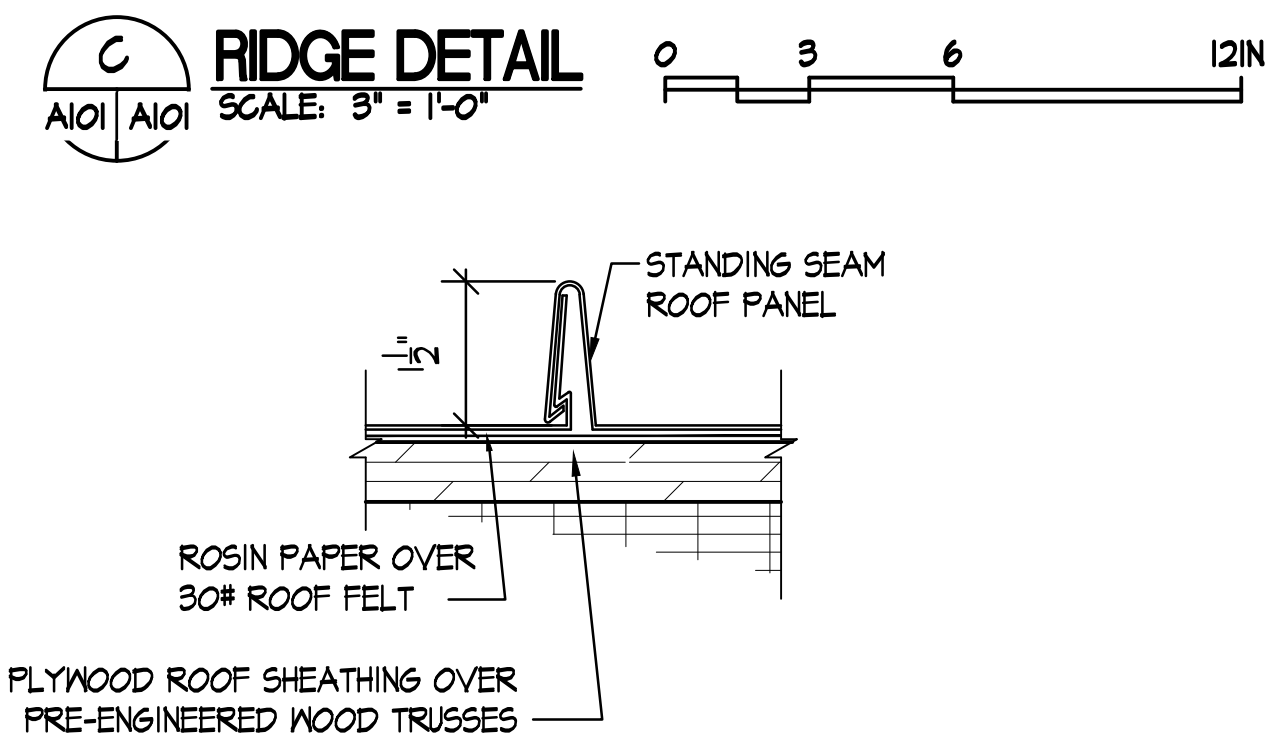
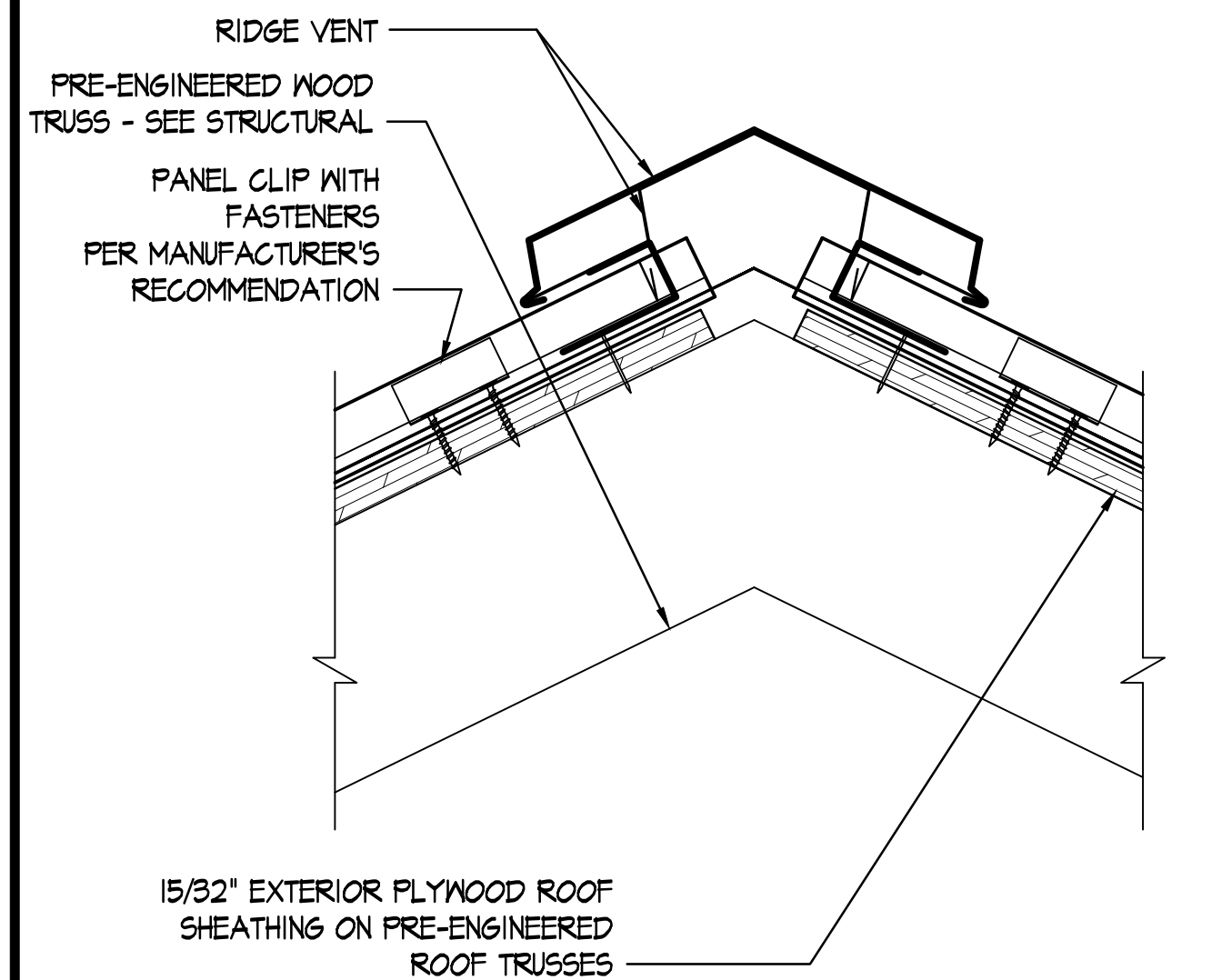
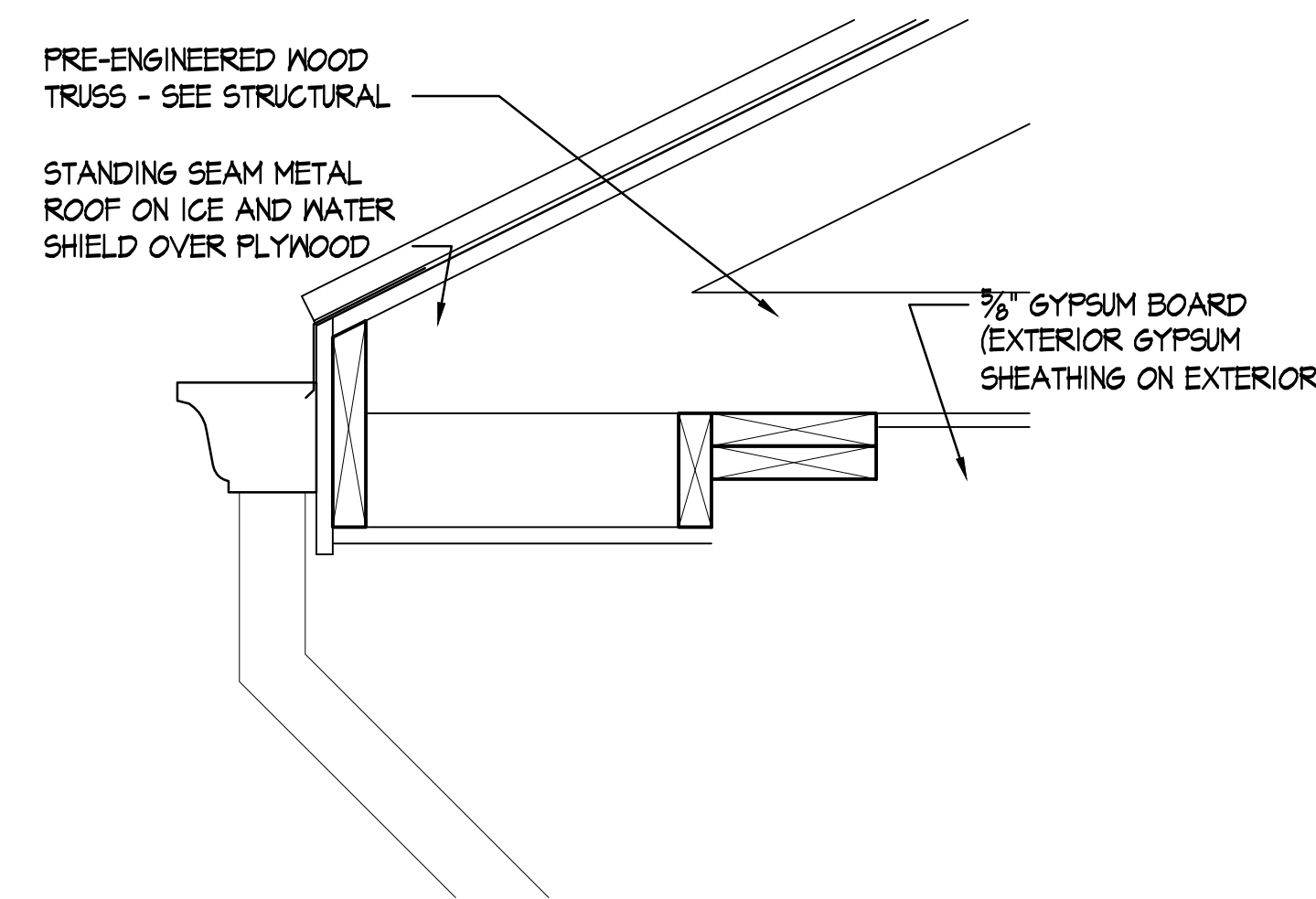
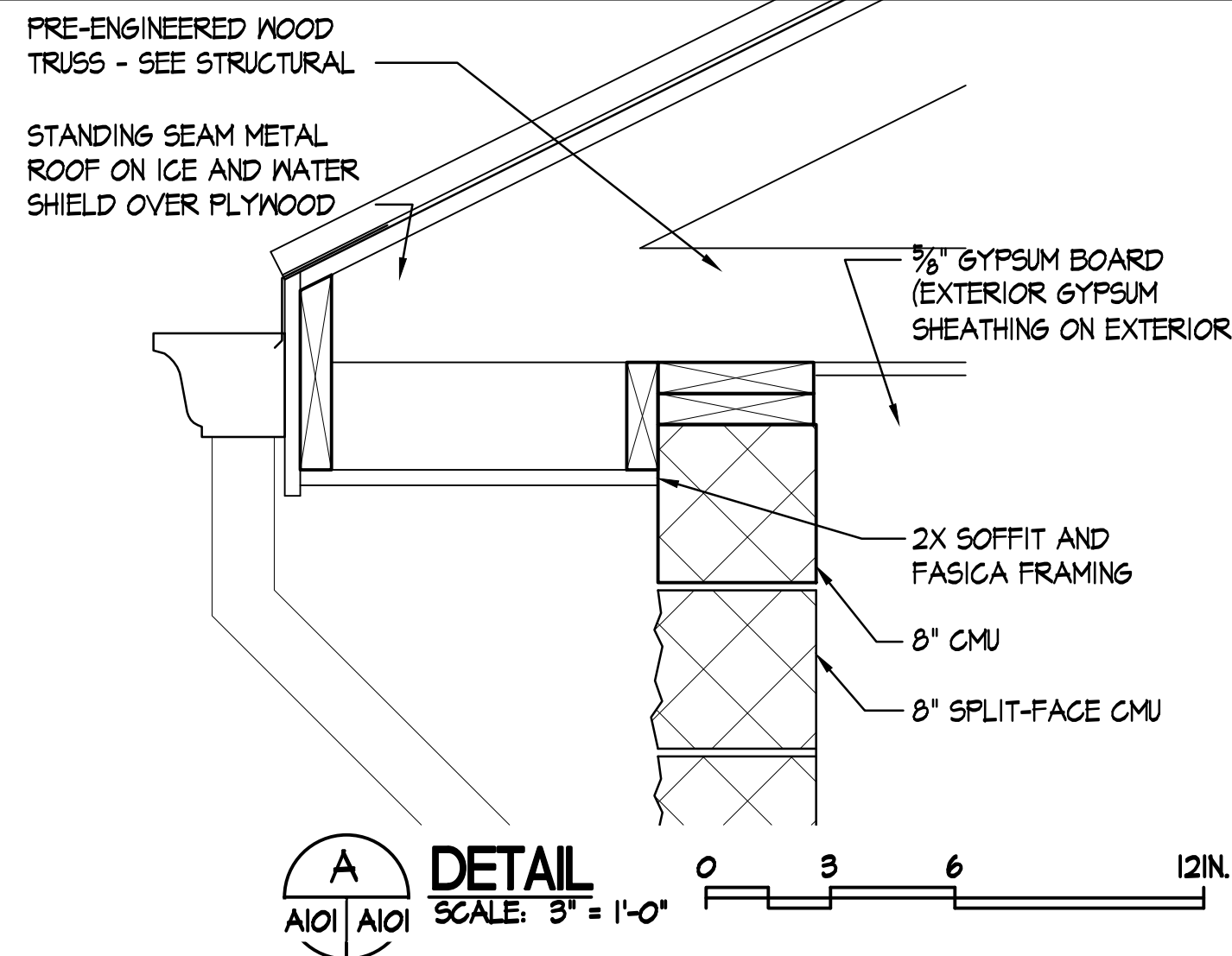
INDEPENDENCE, VA

TITLE SHEET

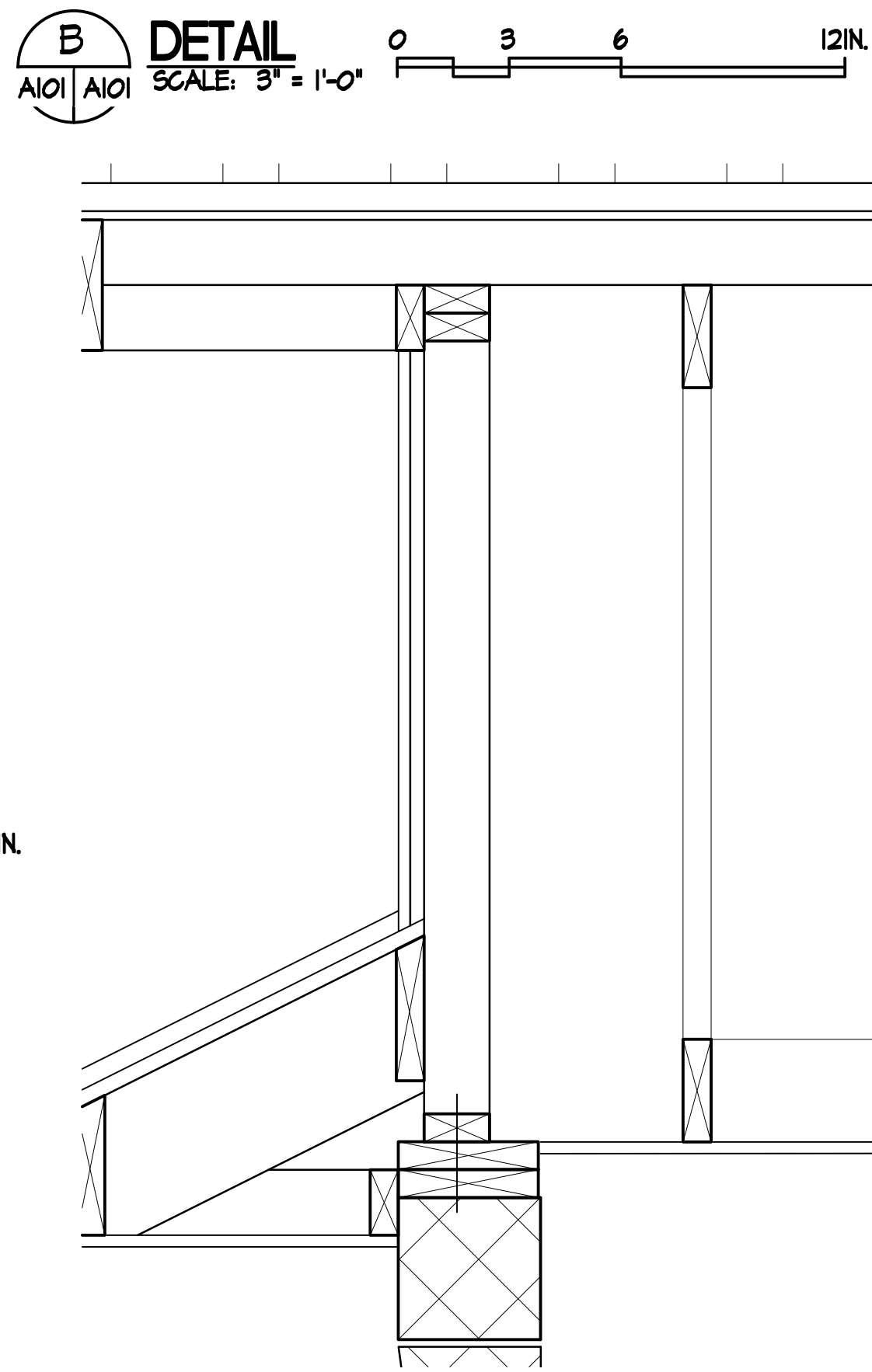
T100

Date OCTOBER 9, 2015

VICINITY MAP



TYP METAL ROOF SEAM DETAIL
SCALE: 6" = 1'-0"



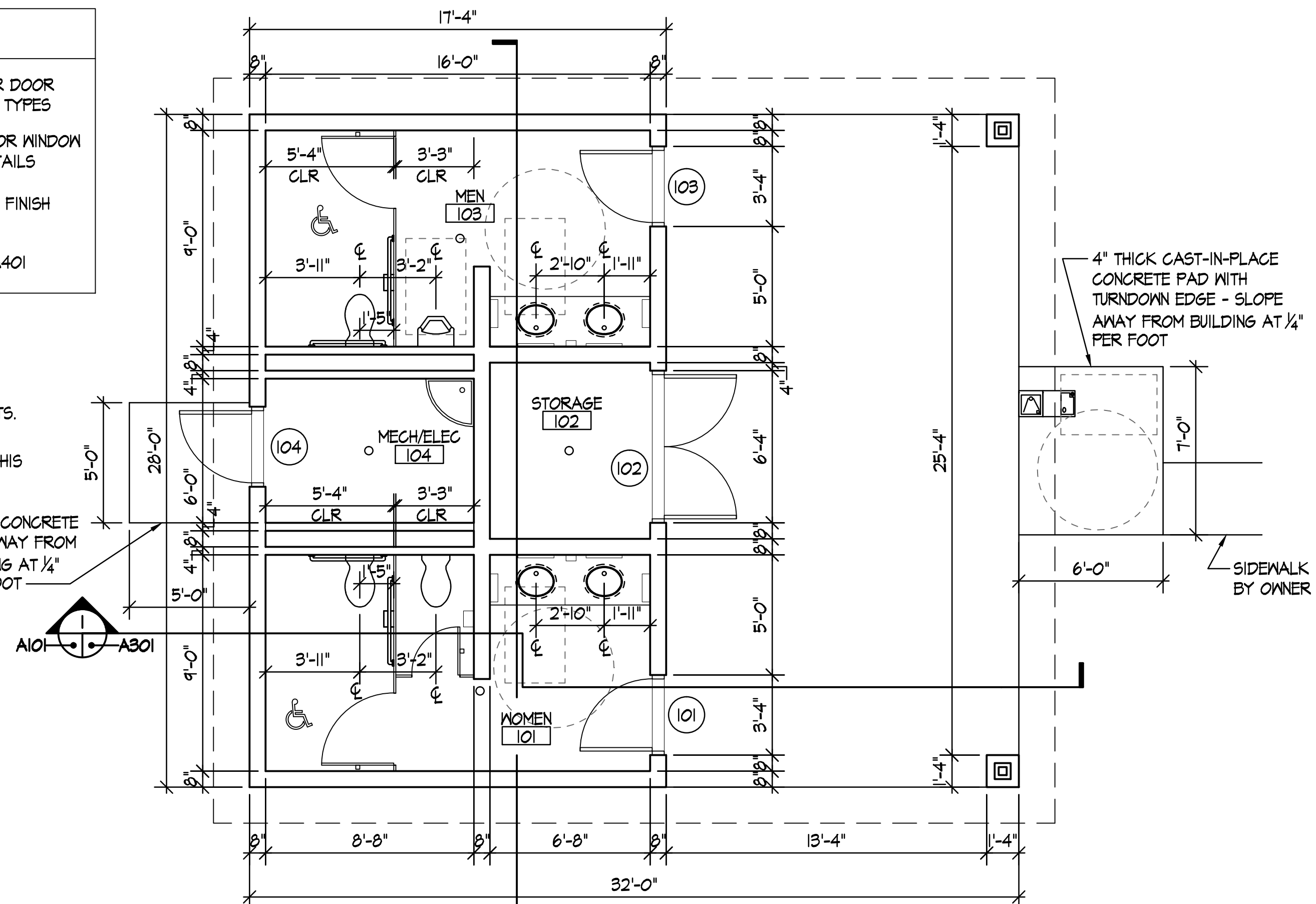
DETAIL
SCALE: 3" = 1'-0"

LEGEND

- XXX DOOR MARK - SEE SHEET A601 FOR DOOR SCHEDULES AND DOOR AND FRAME TYPES
- X WINDOW MARK - SEE SHEET A601 FOR WINDOW FRAME TYPES AND HEAD/JAMB DETAILS
- ROOM NAME # ROOM NAME & NUMBER MARK - SEE FINISH SCHEDULE ON SHEET A601
- X INTERIOR ELEVATION - SEE SHEET A401

GENERAL WORK NOTES

- SEE REFLECTED CEILING PLAN ON SHEET A121 FOR CEILING FINISH REQUIREMENTS. SEE ELECTRICAL FOR FIXTURE TYPE REQUIREMENTS.
- SEE SHEET A401 FOR TOILET ACCESSORY INFORMATION. FIXTURE CENTERLINES SHOWN THIS SHEET.



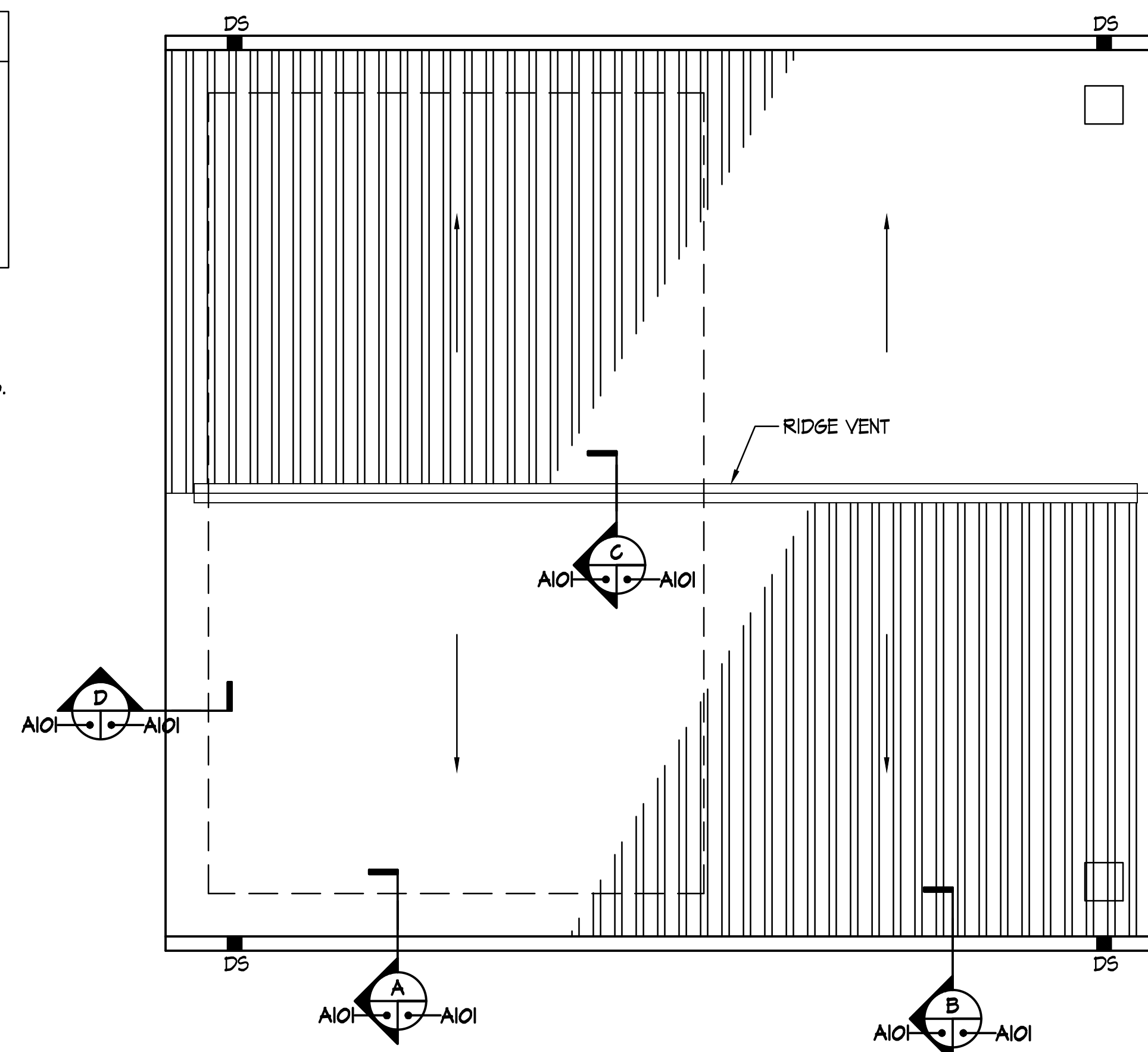
FLOOR PLAN
SCALE: 1/4" = 1'-0"

ROOF PLAN LEGEND

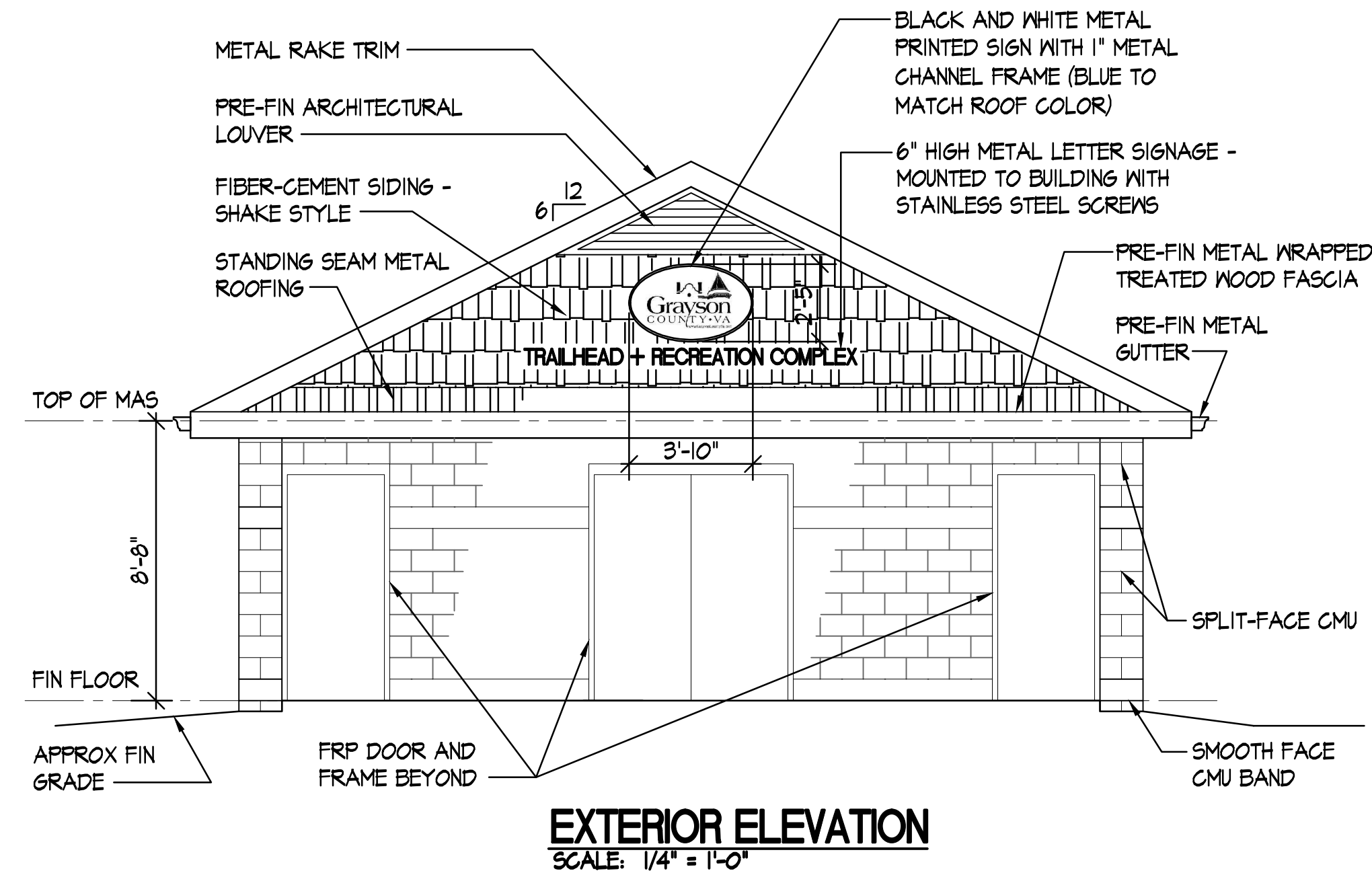
- DS DOWNSPOUT
- DIRECTION OF ROOF SLOPE
- STANDING SEAM METAL ROOF OVER PLYWOOD ROOF SHEATHING ON WOOD TRUSSES

ROOF PLAN NOTES

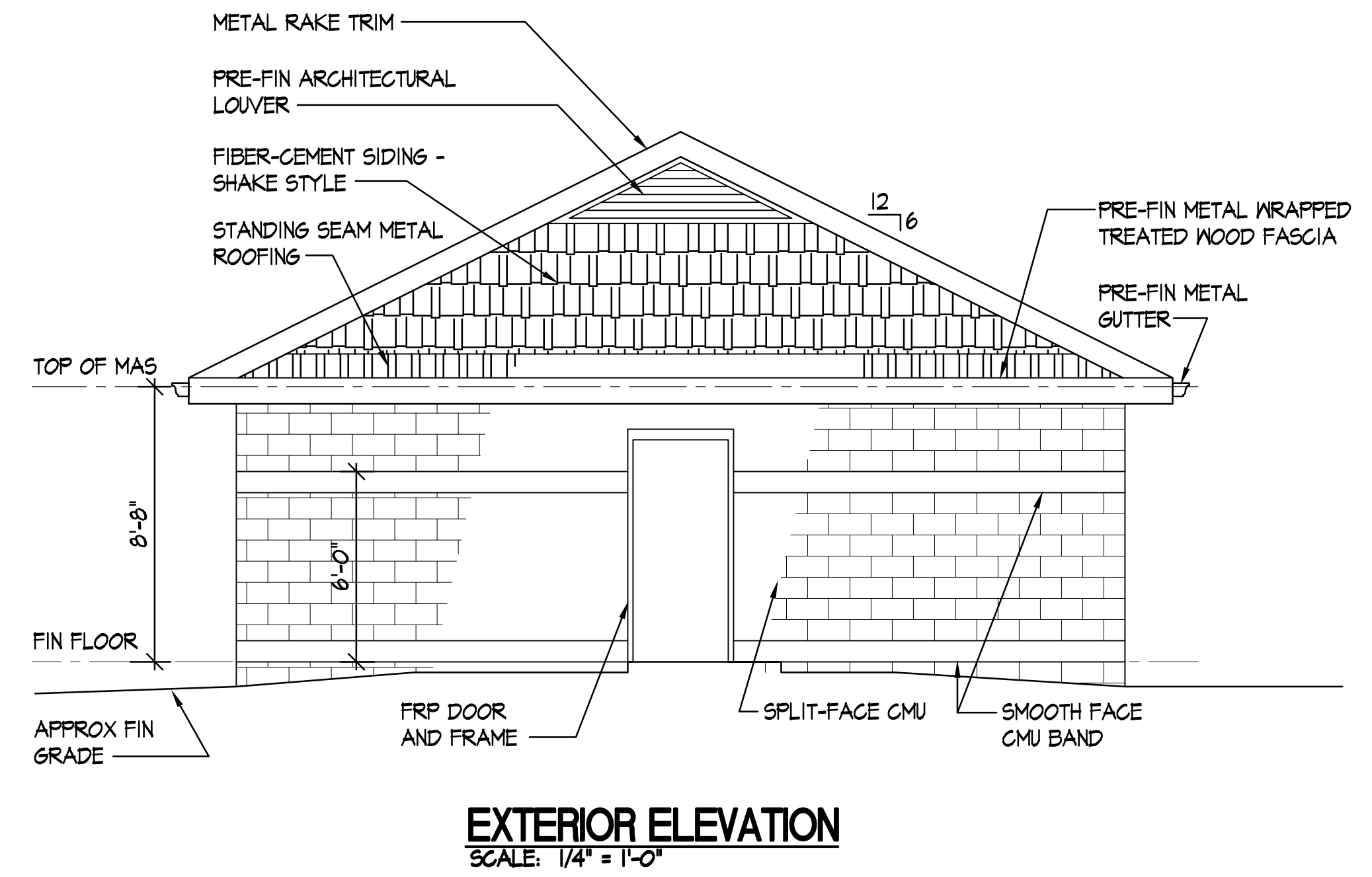
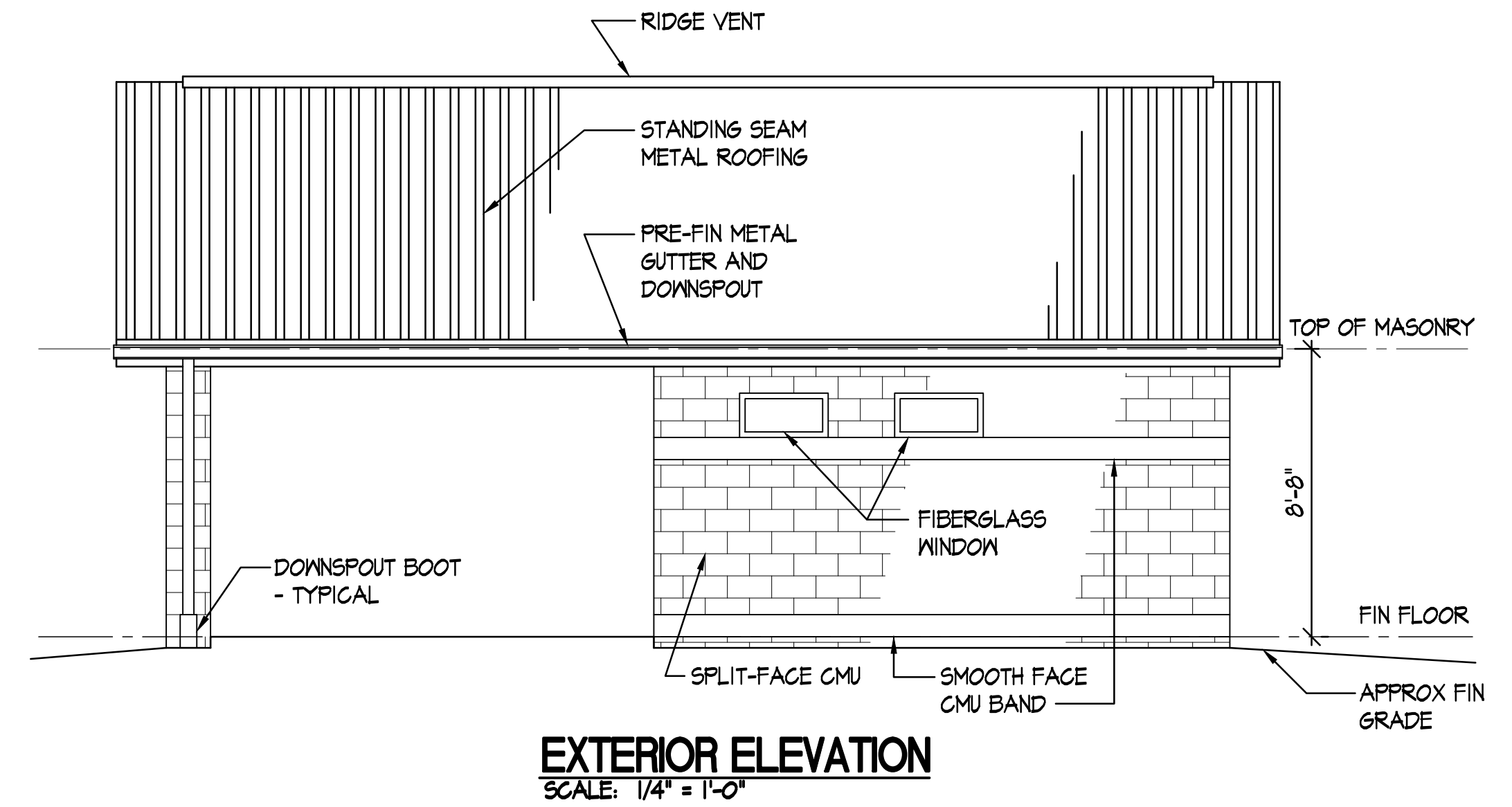
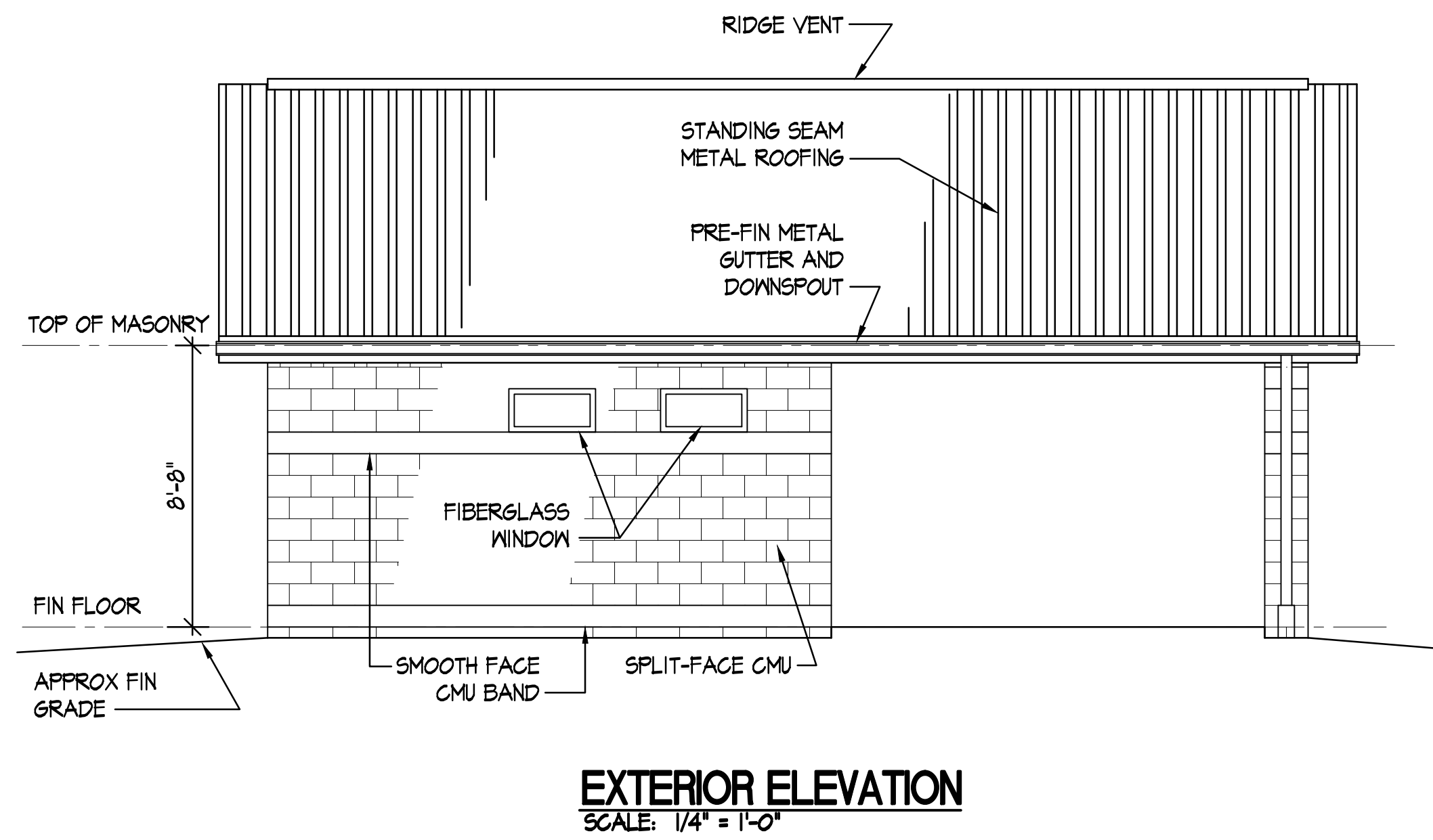
- COORDINATE LOCATIONS OF PLUMBING ROOF VENTS (VTR) WITH PLUMBING PLANS.

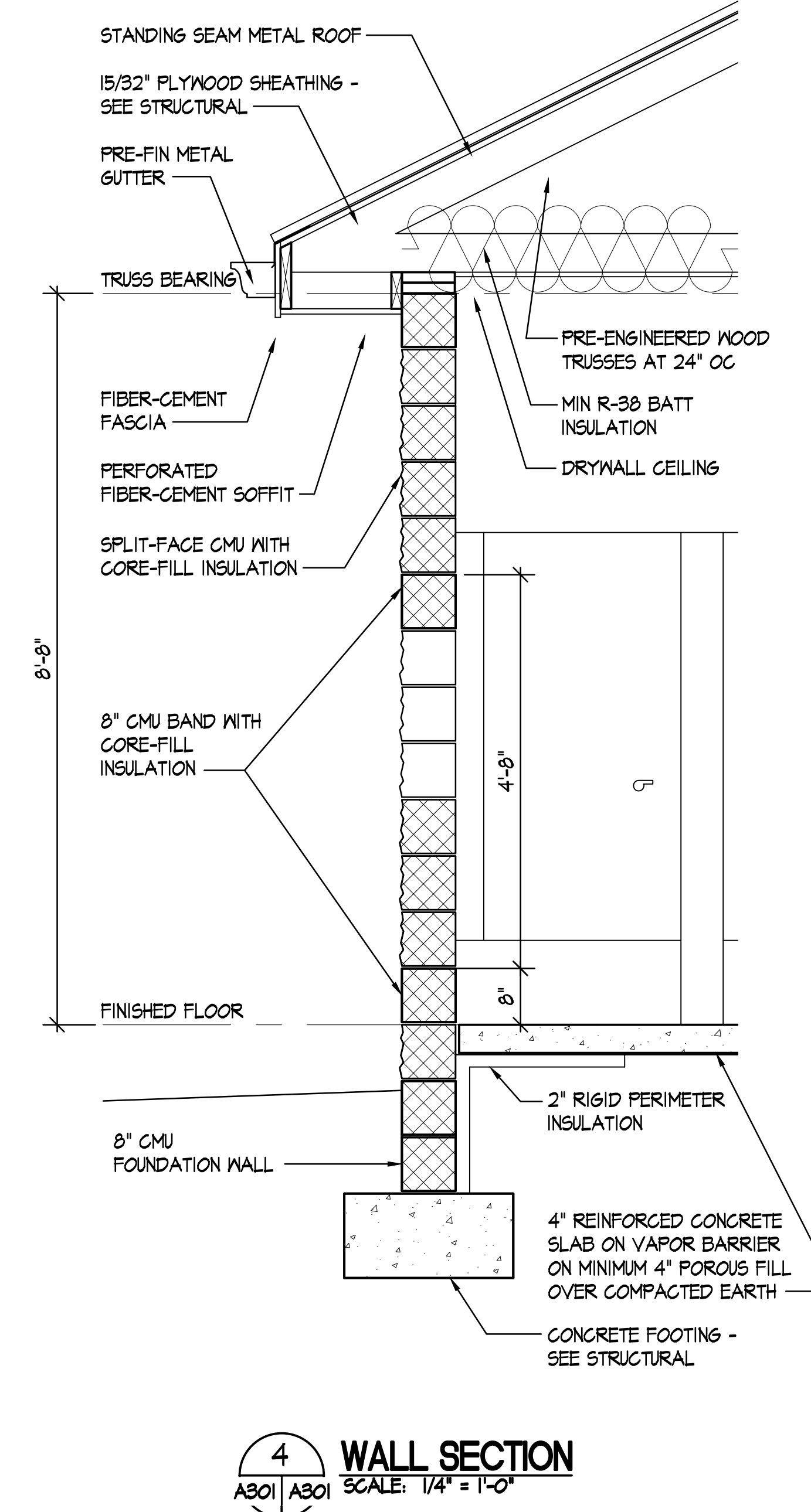
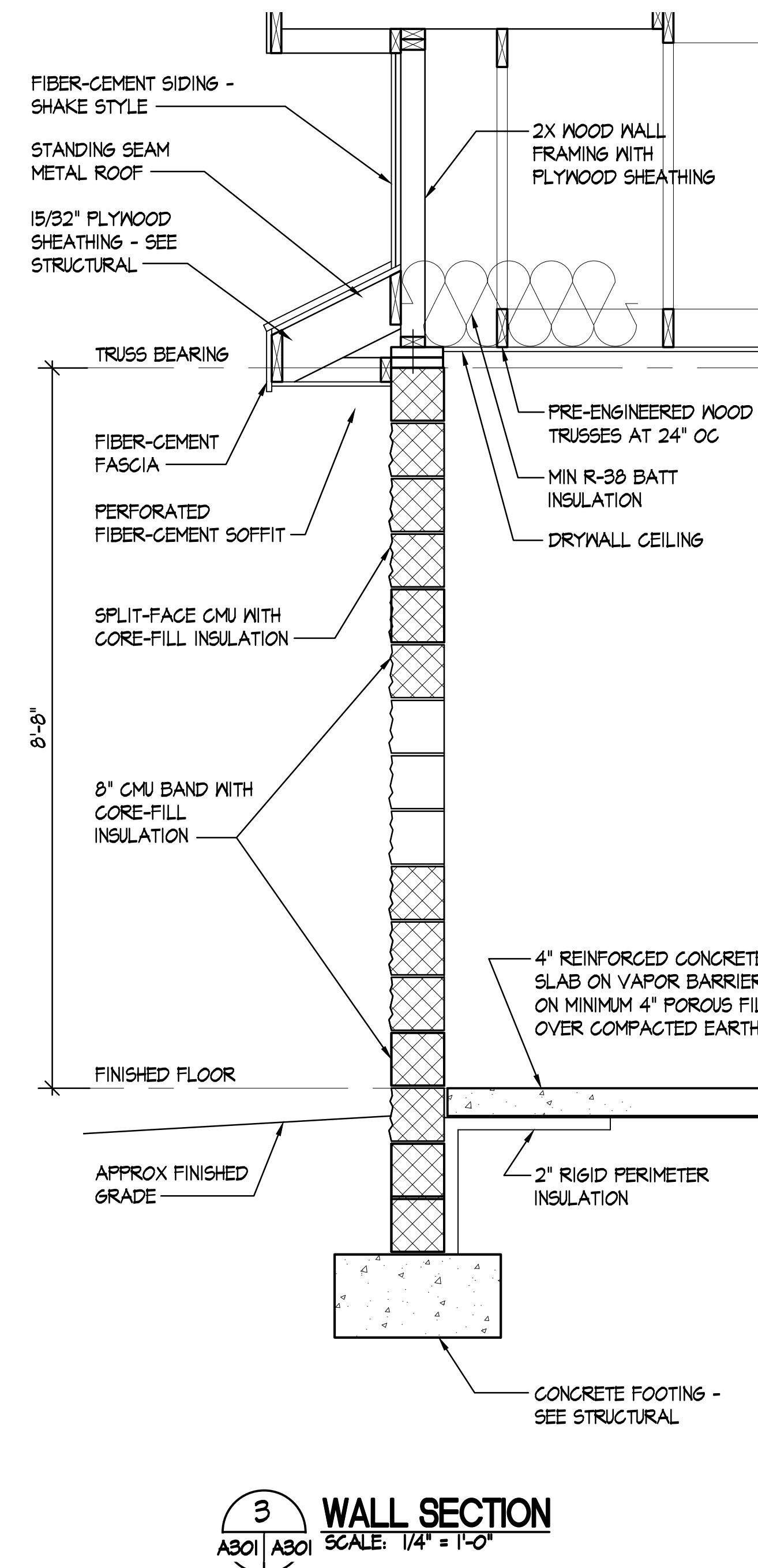
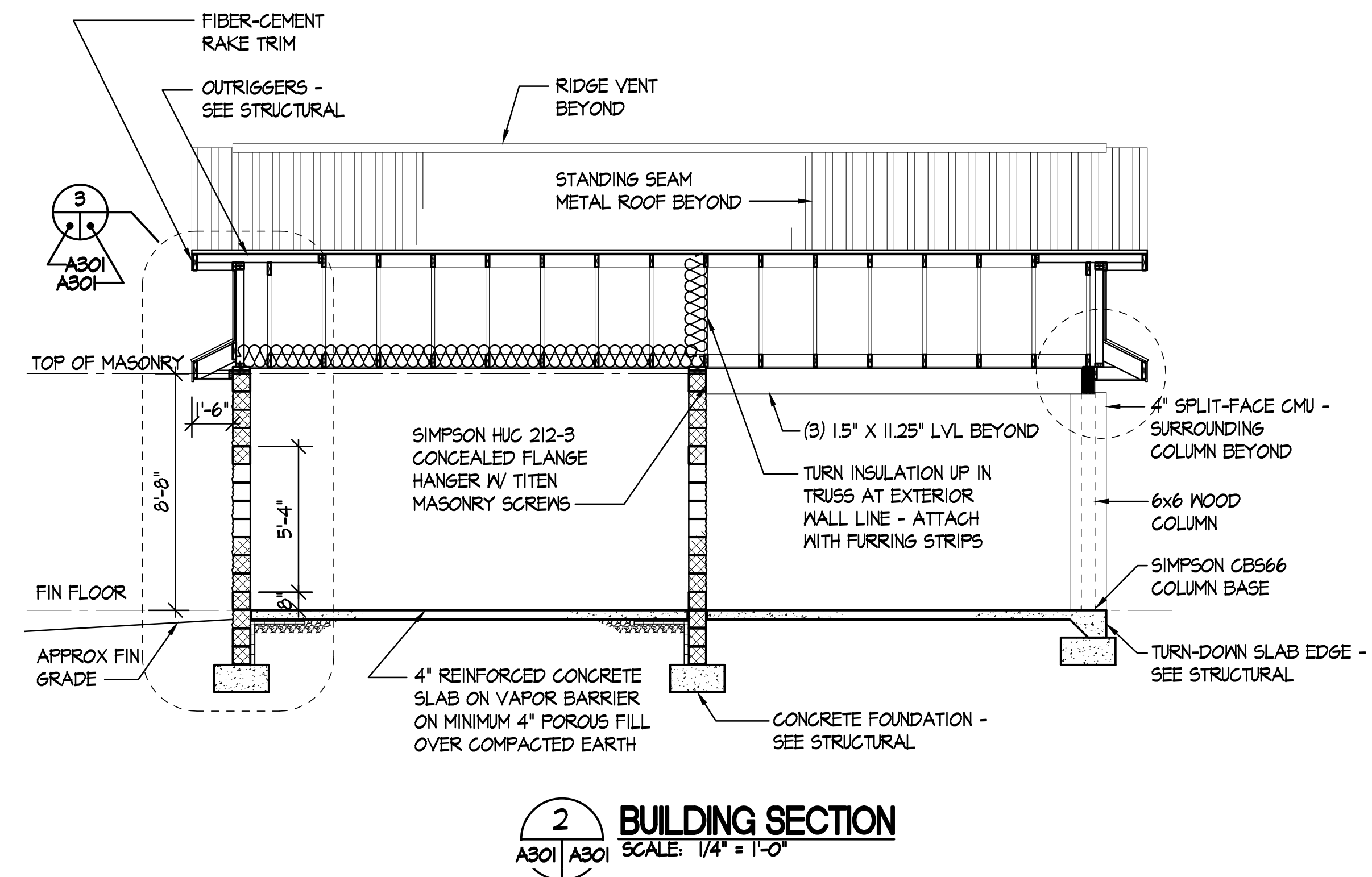
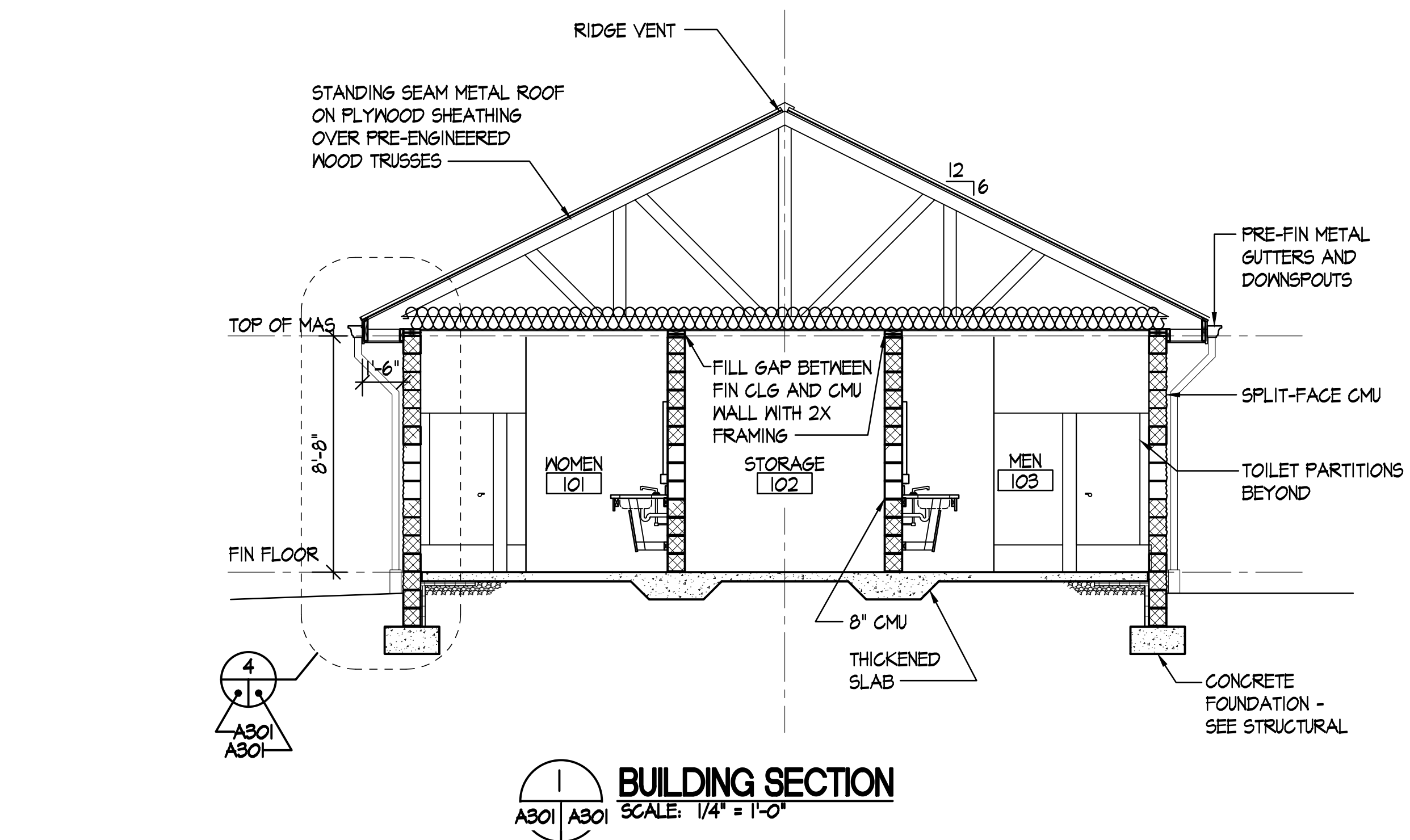


ROOF PLAN
SCALE: 1/4" = 1'-0"



A101 A301





STRUCTURAL NOTES:

BUILDING CODE

2012 VIRGINIA UNIFORM STATEWIDE BUILDING CODE
PART I - VIRGINIA CONSTRUCTION CODE
PART II - VIRGINIA REHABILITATION CODE
2012 INTERNATIONAL BUILDING CODE
ASCE T-10RISK CATEGORY
2012 IBC TABLE 1604.5.11

SLAB ON GRADE

SLAB-ON-GRADE IS NOT DESIGNED FOR CONCENTRATED LOADS SUCH AS RACKS OR FORK TRUCKS. 100 PSF

ROOF LIVE

MINIMUM UNIFORM DESIGN LOAD 20 PSF
MINIMUM CONCENTRATED LOAD (ALL PRIMARY ROOF MEMBERS) 300 LBS

SNOW

GROUND SNOW LOAD, P_g 25 PSF
FLAT ROOF SNOW LOAD, P_f 17.5 PSF
SNOW EXPOSURE FACTOR, C_e 1.0
THERMAL FACTOR, C_t 1.0
RAIN ON SNOW SURCHARGE 0.0 PSF

WIND

ULTIMATE DESIGN WIND SPEED, V_{ult} 115 MPH
NOMINAL DESIGN WIND SPEED, V_{asd} 84 MPH
WIND EXPOSURE CATEGORY B
INTERNAL PRESSURE COEFFICIENT, C_{pi} +/-0.18
COMPONENTS & CLADDING SEE CHART

Roof

Area	GCp +/- GCpi			Surface Pressure (psf)				
	10 sf	50 sf	100 sf	10 sf	50 sf	100 sf	250 sf	300 sf
Negative Zone 1	-1.08	-1.01	-0.98	-24.3 psf	-22.8 psf	-22.1 psf	-21.2 psf	-22.1 psf
Negative Zone 2	-1.88	-1.53	-1.38	-42.4 psf	-34.5 psf	-31.1 psf	-31.1 psf	-31.1 psf
Negative Zone 3	-2.78	-2.36	-2.18	-62.6 psf	-53.2 psf	-49.1 psf	-49.1 psf	-49.1 psf
Positive All Zones	0.68	0.54	0.48	16.0 psf	16.0 psf	16.0 psf	16.0 psf	16.0 psf
Overhang Zone 1&2	-2.20	-2.20	-2.20	-49.6 psf	-49.6 psf	-49.6 psf	-49.6 psf	-49.6 psf
Overhang Zone 3	-3.70	-2.86	-2.50	-83.4 psf	-64.5 psf	-56.3 psf	-56.3 psf	-56.3 psf
a = 3 ft								

Walls

Area	GCp +/- GCpi			Surface Pressure (psf)				
	10 sf	100 sf	500 sf	10 sf	50 sf	100 sf	250 sf	500 sf
Negative Zone 4	-1.28	-1.10	-0.98	-28.8 psf	-26.1 psf	-24.9 psf	-23.3 psf	-22.1 psf
Negative Zone 5	-1.58	-1.23	-0.98	-35.6 psf	-30.0 psf	-27.6 psf	-24.5 psf	-22.1 psf
Positive Zone 4 & 5	1.18	1.00	0.88	26.6 psf	23.8 psf	22.6 psf	21.0 psf	19.8 psf

SEISMIC

SEISMIC IMPORTANCE FACTOR, I_e 1.0
MAFFED SPECTRAL RESPONSE, S_s 24.40%
MAFFED SPECTRAL RESPONSE, S_1 9.10%
SITE CLASS D
SPECTRAL RESPONSE COEFFICIENT, S_{ds} 26.00%
SPECTRAL RESPONSE COEFFICIENT, S_{d1} 14.60%
SEISMIC DESIGN CATEGORY C
SEISMIC-FORCE RESISTING SYSTEM ASCE 7 - TABLE 12.2-1

ORDINARY REINFORCED MASONRY SHEAR WALLS

SEISMIC RESPONSE COEFFICIENT, C_s 0.13
SEISMIC MODIFICATION FACTOR, R 2.0
ANALYSIS PROCEDURE EQ. LATERAL FORCE
DESIGN BASE SHEAR 7 KIPS

- A. STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH ARCHITECTURAL, CIVIL, MECHANICAL, PLUMBING AND ELECTRICAL DRAWINGS AND SPECIFICATIONS.
- B. CONTRACTOR SHALL VERIFY THE REQUIREMENT OF OTHER TRADES FOR SLEEVES, CHASES, HANGERS, INSERTS, ANCHORS, HOLES AND ADDITIONAL ITEMS TO BE PLACED OR SET SIMULTANEOUS WITH STRUCTURAL WORK.
- C. DETAILS SHOWN ARE TYPICAL AND APPLY TO SIMILAR OR LIKE CONDITIONS.
- D. DO NOT SCALE DRAWINGS, FOLLOW DIMENSIONS ON PLANS.
- E. DO NOT CHANGE THE SIZE, LENGTH OR SPACING OF STRUCTURAL ELEMENTS WITHOUT APPROVAL OF STRUCTURAL ENGINEER.
- F. DESIGN, ADEQUACY, AND SAFETY OF ERECTION BRACING, SHORING AND TEMPORARY SUPPORTS IS THE SOLE RESPONSIBILITY OF CONTRACTOR. CONTRACTOR IS RESPONSIBLE FOR COMPLYING WITH OSHA SAFETY REGULATIONS.
- G. CONTRACTOR SHALL VERIFY FLOOR AND ROOF MOUNTED MECHANICAL EQUIPMENT WEIGHTS, FLOOR AND/OR ROOF OPENINGS SIZES AND LOCATIONS, AND SIZES OF EQUIPMENT PADS, WITH ARCHITECTURAL AND MECHANICAL DRAWINGS AND SUPPLIERS. NOTIFY ENGINEER IF LOADS ARE HIGHER THAN THOSE SHOWN.
- H. CONTRACTOR SHALL VERIFY EXISTING CONDITIONS INCLUDING DIMENSIONS TO GRADES, UTILITIES, FRAMING, FOUNDATIONS AND HIDDEN CONDITIONS AND COORDINATE THESE CONDITIONS WITH THE CONTRACT DOCUMENTS. NOTIFY THE ARCHITECT AND ENGINEER OF EXISTING CONDITIONS THAT ARE NOT AS SHOWN.

EARTHWORK FOR STRUCTURES NOTES:

- A. SUBGRADES AND COMPACTED FILL SHALL BE OBSERVED BY A GEOTECHNICAL ENGINEER REGISTERED AS A PROFESSIONAL ENGINEER IN THE COMMONWEALTH OF VIRGINIA TO VERIFY CONFORMANCE. GEOTECHNICAL ENGINEER TO EVALUATE NEED FOR PROOF ROLLING OPERATIONS UPON EXPOSURE OF SUBGRADES. WEAK OR DISTURBED SOILS EXPOSED DURING ANY PROOF ROLLING TO BE REMOVED AND REPLACED WITH COMPACTED FILL AT GEOTECHNICAL ENGINEER'S DIRECTION.
- B. SOIL DESIGN PARAMETERS:
- | | |
|------------------------------------|----------|
| 1. MIN. ALLOWABLE BEARING PRESSURE | 2000 PSF |
| 2. UNIT WEIGHT OF SOIL | 110 PCF |
| 3. MODULUS OF SUBGRADE REACTION | 150 PCF |
- C. SLAB-ON-GRADE PREPARATION:
1. INTERIOR SLABS:
- a. UNDERLAIN BY 4 INCHES (MIN) NO. 57 CRUSHED STONE
- b. INTERIOR SLABS SHALL BE UNDERLAIN BY (10)-MIL (MIN) ASTM 1745 PLASTIC VAPOR RETARDER (ON TOP OF STONE)
2. EXTERIOR SLABS:
- a. UNDERLAIN BY MINIMUM 6 INCHES THICK NO. 57 CRUSHED STONE
- D. COMPACTED FILL/BACKFILL:
1. PERFORM DENSITY AND MOISTURE TESTING: MINIMUM OF ONE FIELD DENSITY TEST PER 2500 SQ FT PER LIFT PLACED (MINIMUM OF ONE TEST PER LIFT)
2. PLACED IN LOOSE LIFTS NOT EXCEEDING 8 INCHES IN THICKNESS FOR GENERAL BACKFILL/FILL, 4 INCHES IN THICKNESS USING LIGHT WEIGHT EQUIPMENT (LESS THAN 3000-LBS).
3. COMPACTED TO AT LEAST 95 PERCENT MAXIMUM DRY DENSITY PER ASTM D-698, STANDARD PROCTOR.
4. CONSIST OF MATERIALS CLASSIFYING AS ONE OF THE FOLLOWING:
- a. SC, SM, SP, SW, GC, GM, GP OR GW PER ASTM D-2487
- b. COMPACTED VDOT NO. 21A DENSE GRADED CRUSHED STONE (CRUSHER RUN)
- c. FLOWABLE FILL - 200 PSI MIN. COMPRESSIVE STRENGTH
5. MOISTURE CONTENT WITHIN (3) PERCENT OF OPTIMUM
6. SHALL BE FREE OF BOULDERS, ORGANICS, TRASH, PARTICLES OF 3 INCHES OR MORE IN DIAMETER, AND OTHER DELETERIOUS MATERIAL
7. PLASTICITY INDEX LESS THAN 20
8. USE ONLY MECHANICAL HAND TAMPS AND/OR SMALL VIBRATORY COMPACTORS/ROLLERS, NOT EXCEEDING 3000 POUNDS STATIC WEIGHT, WHEN CLOSER TO BELOW GRADE WALLS THAN A DISTANCE EQUAL TO THE HEIGHT OF THE BACKFILL ABOVE THE TOP OF THE FOUNDATIONS (1:1 SLOPE)
9. SUBGRADES REQUIRING UNDERCUTTING SHALL BE FILLED WITH COMPACTED FILL AS DESCRIBED ABOVE TO THE ORIGINAL DESIGN SUBGRADE ELEVATION.
- E. UNSUITABLE, LOOSE OR SOFT SOIL SHALL BE REMOVED FROM THE EXCAVATION PRIOR TO PLACING FILL, STONE OR CONCRETE. DISTURBED, UNSUITABLE, OR EXCAVATED MATERIAL OCCURRING BELOW 45 DEGREES FROM HORIZONTAL BEGINNING AT THE BOTTOM MOST OUTER EDGE OF WALLS OR FOUNDATIONS SHALL BE REPLACED WITH COMPACTED FILL.
- F. EXCAVATIONS SHALL BE BRACED OR SLOPED IN ACCORDANCE WITH CURRENT OSHA REGULATIONS. THE CONTRACTOR SHALL STAGE HIS CONSTRUCTION SEQUENCE SO AS NOT TO UNDERMINE (AN ADJACENT BUILDING, PREVIOUSLY CAST FOUNDATION, SLOPE OR OTHER STRUCTURE) DURING THE CONSTRUCTION PROGRESS.
- G. BLASTING IS NOT PERMITTED.
- H. IF ROCK OR DISINTEGRATED ROCK IS ENCOUNTERED AT FOUNDATION DESIGN SUBGRADE ELEVATION, UNDERCUT THIS MATERIAL ONE FOOT MINIMUM AND REPLACE WITH COMPACTED FILL.
- I. EVIDENCE OF KARST ACTIVITY OR SINKHOLES SHALL BE BROUGHT TO THE ATTENTION OF THE STRUCTURAL ENGINEER PRIOR TO PROCEEDING.
- J. SLOPE EXCAVATIONS, INSTALL SMALES AND/OR Dewatering PUMPS TO MAINTAIN DRY SOIL CONDITIONS AND PREVENT STANDING WATER IN EXCAVATIONS FOR FOOTINGS AND SLABS.

CONCRETE AND REINFORCEMENT NOTES:

- A. CONCRETE WORK SHALL BE IN FULL ACCORDANCE WITH:
- AMERICAN CONCRETE INSTITUTE (ACI) 301, 315, AND 318
- CONCRETE REINFORCING STEEL INSTITUTE (CRSI) RECOMMENDED PRACTICE OF PLACING REINFORCING BARS
- ACI 117 FOR PLACEMENT TOLERANCES (CONCRETE AND REINFORCEMENT)
- ACI 302.1 CONCRETE FLOOR AND SLAB CONSTRUCTION
- ACI 306 AND ACI 305 COLD/HOT WEATHER CONCRETING
- ACI 308.1 FOR CURING OF CONCRETE
- ACI 304R-05 GUIDE FOR CONSOLIDATION OF CONCRETE
- ACI 347-04 (CHAPTER 5) GUIDE TO FORMWORK FOR CONCRETE
- ACI "MANUAL OF STANDARD PRACTICES FOR DETAILING REINFORCED CONCRETE STRUCTURES".
- B. GENERAL CONCRETE SHALL BE:

LOCATION	WEIGHT	STRENGTH (PSI)	AIR (%)	SLUMP (IN) (+/- 1/2)	MAX W/C RATIO
FOUNDATIONS	NW	3000	N/A	5	0.50
SLAB ON GRADE (W FIBROUS)	NW	3000	<3	4	0.45
EXTERIOR SLAB ON GRADE (W FIBROUS)	NW	4000	4-6	4	0.45
MISCELLANEOUS	NW	3000	N/A	4	0.50

FIELD SAMPLING SHALL BE OBTAINED FROM MIDDLE OF BATCH

1. NORMAL WEIGHT (NW) CONCRETE SHALL BE 145 - 150 PCF
2. SLUMPS ABOVE ARE PRIOR TO ADDITION OF PLASTICIZERS OR MID RANGE WATER REDUCER. MAXIMUM SLUMP AFTER APPROVED ADDITIVES SHALL BE 8 INCHES.

3. MATERIALS:
- CEMENT: ASTM C 150 TYPE I/II
- FLY ASH: ASTM C618 CLASS C OR F, 20% MAX.
- AGGREGATE: ASTM C33, GRADED, 1-1/2 INCH MAX.
4. FIBROUS REINFORCEMENT (CRACK CONTROL):
- ASTM C 1116 TYPE III AND ASTM C1018 PERFORMANCE LEVEL 1 IS
- 100 PERCENT VIRGIN POLYPROPYLENE, FIBRILLATED FIBERS
- MINIMUM VOLUME PER CUBIC YARD OF 0.1 PERCENT (1.5 POUNDS)
- WHEN INDICATED, FIBER SHALL BE IN ADDITION TO STEEL REINFORCEMENT.

C. SLABS GENERAL

1. CEMENTITIOUS MATERIAL CONTENT IN ACCORDANCE WITH TABLE 6.2 OF ACI 302.1.
2. MODULUS OF RUPTURE (MOR) PER ASTM C 446:
- 3000 PSI MIX - 492 PSI
- 4000 PSI MIX - 569 PSI
3. MORTAR FRACTION (VOLUME PERCENTAGE OF CEMENTITIOUS MATERIALS, AGGREGATE, WATER AND AIR THAT PASS THE NO. 8 SIEVE) SHALL BE 53 TO 57 PERCENT.
4. USE BOND BREAK ALONG FOUNDATION WALLS, AROUND COLUMNS AND OTHER ITEMS THE SLAB IS CAST AGAINST.
5. FLOOR FLATNESS:
- a. PER ACI 302
- D. SLAB CONTROL JOINTS:
1. CUT IN ACCORDANCE WITH ACI 302.1R
2. CUT AS SOON AS POSSIBLE, BUT IN NO CASE MORE THAN 4 HOURS OF SLAB PLACEMENT
3. USE OF EARLY ACCESS SAW
4. LENGTH TO WIDTH RATIOS OF PATTERN SHALL NOT EXCEED 1.25
5. JOINTS SHOWN ON THE PLANS ARE GUIDELINES. CONTRACTOR SHALL SUBMIT PLAN OF JOINT LOCATIONS AND PROPOSED INSTALLATION.

E. REINFORCING:

1. ASTM A615, GRADE 60 FOR DEFORMED BARS
2. ASTM A185, FOR FLAT SHEET WELDED WIRE FABRIC
3. ASTM A496, FOR DEFORMED BAR ANCHORS
4. DEVELOPMENT LENGTH FOR REINFORCEMENT(d_b = BAR DIAMETER):

STRENGTH	DEVELOPMENT LENGTH, LD		
	#6 AND SMALLER	#7 AND LARGER	HOOK, LDH
3000 PSI	44 d_b	55 d_b	22 d_b
4000 PSI	38 d_b	47 d_b	19 d_b

5. DEVELOPMENT LENGTH NOT LESS THAN 12 INCHES. HOOK DEVELOPMENT LENGTH NOT LESS THAN 6 INCHES. DEVELOPMENT LENGTH TOP BAR REINFORCING: ABOVE MULTIPLIED BY 1.3. CLASS B TENSION LAPS: ABOVE MULTIPLIED BY 1.3.
6. SPLICES SHALL BE CLASS B TENSION SPLICES UNLESS NOTED. WELDED WIRE FABRIC SHALL HAVE A MINIMUM LAP OF 6 INCHES. MECHANICAL OR WELDED SPLICES SHALL DEVELOP 125% OF THE BAR YIELD STRENGTH.
7. CONCRETE CLEAR COVER SHALL BE (UNLESS NOTED OTHERWISE):
- BELOW GRADE (UNFORMED) 3"
- BELOW GRADE (FORMED) 2"
- EXPOSED TO WEATHER OR WATER 2"
8. PROVIDE DOWELS IN FOUNDATIONS TO MATCH THE SIZE AND QUANTITY AS VERTICAL WALL, PIER OR COLUMN REINFORCEMENT.
9. PROVIDE CORNER BARS AT CORNERS AND INTERSECTING WALLS.
10. PROVIDE (2) #4 X 3'-0" LONG AT ALL SLAB RE-ENTRANT CORNERS

H. CONCRETE FINISHES:

1. COORDINATE FLOOR SLAB LAYOUT WITH ARCHITECTURAL DRAWINGS FOR EXACT LIMITS, EXTENT OF DEPRESSIONS AND FINISHES.
2. EXTERIOR SIDEWALKS, RAMPS, STEPS AND PLATFORMS SHALL RECEIVE A NONSLIP BROOM FINISH
3. PROVIDE 1-INCH CHAMFER AT EXPOSED CONCRETE CORNERS

- I. REINFORCING STEEL AND EMBEDDED ITEMS SHALL BE ACCURATELY PLACED IN THE POSITIONS SHOWN, TIED AND SUPPORTED BEFORE CONCRETE IS PLACED TO PREVENT DISPLACEMENT BEYOND PERMITTED TOLERANCES.

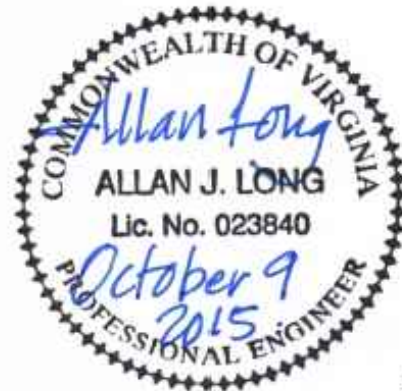
- J. WHEN APPROVED BY STRUCTURAL ENGINEER PRIOR TO INSTALLATION, EPOXY GROUTING OF DEFORMED BAR DOWELS OR ANCHOR RODS INTO EXISTING OR HARDENED CONCRETE SHALL BE INSTALLED ACCORDING TO EPOXY MANUFACTURERS RECOMMENDATION TO PROVIDE FULL DEVELOPMENT OF THE BAR OR BOLT FOR THE SPECIFIC CONCRETE STRENGTH AT POINT OF ATTACHMENT.
1. APPLY LOADS ONLY AFTER EPOXY HAS REACHED FULL STRENGTH.
2. ALL PARTS OF ANCHORING SYSTEM (RODS, NUTS, WASHERS, BITS, EPOXY, ETC.) SHALL BE FROM A SINGLE SUPPLIER.
3. WORK MUST BE PERFORMED BY ACI CERTIFIED EPOXY ANCHOR INSTALLER.

CONCRETE MASONRY NOTES:

- A. MASONRY CONSTRUCTION SHALL BE IN FULL CONFORMANCE WITH:
1. AMERICAN CONCRETE INSTITUTE (ACI) 530.1/AMERICAN SOCIETY OF CIVIL ENGINEERS (ASCE) 6/ THE MASONRY SOCIETY (TMS) 602 "SPECIFICATION FOR MASONRY STRUCTURES" - ALLOWABLE STRESS DESIGN
2. ACI 530.1 FOR PLACEMENT TOLERANCES FOR MASONRY & REINFORCEMENT
3. ACI 530.1 FOR COLD/HOT WEATHER METHODS
4. ACI "MANUAL OF STANDARD PRACTICES FOR DETAILING REINFORCED CONCRETE STRUCTURES"
5. ASTM C91 @STANDARD SPECIFICATION FOR MASONRY CEMENT
- B. MASONRY UNITS:
1. ASTM C90 GRADE N TYPE II, NON-MOISTURE CONTROLLED
2. MINIMUM NET COMPRESSIVE STRENGTH:
- CONCRETE MASONRY UNITS: 1900 PSI NET AREA AT TIME OF DELIVERY
- MASONRY ASSEMBLAGE (f_m): 1500 PSI AT 28 DAYS

THE LANE GROUP

119 N. MAIN STREET
GALAX, VA 24333 | 776.238.4588
BIG STONE GAP, VA | ARLINGTON, VA | GALAX, VA



GRAYSON COUNTY
RESTROOM BUILDING
GRAYSON COUNTY RECREATION PARK
INDEPENDENCE, VIRGINIA

STRUCTURAL
NOTES

DATE: OCTOBER 9, 2015

NO.	REVISION

SHEET:

5001

- C. MASONRY CEMENT :
- TYPE S: MASONRY IN CONTACT WITH EARTH, BELOW GRADE, REINFORCED UNIT MASONRY, ALL EXTERIOR WALLS AND LOAD BEARING WALLS
 - TYPE N: INTERIOR NON-LOAD BEARING WALLS
- D. GROUT:
- ASTM C-476 FINE OR COURSE PER TABLE 7 OF ACI 530.1
 - MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 2000 PSI
 - BE CONSOLIDATED BY MECHANICAL VIBRATION
 - PLACED PER SECTION 3.5 OF ACI 530.1
- E. REINFORCING:
- ASTM A615, GRADE 60 FOR DEFORMED BARS
 - PROVIDE 9 GAGE LADDER TYPE JOINT REINFORCING AT 16" O.C. VERTICALLY, ABOVE AND BELOW EACH OPENING (EXTEND 24 INCHES PAST OPENING) IN MASONRY WALLS. INCORPORATE T'S AND EL'S AT CORNERS, SPLICE 8-INCHES
 - MINIMUM REINFORCEMENT, UNLESS NOTE OTHERWISE: VERTICAL (I) #4 VERTICAL BAR AT EACH CORNER, INTERSECTING WALLS, END OF WALLS, 10'-0" O.C. AND ALONG EACH SIDE OF OPENINGS AND CONTROL JOINTS
 - MAINTAIN REINFORCEMENT SPACING ABOVE AND BELOW OPENINGS
 - GROUT CELLS CONTAINING REINFORCEMENT FULL HEIGHT (AND ALL CELLS BELOW GRADE)
 - LOCATE VERTICAL REINFORCEMENT IN MIDDLE OF CELLS UNLESS NOTED OTHERWISE. USE REBAR POSITIONERS.
 - DEVELOPMENT LENGTH, SPLICES AND HOOKS, REFER TO SCHEDULE
 - PROVIDE DOWELS IN FOUNDATIONS/GLABS TO MATCH THE SIZE, QUANTITY AND SPACING OF VERTICAL REINFORCEMENT
 - SHOP DRAWINGS SHALL CLEARLY INDICATE REBAR PLACEMENT AND INCLUDE PLAN VIEWS, ELEVATIONS AND SECTIONS
- F. BRACING AND GENERAL CONSTRUCTION OF MASONRY WALLS:
- INSTALL AND MAINTAIN BRACING AND WARNINGS IN ACCORDANCE WITH BIA/LIUNA/MCAA/NCMA/PCA'S STANDARD PRACTICE FOR BRACING MASONRY WALLS UNDER CONSTRUCTION
- G. PIPES AND CONDUIT WITHIN MASONRY SHALL BE PLACED VERTICALLY WITHIN CELLS. HORIZONTAL RUNS OF CONDUIT WITHIN WALLS SHALL BE LIMITED TO THE SPACE BETWEEN THE VERTICAL REINFORCEMENT LOCATIONS. CONDUIT IS NOT TO INTERFERE WITH REINFORCEMENT OR GROUT PLACEMENT. SEE THE MECHANICAL AND/OR ELECTRICAL PORTION OF THE CONTRACT DOCUMENTS FOR LOCATION OF SLEEVES AND ACCESSORIES. REFER TO APPROPRIATE PENETRATION DETAILS.
- H. SEE PLANS FOR LINTEL SCHEDULES.
- I. MORTAR PLACEMENT: FULL BEDDING

PREFABRICATED WOOD TRUSS NOTES:

- A. DESIGN, DETAILING, FABRICATION AND ERECTION SHALL COMPLY WITH:
- TPI I, NATIONAL DESIGN STANDARD FOR METAL PLATE CONNECTED WOOD TRUSS CONSTRUCTION
 - TPI DSB, RECOMMENDED DESIGN SPECIFICATION FOR TEMPORARY BRACING OF METAL PLATE CONNECTED WOOD TRUSSES
 - TPI H1B, COMMENTARY AND RECOMMENDATIONS FOR HANDLING, INSTALLING AND BRACING METAL PLATE CONNECTED WOOD TRUSSES
 - TPI, QUALITY CONTROL MANUAL
 - AMERICAN INSTITUTE OF TIMBER CONSTRUCTION - TIMBER CONSTRUCTION STANDARDS
 - AMERICAN FOREST PRODUCTS ASSOCIATION - NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION AND SUPPLEMENT
 - NATIONAL DESIGN SPECIFICATION (NDS) FOR WOOD CONSTRUCTION WITH SUPPLEMENTS BY AMERICAN FOREST AND PAPER ASSOCIATION
- B. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS PREPARED BY A PROFESSIONAL ENGINEER REGISTERED IN THE COMMONWEALTH OF VIRGINIA WHICH INCLUDES DESIGN OF TRUSS, TRUSS CONNECTIONS, AND PROVIDES DESIGN LOADING AND REACTIONS APPLIED TO THE SUPPORTING STRUCTURE.
- FOUNDATION AND FRAMING DESIGN IS BASED UPON TRUSS LAYOUT INDICATED. IF ALTERNATE TRUSS LAYOUT IS PROPOSED, SHOP DRAWINGS MUST CLEARLY INDICATE THE REQUESTED VARIANCE, THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING SUPPORT POINTS AND FOUNDATION CHANGES AND ENGINEER RESERVES THE RIGHT TO CHARGE FOR FRAMING/FOUNDATION MODIFICATIONS.
- C. WOOD TRUSS FRAMING MATERIALS SHALL BE:
- MINIMUM NO. 2 GRADE SOUTHERN PINE PER AGENCY CERTIFIED BY ALSG
 - SURFACE DRY AT 19 PERCENT MAXIMUM MOISTURE CONTENT
 - METAL FRAMING ANCHORS AND ACCESSORIES:
 - GALVANIZED 660
 - ASTM A 653, OR HSLAS TYPE A OR B
 - BOLTS/NUTS: ASTM A307 / ASTM A563
 - LAG SCREWS: ANSI/ASME STANDARD B18.2.1
 - WOOD SCREWS: ASME B18.6.1
 - NAILS: ASTM F1667
- D. WOOD CONNECTORS
- ALL WOOD CONNECTORS TO BE MANUFACTURED BY SIMPSON STRONG TIE OR APPROVED EQUAL. TO BE CONSIDERED EQUAL, THE CONNECTOR MUST BE CONFIGURED SIMILAR AND HAVE THE SAME OVERALL STRUCTURAL QUALITIES AS THE SIMPSON EQUIVALENT MODEL.
 - WHERE CONNECTORS ARE TO BE USED AT MASONRY OR CONCRETE, USE SIMPSON TITEN SCREWS INSTEAD OF NAILS FOR CONNECTORS.
- E. TRUSS MANUFACTURER SHALL PROVIDE INFORMATION, HARDWARE AND ACCESSORIES REQUIRED FOR TRUSS BRACING AND CONNECTIONS. CONTRACTOR SHALL INSTALL TEMPORARY AND PERMANENT BRACING AND CONNECTORS AS REQUIRED.

STRUCTURAL WOOD NOTES:

- A. DESIGN, DETAILING, FABRICATION AND ERECTION SHALL COMPLY WITH:
- AMERICAN INSTITUTE OF TIMBER CONSTRUCTION - TIMBER CONSTRUCTION STANDARDS
 - AMERICAN FOREST PRODUCTS ASSOCIATION - NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION AND SUPPLEMENT
 - NATIONAL DESIGN SPECIFICATION (NDS) FOR WOOD CONSTRUCTION WITH SUPPLEMENTS BY AMERICAN FOREST AND PAPER ASSOCIATION

LAMINATED VENEER LUMBER (LVL)

- APA/EWS PRL-501 PERFORMANCE STANDARD FOR APA EWS LAMINATED VENEER LUMBER

PLYWOOD

- AMERICAN PLYWOOD ASSOCIATION (APA) STANDARDS

FASTENING

- TABLE 2304.9.1, 2012 BUILDING CODE

B. MATERIALS SHALL COMPLY WITH:

- MINIMUM NO. 2 GRADE SOUTHERN PINE PER AGENCY CERTIFIED BY ALSG
- SURFACE DRY AT 19 PERCENT MAXIMUM MOISTURE CONTENT
- STEEL PLATES: ASTM A36, WELDING ETOXX ELECTRODES
- BOLTS/NUTS: ASTM A307 / ASTM A563
- LAG SCREWS: ANSI/ASME STANDARD B18.2.1
- WOOD SCREWS: ASME B18.6.1 GALVANIZED
- NAILS: ASTM F1667 GALVANIZED
- FASTENERS FOR PRESSURE TREATED LUMBER: ASTM F 1667 STAINLESS STEEL
- PLYWOOD: APA RATED AS INDICATED

a. ROOF SHEATHING SHALL BE:

THICKNESS	15/32
SPAN RATING	24/0
GRADE STRESS LEVEL	S-3
SPECIES GROUP	4
EXPOSURE CLASSIFICATION	EXTERIOR
ATTACHMENT	8d NAILS AT 6 INCHES ON CENTER

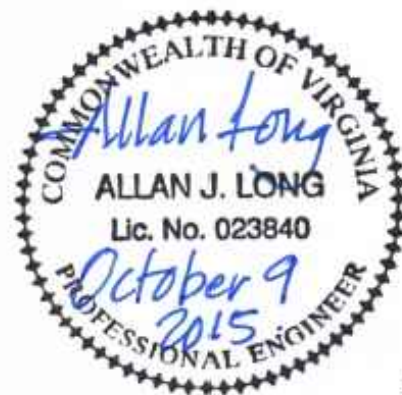
b. WHERE CONNECTORS ARE USED AT MASONRY OR CONCRETE, USE SIMPSON TITEN SCREWS INSTEAD OF NAILS FOR CONNECTORS, OR EQUAL

- C. PLYWOOD SHALL BE INSTALLED CONTINUOUS OVER TWO OR MORE SPANS WITH FACE GRAIN PERPENDICULAR TO SUPPORTS. ALL PANEL JOINTS SHALL OCCUR OVER FRAMING. PROVIDE EDGE SUPPORT WHERE INDICATED ON DRAWINGS OR AS RECOMMENDED BY APA.

D. PRESERVATIVE TREATMENT

- PER AMERICAN WOOD PRESERVERS' ASSOCIATION AWPA C2
- MINIMUM RETENSION OF PRESERVATIVE RETAINED:

ABOVE GROUND	0.25 PCF
--------------	----------
- KILN-DRY LUMBER AFTER PRESERVATIVE TREATMENT TO 19 PERCENT MAXIMUM MOISTURE CONTENT
- TREAT: EXPOSED WOOD MEMBERS, SILLS, CANTS, NAILERS, CURBS, EQUIPMENT BASE SUPPORTS, LEDGERS, MEMBERS IN CONTACT WITH MASONRY OR CONCRETE, EXTERIOR POSTS, MEMBERS THAT ARE LESS THAN 18 INCHES ABOVE GROUND, AND DECKING

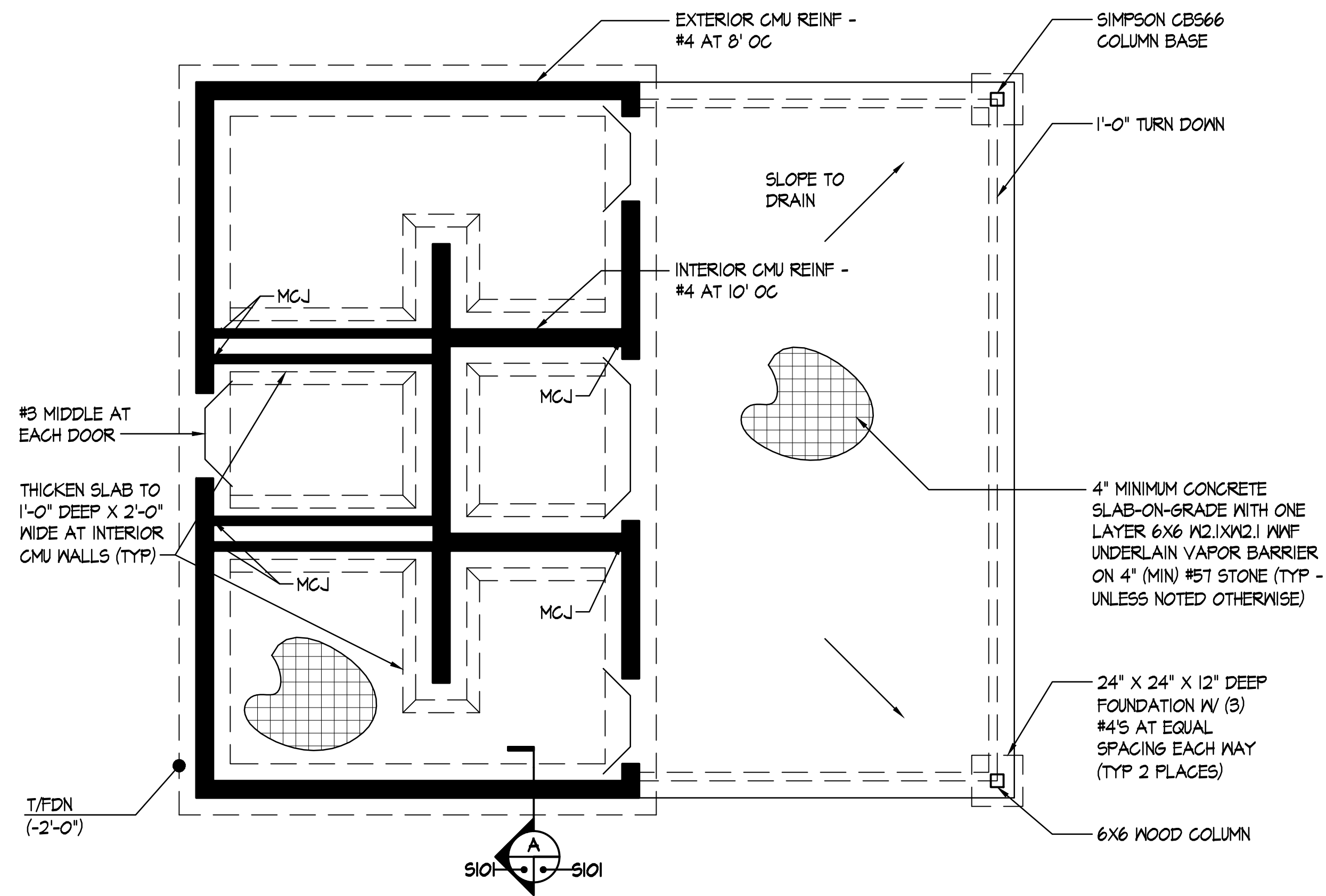


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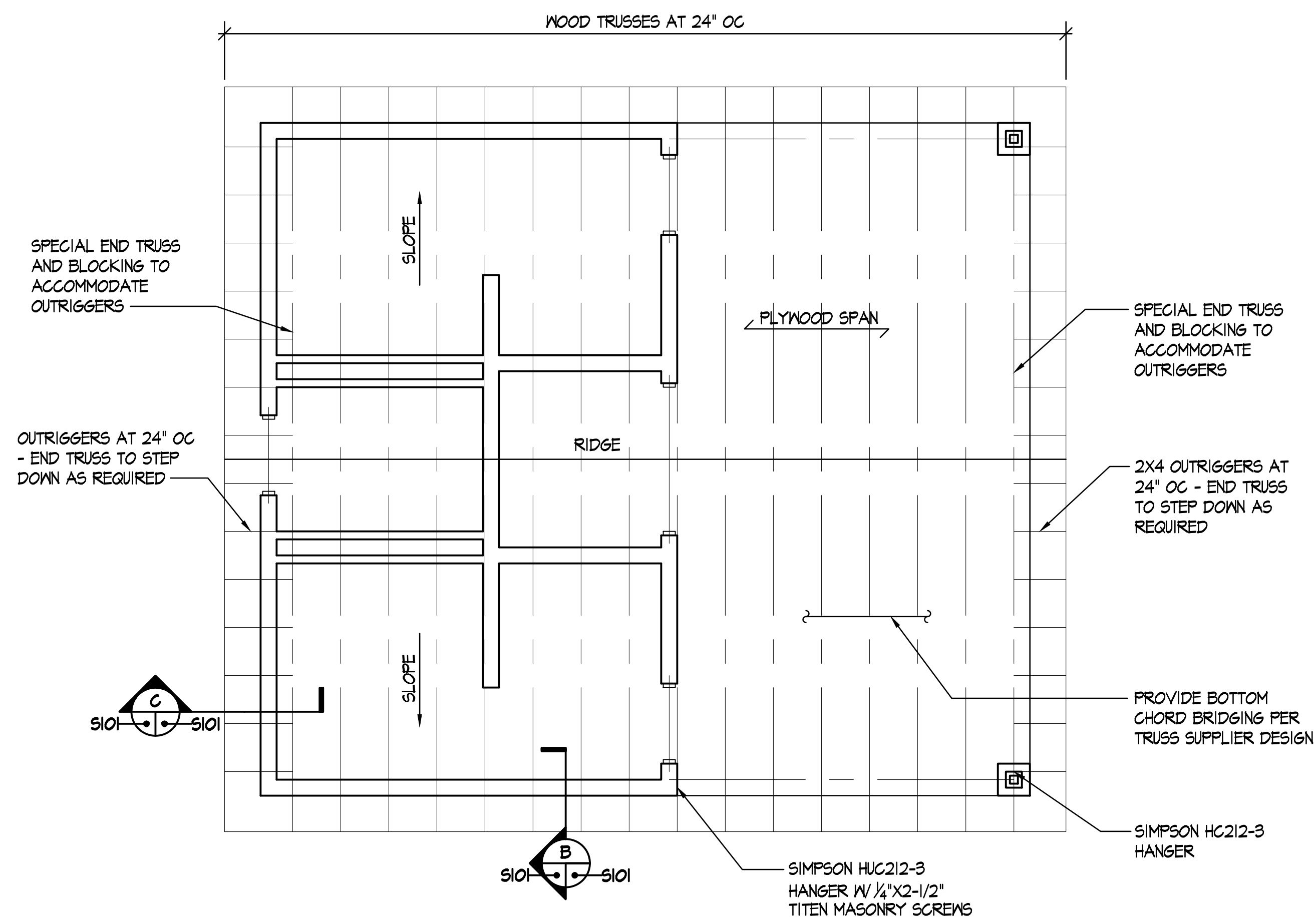
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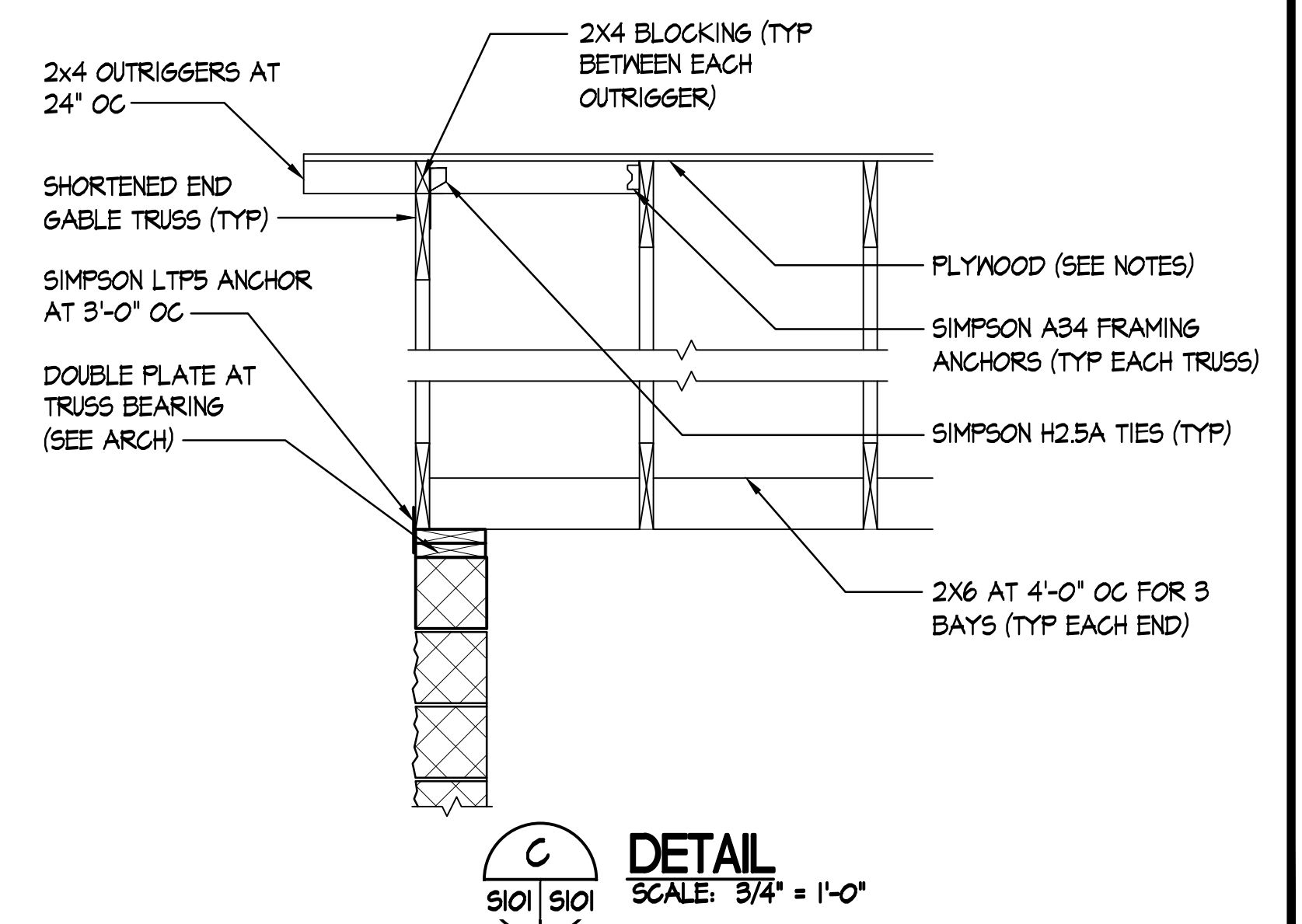
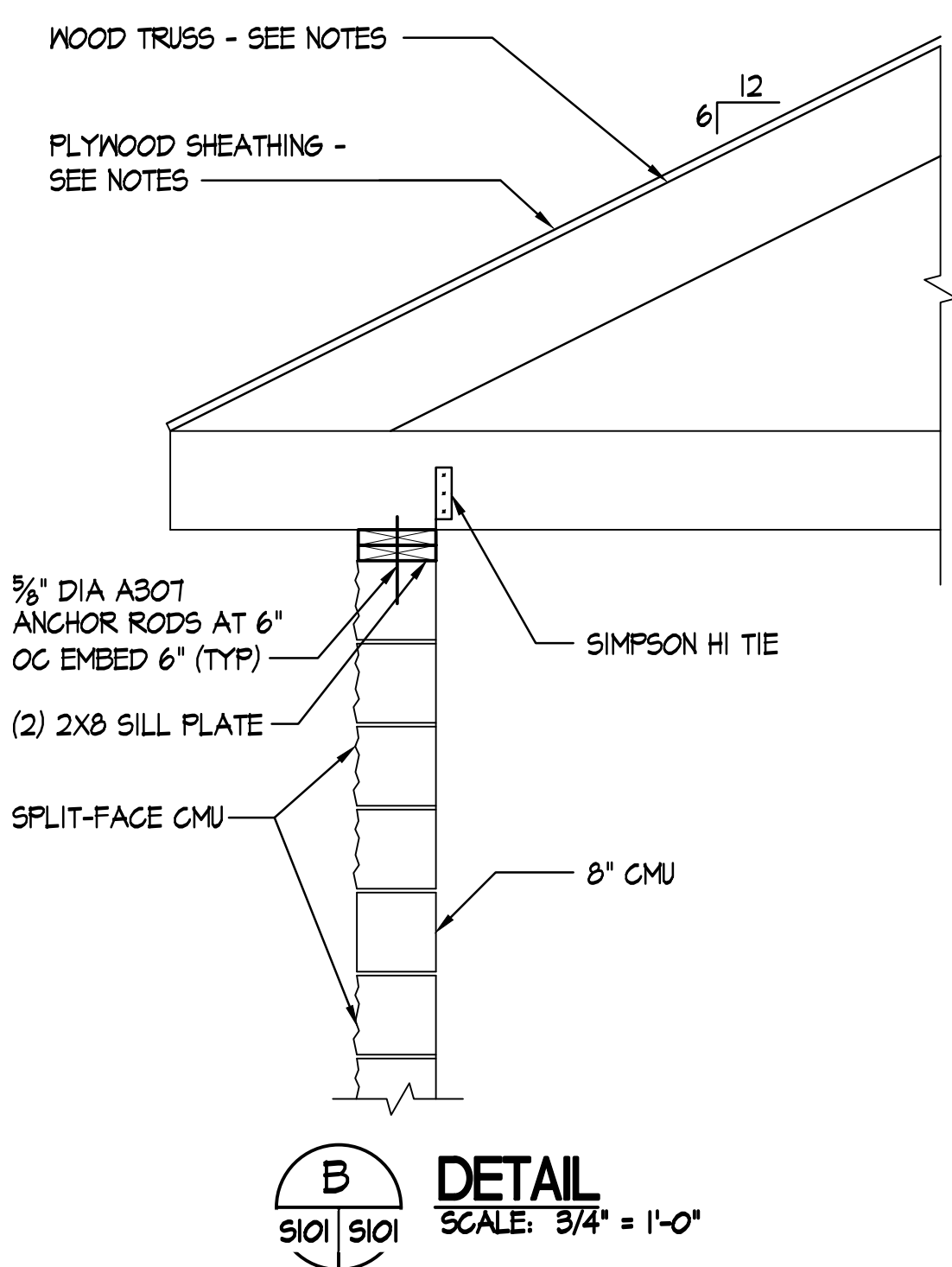
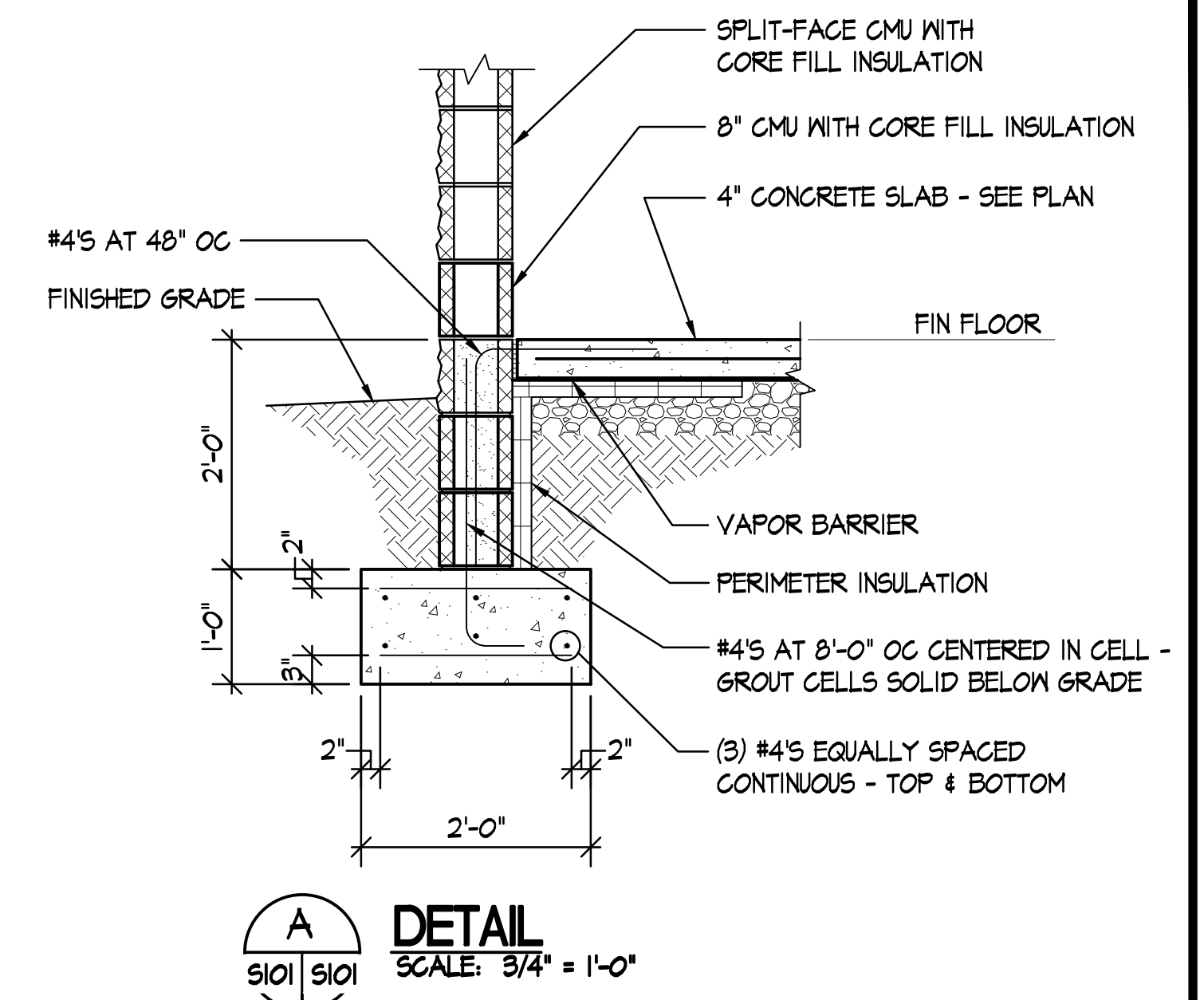
FOUNDATION PLAN
SCALE: 1/4" = 1'-0"

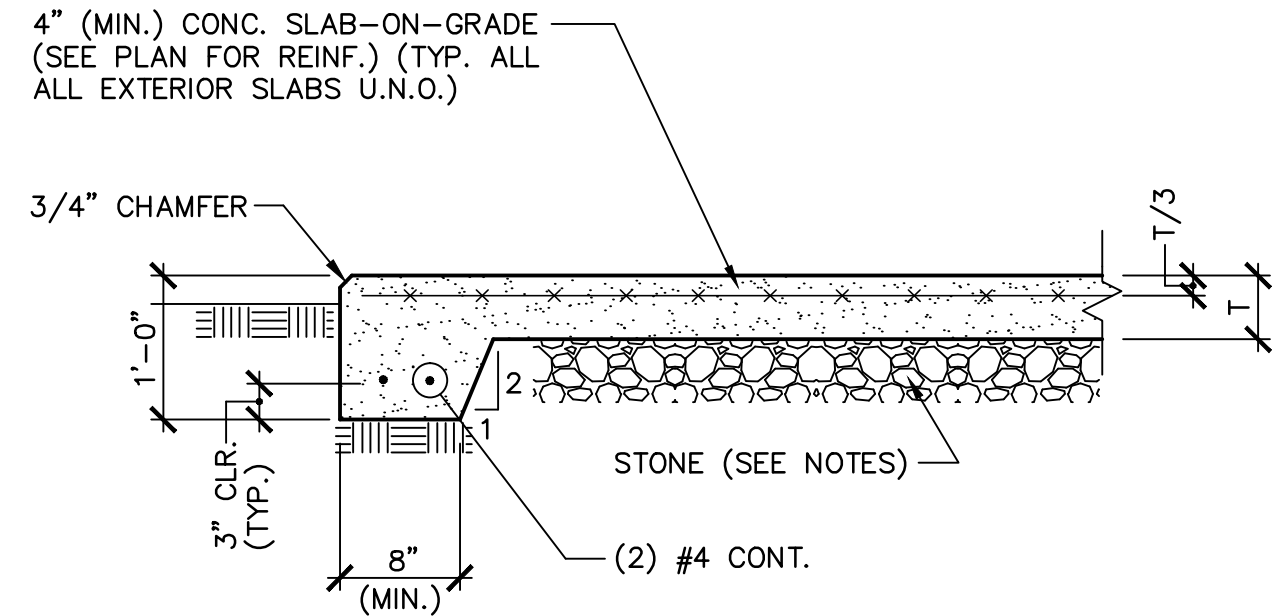
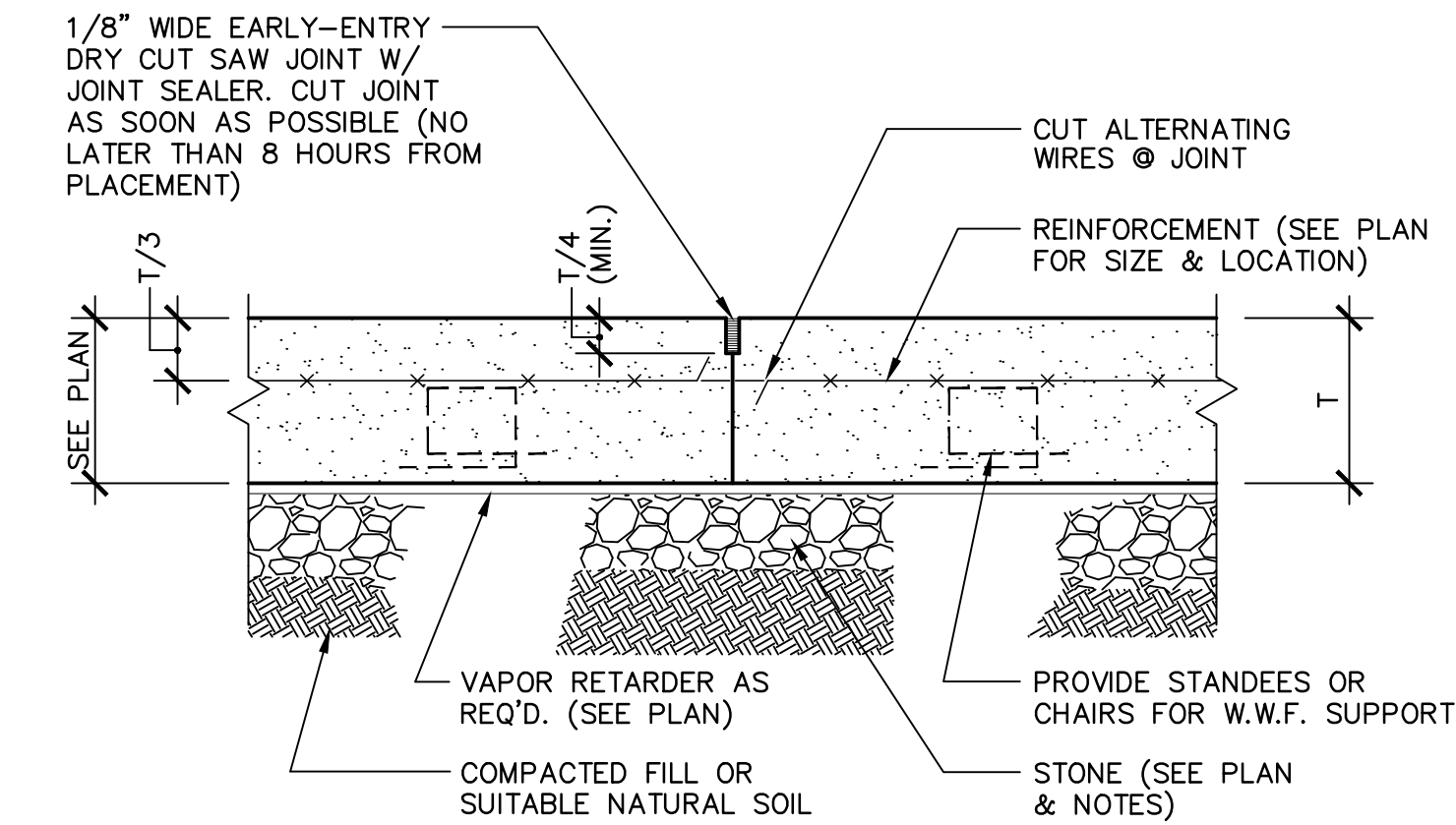
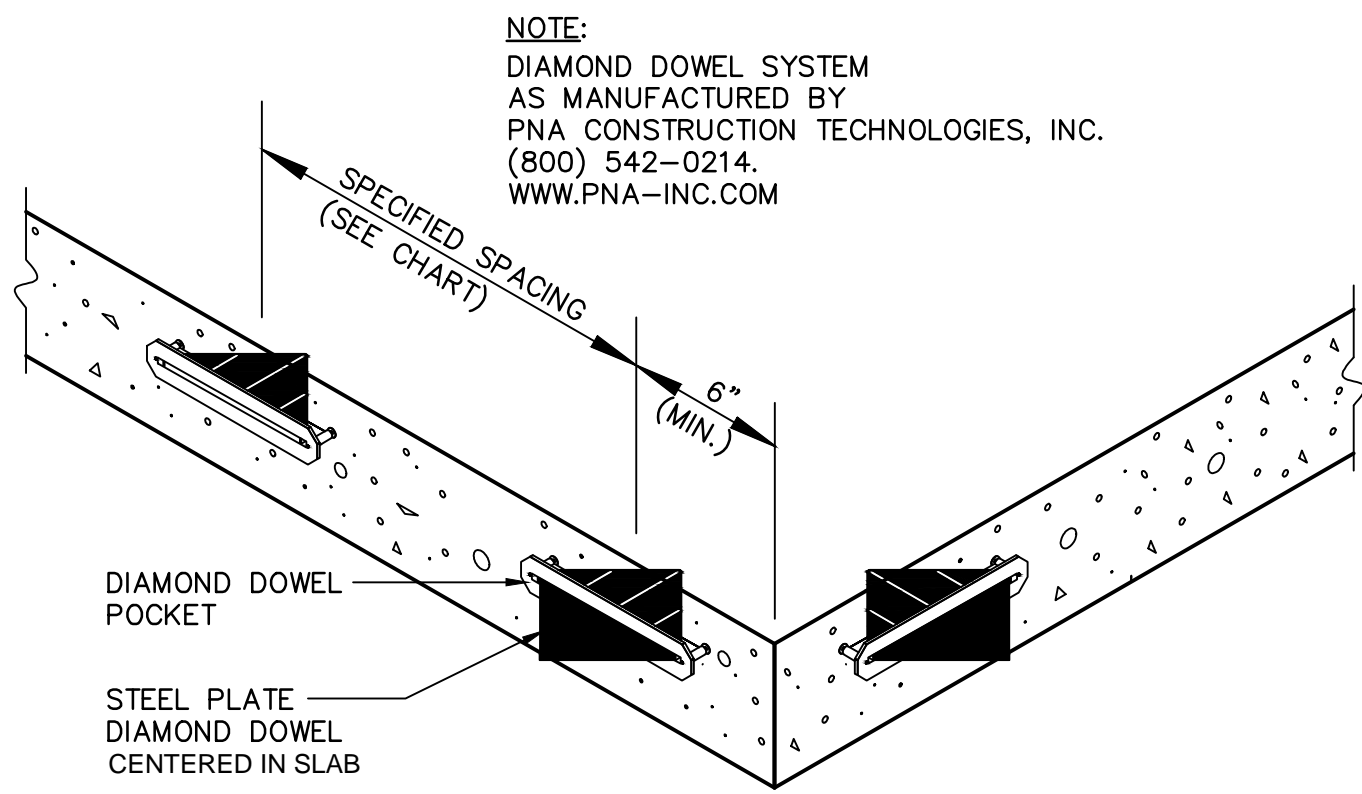
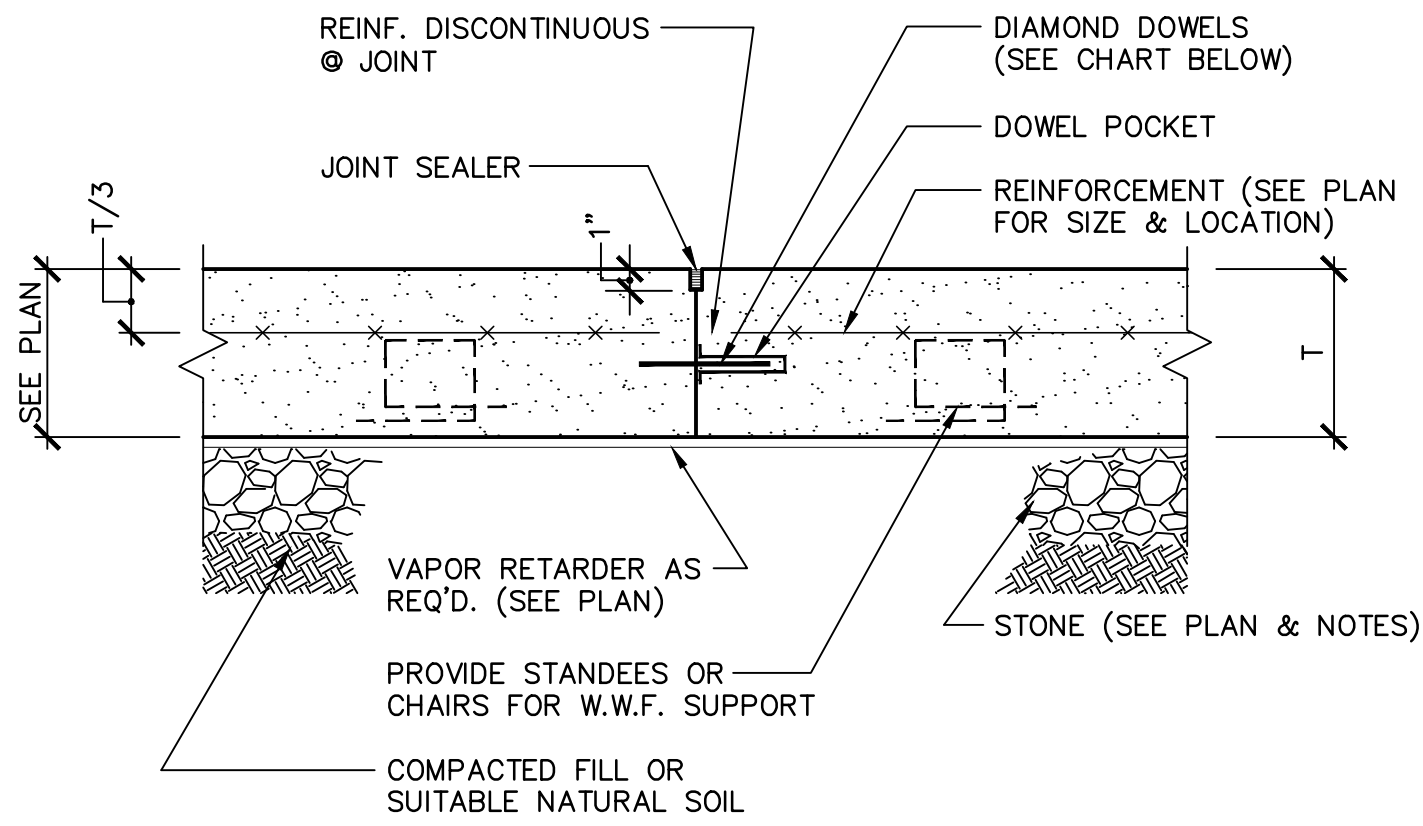
0 1 2 4 8 12 FT.



ROOF FRAMING PLAN
SCALE: 1/4" = 1'-0"

0 1 2 4 8 12 FT.





TYPICAL SLAB CONSTRUCTION JOINT (CSJ)

N.T.S.

DOWEL SIZE AND SPACING CHART		
SLAB THICKNESS (IN.) (T)	DIAMOND DOWEL DIMENSIONS (IN.)	DOWEL SPACING C/C (IN.)
4-6	1/4 x 4 1/2 x 4 1/2	18
7-8	3/8 x 4 1/2 x 4 1/2	18
9-11	3/4 x 4 1/2 x 4 1/2	20

(COORDINATE LOCATION WITH ARCHITECTURAL DRAWINGS AND FINISHES FOR APPEARANCE)

TYPICAL SLAB CONTRACTION JOINT (CTJ)

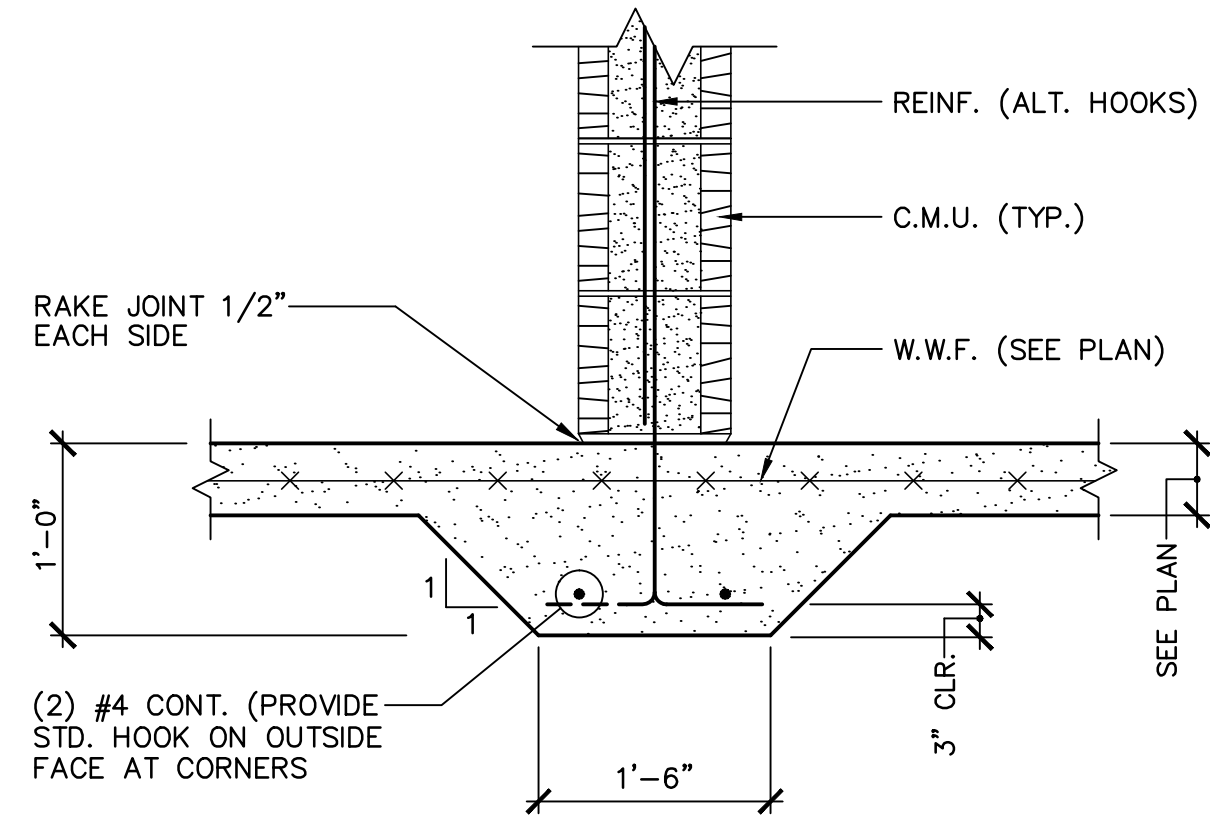
N.T.S.

(COORDINATE LOCATION WITH ARCHITECTURAL DRAWINGS AND FINISHES FOR APPEARANCE)

TYPICAL 12" SLAB TURN DOWN

N.T.S.

(SEE PLAN FOR LOCATION)



TYPICAL THICKENED SLAB DETAIL

N.T.S.

MASONRY LINTEL SCHEDULE

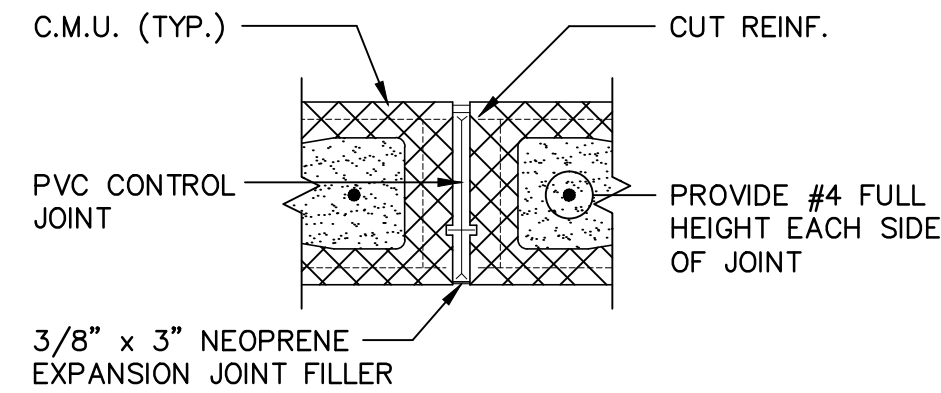
SPAN	8 INCH CONCRETE MASONRY UNITS (CMU)
UP TO 5'-0"	<p>GROUT</p> <p>U-BLOCK</p> <p>#4 (BOT.)</p> <p>8"</p> <p>2" CLR. (TYP.)</p>
5'-1" TO 12'-0"	<p>(2) #4 (T & B)</p> <p>GROUT SOLID</p> <p>#3 STIRRUPS @ 16". BEGIN FIRST STIRRUP 8" PAST OPENING</p> <p>U-BLOCK</p> <p>16"</p> <p>2" CLR. (TYP.)</p> <p>8"</p>

NOTES:

- PROVIDE 16" BEARING @ EACH END OF C.M.U. LINTELS, 8" BEARING @ EACH END OF STEEL LINTELS (INCLUDING W).
- PROVIDE FULL BEDDING @ BEARINGS AND FOR ONE COURSE ABOVE ALL LINTELS.
- GROUT CELLS UNDER BEARING FULL HEIGHT. SEE PLANS/ NOTES FOR REINFORCEMENT.
- NO PENETRATIONS ARE PERMITTED WITHIN LINTEL.
- C.M.U. LINTELS ARE TO BE SHORED UNTIL GROUT HAS REACHED 85 PERCENT OF STRENGTH.

MASONRY BOND BEAM SCHEDULE

SINGLE	8 INCH CONCRETE MASONRY UNITS (C.M.U.)
<p>PROVIDE WHERE SHOWN AND AT TOP OF ALL WALLS LESS THAN 12'-0" TALL</p>	<p>GROUT</p> <p>U-BLOCK</p> <p>#4 (T & B)</p> <p>PROVIDE CORNER BARS @ CORNERS</p> <p>EXTEND REINF. INTO BOND BEAM</p> <p>8"</p> <p>2" CLR. (TYP.)</p>



TYPICAL MASONRY CONTROL JOINT DETAIL

N.T.S.

(SEE PLANS & STRUCT. NOTES)

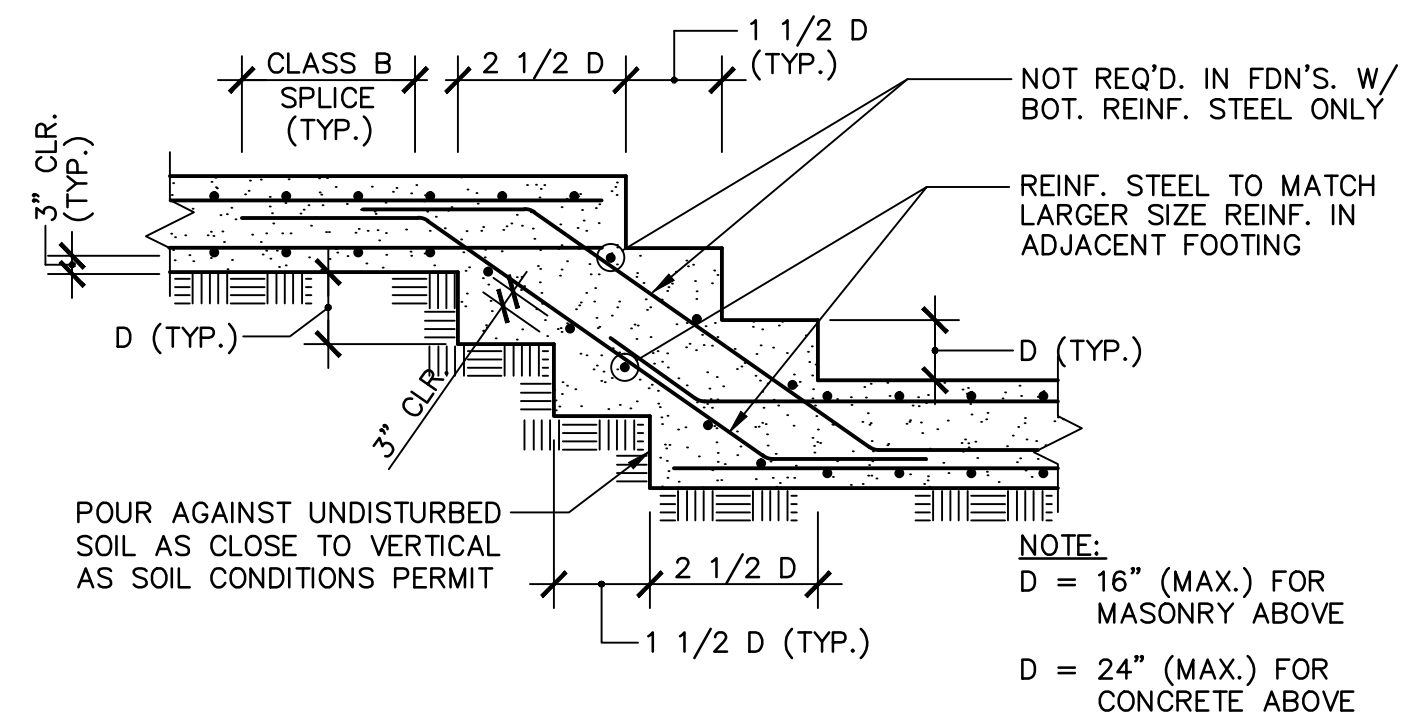
MASONRY REINFORCEMENT LAP DIMENSIONS

ALLOWABLE STRESS DESIGN
f_s = 24,000 PSI MAX.
f_y = 60,000 PSI
f'_m = 1500 PSI

ASTM BAR SIZE	LAP	LDH	PERMITTED BLOCK SIZE
3	18	11	6, 8, 10, 12
4	24	15	6, 8, 10, 12
5	30	18	8, 10, 12
6	43	34	8, 10, 12
7	46	36	10, 12
8	70	59	10, 12
9	73	61	12

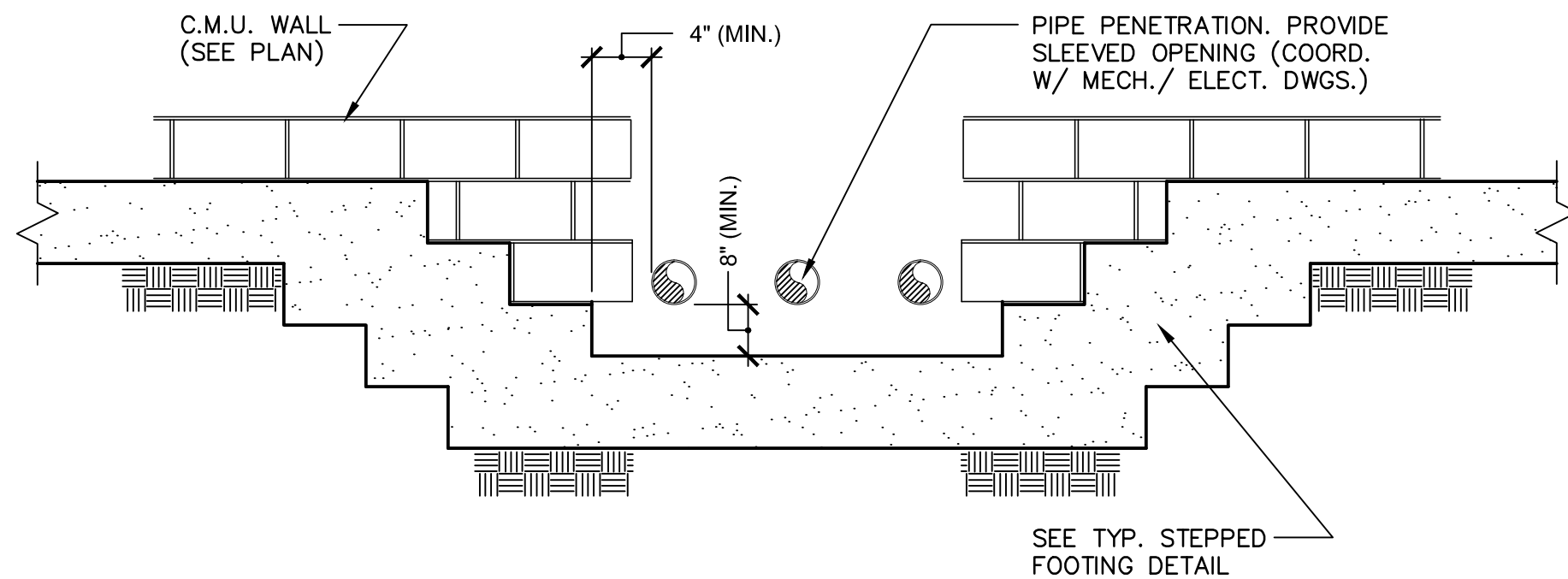
NOTES:

- WELDING OF LAPS ARE PERMITTED IN COMPLIANCE WITH ACI 530/ 530.1 AND AWS D1.4, WELDS MUST DEVELOP 1.25 x YIELD OF BAR.
- MECHANICAL SPLICES ARE PERMITTED IN COMPLIANCE WITH ACI 530/ 530.1, MECHANICAL SPLICES MUST DEVELOP 1.25 x YIELD OF BAR.
- LAPS ON EPOXY COATED BARS ARE TO BE INCREASED BY 50 PERCENT.



TYPICAL STEPPED FOUNDATION

N.T.S.



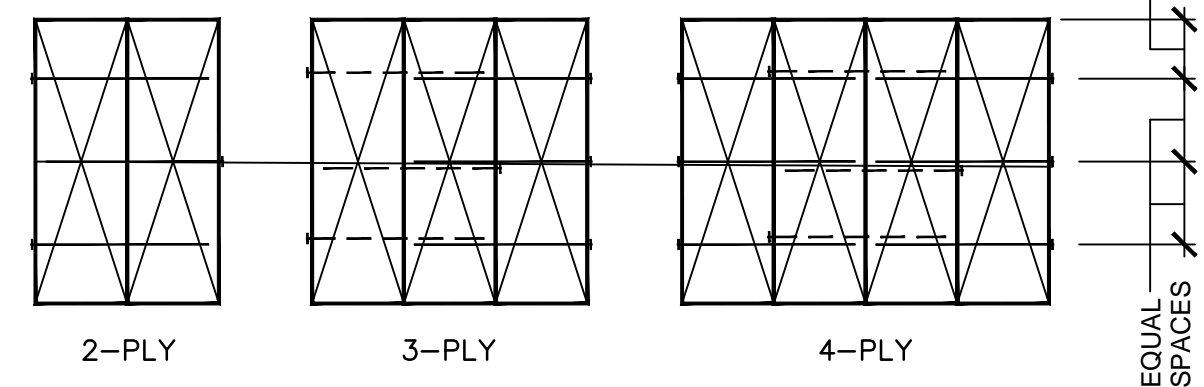
TYPICAL WALL SUBFLOOR PIPE PENETRATION FOOTING DETAIL

N.T.S.

NOTE: UTILITY LINES ARE NOT TO BE PLACED BENEATH STRIP FOOTINGS.

LVL SCHEDULE

NOTE:
USE FULL DEPTH SPACERS EACH SIDE AS REQUIRED.



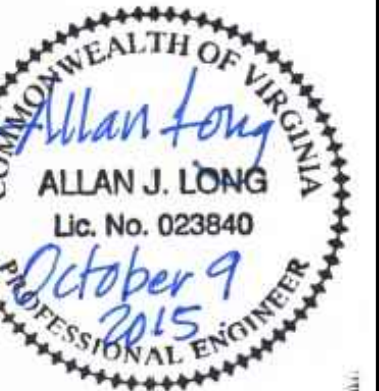
LVL FASTENING REQUIREMENTS FOR MULTIPLE PLY MEMBERS
(MINIMUM REQUIREMENTS - VERIFY COMPLIANCE W/ SUPPLIER RECOMMENDATIONS)

- FOR 12" DEEP (OR LESS) MEMBERS, NAIL PLIES TOGETHER WITH (2) ROWS OF 16d x 3 1/2" COMMON NAILS AT 12" ON CENTER (ADD 1 ROW FOR 16d SINKERS).

NOTE: SIMPSON SDS WOOD SCREWS MAY BE SUBSTITUTED FOR NAILS.

THE LANE GROUP

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GALAX, VA 24333 | 276.236.4588
BIG STONE GAP, VA | ARLINGTON, VA | GALAX, VA



GRAYSON COUNTY
RESTROOM BUILDING
GRAYSON COUNTY RECREATION PARK
INDEPENDENCE, VIRGINIA

TYPICAL
DETAILS

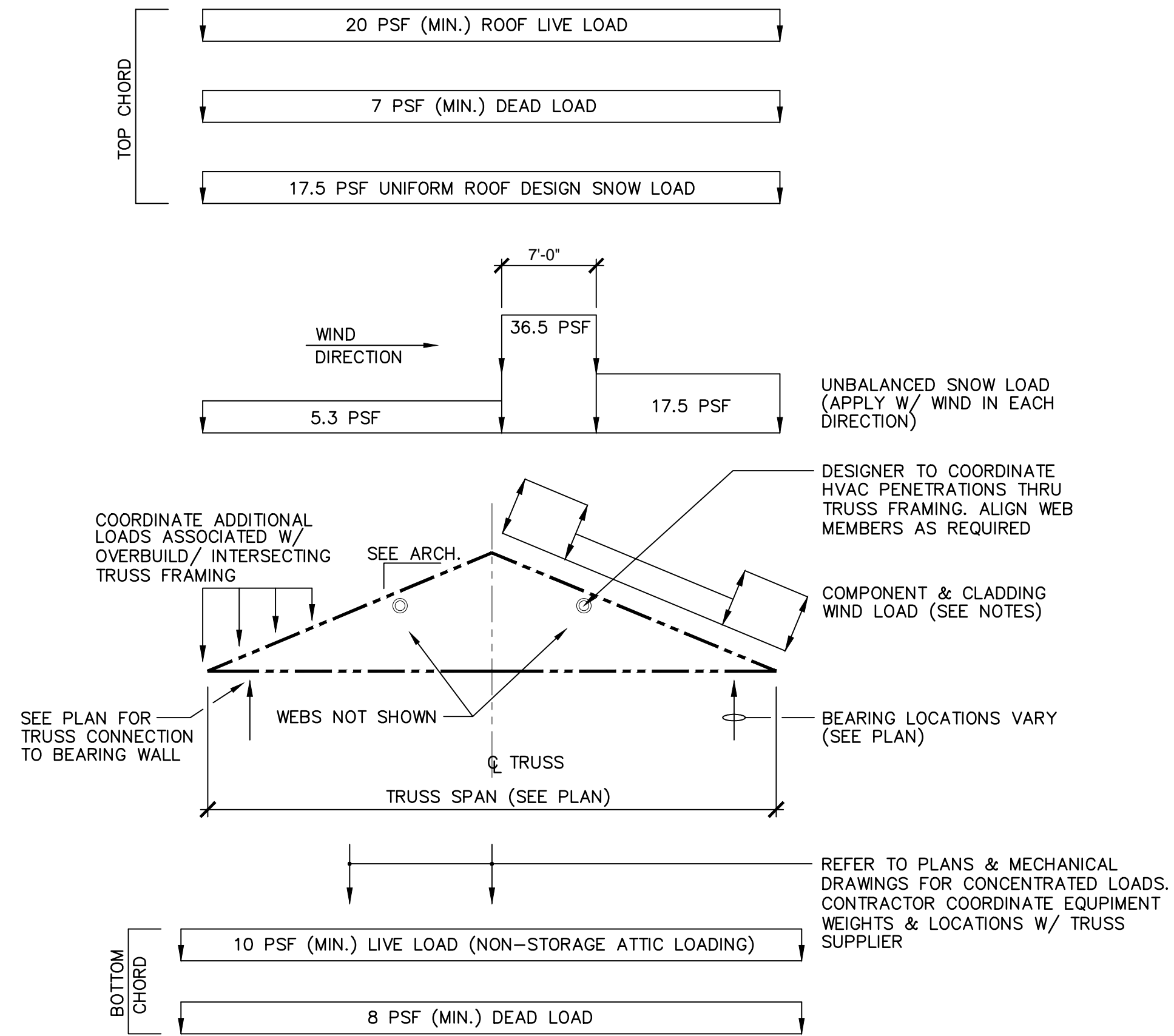
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WOOD TRUSS LOADING DIAGRAM
N.T.S. (GABLE)

- NOTES:
1. CONFIGURATIONS VARY (SEE PLAN).
 2. SEE STRUCTURAL NOTES FOR ADDITIONAL INFORMATION CONCERNING LOADS INCLUDING COMPONENT AND CLADDING LOADS.
 3. DIAGRAM IS SCHEMATIC ONLY. SUBMIT SHOP DRAWINGS FOR EACH CONFIGURATION AND CONNECTION DATA.
 4. PROVIDE VERTICAL 2x FRAMING AT 16" ON CENTER FOR ENDWALL CONSTRUCTION FOR SHEATHING CONNECTIONS. USE COMPONENT AND CLADDING VALUES FOR LATERAL WIND LOADS ON END TRUSSES.
 5. WIND DIRECTION VARIES – TRUSSES TO BE DESIGNED FOR EACH CONDITION.
 6. REDUCE/ DISREGARD DEAD LOADS IN UPLIFT CONDITION CHECKS AS REQUIRED.
 7. TRUSS DESIGNER TO COORDINATE LOAD COMBINATIONS AND DRIFT/ UNBALANCED SNOW LOAD OVERLAP CONDITIONS. COORDINATE AND INCLUDE INTERCONNECTED FRAMING.

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COMMONWEALTH OF VIRGINIA

ALLAN J. LONG

Lic. No. 023840

OCTOBER 9 2015

PROFESSIONAL ENGINEER

GRAYSON COUNTY

RESTROOM BUILDING

GRAYSON COUNTY RECREATION PARK

INDEPENDENCE, VIRGINIA

STRUCTURAL

DETAIL AND

NOTES

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PLUMBING SPECIFICATIONS

1. GENERAL PROVISIONS

- A. INSTALLATION SHALL BE IN STRICT ACCORDANCE WITH THE 2012 INTERNATIONAL PLUMBING CODE INCLUDING REFERENCED CODES AND STANDARDS AND IN ACCORDANCE WITH MANDATES OF THE LOCAL BUILDING OFFICIALS.
- B. THE GENERAL ARRANGEMENT AND LOCATIONS OF PIPING, FIXTURES, ETC. ARE INDICATED BY THE DRAWINGS AND SHALL BE INSTALLED IN ACCORDANCE THEREWITH; WITH THE EXCEPTION OF SUCH CHANGES AS MAY BE REQUIRED ON ACCOUNT OF OTHER TRADES. CONTRACTOR SHALL COORDINATE WORK WITH INSTALLATION OF OTHER SUBCONTRACTORS.
- C. PLUMBING WORK SHALL BE COORDINATED WITH THE CONTRACTOR AS TO SCHEDULING, DIMENSIONING AND LOCATION OF EQUIPMENT.
- D. MAJOR ITEMS ARE SHOWN ON THE PROJECT PLANS. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL INCIDENTAL ITEMS REQUIRED TO PROVIDE A COMPLETE AND FUNCTIONAL SYSTEM.
- E. ALL PIPING SYSTEMS SHALL TERMINATE 5 FEET BEYOND THE BUILDING LINE UNLESS INDICATED OTHERWISE. EXTENSION OF THESE LINES SHALL BE PROVIDED BY THE SITE CONTRACTOR.
- F. SIMILAR ITEMS SHALL BE PROVIDED BY A SINGLE MANUFACTURER.
- G. ALL REQUIRED WALL OR FLOOR OPENINGS SHALL BE COORDINATED WITH THE CONTRACTOR.
- H. ALL PIPING SHALL BE ABOVE CEILING UNLESS INDICATED OTHERWISE.
- I. DO NOT INSTALL PVC PIPING OR ANY COMBUSTIBLE MATERIAL IN ANY AIR PLENUM.
- J. ALL EQUIPMENT SHALL BE WIPED CLEAN, REMOVING ALL TRACES OF OIL, DIRT, OR PAINT SPOTS.
- K. PROVIDE SUPPORTS TO RIGIDLY ATTACH ALL EQUIPMENT, APPURTENANCES AND PIPE AS REQUIRED FOR SUPPORT. PRIOR TO INSTALLATION OF HANGERS AND INSERTS, THE CONTRACTOR SHALL COORDINATE LOCATIONS AND REQUIREMENTS TO MINIMIZE CONFLICTS WITH OTHER BUILDING SYSTEMS. INSTALLATION OF PIPE HANGERS AND SUPPORTS SHALL BE IN STRICT ACCORDANCE WITH MSS SP-58, 69 AND 89.
- L. CONTRACTOR SHALL MAKE FINAL CONNECTIONS TO ALL EQUIPMENT INDICATED TO BE FURNISHED BY OTHERS.
- M. THE CONTRACTOR SHALL INVESTIGATE THE CONSTRUCTION CONDITIONS AFFECTING THE WORK, ADJUST THE LOCATION OF EQUIPMENT, PIPING AND DUCTWORK AND PROVIDE FITTINGS AND ACCESSORIES AS REQUIRED TO MEET ACTUAL CONDITIONS. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR UNANTICIPATED WORK ERUPTING FROM THE INSTALLATION OF THE NEW WORK.
- N. PENETRATIONS THROUGH FIRE RATED PARTITIONS, WALLS AND FLOORS SHALL BE SEALED IN ACCORDANCE WITH THE TERMS OF UL LISTED THROUGH-PENETRATION FIRESTOP SYSTEMS WHEN AS PUBLISHED IN THE UL FIRE RESISTANCE DIRECTORY. PENETRATIONS SHALL EXACTLY CONFORM TO DETAILS OF THE FIRESTOP SYSTEM INDICATED FOR THE TYPE OF PARTITION, WALL AND FLOOR CONSTRUCTION ENCOUNTERED.

2. SUBMISSION OF SHOP DRAWINGS, PRODUCT DATA, SAMPLES AND PROJECT INFORMATION

- A. SHOP DRAWINGS SHALL BE SUBMITTED FOR THE FOLLOWING ITEMS:
- (1) STRAINERS
 - (2) INSULATION
 - (3) GATE VALVES
 - (4) CHECK VALVES
- B. IDENTIFY ALL PLUMBING SHOP DRAWINGS, PRODUCT DATA AND SAMPLES WITH THE NAME OF THE PROJECT. CLEARLY MARK THE SPECIFIC ITEMS INTENDED FOR USE. SUBMIT ALL RELATED ITEMS AT ONE TIME.
- C. PRIOR TO SUBSTANTIAL COMPLETION OF THE PROJECT, SUBMIT THE FOLLOWING INFORMATION FOR REVIEW AND APPROVAL:
- (1) OPERATING AND MAINTENANCE INSTRUCTIONS.
 - (2) "AS BUILT" DRAWINGS.

3. GUARANTEE: ALL MATERIALS AND WORKMANSHIP SHALL BE GUARANTEED TO BE FREE FROM DEFECTS FOR A PERIOD OF ONE (1) YEAR FROM DATE OF ACCEPTANCE AND CONTRACTOR SHALL MAKE GOOD, WITHOUT ADDITIONAL COST TO THE OWNER, ANY DEFECTS WHICH MAY APPEAR WITHIN THAT PERIOD. MANUFACTURER'S WARRANTIES EXTENDING BEYOND ONE YEAR SHALL BE PROCESSED AND TURNED OVER TO THE OWNER.

4. "AS BUILT" DRAWINGS: CONTRACTOR SHALL KEEP AN ACCURATE RECORD OF THE LOCATION OF ALL CONCEALED PIPING, VALVES, CONTROLS, ETC., BOTH INTERIOR AND EXTERIOR. ON COMPLETION OF THE WORK, ONE PRINT EACH OF THE CONTRACT DRAWINGS WHICH ARE APPLICABLE SHALL BE NEATLY AND CLEARLY MARKED IN COLOR TO SHOW ALL VARIATIONS BETWEEN THE WORK ACTUALLY PROVIDED AND THAT INDICATED ON THE CONTRACT DRAWINGS.

5. OPERATING AND MAINTENANCE MANUALS

- A. GENERAL: PRIOR TO COMPLETION OF THE PROJECT, THE CONTRACTOR SHALL PROVIDE THREE HARDBACKED LOOSELEAF RING TYPE BINDERS, IDENTIFIED WITH THE NAME OF THE PROJECT. CONTRACTOR SHALL DELIVER THESE BINDERS TO THE ENGINEER FOR REVIEW AND TRANSMITTAL TO THE OWNER.
- B. THE FOLLOWING ITEMS AND OTHER ADDITIONAL PERTINENT DATA FOR EACH ITEM OF EQUIPMENT SHALL BE INCLUDED:
- C. THE OPERATING AND MAINTENANCE MANUALS SHALL BE CONSIDERED A PART OF THE FINAL INSPECTION AND THEY SHALL BE SUBMITTED FOR APPROVAL AT LEAST THIRTY (30) DAYS PRIOR TO REQUEST FOR FINAL INSPECTION.

6. ACCESS DOORS: ACCESS DOORS SHALL BE PROVIDED FOR ALL CONCEALED VALVES, CONTROLS, AND ANY OTHER EQUIPMENT OR MATERIALS REQUIRING INSPECTION OR MAINTENANCE. ACCESS DOORS SHALL BE FURNISHED FOR FLOORS, WALLS AND CEILINGS, OF ADEQUATE SIZE SO THAT CONCEALED ITEMS WILL BE READILY ACCESSIBLE FOR SERVICING OR FOR REMOVAL AND REPLACEMENT IF NECESSARY.

7. IDENTIFICATION

- A. SUBMITTALS
- (1) SUBMIT LIST OF WORDING, SYMBOLS, LETTER SIZE, AND COLOR CODING FOR MECHANICAL IDENTIFICATION.
 - (2) SUBMIT VALVE CHART AND SCHEDULE, INCLUDING VALVE TAG NUMBER, LOCATION, FUNCTION, AND VALVE MANUFACTURER'S NAME AND MODEL NUMBER.
 - (3) PRODUCT DATA: PROVIDE MANUFACTURERS CATALOG LITERATURE FOR EACH PRODUCT REQUIRED.
- B. NAMEPLATES
- (1) DESCRIPTION: LAMINATED THREE-LAYER PLASTIC WITH ENGRAVED LETTERS ON LIGHT CONTRASTING BACKGROUND COLOR.
- C. TAGS
- (1) METAL TAGS: BRASS WITH STAMPED LETTERS; TAG SIZE MINIMUM 1-1/2 INCHES (40 MM) DIAMETER.
 - (2) CHART: TYPEWRITTEN LETTER SIZE LIST IN ANODIZED ALUMINUM FRAME.
- D. INSTALLATION
- (1) DEGREASE AND CLEAN SURFACES TO RECEIVE ADHESIVE FOR IDENTIFICATION MATERIALS.
 - (2) INSTALL PLASTIC NAMEPLATES WITH CORROSIVE-RESISTANT MECHANICAL FASTENERS, OR ADHESIVE. APPLY WITH SUFFICIENT ADHESIVE TO ENSURE PERMANENT ADHESION AND SEAL WITH CLEAR LAQUER.
 - (3) INSTALL TAGS WITH CORROSION RESISTANT CHAIN.
 - (4) INSTALL PLASTIC PIPE MARKERS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
 - (5) IDENTIFY CONTROL PANELS AND MAJOR CONTROL COMPONENTS OUTSIDE PANELS WITH PLASTIC NAMEPLATES.
 - (6) IDENTIFY VALVES IN MAIN AND BRANCH PIPING WITH TAGS.
 - (7) IDENTIFY PIPING, CONCEALED OR EXPOSED, WITH PLASTIC PIPE MARKERS OR STENCILLED PAINTING: IDENTIFY SERVICE, FLOW DIRECTION, AND PRESSURE. INSTALL IN CLEAR VIEW AND ALIGN WITH AXIS OF PIPING. LOCATE IDENTIFICATION NOT TO EXCEED 20 FEET (6 M) ON STRAIGHT RUNS INCLUDING RISERS AND DROPS, ADJACENT TO EACH VALVE AND TEE, AT EACH SIDE OF PENETRATION OF STRUCTURE OR ENCLOSURE, AND AT EACH OBSTRUCTION.
 - (8) PROVIDE CEILING TAGS TO LOCATE VALVES ABOVE T-BAR TYPE PANEL CEILINGS. LOCATE IN CORNER OF PANEL CLOSEST TO EQUIPMENT.

8. PIPING SPECIALTIES

- A. PIPE ESCUTCHEONS: INSTALL PIPE ESCUTCHEONS ON EACH PIPE PENETRATION THRU FLOORS, WALLS, PARTITIONS, AND CEILINGS WHERE PENETRATION IS EXPOSED TO VIEW AND ON EXTERIOR OF BUILDING. SECURE ESCUTCHEON TO PIPE OR INSULATION SO ESCUTCHEON COVERS PENETRATION HOLE, AND IS FLUSH WITH ADJOINING SURFACE. PROVIDE SHEET STEEL ESCUTCHEONS, SOLID OR SPLIT HINGED. FOR AREAS WHERE WATER AND CONDENSATION CAN BE EXPECTED TO ACCUMULATE, PROVIDE CAST BRASS OR SHEET BRASS ESCUTCHEONS, SOLID OR SPLIT HINGED.
- B. PIPE SLEEVES: INSTALL PIPE SLEEVES WHERE PIPING PASSES THROUGH WALLS, FLOORS, CEILINGS, AND ROOFS. DO NOT INSTALL SLEEVES THROUGH STRUCTURAL MEMBERS OF WORK, EXCEPT AS DETAILED ON DRAWINGS, OR AS REVIEWED BY ARCHITECT/ENGINEER. SIZE SLEEVES SO THAT PIPING AND INSULATION (IF ANY) WILL HAVE FREE MOVEMENT IN SLEEVE, INCLUDING ALLOWANCE FOR THERMAL EXPANSION.

9. INSULATION

- A. FLAME/SMOKE RATINGS: PROVIDE COMPOSITE PLUMBING INSULATION (INSULATION, JACKETS, COVERINGS, SEALERS, MASTICS AND ADHESIVES) WITH FLAME-SPREAD RATING OF 25 OR LESS, AND SMOKE-DEVELOPED RATING OF 50 OR LESS, AS TESTED BY ANSI/ASTM E84 (NFPA 255) METHOD. INSULATION SHALL BE LABELED BY THE MANUFACTURER. THE LABEL SHALL INDICATE THE INSULATING VALUE, FLAME SPREAD AND SMOKE-DEVELOPED RATING.
- B. SUBMITTALS: SUBMIT MANUFACTURER'S SPECIFICATIONS AND INSTALLATION INSTRUCTIONS FOR EACH TYPE OF PLUMBING INSULATION. SUBMIT SCHEDULE SHOWING MANUFACTURER'S PRODUCT NUMBER, THICKNESS, AND FURNISHED ACCESSORIES FOR EACH PLUMBING SYSTEM REQUIRING INSULATION.
- C. INSTALLATION: INSULATION SHALL BE APPLIED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS USING ONLY ADHESIVES, MASTICS AND PLUMBING FASTENERS APPROVED BY THE INSULATION MANUFACTURER. INSULATION SHALL NOT BE APPLIED UNTIL AFTER THE EQUIPMENT HAS BEEN TESTED WITH RESULTS ACCEPTABLE TO THE ARCHITECT/ENGINEER.
- D. MATERIALS:
- (1) CELLULAR FOAM PIPE INSULATION: TUBULAR, FLEXIBLE, FIRE RESISTANT INSULATION WITH OPERATING TEMPERATURE RANGE OF -40 DEGREES F TO 220 DEGREES F, THERMAL CONDUCTIVITY "K"=0.27 BTU-IN/HOUR-SF-DEG F AT 75 DEGREES F. NO JACKET REQUIRED. EQUAL TO ARMSTRONG ARMAFLEX AP.
- E. PIPE INSULATION
- (1) INSULATION OMITTED: OMIT INSULATION ON EXPOSED PLUMBING FIXTURE RUNOUTS FROM FACES OF WALL OR FLOOR TO FIXTURE; ON UNIONS, FLANGES, STRAINERS, FLEXIBLE CONNECTIONS, AND EXPANSION JOINTS.
 - (2) COVER VALVES, FITTINGS AND SIMILAR ITEMS IN EACH PIPING SYSTEM WITH EQUIVALENT THICKNESS AND COMPOSITION OF INSULATION AS APPLIED TO ADJOINING PIPE RUN.

- (3) EXTEND PIPING INSULATION WITHOUT INTERRUPTION THROUGH WALLS, FLOORS AND SIMILAR PIPING PENETRATIONS, EXCEPT WHERE OTHERWISE INDICATED.
- (4) INSTALL PROTECTIVE METAL SHIELDS AND INSULATED INSERTS WHEREVER NEEDED TO PREVENT COMPRESSION OF INSULATION.
- (5) DOMESTIC COLD WATER PIPING, ABOVE GROUND: PIPING SHALL BE INSULATED WITH 1/2 INCH THICK GLASS FIBER, CELLULAR FOAM, OR POLYETHYLENE PIPE INSULATION.
- (6) DOMESTIC HOT WATER PIPING (INCLUDING HOT WATER RECIRCULATING): PIPING SHALL BE INSULATED WITH 1/2 INCH THICK GLASS FIBER, CELLULAR FOAM, OR POLYETHYLENE PIPE INSULATION. VAPOR SEAL IS NOT REQUIRED.

10. PLUMBING PIPING

- A. DOMESTIC WATER PIPING ABOVE GROUND
- PIPE: TYPE L HARD DRAWN COPPER IN ACCORDANCE WITH ASTM B75
FITTINGS: CAST BRONZE OR WROUGHT COPPER ASTM B16.15
JOINTS: SOLDERED USING TIN-ANTIMONY (95-5) SOLDER
- B. DOMESTIC WATER PIPING UNDERGROUND
- PIPE: TYPE K SEAMLESS ROLL STOCK IN ACCORDANCE WITH ASTM B88
FITTINGS: CAST BRONZE OR WROUGHT COPPER ASTM B16.15
JOINTS: SOLDERED USING TIN-ANTIMONY (95-5) SOLDER
- C. SOIL, WASTE AND VENT PIPING BELOW GRADE AND STORM SEWER BELOW GRADE
- SIZE: 4 INCHES AND SMALLER
PIPE: SERVICE WEIGHT CAST IRON ASTM A-74
FITTINGS: SERVICE WEIGHT, BELL AND SPIGOT CAST IRON
JOINTS: BELL AND SPIGOT FOR CAST IRON
- D. SOIL, WASTE AND VENT PIPING ABOVE GRADE AND STORM DRAINS & ROOF LEADERS
- SIZE: 3 INCHES AND LARGER
PIPE: SERVICE WEIGHT CAST IRON ASTM A-74 OR HUBLESS ASTM C-564
FITTINGS: SERVICE WEIGHT OR HUBLESS CAST IRON
JOINTS: HUB & SPIGOT CAULKED, COMPRESSION GASKETS OR NEOPRENE SLEEVES AND STAINLESS STEEL BANDS FOR CAST IRON
SIZE: 2-1/2 INCHES AND SMALLER: SAME AS 3 INCHES AND LARGER EXCEPT VENTS MAY BE SCH. 40 GALVANIZED STEEL ASTM A120/A53 WITH GALVANIZED CAST IRON OR MALLEABLE IRON FITTINGS.

- E. ALL PIPE OF THE SAME SIZE SHALL BE THE SAME MATERIAL.
- F. SLOPE ALL DRAIN LINES 1/4 INCH PER FOOT MINIMUM FOR SIZES LESS THAN 4 INCHES; SLOPE 1/8 INCH PER FOOT FOR SIZES 4 INCHES AND LARGER.
- G. SOIL, WASTE AND VENT PIPING LOCATED BELOW GRADE SHALL BE MINIMUM 2 INCHES SIZE.
- H. VENTS SHALL EXTEND 12 INCHES ABOVE THE ROOF. ROOF FLASHING SHALL BE COORDINATED WITH BY THE CONTRACTOR.
- I. DOMESTIC HOT AND COLD WATER PIPING SHALL BE 1/2 INCHES SIZE UNLESS INDICATED OTHERWISE.

11. PLUMBING VALVES

- A. PROVIDE THREADED SHUT-OFF VALVE AND UNION OR EQUIVALENT AT EACH HOT AND COLD WATER EQUIPMENT CONNECTION. PROVIDE THREADED SHUT-OFF VALVE ON EACH BRANCH OR RISER THAT SERVES TWO OR MORE PLUMBING FIXTURES.
- B. GATE VALVES 2-1/2 INCHES AND SMALLER: ALL BRONZE, RISING STEM, SOLID WEDGE DISC. STOCKHAM B-100 OR B-108.
- C. CHECK VALVES IN HORIZONTAL PIPES:
- (1) 2 INCHES AND SMALLER: ALL BRONZE, REGRINDING BRONZE DISC, HORIZONTAL SWING, Y-PATTERN. STOCKHAM B-3190R B-309.
- D. BALL VALVES MAY BE USED IN LIEU OF GATE VALVES 2 INCHES AND SMALLER. BALL VALVES SHALL HAVE BRONZE BODY, BRONZE BALL AND TFE SEATS AND SEALS. STOCKHAM S-216BRRT OR S-216BRRS.

12. PLUMBING FIXTURES

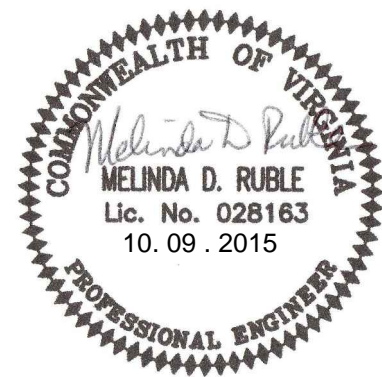
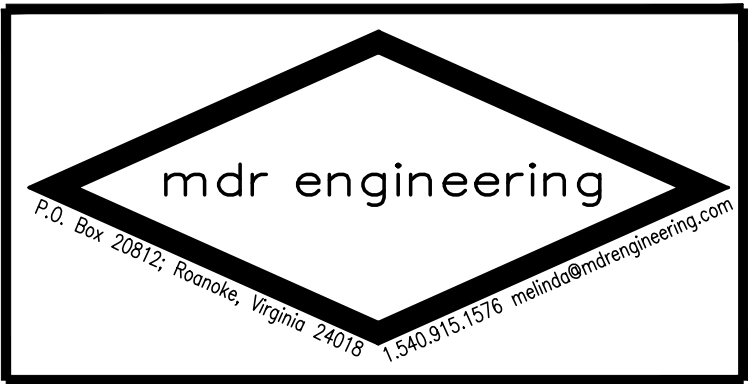
- A. CODES AND STANDARDS: COMPLY WITH APPLICABLE PORTIONS OF NATIONAL STANDARD PLUMBING CODE PERTAINING TO MATERIALS AND INSTALLATION OF PLUMBING FIXTURES.
- (1) ANSI STANDARDS: COMPLY WITH APPLICABLE ANSI STANDARDS PERTAINING TO PLUMBING FIXTURES AND SYSTEMS.
 - (2) PDI COMPLIANCE: COMPLY WITH STANDARDS ESTABLISHED BY PDI PERTAINING TO PLUMBING FIXTURE SUPPORTS.
 - (3) UL COMPLIANCE: CONSTRUCT WATER COOLERS IN ACCORDANCE WITH UL STANDARD 399 "DRINKING-WATER COOLERS", AND PROVIDE UL-LISTING AND LABEL.
 - (4) ANSI COMPLIANCE: CONSTRUCT AND INSTALL BARRIER FREE PLUMBING FIXTURES IN ACCORDANCE WITH ANSI STANDARD A117.1 "SPECIFICATIONS FOR MAKING BUILDINGS AND FACILITIES ACCESSIBLE TO AND USABLE BY PHYSICALLY HANDICAPPED PEOPLE".

- B. ALL EXPOSED FIXTURE SUPPLIES AND WASTE LINES SHALL BE CHROME PLATED.
- C. PLUMBING FIXTURES SHALL BE POSITIVELY VENTED AND TRAPPED IN ACCORDANCE WITH THE INTERNATIONAL PLUMBING CODE. WET VENTING IS ALLOWED IF WASTE PIPING IS OVERSIZED AND IN ACCORDANCE WITH CODE PROVISIONS. LOCATION OF VENT SHALL NOT EXCEED MAXIMUM DISTANCES TO THE TRAP AS ESTABLISHED WITHIN THE INTERNATIONAL PLUMBING CODE.

13. CLEANING AND TESTING

- A. ALL WATER PIPING, VALVES, ETC. SHALL BE THOROUGHLY FLUSHED OF FOREIGN MATTER AND TESTED FOR LEAKS FOR A PERIOD OF TWO HOURS AT NOT LESS THAN 25 PSIG. ANY LEAKAGE SHALL BE REPAIRED. DISINFECT DOMESTIC WATER PIPING INCLUDING WATER SERVICE PIPING IN ACCORDANCE WITH AWWA C601.
- B. ALL DRAIN, WASTE AND VENT PIPING SHALL BE TESTED FOR LEAKS BY FILLING PIPING SYSTEM TO OVERFLOW AND ALLOWING TO STAND FOR 24 HOURS. NO VISIBLE DROP IN WATER LEVEL WILL BE ACCEPTABLE.

END OF SPECIFICATIONS



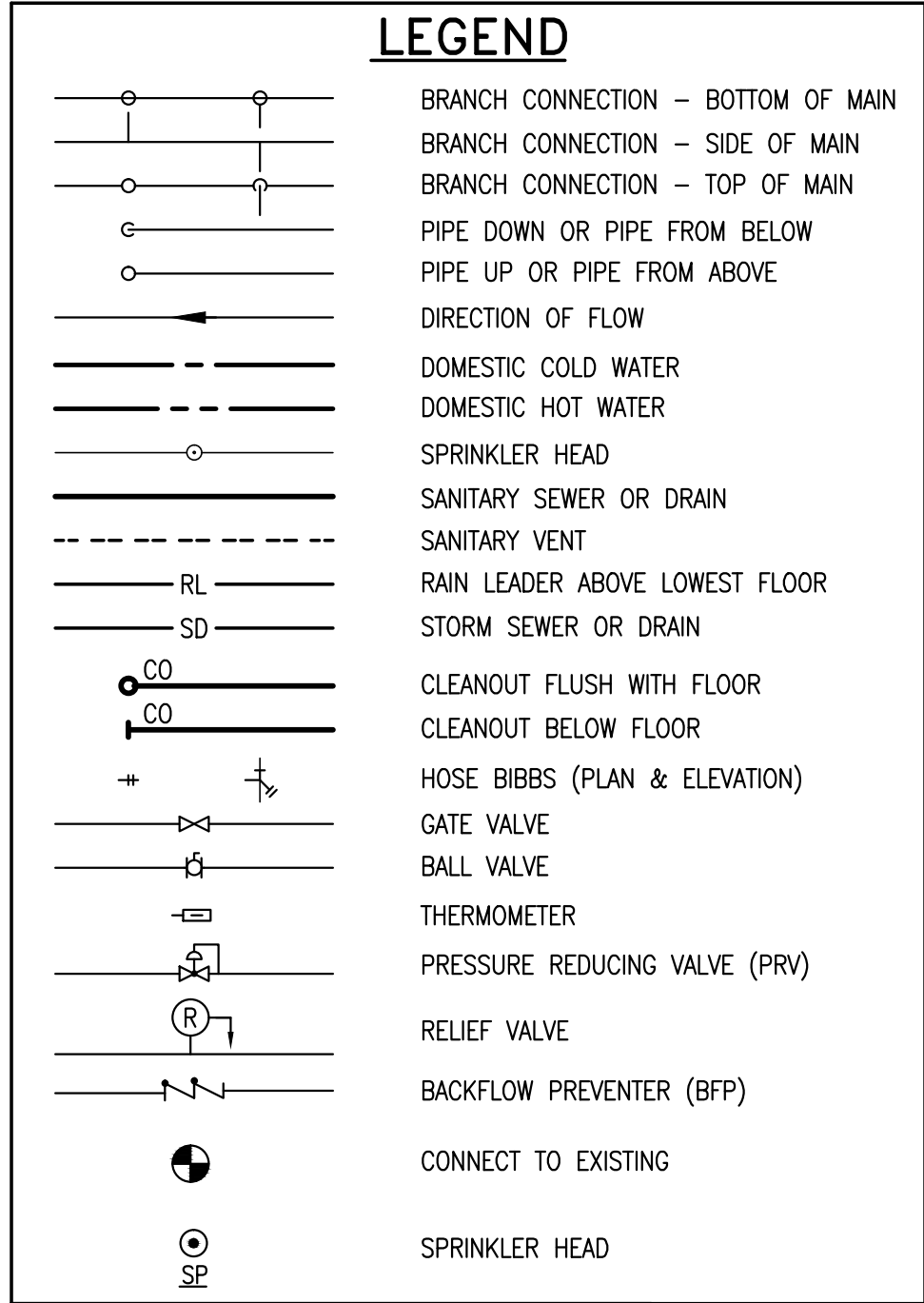
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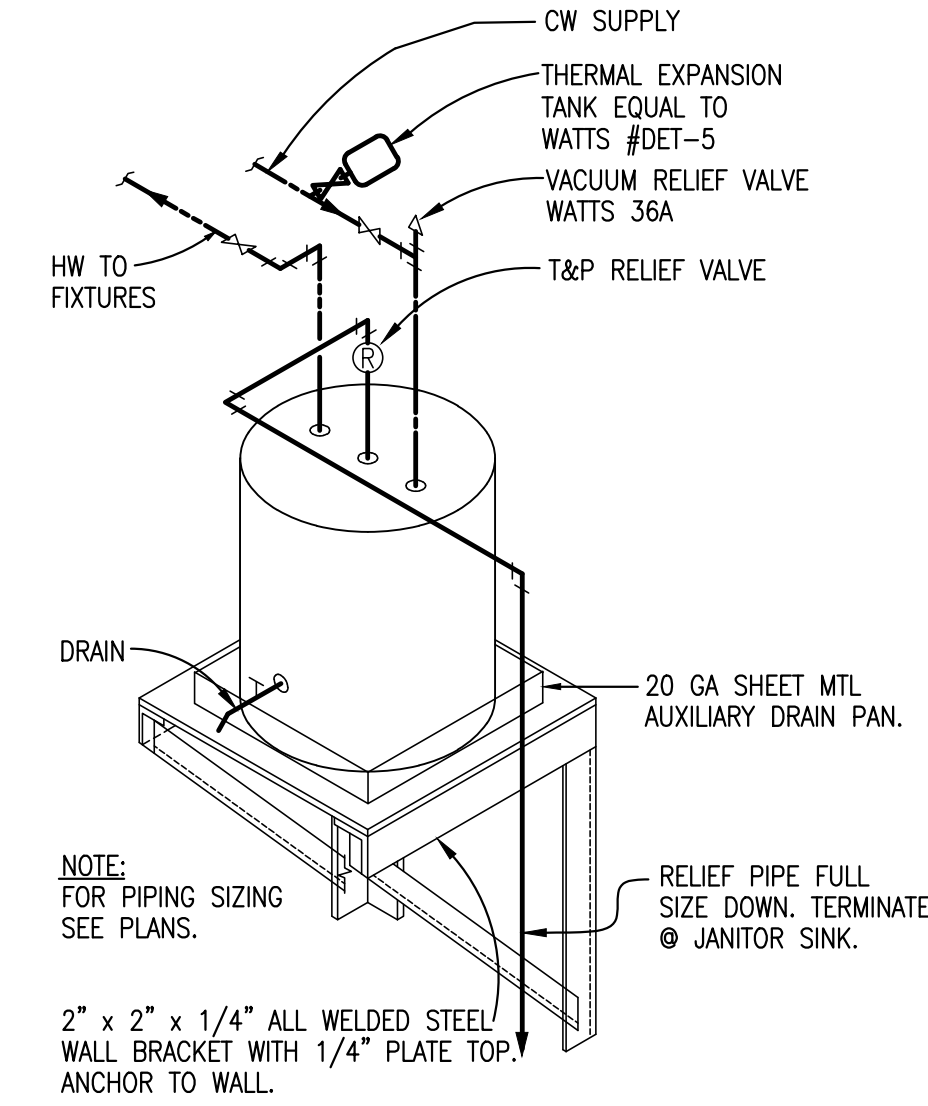
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TLG PROJECT #13013



ABBREVIATIONS

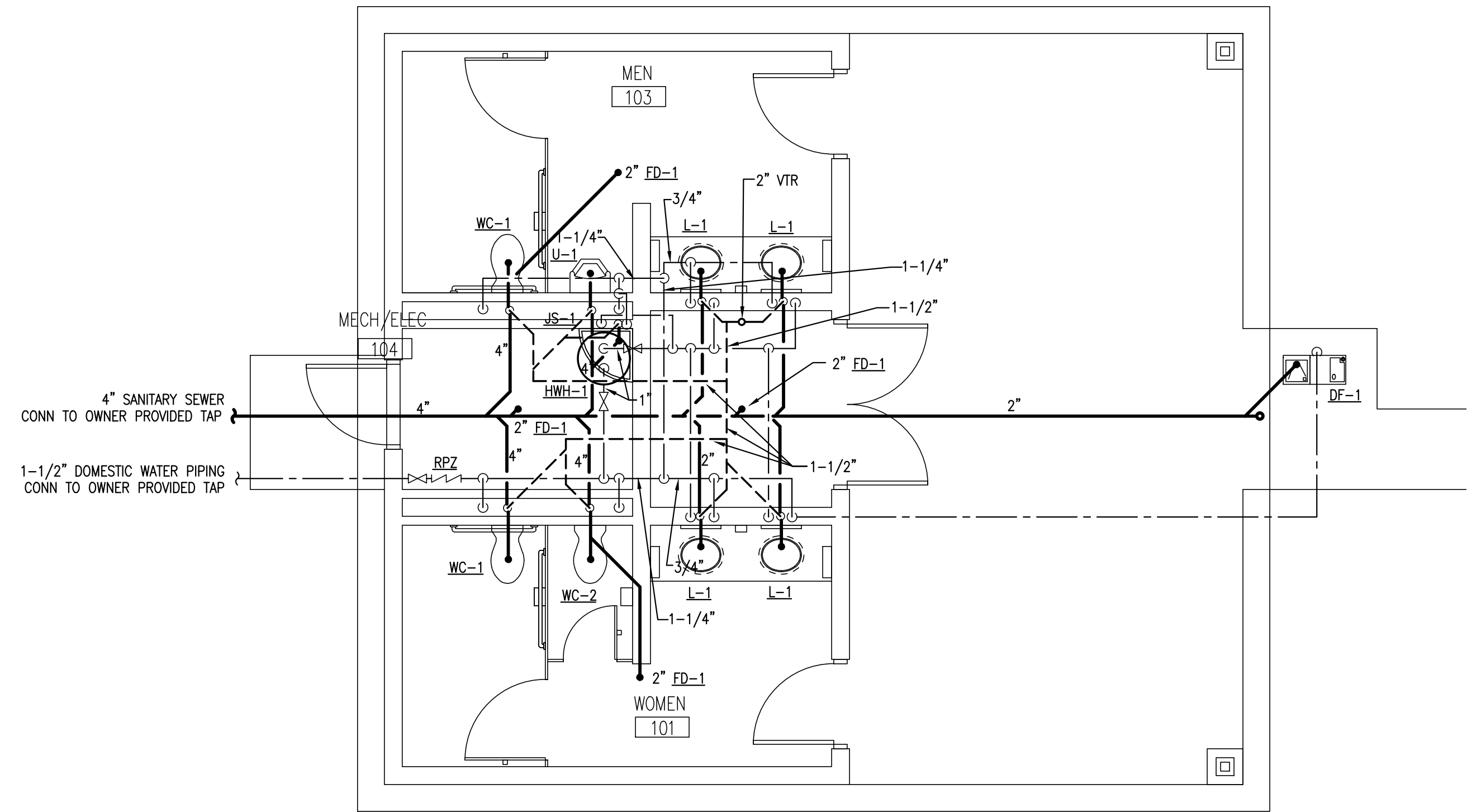
ABV	ABOVE
BTU	BRITISH THERMAL UNIT
BEL	BELOW
BET	BETWEEN
CLG	CEILING
CO	CLEANOUT
CONC	CONCRETE
CONN	CONNECT, CONNECTION
CW	COLD WATER
CONT	CONTINUED
DN	DOWN
EA	EACH
EWC	ELECTRIC WATER COOLER
F	DEGREES FARENHEIT
FD	FLOOR DRAIN
FL	FLOOR
FR	FROM
FT	FEET
GPM	GALLONS PER MINUTE
GV	GATE VALVE
HB	HOSE BIBB
HW	HOT WATER
IN	INCH, INCHES
MAX	MAXIMUM
MIN	MINIMUM
RD	ROOF DRAIN
REQD	REQUIRED
RL	ROOF LEADER
SH	SHEET
TEMP	TEMPERATURE
TYP	TYPICAL
V	SANITARY VENT
VTR	VENT THRU ROOF
W	SANITARY WASTE
WH	WALL HYDRANT



DETAIL - WATER HEATER
NO SCALE

PLUMBING EQUIPMENT SCHEDULE

WC-1	COMMERCIAL WALL-MOUNTED TOILET WITH FLUSH VALVE; INLET WITH SEAT AND CERAMIC GLAZE, ADA COMPLIANT, WHITE, ELONGATED FRONT BOWL, WITH POLISHED CHROME TRIP LEVER AND PRESSURE ASSIST TECHNOLOGY, 1.6 GPF
WC-2	COMMERCIAL WALL-MOUNTED TOILET WITH FLUSH VALVE; INLET WITH SEAT AND CERAMIC GLAZE, WHITE, ELONGATED FRONT BOWL, WITH POLISHED CHROME TRIP LEVER AND PRESSURE ASSIST TECHNOLOGY, 1.6 GPF
U-1	COMMERCIAL WALL-MOUNTED URINAL WITH 3/4" TOP SPUD, ADA COMPLIANT, STAINLESS STEEL DRAIN COVER, CONCEALED INTEGRAL TRAP, WHITE, WITH HYDROPOWER, SELF-GENERATING ELECTRONIC FLUSH VALVE, POLISHED CHROME, MANUAL OVERRIDE BUTTON, 12 HOUR AUTOMATIC AUTOMATIC FLUSH, VACUUM BREAKER & ANGLE STOP SET, 0.5 GPF
L-1	CAST IRON UNDERMOUNT SINK, 18"x11" INSIDE BOWL DIMENSIONS, 8" DEEP, ADA COMPLIANT, DRAIN OPENING AND OVERFLOW. FAUCET TO BE SELF-GENERATING, AUTOMATIC INFRARED SENSOR, ANTI-SCALD THERMOSTATIC MIXING, TEN SECOND DISCHARGE, SENSOR TO BE MOUNTED UNDER SINK AS HIGH AS POSSIBLE; PROVIDE WITH GRID DRAIN STRAINER AND P-TRAP.
JS-1	MOLDED STONE CORNER MOUNT MOP SERVICE BASIN, 24"x24"x10"; WITH WALL MOUNTED FAUCET W/VACUUM BREAKER & BUCKET HOOK; HOSE AND BRACKET, VINYL BUMPER GUARD, MOP HANGAR AND QUICK DRAIN CONNECTOR.
DF-1	PEDESTAL STEEL FOUNTAIN WITH POWDER COAT FINISH AND CORROSION PROTECTION. COUNTOUR FORMED, STAINLESS STEEL BASIN, ADA COMPLIANT, FREEZE RESISTANT VALVE SYSTEM, BUBBLER, PUSHBUTTON MECHANISM, VANDAL RESISTANT.
FD-1	CAST IRON FLOOR DRAIN, 2", ADJUSTABLE NICKEL HEAD AND HEEL=PROOF GRATE, VANDAL-PROOF; PROVIDE WITH TRAP GUARD.
RPZ	WATTS #909 REDUCED PRESSURE ZONE BACKFLOW PREVENTOR, BRONZE CONSTRUCTION, EPOXY COATED CAST IRON CHECK VALVE BODY WITH BRONZE SEATS, FDA APPROVED EPOXY COATED CAST IRON RELIEF VALVE WITH TRIM.
HWH-1	STATE ES8-40-DORS ELECTRIC WATER HEATER, SINGLE ELEMENT, 38 GAL. CAPACITY TANK, 21 GAL/HR RECOVERY AT 40 DEG. F. AND 90 DEG.F. RISE, 4500 W; 208/1; T&P RELIEF VALVE.



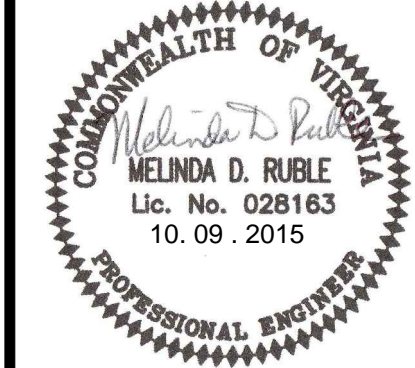
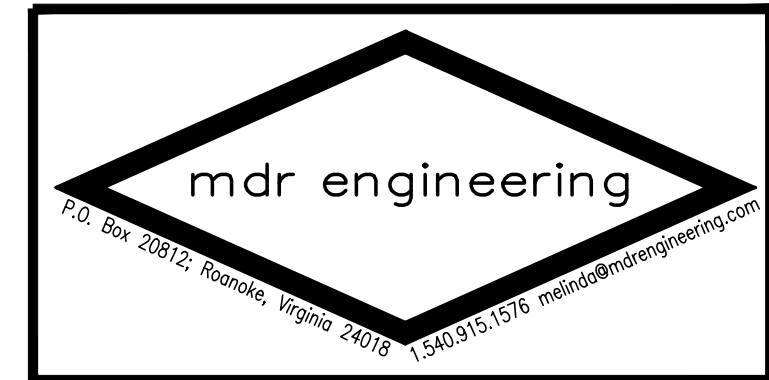
PLUMBING L FLOOR PLAN
SCALE: 1/4" = 1'-0"



PLUMBING FIXTURE INSTALLATION SCHEDULE

FIXTURE	MARK	MH	CW	HW	VENT	WASTE
WATER CLOSET	WC-1	17"	1"	--	2"	4"
WATER CLOSET	WC-2	15"	1"	--	2"	4"
LAVATORY	L-1	UNDERMOUNT	1/2"	1/2"	1-1/2"	2"
URINAL (HC)	U-1	17"	3/4"	--	1-1/2"	2"
JANITOR'S SINK	JS-1	FLOOR	1/2"	1/2"	1-1/2"	2"

- NOTES**
- SIZE GIVEN ARE FOR FIXTURE ONLY. EXCEPTIONS, IF ANY, ARE SHOWN ON PLANS.
 - MOUNTING HEIGHT DIMENSIONS ARE TO FLOOD LEVEL RIM OF FIXTURE, UNLESS NOTED OTHERWISE.

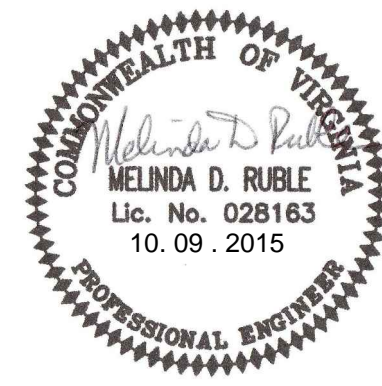
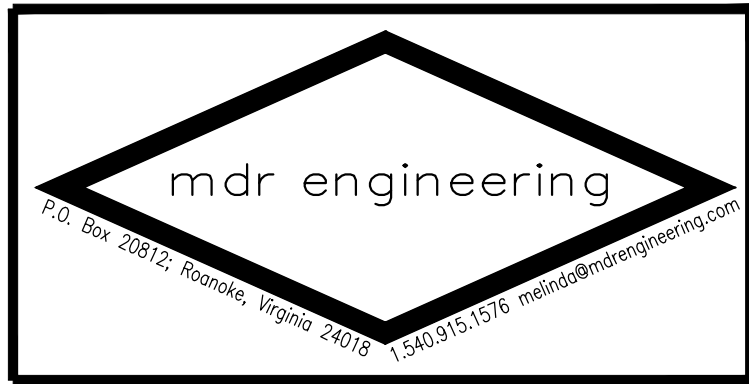


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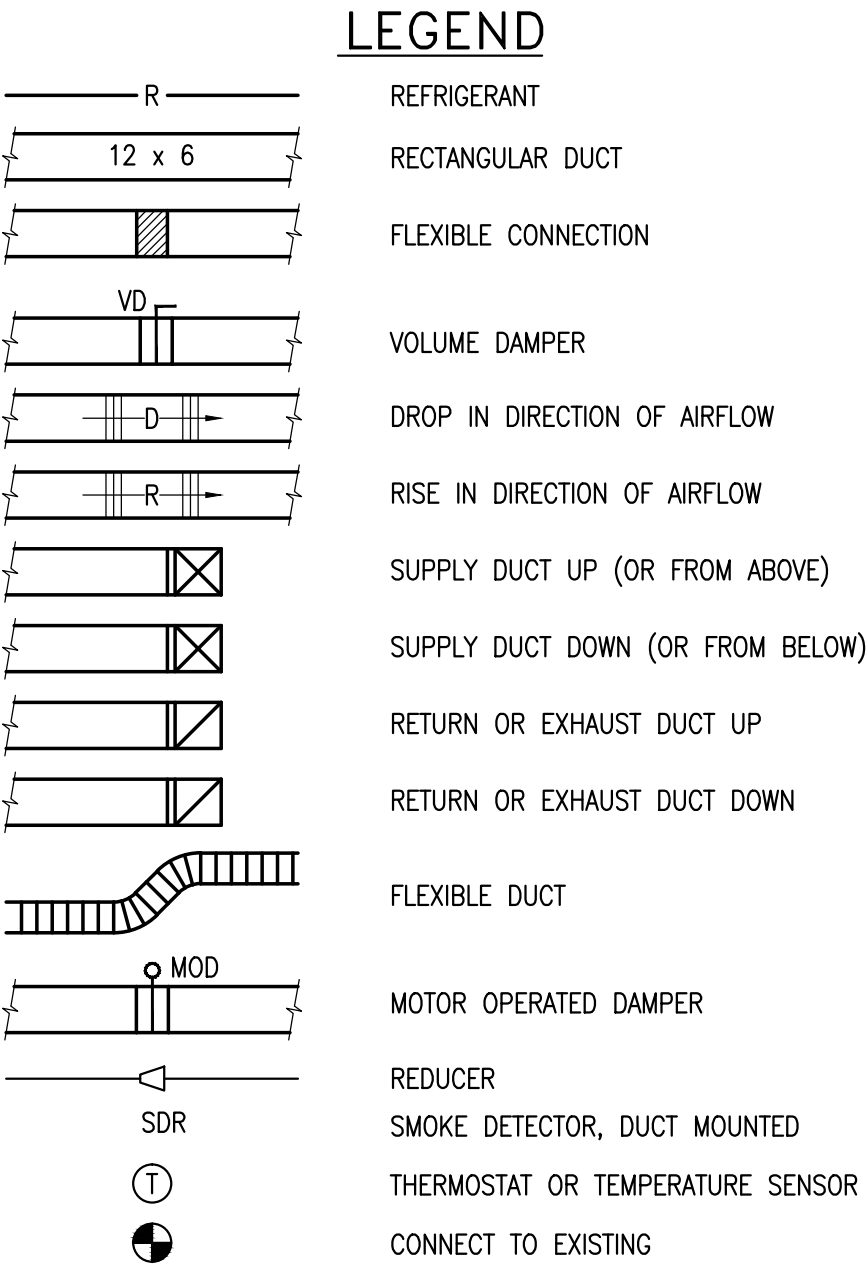
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MECHANICAL SPECIFICATIONS

1. GENERAL PROVISIONS
- A. INSTALLATION SHALL BE IN STRICT ACCORDANCE WITH THE 2012 INTERNATIONAL MECHANICAL CODE INCLUDING REFERENCED CODES AND STANDARDS AND IN ACCORDANCE WITH MANDATES OF THE LOCAL BUILDING OFFICIALS.
- B. THE GENERAL ARRANGEMENT AND LOCATIONS OF DUCTWORK, PIPING, FIXTURES, ETC. ARE INDICATED BY THE DRAWINGS AND SHALL BE INSTALLED IN ACCORDANCE THEREWITH; WITH THE EXCEPTION OF SUCH CHANGES AS MAY BE REQUIRED ON ACCOUNT OF OTHER TRADES. CONTRACTOR SHALL COORDINATE WORK WITH INSTALLATION OF OTHER SUBCONTRACTORS.
- C. MECHANICAL WORK SHALL BE COORDINATED WITH THE CONTRACTOR AS TO SCHEDULING, DIMENSIONING AND LOCATION OF EQUIPMENT.
- D. MAJOR ITEMS ARE SHOWN ON THE PROJECT PLANS. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL INCIDENTAL ITEMS REQUIRED TO PROVIDE A COMPLETE AND FUNCTIONAL SYSTEM.
- E. TRADE NAMES AND CATALOG NUMBERS SHALL BE INTERPRETED AS ESTABLISHING A GENERAL DESIGN AND STANDARD OF QUALITY AND SHALL NOT BE CONSTRUED AS LIMITING COMPETITION. UNLESS STATED OTHERWISE, THE CONTRACTOR MAY USE ANY ARTICLE WHICH, IN HIS JUDGEMENT, AND WITH WRITTEN COMMENT FROM THE ARCHITECT/ENGINEER INDICATING NO OBJECTION, IS EQUAL OR SUPERIOR TO THAT SPECIFIED. DRAWINGS SHOWING CHANGES OR REVISIONS REQUIRED BY THE SUBSTITUTION FOR SPECIFIED ITEMS SHALL BE SUBMITTED WITH THE SHOP DRAWING DATA, AND THE COSTS OF ALL SUCH CHANGES SHALL BE BORNE BY THE CONTRACTOR.
- F. SIMILAR ITEMS SHALL BE PROVIDED BY A SINGLE MANUFACTURER.
- G. ALL REQUIRED WALL OR FLOOR OPENINGS SHALL BE COORDINATED WITH THE CONTRACTOR.
- H. ALL PIPING SHALL BE ABOVE CEILING UNLESS INDICATED OTHERWISE.
- I. DO NOT INSTALL PVC PIPING OR ANY COMBUSTIBLE MATERIAL IN ANY AIR PLENUM.
- J. ALL EQUIPMENT SHALL BE WIPED CLEAN, REMOVING ALL TRACES OF OIL, DIRT, OR PAINT SPOTS.
- K. PROVIDE SUPPORTS TO RIGIDLY ATTACH ALL EQUIPMENT, APPURTENANCES AND PIPE AS REQUIRED FOR SUPPORT. PRIOR TO INSTALLATION OF HANGERS AND INSERTS, THE CONTRACTOR SHALL COORDINATE LOCATIONS AND REQUIREMENTS TO MINIMIZE CONFLICTS WITH OTHER BUILDING SYSTEMS. INSTALLATION OF PIPE HANGERS AND SUPPORTS SHALL BE IN STRICT ACCORDANCE WITH MSS SP-58, 69 AND 89.
- L. CONTRACTOR SHALL MAKE FINAL CONNECTIONS TO ALL EQUIPMENT INDICATED TO BE FURNISHED BY OTHERS.
- M. ALL MATERIALS AND WORKMANSHIP SHALL BE WARRANTED TO BE FREE FROM DEFECTS FOR A PERIOD OF ONE YEAR FROM DATE OF ACCEPTANCE AND CONTRACTOR SHALL MAKE GOOD, WITHOUT ADDITIONAL COST TO THE OWNER, ANY DEFECT WHICH MAY APPEAR WITHIN THAT PERIOD. MANUFACTURER'S WARRANTIES EXTENDING BEYOND ONE YEAR SHALL BE PROCESSED AND TURNED OVER TO THE OWNER.
- N. THE CONTRACTOR SHALL INVESTIGATE THE CONSTRUCTION CONDITIONS AFFECTING THE WORK, ADJUST THE LOCATION OF EQUIPMENT, PIPING AND DUCTWORK AND PROVIDE FITTINGS AND ACCESSORIES AS REQUIRED TO MEET ACTUAL CONDITIONS. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR UNANTICIPATED WORK ERUPTING FROM THE INSTALLATION OF THE NEW WORK.
- O. PENETRATIONS THROUGH FIRE RATED PARTITIONS, WALLS AND FLOORS SHALL BE SEALED IN ACCORDANCE WITH THE TERMS OF UL LISTED THROUGH-PENETRATION FIRESTOP SYSTEMS XHEZ AS PUBLISHED IN THE UL FIRE RESISTANCE DIRECTORY. PENETRATIONS SHALL EXACTLY CONFORM TO DETAILS OF THE FIRESTOP SYSTEM INDICATED FOR THE TYPE OF PARTITION, WALL AND FLOOR CONSTRUCTION ENCOUNTERED.
2. SUBMISSION OF SHOP DRAWINGS, PRODUCT DATA, SAMPLES AND PROJECT INFORMATION
- A. SHOP DRAWINGS SHALL BE SUBMITTED FOR THE FOLLOWING ITEMS:
- (1) ALL MECHANICAL EQUIPMENT
- B. IDENTIFY ALL MECHANICAL SHOP DRAWINGS, PRODUCT DATA AND SAMPLES WITH THE NAME OF THE PROJECT. CLEARLY MARK THE SPECIFIC ITEMS INTENDED FOR USE. SUBMIT ALL RELATED ITEMS AT ONE TIME.
- C. PRIOR TO SUBSTANTIAL COMPLETION OF THE PROJECT, SUBMIT THE FOLLOWING INFORMATION FOR REVIEW AND APPROVAL.
- (1) OPERATING AND MAINTENANCE INSTRUCTIONS.
- (2) "AS BUILT" DRAWINGS.
3. GUARANTEE: ALL MATERIALS AND WORKMANSHIP SHALL BE GUARANTEED TO BE FREE FROM DEFECTS FOR A PERIOD OF ONE (1) YEAR FROM DATE OF ACCEPTANCE AND CONTRACTOR SHALL MAKE GOOD, WITHOUT ADDITIONAL COST TO THE OWNER, ANY DEFECTS WHICH MAY APPEAR WITHIN THAT PERIOD. MANUFACTURER'S WARRANTIES EXTENDING BEYOND ONE YEAR SHALL BE PROCESSED AND TURNED OVER TO THE OWNER.
4. "AS BUILT" DRAWINGS: CONTRACTOR SHALL KEEP AN ACCURATE RECORD OF THE LOCATION OF ALL CONCEALED DUCTWORK, PIPING, VALVES, CONTROLS, ETC., BOTH INTERIOR AND EXTERIOR. ON COMPLETION OF THE WORK, ONE PRINT EACH OF THE CONTRACT DRAWINGS WHICH ARE APPLICABLE SHALL BE NEATLY AND CLEARLY MARKED IN RED COLOR TO SHOW ALL VARIATIONS BETWEEN THE WORK ACTUALLY PROVIDED AND THAT INDICATED ON THE CONTRACT DRAWINGS. CONTRACTOR MARK-UPS SHALL BE ON THE CONTRACT DRAWINGS WITH THE BUILDING OFFICIAL'S STAMP.
5. OPERATING AND MAINTENANCE MANUALS
- A. GENERAL: PRIOR TO COMPLETION OF THE PROJECT, THE CONTRACTOR SHALL PROVIDE THREE HARDBACKED LOOSELEAF RING TYPE BINDERS, IDENTIFIED WITH THE NAME OF THE PROJECT. CONTRACTOR SHALL DELIVER THESE BINDERS TO THE ENGINEER FOR REVIEW AND TRANSMITTAL TO THE OWNER.
- B. THE FOLLOWING ITEMS AND OTHER ADDITIONAL PERTINENT DATA FOR EACH ITEM OF EQUIPMENT SHALL BE INCLUDED:
- (1) NAME OF MANUFACTURER.
- (2) NAME, ADDRESS AND TELEPHONE NUMBER OF NEAREST MANUFACTURER'S REPRESENTATIVE.
- (3) COPY OF LATEST APPROVED SHOP DRAWING.
- (4) MANUFACTURER'S OPERATING AND MAINTENANCE MANUAL INCLUDING LUBRICATION DATA.
- (5) PARTS NUMBERS FOR ALL REPLACEABLE ITEMS.
- (6) SERIAL NUMBERS OF ALL PRINCIPAL ITEMS OF EQUIPMENT.
- (7) CONTROL DIAGRAMS AND SEQUENCE OF OPERATION.
- (8) MANUFACTURER'S WRITTEN GUARANTEES THAT EXTEND BEYOND THE CONTRACTOR'S ONE YEAR GUARANTEE.
- C. THE OPERATING AND MAINTENANCE MANUALS SHALL BE CONSIDERED A PART OF THE FINAL INSPECTION AND THEY SHALL BE SUBMITTED FOR APPROVAL AT LEAST THIRTY (30) DAYS PRIOR TO REQUEST FOR FINAL INSPECTION.
6. ACCESS DOORS: ACCESS DOORS SHALL BE PROVIDED FOR ALL CONCEALED VALVES, CONTROLS, AND ANY OTHER EQUIPMENT OR MATERIALS REQUIRING INSPECTION OR MAINTENANCE. ACCESS DOORS SHALL BE FURNISHED FOR FLOORS, WALLS AND CEILINGS, OF ADEQUATE SIZE SO THAT CONCEALED ITEMS WILL BE READILY ACCESSIBLE FOR SERVING OR FOR REMOVAL AND REPLACEMENT IF NECESSARY.
7. PAINTING
- A. SCOPE OF WORK: MECHANICAL EQUIPMENT, MATERIALS, AND RELATED PIPING DO NOT REQUIRE PAINTING EXCEPT AS INDICATED BELOW.
- B. EQUIPMENT WITH A FACTORY APPLIED FINISH WILL NOT REQUIRE ADDITIONAL PAINTING EXCEPT TOUCH-UP WITH MATCHING FINISH WHERE IT IS DAMAGED.
- C. PIPING, FABRICATED SUPPORTS, OR OTHER UNFINISHED AND UNPROTECTED MATERIALS LOCATED OUTDOORS SHALL BE PAINTED WITH A SUITABLE PRIMER AND COMPATIBLE FINISH PAINT. COLOR SHALL BE AS DIRECTED BY ENGINEER.
- D. PAINT INSIDE OF DUCTWORK WITH MATTE BLACK PAINT WHERE VISIBLE BEHIND AIR INLETS AND OUTLETS.
- E. PROTECTION OF WORK: PAINTING SHALL BE DONE WITH ALL POSSIBLE CARE TO PROTECT THIS WORK AND WORK OF OTHER TRADES. ALL DAMAGE TO THIS AND OTHER WORK CAUSED BY THE PAINTING OPERATIONS SHALL BE CORRECTED, CLEANED OR REPAIRED AS REQUIRED. HARDWARE, SPECIAL CONTROL ITEMS, GAUGES, THERMOMETERS, NAMEPLATES, INSTRUMENT GLASS AND OTHER SIMILAR ITEMS SHALL BE REMOVED OR PROPERLY PROTECTED DURING THE PAINTING OPERATIONS TO INSURE THAT THESE ITEMS ARE NOT COVERED OR SPLATTERED WITH PAINT.
8. IDENTIFICATION
- A. SUBMITTALS
- (1) SUBMIT LIST OF WORDING, SYMBOLS, LETTER SIZE, AND COLOR CODING FOR MECHANICAL IDENTIFICATION.
- (2) SUBMIT VALVE CHART AND SCHEDULE, INCLUDING VALVE TAG NUMBER, LOCATION, FUNCTION, AND VALVE MANUFACTURER'S NAME AND MODEL NUMBER.
- (3) PRODUCT DATA: PROVIDE MANUFACTURERS CATALOG LITERATURE FOR EACH PRODUCT REQUIRED.
- B. NAMEPLATES
- (1) DESCRIPTION: LAMINATED THREE-LAYER PLASTIC WITH ENGRAVED LETTERS ON LIGHT CONTRASTING BACKGROUND COLOR.
- C. TAGS
- (1) METAL TAGS: BRASS WITH STAMPED LETTERS; TAG SIZE MINIMUM 1-1/2 INCHES (40 MM) DIAMETER.
- (2) CHART: TYPEWRITTEN LETTER SIZE LIST IN ANODIZED ALUMINUM FRAME.
- D. STENCILS
- (1) STENCILS: WITH CLEAN CUT SYMBOLS AND LETTERS OF FOLLOWING SIZE:
- (A) 3/4 TO 1-1/4 INCHES (20-30 MM) OUTSIDE DIAMETER OF INSULATION OR PIPE: 8 INCHES (200 MM) LONG COLOR FIELD, 1/2 INCHES (15 MM) HIGH LETTERS.
- (B) 1-1/2 TO 2 INCHES (40-50 MM) OUTSIDE DIAMETER OF INSULATION OR PIPE: 8 INCHES (200 MM) LONG COLOR FIELD, 3/4 INCH (20 MM) HIGH LETTERS.
- (C) 2-1/2 TO 6 INCHES (65-150 MM) OUTSIDE DIAMETER OF INSULATION OR PIPE: 12 INCHES (300 MM) LONG COLOR FIELD, 1-1/4 INCHES (30 MM) HIGH LETTERS.
- (D) 8 TO 10 INCHES (200-250 MM) OUTSIDE DIAMETER OF INSULATION OR PIPE: 24 INCHES (600 MM) LONG COLOR FIELD, 2-1/2 INCHES (65 MM) HIGH LETTERS.
- (E) OVER 10 INCHES (250 MM) OUTSIDE DIAMETER OF INSULATION OR PIPE: 32 INCHES (800 MM) LONG COLOR FIELD, 3-1/2 INCHES (90 MM) HIGH LETTERS.
- (F) DUCTWORK AND EQUIPMENT: 2-1/2 INCHES (65 MM) HIGH LETTERS.
- (2) STENCIL PAINT: AS SPECIFIED IN SECTION 09900, SEMI-GLOSS ENAMEL, COLORS CONFORMING TO ASME A13.1.
- E. PIPE MARKERS
- (1) COLOR: CONFORM TO ASME A13.1.
- (2) PLASTIC PIPE MARKERS: FACTORY FABRICATED, FLEXIBLE, SEMI-RIGID PLASTIC, PREFORMED TO FIT AROUND PIPE OR PIPE COVERING; MINIMUM INFORMATION INDICATING FLOW DIRECTION ARROW AND IDENTIFICATION OF FLUID BEING CONVEYED.
- F. CEILING TAGS
- (1) DESCRIPTION: STEEL WITH 3/4 INCH (20 MM) DIAMETER COLOR CODED HEAD.
- (2) COLOR CODE AS FOLLOWS:
- (A) YELLOW - HVAC EQUIPMENT
- (B) RED - FIRE DAMPERS/SMOKE DAMPERS
- (C) GREEN - PLUMBING VALVES
- (D) BLUE - HEATING/COOLING VALVES
- G. INSTALLATION
- (1) DECREASE AND CLEAN SURFACES TO RECEIVE ADHESIVE FOR IDENTIFICATION MATERIALS.
- (2) INSTALL PLASTIC NAMEPLATES WITH CORROSIVE-RESISTANT MECHANICAL FASTENERS, OR ADHESIVE. APPLY WITH SUFFICIENT ADHESIVE TO ENSURE PERMANENT ADHESION AND SEAL WITH CLEAR LACQUER.
- (3) INSTALL TAGS WITH CORROSION RESISTANT CHAIN.
- (4) INSTALL PLASTIC PIPE MARKERS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
- (5) IDENTIFY AIR CONDITIONING UNITS AND FANS WITH PLASTIC NAMEPLATES OR STENCIL PAINTING.
- (6) IDENTIFY CONTROL PANELS AND MAJOR CONTROL COMPONENTS OUTSIDE PANELS WITH PLASTIC NAMEPLATES.
- (7) IDENTIFY DUCTWORK WITH PLASTIC NAMEPLATES OR STENCILLED PAINTING. IDENTIFY WITH AIR HANDLING UNIT OR FAN AND AREA BEING SERVED.
- (8) TAG AUTOMATIC CONTROLS, INSTRUMENTS, AND RELAYS. KEY TO CONTROL SCHEMATIC.
- (9) IDENTIFY PIPING, CONCEALED OR EXPOSED, WITH PLASTIC PIPE MARKERS OR STENCILLED PAINTING. IDENTIFY SERVICE, FLOW DIRECTION, AND PRESSURE. INSTALL IN CLEAR VIEW AND ALIGN WITH AXIS OF PIPING. LOCATE IDENTIFICATION NOT TO EXCEED 20 FEET (6 M) ON STRAIGHT RUNS INCLUDING RISERS AND DROPS, ADJACENT TO EACH VALVE AND TEE, AT EACH SIDE OF PENETRATION OF STRUCTURE OR ENCLOSURE, AND AT EACH OBSTRUCTION.
- (10) PROVIDE CEILING TAGS TO LOCATE VALVES ABOVE T-BAR TYPE PANEL CEILINGS. LOCATE IN CORNER OF PANEL CLOSEST TO EQUIPMENT.
9. DUCTWORK
- A. GALVANIZED STEEL DUCTS: ASTM A653/A653M GALVANIZED STEEL SHEET, LOCK-FORMING QUALITY, HAVING G60 ZINC COATING IN CONFORMANCE WITH ASTM A90/90M.
- B. FABRICATE AND SUPPORT IN ACCORDANCE WITH SMACNA HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE.
- C. INCREASE DUCT SIZES GRADUALLY, NOT EXCEEDING 15° DIVERGENCE WHEREVER POSSIBLE; MAXIMUM 30° DIVERGENCE UPSTREAM OF EQUIPMENT AND 45° CONVERGENCE DOWNSTREAM.
- D. FLEXIBLE DUCTS: UL LABELED, BLACK POLYMER FILM SUPPORTED BY HELICAL WOUND SPRING STEEL WIRE. THE PRESSURE RATING SHALL BE 4" WG POSITIVE AND 0.5" WG NEGATIVE. THE MAXIMUM VELOCITY SHALL BE 4000 FPM AND THE TEMPERATURE RANGE SHALL BE -20°F TO 175°F.
- E. VOLUME CONTROL DAMPERS SHALL BE RUSKIN MODEL MD-35 AND SHALL BE FABRICATED IN ACCORDANCE WITH SMACNA HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE.
10. CLEANING AND TESTING
- A. CLEAN EQUIPMENT AND FIXTURES TO A SANITARY CONDITION WITH CLEANING MATERIALS APPROPRIATE TO THE SURFACE AND MATERIAL BEING CLEANED. THOROUGHLY CLEAN AND SEAL AIRTIGHT ALL EXHAUST DUCTWORK LOCATED IN THE RENOVATED SPACES.
- B. EXHAUST SYSTEMS SHALL TESTED, ADJUSTED AND BALANCED (TAB) TO VERIFY PROPER CODE REQUIRED AIRFLOWS FROM EACH RENOVATED TOILET SPACE. EXISTING VOLUME DAMPERS WHERE PRESENT SHALL BE ADJUSTED TO DELIVER +/- 10% OF DESIGN. WHERE VOLUME DAMPERS ARE NOT PRESENT, DAMPERS SHALL BE ADDED TO ACHIEVE BALANCING TO LISTED AIRFLOW.

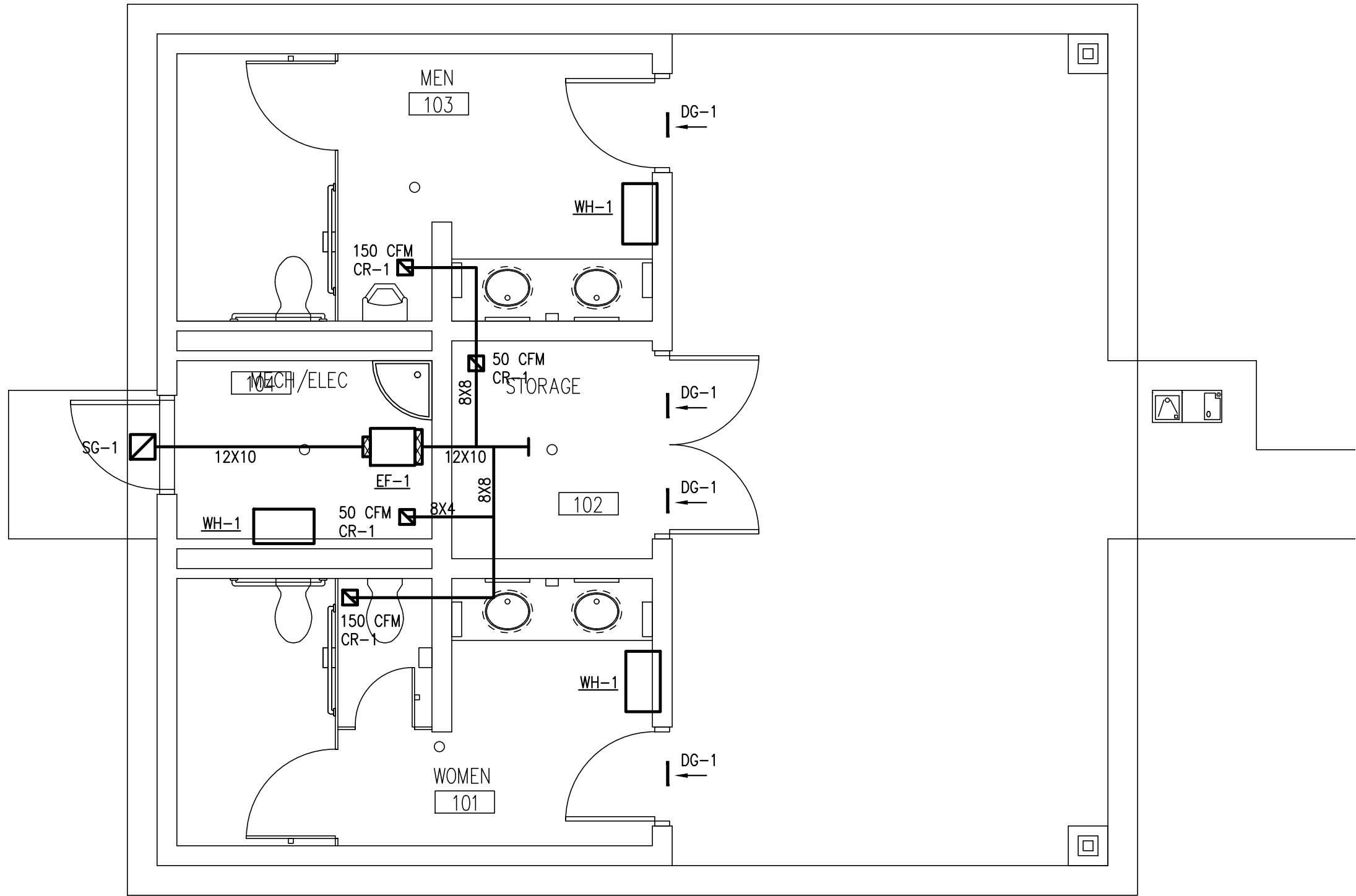


NO.	REVISION



ABBREVIATIONS

BTU	BRITISH THERMAL UNIT
CD	CEILING DIFFUSER
CFD	CEILING FIRE DAMPER
CFM	CUBIC FEET PER MINUTE
CG	CEILING GRILLE
COP	COEFFICIENT OF PERFORMANCE
CR	CEILING REGISTER
DB	DRY BULB TEMPERATURE
EAT	ENTERING AIR TEMPERATURE
EER	ENERGY EFFICIENCY RATIO
EFF	EFFICIENCY
EXT	EXTERNAL
F	DEGREES FAHRENHEIT
FPM	FEET PER MINUTE
FT	FEET
HP	HORSEPOWER
IN	INCH, INCHES
LAT	LEAVING AIR TEMPERATURE
MAX	MAXIMUM
MBH	THOUSAND BTU PER HOUR
VD	VOLUME DAMPER
MH	MOUNTING HEIGHT
MIN	MINIMUM
MOD	MOTOR OPERATED DAMPER
NC	NORMALLY CLOSED
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
OA	OUTSIDE AIR
PD	PRESSURE DROP
PS	PRESSURE SENSOR
PSI	POUNDS PER SQUARE INCH
PSIG	POUNDS PER SQUARE INCH GAGE
RA	RETURN AIR
SP	STATIC PRESSURE
TEMP	TEMPERATURE
TG	TOP GRILLE
TR	TOP REGISTER
TYP	TYPICAL
WB	WET BULB TEMPERATURE
WC, WG	WATER COLUMN
AFF	ABOVE FINISHED FLOOR
ABV	ABOVE
AD	ACCESS DOOR
BEL	BELOW
BET	BETWEEN
CLG	CEILING
CONN	CONNECT, CONNECTION
CONT	CONTINUED
DN	DOWN
EA	EACH
FL	FLOOR
FLEX	FLEXIBLE
FR	FROM
GALV	GALVANIZED
REQD	REQUIRED
SH	SHEET



MECHANICAL FLOOR PLAN

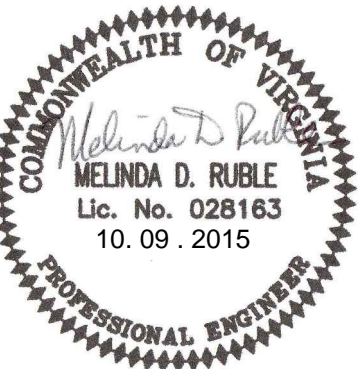
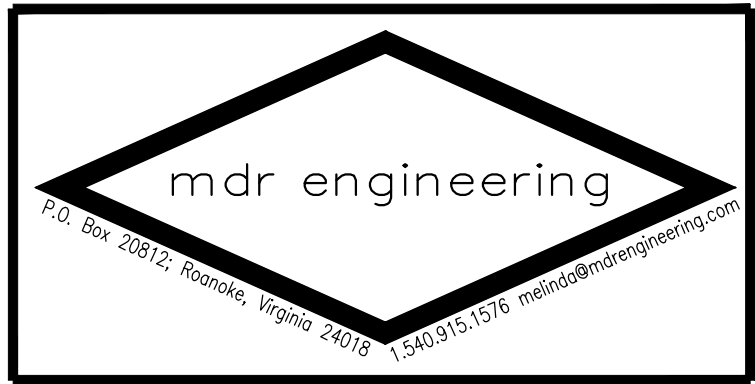
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GRILLES, REGISTERS AND DIFFUSERS SCHEDULE					
MARK	MANUFACTURER & MODEL NO.	DESCRIPTION	MATERIAL	FINISH	ACCESSORIES & FEATURES
GRILLES & REGISTERS					
CR-1	METALAIRE SRH-1	6"x6" SURFACE MOUNT CEILING EXHAUST REGISTER	STEEL	WHITE	OPOSED BLADE DAMPER
DG-1	METALAIRE DGDF	10"x8" DOOR GRILLE	STEEL	MILL	COLOR AS SELECTED BY ARCHITECT
SG-1	METALAIRE RH-1	10"x10" SURFACE MOUNT SOFFIT GRILLE	ALUMINUM	WHITE	--

ELECTRIC WALL HEATER SCHEDULE					
MARK	MANUFACTURER & MODEL NO.	MBH	CFM	KW	VOLT/PH
WH-1	MARKEL E3323TTD-RP	5.1	400	1.5	120/1
NOTES: PROVIDE WITH IN-BUILT THERMOSTAT AND DISCONNECT.					

FAN SCHEDULE								
UNIT	CFM	S.P.	RPM	MOTOR			SELECTION BASED ON GREENHECK	CONTROL
				WATTS	VOLTS	PH		
EF-1	400	0.25	900	48.2	120	1	CSP-A200	CONTINUOUS
SCHEDULE NOTES: 1. INLINE DIRECT DRIVE FAN, BACKDRAFT DAMPER, VARIABLE SPEED CONTROLLER, ELECTRICAL DISCONNECT. CONTROL AS INDICATED IN SCHEDULE.								



DATE: OCTOBER 9, 2015

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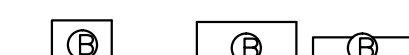


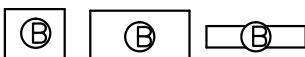
M-201

TLG PROJECT #13013

GENERAL ELECTRICAL NOTES

1. ALL NOTES, SYMBOLS AND ABBREVIATIONS MAY NOT BE APPLICABLE TO THIS PROJECT.
2. COMPLY WITH 2011 NEC.
3. CONTRACTORS SHOULD SCHEDULE A SITE VISIT TO FAMILIARIZE THEMSELVES WITH CONDITIONS TO BE MET IN THE EXECUTION OF THE WORK UNDER THIS CONTRACT.
4. COORDINATE SERVICE REQUIREMENTS WITH LOCAL POWER COMPANY, TELEPHONE, DATA AND/OR CABLE PROVIDER. PROVIDE C.T. CABINET AND TRANSFORMER PAD AS REQUIRED PER POWER COMPANY SPECIFICATIONS.
5. COORDINATE EXACT PANEL, SWITCHBOARD AND MCC LOCATIONS WITH PLUMBING AND MECHANICAL DRAWINGS TO INSURE REQUIRED CLEARANCE ABOVE AND AROUND PANELS.
6. PROVIDE INCREASED CONDUCTOR SIZES FOR 120/208 BRANCH CIRCUITS AS FOLLOWS UNO:
- | CIRCUIT BREAKER SIZE | 0-100 FT. LENGTH | 100-200 FT. LENGTH | 200-300 FT. LENGTH | OVER 300 FT. LENGTH |
|----------------------|------------------|--------------------|--------------------|---------------------|
| 20 AMP | 12 AWG | 10 AWG | 6 AWG | 4 AWG |
| 30 AMP | 10 AWG | 8 AWG | 4 AWG | 3 AWG |
7. ALL EMPTY CONDUIT RUNS IN EXCESS OF 10 FT. SHALL BE PROVIDED WITH A PULLWIRE.
8. ALL CONDUCTORS SHALL BE COPPER, TWHN OR THHN.
9. ALL BRANCH CIRCUIT WIRES TO BE SIZED AT LEAST #12 AWG THWN WITH #12 AWG GROUND, IN 3/4" CONDUIT UNLESS OTHERWISE INDICATED ON THE PLANS OR SCHEDULES.
10. SHARED NEUTRALS ON RECEPTACLE BRANCH CIRCUITS IS NOT ACCEPTABLE.
11. RECESSED DEVICES MAY BE ADJUSTED TO MATCH MASONRY COURSES IF APPLICABLE. MOUNT ALL BOXES TRUE AND PLUMB.
12. COORDINATE WITH MECHANICAL CONTRACTOR ON EXACT LOCATION AND ELECTRICAL CONNECTION REQUIREMENTS FOR HVAC EQUIPMENT.
13. ELECTRICAL REQUIREMENTS FOR HVAC EQUIPMENT ARE FOR HVAC EQUIPMENT SPECIFIED. IF SUBSTITUTE HVAC EQUIPMENT IS SUPPLIED, CONTRACTOR IS RESPONSIBLE FOR MODIFICATIONS IN AND/OR ADDITIONS TO ELECTRICAL REQUIREMENTS OF HVAC EQUIPMENT SUPPLIED.
14. THE MANUFACTURER AND MODEL NUMBER SHOWN ON THE LIGHT FIXTURE SCHEDULE INDICATES THE STYLE, QUALITY AND STANDARD OF PERFORMANCE REQUIRED. OTHER MANUFACTURERS WITH EQUAL PRODUCTS ARE ACCEPTABLE ON APPROVAL.
15. THE ELECTRICAL CONTRACTOR SHALL VERIFY THE TYPE OF CEILING SYSTEM WITH THE GENERAL CONTRACTOR. TO INSURE THAT ALL RECESSED LIGHTING FIXTURES ARE COMPATIBLE WITH THE CEILING SYSTEM BEING INSTALLED, LIGHTING FIXTURES SHOULD NOT BE ORDERED UNTIL THE TYPE OF CEILING HAS BEEN VERIFIED.
16. THE ELECTRICAL CONTRACTOR SHALL VERIFY THAT ALL DOOR SWINGS ARE CORRECT BEFORE ROUGHING IN LIGHT SWITCH OUTLETS. LIGHT SWITCHES SHALL NOT BE LESS THAN 3 NOR MORE THAN 12 INCHES FROM DOOR TRIM.
17. LOCATIONS FOR ELECTRICAL COMPONENTS INDICATED ON THE DRAWINGS ARE SCHEMATIC, UNLESS WRITTEN DIMENSIONS ARE GIVEN. THESE LOCATIONS SHALL BE FOLLOWED AS CLOSELY AS THE ACTUAL CONSTRUCTION AND THE WORK OF OTHER TRADES WILL ALLOW. EXACT LOCATIONS OF ALL COMPONENTS SHALL BE VERIFIED IN THE FIELD, PRIOR TO INSTALLATION. ADJUST LOCATIONS OF COMPONENTS AS REQUIRED TO AVOID INTERFERENCES WITH MECHANICAL EQUIPMENT AND OTHER BUILDING ELEMENTS.
18. PRIOR TO LIGHT FIXTURE AND OVERHEAD RACEWAY INSTALLATION, VERIFY THAT THESE COMPONENTS CAN BE INSTALLED AT THE SPECIFIED HEIGHT ABOVE FINISHED FLOOR, INCLUDING ALLOWANCES FOR DUCTWORK AND PIPING. ADJUST LOCATIONS OF COMPONENTS AS REQUIRED TO OBTAIN THE INDICATED LIGHT FIXTURE MOUNTING HEIGHTS,SUBJECT TO THE APPROVAL OF THE A/E.

LEGEND



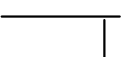
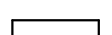



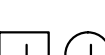
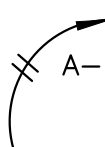






CEILING OUTLET WITH FLUORESCENT FIXTURE, TYPE AS INDICATED

WALL OUTLET WITH LIGHTING FIXTURE, TYPE AS INDICATED

SHADING OR NL SUBSCRIPT DENOTES NIGHT LIGHT – CIRCUIT SO THAT THE OUTER TWO LAMPS OR FIXTURE OPERATES 24 HOURS A DAY. CIRCUIT ON LINE SIDE OF SWITCH FOR LIGHTS IN SAME AREA, OR WITH LIKE FIXTURES ON SEPARATE CIRCUIT. TYPE AS INDICATED.

NL

DENOTES FIXTURE WITH TWO BALLASTS, ONE BALLAST CIRCUITED TO A SELF CONTAINED BATTERY. THE OTHER BALLAST TO BE SWITCHED WITH OTHER FIXTURES IN SAME AREA, TYPE AS INDICATED. CIRCUIT EMERGENCY BALLAST ON LINE SIDE OF SWITCH FOR LIGHTS IN SAME AREA, OR WITH LIKE FIXTURES ON SEPARATE CIRCUIT. BALLAST WILL OPERATE TWO 2' FIXTURES AT 90% RATED LUMENS FOR 90 MINUTES. UNIT WILL BE WIRED ON A SWITCHABLE CIRCUIT (UNSWITCHED CIRCUIT TO BATTERY PACK AND SWITCHED CIRCUIT TO FIXTURE BALLAST). UNIT WILL STRIKE NORMALLY OFF LAMP.



\$ LIGHT SWITCH, SINGLE POLE DEVICE, 20 AMP, 120/277 VOLT, FLUSH MOUNT 48" AFF TO TOP OF BOX. "K" INDICATES KEY OPERATED. "D" INDICATES DIMMER SWITCH.

⌚ OCCUPANCY SENSOR, MOTION SENSITIVE ON, AUTOMATIC TIMED OFF DUAL TECHNOLOGY TYPE-ULTRASONIC AND INFRARED.

⌚ 120 V, 3 W, 20 AMP, DUPLEX CONVENIENCE RECEPTACLE, FLUSH MOUNT 20" AFF TO TOP OF BOX, NEMA 5-20R

⌚ 48 DUPLEX RECEPTACLE WITH MOUNTING HEIGHT.

⌚ A 120 V, 3 W, 20 AMP, DUPLEX CONVENIENCE RECEPTACLE, FLUSH MOUNT A INDICATES 6" ABOVE COUNTERTOP OR BACKSPLASH TO TOP OF BOX

⌚ G,WP 120 V, 3 W, 20 AMP, DUPLEX CONVENIENCE RECEPTACLE, FLUSH MOUNT G INDICATES GFCI PROTECTED, WP INDICATES WEATHER PROOF WHILE IN USE.

A-1 CIRCUIT HOME RUN AND CONNECTION TO DEVICE, HASH MARKS INDICATE NUMBER OF CONDUCTORS EXCEPT GROUNDS. ARROW HEADS INDICATE NUMBER OF CIRCUITS. PANEL DESIGNATION AS INDICATED. BRANCH CONDUCTORS ARE #12 AWG COPPER IN 3/4" MINIMUM RACEWAY, UNO. VERIFY NUMBER OF CONDUCTORS WITH EQUIPMENT SUPPLIED.

J JUNCTION BOX / PULL BOX




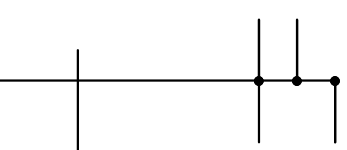














⌚ SAFETY SWITCH, HEAVY DUTY, FUSIBLE OR NON-FUSIBLE, POLES AS REQUIRED, "F" INDICATES FUSIBLE.

C1 CONTACTOR NUMBER AS INDICATED

⌚ TIME CLOCK

⌚ PANEL BOARD AS SCHEDULED

3/4"X4"X4" PAINTED PLYWOOD TELEPHONE/DATA BACKBOARD WITH GROUND. PROVIDE #6 GROUNDING CONDUCTOR AND GROUND



DEVICE WIRING POINT/TERMINAL

NORMALLY OPEN SINGLE CIRCUIT MOMENTARY PUSHBUTTON SWITCH

NORMALLY CLOSED SINGLE CIRCUIT MOMENTARY PUSHBUTTON SWITCH

SINGLE POLE NORMALLY OPEN TOGGLE SWITCH

SINGLE POLE NORMALLY CLOSED TOGGLE SWITCH

RELAY OPERATING COIL

NORMALLY OPEN RELAY CONTACT

NORMALLY CLOSED RELAY CONTACT

NORMALLY OPEN/NORMALLY CLOSED RELAY CONTACT

FUSE, NON RESETTABLE

THERMAL OVERLOAD

CIRCUIT INTERRUPTER, 1-POLE MANUAL RESET

CIRCUIT BREAKER

GROUND

CONNECTIONS. LEFT=NOT CONNECTED. RIGHT=CONNECTED

MOTOR/PUMP

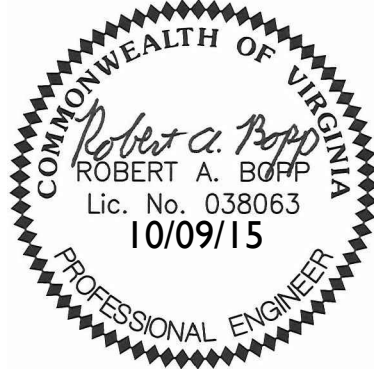
SCHEDULE TAG

ELECTRICAL METER

ABBREVIATIONS

A	AMP
AFF	ABOVE FINISHED FLOOR
AP	ALARM PANEL
AHU	AIR HANDLING UNIT
ATS	AUTOMATIC TRANSFER SWITCH
AWG	AMERICAN WIRE GAGE
BC	BATTERY CHARGER
C	CONDUIT
CB	CIRCUIT BREAKER
CKT	CIRCUIT
CP	CONTROL PANEL
CR	CONTROL RELAY
CTB	CABLE TAP BOX
CU	COPPER
DETD	DUAL ELEMENT TIME DELAY
DPS	DOOR POSITION SWITCH
EX	EXISTING TO REMAIN
ECB	ENCLOSED CIRCUIT BREAKER
EF	EXHAUST FAN
EVA	ELECTRIC VALVE ACTUATOR
EM	EMERGENCY
ER	EXISTING TO BE RELOCATED
EWC	ELECTRIC WATER COOLER
EWB	ELECTRIC WATER HEATER
GFI	GROUND FAULT INTERRUPTER
GND/G	GROUND
HP	HEAT PUMP
HMI	HUMAN MACHINE INTERFACE
LA	LIGHTING ARRESTOR
IG	ISOLATED GROUND
JB	JUNCTION BOX
KW	KILOWATT
KVA	KILOVOLT AMPERE
MDP	MAIN DISTRIBUTION PANEL
MLO	MAIN LUG ONLY
NEC	NATIONAL ELECTRICAL CODE
NEMA	NATIONAL ELECTRICAL MANUF. ASSOC
NL	NIGHT LIGHT
OL	OVERLOAD
PB	PUSHBUTTON MOMENTARY CONTACT SWITCH
PS	POWER SUPPLY
RAIL	REMOTE ALARM INDICATOR LIGHT
RGS	RIGID GALVANIZED STEEL CONDUIT
RCH	REHEAT COIL
RTU	ROOFTOP UNIT
SP	SURGE PROTECTOR
TB	TERMINAL BLOCK
TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSOR
UH	UNIT HEATER
UNO	UNLESS NOTED OTHERWISE
UPS	UNINTERRUPTIBLE POWER SUPPLY
V	VOLT
WG	WIRE GUARD
WP	WEATHERPROOF
XFMR	TRANSFORMER

THE LANE GROUP



GRAYSON COUNTY
RESTROOM BUILDING
INDEPENDENCE, VIRGINIA

ELECTRICAL LEGEND
AND ABBREVIATIONS

DATE: OCTOBER 9, 2015

NO.	REVISION

SHEET:

E001

TLG PROJECT #13013

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SECTION 16000 – ELECTRICAL SPECIFICATIONS

PART 1 – GENERAL

- 1.1 BASIC ELECTRICAL METHODS
- A. DRAWINGS ARE SCHEMATIC AND DIAGRAMMATIC. ELECTRICAL WORK SHALL BE PERFORMED IN A NEAT AND WORKMANLIKE MANNER IN ORDER TO FUNCTION PROPERLY AND FIT WITHIN BUILDING CONSTRUCTION AND FINISHES. ELECTRICAL CONDUCTORS, CONDUIT, COMPONENTS, NOT SHOWN OR SPECIFIED, WHICH ARE REQUIRED FOR ANY DEVICE OR SYSTEM TO PRODUCE A COMPLETE AND OPERATIVE SYSTEM ARE REQUIRED TO BE FURNISHED AND INSTALLED.
- B. ROUTE CONDUITS AND WIRING ASSOCIATED WITH NEW EQUIPMENT AND SYSTEMS ABOVE CEILINGS AND CONCEALED WITHIN BUILDING STRUCTURE AS MUCH AS POSSIBLE.
- C. CIRCUIT GROUPING--PROVIDE PROPER NUMBER OF CONDUCTORS AND CONDUITS OR CABLES TO PROVIDE OPERATIVE SYSTEM AS INDICATED ON CONTRACT DOCUMENTS. DO NOT REGROUP ANY FEEDER CIRCUITS, BRANCH CIRCUITS, AND HOME RUNS AT ANY POINT, FROM THAT SHOWN ON CONTRACT DOCUMENTS.
- D. NEW EQUIPMENT, SWITCHES, DEVICES, SHOWN MOUNTED ON AND/OR ADJACENT TO EQUIPMENT, WHICH IF INSTALLED, WOULD IMPAIR PROPER OPERATION OF NEW EQUIPMENT, SHALL BE RELOCATED AS REQUIRED SO EQUIPMENT WILL FUNCTION PROPERLY.
- E. SEAL AND MAKE PERMANENTLY WATERTIGHT PENETRATIONS BY ELECTRICAL RACEWAYS OR EQUIPMENT THROUGH ROOFS, CEILINGS, WALLS OR FLOORS.
1. SEAL PENETRATIONS IN NON-FIRE RATED CEILINGS, WALLS OR FLOORS.
2. SEAL PENETRATIONS IN FIRE RATED WALLS WITH FIRE RATED MATERIAL.
- F. TIGHTEN ELECTRICAL CONNECTORS AND TERMINALS, INCLUDING SCREWS AND BOLTS, IN ACCORDANCE WITH EQUIPMENT MANUFACTURER'S PUBLISHED TORQUE TIGHTENING VALUES FOR EQUIPMENT CONNECTORS.
- G. INSTALL EQUIPMENT AND MATERIALS TO PROVIDE REQUIRED MAINTENANCE AND CODE WORKING CLEARANCE FOR SERVICING AND MAINTENANCE. COORDINATE FINAL LOCATION OF CONCEALED EQUIPMENT AND DEVICES REQUIRING ACCESS WITH FINAL LOCATION OF REQUIRED ACCESS PANELS AND DOORS. ALLOW REQUIRED SPACE FOR REMOVAL OF PARTS THAT REQUIRE REPLACEMENT OR SERVICING.

1.2 QUALITY ASSURANCE

- A. ELECTRICAL COMPONENTS, DEVICES, AND ACCESSORIES: LISTED AND LABELED AS DEFINED IN NFPA 70, ARTICLE 100, BY A TESTING AGENCY ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION.
- B. COMPLY WITH 2011 NFPA 70 – NATIONAL ELECTRICAL CODE.

PART 2 – PRODUCTS

2.1 GENERAL

- A. ALL DEVICES AND COMPONENTS SHALL BE SPECIFICATION GRADE PRODUCTS. SIZES, WATTAGES, AMPACITIES, AND OTHER SPECIFICS ARE INDICATED ON THE DRAWINGS OR SPECIFIED HEREIN. ALL ELECTRICAL COMPONENTS SHALL BE READILY AVAILABLE ITEMS WHICH ARE CURRENTLY IN PRODUCTION BY THE MANUFACTURER.

2.2 HANGERS AND SUPPORTS

- A. PRODUCT REQUIREMENTS: FURNISH AND INSTALL APPROVED MATERIALS, SIZES, AND TYPES OF ANCHORS, FASTENERS, AND SUPPORTS TO CARRY LOADS OF EQUIPMENT AND CONDUIT.
- B. MATERIALS AND FINISHES: CORROSION RESISTIVE.
- C. ANCHORS AND FASTENERS:
1. CONCRETE SURFACES: SELF-DRILLING ANCHORS AND EXPANSION ANCHORS.
2. HOLLOW MASONRY, PLASTER, AND GYPSUM BOARD PARTITIONS: TOGGLE BOLTS AND HOLLOW WALL FASTENERS.
3. SOLID MASONRY WALLS: EXPANSION ANCHORS.
4. SHEET METAL: SHEET METAL SCREWS.
5. WOOD: WOOD SCREWS.

2.3 RECEPTACLES

- A. DUPLEX RECEPTACLES: SPECIFICATION GRADE DUPLEX RECEPTACLES, 3--WIRE GROUNDING TYPE, WIRED WITH SCREW TERMINALS, 125 VOLT, 20 AMP, NEMA 5--20R CONFIGURATION. EXPOSED FACES TO MATCH EXISTING FACILITY FINISHES. COVER PLATES TO BE TYPE 302 STAINLESS STEEL WITH WHITE PAINTED FINISH. PROVIDE GROUND FAULT INTERRUPTER RECEPTACLES WHERE INDICATED ON THE DRAWINGS, WITH TEST AND RESET BUTTONS ON THE EXPOSED FACE, CLEARLY MARKED. THROUGH--FEED GFCI RECEPTACLES MAY BE USED, IF ALL PROTECTED RECEPTACLES ARE SO MARKED. DEVICES SHOWN AS EXISTING DUPLEX OR GFCI RECEPTACLES SHALL BE REPLACED WITH NEW DEVICES AND COVERS.

2.4 CONDUIT

- A. ALL INDOOR CONDUCTORS SHALL BE RUN IN ELECTRICAL METALLIC TUBING (EMT), 3/4" MINIMUM SIZE. FLEXIBLE METAL CONDUITS OR MC CABLE SHALL TERMINATE AT A JUNCTION BOX LOCATED ABOVE THE ACOUSTICAL CEILING, DIRECTLY ABOVE THE DEVICE SERVED BY THE CONDUIT, MINIMUM CONDUIT SIZE SHALL BE 3/4", EXCEPT AS SPECIFICALLY NOTED OTHERWISE. FITTINGS FOR EMT SHALL BE STEEL SET SCREW, OR GLAND COMPRESSION TYPE. PROVIDE PULL BOXES AT NECESSARY POINT TO PREVENT INJURY TO INSULATION OR DAMAGE FROM PULLING RESISTANCE ON LONG CIRCUIT ROUTES.
- B. AT ALL CONNECTIONS TO MOTORIZED EQUIPMENT OR EQUIPMENT SUBJECT TO VIBRATION, PROVIDE AN 18 INCH MINIMUM AND 48 INCH MAXIMUM SECTION OF LIQUID--TIGHT FLEXIBLE METAL CONDUIT. FLEXIBLE METAL CONDUIT SHALL BE USED FOR LIGHTING FIXTURE WIRES.
- C. ALL CONDUITS SHALL BE GROUNDED PER NEC AND INCLUDE AN EQUIPMENT GROUNDING CONDUCTOR.

2.5 RACEWAYS FOR DATA/TELEPHONE WIRING

- A. ALL VOICE/DATA WIRING SHALL BE RUN IN EMT, WITH PLASTIC BUSHINGS, 1" MINIMUM SIZE, WITH NYLON PULL STRING INSTALLED WITH 18 INCH EXCESS COILED AT EACH END, IN LOCATIONS INDICATED ON THE DRAWINGS. ROUTE DATA/TELEPHONE CONDUITS FROM OUTLETS INTO CEILING SPACE. CONDUIT SHALL TURN OUT TOWARD THE SPACE 6 INCHES FROM WALL AT HEIGHT APPROXIMATELY 18 INCHES ABOVE SUSPENDED ACOUSTICAL CEILINGS, IN AN ACCESSIBLE LOCATION.

2.6 CONDUCTORS

- A. ALL WIRE SHALL BE COPPER CONDUCTOR, 600 VOLT, THWN, WITH MOISTURE--RESISTANT INSULATION. SIZE ALL CONDUCTORS PER NEC, PROVIDING VOLTAGE DROP OF 3 PER CENT OR LESS. FOR ALL USES, MINIMUM WIRE SIZE SHALL BE AWG #12. WIRE SIZES LARGER THAN #10 SHALL BE STRANDED, ALL OTHERS SHALL BE SOLID. PROVIDE AMPACITY BASED ON 75 DEGREES C RATING FOR CONDUCTOR SIZES #1, AND LARGER, AND BASED ON 60 DEGREE RATING FOR CONDUCTOR SIZES SMALLER THAN #1 AWG. PROVIDE FULL RATED NEUTRAL CONDUCTORS. TYPE AC ARMORED CABLE SHALL NOT BE USED.

2.7 ELECTRICAL IDENTIFICATION

- A. PROVIDE PLASTIC NAMEPLATES AT ALL EXISTING PANELBOARDS WHERE CIRCUITS ARE MODIFIED, AND AT ALL DISCONNECTS. NAMEPLATES SHALL BE THREE--LAYER LAMINATED PLASTIC, WHITE LETTERS ENGRAVED INTO A BLACK BACKGROUND, WITH 1/4" HIGH LETTERS. FOR DISCONNECTS, IDENTIFY EQUIPMENT SERVED, INCLUDING VOLTAGE RATINGS. FOR PANELBOARDS, IDENTIFY PANELBOARD, VOLTAGE, NUMBER OF PHASES, AND THE DISTRIBUTION PANELBOARD WHICH PROVIDES THE POWER FEED.
- B. PROVIDE NEATLY TYPED CIRCUIT BREAKER DIRECTORY IN ALL PANELBOARDS, INCLUDING EXISTING PANELBOARDS WITH CIRCUITS MODIFIED AS PART OF THIS WORK. DIRECTORY SHALL SHOW THE CIRCUIT NUMBER AND COMPLETE DESCRIPTION OF ALL COMPONENTS ON ALL CIRCUITS, INCLUDING ROOM NUMBERS OR ROOM NAMES WHERE COMPONENTS ARE LOCATED, AS APPROVED BY THE OWNER.
- C. PROVIDE WIRE MARKERS ON EACH CONDUCTOR IN PANELBOARDS, PULL BOXES, OUTLET BOXES, JUNCTION BOXES, AND AT LOAD CONNECTION. IDENTIFY WIRE WITH BRANCH CIRCUIT OR FEEDER NUMBER FOR POWER AND LIGHTING CIRCUITS, AND WITH CONTROL WIRE NUMBER FOR EQUIPMENT, AS IDENTIFIED ON EQUIPMENT MANUFACTURER'S SHOP DRAWINGS FOR CONTROL WIRING.
- D. LABEL ALL RECEPTACLES THAT HAVE GROUND FAULT CIRCUIT INTERRUPTER PROTECTION.
- E. LABEL ALL RECEPTACLES COVER PLATES ON THE BACK FACE WITH A PERMANENT MACHINE--PRINTED LABEL, INDICATING THE PANELBOARD AND CIRCUIT NUMBER WHICH SERVES THE RECEPTACLE.

2.8 DISCONNECTS

- A. QUICK MAKE, QUICK BREAK HEAVY DUTY DISCONNECT. VOLTAGE, PHASE, AND POLES AS SCHEDULED, SAFETY SWITCHES, FUSED OR NON FUSED AS SCHEDULED. NEMA 1 OR NEMA 3R ENCLOSURE AS NOTED.

2.9 OTHER MATERIALS

- A. PROVIDE OTHER MATERIALS AND MISCELLANEOUS COMPONENTS, NOT SPECIFICALLY DESCRIBED BUT REQUIRED FOR A COMPLETE AND PROPER INSTALLATION, AS SELECTED BY THE CONTRACTOR

SUBJECT TO THE APPROVAL OF THE A/E.

2.10 PANELBOARDS

- A. LIGHTING AND APPLIANCE PANELBOARDS: (120 /208 VOLT, 3 PHASE, 4 WIRE) EQUAL TO CUTLER HAMMER, SIEMENS, SQUARE--D, GENERAL ELECTRIC, AND APPROVED PRODUCTS.
- B. GENERAL: INSTALL AND FURNISH COMMERCIAL CIRCUIT BREAKER PANELBOARDS AS SHOWN ON THE PLANS AND INDICATED ON THE PANELBOARD SCHEDULE. THE PANELBOARDS SHALL BE DEAD FRONT EQUIPPED WITH MOLDED CASE CIRCUIT BREAKERS, ENCLOSURES, BUSES, GROUND AND NEUTRAL BARS, FRONT COVERS WITH DOORS INCLUDING DIRECTORY FRAME, AND BUILT IN LOCKS. CIRCUIT BREAKERS SHALL BE REMOVABLE WITHOUT DISTURBING ADJACENT UNITS. SUB PANEL NEUTRALS SHALL BE ISOLATED FROM THEIR ENCLOSURES AND GROUNDS. PANELS USED AS SERVICE ENTRANCE DUTY SHALL BE U.L. LISTED AND LABELED AS SUITABLE FOR SERVICE ENTRANCE EQUIPMENT. USE OF LOAD CENTERS IS NOT ACCEPTABLE.
- C. CIRCUIT BREAKERS: SHALL BE THERMAL--MAGNETIC TYPES WITH INVERSE TIME ELEMENT CHARACTERISTICS, UNLESS OTHERWISE SHOWN. MULTI--POLE BREAKERS SHALL AUTOMATICALLY OPEN ALL POLES WHEN AN OVERLOAD OCCURS IN ANY POLE. EXTERNAL TIE--HANDLE CONSTRUCTION WHERE ADJACENT POLES ARE ON THE SAME PHASE OR LEG WILL NOT BE ACCEPTED. ONE HALF 1/2 WIDTH (MINI) BREAKERS ARE NOT ACCEPTABLE. TANDEM BREAKERS ARE NOT ACCEPTABLE. BRANCH CIRCUIT BREAKERS USED FOR SWITCHING DUTY SHALL BE U.L. LISTED AS SWD TYPE. GROUND FAULT CIRCUIT INTERRUPTER PROTECTION AS REQUIRED BY NEC SHALL BE PROVIDED BY GROUND FAULT CIRCUIT INTERRUPTING BREAKERS UNLESS OTHERWISE NOTED. MINIMUM MAIN BREAKER INTERRUPTING RATINGS SHALL BE 22,000 AIC SYMMETRICAL AT 250 VOLTS AS UNLESS SCHEDULED. BRANCH CIRCUIT BREAKERS SHALL HAVE A MINIMUM INTERRUPTING RATING OF 10,000 AIC SYMMETRICAL AT 250 VOLTS AC. UNUSED CIRCUIT BREAKER SPACE SHALL BE COVERED BY BLANK FILLERS.
- D. CONSTRUCTION:
1. PANELBOARD CABINETS AND FRONTS SHALL BE STEEL. THE SIZE OF THE WIRING GUTTERS AND GAUGE OF STEEL SHALL BE IN ACCORDANCE WITH NEMA STANDARDS AND NEC REQUIREMENTS. FRONTS SHALL HAVE HINGED DOORS WITH FLUSH STAINLESS STEEL DOOR PULLS AND FLUSH LOCK. ALL PANELS SHALL BE KEYPED ALIKE.
2. DIRECTORY: PROVIDE A TYPE WRITTEN DIRECTORY CARD TO INDICATE THE CIRCUIT NUMBER, ITEM CONNECTED, AND LOCATION OF EACH CIRCUIT. THE DIRECTORY CARD SHALL BE MOUNTED IN A METAL FRAME WITH A TRANSPARENT COVER.
3. PROVIDE AN ENGRAVED NAMEPLATE WITH THE PANELBOARD NAME AS SCHEDULED ON THE DRAWINGS.
4. BUSSING: PROVIDE BUS BAR CONNECTIONS TO BREAKERS USING BOLTED CONNECTIONS. USE PHASE--SEQUENCE A--B--C ADJACENT BUS CONNECTIONS TO PERMIT TWO POLE BREAKERS TO BE INSTALLED AT ANY POLE SPACE AND BE CONNECTED TO ADJACENT PHASES. ALL CURRENT CARRYING PARTS SHALL BE PLATED AND SHALL MEET ESTABLISHED HEAT RISE CHARACTERISTICS FOR UL 67 AND UL 991.
5. FINISH: FACTORY PRIMED WITH A RUST INHIBITING PRIMER AND PAINTED WITH A LIGHT GRAY ENAMEL PAINT SIMILAR IN COLOR TO ANSI NO. 49. PROVIDE A SPRAY CAN OF MATCHING TOUCH--UP PAINT.

2.11 LIGHTING FIXTURES--

- PROVIDE ALL ACCESSORIES REQUIRED FOR A COMPLETE AND OPERABLE SYSTEM. FURNISH FIXTURE TYPE, MODEL STYLE, COLOR AND FINISH AS INDICATED IN LIGHT FIXTURE SCHEDULE, AND NOTED IN THE SPECIFICATIONS FOR PARTICULAR LIGHT FIXTURES.
- A. FLUORESCENT FIXTURES: FURNISH FLUORESCENT FIXTURES COMPLETE WITH LAMPS AS SCHEDULED AND HIGH EFFICIENCY ELECTRONIC BALLASTS, LESS THAN 10% THD AND U.L. APPROVED. FURNISH FLUORESCENT FIXTURES WITH LAMP SOCKETS COMPATIBLE WITH LAMP CONNECTION PINS.
- B. FLUORESCENT LAMPS: PROVIDE ENERGY SAVING LAMPS WITH WATTAGE AS SHOWN IN THE SCHEDULE. LAMPS SHALL GENERALLY BE T--8 TYPE, 32 WATT WITH BI--PIN SOCKETS. LAMPS SHALL BE MANUFACTURED BY GENERAL ELECTRIC OR PHILLIPS. PROVIDE LOW MERCURY CONTENT, TOLP EPA COMPLIANT LAMPS. LAMPS TO DELIVER 95% LUMEN MAINTENANCE AND REDUCED LAMP END BLACKENING. PROVIDE A CRI OF 75 OR GREATER FOR T--8 LAMPS USING 32 WATTS. THE COLOR TEMPERATURE SHALL BE 3500K. LAMPS SHALL HAVE GREEN COLORED END CAPS. COMPACT FLUORESCENTS SHALL HAVE A PIN TYPE SOCKETS.
- C. BALLASTS: MULTI VOLT, 60 HERTZ, ELECTRONIC TYPE A. FLUORESCENT LAMP ELECTRONIC BALLAST LESS THAN 10% THD, 32 WATT, SOUND RATING A. BALLAST SHALL BE OF THE PARALLEL LAMP CONNECTION DESIGN SUCH THAT LAMPS REMAIN FULLY ILLUMINATED IF ANY ADJACENT LAMP FAILS
- D. LENS AND ENCLOSURES: ACRYLIC FIXTURE LENS. WHERE SHOWN, PROVIDE ACRYLIC PRISMATIC LENS, INJECTION MOLDED, ULTRAVIOLET STABILIZED. PARABOLIC LENS SHALL HAVE ALZAK ALUMINUM REFLECTORS, LOW IRIDESCENT TYPE, WITH CELL SIZE AND CONFIGURATION AS SHOWN IN THE FIXTURE SCHEDULE. MINIMUM LENS THICKNESS SHALL BE .125 INCHES.
- E. EXIT LIGHTING UNITS: FIXTURES SHALL HAVE A LED WITH RED LETTERS ON AN ALUMINUM FACE AND BUILT--IN ARROWS TO ALLOW ANY DIRECTIONAL COMBINATION. LIGHT--EMITTING DIODES, LED AC VOLT LAMPS SHALL BE PROVIDED WITH A RATED LIFE OF 70,000 HOURS MINIMUM. 5 WATTS MAXIMUM PER SIDE.
- F. EMERGENCY LIGHTING; RATED AT 115 VOLTS, 60 HERTZ, SINGLE PHASE, AC INPUT WITH 12 VOLT DC OUTPUT, RATED FOR TOTAL EMERGENCY LIGHTING LOAD. SYSTEM SHALL AUTOMATICALLY ENERGIZE EMERGENCY AND DC EGRESS LIGHTS UPON FAILURE OF NORMAL POWER AND DE--ENERGIZE LIGHTS UPON RESTORATION OF NORMAL POWER. THE UNIT SHALL AUTOMATICALLY BE MAINTAINED IN A CHARGED CONDITION.
1. CASE: ACID--RESISTANT, CONTAINING BATTERY, CHARGER AND CONTROLS, RELAYS, INDICATING LIGHTS, SWITCHES, AND ALL NECESSARY COMPONENTS. CASE SHALL CONTAIN COMPARTMENTS TO SEPARATE BATTERY FROM OTHER CONTROLS. THE ENCLOSURE COLOR SHALL BE WHITE AND MATCH EXIT LIGHT HOUSING COLOR. CASE SHALL BE LOW PROFILE ARCHITECTURAL STYLE. COMBINATION EXIT SIGN AND EMERGENCY LIGHT SHALL BE PROVIDED AS A COMBINATION UNIT AS SCHEDULED.
2. BATTERY: TWO 3--CELL, 6 VOLT OR 12 VOLT, SEALED LEAD--ACID, CALCIUM ALLOY, GRID TYPE. PROVIDE A 90 MINUTE DURATION WITHOUT POWER INPUT, WITH LAMP LOADS SPECIFIED.
3. CHARGER: COMPLETELY AUTOMATIC, SOLID STATE, TWO--RATE, WITH CAPACITY TO RESTORE BATTERIES TO FULL CHARGE WITHIN 12 HOURS AFTER A FULL LOAD DISCHARGE FOR 1 1/4 HOURS. CHARGER SHALL MONITOR BATTERY VOLTAGE AND AUTOMATICALLY RETURN TO HIGH STATE AS REQUIRED. SOLID STATE COMPONENTS SHALL BE RATED MINIMUM 200 PERCENT OF OPERATING DUTY.
4. CONTROLS: ON--OFF SWITCH, FRONT--MOUNTED PUSH--TO--TEST SWITCH, READY STATE LED LIGHT.

2.12 ELECTRICAL EQUIPMENT AND CONNECTIONS TO MECHANICAL EQUIPMENT

- A. FURNISH AND INSTALL THE FOLLOWING:
1. CONDUIT, WIRING AND ELECTRICAL CONNECTIONS TO MOTORS, SAFETY SWITCHES, STARTERS, RELAYS, ELECTRICAL INTERLOCK CIRCUITS, UNIT HEATERS, FAN COIL UNITS, AIR HANDLING UNITS, AND OTHER SIMILAR EQUIPMENT, REQUIRED FOR COMPLETE AND READY FOR OPERATION.
2. STARTERS AS INDICATED ON DRAWINGS EXCEPT CUSTOM DESIGNED STARTERS SUCH AS THOSE PHYSICALLY MOUNTED ON THE UNIT OR ANY PIECE OF EQUIPMENT WHERE STARTER IS FURNISHED AS AN INTEGRAL PART OF THE EQUIPMENT.
3. THERMOSTAT AND SPECIAL WIRE OTHER THAN BUILDING WIRE.

PART 3 – EXECUTION

3.1 INSTALLATION – GROUNDING AND BONDING

- A. PROVIDE BONDING AND GROUNDING IN CONFORMANCE WITH NFPA 70.
- B. EQUIPMENT GROUNDING CONDUCTOR: PROVIDE SEPARATE, INSULATED CONDUCTOR WITHIN EACH FEEDER AND BRANCH CIRCUIT RACEWAY. TERMINATE EACH END ON SUITABLE LUG, BUS, OR BUSHING.

3.2 INSTALLATION – HANGERS AND SUPPORTS

- A. INSTALL PRODUCTS IN ACCORDANCE WITH MANUFACTURER'S PUBLISHED INSTRUCTIONS.
- B. DO NOT FASTEN SUPPORTS TO PIPES, DUCTS, MECHANICAL EQUIPMENT, AND CONDUIT.
- C. DO NOT USE SPRING STEEL CLIPS AND CLAMPS.
- D. DO NOT USE POWDER--ACTUATED ANCHORS.
- E. OBTAIN PERMISSION FROM BUILDING STRUCTURAL ENGINEER BEFORE DRILLING OR CUTTING STRUCTURAL MEMBERS.
- F. FABRICATE SUPPORTS FROM STRUCTURAL STEEL ANGLE OR STRUCTURAL STEEL CHANNEL. RIGIDLY WELD MEMBERS OR USE HEXAGON HEAD BOLTS TO PRESENT NEAT APPEARANCE WITH ADEQUATE STRENGTH AND RIGIDITY. USE SPRING LOCK WASHERS UNDER ALL NUTS.
- G. INSTALL SURFACE--MOUNTED CABINETS AND PANELS WITH MINIMUM OF FOUR ANCHORS.
- H. IN WET AND DAMP LOCATIONS USE STRUCTURAL STEEL CHANNEL SUPPORTS TO STAND CABINETS AND PANELBOARDS ONE INCH OFF WALL.

3.3 INSTALLATION – CONDUCTORS AND CABLES

- A. WIRING METHODS:
1. CONCEALED DRY INTERIOR LOCATIONS: USE ONLY BUILDING WIRE, TYPE THHN/THWN INSULATION IN EMT, FMC, OR RGS METALLIC RACEWAY.

2. EXPOSED DRY INTERIOR LOCATIONS: USE ONLY BUILDING WIRE, TYPE THHN/THWN INSULATION IN EMT OR RGS METALLIC RACEWAY. PROVIDE RGS WHERE EXPOSED TO MECHANICAL DAMAGE.
3. ABOVE ACCESSIBLE CEILINGS: USE ONLY BUILDING WIRE, TYPE THHN/THWN INSULATION IN EMT, FMC, OR RGS METALLIC RACEWAY.
4. WET OR DAMP INTERIOR AND EXTERIOR LOCATIONS: USE ONLY BUILDING WIRE, TYPE THWN INSULATION IN RGS RACEWAY.
5. MINIMUM RACEWAY SIZE IS 3/4" DIAMETER.
6. BELOW GRADE: USE ONLY BUILDING WIRE TYPE THHN/THWN INSULATION IN PVC SCHEDULE 40 RACEWAY.
7. IDENTIFY WIRE AND CABLE USING VINYL MARKERS.
- B. USE SOLID COPPER CONDUCTORS FOR FEEDERS AND BRANCH CIRCUITS #10 AWG AND SMALLER. USE STRANDED COPPER CONDUCTORS FOR #8AWG AND LARGER CONDUCTORS.
- C. USE STRANDED COPPER CONDUCTORS FOR CONTROL CIRCUITS AND FINAL CONNECTIONS TO ALL VIBRATION EQUIPMENT.
- D. USE CONDUCTOR NOT SMALLER THAN 12 AWG FOR POWER AND LIGHTING CIRCUITS.
- E. USE CONDUCTOR NOT SMALLER THAN 14 AWG FOR CONTROL CIRCUITS.
- F. USE 10 AWG CONDUCTORS FOR 20 AMPERE, 120 VOLT BRANCH CIRCUITS LONGER THAN 75 FEET.
- G. PULL ALL CONDUCTORS INTO RACEWAY AT SAME TIME.
- H. USED APPROVED WIRE PULLING LUBRICANT FOR ALL BUILDING WIRE.
- I. PROTECT EXPOSED CABLE FROM DAMAGE.
- J. NEATLY TRAIN AND LACE WIRING INSIDE BOXES, EQUIPMENT, AND PANELBOARDS.
- K. CLEAN CONDUCTOR SURFACES BEFORE INSTALLING LUGS AND CONNECTORS.
- L. MAKE SPLICES, TAPS, AND TERMINATIONS TO CARRY FULL AMPACITY OF CONDUCTORS WITH NO PERCEPTIBLE TEMPERATURE RISE.
- M. USE SOLDER LESS PRESSURE COMPRESSION CONNECTORS WITH INSULATING COVERS FOR COPPER CONDUCTOR SPLICES AND TAPS, 8 AWG AND SMALLER.
- N. USE CONDUCTORS RATED 90 DEGREES C, INSIDE A BALLAST COMPARTMENT OR WITHIN 6 INCHES OF ANY BALLAST.

3.4 INSTALLATION – RACEWAYS AND BOXES

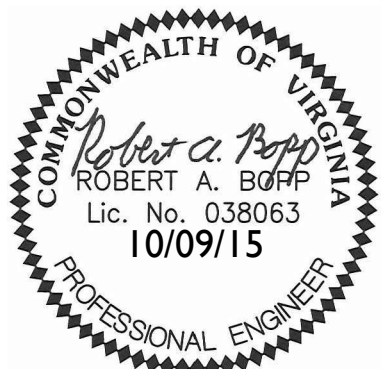
- A. INSTALL NONMETALLIC CONDUIT IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. NONMETALLIC CONDUIT SHALL ONLY BE USED UNDER SLABS OR DIRECT BURIED IN EARTH. CONDUIT PENETRATIONS THROUGH SLAB INCLUDING ELBOWS SHALL BE RGS.
- B. CONDUIT ROUTING INDICATED ON DRAWINGS ARE APPROXIMATE LOCATIONS UNLESS DIMENSIONED. ROUTE PARALLEL AND PERPENDICULAR TO BUILDING CONSTRUCTION FOR COMPLETE WIRING SYSTEM REGARDLESS WHETHER EXPOSED OR CONCEALED.
- C. ARRANGE SUPPORTS TO PREVENT MISALIGNMENT DURING WIRING INSTALLATION.
- D. GROUP RELATED CONDUITS; SUPPORT USING CONDUIT RACK. CONSTRUCT RACK USING APPROVED STEEL CHANNEL, PROVIDE SPACE ON EACH FOR 25 % ADDITIONAL CONDUITS.
- E. FASTEN CONDUIT SUPPORTS TO BUILDING STRUCTURE AND SURFACES UNDER PROVISIONS OF THIS SECTION.
- F. DO NOT SUPPORT CONDUIT WITH WIRE OR PERFORATED PIPE STRAPS IN ANY TYPE STRUCTURE. REMOVE WIRE USED FOR TEMPORARY SUPPORTS. STEEL TIE WIRE MAY BE USED TO ANCHOR CONDUIT DOWN TO REINFORCING RODS IN CONCRETE ENCASEMENT ONLY.
- G. DO NOT ATTACH CONDUIT TO CEILING SUPPORT WIRES.
- H. ARRANGE CONDUIT TO MAINTAIN HEADROOM AND PRESENT NEAT APPEARANCE.
- I. ROUTE ALL CONDUIT WHETHER EXPOSED OR CONCEALED PARALLEL AND PERPENDICULAR TO WALLS, CEILINGS, BUILDING STRUCTURES, ETC.
- J. MAINTAIN REQUIRED CLEARANCE BETWEEN CONDUIT AND PIPING.
- K. MAINTAIN 12 INCH CLEARANCE BETWEEN CONDUIT AND SURFACES WITH TEMPERATURES EXCEEDING 104 DEGREES F.
- L. CUT EMT CONDUIT SQUARE USING SAW OR PIPECUTTER; DE--BURR CUT ENDS AND REAM.
- M. BRING CONDUIT TO SHOULDER OF FITTINGS; FASTEN SECURELY.
- N. USE CONDUIT HUBS OR SEALING LOCKNUTS TO FASTEN CONDUIT TO SHEET METAL BOXES IN DAMP AND WET LOCATIONS AND TO CAST BOXES.
- O. INSTALL NO MORE THAN EQUIVALENT OF THREE 90--DEGREE BENDS BETWEEN BOXES. USE CONDUIT BODIES TO MAKE SHARP CHANGES IN DIRECTION, AS AROUND BEAMS.
- P. AVOID MOISTURE TRAPS; PROVIDE JUNCTION BOX WITH DRAIN FITTING AT LOW POINTS IN CONDUIT SYSTEM.
- Q. PROVIDE SUITABLE FITTINGS TO ACCOMMODATE EXPANSION AND DEFLECTION WHERE CONDUIT CROSSES CONTROL AND EXPANSION JOINTS.
- R. PROVIDE SUITABLE NYLON PULL STRING OR #14 AWG STEEL WIRE IN EACH CONDUIT EXCEPT SLEEVES AND NIPPLES.
- S. USE SUITABLE CAPS TO PROTECT INSTALLED CONDUIT AGAINST ENTRANCE OF DIRT AND MOISTURE.
- T. GROUND AND BOND CONDUIT PER NFPA 70
- U. COAT ALL METALLIC CONDUIT MALE THREADS WITH "GENERAL ELECTRIC" RTV SILICONE SEALER WHERE CONDUIT IS INSTALLED IN EXTERIOR AREAS OR IN CONTACT WITH CONCRETE OR EARTH.
- V. INSTALL ALL ABOVE GRADE FEEDERS IN GALVANIZED OR SHERADIZED THICK WALL RIGID STEEL (GRC), INTERMEDIATE METAL OR CONDUIT (IMC).
- W. CONDUITS SIZED AS INDICATED ON DRAWINGS. WHERE SIZE NOT INDICATED, SIZE PER NFPA 70.
- X. CAP ALL UPTURNED CONDUITS DURING CONSTRUCTION ROUGH--IN TO PREVENT MOISTURE OR DEBRIS FROM ENTERING. PULL THROUGH EACH AND EVERY CONDUIT A DRY SWAB OF SUFFICIENT SIZE TO REMOVE ANY AND ALL MOISTURE.
- Y. MAXIMUM 6 FOOT LENGTH FLEXIBLE METAL CONDUIT (GREENFIELD), MC CABLE, OR FLEXIBLE LIQUIDTITE PERMITTED.
- Z. ASSURE GROUND CONTINUITY ON ALL BRANCH CIRCUITRY CONDUITS WITH TWO LOCKNUTS, ONE INSIDE AND ONE OUTSIDE OF ALL BOXES, CABINETS AND GUTTERS FOR RIGID CONDUIT. ONE LOCKNUT INSIDE OF ALL BOXES, CABINETS, AND GUTTERS FOR EMT.
- AA. INSTALL BOXES IN ACCORDANCE WITH NECA "STANDARD OF INSTALLATION."
- BB. SET WALL MOUNTED BOXES AT ELEVATION TO ACCOMMODATE MOUNTING HEIGHTS INDICATED OR AS REQUIRED FOR SPECIFIC PROJECT REQUIREMENTS.
- CC. INACCESSIBLE CEILING AREAS: INSTALL OUTLET AND JUNCTION BOXES NO MORE THAN 6 INCHES FROM CEILING ACCESS PANEL OR FROM REMOVABLE RECESSED LUMINAIRE.
- DD. COORDINATE MOUNTING HEIGHTS AND LOCATIONS OF OUTLETS MOUNTED ABOVE COUNTERS, BENCHES, AND BACKSPASHES OR FOR HVAC WINDOW UNITS.
- EE. LOCATE OUTLET BOXES TO ALLOW LUMINARIES POSITIONED AS INDICATED ON DRAWINGS.
- FF. DO NOT INSTALL FLUSH MOUNTING BOX BACK--TO--BACK IN WALLS; PROVIDE MINIMUM 6 INCHES SEPARATION.
- GG. SECURE FLUSH MOUNTING BOX TO INTERIOR WALL AND PARTITION STUDS. ACCURATELY POSITION TO ALLOW FOR SURFACE FINISH THICKNESS.
- HH. USE APPROVED STAMPED STEEL BRACKETS TO FASTEN FLUSH MOUNTING OUTLET BOX BETWEEN STUDS.
- II. INSTALL FLUSH MOUNTING BOX WITHOUT DAMAGING WALL INSULATION OR REDUCING ITS EFFECTIVENESS.
- JJ. USE APPROVED ADJUSTABLE STEEL CHANNEL FASTENERS SPANNING JOIST FOR HUNG CEILING OUTLET BOX.
- KK. DO NOT FASTEN BOXES TO CEILING SUPPORT WIRES.
- LL. SUPPORT BOXES INDEPENDENTLY OF CONDUIT.

3.9 INSTALLATION – WIRING DEVICES.

- A. INSTALL DEVICES PLUMB AND LEVEL.
- B. INSTALL RECEPTACLES WITH GROUNDING POLE ON BOTTOM.
- C. CONNECT WIRING DEVICE GROUNDING TERMINAL TO BRANCH CIRCUIT EQUIPMENT GROUNDING CONDUCTOR.
- D. CONNECT WIRING DEVICES BY WRAPPING CONDCUTOR 2/3 OF SCREW DIAMETER IN CLOCKWISE DIRECTION AROUND SCREW TERMINAL. DO NOT USE SPRING PRESSURE DEVICES FOR WIRE CONNECTIONS.
- E. INSTALL STAINLESS STEEL WALL PLATES – 302 BRUSUED STAINLESS STEEL.

END OF SECTION 16000

THE LANE GROUP



GRAYSON COUNTY
RESTROOM BUILDING
INDEPENDENCE, VIRGINIA

ELECTRICAL
SPECIFICATIONS

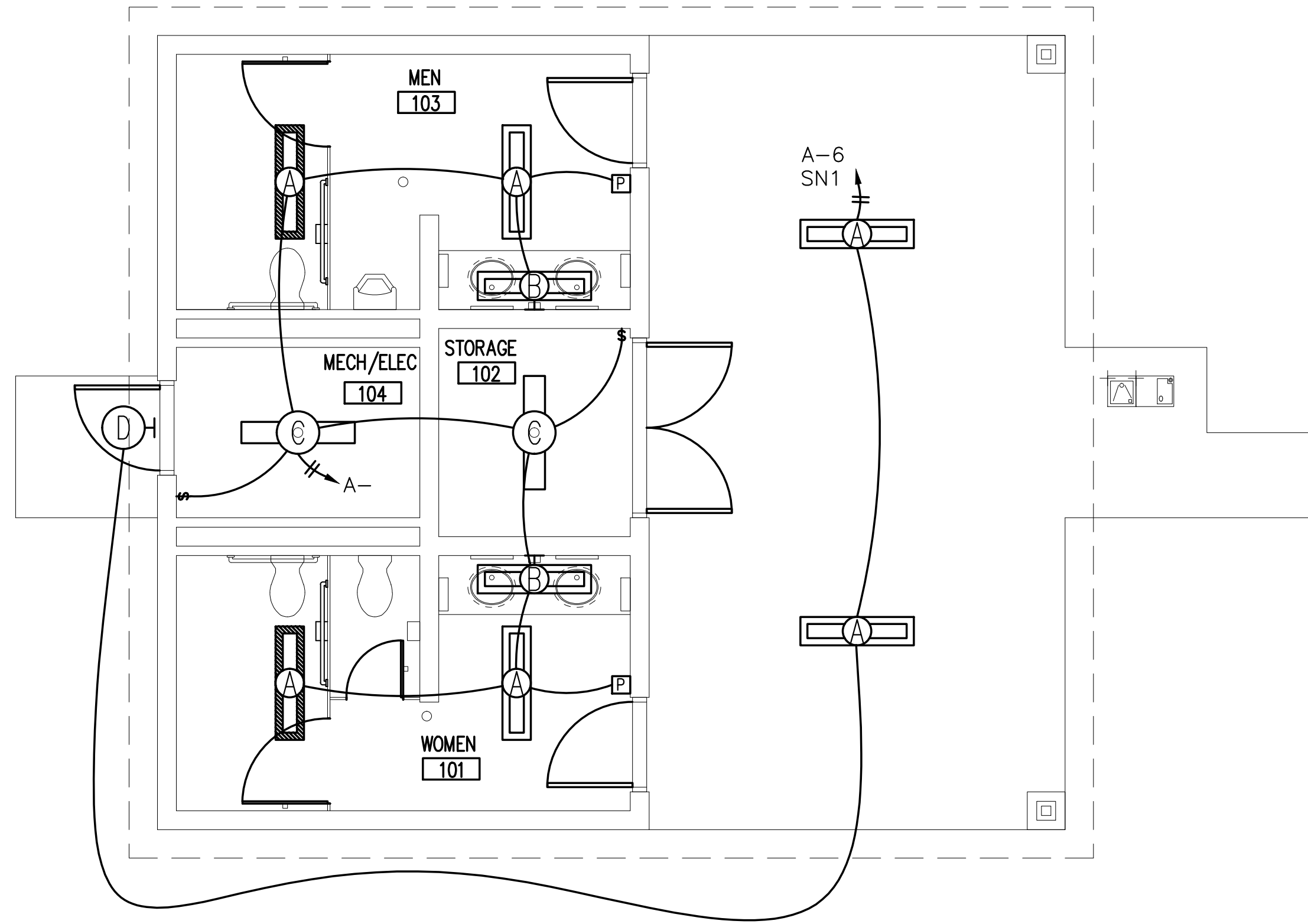
DATE: OCTOBER 9, 2015

NO.	REVISION

SHEET:

E002
TLG PROJECT #13013

THE LANE GROUP © 2015

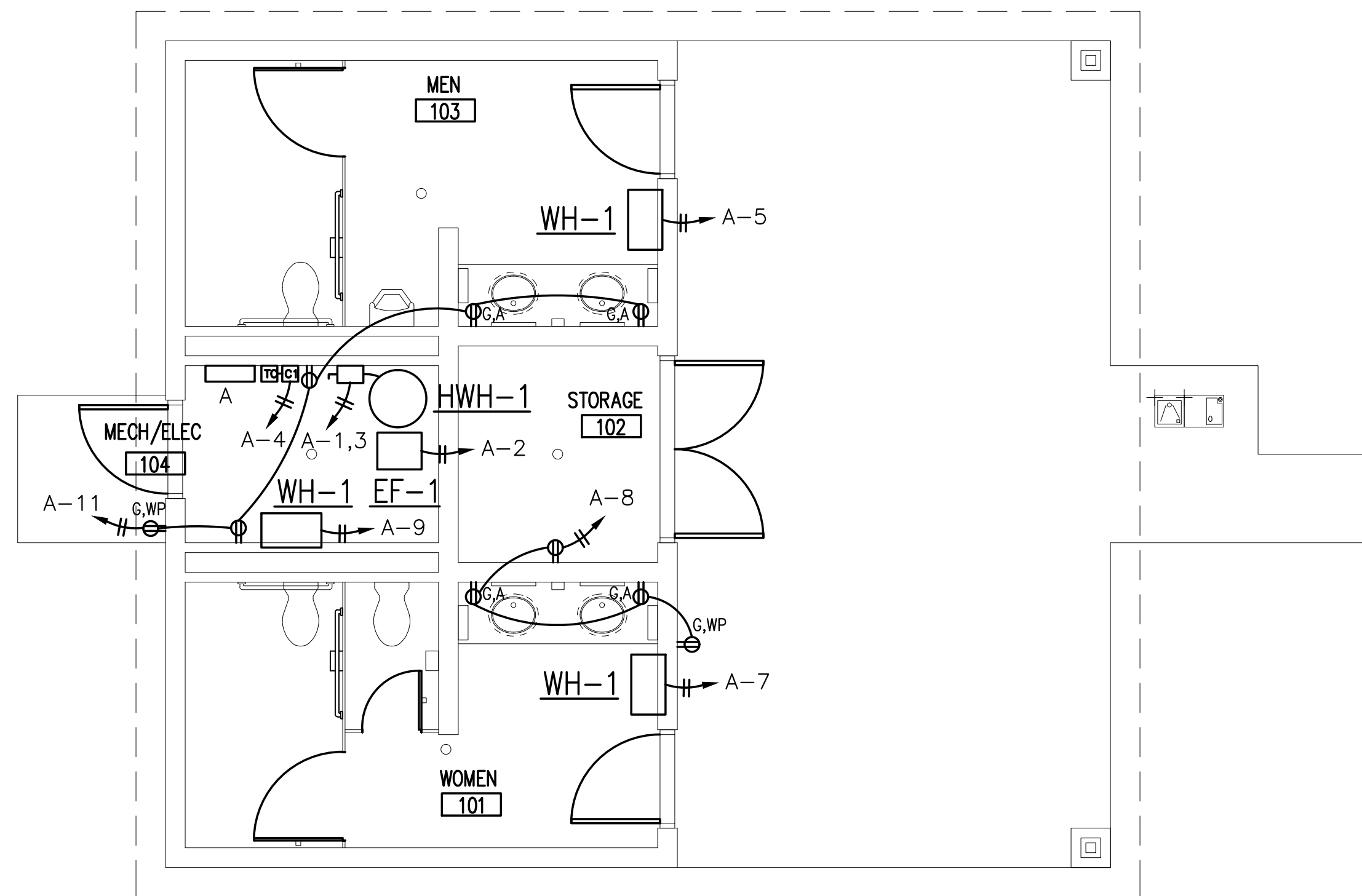


LIGHTING SHEET NOTES:

SN1 TO LIGHTING CIRCUIT, ROUTE THROUGH LIGHTING CONTACTOR.

SN2 OCCUPANCY SENSOR SHALL BE SUITABLE FOR USE IN WET LOCATIONS.

LIGHTING PLAN - GRAYSON COUNTY RESTROOM BUILDING
SCALE: 1/4" = 1'-0"

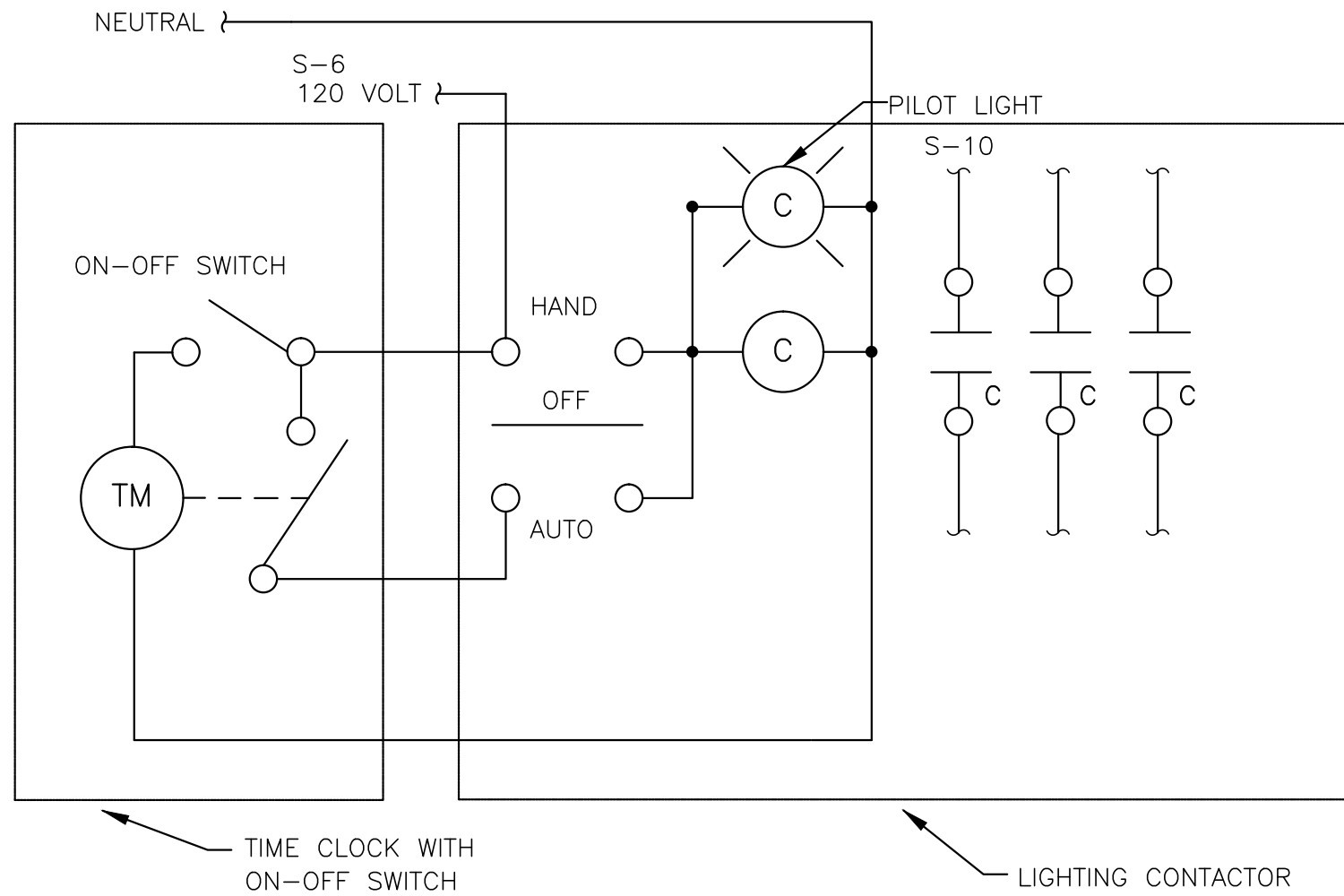


POWER SHEET NOTES:

SN1 EXTERIOR RECEPTACLES SHALL BE FLUSH MOUNTED.

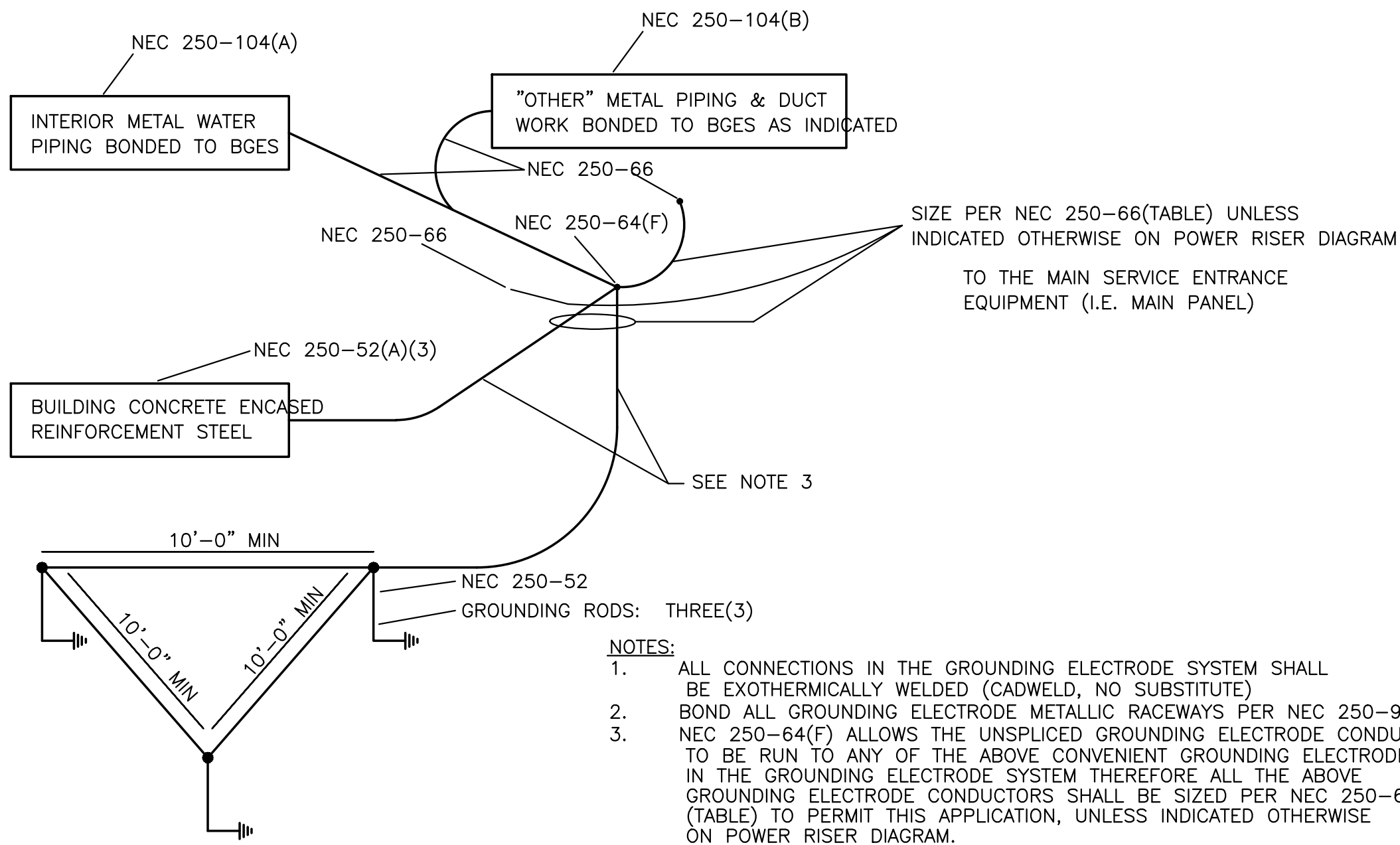
SN2 EXHAUST FAN AND WALL HEATERS WILL BE SUPPLIED WITH INTEGRAL DISCONNECT.

POWER PLAN - GRAYSON COUNTY RESTROOM BUILDING
SCALE: 1/4" = 1'-0"

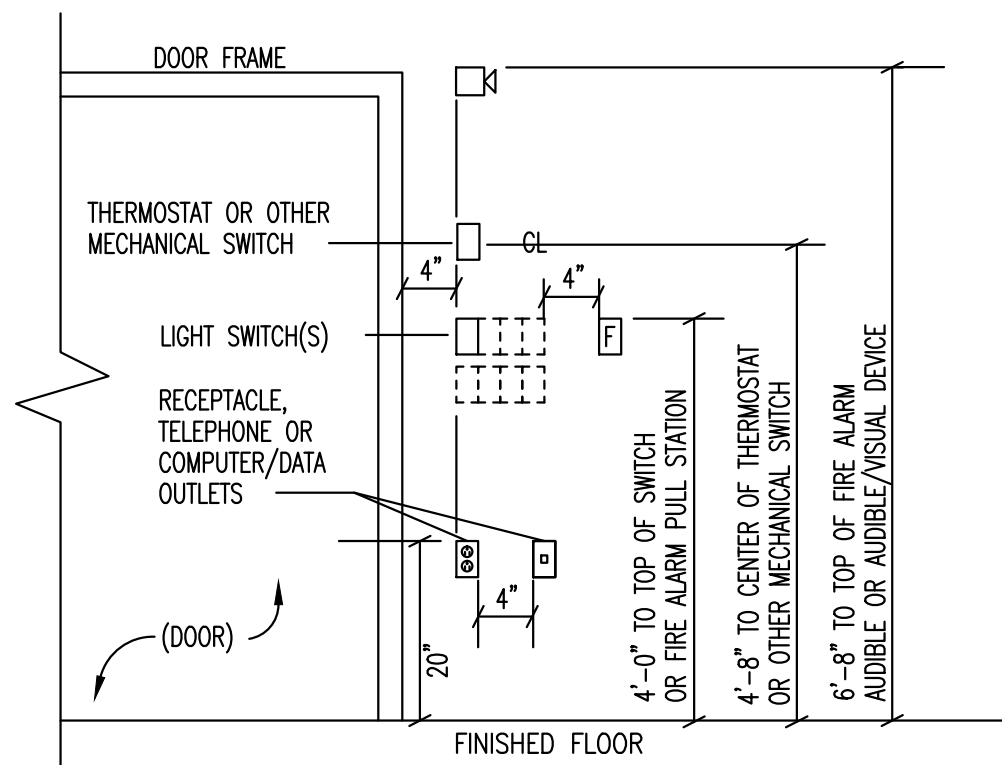


LIGHTING TIME CLOCK— ASTROMOMICAL DIAL, AUTOMATICALLY ADJUSTS FOR DAYLIGHT SAVINGS TIME, OFF SUNRISE, ON SUNSET. 120 VOLT, CONTACTS, ELECTRONIC, BATTERY BACKUP EQUAL TO INTERMATIC ET8115.

OUTDOOR LIGHTING CONTROL WITH TIME CLOCK
NTS



BUILDING GROUNDING ELECTRODE SYSTEM (BGES)
SCHEMATIC



DETAIL — TYPICAL OUTLET BOX ELEVATIONS
NO SCALE

NO.	REVISION

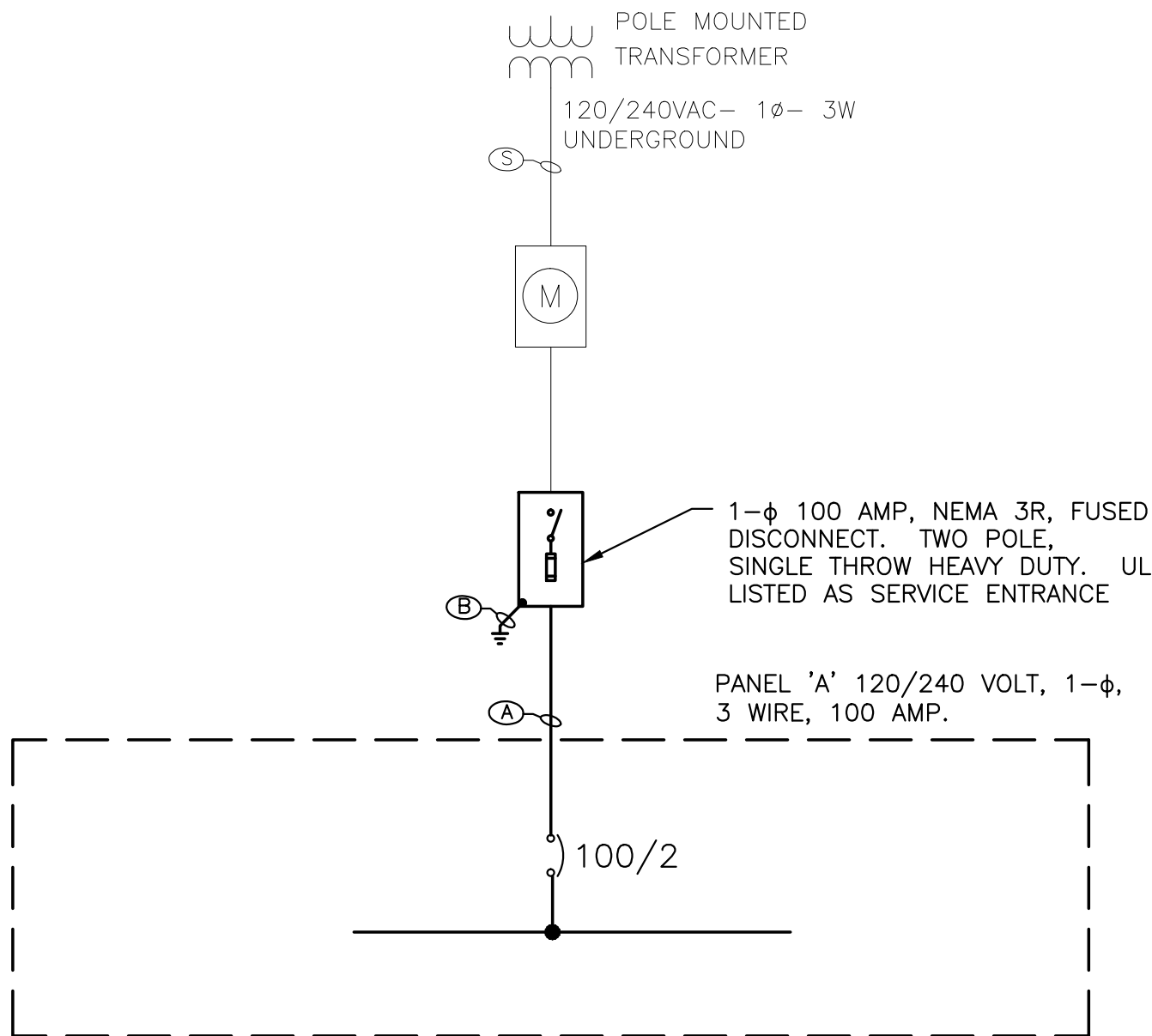
LIGHT FIXTURE SCHEDULE								
MARK	MANUFACTURING MODEL NO.	INPUT VOLTAGE	LAMPS			TOTAL WATTS	MNTG.	REMARKS
			NO.	WATTAGE	TYPE			
A	LITHONIA -WRT F 2 32 A12125 MVOLT GEB10IS	120	2	32	FLUOR T-8	64	REC	1'x4' RECESSED WET LOCATION TROFFER, FLANGE MOUNT, ELECTRONIC BALLAST, EMERGENCY BALLAST WHERE INDICATED ON PLANS.
B	NEW STAR-VIC4N 1 32 1 RW 12 WH TH	120	1	32	FLUOR T-8	32	WALL	6"x2' VANDAL RESISTANT ARCHITECTURAL LINEAR LUMINAIRE. WET LOCATION LISTED, WHITE POLYCARBONATE RIBBED LENS. ALUMINUM FRAME AND END CAPS. TAMPER RESISTANT SCREWS. MOUNT ABOVE MIRROR
C	LITHONIA -Z 2 32 MVOLT GEB10IS	MVOLT	2	32	FLUOR T-8	64	PEND	1'x4' FLUORESCENT GENERAL PURPOSE STRIP LIGHT.
D	LITHONIA WSR LED 1 10A700/30K SR4 MVOLT DDBXD	MVOLT	1	24	LED	24	SURF	EXTERIOR AREA LIGHT. 1/8" TEMPERED GLASS LENS. DARK BRONZE FINISH. MOUNTING HEIGHT-8'.

Rating	120/240	Bus Rating	100	PANEL	NOTES:				
Phases	1	Lug Rating	100	DESIGNATION	EXISTING				
wires	3	Pole Spacing	30						
main breaker	MB	AIC Rating	22,000						
breaker rating	100	Mounting	SURF						
Load Served	WIRE SIZE	CB	CKT	VA/PHASE		CKT	CB	WIRE SIZE	Load Served
			A	B					
HWH-1	10	30/2	1	2250		2	20/1	12	EF-1
	10		3	49	2250	4	20/1	12	LTG CONTACTOR
WH-1 MENS	12	20/1	5	1500		6	20/1	12	LIGHTING
WH-1 WOMENS	12	20/1	7	676	1500	8	20/1	12	REC
WH-1 MECH/ELEC	12	20/1	9	1500		10			
REC	12	20/1	11		900	12			
			13			14			
			15			16			
			17			18			
			19			20			
			21			22			
			23			24			
			25			26			
			27			28			
			29			30			
TOTAL LOAD:			5975	5490					
amps/phase:			49.79	45.75					

PANEL A

DISCONNECT SWITCH SCHEDULE									
DEVICE	SWITCH VOLTAGE	PHASE	AMP	POLES	SW/ FUSE	NEUTRAL BAR	GROUND BAR	NEMA ENCL.	REMARKS
<input type="checkbox"/>	120/240	1	100	2	100	YES	YES	3R	SERVICE ENTRANCE
<input type="checkbox"/>	240	1	30	2	-	NO	YES	1	HWH-1

FEEDER SCHEDULE				
MARK	SETS	CONDUCTOR	CONDUIT	AMPACITY
S	2	BY GRAYSON COUNTY	-	-
A	1	4#2 THWN COPPER,1#8 EGC.	1 1/2"	110
B	1	#6 COPPER GEC	--	--
C	-	-	-	-



ELECTRICAL EQUIPMENT SCHEDULE

- PANELBOARDS 120/240 VOLT, 1- ϕ , 3 WIRE SURFACE OR FLUSH MOUNTED. BRANCH CIRCUITS AND POLE SPACE AS SCHEDULED ON THE PLANS. PROVIDE SHORT CIRCUIT RATING AS NOTED IN THE SCHEDULES. EQUAL TO SQUARE D TYPE NQOD.
- LIGHTING CONTACTOR 4 POLE, ELECTRICALLY HELD LIGHTING CONTACTOR. 120 VOLT AC COIL, H-O-A SELECTOR, NEMA 1 ENCLOSURE, 20 AMP CONTACTS. EQUAL TO SQUARE-D LG40
- TIME CLOCK ASTRONOMICAL DIAL, AUTOMATICALLY ADJUSTS FOR DAYLIGHT SAVINGS TIME, OFF SUNRISE, ON SUNSET. 120 VOLT, CONTACTS, ELECTRONIC, BATTERY BACKUP. EQUAL TO INTERMATIC ETB115.

SHEET NOTES:

SN1 SERVICE WILL BE INSTALLED BY GRAYSON COUNTY. ELECTRICAL CONTRACTOR IS NOT RESPONSIBLE FOR CONNECTION FROM METER TO DISCONNECT.

SN2 ITEMS SHOWN LIGHT ARE BY OTHERS.

NO.	REVISION

COUNTY OF GRAYSON -CONSTRUCTION GENERAL TERMS AND CONDITIONS

All bidders shall note that the Invitation for Bid (IFB) method of procurement does not allow any modifications or exceptions to the County of Grayson Construction General Terms and Conditions. Any modifications or exceptions made to this section may cause your bid response to be considered non-responsive.

A. Addenda:

1. Bidders are welcome to provide comments regarding how the bid documents, specifications or drawings can be improved. Bidders requesting clarification or interpretation of improvements to the bid general terms, conditions, specifications or drawings shall make a written request which must reach the Purchasing Office, Department of Finance, at least eight (8) calendar days prior to the date set for the receipt of bids.
2. Any changes to the bid general terms, conditions, specifications or drawings shall be in the form of a written addendum from the Purchasing Office and it shall be signed by the Purchasing Director of Finance or a duly authorized representative.
3. If changes occur, an addendum shall be issued no later than six (6) calendar days prior to the date set for the receipt of bids. However, an addendum extending the date for the receipt of bids or an addendum withdrawing the Invitation for Bid may be issued any time prior to the date set for the receipt of bids.
4. Each bidder shall be responsible for determining that it has received all addenda for the Invitation for Bid issued by the Purchasing Office before submitting a bid for the work. Bidder shall acknowledge the receipt of each addendum (when issued) on the Bid Form.

B. Annual Appropriations:

It is understood and agreed that this contract shall be subject to annual appropriations by the Board of County Supervisors (the "Board"). Should the Board fail to appropriate funds for this contract, the contract shall be terminated when existing funding is exhausted. The successful bidder ("Successful Bidder") shall not be entitled to seek redress from the County of Grayson, Virginia (the "County") should the Board fail to make annual appropriations for this contract.

C. Authorization to Transact Business in the Commonwealth (Va. Code § 2.2-4311.2):

1. Any business entity that enters into a written contract with the County of Grayson (the "County") that is organized as a stock or nonstock corporation, limited liability company, business trust, or limited partnership or registered as a registered limited liability partnership must be authorized to transact business in the Commonwealth of Virginia as a domestic or foreign business entity if so required by Title 13.1 or Title 50 of the Code of Virginia, or as otherwise required by law.
2. Any business entity described in paragraph C.1 above that enters into a contract with the County shall not allow its existence to lapse or its certificate of authority or registration to transact business in the Commonwealth of Virginia, if so required under Title 13.1 or

Title 50 of the Code of Virginia, to be revoked or cancelled at any time during the term of the contract.

3. Any business entity organized or authorized to transact business in the Commonwealth pursuant to Title 13.1 or Title 50 of the Code of Virginia must include in its bid or proposal the identification number issued to it by the State Corporation Commission. Any business entity that is not required to be authorized to transact business in the Commonwealth as a foreign business entity under Title 13.1 or Title 50 of the Code of Virginia or as otherwise required by law shall include in its bid or proposal a statement describing why the bidder or offeror is not required to be so authorized.
4. A bidder described in subsection 3 that fails to provide the required information shall not receive an award unless a waiver is granted by the Purchasing Director of Finance, his designee, or the County Manager.
5. Any falsification or misrepresentation contained in the statement submitted by a bidder pursuant to Title 13.1 or Title 50 of the Code of Virginia may be cause for debarment.
6. The County may, in its sole discretion, void any contract with a business entity if the business entity fails to remain in compliance with the provisions of this section, entitled "Authorization to Transact Business in the Commonwealth."

D. Award of Contract:

1. The Purchasing Office/County Administration reserves the right to waive any informality in bids and to award in part or in whole or to reject any or all bids. The reasons for the rejection shall be made a part of the contract file.
2. In case of a tie bid, preference shall be given to goods, services, and construction produced in the County of Grayson or the Commonwealth of Virginia or provided by persons, firms or corporations having principal places of business in the County of Grayson or the Commonwealth of Virginia, if such a choice is available; otherwise the tie shall be decided by lot. A County of Grayson business shall be given preference over a Commonwealth of Virginia business, if such a choice is available.
3. The Purchasing Office shall have the right, before awarding the contract, to require a bidder to submit such evidence of its qualifications as it may deem necessary and may consider any evidence available to it concerning the financial, technical, and other qualifications and abilities of a bidder.
4. Project work shall not be awarded to any vendor which is debarred or suspended or is otherwise excluded for or ineligible for participation in Federal assistance programs under Executive Order 12549, "Debarment and Suspension". (For Federal Projects only)
5. It is the intent of the County of Grayson to recommend the award of this contract to the lowest responsive and responsible bidder provided the bid does not exceed the funds available for the contract. **This bid will be awarded by Total Bid Amount.** (See the Bid Form).

6. The bidder to whom the contract is awarded ("Successful Bidder") shall, within fifteen (15) days after prescribed documents are presented for signature, execute and deliver to the Purchasing Office the contract forms and any other forms required by the bid.

E. Bid Security:

1. When a bid security is required, this requirement will be conveyed in the Invitation to Bid.

F. Successful Bidder's Performance:

1. Goods and services must be delivered and rendered strictly in accordance with this bid and shall not deviate in any way from the terms, conditions, prices, quality, quantity, delivery instructions, and specifications of this bid.
2. All goods and/or services delivered and/or rendered shall comply with all applicable federal, state, and local laws, and shall not infringe any valid patent or trademark. The Successful Bidder shall indemnify, keep, save, and hold the County, its officers and employees, harmless from any liability for infringement and from any and all claims or allegations of infringement by the Successful Bidder or the County, its officers and employees, arising from, growing out of, or in any way involved with the goods delivered or services rendered pursuant to this purchase.
3. In the event that suit is brought against the County, its officers and/or its employees, either independently or jointly with the Successful Bidder, the Successful Bidder shall defend the County and the County's officers and employees in any such suit at no cost to the County and the County's officers and employees. In the event that final judgment is obtained against the County, its officers, and/or its employees, either independently or jointly with the Successful Bidder, then the Successful Bidder shall pay such judgment, including costs and attorney's fees, if any, and hold the County, and the County's officers and employees, harmless therefrom.
4. The Successful Bidder shall ensure that its employees shall observe and exercise all necessary caution and discretion so as to avoid injury to person or damage to property of any and all kinds.
5. The Successful Bidder shall not, in its product literature or advertising, refer to this purchase or the use of the Successful Bidder's goods or services by the County of Grayson, Virginia.
6. The Successful Bidder shall cooperate with County officials in performing the specified work so that interference with the County's activities will be held to a minimum.

Notwithstanding any other language to the contrary contained in the contract documents, in case of an inconsistency between drawings and specifications or within either document and clarified by addendum, the better quality or greater quantity of work shall be provided.

7. The Successful Bidder shall be solely responsible for initiating, maintaining, and supervising all safety precautions and programs. The provisions of all rules and regulations

governing safety as adopted by the Safety Codes Commission of the Commonwealth of Virginia and as issued by the Department of Labor and Industry under Title 40.1 of the Code of Virginia shall apply to all work under this purchase order.

G. Bidder's Representation:

1. By submitting a bid in response to this Invitation to Bid, the bidder certifies that it has read and understands the bid documents, specifications, and drawings, if any, and has familiarized itself with all federal, state and local laws, ordinances, rules and regulations that in any manner may affect the cost, progress or performance of the work.
2. The failure or omission of any bidder to receive or examine any form, instrument, addendum or other documents, or to acquaint itself with conditions existing at the site(s), shall in no way relieve any bidder from any obligations with respect to its bid or to the contract.

H. Bonds:

1. When a bond is required, this requirement will be conveyed in the Invitation to Bid.

I. Collusion:

By submitting a bid in response to this Invitation for Bid, the bidder represents that in the preparation and submission of this bid, said bidder did not, either directly or indirectly, enter into any combination or arrangement with any person, Bidder or corporation or enter into any agreement, participate in any collusion, or otherwise take any action in the restraint of free, competitive bidding in violation of the Sherman Act (15 U.S.C. § 1) or Va. Code §§ 59.1-9.1 through 59.1-9.17 or §§ 59.1-68.6 through 59.1-68.8.

J. Compensation:

1. The County shall not pay for any goods or services until the same have been actually received by the County.
2. The Successful Bidder/Offeror shall provide the Purchasing Office their social security numbers, upon request. Proprietorships, partnerships and corporations shall provide their federal employer identification numbers, upon request (Va. Code § 2.2-4354.2).
3. The Successful Bidder shall submit a complete itemized invoice for each item or service delivered under the contract and keep copies for their own personal record.
4. Payment shall be rendered to the Successful Bidder for satisfactory performance in compliance with the general terms, conditions and specifications of this bid. The required payment date shall be either: (i) the date on which payment is due under the terms of the contract for the provision of such goods or services; or (ii) if such date is not established by contract, not more than forty-five days after goods or services are received or not more than forty-five (45) days after the Successful Bidder renders a proper invoice to the County, whichever is later (Va. Code § 2.2-4352).

6. Unless otherwise provided under the terms of this contract, interest shall accrue at the rate of one percent per month (Va. Code § 2.2-4354.4).
- 7) Final payment for services rendered will not occur until all inspections have been certified and the project is complete. Invoices shall be submitted for payment.

K. Contractor's Qualification Statement:

1. When required, the Bidder must be a registered contractor or land disturber in the Commonwealth of Virginia in accordance with Title 54.1, Chapter 11 of the Code of Virginia, as amended, at the time of bid submission, and shall possess a **Virginia Contractor's License Classification A or equivalent for the work performed.** The Bidder shall have bid and completed projects of comparable nature, size, complexity, and construction cost.
2. Once the bid document is submitted by the bidder and accepted by the County Purchasing Office, the document will be used by the County in the evaluation of all bids submitted by the bidder during the designated period of time. The County may request additional information as needed to determine if the contractor is qualified.

L. Contractor's Registration:

1. No person shall engage in, or offer to engage in, contracting work or operate as an owner-developer in the Commonwealth of Virginia unless it has been licensed or certified under the provisions of Chapter 11 of Title 54.1 of the Code of Virginia, as amended. See Virginia Code § 54.1-1103(A).
2. Bidders are prohibited from contracting for, or bidding upon the construction, removal, repair or improvements to or upon real property owned, controlled or leased by the County of Grayson without a Virginia contractor's license or certificate when such license is required.
3. Each bidder shall indicate its Virginia contractor's registration number on the bid envelope and the Bid Form.

M. Contract Time:

1. The number of days within which, or the date by which, the work is to be completed (the "Contract Time") is set forth in the Bid Form and will be included in the agreement.
2. The Successful Bidder may obtain an extension of the Contract Time only for an Excusable Delay. An Excusable Delay is one of the following events that delays the Successful Bidder's performance of the Work, when such event is the sole cause of delay and the Successful Bidder is not responsible in whole or in part for the event:
 - (a) an act or omission by the County;
 - (b) an act or omission by a third party employed by the County and not under the Successful Bidder's control;

- (c) fire or extraordinary adverse weather conditions in the County;
 - (d) changes ordered by the County that affect the scope of the Work; and
 - (e) other events beyond the control of the Successful Bidder that were not reasonably anticipated by the Successful Bidder.
3. If the Successful Bidder believes an Excusable Delay has occurred, the Successful Bidder shall notify the County in writing that the Successful Bidder believes an Excusable Delay has occurred and specify the nature of the Excusable Delay within ten (10) calendar days of the beginning of the Excusable Delay. The Successful Bidder's notice of the Excusable Delay shall be a condition precedent to an extension of the Contract Time.
4. The Successful Bidder may recover damages only for an Unreasonable Delay. An Unreasonable Delay is a delay caused by the acts or omissions of the County, its agents or employees that is due to causes within their control.
5. If the Successful Bidder believes there has been an Unreasonable Delay, the Successful Bidder shall notify the County in writing that the Successful Bidder believes an Unreasonable Delay has occurred and specify the nature of the Unreasonable Delay within ten (10) calendar days of the beginning of the Unreasonable Delay. The Successful Bidder's notice of the Unreasonable Delay shall be a condition precedent to the recovery of damages for the Unreasonable Delay.

N. Controlling Law and Venue

This contract is made, entered into, and shall be performed in the County of Grayson, Virginia, and shall be governed by the applicable laws of the Commonwealth of Virginia. Any dispute arising out of the contract resulting from this Invitation for Bid, its interpretations, or its performance shall be litigated only in the County of Grayson General District Court or the Circuit Court of the County of Grayson, Virginia.

O. Default:

If the Successful Bidder fails to make delivery or complete implementation and installation, or if the system fails in any way to perform as specified herein, the County may consider the Successful Bidder to be in default. In the event of default, the County will provide the Successful Bidder with written notice of default, and the Successful Bidder will be provided a set time in which to provide a plan to correct said default ("Cure Plan"). The Cure Plan shall provide for the complete correction of the default within a time period specified by the County ("Cure Period"). The County shall review the Cure Plan and determine, in the County's sole discretion, whether the Cure Plan is satisfactory. If the County determines that the Cure Plan is satisfactory, then the County shall so notify the Successful Bidder and the Successful Bidder shall promptly proceed with performance of the Cure Plan such that the Successful Bidder completely corrects the default within the Cure Period, unless the County otherwise agrees in writing. Should the County determine that the Successful Bidder's Cure Plan is unsatisfactory, or should the Successful Bidder fail to completely correct the default in accordance with the terms of this Paragraph, the County may, among other actions, terminate the Successful Bidder's Contract.

The failure of the County to insist upon, or to delay enforcing the strict performance of the terms and conditions hereof, or any right or remedy, shall not constitute or be construed as a waiver or relinquishment of the County's right to thereafter enforce the same in accordance with the Contract Documents.

P. Drug-Free Workplace to be Maintained by the Contractor (Va. Code § 2.2-4312)

1. As used in this Section, the term "contractor" shall mean "Successful Bidder" as defined herein.
2. During the performance of this contract, the contractor agrees to (i) provide a drug-free workplace for the contractor's employees; (ii) post in conspicuous places, available to employees and applicants for employment, a statement notifying employees that the unlawful manufacture, sale, distribution, dispensation, possession, or use of a controlled substance or marijuana is prohibited in the contractor's workplace and specifying the actions that will be taken against employees for violations of such prohibition; (iii) state in all solicitations or advertisements for employees placed by or on behalf of the contractor that the contractor maintains a drug-free workplace; and (iv) include the provisions of the foregoing clauses in every subcontract or purchase order of over \$10,000, so that the provisions will be binding upon each subcontractor or vendor.
3. For the purposes of this section, "*drug-free workplace*" means a site for the performance of work done in connection with a specific contract awarded to a contractor in accordance with the Virginia Public Procurement Act, the employees of whom are prohibited from engaging in the unlawful manufacture, sale, distribution, dispensation, possession or use of any controlled substance or marijuana during the performance of the contract.

Q. Provision of a Drug-Free Workplace – For Federal Grant Projects

In compliance with the Drug-Free Workplace Act of 1988 (43 CFR Part 12, Subpart D), upon signing the Recreational Trails Program project agreement, the Recipient certifies that is shall:

1. Publish a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the Recipient's workplace and specifying the actions that will be taken against employees for violation of such prohibition;
2. Establish an ongoing drug-free awareness program to inform employees about:
 - (1) The dangers of drug abuse in the workplace;
 - (2) The Recipient's policy of maintaining a drug-free workplace;
 - (3) Any available drug counseling, rehabilitation and employee assistance programs, and
 - (4) The penalties that may be imposed upon employees for drug abuse violations occurring in the workplace;
3. Require that each employee be engaged in the performance of a grant be given a copy of the statement required by paragraph (a);
4. Notify the employee in the statement required by paragraph (a) that, as a condition of employment under the grant, the employee will:

- a. Abide by the terms of the statement;
 - b. Notify the employer in writing of his or her convictions for a violation of a criminal drug statute occurring in the workplace no later than five calendar days after such conviction.
5. Notify the agency in writing, within ten calendar days after receiving notice under subparagraph (d) (2) from an employee or otherwise receiving actual notice of such conviction. Employers of convicted employees must provide notice, including position title, to every grant officer on whose grant activity the convicted employee was working, unless the FHWA designates a central point for the receipt of such notices. Notice shall include the identification number(s) of each affected grant;
6. Taking one of the following actions, within 30 calendar days of receiving notice under subparagraph (d)(2), with respect to any employee who is so convicted;
 - a) Taking appropriate personnel action against such an employee, up to and including termination, consistent with the requirements of the Rehabilitation Act of 1973, as amended or
 - b) Requiring such employee to participate satisfactorily in a drug abuse assistance or rehabilitation program approved for such purposes by a Federal, State, or local health, law enforcement, or other appropriate agency;
7. Making a good faith effort to continue to maintain a drug-free workplace through implementation of paragraphs (a), (b), (c), (d), (e) and (f).

R. Other Federal Requirements- For Federal Grant Projects

1. Where required, recipient agrees to comply with the required contract provisions for federal aid construction grants as outlined in the attached form FHWA-1273 and Buy America Special Provisions.

S. Employment Discrimination by Bidder Prohibited:

1. During the performance of this contract, the Successful Bidder agrees as follows (Va. Code § 2.2-4311):
 - (a) The Successful Bidder will not discriminate against any employee or applicant for employment because of race, religion, color, sex, national origin, age, disability, or other basis prohibited by state law relating to discrimination in employment, except where there is a bona fide occupational qualification reasonably necessary to the normal operation of the Successful Bidder. The Successful Bidder agrees to post in conspicuous places, available to employees and applicants for employment, notices setting the provisions of this nondiscrimination clause.
 - (b) The Successful Bidder, in all solicitations or advertisements for employees placed by or on behalf of the Successful Bidder, will state that such Successful Bidder is an equal opportunity employer.
 - (c) Notices, advertisements and solicitations placed in accordance with federal law, rule or regulation shall be deemed sufficient for the purpose of meeting the requirements of this section.

2. The Successful Bidder shall include the provisions of the foregoing paragraphs of this section in every subcontract or purchase order of over \$10,000, so that the provisions will be binding upon each subcontractor or vendor.

T. Environmental Impact Management

Contractor shall be responsible for complying with all applicable federal, state, and local environmental regulations. Contractor is responsible for ensuring that all employees conducting activities on behalf of the County are properly trained to carry out environmental responsibilities.

U. Employment of Unauthorized Aliens Prohibited:

As required by Virginia Code § 2.2-4311.1, the Successful Bidder does not, and shall not during the performance of this agreement in the Commonwealth of Virginia knowingly employ an unauthorized alien as defined in the federal Immigration Reform and Control Act of 1986.

V. General Bid Information

1. Sealed bids in accordance with the conditions, specifications, and instructions below and on the attached sheets or drawings hereto, if any, will be received in person or via special courier service in the Purchasing Office, Department of Finance, Grayson County Courthouse, 129 Davis Street, Independence, VA 24348 or through the regular mail by the U.S. Postal Service, P.O. Box 217, Independence, VA 24348, until, but no later than the time and date specified in the Invitation to Bid.
2. In the solicitation or awarding of contracts, the County of Grayson shall not discriminate because of the race, religion, color, sex, national origin, age, disability or any other basis prohibited by state law relating to discrimination in employment.
3. The County of Grayson may utilize the Commonwealth of Virginia eVA Supplier Web Site for selection of bidders. If your company is not registered, a supplier application is available on the eVA website.

W. Indemnification:

The Successful Bidder agrees to indemnify, defend and hold harmless the County of Grayson, the County's officers, agents and employees, from any claims, damages, suits, actions, liabilities and costs of any kind or nature, including attorneys' fees, arising from or caused by the provision of any services, the failure to provide any services or the use of any services or materials furnished (or made available) by the Successful Bidder, provided that such liability is not attributable to the County's sole negligence.

X. Insurance:

The Successful Bidder shall maintain insurance to protect itself and the County of Grayson from claims for damages for personal injury, including death, and for damages to property, which may arise from operations under this contract. Such insurance shall conform to the County Insurance Specifications.

Y. Modification of Bids:

1. A bid may be modified or withdrawn by the bidder any time prior to the time and date set for the receipt of bids. The bidder shall notify the Purchasing Office in writing of its intentions.
2. Modified and withdrawn bids may be resubmitted to the Purchasing Office up to the time and date set for the receipt of bids.
3. No bid can be withdrawn after the time set for the receipt of bids and for ninety (90) days thereafter except as provided in the section herein regarding Withdrawal of Bid Due to Error.

AA. No Discrimination Against Faith-Based Organizations:

Grayson County does not discriminate against faith-based organizations as that term is defined in Va. Code § 2.2-4343.1.

BB. Opening of Bids:

1. All bids received on time in the Purchasing Office shall be opened and publicly read aloud.
2. Any competitive sealed bidding bidder, upon request, shall be afforded the opportunity to inspect bid records within a reasonable time after the opening of all bids but prior to award, except in the event that the County decides not to accept any of the bids and to reopen the contract. Otherwise, bid records shall be open to public inspection only after award of the contract (Va. Code § 2.2-4342.C).

Any inspection of procurement transaction records shall be subject to reasonable restrictions to ensure the security and integrity of the records (Va. Code § 2.2-4342.E).

CC. Record Retention/County Audits:

1. The Successful Bidder shall retain, during the performance of the contract and for a period of five years from the completion of the contract, all records pertaining to the Successful Bidder's bid and any contract awarded pursuant to this Invitation to Bid. Such records shall include but not be limited to all paid vouchers including those for out-of-pocket expenses; other reimbursement supported by invoices, including Successful Bidder's copies of periodic estimates for partial payment; ledgers, cancelled checks; deposit slips; bank statements; journals; contract amendments and change orders; insurance documents; payroll documents; timesheets; memoranda; and correspondence. Such records shall be available to the County on demand and without advance notice during the Successful Bidder's normal working hours.
2. County personnel may perform in-progress and post-performance audits of the Successful Bidder's records as a result of a contract awarded pursuant to this Invitation to Bid. Files shall be available on demand and without notice during normal working hours.

DD. Safety:

1. The Successful Bidder shall comply with and ensure that the Successful Bidder's personnel comply with all current applicable local, state and federal policies, regulations and standards relating to safety and health, including, by way of illustration and not limitation, the standards of the Virginia Occupational Safety and Health Administration for the industry. The provisions of all rules and regulations governing safety as adopted by the Safety Codes Commission of the Commonwealth of Virginia and issued by the Department of Labor and Industry under Title 40.1 of the Code of Virginia/Virginia Occupational Safety and Health shall apply to all work under this contract. The Successful Bidder shall provide or cause to be provided all technical expertise, qualified personnel, equipment, tools and material to safely accomplish the work specified and performed by the Successful Bidder.
2. Each job site shall have a supervisor who is competent, qualified, or authorized on the worksite, who is familiar with policies, regulations and standards applicable to the work being performed. The supervisor must be capable of identifying existing and predictable hazards in the surroundings or working conditions which are hazardous or dangerous to employees or the public, and is capable of ensuring that applicable safety regulations are complied with, and shall have the authority and responsibility to take prompt corrective measures, which may include removal of the Successful Bidder's personnel from the work site.
3. Any operations of the Successful Bidder determined to be hazardous by the County, shall be immediately discontinued by the Successful Bidder upon receipt of either written or oral notice by the County to discontinue such practice.

EE. Small, Women-Owned and Minority-Owned (SWAM) Business and Disadvantaged Business Enterprises:

The County welcomes and encourages the participation of small businesses and businesses owned by women and minorities in procurement transactions made by the County. The County of Grayson actively solicits both small business, women-owned and minority (SWAM) and Disadvantaged Business Enterprise (DBE) businesses to respond to all Invitations for Bids and Request for Proposals. All solicitations are posted on the County's Internet site at <http://www.graysongovernment.com/> and may be viewed under the "Informational Items" link on the homepage. The county may advertise for bids through mediums that support SWAM and DBE as part of the bidding process.

FF. Subcontracts:

1. No portion of the work shall be subcontracted without prior written consent of the County of Grayson, Virginia. In the event that the Contractor desires to subcontract some part of the work specified in the contract, the Contractor shall furnish the County the names,

qualifications, and experience of the proposed subcontractors. The Contractor shall, however, remain fully liable and responsible for the work to be done by his/her subcontractor(s) and shall assure compliance with all the requirements of the contract.

2. The County encourages the contractor to utilize small, women-owned, and minority-owned business enterprises. For assistance in finding subcontractors, contact the Supplier Relations Manager (804-501-5689) or the Virginia Department of Small Business & Supplier Diversity (SBSD) www.sbsd.virginia.gov.

GG. Submission of Bids:

1. All bidders shall use the enclosed Bid Form in submitting their bid prices. The Purchasing Office shall not accept oral bids or bids received by telephone, telecopier (FAX machine) or other electronic means.
2. All prices must be F.O.B. delivered to the point as indicated in this bid. The County will grant no allowance for boxing, crating, or delivery unless specifically provided for in this bid.
3. The Bid Form must be completed in blue or black ink or by typewriter. Discrepancies in the multiplication of units of work and the unit prices will be resolved in favor of the correct multiplication of the unit prices. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum.
4. All erasures, insertions, additions, and other changes made by the bidder to the Bid Form shall be signed or initialed by the bidder. Bids containing any conditions, omissions, erasures, alterations, or items not called for in the bid, may be rejected by the Purchasing Office as being incomplete or nonresponsive.
5. The Bid Form must be signed in order to be considered. If the bidder is a corporation, the bid must be submitted in the name of the corporation, not simply the corporation's trade name. In addition, the bidder must indicate the corporate title of the individual signing the bid.
6. The Bid Form, the bid security, if any, and any other documents required, shall be enclosed in a sealed opaque envelope. Any notation or notations on the exterior of the envelope purporting to alter, amend, modify, or revise the bid contained within the envelope shall be of no effect and shall be disregarded.
7. The envelope containing the bid should be sealed and marked in the lower left-hand corner with the bid request number, project name, hour and due date of the bid.
8. The time for the receipt of bids shall be determined by the time and date of delivery at the Purchasing Office. Bidders are responsible for ensuring that their bids are stamped received and dated by Purchasing Office personnel or appointed staff
9. All bids received in the Purchasing Office by the deadline indicated will be kept in a locked location until the time and date set for the opening of bids.

10. All late bids shall be returned unopened to the Bidder.
11. All line items must be filled in. It is understood and agreed, if bidder indicates a "0" dollar amount on the bid form the product or service shall be provided at no charge.

HH. Successful Bidder's Obligation to Pay Subcontractors: When applicable

1. The Successful Bidder awarded the contract for this project shall take one of the two following actions within seven (7) days after the receipt of amounts paid to the Successful Bidder by the County for work performed by the Successful Bidder's subcontractor(s) under the contract (Va. Code § 2.2-4354):
 - (a) Pay the subcontractor(s) for the proportionate share of the total payment received from the County attributable to the work performed by the subcontractor(s) under the contract; or
 - (b) Notify the County and subcontractor(s), in writing, of the Successful Bidder's intention to withhold all or a part of the subcontractor's payment with the reason for nonpayment.
2. The Successful Bidder shall pay interest to the subcontractor(s) on all amounts owed by the Successful Bidder that remain unpaid after seven (7) days following receipt by the Successful Bidder of payment from the County for work performed by the subcontractor(s) under the contract, except for amounts withheld as allowed in subparagraph 1(b) of this section. Unless otherwise provided under the terms of this contract, interest shall accrue at the rate of one percent (1%) per month.
3. The Successful Bidder shall include in each of its subcontracts a provision requiring each subcontractor to include or otherwise be subject to the same payment and interest requirements with respect to each lower-tier subcontractor(s).
4. The Successful Bidder's obligation to pay an interest charge to a subcontractor(s) pursuant to the payment clause in this section shall not be construed to be an obligation of the County. A contract modification shall not be made for the purpose of providing reimbursement for such interest charge and a cost reimbursement claim shall not include any amount for reimbursement for such interest charge

II. Taxes:

1. The County of Grayson is exempt from the payment of federal excise or state sales taxes on all tangible, personal property for its use or consumption except taxes paid on materials that will be installed by the Successful Bidder and become a part of real property.
2. If a bidder is bidding on materials that require installation by the bidder and become a part of real property, the applicable taxes shall be included in the lump sum bid price for the installation of the material and not as a separate charge for taxes. The taxes shall be an obligation of the Successful Bidder and not of the County, and the County shall be held harmless for same by the Successful Bidder.
3. The Purchasing Office will furnish a Tax Exemption Certificate (Form ST-12) upon request and if applicable to this contract.

4. When a bidder lists a separate tax charge on the Bid Form and the tax is not applicable to the purchase by the County, the bidder will be allowed to delete the tax from its bid.

JJ. Termination of the Contract:

1. If the Successful Bidder should be adjudged bankrupt, or make a general assignment for the benefit of its creditors, or if a receiver should be appointed on account of the Successful Bidder's insolvency, or if the Successful Bidder should persistently or repeatedly refuse or should fail, except in cases for which extension of time is provided, to deliver the goods or services within the time specified, or if the Successful Bidder otherwise defaults in its performance of the Contract, then the County may without prejudice to any other right or remedy, and after giving the Successful Bidder seven (7) calendar days' written notice, terminate the employment of the Successful Bidder and procure such goods or services from other sources. In such event, the Successful Bidder shall be liable to the County for any additional cost occasioned by such failure or other default.
2. In such cases, the Successful Bidder shall not be entitled to receive any further payment. If the expense of finishing the contract requirements, including compensation for additional managerial and administrative services shall exceed the unpaid balance of the contract price, the Successful Bidder shall pay the difference to the County.
3. Notwithstanding anything to the contrary contained in the contract between the County and the Successful Bidder, the County may, without prejudice to any other rights it may have, terminate the contract for convenience and without cause, by giving 30 days' written notice to the Successful Bidder.

KK. Trade Secrets/Proprietary Information:

Trade secrets or proprietary information submitted by a bidder in response to this Invitation for Bid shall not be subject to public disclosure under the Virginia Freedom of Information Act; however, the bidder must invoke the protection of this section prior to or upon submission of data or materials, and must identify the data or other materials to be protected and state the reasons why protection is necessary (Va. Code § 2.2-4342.F).

LL. Use of Brand Names/Product Information:

1. Unless otherwise provided in the Invitation for Bid, the name of a certain brand, make or manufacturer does not restrict bidders to the specific brand, make manufacturer named; it conveys the general style, type, character, and quality of the article desired, and any article which the public body in its sole discretion determines to be the equal of that specified, considering quality, workmanship, economy of operation, and suitability for the purpose intended, shall be accepted (Va. Code § 2.2-4315).

2. If bidding other than specified, the bidder will clearly and specifically identify the product being offered and enclose complete and detailed descriptive literature, catalog cuts and specifications with the Bid Form to enable the Purchasing Office to determine whether the product offered meets the requirements of the solicitation. Material Safety Data Sheets and descriptive literature will be provided with the Bid Form for each chemical and/or compound offered. Failure to do so may cause bid to be considered nonresponsive/rejected.
3. It shall be understood that the burden of proof for an "equal" product shall be and remain the sole responsibility of the bidder. The County's decision of approval or disapproval of a proposed alternate shall be final. Nothing herein is intended to exclude any responsible bidder, its product or service or in any way restrain or restrict competition.

MM. Withdrawal of Bid Due to Error (Construction):

1. A bidder for a public construction contract, other than a contract for construction or maintenance of public highways, may withdraw its bid from consideration if the price bid was substantially lower than the other bids due solely to a mistake in the bid, provided the bid was submitted in good faith, and the mistake was a clerical mistake as opposed to a judgment mistake, and was actually due to an unintentional arithmetic error or an unintentional omission of a quantity of work, labor or material made directly in the compilation of a bid, which unintentional arithmetic error or unintentional omission can be clearly shown by objective evidence drawn from inspection of original work papers, documents and materials used in the preparation of the bid sought to be withdrawn. If a bid contains both clerical and judgment mistakes, a bidder may withdraw his bid from consideration if the price bid would have been substantially lower than the other bids due solely to the clerical mistake, that was an unintentional arithmetic error or an unintentional omission of a quantity of work, labor or material made directly in the compilation of a bid which shall be clearly shown by objective evidence drawn from inspection of original work papers, documents and materials used in the preparation of the bid sought to be withdrawn. (Va. Code § 2.2-4330.)
2. The Purchasing Office will use procedure set forth in Va. Code § 2.2-4330.B.2 (Virginia Public Procurement Act) for the withdrawal of a bid and the procedure is as follows:
 - (a) The bidder shall submit to the Purchasing Office its original work papers, documents and materials used in the preparation of the bid at or prior to the time fixed for the opening of bids. Such work papers shall be delivered to the Purchasing Office by the bidder in person or by registered mail. The bids shall be opened one day following the time fixed by the Purchasing Office for the submission of bids. The bidder shall have two hours after the opening of bids within which to claim in writing any mistake as defined herein and withdraw its bid. The contract shall not be awarded by the County until such two hour period has elapsed. Such mistake shall be proved only from the original work papers, documents, and materials delivered to the Purchasing Office as required herein. The work papers, documents and materials submitted by the bidder shall, at the bidder's request, be considered trade secrets or proprietary information subject to the conditions of subsection F of Va. Code § 2.2-4342.

- (b) No bid shall be withdrawn under this section when the result would be the awarding of the contract on another bid of the same bidder or of another bidder in which the ownership of the withdrawing bidder is more than five percent (5%).
- (c) No bidder who is permitted to withdraw a bid shall, for compensation, supply any material or labor to or perform any subcontract or other work agreement for the person or firm to whom the contract is awarded or otherwise benefit directly or indirectly from the performance of the project for which the withdrawn bid was submitted.
- (d) If a bid is withdrawn under authority of this section, the lowest remaining bid shall be deemed to be the low bid.
- (e) When the procedure set forth in the paragraphs above is utilized, original work papers, documents, and materials used in the preparation of the bid must be submitted in an envelope or package separate and apart from the envelope containing the bid marked clearly as to the contents.
- (f) The Purchasing Office shall notify the bidder in writing within five business days of its decision regarding the bidder's request to withdraw its bid. If the Purchasing Office denies the withdrawal of a bid under the provisions of this section, it shall state in such notice the reasons for its decision and award the contract to such bidder at the bid price, provided such bidder is a responsible and responsive bidder. At the same time that the notice is provided, the public body shall return all work papers and copies thereof that have been submitted by the bidder.

NN. Entire Agreement:

The written Contract Document represent the entire and integrated agreement between the County and the Successful Bidder and supersedes all prior negotiations, representations, or agreements, either written or oral. The Contract Document may be amended only in writing and such written amendments must be signed by both the County and the Successful Bidder. Upon award of the project, a contract will be drafted and signed by all parties prior to work or payment.

END OF DOCUMENT

September 2015

BID FORM
FIXED PRICE
IFB # 03-2016

Date: _____.

To: County of Grayson
Department of Finance, Purchasing Office
129 Davis Street
PO Box 217, Independence, VA 24348

Project: Recreation Park, Trailhead Bathroom

Contractor Name: _____

Legal Company Name: _____

Mailing Address: _____

Physical Address: _____

Contact Phone: _____

Contact Email or Fax: _____

Subcontractor(s) Name: _____ (N/A if not subcontracting)

For this construction project the bidder must be a registered contractor in the Commonwealth of Virginia in accordance with Title 54.1, Chapter 11 of the Code of Virginia, as amended, at the time of bid submission, and shall possess a contractor license. The Bidder shall have bid and completed projects of comparable nature, size, complexity and construction cost.

My/Our Virginia Contractor's registration number is: _____ CLASS _____

EXPERIENCE WITH STATE AND FEDERAL CONSTRUCTION PROJECTS:

(Describe experience with local, state and/or federal construction projects below- use separate sheet if necessary, please elaborate on commercial building construction experience)

September 2015

Please indicate below if the bidder is registered with Virginia SCC as a legal business or otherwise:

The bidder or offeror name:

☐ is a corporation or other business entity with the following SCC identification number:

-OR-

☐ is not a corporation, limited liability company, limited partnership, registered limited liability partnership, or business trust **-OR-**

☐ is an out-of-state business entity that does not regularly and continuously maintain as part of its ordinary and customary business any employees, agents, offices, facilities, or inventories in Virginia (not counting any employees or agents in Virginia who merely solicit orders that require acceptance outside Virginia before they become contracts, and not counting any incidental presence of the bidder/offeror in Virginia that is needed in order to assemble, maintain, and repair goods in accordance with the contracts by which such goods were sold and shipped into Virginia from bidder's/offeror's out-of-state location) **-OR-**

☐ is an out-of-state business entity that is including with this bid/proposal an opinion of legal counsel which accurately and completely discloses the undersigned bidder's/offeror's current contacts with Virginia and describes why those contacts do not constitute the transaction of business in Virginia within the meaning of § 13.1-757 or other similar provisions in Titles 13.1 or 50 of the Code of Virginia.

Please check the following box if you have not checked any of the foregoing options but currently have pending before the SCC an application for authority to transact business in the Commonwealth of Virginia and wish to be considered for a waiver to allow you to submit the SCC identification number after the due date for bids/proposals: ☐

PLEASE SPECIFY YOUR BUSINESS CATEGORY BY CHECKING THE APPROPRIATE BOX(ES)

(Check all that apply.) *

- ☐ **SMALL BUSINESS**
- ☐ **WOMEN-OWNED BUSINESS**
- ☐ **MINORITY-OWNED BUSINESS**
- ☐ **SERVICE DISABLED VETERAN**
- ☐ **LARGE**
- ☐ **NONPROFIT**
- ☐ **REGISTERED DISADVANTAGED BUSINESS ENTERPRISE (DBE)**
- ☐ **REGISTERED SWAM**
- ☐ **NONE OF THE ABOVE**

SUPPLIER REGISTRATION – The County of Grayson encourages all suppliers interested in doing business with the County to register with eVA, the Commonwealth of Virginia's electronic procurement portal, <http://eva.virginia.gov>.

eVA Registered? ☐ **Yes** ☐ **No**

*** FOR YOUR CONVENIENCE- DEFINITIONS ON NEXT PAGE**

DEFINITIONS

For the purpose of determining the appropriate business category, the following definitions apply:

"Small business" means a business, independently owned and controlled by one or more individuals who are U.S. citizens or legal resident aliens, and together with affiliates, has 250 or fewer employees, or annual gross receipts of \$10 million or less averaged over the previous three years. One or more of the individual owners shall control both the management and daily business operations of the small business.

"Women-owned business" means a business that is at least 51 percent owned by one or more women who are U.S. citizens or legal resident aliens, or in the case of a corporation, partnership, or limited liability company or other entity, at least 51 percent of the equity ownership interest is owned by one or more women who are U.S. citizens or legal resident aliens, and both the management and daily business operations are controlled by one or more women.

"Minority-owned business" means a business that is at least 51 percent owned by one or more minority individuals who are U.S. citizens or legal resident aliens, or in the case of a corporation, partnership, or limited liability company or other entity, at least 51 percent of the equity ownership interest in the corporation, partnership, or limited liability company or other entity is owned by one or more minority individuals who are U.S. citizens or legal resident aliens, and both the management and daily business operations are controlled by one or more minority individuals.

"Minority individual" means an individual who is a citizen of the United States or a legal resident alien and who satisfies one or more of the following definitions:

1. "African American" means a person having origins in any of the original peoples of Africa and who is regarded as such by the community of which this person claims to be a part.
2. "Asian American" means a person having origins in any of the original peoples of the Far East, Southeast Asia, the Indian subcontinent, or the Pacific Islands, including but not limited to Japan, China, Vietnam, Samoa, Laos, Cambodia, Taiwan, Northern Mariana Islands, the Philippines, a U.S. territory of the Pacific, India, Pakistan, Bangladesh, or Sri Lanka and who is regarded as such by the community of which this person claims to be a part.
3. "Hispanic American" means a person having origins in any of the Spanish-speaking peoples of Mexico, South or Central America, or the Caribbean Islands or other Spanish or Portuguese cultures and who is regarded as such by the community of which this person claims to be a part.
4. "Native American" means a person having origins in any of the original peoples of North America and who is regarded as such by the community of which this person claims to be a part or who is recognized by a tribal organization.

"Service disabled veteran business" means a business that is at least 51 percent owned by one or more service disabled veterans or, in the case of a corporation, partnership, or limited liability company or other entity, at least 51 percent of the equity ownership interest in the corporation, partnership, or limited liability company or other entity is owned by one or more individuals who are service disabled veterans and both the management and daily business operations are controlled by one or more individuals who are service disabled veterans.

"Service disabled veteran" means a veteran who (i) served on active duty in the United States military ground, naval, or air service, (ii) was discharged or released under conditions other than dishonorable, and (iii) has a service-connected disability rating fixed by the United States Department of Veterans Affairs.

"Large business" means any **non**-women- or minority-owned, or service-disabled business as defined above or any business having more than 250 employees or more than \$10 million in gross receipts averaged over the previous three years.

"Nonprofit" means a corporation or an association that conducts business for the benefit of the general public without shareholders and without a profit motive.

"Small Women Owned and Minority Owned Business or SWAM" is a certification by the Virginia Department of Small Business and Supplier Diversity Program. (Commonwealth of Virginia Certification) to acknowledge women and minority owned businesses.

"Disadvantaged Business Enterprise or DBE " is a certification program for disadvantaged businesses, determined by personal net worth, SBA size criteria, gross receipts and/or ethnic background among other criteria. To be considered DBE the business must register with the State Department of Transportation or Uniform Certification Program.

September 2015

If registered as a SWAM with the Virginia Department of Small Business and Supplier Diversity (SBSD) please provide SWAM Certification number here: _____

If registered as DBE with the Federal Disadvantaged Business Enterprise Directory please provide the DBE certification number here: _____

If you are not registered with either agency please indicate this here: _____

This project requires that the contractor is insured in accordance with the Grayson County Insurance Requirements for Contractors. As the bidder, have you read the insurance requirements and are you insured in accordance with this document? _____ Yes _____ No

This project requires that the contractor understands federal requirements outlined on Form- FHWA 1273 and the “Buy America” (S102CF1-0309) clause. These documents are included in the Project Manual. The “Buy America” program requires a “Certificate of Compliance” regarding any iron or steel products (including fasteners) used in the construction project when such amount of iron/steel products is over \$2500 or one tenth of one percent of the contract amount. Please indicate that you have read and understand these provisions by signing below:

Name

Date

It is the intent of the County of Grayson to recommend the award of this contract to the lowest responsive and responsible bidder based upon the **Base Bid (Lump Sum) Amount**, provided the bid does not exceed the funds available for the project. Please submit the Base Bid Amount below for the **Trailhead Bathroom**.

Contractor Name:

Business Name (if applicable):

Having carefully examined the site, the drawings, specifications and other documents, and in compliance with the Project Package including the Invitation for Bid, County of Grayson, Construction General Terms and Conditions and this Bid Form, the undersigned proposes to furnish all labor, materials, supplies and equipment necessary for the **Trailhead Bathroom**. All shall be in accordance with drawings and technical specifications in the scope of work and in accordance with the **Trailhead Bathroom Plans**.

My signature certifies that the proposal as submitted complies with all requirements specified in this Invitation for Bid (“IFB”) and Project Manual.

My signature also certifies that by submitting a bid in response to this IFB, the Bidder represents that in the preparation and submission of this bid, the Bidder did not, either directly or indirectly, enter into any combination or arrangement with any person or business entity, or enter into any agreement, participate in any collusion, or otherwise take any action in the restraining of free, competitive bidding in violation of the Sherman Act (15 U.S.C. Section 1) or Sections 59.1-9.1 through 59.1-9.17 or Sections 59.1-68.6 through 59.1-68.8 of the Code of Virginia.

September 2015

My/Our lump sum price is as follows:

BASE BID: The Base Bid includes all work and materials required by the Bid Documents for this project, **Trailhead Bathroom**, in strict accordance with the drawings and specifications, for the lump sum of:

\$_____ (Figure Only)

I hereby certify that I am authorized to sign as a legal representative for the business entity submitting this bid.

Signed: _____

Date: _____

Printed Name: _____

Title: _____

Space Reserved for Office Use:

COUNTY OF GRAYSON INSURANCE REQUIREMENTS/CONTRACTORS

The Successful Vendor shall carry Public Liability Insurance in the amount specified below, including contractual liability assumed by the Successful Vendor, and shall deliver a Certificate of Insurance from carriers licensed to do business in the Commonwealth of Virginia and is representative of the insurance policies. The Certificate shall show that the policy has been endorsed to add the County of Grayson named as an additional insured for the Commercial General Liability coverage. The coverage shall be provided by a carrier(s) rated not less than "A-" with a financial rating of at least VII by A.M. Bests or a rating acceptable to the County. In addition, the Successful Vendor shall agree to give the County a minimum of 30 days prior notice of any cancellation or material reduction in coverage.

Workers' Compensation

Statutory Virginia Limits

Employers' Liability Insurance - \$100,000 for each Accident by employee
 \$100,000 for each Disease by employee
 \$500,000 policy limit by Disease

Commercial General Liability - Combined Single Limit

\$1,000,000 each occurrence including contractual liability for specified agreement
\$2,000,000 General Aggregate (other than Products/Completed Operations)
\$2,000,000 General Liability-Products/Completed Operations
\$1,000,000 Personal and Advertising injury
\$ 100,000 Fire Damage Legal Liability
Coverage must include Broad Form property damage and (XCU) Explosion, Collapse and Underground Coverage

Business Automobile Liability – including owned, non-owned and hired car coverage

Combined Single Limit - \$1,000,000 each accident

Umbrella/Excess Liability

\$2,000,000 Each Occurrence/Aggregate

NOTE 1: **The commercial general liability insurance shall include contractual liability. The contract documents include an indemnification provision(s). The County makes no representation or warranty as to how the Vendor's insurance coverage responds or does not respond. Insurance coverages that are unresponsive to the indemnification provision(s) do not limit the Vendor's responsibilities outlined in the contract documents.**

NOTE 2: The intent of this insurance specification is to provide the coverage required and the limits expected for each type of coverage. With regard to the Business Automobile Liability and Commercial General Liability, the total amount of coverage can be accomplished through any combination of primary and excess/umbrella insurance. This insurance shall apply as primary insurance and non-contributory with respect to any other insurance or self-insurance programs afforded the County of Grayson. This policy shall be endorsed to be primary with respect to the additional insured.

NOTE 3: Title 65.2 of the Code of Virginia requires every employer who regularly employs three or more full-time or part-time employees to purchase and maintain workers' compensation insurance. If you do not purchase a workers' compensation policy, a signed statement is required documenting that you are in compliance with Title 65.2 of the Code of Virginia.

COMMONWEALTH OF VIRGINIA
COUNTY OF GRAYSON, VIRGINIA

C O N T R A C T # XXXX

This contract ("Contract"), made this XXth day of XXXX 2014 between the County of Grayson, hereinafter called the "County" and

Legal name of contractor

and its successors, executors, administrators, and assigns, hereinafter called the "Contractor";

WITNESSETH: That the said Contractor agrees with the County, for the consideration herein mentioned, and at the Contractor's own proper cost and expense to do all the work and/or furnish all the tools, labor, materials, equipment, fees and supervision necessary to carry out this Contract in the manner and to the full extent as set forth in Grayson County Invitation for Bid #03-2016 dated xxxx and the Contractor's bid dated XXXXXXXXXXXX; to the satisfaction of the County, who shall have at all times full opportunity to inspect the work to be done under this Contract.

All terms and conditions, specifications, general and special provisions, plans, drawings, and all documents referred in the Grayson County Invitation for Bid, Project Manual, and Drawings (the "Contract Documents") are hereby incorporated into and made part of this Contract as though completely set forth herein.

It is agreed that the work to be performed by the Contractor under this Contract is to furnish all tools, labor, materials, equipment, fees and supervision necessary to provide Trailhead Bathroom, Grayson County Recreation Park, in accordance with Invitation for Bid #03-2016 dated, xxxx, Contractor's bid dated XXXXXXXXXXXXXX, and the general terms, conditions, and requirements (the "Work").

The Work shall be substantially complete and certified by the Project Manager by (6 months date of contract)

The Owner and the Contractor recognize that time is of the essence and that the Owner will suffer financial loss/use of property if the Work is not completed by the Substantial Completion date required by the Contract Documents. Both parties recognize the delays, expense, and damages involved in proving a legal proceeding the actual loss suffered by the Owner if the Work is not completed on time. Accordingly, notwithstanding any other provisions of this Contract, and inclement weather or acts of god, the Owner and the Contractor agree, stipulate and fix as liquidated damages if the work is delayed, but not as a penalty, the sum of **One Hundred Dollars (\$100.00)** that the Contractor together with the Contractor's surety shall pay the Owner for each calendar day or part thereof that expires after the date specified for Substantial Completion, if the Contractor does not complete the Work by the Substantial Completion date required by the Contract Documents. The Contractor hereby waives any defense as to the validity of liquidated damages stated in this Agreement on the grounds that such liquidated damages are void as penalties or are not reasonably related to actual damages, and the parties agree that the Owner's entitlement to liquidated damages shall be determined at the time of Substantial Completion and shall not be subject to the claims provisions of the Contract Documents.

The County shall pay to the Contractor the Contract Sum in current funds for the Contractor's performance of the Contract. The Contract Sum shall be xxxxxx Dollars (\$xx,xxx.xx). Payment shall be due 45 calendar days after the County receives a properly prepared invoice submitted by the Contractor and accepted by the County for Work performed in accordance with the Contract Documents.

In consideration of the foregoing premises the County agrees to pay the Contractor for all items of work performed and/or materials furnished at the unit prices or lump prices under the conditions set forth in documents herein referred to.

The Contractor and any sub-contractor under the direction of the contractor, agrees to follow the requirements for Federal Aid Construction Contracts as outlined in the Attachment- Form 1273.

FIRM: Legal name of Contractor.

ADDRESS XXXXXXXXXXXXXXXXXXXX

XXXXXXXXXXXXXXXXXXXX

BY _____

TITLE _____

County of Grayson
County Administration

P.O. Box 217
Independence, VA 24348

XXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXX

Attachment- FWHA Form 1273
Buy America

Change Order**Bid Information:**

Bid Number: _____ PO # : _____

Amendment Number: _____ Date: _____

Name of Project: _____ Owner/Agency: _____

Contractor: _____ Telephone
Number: _____

The following changes are hereby made to the above referenced contract documents:

Change to Contract Prices:

Original contract price: _____

Current contract price (adjusted by previous change orders): _____

Contract price due to this change order will be (circle) increased or decreased by: _____

Contract price including this change order will be: _____

Change to Contract Times:

Contract Time will be (circle one) Increased/Decreased by (calendar days): _____

Completion date for all work: _____

Approvalsby: _____ Date: _____
(Authorized Signature of Architect/ Engineer, if required)by: _____ Date: _____
(Authorized Signature of Agency Head)by: _____ Date: _____
(Signature of County Manager or Superintendent of Schools if required)Accepted by: _____ Date: _____
(Authorized Signature of Contractor)

REQUIRED CONTRACT PROVISIONS FEDERAL-AID CONSTRUCTION CONTRACTS

- I. General
- II. Nondiscrimination
- III. Nonsegregated Facilities
- IV. Davis-Bacon and Related Act Provisions
- V. Contract Work Hours and Safety Standards Act Provisions
- VI. Subletting or Assigning the Contract
- VII. Safety: Accident Prevention
- VIII. False Statements Concerning Highway Projects
- IX. Implementation of Clean Air Act and Federal Water Pollution Control Act
- X. Compliance with Governmentwide Suspension and Debarment Requirements
- XI. Certification Regarding Use of Contract Funds for Lobbying

ATTACHMENTS

A. Employment and Materials Preference for Appalachian Development Highway System or Appalachian Local Access Road Contracts (included in Appalachian contracts only)

I. GENERAL

1. Form FHWA-1273 must be physically incorporated in each construction contract funded under Title 23 (excluding emergency contracts solely intended for debris removal). The contractor (or subcontractor) must insert this form in each subcontract and further require its inclusion in all lower tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services).

The applicable requirements of Form FHWA-1273 are incorporated by reference for work done under any purchase order, rental agreement or agreement for other services. The prime contractor shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Form FHWA-1273 must be included in all Federal-aid design-build contracts, in all subcontracts and in lower tier subcontracts (excluding subcontracts for design services, purchase orders, rental agreements and other agreements for supplies or services). The design-builder shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Contracting agencies may reference Form FHWA-1273 in bid proposal or request for proposal documents, however, the Form FHWA-1273 must be physically incorporated (not referenced) in all contracts, subcontracts and lower-tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services related to a construction contract).

2. Subject to the applicability criteria noted in the following sections, these contract provisions shall apply to all work performed on the contract by the contractor's own organization and with the assistance of workers under the contractor's immediate superintendence and to all work performed on the contract by piecework, station work, or by subcontract.

3. A breach of any of the stipulations contained in these Required Contract Provisions may be sufficient grounds for withholding of progress payments, withholding of final payment, termination of the contract, suspension / debarment or any other action determined to be appropriate by the contracting agency and FHWA.

4. Selection of Labor: During the performance of this contract, the contractor shall not use convict labor for any purpose within the limits of a construction project on a Federal-aid highway unless it is labor performed by convicts who are on parole, supervised release, or probation. The term Federal-aid highway does not include roadways functionally classified as local roads or rural minor collectors.

II. NONDISCRIMINATION

The provisions of this section related to 23 CFR Part 230 are applicable to all Federal-aid construction contracts and to all related construction subcontracts of \$10,000 or more. The provisions of 23 CFR Part 230 are not applicable to material supply, engineering, or architectural service contracts.

In addition, the contractor and all subcontractors must comply with the following policies: Executive Order 11246, 41 CFR 60, 29 CFR 1625-1627, Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), Title VI of the Civil Rights Act of 1964, as amended, and related regulations including 49 CFR Parts 21, 26 and 27; and 23 CFR Parts 200, 230, and 633.

The contractor and all subcontractors must comply with: the requirements of the Equal Opportunity Clause in 41 CFR 60-1.4(b) and, for all construction contracts exceeding \$10,000, the Standard Federal Equal Employment Opportunity Construction Contract Specifications in 41 CFR 60-4.3.

Note: The U.S. Department of Labor has exclusive authority to determine compliance with Executive Order 11246 and the policies of the Secretary of Labor including 41 CFR 60, and 29 CFR 1625-1627. The contracting agency and the FHWA have the authority and the responsibility to ensure compliance with Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), and Title VI of the Civil Rights Act of 1964, as amended, and related regulations including 49 CFR Parts 21, 26 and 27; and 23 CFR Parts 200, 230, and 633.

The following provision is adopted from 23 CFR 230, Appendix A, with appropriate revisions to conform to the U.S. Department of Labor (US DOL) and FHWA requirements.

1. Equal Employment Opportunity: Equal employment opportunity (EEO) requirements not to discriminate and to take affirmative action to assure equal opportunity as set forth under laws, executive orders, rules, regulations (28 CFR 35, 29 CFR 1630, 29 CFR 1625-1627, 41 CFR 60 and 49 CFR 27) and orders of the Secretary of Labor as modified by the provisions prescribed herein, and imposed pursuant to 23 U.S.C. 140 shall constitute the EEO and specific affirmative action standards for the contractor's project activities under

this contract. The provisions of the Americans with Disabilities Act of 1990 (42 U.S.C. 12101 et seq.) set forth under 28 CFR 35 and 29 CFR 1630 are incorporated by reference in this contract. In the execution of this contract, the contractor agrees to comply with the following minimum specific requirement activities of EEO:

a. The contractor will work with the contracting agency and the Federal Government to ensure that it has made every good faith effort to provide equal opportunity with respect to all of its terms and conditions of employment and in their review of activities under the contract.

b. The contractor will accept as its operating policy the following statement:

"It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, color, national origin, age or disability. Such action shall include: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship, pre-apprenticeship, and/or on-the-job training."

2. EEO Officer: The contractor will designate and make known to the contracting officers an EEO Officer who will have the responsibility for and must be capable of effectively administering and promoting an active EEO program and who must be assigned adequate authority and responsibility to do so.

3. Dissemination of Policy: All members of the contractor's staff who are authorized to hire, supervise, promote, and discharge employees, or who recommend such action, or who are substantially involved in such action, will be made fully cognizant of, and will implement, the contractor's EEO policy and contractual responsibilities to provide EEO in each grade and classification of employment. To ensure that the above agreement will be met, the following actions will be taken as a minimum:

a. Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months, at which time the contractor's EEO policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer.

b. All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer, covering all major aspects of the contractor's EEO obligations within thirty days following their reporting for duty with the contractor.

c. All personnel who are engaged in direct recruitment for the project will be instructed by the EEO Officer in the contractor's procedures for locating and hiring minorities and women.

d. Notices and posters setting forth the contractor's EEO policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.

e. The contractor's EEO policy and the procedures to implement such policy will be brought to the attention of employees by means of meetings, employee handbooks, or other appropriate means.

4. Recruitment: When advertising for employees, the contractor will include in all advertisements for employees the notation: "An Equal Opportunity Employer." All such advertisements will be placed in publications having a large circulation among minorities and women in the area from which the project work force would normally be derived.

a. The contractor will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employee referral sources likely to yield qualified minorities and women. To meet this requirement, the contractor will identify sources of potential minority group employees, and establish with such identified sources procedures whereby minority and women applicants may be referred to the contractor for employment consideration.

b. In the event the contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, the contractor is expected to observe the provisions of that agreement to the extent that the system meets the contractor's compliance with EEO contract provisions. Where implementation of such an agreement has the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Federal nondiscrimination provisions.

c. The contractor will encourage its present employees to refer minorities and women as applicants for employment. Information and procedures with regard to referring such applicants will be discussed with employees.

5. Personnel Actions: Wages, working conditions, and employee benefits shall be established and administered, and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoff, and termination, shall be taken without regard to race, color, religion, sex, national origin, age or disability. The following procedures shall be followed:

a. The contractor will conduct periodic inspections of project sites to insure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.

b. The contractor will periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.

c. The contractor will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the contractor will promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.

d. The contractor will promptly investigate all complaints of alleged discrimination made to the contractor in connection with its obligations under this contract, will attempt to resolve such complaints, and will take appropriate corrective action within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action shall include such other persons. Upon completion of each investigation, the contractor will inform every complainant of all of their avenues of appeal.

6. Training and Promotion:

a. The contractor will assist in locating, qualifying, and increasing the skills of minorities and women who are

applicants for employment or current employees. Such efforts should be aimed at developing full journey level status employees in the type of trade or job classification involved.

b. Consistent with the contractor's work force requirements and as permissible under Federal and State regulations, the contractor shall make full use of training programs, i.e., apprenticeship, and on-the-job training programs for the geographical area of contract performance. In the event a special provision for training is provided under this contract, this subparagraph will be superseded as indicated in the special provision. The contracting agency may reserve training positions for persons who receive welfare assistance in accordance with 23 U.S.C. 140(a).

c. The contractor will advise employees and applicants for employment of available training programs and entrance requirements for each.

d. The contractor will periodically review the training and promotion potential of employees who are minorities and women and will encourage eligible employees to apply for such training and promotion.

7. Unions: If the contractor relies in whole or in part upon unions as a source of employees, the contractor will use good faith efforts to obtain the cooperation of such unions to increase opportunities for minorities and women. Actions by the contractor, either directly or through a contractor's association acting as agent, will include the procedures set forth below:

a. The contractor will use good faith efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minorities and women for membership in the unions and increasing the skills of minorities and women so that they may qualify for higher paying employment.

b. The contractor will use good faith efforts to incorporate an EEO clause into each union agreement to the end that such union will be contractually bound to refer applicants without regard to their race, color, religion, sex, national origin, age or disability.

c. The contractor is to obtain information as to the referral practices and policies of the labor union except that to the extent such information is within the exclusive possession of the labor union and such labor union refuses to furnish such information to the contractor, the contractor shall so certify to the contracting agency and shall set forth what efforts have been made to obtain such information.

d. In the event the union is unable to provide the contractor with a reasonable flow of referrals within the time limit set forth in the collective bargaining agreement, the contractor will, through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex, national origin, age or disability; making full efforts to obtain qualified and/or qualifiable minorities and women. The failure of a union to provide sufficient referrals (even though it is obligated to provide exclusive referrals under the terms of a collective bargaining agreement) does not relieve the contractor from the requirements of this paragraph. In the event the union referral practice prevents the contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such contractor shall immediately notify the contracting agency.

8. Reasonable Accommodation for Applicants / Employees with Disabilities: The contractor must be familiar

with the requirements for and comply with the Americans with Disabilities Act and all rules and regulations established there under. Employers must provide reasonable accommodation in all employment activities unless to do so would cause an undue hardship.

9. Selection of Subcontractors, Procurement of Materials and Leasing of Equipment: The contractor shall not discriminate on the grounds of race, color, religion, sex, national origin, age or disability in the selection and retention of subcontractors, including procurement of materials and leases of equipment. The contractor shall take all necessary and reasonable steps to ensure nondiscrimination in the administration of this contract.

a. The contractor shall notify all potential subcontractors and suppliers and lessors of their EEO obligations under this contract.

b. The contractor will use good faith efforts to ensure subcontractor compliance with their EEO obligations.

10. Assurance Required by 49 CFR 26.13(b):

a. The requirements of 49 CFR Part 26 and the State DOT's U.S. DOT-approved DBE program are incorporated by reference.

b. The contractor or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of DOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the contracting agency deems appropriate.

11. Records and Reports: The contractor shall keep such records as necessary to document compliance with the EEO requirements. Such records shall be retained for a period of three years following the date of the final payment to the contractor for all contract work and shall be available at reasonable times and places for inspection by authorized representatives of the contracting agency and the FHWA.

a. The records kept by the contractor shall document the following:

(1) The number and work hours of minority and non-minority group members and women employed in each work classification on the project;

(2) The progress and efforts being made in cooperation with unions, when applicable, to increase employment opportunities for minorities and women; and

(3) The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minorities and women;

b. The contractors and subcontractors will submit an annual report to the contracting agency each July for the duration of the project, indicating the number of minority, women, and non-minority group employees currently engaged in each work classification required by the contract work. This information is to be reported on [Form FHWA-1391](#). The staffing data should represent the project work force on board in all or any part of the last payroll period preceding the end of July. If on-the-job training is being required by special provision, the contractor

will be required to collect and report training data. The employment data should reflect the work force on board during all or any part of the last payroll period preceding the end of July.

III. NONSEGREGATED FACILITIES

This provision is applicable to all Federal-aid construction contracts and to all related construction subcontracts of \$10,000 or more.

The contractor must ensure that facilities provided for employees are provided in such a manner that segregation on the basis of race, color, religion, sex, or national origin cannot result. The contractor may neither require such segregated use by written or oral policies nor tolerate such use by employee custom. The contractor's obligation extends further to ensure that its employees are not assigned to perform their services at any location, under the contractor's control, where the facilities are segregated. The term "facilities" includes waiting rooms, work areas, restaurants and other eating areas, time clocks, restrooms, washrooms, locker rooms, and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing provided for employees. The contractor shall provide separate or single-user restrooms and necessary dressing or sleeping areas to assure privacy between sexes.

IV. DAVIS-BACON AND RELATED ACT PROVISIONS

This section is applicable to all Federal-aid construction projects exceeding \$2,000 and to all related subcontracts and lower-tier subcontracts (regardless of subcontract size). The requirements apply to all projects located within the right-of-way of a roadway that is functionally classified as Federal-aid highway. This excludes roadways functionally classified as local roads or rural minor collectors, which are exempt. Contracting agencies may elect to apply these requirements to other projects.

The following provisions are from the U.S. Department of Labor regulations in 29 CFR 5.5 "Contract provisions and related matters" with minor revisions to conform to the FHWA-1273 format and FHWA program requirements.

1. Minimum wages

a. All laborers and mechanics employed or working upon the site of the work, will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions

of paragraph 1.d. of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under paragraph 1.b. of this section) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

b. (1) The contracting officer shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The contracting officer shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

(i) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

(ii) The classification is utilized in the area by the construction industry; and

(iii) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(2) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the contracting officer to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(3) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer shall refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Wage and Hour Administrator for determination. The Wage and Hour Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or

will notify the contracting officer within the 30-day period that additional time is necessary.

(4) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs 1.b.(2) or 1.b.(3) of this section, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

c. Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

d. If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program. Provided, That the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

2. Withholding

The contracting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor under this contract, or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, the contracting agency may, after written notice to the contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

3. Payrolls and basic records

a. Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-

Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

b. (1) The contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the contracting agency. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g., the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division Web site at <http://www.dol.gov/esa/whd/forms/wh347instr.htm> or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the contracting agency for transmission to the State DOT, the FHWA or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the contracting agency..

(2) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(i) That the payroll for the payroll period contains the information required to be provided under §5.5 (a)(3)(ii) of Regulations, 29 CFR part 5, the appropriate information is being maintained under §5.5 (a)(3)(i) of Regulations, 29 CFR part 5, and that such information is correct and complete;

(ii) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations, 29 CFR part 3;

(iii) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(3) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph 3.b.(2) of this section.

(4) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under section 1001 of title 18 and section 231 of title 31 of the United States Code.

c. The contractor or subcontractor shall make the records required under paragraph 3.a. of this section available for inspection, copying, or transcription by authorized representatives of the contracting agency, the State DOT, the FHWA, or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the FHWA may, after written notice to the contractor, the contracting agency or the State DOT, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

4. Apprentices and trainees

a. Apprentices (programs of the USDOL).

Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice.

The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed.

Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly

rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination.

In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

b. Trainees (programs of the USDOL).

Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration.

The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration.

Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed.

In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

c. Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.

d. Apprentices and Trainees (programs of the U.S. DOT).

Apprentices and trainees working under apprenticeship and skill training programs which have been certified by the Secretary of Transportation as promoting EEO in connection with Federal-aid highway construction programs are not subject to the requirements of paragraph 4 of this Section IV. The straight time hourly wage rates for apprentices and trainees under such programs will be established by the particular programs. The ratio of apprentices and trainees to journeymen shall not be greater than permitted by the terms of the particular program.

5. Compliance with Copeland Act requirements. The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract.

6. Subcontracts. The contractor or subcontractor shall insert Form FHWA-1273 in any subcontracts and also require the subcontractors to include Form FHWA-1273 in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR 5.5.

7. Contract termination: debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

8. Compliance with Davis-Bacon and Related Act requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract.

9. Disputes concerning labor standards. Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.

10. Certification of eligibility.

a. By entering into this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

b. No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

c. The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

V. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT

The following clauses apply to any Federal-aid construction contract in an amount in excess of \$100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by 29 CFR 5.5(a) or 29 CFR 4.6. As used in this paragraph, the terms laborers and mechanics include watchmen and guards.

1. Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

2. Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (1.) of this section, the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (1.) of this section, in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (1.) of this section.

3. Withholding for unpaid wages and liquidated damages. The FHWA or the contracting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (2.) of this section.

4. Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (1.) through (4.) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (1.) through (4.) of this section.

VI. SUBLETTING OR ASSIGNING THE CONTRACT

This provision is applicable to all Federal-aid construction contracts on the National Highway System.

1. The contractor shall perform with its own organization contract work amounting to not less than 30 percent (or a greater percentage if specified elsewhere in the contract) of the total original contract price, excluding any specialty items designated by the contracting agency. Specialty items may be performed by subcontract and the amount of any such specialty items performed may be deducted from the total original contract price before computing the amount of work required to be performed by the contractor's own organization (23 CFR 635.116).

a. The term "perform work with its own organization" refers to workers employed or leased by the prime contractor, and equipment owned or rented by the prime contractor, with or without operators. Such term does not include employees or equipment of a subcontractor or lower tier subcontractor, agents of the prime contractor, or any other assignees. The term may include payments for the costs of hiring leased employees from an employee leasing firm meeting all relevant Federal and State regulatory requirements. Leased employees may only be included in this term if the prime contractor meets all of the following conditions:

- (1) the prime contractor maintains control over the supervision of the day-to-day activities of the leased employees;
- (2) the prime contractor remains responsible for the quality of the work of the leased employees;
- (3) the prime contractor retains all power to accept or exclude individual employees from work on the project; and
- (4) the prime contractor remains ultimately responsible for the payment of predetermined minimum wages, the submission of payrolls, statements of compliance and all other Federal regulatory requirements.

b. "Specialty Items" shall be construed to be limited to work that requires highly specialized knowledge, abilities, or equipment not ordinarily available in the type of contracting organizations qualified and expected to bid or propose on the contract as a whole and in general are to be limited to minor components of the overall contract.

2. The contract amount upon which the requirements set forth in paragraph (1) of Section VI is computed includes the cost of material and manufactured products which are to be purchased or produced by the contractor under the contract provisions.

3. The contractor shall furnish (a) a competent superintendent or supervisor who is employed by the firm, has full authority to direct performance of the work in accordance with the contract requirements, and is in charge of all construction operations (regardless of who performs the work) and (b) such other of its own organizational resources (supervision, management, and engineering services) as the contracting officer determines is necessary to assure the performance of the contract.

4. No portion of the contract shall be sublet, assigned or otherwise disposed of except with the written consent of the contracting officer, or authorized representative, and such consent when given shall not be construed to relieve the contractor of any responsibility for the fulfillment of the contract. Written consent will be given only after the contracting agency has assured that each subcontract is

evidenced in writing and that it contains all pertinent provisions and requirements of the prime contract.

5. The 30% self-performance requirement of paragraph (1) is not applicable to design-build contracts; however, contracting agencies may establish their own self-performance requirements.

VII. SAFETY: ACCIDENT PREVENTION

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

1. In the performance of this contract the contractor shall comply with all applicable Federal, State, and local laws governing safety, health, and sanitation (23 CFR 635). The contractor shall provide all safeguards, safety devices and protective equipment and take any other needed actions as it determines, or as the contracting officer may determine, to be reasonably necessary to protect the life and health of employees on the job and the safety of the public and to protect property in connection with the performance of the work covered by the contract.

2. It is a condition of this contract, and shall be made a condition of each subcontract, which the contractor enters into pursuant to this contract, that the contractor and any subcontractor shall not permit any employee, in performance of the contract, to work in surroundings or under conditions which are unsanitary, hazardous or dangerous to his/her health or safety, as determined under construction safety and health standards (29 CFR 1926) promulgated by the Secretary of Labor, in accordance with Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3704).

3. Pursuant to 29 CFR 1926.3, it is a condition of this contract that the Secretary of Labor or authorized representative thereof, shall have right of entry to any site of contract performance to inspect or investigate the matter of compliance with the construction safety and health standards and to carry out the duties of the Secretary under Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C.3704).

VIII. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

In order to assure high quality and durable construction in conformity with approved plans and specifications and a high degree of reliability on statements and representations made by engineers, contractors, suppliers, and workers on Federal-aid highway projects, it is essential that all persons concerned with the project perform their functions as carefully, thoroughly, and honestly as possible. Willful falsification, distortion, or misrepresentation with respect to any facts related to the project is a violation of Federal law. To prevent any misunderstanding regarding the seriousness of these and similar acts, Form FHWA-1022 shall be posted on each Federal-aid highway project (23 CFR 635) in one or more places where it is readily available to all persons concerned with the project:

18 U.S.C. 1020 reads as follows:

"Whoever, being an officer, agent, or employee of the United States, or of any State or Territory, or whoever, whether a person, association, firm, or corporation, knowingly makes any false statement, false representation, or false report as to the character, quality, quantity, or cost of the material used or to be used, or the quantity or quality of the work performed or to be performed, or the cost thereof in connection with the submission of plans, maps, specifications, contracts, or costs of construction on any highway or related project submitted for approval to the Secretary of Transportation; or

Whoever knowingly makes any false statement, false representation, false report or false claim with respect to the character, quality, quantity, or cost of any work performed or to be performed, or materials furnished or to be furnished, in connection with the construction of any highway or related project approved by the Secretary of Transportation; or

Whoever knowingly makes any false statement or false representation as to material fact in any statement, certificate, or report submitted pursuant to provisions of the Federal-aid Roads Act approved July 1, 1916, (39 Stat. 355), as amended and supplemented;

Shall be fined under this title or imprisoned not more than 5 years or both."

IX. IMPLEMENTATION OF CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

By submission of this bid/proposal or the execution of this contract, or subcontract, as appropriate, the bidder, proposer, Federal-aid construction contractor, or subcontractor, as appropriate, will be deemed to have stipulated as follows:

1. That any person who is or will be utilized in the performance of this contract is not prohibited from receiving an award due to a violation of Section 508 of the Clean Water Act or Section 306 of the Clean Air Act.

2. That the contractor agrees to include or cause to be included the requirements of paragraph (1) of this Section X in every subcontract, and further agrees to take such action as the contracting agency may direct as a means of enforcing such requirements.

X. CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION

This provision is applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, consultant contracts or any other covered transaction requiring FHWA approval or that is estimated to cost \$25,000 or more – as defined in 2 CFR Parts 180 and 1200.

1. Instructions for Certification – First Tier Participants:

a. By signing and submitting this proposal, the prospective first tier participant is providing the certification set out below.

b. The inability of a person to provide the certification set out below will not necessarily result in denial of participation in this

covered transaction. The prospective first tier participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective first tier participant to furnish a certification or an explanation shall disqualify such a person from participation in this transaction.

c. The certification in this clause is a material representation of fact upon which reliance was placed when the contracting agency determined to enter into this transaction. If it is later determined that the prospective participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the contracting agency may terminate this transaction for cause of default.

d. The prospective first tier participant shall provide immediate written notice to the contracting agency to whom this proposal is submitted if any time the prospective first tier participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

e. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180 and 1200. "First Tier Covered Transactions" refers to any covered transaction between a grantee or subgrantee of Federal funds and a participant (such as the prime or general contract). "Lower Tier Covered Transactions" refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). "First Tier Participant" refers to the participant who has entered into a covered transaction with a grantee or subgrantee of Federal funds (such as the prime or general contractor). "Lower Tier Participant" refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

f. The prospective first tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction.

g. The prospective first tier participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transactions," provided by the department or contracting agency, entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the \$25,000 threshold.

h. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the Excluded Parties List System website (<https://www.epls.gov/>), which is compiled by the General Services Administration.

i. Nothing contained in the foregoing shall be construed to require the establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of the prospective participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

j. Except for transactions authorized under paragraph (f) of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default.

* * * * *

2. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion – First Tier Participants:

a. The prospective first tier participant certifies to the best of its knowledge and belief, that it and its principals:

(1) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency;

(2) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

(3) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (a)(2) of this certification; and

(4) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

b. Where the prospective participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

2. Instructions for Certification - Lower Tier Participants:

(Applicable to all subcontracts, purchase orders and other lower tier transactions requiring prior FHWA approval or estimated to cost \$25,000 or more - 2 CFR Parts 180 and 1200)

a. By signing and submitting this proposal, the prospective lower tier is providing the certification set out below.

b. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department, or agency with which

this transaction originated may pursue available remedies, including suspension and/or debarment.

c. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous by reason of changed circumstances.

d. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180 and 1200. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations. "First Tier Covered Transactions" refers to any covered transaction between a grantee or subgrantee of Federal funds and a participant (such as the prime or general contract). "Lower Tier Covered Transactions" refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). "First Tier Participant" refers to the participant who has entered into a covered transaction with a grantee or subgrantee of Federal funds (such as the prime or general contractor). "Lower Tier Participant" refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

e. The prospective lower tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated.

f. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the \$25,000 threshold.

g. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the Excluded Parties List System website (<https://www.epls.gov/>), which is compiled by the General Services Administration.

h. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

i. Except for transactions authorized under paragraph e of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the

department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

* * * * *

Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--Lower Tier Participants:

1. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency.

2. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

* * * * *

XI. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts which exceed \$100,000 (49 CFR 20).

1. The prospective participant certifies, by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:

a. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

b. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

2. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. 1352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

3. The prospective participant also agrees by submitting its bid or proposal that the participant shall require that the language of this certification be included in all lower tier subcontracts, which exceed \$100,000 and that all such recipients shall certify and disclose accordingly.

**ATTACHMENT A - EMPLOYMENT AND MATERIALS
PREFERENCE FOR APPALACHIAN DEVELOPMENT
HIGHWAY SYSTEM OR APPALACHIAN LOCAL ACCESS
ROAD CONTRACTS**

This provision is applicable to all Federal-aid projects funded under the Appalachian Regional Development Act of 1965.

1. During the performance of this contract, the contractor undertaking to do work which is, or reasonably may be, done as on-site work, shall give preference to qualified persons who regularly reside in the labor area as designated by the DOL wherein the contract work is situated, or the subregion, or the Appalachian counties of the State wherein the contract work is situated, except:

a. To the extent that qualified persons regularly residing in the area are not available.

b. For the reasonable needs of the contractor to employ supervisory or specially experienced personnel necessary to assure an efficient execution of the contract work.

c. For the obligation of the contractor to offer employment to present or former employees as the result of a lawful collective bargaining contract, provided that the number of nonresident persons employed under this subparagraph (1c) shall not exceed 20 percent of the total number of employees employed by the contractor on the contract work, except as provided in subparagraph (4) below.

2. The contractor shall place a job order with the State Employment Service indicating (a) the classifications of the laborers, mechanics and other employees required to perform the contract work, (b) the number of employees required in each classification, (c) the date on which the participant estimates such employees will be required, and (d) any other pertinent information required by the State Employment Service to complete the job order form. The job order may be placed with the State Employment Service in writing or by telephone. If during the course of the contract work, the information submitted by the contractor in the original job order is substantially modified, the participant shall promptly notify the State Employment Service.

3. The contractor shall give full consideration to all qualified job applicants referred to him by the State Employment Service. The contractor is not required to grant employment to any job applicants who, in his opinion, are not qualified to perform the classification of work required.

4. If, within one week following the placing of a job order by the contractor with the State Employment Service, the State Employment Service is unable to refer any qualified job applicants to the contractor, or less than the number requested, the State Employment Service will forward a certificate to the contractor indicating the unavailability of applicants. Such certificate shall be made a part of the contractor's permanent project records. Upon receipt of this certificate, the contractor may employ persons who do not normally reside in the labor area to fill positions covered by the certificate, notwithstanding the provisions of subparagraph (1c) above.

5. The provisions of 23 CFR 633.207(e) allow the contracting agency to provide a contractual preference for the use of mineral resource materials native to the Appalachian region.

6. The contractor shall include the provisions of Sections 1 through 4 of this Attachment A in every subcontract for work which is, or reasonably may be, done as on-site work.

VIRGINIA DEPARTMENT OF TRANSPORTATION
SPECIAL PROVISION FOR
USE OF DOMESTIC MATERIAL

July 26, 2013

SECTION 102.05 PREPARATION OF BID of the Specifications is amended to include the following:

In accordance with the provisions of Section 635.410(b) of Title 23 CFR, hereinafter referred to as "Buy America", except as otherwise specified, all iron and steel products (including miscellaneous steel items such as fasteners, nuts, bolts and washers) to be permanently incorporated for use on federal aid projects shall be produced in the United States of America regardless of the percentage they exist in the manufactured product or final form they take. Therefore, "Domestically produced in the United States of America" means all manufacturing processes must occur in the United States of America, to mean, in one of the 50 States, the District of Columbia, Puerto Rico or in the territories and possessions of the United States. Manufacturing processes are defined as any process which alters or modifies the chemical content, physical size or shape or final finish of iron or steel material) such as rolling, extruding, bending, machining, fabrication, grinding, drilling, finishing, or coating whereby a raw material or a reduced iron ore material is changed, altered or transformed into a steel or iron item or product which, because of the process, is different from the original material. For the purposes of satisfying this requirement "coating" is defined as the application of epoxy, galvanizing, painting or any other such process that protects or enhances the value of the material. Materials used in the coating process need not be domestic materials.

For the purposes herein the manufacturing process is considered complete when the resultant product is ready for use as an item in the project (e.g. fencing, posts, girders, pipe, manhole covers, etc.) or is incorporated as a component of a more complex product by means of further manufacturing. Final assembly of a product may occur outside of the United States of America provided no further manufacturing process takes place.

Raw materials such as iron ore, pig iron, processed, pelletized and reduced iron ore, waste products (including scrap, that is, steel or iron no longer useful in its present form from old automobiles, machinery, pipe, railroad rail, or the like and steel trimmings from mills or product manufacturing) and other raw materials used in the production of steel and/or iron products may, however, be imported. Extracting, handling, or crushing the raw materials which are inherent to the transporting the materials for later use in the manufacturing process are exempt from Buy America. The use of foreign source steel or iron billet is not acceptable under the provisions of Buy America. For the purposes of this provision all steel or iron material not meeting the criteria as domestically produced in the United States of America will be considered as "foreign" material. All iron and steel items will be classified hereinafter as "domestic" or "foreign", identified by and subject to the provisions herein.

Domestically produced iron or steel ingots or billets shipped outside the United States of America for any manufacturing process and returned for permanent use in a project would not comply with "Buy America" requirements.

Buy America provisions do not apply to iron or steel products used temporarily in the construction of a project such as temporary sheet piling, temporary bridges, steel scaffolding, falsework or such temporary material or product or material that remains in place for the Contractor's convenience.

Section 635.410(b) of Title 23 CFR permits a minimal amount of steel or iron material to be incorporated in the permanent work on a federal-aid contract. The cost of such materials or products must not exceed one-tenth of one percent of the contract amount or \$2500, whichever is greater. The cost of the foreign iron or steel material is defined as its monetary value delivered to the job site

and supported by invoices or bill of sale to the Contractor. This delivered to site cost must include transportation, assembly, installation and testing.

In the event the total cost of all "foreign" iron and steel product or material does not exceed one-tenth of one percent of the total contract cost or \$2,500, whichever is greater, the use of such material meeting the limitations herein will not be restricted by the domestic requirements herein. However, by signing the bid, the Bidder certifies that such cost does not exceed the limits established herein.

Waivers:

With prior concurrence from Federal Highway Administration (FHWA) headquarters, the Federal Highway Division Administrator may grant a waiver to specific projects provided it can be demonstrated:

1. that the use of domestic steel or iron materials would be inconsistent with the public interest; or
2. materials or products requested for use are not produced in the United States in sufficient or reasonably available quantities and are of satisfactory quality for use in the permanent work.

The waiver request shall be submitted with supportive information to include:

1. Project number\description, project cost, waiver item, item cost, country of origin for the product, reason for the waiver, and
2. Analysis of redesign of the project using alternative or approved equal domestic products

In order to grant such a waiver the request for the waiver must be published in the Federal Register for a period not less than 15 days or greater than 60 days prior to waiving such requirement. An initial 15 day comment period to the waiver will be available to the public by means of the FHWA website: <http://www.fhwa.dot.gov/construction/contracts/waivers.cfm>. Following that initial 15 day period of review and comment the request for waiver will be published by the FHWA in the Federal Register. The effective date of the FHWA finding, either to approve or deny the waiver request, will be 15 days following publication in the Federal Register.

Only the FHWA Administrator may grant nationwide waivers which still are subject to the public rulemaking and review process.

Alternative Bidding Procedures:

An alternative bidding procedure may be employed to justify the use of foreign iron and/or steel. To qualify under this procedure the total project is bid using two alternatives, one based on the use of domestic products and the other, the use of corresponding foreign source steel and/or iron materials.

In accordance with the provisions of Section 103.02 the Contract will be awarded to the lowest responsive and responsible bidder who submits the lowest total bid based on furnishing domestic iron or steel unless such total exceeds the lowest total bid based on furnishing foreign iron and/or steel by more than 25 percent, in which case the award will be made to the lowest responsive and responsible bidder furnishing foreign iron and/or steel based upon furnishing verifiable supportive data. The bidder shall submit a bid based on permanently incorporating only domestic iron and/or steel in the construction of the project. The bidder may also submit a bid for the same proposed contract based on being allowed to permanently incorporate corresponding foreign iron and/or steel materials meeting the other contract requirements into the work on the contract. If he chooses to submit such a bid, that alternate bid shall clearly indicate which foreign iron and/or steel items will be permanently

installed in the work as well as contain prices for all other items listed in the corresponding domestic proposal to complete a total "Foreign" bid.

In the event the contract is awarded to the bidder furnishing foreign iron and/or steel materials or items the provision for price adjustment of steel items will be permitted, however, price fluctuations shall use the U.S. index as stated in the Special Provision for Price Adjustment For Steel. The Contractor must indicate which corresponding eligible steel items he chooses price adjustment to apply. In the event the contract is awarded to a bidder furnishing foreign iron and/or steel items and during the life of that contract the Contractor discovers he can not furnish foreign iron and/or steel material as originally anticipated and agreed upon, he shall be responsible to honor the total bid price and furnish such iron and/or steel materials meeting the contract requirements from other sources as necessary to complete the work.

In the event the Contractor proposes to furnish "foreign" iron and steel and can verify a savings in excess of 25 percent of the overall project cost if bid using domestic materials, the Contractor shall submit a second complete paper bid proposal clearly marked "Foreign" including Form C-7 and supportive data supplement on all sheets. Supportive data shall list, but not be limited to, origin of material, best price offer, quantity and complete description of material, mill analysis, evidence or certification of conformance to contract requirements, etc. The "Foreign" bid shall be completed using the best price offer for each corresponding bid item supplying foreign material in the alternative bid and submit the same with the Contractor's "Domestic" bid. The Contractor shall write the word "Foreign" by the bid total shown on Form C-7 as well as last page of Schedule of Items showing the total bid amount. The bidder shall also contact the State Contract Engineer to inform him that he is also submitting an alternate "Foreign" paper bid..

The information listed on the supportive data sheet(s) will be used to provide the basis for verification of the required cost savings. In the event comparison of the prices given, or corrected as provided in Section 103.01 of the Specifications, shows that use of "foreign" iron and steel items does not represent a cost savings exceeding the aforementioned 25 percent, "domestic" iron and/or steel and prices given there for shall be used and the "100 percent Domestic Items Total" shall be the Contractor's bid.

Certification of Compliance:

Where domestic material is supplied, prior to incorporation into the Work, the Contractor shall furnish to the Department a certificate of compliance (such as may be furnished by steel mill test reports) that all steel and/or iron products supplied to the project except as may be permitted (one-tenth of one percent of the total contract cost or \$2,500, whichever is greater) and permanently incorporated into the work satisfies the domestic requirements herein. This certification shall contain a definitive statement about the origin of all products covered under the provisions of Buy America as stated herein.

In lieu of the Contractor providing personal certification, the Contractor may furnish a stepped certification in which each handler of the product, such as supplier, fabricator, manufacturer, processor, etc. furnishes an individual certification that their step in the process was domestically performed.