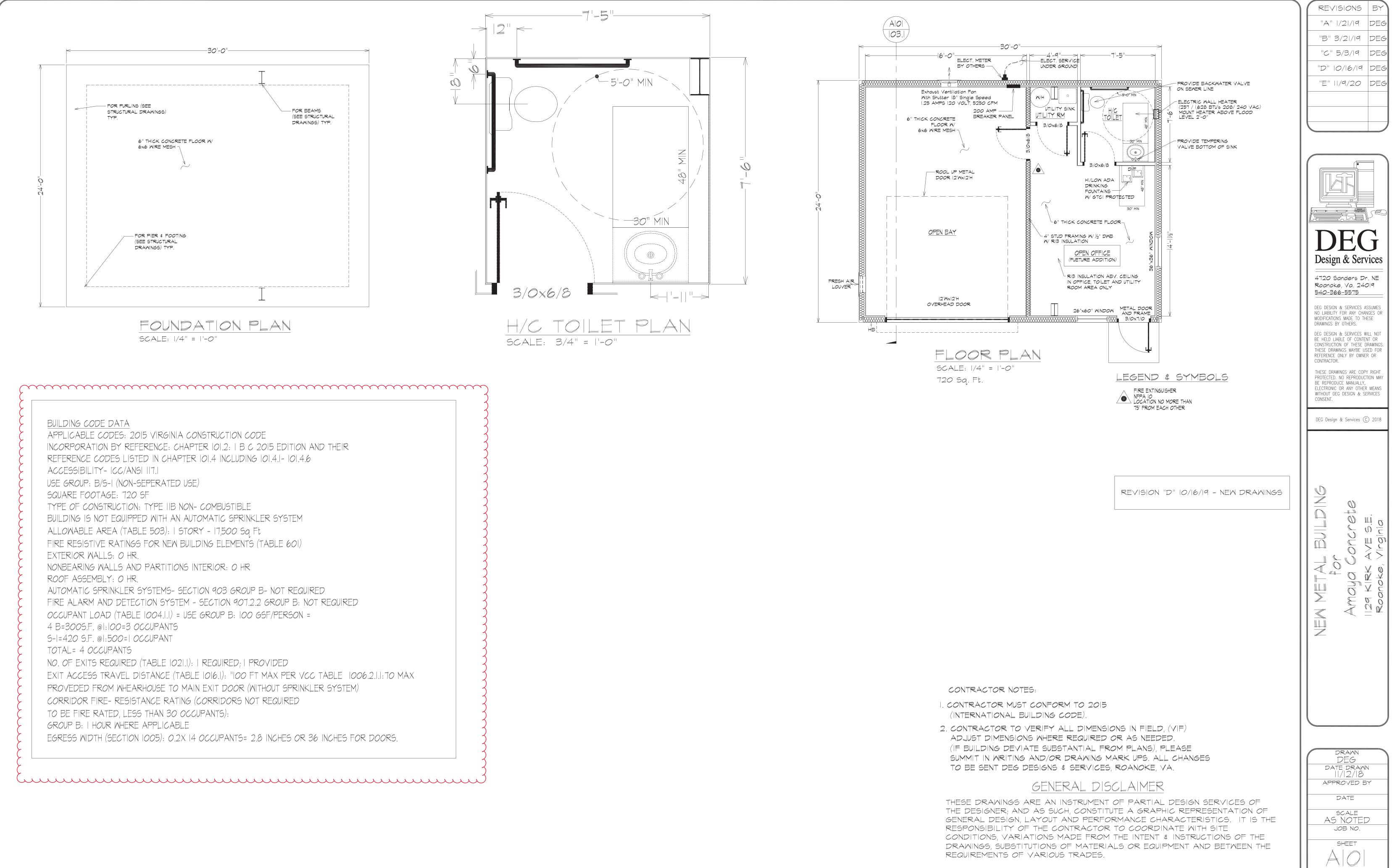


REVISIONS

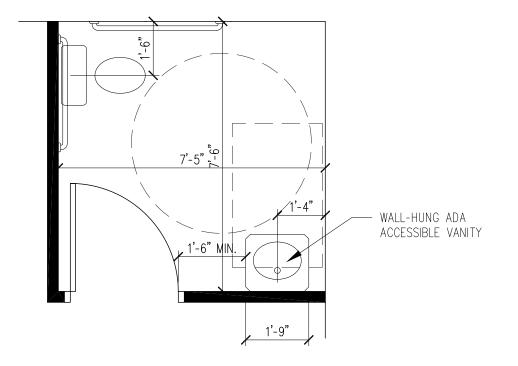
'A" 1/21/19

"B" 2/13/19



REQUIREMENTS OF VARIOUS TRADES.

SHEETS



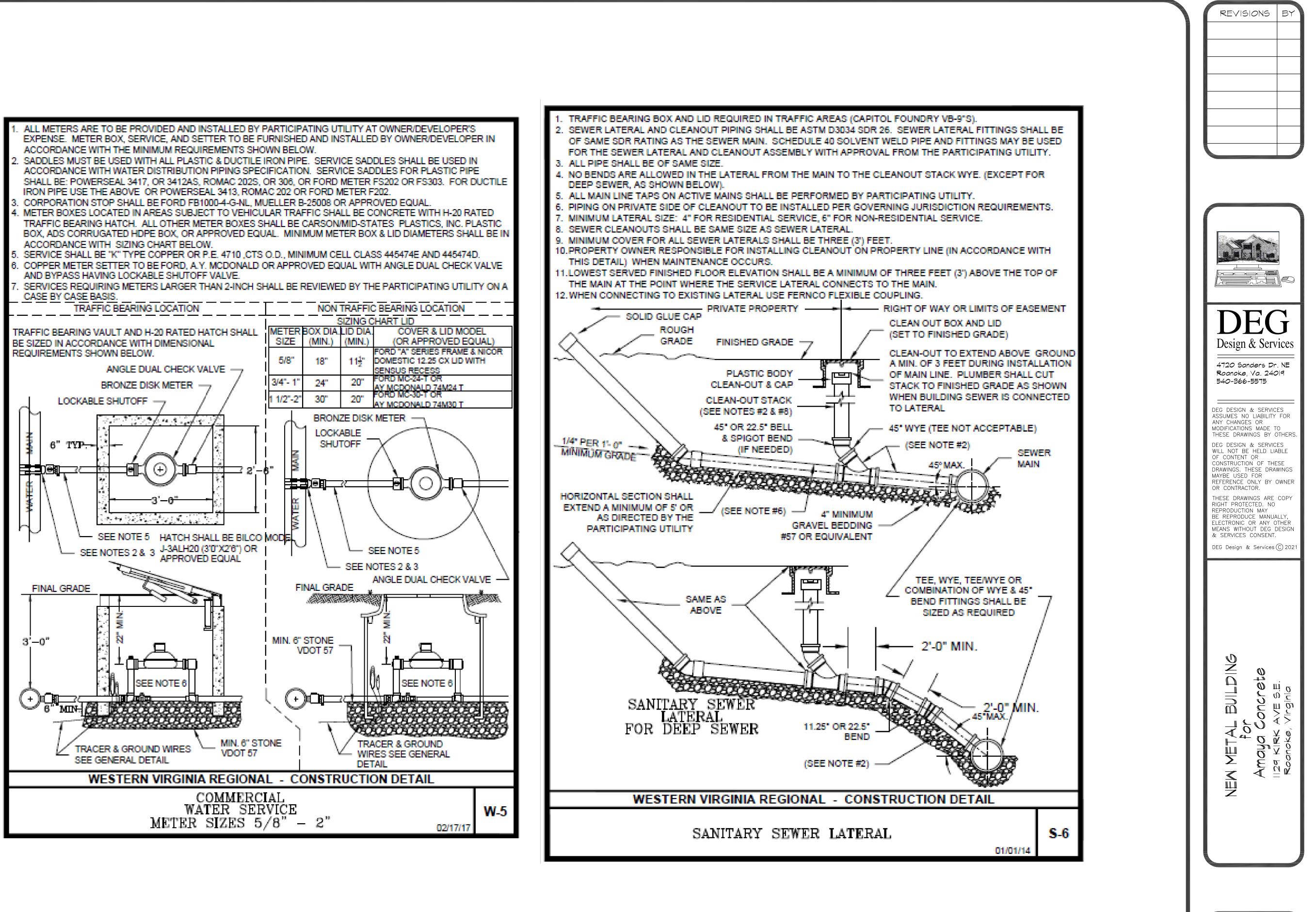
### AMAYA CONCRETE WAREHOUSE RESTROOM PLAN SKETCH

SCALE: 3/8"= 1'-0"

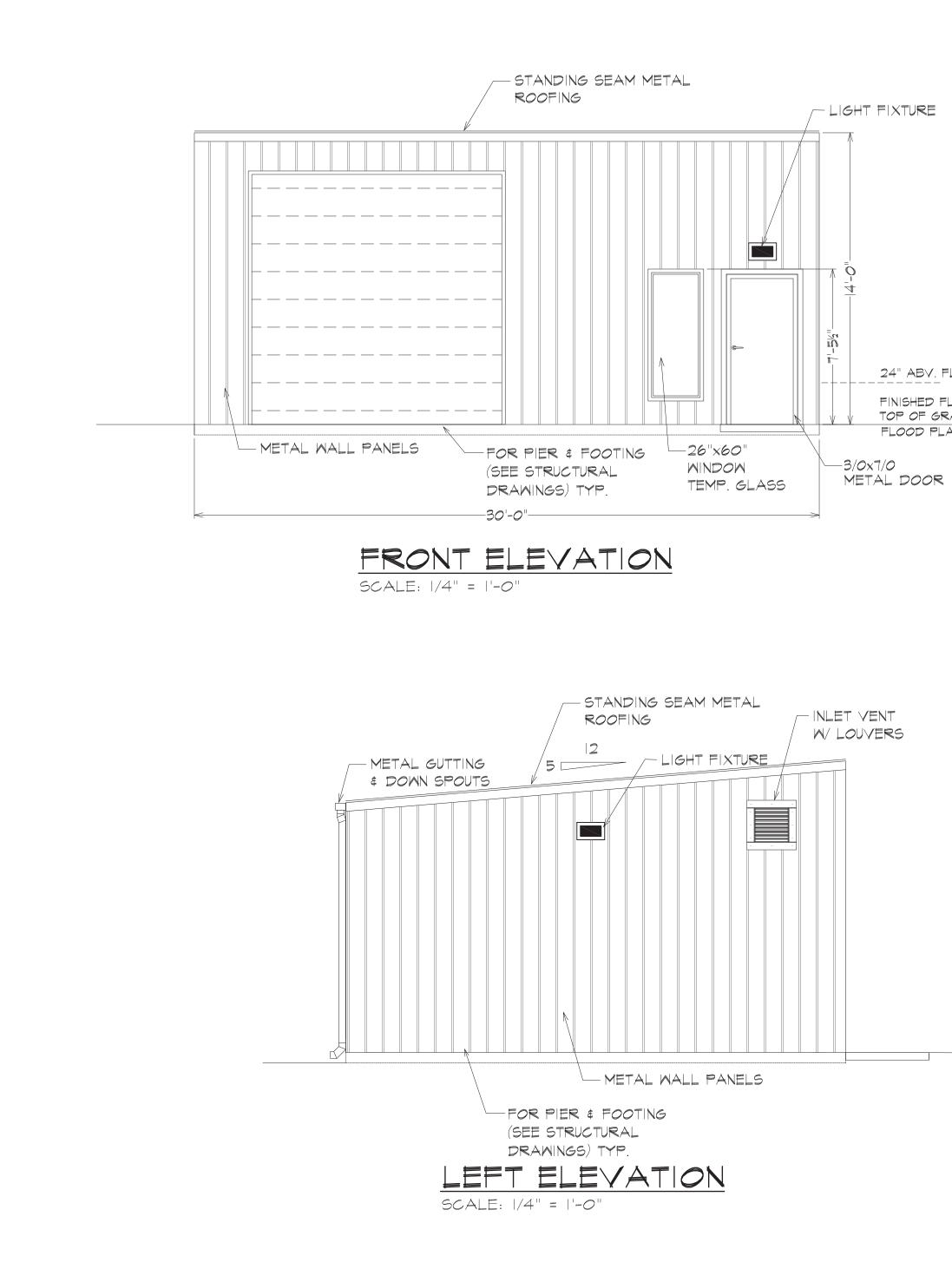
12/30/2020

BALZER JOB # 032000094.00



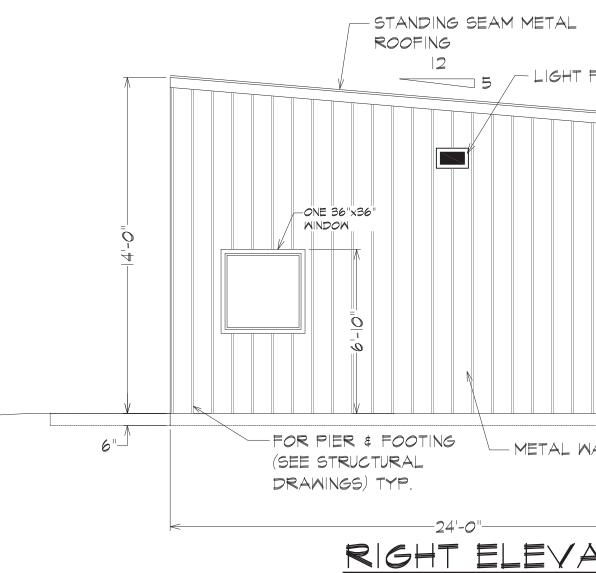


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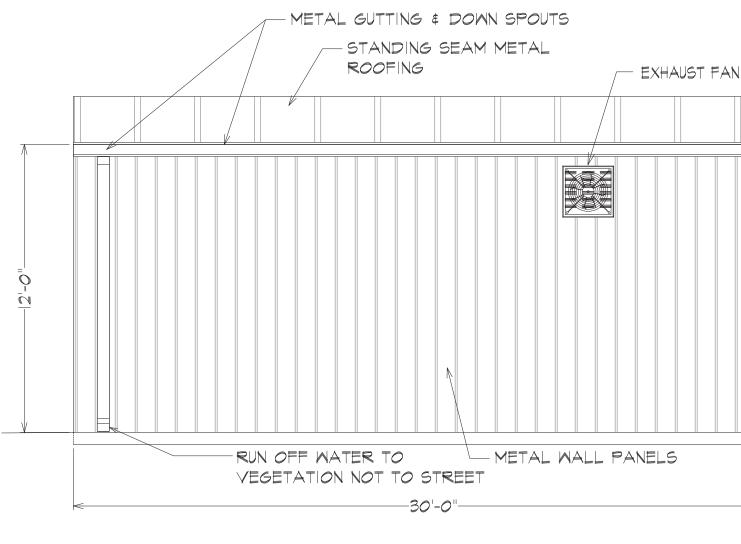


24" ABV. FL*ood* Plane

FINISHED FLOOR TOP OF GRADE FLOOD PLAIN



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



REAR ELEVATION SCALE: |/4'' = |'-0''

CON

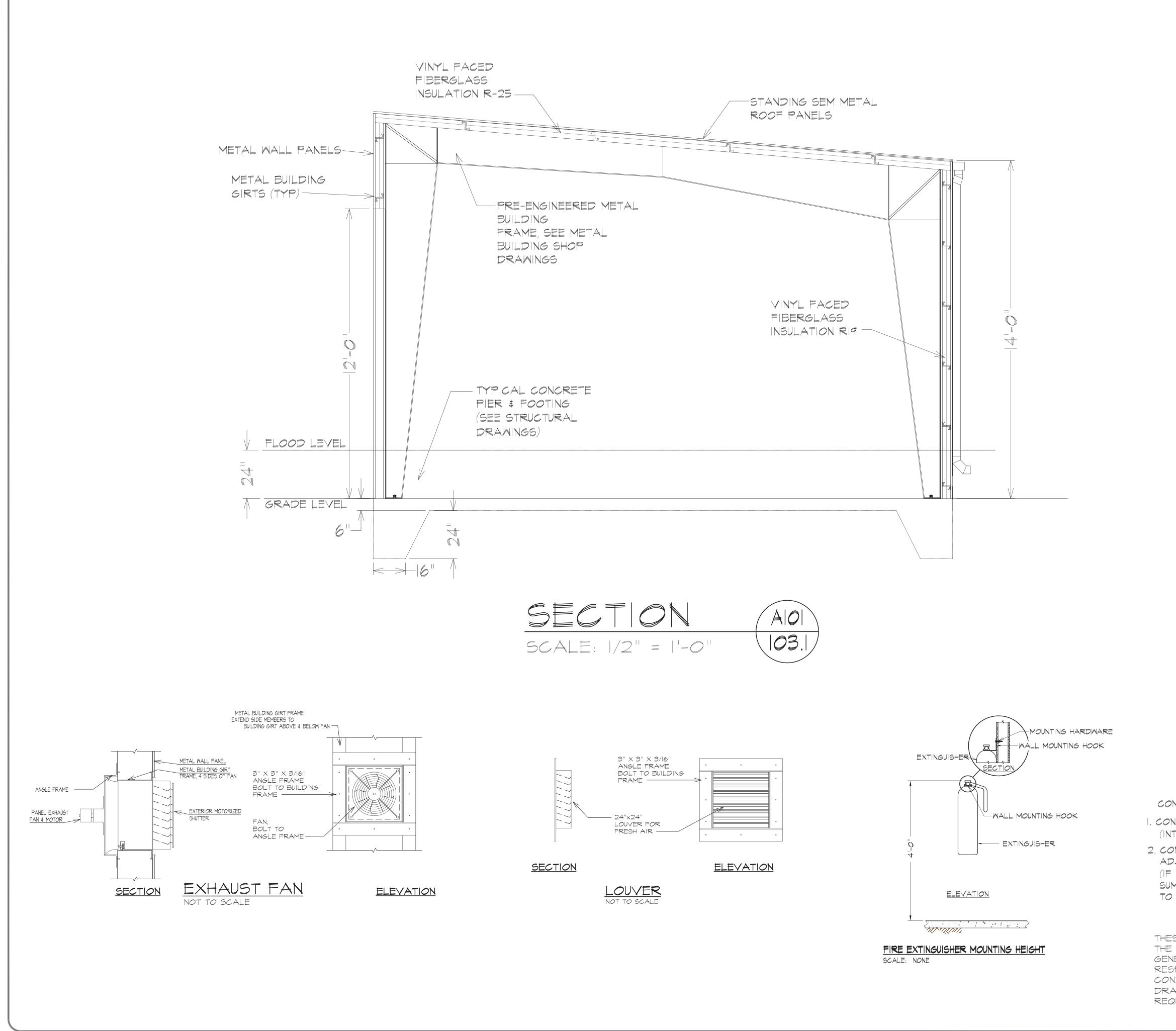
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SUM TO

THES THE GENE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE WITH SITE CONDITIONS, VARIATIONS MADE FROM THE INTENT & INSTRUCTIONS OF THE DRAWINGS, SUBSTITUTIONS OF MATERIALS OR EQUIPMENT AND BETWEEN THE REQUIREMENTS OF VARIOUS TRADES.

FIXTURE METAL GUTTING & DOWN SPOUTS		REVISIONS BY   "A" I/2I/I9 DEG   "B" 3/2I/I9 DEG   "D" I0/I6/I9 DEG
	ER TO NOT TO STREET	<image/> <section-header><text><text><text><text><text></text></text></text></text></text></section-header>
	REVISION "D" IO/I6/I9 - NEW DRAWINGS	NEW METAL BUILDING For For Manya Concrete II29 KIRK AVE SE. Roanoke, Virginia
DESIGNER; AND AS SUCH, CONST	SIONS IN FIELD, (VIF) D OR AS NEEDED. FROM PLANS), PLEASE MARK UPS. ALL CHANGES ES, ROANOKE, VA. ISCLAIMER NT OF PARTIAL DESIGN SERVICES OF TUTE A GRAPHIC REPRESENTATION OF FORMANCE CHARACTERISTICS. IT IS THE	DRAWN DEG DATE DRAWN II/12/18 APPROVED BY DATE SCALE AS NOTED DE NO

JOB NO. SHEET A|02



REVISIONS	BY
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Design & Serv	rices
4720 Sanders Dr Roanoke, Va. 240	
<u>540-366-5575</u>	=
DEG DESIGN & SERVICES AS NO LIABILITY FOR ANY CHAN MODIFICATIONS MADE TO THE	GES OR
DRAWINGS BY OTHERS. DEG DESIGN & SERVICES WI	LL NOT
BE HELD LIABLE OF CONTEN CONSTRUCTION OF THESE D THESE DRAWINGS MAYBE US REFERENCE ONLY BY OWNEF	RAWINGS. ED FOR
CONTRACTOR. THESE DRAWINGS ARE COPY	
PROTECTED. NO REPRODUCT BE REPRODUCE MANUALLY, ELECTRONIC OR ANY OTHER	ION MAY
WITHOUT DEG DESIGN & SE CONSENT.	RVICES
DEG Design & Services (C	) 2018
NEW METAL BUILDING For Amaya Concrete	Roanoke, Virginia
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CONTRACTOR NOTES:

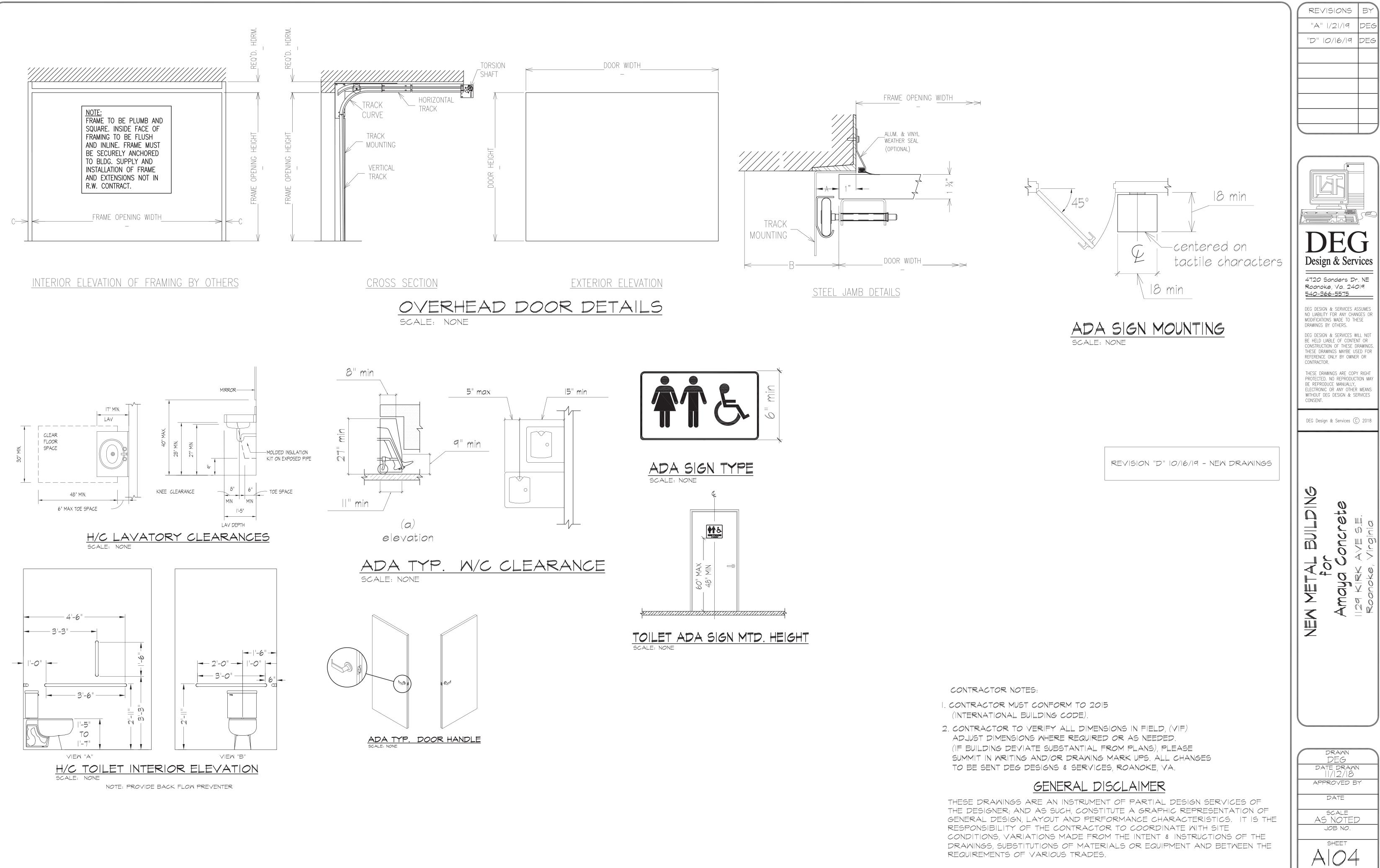
I. CONTRACTOR MUST CONFORM TO 2015 (INTERNATIONAL BUILDING CODE).

2. CONTRACTOR TO VERIFY ALL DIMENSIONS IN FIELD, (VIF) ADJUST DIMENSIONS WHERE REQUIRED OR AS NEEDED. (IF BUILDING DEVIATE SUBSTANTIAL FROM PLANS), PLEASE SUMMIT IN WRITING AND/OR DRAWING MARK UPS. ALL CHANGES TO BE SENT DEG DESIGNS & SERVICES, ROANOKE, VA.

### GENERAL DISCLAIMER

THESE DRAWINGS ARE AN INSTRUMENT OF PARTIAL DESIGN SERVICES OF THE DESIGNER; AND AS SUCH, CONSTITUTE A GRAPHIC REPRESENTATION OF GENERAL DESIGN, LAYOUT AND PERFORMANCE CHARACTERISTICS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE WITH SITE CONDITIONS, VARIATIONS MADE FROM THE INTENT & INSTRUCTIONS OF THE DRAWINGS, SUBSTITUTIONS OF MATERIALS OR EQUIPMENT AND BETWEEN THE REQUIREMENTS OF VARIOUS TRADES.

REVISION "D" IO/I6/I9 - NEW DRAWINGS



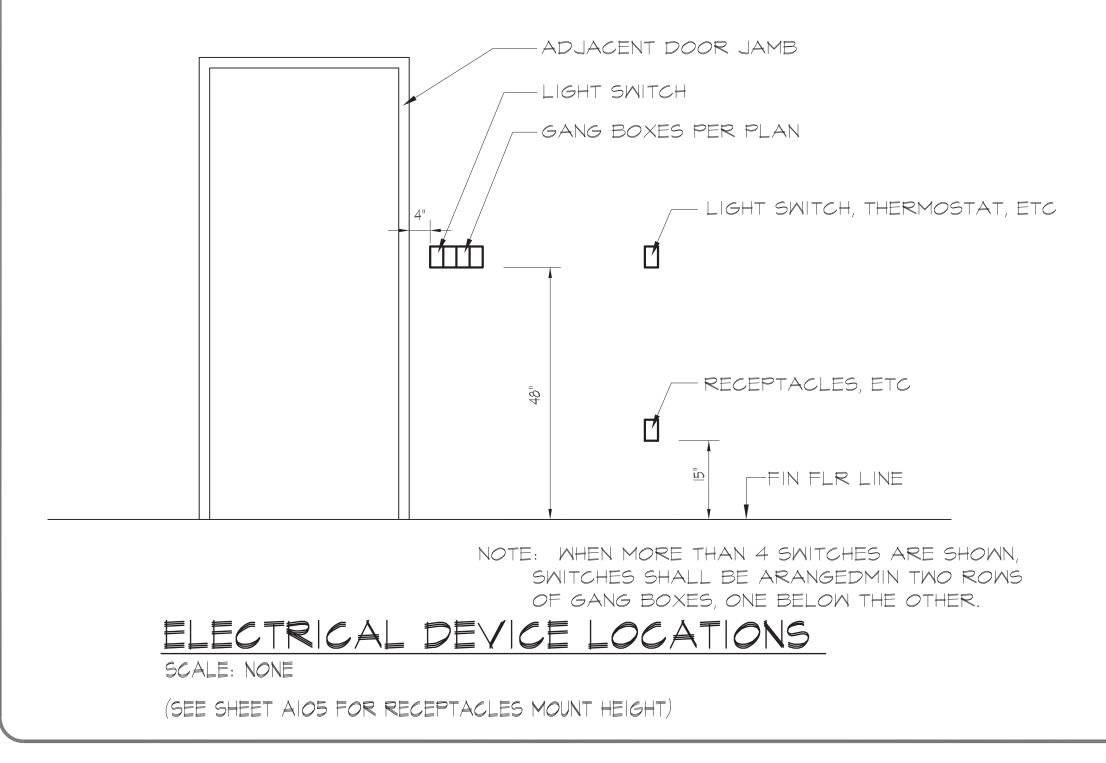
# ELECTRICAL NOTES:

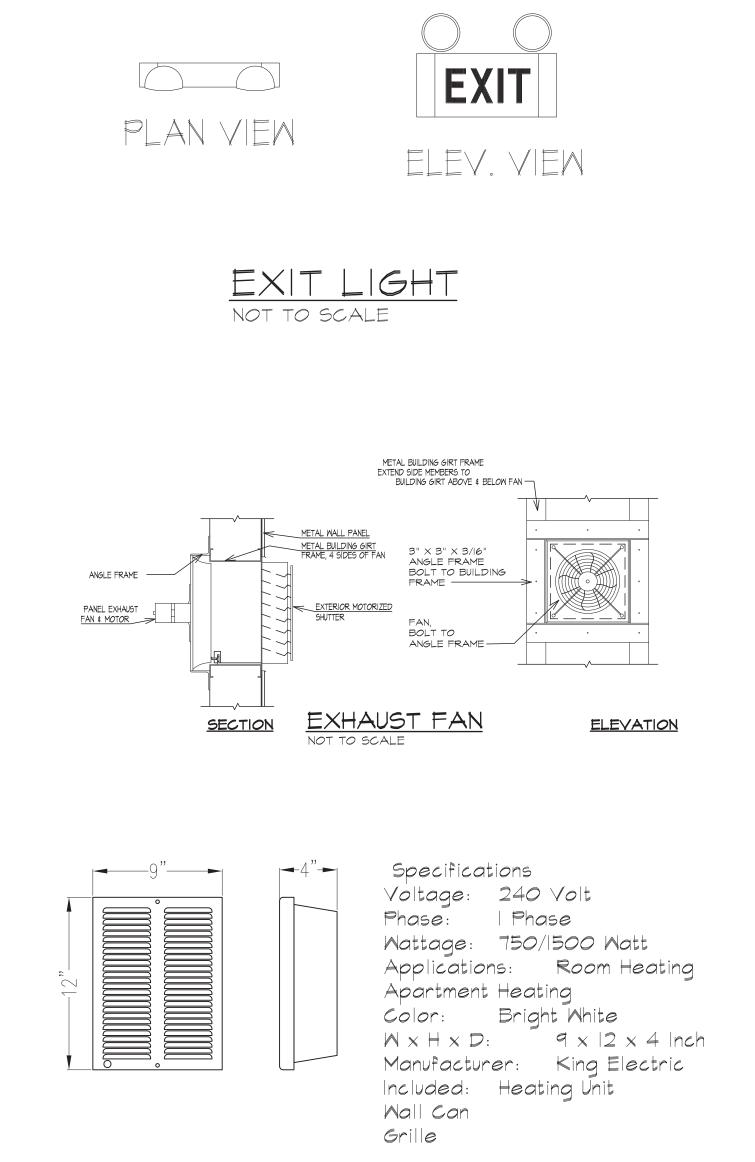
- I. ARC-FAULT CIRCUIT INTERRUPTER TO BE INSTALLED BY THE CONTRACTOR AS REQUIRED PER ELECT. 2015 CODE.
- 2. ALL ELECTRIC FIXTURES, SWITCHES, RECEPTICAL, ETC. APPROX. LOCATION AS SHOWN. (OFFSET FOR CLARITY)
- 3. ALL ELECTRIC CONNECTIONS, FIXTURES, PANELS, ETC ... MUST BE SIZED BY THE ELECTOR CONTRACTOR
- 4. SMOKE W/ CARBON MONOXIDE DETECTOR TO BE HARDWIRED AND INTERCONNECTED AND WITH BATTERY BACKUP.

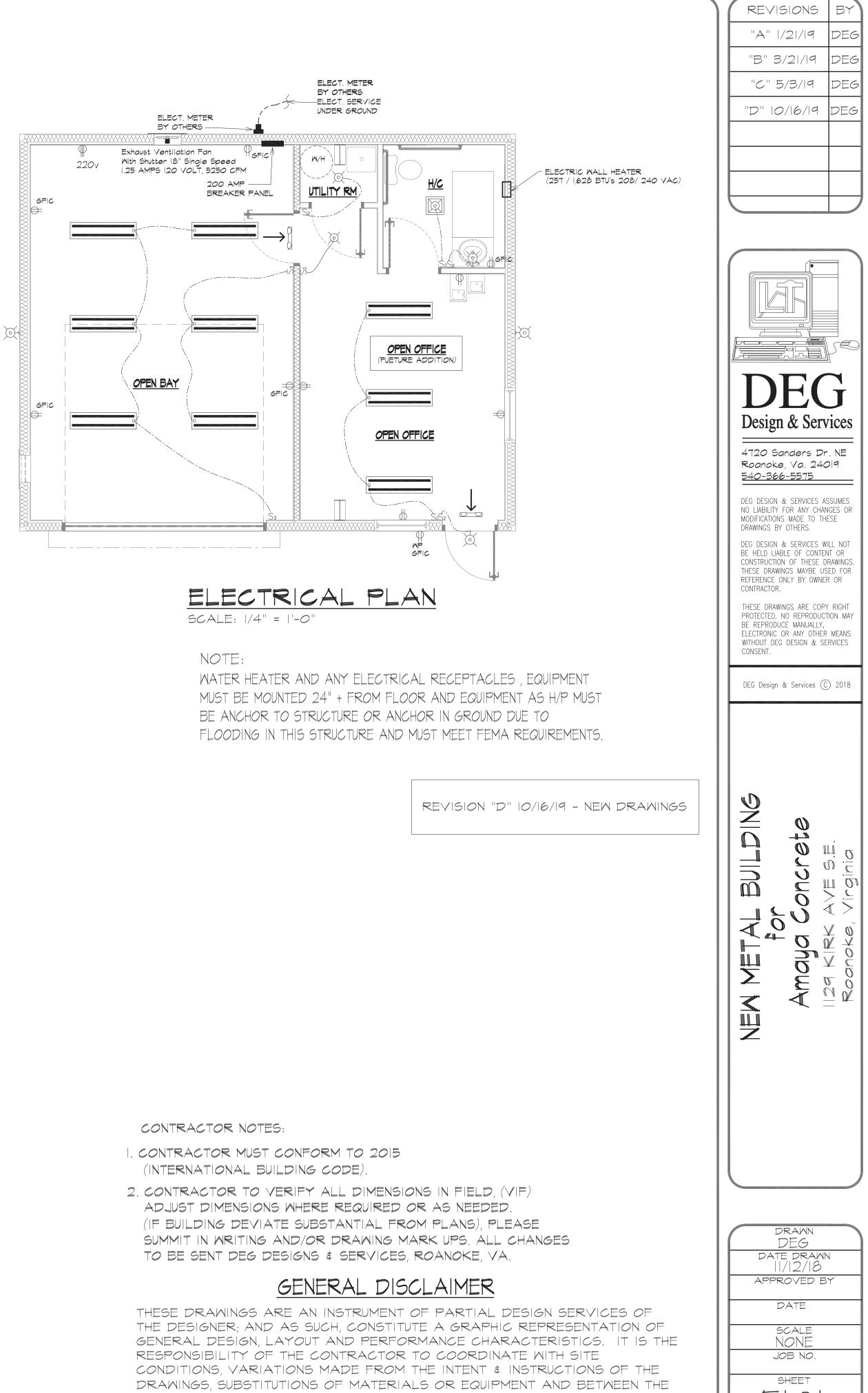
ELECTRICAL LEGEND					
	DUPLEX RECEPTACLE WALL -TAMPER- RESISTANT (T.R.)				
	220V DUPLEX RECEPTACLE WALL-TAMPER- RESISTANT (T.R.)				
	WEATHER PROFF DUPLEX RECEPTACLE WALL)(TAMPER- RESISTANT)				
GEIC	DUPLEX RECEPTACLE WALL GROUND FAULT INTERFACE FAULT (T.R.)				
T T	SINGLE LIGHT FIXTURE (WALL MOUNT) - LED				
$\overbrace{\bigcirc}$	SINGLE LIGHT FIXTURE - LED				
0	SURFACE MOUNTED LIGHT FIXTURE - 2 TUBE LED				
	LIGHT W/ EXHAUST FAN - LED				
PLAN VIEW ELEV. VIEW	EXIT LIGHT W/ BATTERY BACK UP EMERGENCY LIGHT				

## ELECTRICAL NOTES:

- I. ARC-FAULT CIRCUIT INTERRUPTER TO BE INSTALLED BY THE CONTRACTOR AS REQUIRED PER ELECT. 2014 CODE.
- 2. ALL ELECTRIC FIXTURES, SWITCHES, RECEPTICAL, ETC. APPROX. LOCATION AS SHOWN. (OFFSET FOR CLARITY)
- 3. ALL ELECTRIC CONNECTIONS, FIXTURES, PANELS, ETC... MUST BE SIZED BY THE ELECTOR CONTRACTOR.
- 4. SMOKE W/ CARBON MONOXIDE DETECTOR TO BE HARDWIRED AND INTERCONNECTED AND WITH BATTERY BACKUP.







ELECT. WALL HEATER SCALE: NONE

REQUIREMENTS OF VARIOUS TRADES.

EIOI SHEET

#### 1. In case of conflict between the general notes, specifications, and drawings regarding structural issues, the most stringent requirements shall govern. 2. Structural drawings shall be used in conjunction with the architectural, mechanical, electrical, & plumbing drawings, as well as any additional drawings provided by material & equipment suppliers. Contractor shall be responsible for coordinating the work of all other trades with the structure. 3. This structure is considered unstable until all structural components are in place, fastened, plumbed, true and in accordance with these signed and sealed drawings. contractor shall be responsible for furnishing, erecting, and removing any temporary shoring and bracing during construction. 4. Contractor shall strictly adhere to all safety regulations. The architect/ engineer shall not be responsible

- for construction means, methods, or procedures for safety precautions in connection with the work. 5. Construction materials, equipment, or other heavy loads shall not be placed upon structural components in concentrated areas. construction material or equipment staging shall not impart loads to the structure
- greater than that shown in the design load schedule. 6. Work not indicated on a part of the drawings, but reasonably implied to be similar to that shown at
- corresponding pieces, shall be repeated. 7. Temporary bracing, sheeting, shoring, etc., required to ensure the structural integrity/stability of the existing buildings, sidewalks, utilities, etc. during construction is the Contractor's responsibility and shall be designed by a Professional Engineer licensed in the Commonwealth of Virginia.
- 8. Shop Drawings: Shop drawings for materials shall be submitted to the Architect for review prior to the start of fabrication or commencement of work.
- No portion of the contract drawings may be reproduced for submittal as shop drawings unless authorized by Balzer and Associates, Inc. in writing. Violation of this provision will result in the rejection of the shop drawings and will be returned without being reviewed by the Architect or Structural Engineer.
- Shop drawings shall bear the General Contractor's stamp of approval, which shall constitute certification that he has verified all field measurements, construction criteria, materials, and similar data and has checked each drawing for completeness, coordination, and compliance with the contract documents. Shop drawings not reviewed by the General Contractor prior to submittal will be rejected. Changes to shop drawings that are re-submitted must be clouded or otherwise clearly indicate the
- changes that have been made to a previously issued and reviewed drawing. The Contractor shall provide the Architect or Structural Engineer with written notice of deviations of any type from the requirements of the Construction Documents. The notice must be received prior to shop drawing submittal. The Contractor remains liable for any deviation unless reviewed by the Architect or Structural Engineer and acknowledged in writing, prior to receipt of the shop drawings. Shop Drawings will be returned not later than 10 working days after receipt by the Architect or
- Structural Engineer. Architect/Engineer shall not be liable for work performed without approved shop drawings.

#### **DIVISION 2 - FOUNDATION & SITE PREPARATION:**

**DIVISION 1 - GENERAL:** 

- The surface of the exposed sub-grade shall be inspected by probing or testing to check for pockets of soft or unsuitable material. All fill and unsuitable foundation material shall be removed and footings shall rest on undisturbed soil or engineered fill. Footings shall be designed for an assumed minimum soil bearing capacity of **1,500 psf.** All footing excavations, site stripping, undercutting and control fill operations shall be done under the supervision of an independent testing laboratory, under the direction of a professional engineer licensed in the Commonwealth of Virginia.
- General contractor shall coordinate foundation details, dimensions, and anchor bolt setting plan with requirements of metal building system supplied. Contractor is responsible for the conformance of the metal building column bases with the foundation plan.
- 3. The pre-engineered building columns shall have pinned based and shall transfer no moments to the foundations.
- 4. Reference plan notes on foundation plan for additional notes and requirements.
- 5. Clear site and remove all vegetation, trees, roots, decaying material and other obstructions from areas occupied by utilities and structures, etc; strip top soil to a depth of 5" or deeper as required; debris is to be completely removed from site or disposed of and is not to be deposited in fills.
- 6. Strip all topsoil from areas to be covered by structures or pavement and fill with an approved controlled fill, compacted to 95% or better of maximum dry density as determined by Standard Proctor (ASTM D698). 7. Foundations are not to be excavated until building fill is placed and compacted. 8. Center footings under walls and columns unless noted otherwise.
- 9. Footing elevations shown represent the minimum depth to which footings shall be carried and shall be lowered as required to obtain suitable bearing.
- 10. All footings shall project at least 1'-0" into undisturbed natural soil or compacted controlled fill having a bearing value at least equal to that specified above. Place bottoms of all exterior footings at least 2'-0" below finished grade. Earth cuts may be used as forms for footing concrete. Drain all bearing strata
- adequately before placing foundation concrete. Do not place concrete on frozen soil. 11. Proper site drainage shall be maintained in order to protect the site from excess surface moisture during construction. Protection of the site shall include the construction of temporary ditches, berms or other surface water diversion devices in order to divert surface water from and not across the site.
- 12. Where, due to field conditions, actual bottom of footing elevations will differ from elevations shown on plans, piers and columns shall be increased, decreased, added or eliminated following intent of these drawings and specifications. 13. Footing step locations indicated on the foundation plans are approximate; actual locations may vary from
- that shown based upon existing conditions at the site. Contractor shall locate footing steps in field as required by finish grade and localized soil conditions.
- 14. Except where unbalanced fill on foundation walls is less than 4'-0" (or as otherwise stated on drawings), backfill shall not be placed against concrete or masonry foundation walls unless the walls have attained full design strength and the top of these walls are braced against overturning in a manner satisfactory to the enginee
- 15. Excavations at retaining walls shall be sloped. Temporary slopes should be constructed on a slope of one horizontal to one vertical or flatter.
- 16. All walls shall be adequately braced to resist all horizontal loads from wind, earth, and construction loads during installation and until such time as permanent anchorage is in place. Heavy compaction equipment will not be allowed within a distance subtended by a 45° angle between the surface of the ground and any footing.
- 17. Contractor shall include in his bid all civil engineering and site work including landscaping, seeding and straw placement at denuded/disturbed areas, as well as temporary erosion control as required by the governing jurisdiction(s).
- 18. All underground utilities shall be referenced from site, mechanical, electrical, and plumbing drawings and connections shall be made prior to placing foundation concrete. Architect / Structural Engineer is not responsible for locating and coordinating utility interactions with building.
- 19. Roof drain pipes serving the structure shall tie into underground perimeter foundation drain pipes and be taken to an appropriate point of discharge. Contractor to coordinate with civil drawings for daylight or underground tie-in information.
- 20. All concrete sidewalks shall receive a broom finish unless otherwise specified on architectural or landscape drawings.

### **DIVISION 3 - CONCRETE:**

- Materials for concrete construction shall be in accordance with the following specifications: a. Unit weight:
- b. Portland cement: c. Coarse and Fine Aggregate: ASTM C33 max size 3/4"
- ASTM C1602 potable d. Water: ASTM C618 Flyash
- e. Cementitious Admixtures:
- ASTM C989 Ground granulated blast furnace slag f. Chemical Admixtures: ASTM C260 Air-Entrainment
- ASTM C494 Plasticizers, Water Reducers, High Early Strength, etc. ASTM A615, Grade 60 deformed billet steel bars g. Reinforcing steel:

Normal weight (145-150 pcf)

ASTM C150 Type 1

ASTM A185 Welded Wire Reinforcement using ASTM A82 wire ASTM A416 7-wire steel strand for prestressed concrete (270 ksi) h. Embedded fiber reinforcing: ASTM C1116 Standard spec for fiber reinforced concrete

Hilti HIT-HY 200 Safe Set System or approved equal

Hilti KWIK Con II+ or Simpson Titen or approved equal

Hilti HIT-Z rod (ICC ESR 3187) or approved equal

- ASTM A820 Steel fibers STM C1666 Glass fibers
- i. Adhesive anchoring:
- Concrete screws:
- k. Heavy duty screw anchors: Hilti KWIK HUS-EZ or Simpson Titen HD
- I. Expansion / wedge anchors: Hilti KWIK Bolt TZ or Simpson Strong Bolt 2 or approved equal ASTM C1436 m. Shotcrete:
- Other agents, components, admixtures, and/or embedded items as approved by Engineer 3. All concrete materials, processes, and work shall be in accordance with ACI 318-14 "Building Code Requirements for Structural Concrete", ACI 301-10 "Specifications for Structural Concrete", and ASTM C94, unless otherwise noted or detailed on the contract drawings.
- 4. All exterior concrete slabs exposed to traffic shall be 4000 psi. All concrete slabs, on-grade or on suspended metal deck, shall be 3500 psi. Footings for walls and columns, and all other concrete, shall be 3000 psi. Refer to structural drawings for additional notes and use highest strength mix where
- discrepancies occur. 5. All concrete exposed to freezing and thawing shall have an entrained air content of 6% (±1.5%). 6. Refer to Table 19.3.2.1 "Requirements for Concrete by Exposure Class" and referenced exposure class
- definitions for maximum water / cementitious materials (w/c) ratio, minimum design strength, entrained air contents, and other constituent restrictions for this project. 7. Contractor shall submit a concrete mix design for each type of concrete to the project Architect for approv
- prior to the placement of concrete. 8. Contractor to provide a mockup sample of all exposed architectural concrete elements as directed by the
- Architect. 9. All reinforcing steel shall be deformed bars of new billet steel conforming to specification listed above. Rebar splices shall be as per ACI 318. All reinforcing marked continuous (cont.) on the plans and details shall be lapped 48x bar diameters at splices unless otherwise noted.
- 10. Welded wire fabric shall be lapped a minimum of one full wire space plus 2" when spliced. 11. Detail, fabricate and place reinforcement in accordance with ACI 318 unless otherwise shown. Concrete protection for reinforcing steel reinforcing steel shall be in accordance with ACI 318-14.
- 12. All reinforcing steel shall be held securely in place to prevent dislocation during the placing operation. Sla reinforcing bars shall be supported on high chairs and bar spacers of suitable design.
- 13. Reinforcing steel shall be clean of mud, debris, loose rust, cement grout, or any other material which may inhibit the bond between the steel and the concrete. Do not field bend reinforcement. In no case may bars be heated to facilitate bending.
- 14. No concrete shall be placed until all embedded items have been installed, tested and inspected. 15. Contractor shall gain approval from Structural Engineer for post-installing any column anchor rods. 16. Follow manufacturer's written installation procedures for installation of all post-installed anchors in concret work. Control silica dust per OSHA requirements and prepare hole for receiving adhesive in accordance with manufacturer's requirements. Where required, contractor shall receive certification from manufacture for conformance to installation procedures.
- 17. Concrete slabs on ground specified as fiber reinforced concrete shall be reinforced at minimum with micropolymeric fibers to control plastic shrinkage cracking. At the contractor's option, steel or macropolymeric fibers may be added to control random cracking upon the concrete reaching its hardened state. Micropolymeric fibers shall be added into the concrete mix at a minimum rate of 0.1% by volume (1.5 lbs per cubic yard of concrete), or as suggested by material supplier.
- 18. Sufficient time should be allowed before cutting saw joints in fiber reinforced concrete slabs to ensure that
- the saw blade cuts the fiber reinforcement without pulling the fibers out of the concrete. 19. Where resilient floors are to be installed on concrete slab-on-grade, a vapor retarder (per ASTM E1745) with a maximum permeance of 0.3 perms (per ASTM E96), shall be installed over a minimum of 4" of compacted porous fill. Seal all penetrations of vapor retarder to maintain continuity. Moisture, alkali, and bond testing must be conducted prior to installation of finished flooring, in accordance with manufacturer's written Guaranteed Installation Guide.
- 20. Floor depressions and openings to be provided where equipment or floor finishes require them, whether of not indicated on structural drawings. It shall be the contractor's responsibility to coordinate his work with architectural and mechanical drawings and specifications and provide depressions and openings as reauired.
- 21. Concrete for all floor slabs shall be wet-cured with wet burlap, plastic film, waterproof paper or misting. 22. Concrete slab surfaces shall conform to ASTM E1155 F-number system for flatness and levelness or as required by owner.
- 23. Refer to structural plans for additional notes regarding concrete slabs and walls. 24. Unless otherwise shown, provide #5 bar at each face around all sides of openings in concrete walls. Bars
- shall extend a minimum of 24" beyond the edge of the opening. 25. Construction and control joints shall be located where indicated on the drawings. See typical details for
- additional reinforcing at construction joints. 26. Where column and wall footings coincide, provide full reinforcement for both footings, with wall footing reinforcement continuous through column footing. Joints between wall footings and column footings not permitted
- 27. Unless otherwise required, provide 3/4" chamfer on all concrete corners exposed to view. 28. Unless noted otherwise, all concrete column vertical reinforcing to be doweled into footings with dowels
- same size as verticals, lap 48x bar diameters. 29. Top of plumbing pipes must be at least 12" below bottom of wall footings or above. Otherwise footings must be lowered below pipe invert. Pipes shall not pass through footings. See mechanical drawings for location of pipe sleeves and openings. Prior approval required for cutting and bending of reinforcing to
- accommodate sleeving and in no case shall major reinforcing be cut or bent. 30. All structural members shall be poured for their full depth in one operation. Construction joints, such as day's pour joints, shall not be located in the middle third of any span or over intermediate supports of continuous multi-span members. The reinforcement shall extend through the joint in both faces. Where, in either face, no reinforcement is called for, provide #4 dowels at 12" on center. Joint shall be roughened b use of an approved surface retarder in accordance with manufacturer's directions, to expose aggregate. Depth of etch shall be 1/8" minimum. Apply a chemical bonding agent per manufacturer's specifications prior to finishing the concrete placement.
- 31. The concrete contractor shall cooperate with other contractors and, where required, install all built-in work sleeves, inserts, brick ties, etc., including framework for chases, reglets and other provisions for built-in work to complete the job (see specifications).
- 32. At steel deck slabs, concrete contractor shall include in his bid additional quantity of concrete that may be required to provide a level slab at the prescribed elevation and compensate for steel deck and steel beam deflections.
- 33. Electrical contractor shall confer with architect and structural engineer before placing any conduits in concrete construction in order to agree on permissible arrangements of conduits.
- 34. Electrical contractor shall prevent placing conduits in concrete that will impair concrete strengths. 35. Only conduits having outside diameters no larger than one-third of the slab thickness may be installed. F slabs on steel deck, slab thickness shall be considered as thickness of concrete above upper deck flutes. 36. Conduits are to be spaced so as to provide no less than three (3) conduit diameters, center-to-center.
- Wherever possible, larger spacings are preferred. 37. Continuous rows of conduits are not to be placed immediately along bearing ends of slabs. 38. Aluminum conduits are not allowed.
- 39. Conduits are not allowed in concrete slabs less than 4" thick.
- 40. Crossover of conduit shall not be allowed in steel deck slabs.

	Mater			ce with the following specifications:	<u>DI'</u> 1.
		ollow load bearing units: f'm	ASTM C90 Type 1, Gi 1,350 psi on the net an	rade N,	
		maximum weight	32 lbs per 8" x 8" x 16 47 lbs per 12" x 8" x 1	" unit,	
	b. G		ASTM C476, f'c = 200	0 psi	
	c. M	ortar:	ASTM C270, Type M structural).	(below grade), S (structural), or N (veneer, non-	
		einforcing steel: ire ties and reinforcing:	ASTM A615, Grade 6		
		thesive anchoring:	Hilti HIT-HY 270 or Sir	/I A153 (galvanized) or ASTM A580 (stainless) npson AT-XP or SET-XP or <u>approved</u> equal	
	g. M	asonry screws:		r F1554 or A615 deformed bar or <u>approved</u> equal Simpson Titen or approved equal	
	h. He	eavy duty screw anchors:	Hilti KWIK HUS-EZ or	Simpson Titen HD	
2.		xpansion / wedge anchors: hcrete masonry work shall be		mpson Wedge All or <u>approved</u> equal /IS 402, ACI 530 and TMS 403.	
3.		gineered concrete masonry s ble stresses. Special inspe		Irawings has been designed based on full ector shall be required	
4.	All ma	sonry shall be laid in running	g bond unless otherwise	e noted on the architectural drawings. Build all	
				9 ga. galvanized steel truss type horizontal joint awings for vertical reinforcement.	2.
5.		e vertical control joints at a actural elevations for control		acing in all masonry walls unless noted. See	
6.	Venee	er masonry shall be anchore	d to studs with 3/16" ga	ge hot-dipped, galvanized steel adjustable wire	3.
				ors shall be X-Seal Anchor (for continuous ohmann & Barnard or approved equivalent.	4.
				anufacturer's written instructions using specified intain minimum airspace between veneer	5.
_	maso	nry and wall sheathing/insula	ation as required per arc	chitectural drawings.	0.
		Brick: See architectural drav veneer masonry.	wings for all notes, spec	ifications, and details regarding face brick and/or	
	See a	rchitectural drawings for all r		d details regarding flashing and weeps.	6.
				rtical reinforcing from wall and spread footings. ss noted otherwise, 48x bar diameter with first lift	7.
p	of ver	ical reinforcing.		all be placed 1/2" clear from face or cell wall, or	8. 9.
	as no	ed in structural details.	, <b>.</b>	•	
1.				9 8"-10". Grouting to be placed in lifts not to sses to be fully monitored and inspected by	10
	specia	I inspections engineer. Prov	ide inspection ports at I	bottom of each grout lift over 5'-4" in height as	11
				each lift 1" below top of last CMU course, with the ed cell shall be mechanically consolidated, either	
	by usi	ng a mechanical "pencil" vib	rator for a maximum of	two seconds or by rodding with a separate piece	12
	conso	lidated upon water loss by s	imilar means.	bottom of the grout lift. Grout shall be re-	13
2.		low masonry walls that char filled units at the transition.	ige in thickness or num	ber of wythes shall have a course of solid or	14
3.	Walls	shall be grouted as soon as		inkage cracking. Masonry shall be allowed to	15
4.		minimum of 24 hours prior		ry materials shall be covered to protect the	16
	maso	nry material from the weathe	r.	form of wood construction. Provide steel lintels	
	bearir	g on solid masonry above a	ll openings.		
δ.		leted masonry work to be br all other work affected by m		warm clean water, and free of excess mortar.	
7.	Loose	steel angle lintels shall conf	form to ASTM A36 for s	teel. All lintels to have 8" minimum bearing on	
		ourse of solid or grouted mas	sonry units, unless note	d otherwise. All loose lintels to be provided by	
18.		e angle L5x31/2"x5/16" for e and other miscellaneous ope		thickness over grilles, louvers, panel boxes,	
	Use tv	vo courses of solid grouted (	CMU under all joists bea	aring into masonry walls.	
20.				nstallation of all post-installed anchors in use appropriately sized screen tube in oversized	
	hole.	Control silica dust per OSHA	requirements and prep	pare hole for receiving adhesive in accordance	
		nformance to installation pro		actor shall receive certification from manufacturer	
		5 - STRUCTURAL STEEL:		specifications:	
	Struct a.	ural steel shall be in accorda Wide flange shapes:	ance with the following s	ASTM A992 (fy = 50 ksi)	
	Struct a. b.	ural steel shall be in accorda Wide flange shapes: Angles, channels, plates, l	ance with the following s	ASTM A992 (fy = 50 ksi) ASTM A36 (fy = 36 ksi)	
	Struct a. b. c. d.	ural steel shall be in accorda Wide flange shapes: Angles, channels, plates, l Pipes columns: Square and rectangular tu	nce with the following s	ASTM A992 (fy = 50 ksi) ASTM A36 (fy = 36 ksi) ASTM A500, Grade C (fy = 50 ksi) ASTM A1085 (fy = 50 ksi)	
	Struct a. b. c. d.	ural steel shall be in accorda Wide flange shapes: Angles, channels, plates, l Pipes columns:	nce with the following s	ASTM A992 (fy = 50 ksi) ASTM A36 (fy = 36 ksi) ASTM A500, Grade C (fy = 50 ksi)	
	Struct a. b. c. d.	ural steel shall be in accorda Wide flange shapes: Angles, channels, plates, l Pipes columns: Square and rectangular tu	nce with the following s	ASTM A992 (fy = 50 ksi) ASTM A36 (fy = 36 ksi) ASTM A500, Grade C (fy = 50 ksi) ASTM A1085 (fy = 50 ksi) ASTM A325 or A490 as specified ASTM A563 nuts ASTM F436 hardened washers or	
	Struct a. b. c. d. e. f.	ural steel shall be in accorda Wide flange shapes: Angles, channels, plates, l Pipes columns: Square and rectangular tu High strength bolts: Common (non-high streng	nce with the following s pars, misc. shapes: bing:	ASTM A992 (fy = 50 ksi) ASTM A36 (fy = 36 ksi) ASTM A500, Grade C (fy = 50 ksi) ASTM A1085 (fy = 50 ksi) ASTM A325 or A490 as specified ASTM A563 nuts ASTM F436 hardened washers or ASTM F959 tension-indicating washers ASTM A307 Grade A	
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- shall clearly show weld sizes and lengths for all connections. Provide gusset plates as required to obtain sufficient weld length. Gusset plate thickness shall match web thickness of chord. 20. Bolting in combination with welds shall not be considered as sharing the stress. Welds shall be provided to carry the entire stress for which the connection is designed.
- 21. The frame of the steel skeleton shall be carried up true and plumb and temporary bolting and bracing shall be introduced to safely carry all loads to which the structure may be subjected, including equipment and operation of same. Individual columns must be braced before beam connections are made and bracing shall be left in place as long as may be required for safety. No bolting or welding shall be done until as much of the structure as will be stiffened thereby has been properly aligned.
- 22. The owner shall retain the services of a qualified inspector to inspect erected steel and connections. 23. All powder actuated fasteners to be used in structural steel shall be as listed with a minimum length
- sufficient to fully penetrate base member thickness (not less than 5/8"). 24. Provide 12 gauge galvanized gripstay masonry anchoring system by Hohmann & Barnard, inc., or equal,
- vertically on all steel column flanges and webs and horizontally on all beam webs, abutted with or encased in masonry. See "Typical Masonry Anchoring System Details".
- 25. See architectural drawings for steel plate and grate flooring specifications and details. Steel grating shall be manufactured in accordance with the Metal Bar Grating Manual, as published by the National Association of Architectural Metals Manufacturers and shall conform to Federal Specification RR-G-661E. Type I, Class I. Steel for grating shall conform to ASTM A569. Perpendicular welded cross bars to be spaced 4" on center. Stair tread grating shall be same type. Band exposed edges, unless noted otherwise. Grating and fasteners shall be hot dipped galvanized, unless noted otherwise.

VISION 6 - WOOD CONSTRUCTION: Wood materials for use in construction shall be in accordance with the following specifications:

- 2x8 or larger: a. Dimensional lumber: 2x6 or smaller: b. Engineered lumber: I-joists:
- Beams and girders: 2.0E, min. f/b = 2,600 psi Columns and posts: 1.8E, min. f/b = 2,400 psi c. Glue-laminated lumber: Beams and girders: 1.8E, min. f/b = 2,400 psi Columns and posts: 1.8E, min. f/b = 2,400 psi
- d. Nails specified on structural drawings to be common wire nails unless noted otherwise (refer to NDS for sizes other than listed) 8d: 0.131Ø x2-1/2"
- e. Wood screw manufacturers:
- (various types and applications, others available subject to approval of engineer)
- f. Lag screws:
- g. Bolts:
- under nut and head
- h. Proprietary metal clips: Simpson Strong-Tie or USP i. Power driven fasteners for sill plates: min. 0.145"Ø x2-7/8" max. length w/ washer Wood construction shall conform to the requirements of the American Institute of Timber Construction and

Southern Yellow Pine (SYP) #2 or greater

Spruce Pine Fir (SPF) #2 or greater

Simpson, Fastenmaster LOK, USP

ASTM A307 with common or plate washer

Manufactured to ANSI B18.2.1

As specified on plans

10d: 0.148"Ø x3"

16d: 0.162"Ø x3-1/2"

30d: 0.207"Ø x4-1/2"

- the 2012 "National Design Specification for Wood Construction" from the National Forest Products Association. Unless otherwise noted, all connections shall conform to the "Fastening Schedule", Table 2304.9.1 of the
- International Building Code (IBC 2015). Contractor shall install permanent bridging or solid blocking spaced at 8'-0" o.c. maximum between wood
- ioists unless noted otherwise. Sheathing: shall conform to APA specifications. End joints shall occur over supports. Panels shall be staggered on half panel length from adjacent panels. Provide 1/8" space at panel ends. Wall sheathing shall be minimum 7/16", and roof sheathing shall be minimum 19/32", "APA rated sheathing", 24/16 panel span rating, exposure 1. All panels shall be nailed as indicated on structural drawings.
- All dimensions are to outside face of sheathing unless otherwise noted. See architectural drawings for dimensions not shown on structural drawings.
- Provide double joists under all partitions which run parallel with joists.
- All dimensional lumber to be surfaced dry and used at 19% maximum moisture content or equal. All members exposed to the weather, or in contact with masonry or concrete, shall be pressure- treated. See structural drawings for additional notes and requirements.
- ). See architectural drawings for all fire blocking, draft stopping, and other miscellaneous blocking requirements.
- 1. Bolts connecting wood members shall be ASTM A307 common steel bolts of a diameter shown on the structural drawings. Common washers shall be used under each bolt head and nut. Bolt holes shall be carefully centered and drilled not more than 1/16" larger than the bolt diameters. 2. All wood framing shall be continuous unless otherwise indicated. All splices shall be only as shown on
- 3. Connection details shown are typical unless otherwise noted or submitted.
- 14. Wood bearing under wood beams shall be solid and bearing parallel to grain, continuous through floors from beam bearing to concrete slab.
- 5. Interior stud walls bearing on concrete slabs may be anchored by powder actuated fasteners at 24" on center (max).
- 6. Fasteners for preservative treated and fire retardant-treated wood shall be hot-dipped zinc coated galvanized steel, stainless steel, silicon bronze, or copper per IBC 2304.10.5.

## **DESIGN LOAD SCHEDULE (2015 IBC)**

DESIGN ALLOWABLE SOIL BEARING CAPACITY:	1500 psf (ASSUMED)
<u>DEAD LOADS:</u> ROOF DEAD LOAD:	BY MFR
UNREDUCED LIVE LOADS: ROOF LIVE LOAD:	20 psf
METAL BUILDING DESIGN CRITERIA: ROOF DEFLECTION LIMIT: HORIZONTAL DEFLECTION LIMIT: LATERAL DRIFT LIMIT:	L/180 L/180 H/200
<u>SNOW LOADS:</u> GROUND SNOW LOAD: SLOPED ROOF SNOW LOAD: SNOW EXPOSURE FACTOR: IMPORTANCE FACTOR: THERMAL FACTOR:	30 psf 21 psf 1.0 1.0 1.0
WIND LOAD DESIGN CRITERIA: ANALYSIS PROCEDURE: BUILDING TYPE: ULTIMATE DESIGN WIND SPEED: NOMINAL DESIGN WIND SPEED: RISK CATEGORY: EXPOSURE: INTERNAL PRESSURE COEFFICIENT:	ASCE 7-10 CHAPTER 27 ENCLOSED 115 mph 89 mph II B ±0.18
<u>SEISMIC LOADS:</u> RISK CATEGORY: IMPORTANCE FACTOR: MAPPED SPECTRAL ACCELERATION:	II 1.0 S <sub>S</sub> =0.23 S <sub>1</sub> =0.06
SITE CLASS: SITE CLASS COEFFICIENTS:	D F <sub>a</sub> =1.20
SPECTRAL RESPONSE COEFFICIENT:	F <sub>v</sub> =1.70 S <sub>DS</sub> =0.06 S <sub>D1</sub> =0.24
SEISMIC DESIGN CATEGORY:	B



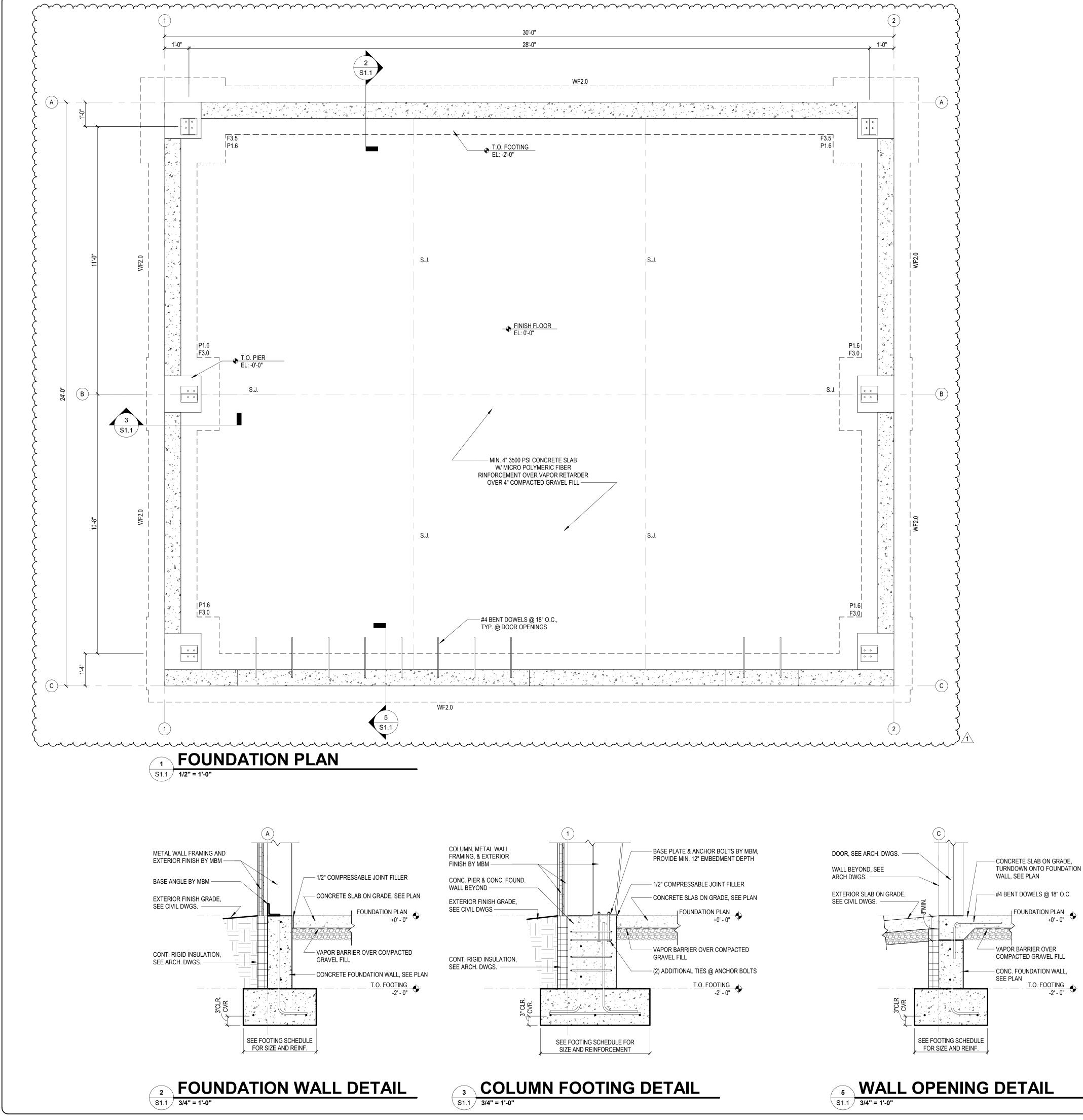
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PIER SCHEDULE				
MARK	WxL	VERTICAL REINFORCEMENT	HORIZONTAL REINFORCEMENT	REMARKS
P1.6	18" x 18"	(4) #5 BARS	#3 TIES @ 12" O.C.	ADDITONAL TIES @ ANCHOR RODS

**FOOTING SCHEDULE** 

	SIZE			LONGITUDIANL
MARK	WIDTH	LENGTH	DEPTH	REINFORCEMENT
F3.0	3' - 0"	3' - 0"	1' - 0"	(3) #5 @ BOTTOM
F3.5	3' - 6"	3' - 6"	1' - 0"	(3) #5 @ BOTTOM
VF2.0	2' - 0"		1' - 0"	(2) #5 @ BOTTOM

TRANSVERSE REINFORCEMENT 3) #5 @ BOTTOM (3) #5 @ BOTTOM

REMARKS SPREAD FOOTING SPREAD FOOTING WALL FOOTING

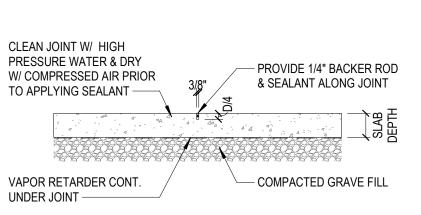
### **GENERAL FOUNDATION NOTES:**

1. SEE SITE PLAN FOR EXACT WALKWAY/CURB, ETC. LOCATIONS AND FOR CONTINUATION REQUIREMENTS.

- 2. FOOTING SIZES BASED ON AN ASSUMED 1500 psf BEARING CAPACITY.
- 3. FOOTING SIZES BASED ON FINAL METAL BUILDING REACTIONS AS PROVIDED BY AMERICAN BUILDINGS, DATED MARCH 2, 2021. 4. FOOTING ELEVATIONS SHOWN ARE APPROXIMATE ONLY. ACTUAL FOOTING STEP LOCATIONS SHALL BE AS REQUIRED IN FIELD TO MAINTAIN DEPTH BELOW FINISH GRADE. ADDITIONAL STEPS MAY BE REQUIRED TO OBTAIN SUITABLE BEARING.
- 5. ALL EARTHWORK CUT AND FILL OPERATIONS SHALL BE OBSERVED BY A LICENSED GEOTECHNICAL ENGINEER AS STIPULATED IN THE PROJECT STATEMENT OF SPECIAL INSPECTIONS. NOTIFY ENGINEER OF RECORD OF ANY ADVERSE SOIL CONDITIONS DISCOVERED THAT MAY AFFECT THE DESIGN OF ANY FOUNDATION ELEMENTS.
- 6. ONSITE SOILS MAY BE USED FOR STRUCTURAL BACKFILLING OPERATIONS WHEN STATED IN THE PROJECT GEOTECHNICAL ENGINEER'S REPORT. SUITABLE SOILS MUST BE CLASSIFIED AS CL, ML, SC, SM, SP, SW, GC, GM, GP, OR GW PER ASTM D2487. BACKFILL MUST BE PLACED AT OPTIMUM MOISTURE CONTENT AND IN 8" MAXIMUM LIFT INCREMENTS AND COMPACTED TO AT LEAST 95% OF THE MAXIMUM DRY DENSITY PER ASTM D698. ALL BACKFILLING OPERATIONS AND FOUNDATION TRENCHES ARE TO BE OBSERVED BY AND PERFORMED IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE GEOTECHNICAL ENGINEER.

#### **CONCRETE SLAB NOTES:**

- . SUB-BASE GRADE FOR GROUND FLOOR SLAB SHALL BE PROOF-ROLLED IN CONSULTATION WITH THE GEOETECH ENGINEER EXTERIOR SLABS ON GRADE SHALL BE PROVIDED WITH A MINIMUM 8" LAYER OF POROUS COMPACTED FILL AND INTERIOR SLABS SHALL OVERLAY A MINIMUM 4" SUCH LAYER. FILL MAY CONSIST OF VDOT #57, #21A, STONE SCREENINGS, RECYCLED CONCRETE, OR OTHER SUITABLE MATERIAL SUBJECT TO APPROVAL OF GEOTECH ENGINEER.
- 2. CONCRETE FLOOR SLABS SHALL BE OF A MINIMUM THICKNESS AS CALLED OUT ON FOUNDATION PLAN. CONCRETE FOR SLABS ON GRADE SHALL BE REINFORCED WITH EMBEDDED FIBER REINFORCEMENT FOR SHRINKAGE CRACK CONTROL AND RESIDUAL STRENGTH. SLABS SHALL BE PROPERLY CURED TO PREVENT EXCESSIVE SHRINKAGE AS WELL AS EDGE CURLING AND OTHER FIELD ISSUES. A 7-DAY WET CURE IS RECOMMENDED. SLABS SHALL BE SUITABLY FLAT AND LEVEL FOR THE INTENDED USE AS ACCEPTABLE TO THE OWNER.
- 3. SAW CUT CONTROL JOINTS SHALL BE PROVIDED IN THE SLAB PRIOR TO CURING IN A REGULAR RECTANGULAR GRID, AS BEST AS POSSIBLE, JOINTS SHALL BEGIN AT COLUMN ISOLATION JOINTS AND/OR RE-ENTRANT CORNERS AND SHALL PANELIZE THE SLAB IN RECTANGULAR SEGMENTS APPROXIMATELY 2:1 OR SQUARER IN LENGTH/WIDTH RATIO. JOINTS SHALL BE SPACED NO FURTHER THAN 60X SLAB THICKNESS IN A "STRUCTURALLY REINFORCED" SLAB OR 36X SLAB THICKNESS FOR A MINIMALLY- REINFORCED SLAB. ADJUST ACTUAL SPACING OF JOINTS AS NECESSARY BASED UPON SELECTED PERFORMANCE CRITERIA AND FIBER REINFORCEMENT DOSAGE RATE.
- 4. FIBER REINFORCEMENT FOR CONCRETE SLABS SHALL BE EUCLID TUF-STRAND SF MACRO FIBERS OR APPROVED EQUIVALENT. PROVIDE MINIMUM FIBER REINFORCEMENT DOSAGE RATE OF 3 LB/CYD (POUNDS PER CUBIC YARD). MACRO FIBERS SHALL COMPLY WITH ASTM C1116 TYPE III AND ASTM D7508 AND SHALL HAVE A MINIMUM TENSILE STRENGTH OF 70 ksi. SYNTHETIC MACRO FIBERS FOR CONCRETE SHALL EXHIBIT A POST-CRACK RESIDUAL STRENGTH AND TOUGHNESS VALUE (Re3) OF 18% IN ACCORDANCE WITH ASTM C1609.
- 5. SEE PLAN FOR GROUND FLOOR SLAB ELEVATIONS AND STEPS. COORDINATE WITH ARCHITECTURAL AND MEP DRAWINGS FOR SLAB CUTOUTS, DEPRESSIONS, AND PENETRATIONS NOT SHOWN ON FOUNDATION PLAN. STRUCTURAL ENGINEER IS NOT RESPONSIBLE FOR COORDINATION OF OTHER TRADES WITH THE CONCRETE
- 6. SEE ARCHITECTURAL DRAWINGS FOR SLAB FINISHES, COVERINGS, AND/OR TOPPINGS, FOLLOW ALL MANUFACTURER'S RECOMMENDATIONS FOR COVERINGS AND TOPPINGS WITH REGARDS TO SLAB THICKNESS, SLOPE, FLATNESS/LEVELNESS, MOISTURE, PERMEABILITY, HARDNESS, JOINT SPACING, AND ANY OTHER COMPATIBILITY ISSUE. STRUCTURAL ENGINEER IS NOT RESPONSIBLE FOR COORDINATION OF FINISH REQUIREMENTS
- 7. PROVIDE DIAMOND-SHAPED ISOLATION BLOCKOUTS AROUND COLUMN BASES EXTENDING BELOW THE SLAB.
- 8. PROVIDE (2) #4 X24" REBARS AT 2" DEPTH AT 45° ANGLE TO ALL RE-ENTRANT CORNERS IN SLAB.







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