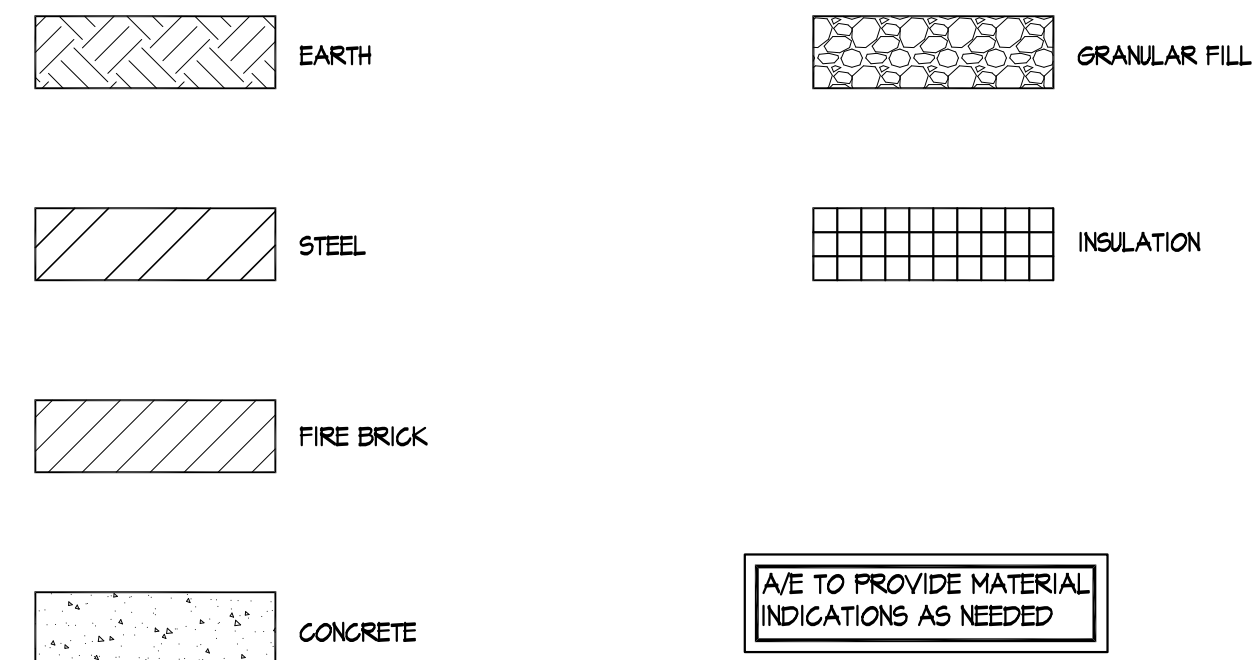


ABBREVIATIONS

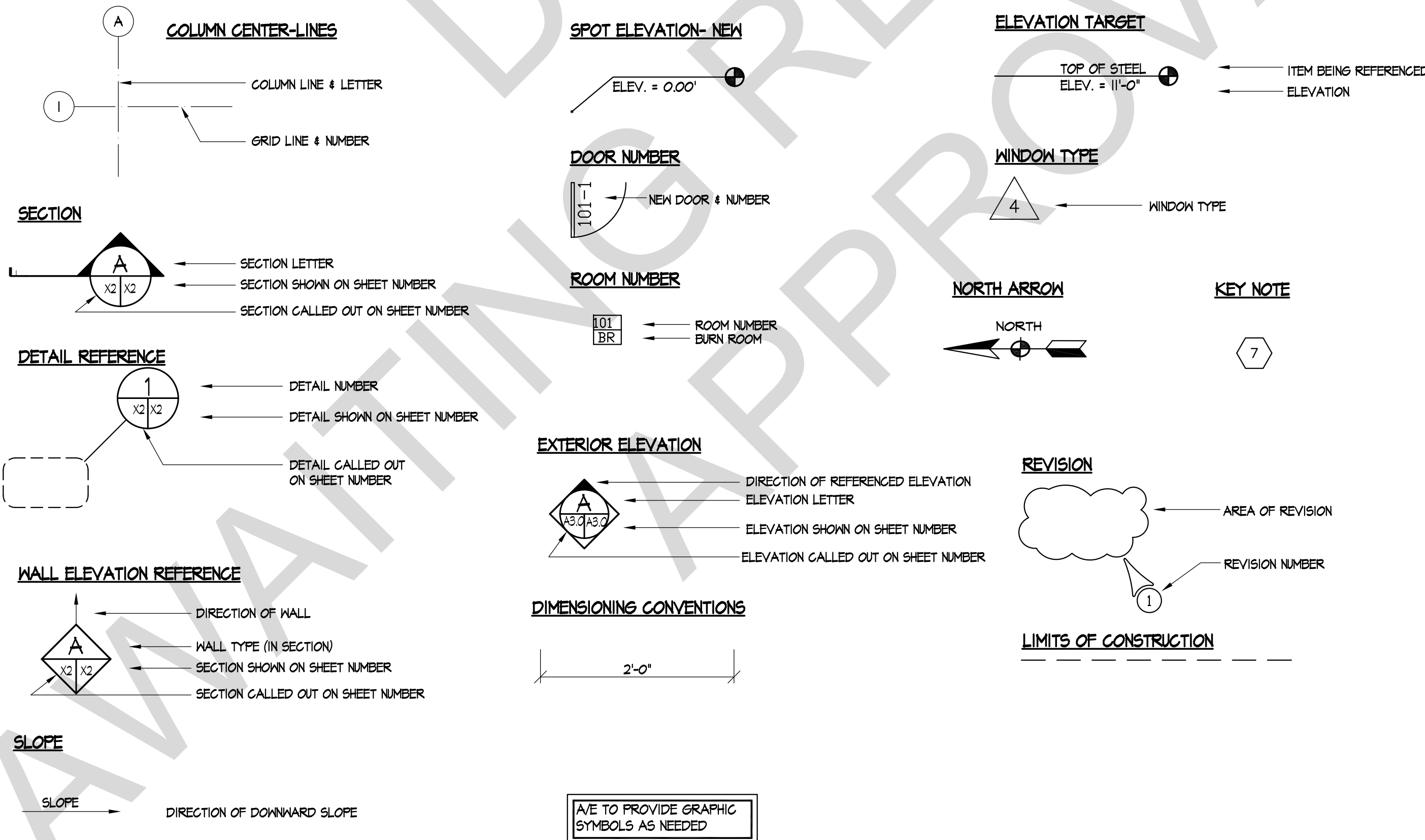
ADJ	ADJACENT, ADJUSTABLE	JT	JOINT
AFF	ABOVE FINISHED FLOOR	L	LENGTH
AGG	AGGREGATE	LB(S)	POUND, POUNDS
ANCH	ANCHOR, ANCHORAGE	LTWT CONC	LIGHTWEIGHT CONCRETE
AND	ANDIZED	MATL	MATERIAL
APFD	APPROVED	MAX	MAXIMUM
ARCH	ARCHITECTURAL	MECH	MECHANICAL
ASSOC	ASSOCIATED	MED	MEDIUM
AUTO	AUTOMATIC	MANUF	MANUFACTURER
AUX	AUXILIARY	MIN	MINIMUM
AVG	AVERAGE	MISC	MISCELLANEOUS
BLDG	BUILDING	MTD	MOUNTED
BLK	BLOCK	MTG HT	MOUNTING HEIGHT
BOTT	BOTTOM	MTL	METAL
BR	BURN ROOM	N/A	NOT APPLICABLE
BUR	BUILT UP ROOFING	NEG	NECESSARY
CEM	CEMENT	NG	NOT IN CONTRACT
CHK'D	CHECKED	NTS	NOT TO SCALE
CJ	CONTROL JOINT	NO#	NUMBER
CL	CENTER LINE	NOM	NOMINAL
CLS	CELLING	OC	ON CENTER
CLR	CLEAR	OD	OUTSIDE DIAMETER
COL	COLUMN	OH	OVERHEAD
CONC	CONCRETE	OPENS	OPENING
CONT	CONTINUOUS	OPP	OPPOSITE
CONTR	CONTRACTOR	PART	PARTITION
COORD	COORDINATE	P	PLATE
CTR	CENTER	PLUMB	PLUMBING
D	DEEP (DEPTH)	PR	PAIR
DBL	DOUBLE	PRFAB	PREFABRICATED
DEP	DEPRESSION, DEPRESS	PROV	PROVIDE
DET	DETAIL	PSF	POUNDS PER SQUARE FOOT
DIA	DIAMETER	PSI	POUNDS PER SQUARE INCH
DIM	DIMENSION	PT	PAINT POINT
DN	DOWN	PVC	POLYVINYL CHLORIDE
DR	DOOR	R	RADIUS, RISER
DRG(S)	DRAWING(S)	REF	REFLECTED, REFERENCE, REFER
DVL	DOVEL	REINF	REINFORCEMENT
EACH	EACH	REQ	REQUIRED, REQUIRED
ELEV	ELEVATION	REV	REVISE, REVISION
ELECT	ELECTRICAL	ROOF	ROOFING
ENCLOS	ENCLOSURE	RH	RIGHT HAND
EQ	EQUAL	RO	ROUGH OPENING
EQUIP	EQUIPMENT	RM	ROOM
EXP	EXPANSION EXPOSED	SCHED	SCHEDULE
EJ	EXPANSION JOINT	SEAL	SEALANT
EXIST	EXISTING	SHT	SHEET
EXT	EXTERIOR	SIM	SIMILAR
FDN	FOUNDATION	SPEC(S)	SPECIFICATION
FIN	FINISH	SQ	SQUARE
FLR	FLOOR	SS	STAINLESS STEEL
FLEX	FLEXIBLE	STD	STANDARD
FRT	FIRE RETARDANT TREATED	STL	STEEL
FTT	FEET (FOOT)	STRUC	STRUCTURAL (STRUCTURE)
FTG	FOOTING	SUSP	SUSPEND, SUSPENDED
GA	GAUGE	T	TOP, THICK
GALV	GALVANIZED	T&B	TOP AND BOTTOM
GC	GENERAL CONTRACTOR	TEMP	TEMPERED, TEMPORARY, TEMPERATURE
GEN	GENERAL	THK	THICK, THICKNESS
H	HIGH	THRU	THROUGH
HDW	HARDWARE	TS	STRUCTURAL STEEL TUBE OR TOP OF STEEL
HM	HOLLOW METAL	TYP	TYPICAL
HORIZ	HORIZONTAL	UL	UNDERWRITERS LABORATORIES
HP	HIGH POINT	UNLESS	UNLESS NOTED OTHERWISE
HHTH	HEIGHT	VERT	VERTICAL
INCH	INCH	V.I.F.	VERIFY IN FIELD
INFO	INFORMATION	WT	WEIGHT
INSUL	INSULATE, INSULATION	WVF	WELDED WIRE FABRIC
INT	INTERIOR	W	WIDTH, WIDE
		W/	WITH
		W/O	WITHOUT
		WO	WORKING POINT

A/E TO PROVIDE ABBREVIATIONS AS NEEDED

MATERIAL INDICATIONS



GRAPHIC SYMBOLS



A/E TO PROVIDE GRAPHIC SYMBOLS AS NEEDED

PRIME PROFESSIONAL FIRM LOGO

Project Title
COMMONWEALTH OF VIRGINIA LIVE FIRE TRAINING STRUCTURE PROTOTYPE 4 CLASS B FUEL

SUB-CONSULTANT'S LOGO



Department of Fire Programs

NOT FOR CONSTRUCTION

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No.	REVISIONS	Date

Sheet Title
ABBREVIATIONS MATERIAL INDICATORS, & GRAPHIC SYMBOLS
 CITY/COUNTY VIRGINIA
 Drawn By: ATA Approved By: MAM
 Checked By: MAM Date: 01/31/24

PROFESSIONAL SEAL

Sheet No.

A0.1

GENERAL NOTES:

GENERAL:

- WORK PERFORMED SHALL COMPLY WITH THE FOLLOWING:
 - THE VIRGINIA UNIFORM STATEWIDE BUILDING CODE (VUBEC), LATEST EDITION
 - THE INTERNATIONAL BUILDING CODE (IBC), LATEST EDITION AS ADOPTED/AMENDED BY THE VUBEC
 - ALL APPLICABLE STATE AND LOCAL CODES, ORDINANCES AND REGULATIONS
- MAINTAIN UTILITY EQUIPMENT IN SERVICE AND PROTECT AGAINST DAMAGE DURING CONSTRUCTION. IF REQUIRED, CONTRACTORS SHALL PROVIDE TEMPORARY SERVICES DURING INTERRUPTIONS TO EXISTING UTILITIES. PROVIDE NO LESS THAN 72 HOURS PRIOR NOTICE TO THE OWNER IF SHUTDOWN OF SERVICE IS REQUIRED.

DESIGN LOADS:

1. BUILDING CLASSIFICATION CATEGORY _____	II
2. GROUND SNOW, P _g	30 PSF*
FLAT ROOF SNOW LOAD, P _f	25 PSF*
SNOW EXPOSURE FACTOR, C _e	0.4
SNOW THERMAL FACTOR, C _t	1.2
SNOW IMPORTANCE FACTOR, I	1.0
3. WIND SPEED _____	115 MPH*
EXPOSURE _____	C*
IMPORTANCE FACTOR, I	1.0
INTERNAL PRESSURE COEFFICIENT _____	±0.18
4. COMPONENTS AND CLADDING (A = 10 SOFT):	
ROOF WIND LOADINGS:	
ZONE 1 _____	+12.5, -21.0 PSF*
ZONE 2 _____	+12.5, -36.5 PSF*
ZONE 3 _____	+12.5, -55.0 PSF*
WALL WIND LOADINGS:	
ZONE 4 _____	+21.8, -23.6 PSF*
ZONE 5 _____	+21.8, -24.1 PSF*
5. LIVE LOADS:	
FLAT AND SLOPED ROOFS _____	UNIFORM 50 PSF
FLOORS _____	50 PSF
STAIRS _____	100 PSF
* MINIMUM CONCENTRATED LOAD OF 300 POUNDS ON STAIR TREADS (ON AREA OF 4 SQUARE INCHES)	
RAILINGS _____	50 PSF UNIFORM OR 200 LB POINT LOAD
EXTERIOR APRON _____	25 PSF
6. SEISMIC DESIGN:	
SEISMIC IMPORTANCE FACTOR, I _____	1.0
MAPPED SPECTRAL RESPONSE ACCELERATION, S _s _____	0.42*
MAPPED SPECTRAL RESPONSE ACCELERATION, S ₁ _____	0.115*
SEISMIC USE GROUP _____	I*
SITE SOIL CLASS _____	0.44B*
SPECTRAL COEFFICIENT, S _{ds} _____	0.184*
SPECTRAL COEFFICIENT, S _{d1} _____	C*
SEISMIC DESIGN CATEGORY _____	C*
BASIC STRUCTURAL SYSTEM _____	LIGHT FRAME W/ SHEAR PANELS OF ALL OTHER MATERIAL
SEISMIC FORCE RESISTING SYSTEM _____	A (ASCE 7 TABLE 12.2-1)
DESIGN BASE SHEAR _____	12.2 KIPS*
SEISMIC RESPONSE COEFFICIENT C _s _____	0.12*
RESPONSE MODIFICATION COEFFICIENT R _____	2
SEISMIC ANALYSIS _____	EQUIV. LATERAL FORCE PROCEDURE

*VERIFY WITH LOCAL JURISDICTION

ARCHITECTURAL:

- UNLESS NOTED OTHERWISE, ALL PARTITIONS ARE DIMENSIONED TO THE FACE OF FINISHED WALL.
- THE DATUM ELEVATION IS TAKEN AT THE TOP OF THE EXTERIOR APRON SLAB WHERE THE APRON INTERSECTS THE PERIMETER OF THE BUILDING (EXCEPT AT GROUND FLOOR DOORS).
- THE DATUM ELEVATION IS XXX FEET.
- ALL BUILDING ELEVATIONS ARE SHOWN IN THE PLANS AS +XXX OR -XXX IN FEET RELATIVE TO THE DATUM.

FOUNDATIONS:

- CONTRACTOR SHALL NOTIFY "MISS UTILITY" PRIOR TO BEGINNING EXCAVATION FOR LOCATION OF UNDERGROUND UTILITIES.
- EXTERIOR FOOTINGS AND COLUMN FOOTINGS WERE DESIGNED TO BEAR ON UNDISTURBED SOIL BELOW THE FROST LINE A MINIMUM OF 18" BELOW EXISTING GRADE.
- MINIMUM SOIL BEARING PRESSURE IS ASSIGNED TO BE 2000* PSF. THE OWNER SHALL EMPLOY A GEOTECHNICAL ENGINEER TO VERIFY THAT THIS ALLOWABLE SOIL BEARING PRESSURE IS ATTAINABLE. IF THIS IS NOT ATTAINABLE, THE OWNER/CONTRACTOR SHALL CONTACT THE ENGINEER FOR REDESIGN.
- SOIL POISONING TREATMENT SHALL BE PROVIDED FOR AREAS BENEATH CONCRETE SLABS ON EARTH AND ALONG INTERIOR SURFACES OF FOUNDATION BY APPLICATOR CERTIFIED TO PERFORM SUCH WORK IN THE STATE OF VIRGINIA. FURNISH OWNER WITH A WRITTEN 5-YEAR INSURED GUARANTEE.
- ALL COLUMN FOOTINGS SHALL BE CENTERED UNDER COLUMN CENTER LINES UNLESS NOTED OTHERWISE.
- ALL UTILITIES WHICH CROSS FOOTINGS MUST PASS ABOVE STRIP FOOTING THROUGH THE FOUNDATION WALL, SLEEVE, PATCH, AND PARGE. STEP FOOTINGS AS REQUIRED. REINFORCING SHALL BE CONTINUOUS AT ALL FOOTING STEPS.
- CONCRETE SLABS ON GRADE SHALL BEAR ON A MINIMUM OF 6" COMPACTED #51 STONE. WHERE REQUIRED, SOIL UNDER FOOTINGS SHALL BE COMPACTED TO AT LEAST 95% OF MAXIMUM DENSITY AS DETERMINED BY ASTM METHOD D-698 (STANDARD PROCTOR).

CONCRETE:

- CONCRETE FOR FOOTINGS SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI AT 28 DAYS AND A MAXIMUM WATER/CEMENT RATIO OF 0.5.
- CONCRETE FOR FLOOR SLABS AND OTHER ABOVE GROUND CONSTRUCTION SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 5,000* PSI AT 28 DAYS AND A MAXIMUM WATER/CEMENT RATIO OF 0.40* UNLESS NOTED OTHERWISE.
- ALL CONCRETE SHALL BE MIXED, PLACED AND TESTED IN ACCORDANCE WITH THE LATEST EDITION OF ACI 318.
- ALL CONCRETE SHALL HAVE A SLUMP OF 4" ± 1" UNLESS NOTED OTHERWISE.
- CONCRETE MIX DESIGNS SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER OF RECORD FOR APPROVAL PRIOR TO USE.
- ALL CONCRETE TO BE POURED IN COLD WEATHER, AS DEFINED IN SECTION 11 OF ACI 306R, COLD WEATHER CONCRETING, SHALL FULLY COMPLY WITH ACI 306.1, STANDARD SPECIFICATIONS FOR COLD WEATHER CONCRETING, AND ACI 306R.
- ALL CONCRETE TO BE POURED IN HOT WEATHER, AS DEFINED IN SECTION 1.2 OF ACI 305R, HOT WEATHER CONCRETING, SHALL FULLY COMPLY WITH ACI 305.1, STANDARD SPECIFICATIONS FOR HOT WEATHER CONCRETING, AND ACI 305R.
- REINFORCING BARS SHALL BE ASTM A-615, GRADE 60. EPOXY COATED BARS SHALL BE ASTM A-715 GRADE 60 AS A BID ALTERNATE.
- ALL CONCRETE REINFORCING SHALL BE DETAILED AND CONSTRUCTED PER ACI 318.
- CONTRACTOR SHALL SUBMIT REINFORCING SHOP DRAWINGS FOR CONCRETE REINFORCING STEEL FOR APPROVAL.
- ALL CONCRETE REINFORCING STEEL SHALL HAVE CORNER OR "Z" BARS OF THE SAME DIAMETER AT ALL CORNERS AND CHANGES IN DIRECTION. CORNER AND "Z" BARS SHALL LAP CONTINUOUS BARS A MINIMUM OF 48 TIMES THE NOMINAL BAR DIAMETER ON BOTH ENDS.
- ALL CONCRETE SLABS ON GRADE SHALL BE REINFORCED WITH WELDED WIRE FABRIC OF THE SIZE INDICATED ON THE PLANS AND SHALL BE PLACED OVER 6 MIL VAPOR BARRIER UNLESS SHOWN OTHERWISE ON DRAWINGS.
- SAW CUTTING CONTROL JOINTS SHALL BE PERFORMED AS SOON AS THE CONCRETE SLAB ON GRADE IS HARD ENOUGH TO SUPPORT THE CUTTING MACHINE WITHIN FIRST FOUR HOURS OF CURING.
- SLABS ON GRADE INCLUDING THE EXTERIOR APRON SLAB SHALL BE AIR ENTRAINED CONCRETE AND REINFORCED WITH WELDED WIRE FABRIC PLACED ON CONCRETE BLOCKS. AIR ENTRAINMENT FOR SLABS SHALL BE 6% BY VOLUME ± 1%.
- ALL CONCRETE EXCEPT FOOTINGS SHALL BE AIR-ENTRAINED 6% BY VOLUME ± 1% UNLESS SHOWN OTHERWISE ON DRAWINGS.
- CONCRETE PROTECTION FOR STEEL REINFORCEMENT OF CAST-IN-PLACE CONCRETE SHALL BE AS SPECIFIED BELOW:

TYPE OF STRUCTURE	MINIMUM CLEAR COVER (UNLESS OTHERWISE NOTED IN DRAWINGS)
FOOTINGS AND OTHER EARTH FORMED CONCRETE	3"

- SPECIAL INSPECTIONS SHALL BE REQUIRED FOR THE CAST IN PLACE CONCRETE MATERIALS AND INSTALLATION, INCLUDING BUT NOT LIMITED TO REINFORCEMENT, BOLTS, FORMWORK, PLACEMENT, CURING AND STRENGTH AS IDENTIFIED IN THE SCHEDULE OF SPECIAL INSPECTIONS.

STRUCTURAL STEEL:

- ALL STRUCTURAL STEEL FRAMING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF AISI "MANUAL OF STEEL CONSTRUCTION." ALL STRUCTURAL STEEL BEAM, COLUMN AND CHANNEL SHAPES SHALL BE ASTM A-992. ALL STEEL ANGLES AND PLATES SHALL BE ASTM A-36. ALL STRUCTURAL STEEL TUBES SHALL BE ASTM A500 GRADE B.
- CONTRACTOR TO SUBMIT STRUCTURAL STEEL SHOP DRAWINGS FOR APPROVAL BY THE STRUCTURAL ENGINEER OF RECORD.
- ALL STRUCTURAL STEEL SHOP WORK TO BE WELDED WITH E70XXX ELECTRODES. FIELD WORK CONNECTIONS TO BE BOLTED WITH 3/4" HIGH STRENGTH A325X BOLTS OR WELDED WITH E70XXX ELECTRODES. PRE-DRILL HOLES IN STEEL MEMBERS AS REQUIRED FOR FASTENING, BLOCKING, ETC.
- ALL COLUMNS SHALL BE FURNISHED WITH CAP PLATES AND BASE PLATES OF SIZE CALLED FOR AND SHALL BE SHOP WELDED. BASE PLATES SHALL BEAR ON LEVELING NUTS SET IN 1" THICKNESS OR APPROVED SHRINK RESISTANT GROUT EXCEPT WHEN SHOWN OTHERWISE, AND ANCHORED WITH FOUR (4) 3/4" DIAMETER 12" THREADED RODS WITH A WASHER AND DOUBLE NUTS. SHIM UNDER BASE PLATES AS REQUIRED.
- ALL STRUCTURAL STEEL FRAMING TO HAVE ONE SHOP COAT OF RUST INHIBITIVE PAINT AFTER FABRICATION, AND ONE FINISH COAT OF APPROVED PAINT UNLESS NOTED OTHERWISE. ALL EXPOSED STEEL TO HAVE TWO (2) COATS OF APPROVED COLOR SELECTED BY OWNER.
- SPECIAL INSPECTIONS SHALL BE REQUIRED FOR THE STRUCTURAL STEEL MATERIALS, QUALITY CONTROL PROGRAM, BOLTS, NUTS AND WASHERS, WELDING, AND STRUCTURAL DETAILS AS IDENTIFIED IN THE SCHEDULE OF SPECIAL INSPECTIONS.

STEEL GRATING AND TREADS:

- STEEL GRATING SHALL BE 2" DEEP, 1/4 GAUGE, GALVANIZED GRIP STRUT DIAMOND SAFETY GRATING OR EQUIVALENT. INSTALL GRATING IN ACCORDANCE WITH THE MANUFACTURER'S REQUIREMENTS TO CREATE A TWO-SPAN CONDITION BY WELDING. WELD SIDES OF ADJACENT PANELS TOGETHER PER MANUFACTURER'S RECOMMENDATIONS.
- STEEL STAIR TREADS SHALL BE 2" DEEP, 1/4 GAUGE GALVANIZED GRIP STRUT DIAMOND STAIR TREADS OR EQUIVALENT. INSTALL TREADS IN ACCORDANCE WITH THE MANUFACTURER'S REQUIREMENTS USING STANDARD ZINC COATED BOLTS.

WOOD:

- WOOD FRAMING IS BASED ON DESIGN VALUES NOTED IN THE LATEST EDITION OF THE NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION.
- RAFTERS FOR CHOP OUT OPENING SHALL BE CONSTRUCTED WITH NO. 2 SOUTHERN YELLOW PINE (SYP) WITH MINIMUM F_b = 1050 PSI AND E = 1,800,000 PSI ALLOWABLE STRESSES.
- ALL PLYWOOD SHALL BE MANUFACTURED AND GRADED IN ACCORDANCE WITH U.S. DEPARTMENT OF COMMERCE (DOC) PRODUCT STANDARD PS1-15 FOR PLYWOOD CONSTRUCTION FROM GROUP 1 SPECIES. EACH PLYWOOD SHEET SHALL BEAR THE "APA" GRADE TRADEMARK.
- PLYWOOD ROOF SHEATHING SHALL CONFORM TO APA C-D RATED EXTERIOR 3/4" MINIMUM THICKNESS PLYWOOD SHEATHING UNLESS NOTED OTHERWISE. PROVIDE APPROPRIATE SPACING BETWEEN JOINTS. USE OF "H" CLIPS REQUIRED ON ROOF SHEATHING.
- THE FACE GRAIN OF THE PLYWOOD SHALL BE LAID AT RIGHT ANGLES TO THE RAFTERS.
- FASTENERS SHALL BE PLACED 3/8" MINIMUM FROM THE EDGE OF THE PLYWOOD SHEETS.
- ALL PLYWOOD END JOINTS SHALL BE STAGGERED AND SHALL BE LOCATED ALONG THE CENTER LINES OF THE FRAMING MEMBERS.
- PLYWOOD USED FOR SLOPED ROOF PROP, WITH THE EXCEPTION OF THE TRAINING CHOP OUT, SHALL BE FIRE RETARDANT TREATED. PLYWOOD AND WOOD FRAMING USED FOR TRAINING CHOP OUT SHALL NOT BE PRESERVATIVE OR FIRE RETARDANT TREATED.

MODULAR/INTERMODAL SHIPPING CONTAINER COMPONENTS:

- CONTRACTOR SHALL SUBMIT SEALED COMMONWEALTH OF VIRGINIA LICENSED PROFESSIONAL ENGINEER'S STRUCTURAL DESIGN CALCULATIONS AND SHOP DRAWINGS FOR APPROVAL PRIOR TO CONSTRUCTION OF MODULAR/INTERMODAL SHIPPING CONTAINER BUILDING FOUNDATION.
- SHOP DRAWINGS SUBMITTAL REQUIREMENTS: SUBMIT COMPLETE ERECTION DRAWINGS SHOWING ANCHOR BOLT SETTINGS, SIDEWALL, ENDWALL AND ROOF FRAMING, TRANSVERSE CROSS SECTIONS, COVERING AND TRIM DETAILS AND ACCESSORY INSTALLATION DETAILS TO CLEARLY INDICATE PROPER ASSEMBLY OF BUILDING COMPONENTS.
- MANUFACTURER SHALL PROVIDE A COMPLETE AND PROPERLY INSTALLED SYSTEM AS REQUIRED FOR A WEATHER TIGHT, 20 YEAR WARRANTED BUILDING.
- THE LOCATION OF ANCHOR BOLTS, SIZE OF BASE PLATES, LOCATION OF MODIFIED COMPONENTS, ETC. MUST BE VERIFIED AGAINST MANUFACTURER'S FRAMING ARRANGEMENT. ANY DEVIATIONS MUST BE BROUGHT TO THE ATTENTION OF THE ENGINEER. ALL SUCH DEVIATIONS MUST BE COORDINATED AND APPROVED BEFORE CONCRETE IS PLACED.
- DESIGN OF THE MODULAR/INTERMODAL SHIPPING CONTAINER BUILDING TO SUPPORT ROOF, SNOW, WIND AND SEISMIC LOADS AS STATED IN THE DESIGN LOADS ABOVE AND IN ACCORDANCE WITH CHAPTERS 16 AND 31 OF THE INTERNATIONAL BUILDING CODE AS ADOPTED BY THE VUBEC.
- INTERMODAL SHIPPING CONTAINERS REPURPOSED FOR USE AS STRUCTURAL COMPONENTS SHALL BEAR AN EXISTING DATA PLATE AS REQUIRED BY ISO 6346 AND SHALL BE VERIFIED BY AN APPROVED AGENCY. A REPORT OF THE VERIFICATION PROCESS AND FINDINGS SHALL BE PROVIDED FOR REVIEW AND APPROVAL.
- INTERMODAL SHIPPING CONTAINERS SHALL BEAR ON A LAMINATED ELASTOMERIC BEARING PAD WHEN SUPPORTED BY CAST-IN-PLACE CONCRETE SLABS ON GRADE.

EXPANSION ANCHORS:

- ALL ANCHORS SHALL BE INSTALLED IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE MANUFACTURER.
- EXPANSION ANCHORS SHALL BE WEDGE TYPE WITH A SINGLE PIECE THREE SECTION WEDGE. THE ANCHORS SHALL MEET THE DESCRIPTION IN FEDERAL SPECIFICATION FF-9-325, GROUP II, TYPE 4, CLASS 1 FOR CONCRETE EXPANSION ANCHORS. ANCHORS SHALL BE HILTI KWIK BOLT II, MANUFACTURED BY HILTI FASTENING SYSTEMS, OR EQUIVALENT.
- ALL EXPANSION ANCHORS SHALL BE ZINC PLATED IN ACCORDANCE WITH ASTM B633, SERVICE CONDITION SC 1, TYPE III UNLESS INDICATED IN THE DRAWINGS AS STAINLESS STEEL.
- UNLESS OTHERWISE NOTED, THE FOLLOWING MINIMUM REQUIREMENTS SHALL BE MET FOR EXPANSION ANCHORS:

ANCHOR DIAMETER	EMBEDMENT DEPTH	ALLOWABLE LOADS IN CONCRETE	
		TENSION (POUNDS)	SHEAR (POUNDS)
3/8"	2 3/8"	2,440	3,005
1/2"	3 1/2"	4,960	12,450

THERMAL LINING:

- THE THERMAL LINING SHALL BE INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF THE MANUFACTURER.
- THE THERMAL LINING SYSTEM SHALL BE DESIGNED TO PROVIDE THE REQUIRED LEVEL OF PROTECTION AS INDICATED IN THE SPECIFICATIONS.

TEMPERATURE MONITORING SYSTEM:

- THE TEMPERATURE MONITORING SYSTEM SHALL CONSIST OF A CENTRAL RECORDER LOCATED IN THE MONITORING EQUIPMENT ROOM AND THERMOCOUPLES AS SHOWN ON ELECTRICAL DRAWINGS, SEE SPECIFICATION FOR REQUIREMENTS.

ELECTRICAL:

- PROVIDE ALL NECESSARY LABOR, EQUIPMENT, ETC. FOR ALL WORK INDICATED AND REQUIRED FOR A COMPLETE INSTALLATION TO COMPLY WITH THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE (NEC).
- ELECTRICAL SUB CONTRACTOR TO PROVIDE SYSTEM DESIGN AND PLAN LAYOUT FOR REVIEW AND APPROVAL.
- THE ELECTRICAL CONTRACTOR SHALL KEEP THE PREMISES FREE FROM ACCUMULATION OF WASTE MATERIAL AND RUBBISH DAILY AND AT THE COMPLETION OF THE WORK, CONTRACTOR SHALL REMOVE FROM THE PREMISES ALL RUBBISH, IMPLEMENTS, AND SURPLUS MATERIALS AND LEAVE THE BUILDING "BROOM CLEAN".
- THE ELECTRICAL CONTRACTOR SHALL PROVIDE A WRITTEN WARRANTY STATING THAT ALL MATERIALS AND WORKMANSHIP ARE FREE FROM DEFECTS FOR A PERIOD OF 12 MONTHS FROM DATE OF FINAL ACCEPTANCE.
- MATERIALS:
 - WIRE AND CABLE SHALL BE COPPER WITH THIN/THIN INSULATION AND BE SIZED AS PER THE LATEST EDITION OF THE NEC.
 - ALL WIRING SHALL BE CONCEALED WHERE POSSIBLE. WHERE APPROVED BY THE DESIGNER, EXPOSED WIRING SHALL BE RUN PARALLEL AND PERPENDICULAR TO THE BUILDING CONSTRUCTION.
 - DISCONNECT SWITCHES SHALL BE SQUARE-D GENERAL DUTY FUSIBLE WITH CLASS "R" FUSE CLIPS OR EQUAL.
 - FUSES SHALL BE TIME-DELAY DUAL ELEMENT TYPE AND SHALL BE SIZED AS REQUIRED, AND QUANTITY.
 - ALL SWITCHES AND RECEPTACLES SHALL BE SPECIFICATION GRADE AND COLOR AS CHOSEN BY OWNER.
- THE ELECTRICAL CONTRACTOR MUST INSPECT JOB SITE PRIOR TO BIDDING JOB AND WILL INCLUDE COMPLETE RESPONSIBILITY FOR ALL LABOR AND MATERIALS AS SPECIFIED ON PLANS.
- ELECTRICAL CONTRACTOR SHALL VERIFY THE AIG BEFORE PURCHASE OF SERVICE ENTRANCE EQUIPMENT.
- ELECTRICAL CONTRACTOR SHALL VERIFY EQUIPMENT CAPACITY BEFORE ROUGH-IN.
- ALL WIRING SHALL BE IN CONDUIT AND BE 12 AWG UNLESS OTHERWISE SPECIFIED. CONDUIT SHALL BE EMT OR RMC.
- CONDUIT IN AND UNDER SLAB SHALL BE SCHEDULE 40 PVC AND SHALL BE BELOW THE FROST LINE.

1. THESE PROTOTYPE DRAWINGS HAVE BEEN DESIGNED TO PROVIDE ADEQUATE FACILITIES FOR FIRE FIGHTER I & II TRAINING AND TO MEET THE REQUIREMENTS OF NFPA 1403 AND 1402.

2. THE ATTACHED DRAWINGS, PROJECT MANUAL, AND SPECIFICATIONS ARE FOR INFORMATIONAL PURPOSES ONLY AND ARE NOT TO BE USED AS CONSTRUCTION DOCUMENTS. GRANT RECIPIENTS SHALL RETAIN A LICENSED DESIGN PROFESSIONAL TO PROVIDE SITE SPECIFIC CONTRACT DOCUMENTS SUITABLE FOR USE AS THE BASIS OF CONSTRUCTION.

3. THE GRANT RECIPIENT SHALL RETAIN A LICENSED DESIGN PROFESSIONAL TO CREATE A SITE PLAN, CIVIL DRAWINGS AND CIVIL SPECIFICATIONS TO ACCOMPANY THE ABOVE REFERENCED SITE SPECIFIC CONTRACT DOCUMENTS.

4. THESE PROTOTYPE DRAWINGS HAVE BEEN DESIGNED TO BE COMPARED WITH THE VARIOUS REQUIREMENTS FOR WIND SPEED, FROST DEPTH, SEISMIC VALUES, ETC. WITHIN THE COMMONWEALTH OF VIRGINIA. AS THESE VALUES ARE SITE DEPENDENT, THE LICENSED DESIGN PROFESSIONAL SHALL VERIFY ALL SITE RELATED VALUES WITH THE LOCAL JURISDICTION & MODIFY THE PROTOTYPE DRAWINGS ACCORDINGLY.

5. DESIGN LOADS AND NOTES WITH ASTERISKS (*) SIGNIFY THOSE THAT ARE SITE DEPENDENT AND SHALL BE VERIFIED WITH THE LOCAL JURISDICTION.

1. ALL CONCRETE ADJACENT TO AND WITHIN THE LIVE FIRE TRAINING STRUCTURE SHALL STAND A MINIMUM OF TWO (2) MONTHS TO CURE BEFORE CONDUCTING THE FIRST LIVE FIRE TRAINING EVOLUTION.

2. NO VEHICLE TRAFFIC SHALL BE PERMITTED ON THE APRON SLAB FOR A MINIMUM OF ONE (1) MONTH AFTER APRON SLAB HAS BEEN PLACED.

PRIME PROFESSIONAL FIRM LOGO

Project Title

COMMONWEALTH OF VIRGINIA LIVE FIRE TRAINING STRUCTURE PROTOTYPE 4 CLASS B FUEL

SUB-CONSULTANT'S LOGO



Department of Fire Programs

NOT FOR CONSTRUCTION

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No.	REVISIONS	Date

Sheet Title

GENERAL NOTES

CITY/COUNTY _____ VIRGINIA

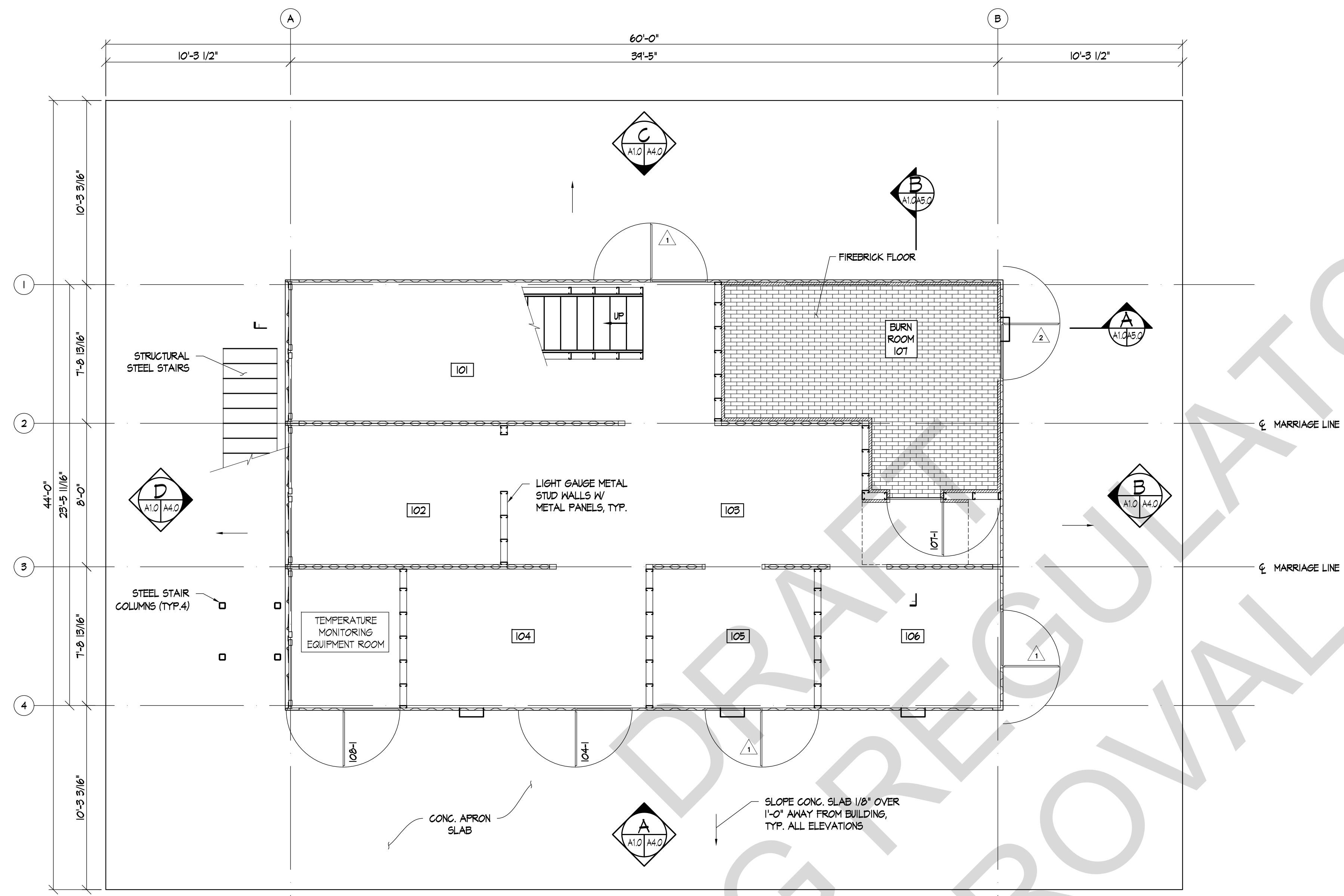
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Checked By: MAM Date: 01/31/24

PROFESSIONAL SEAL

Sheet No.

A0.2

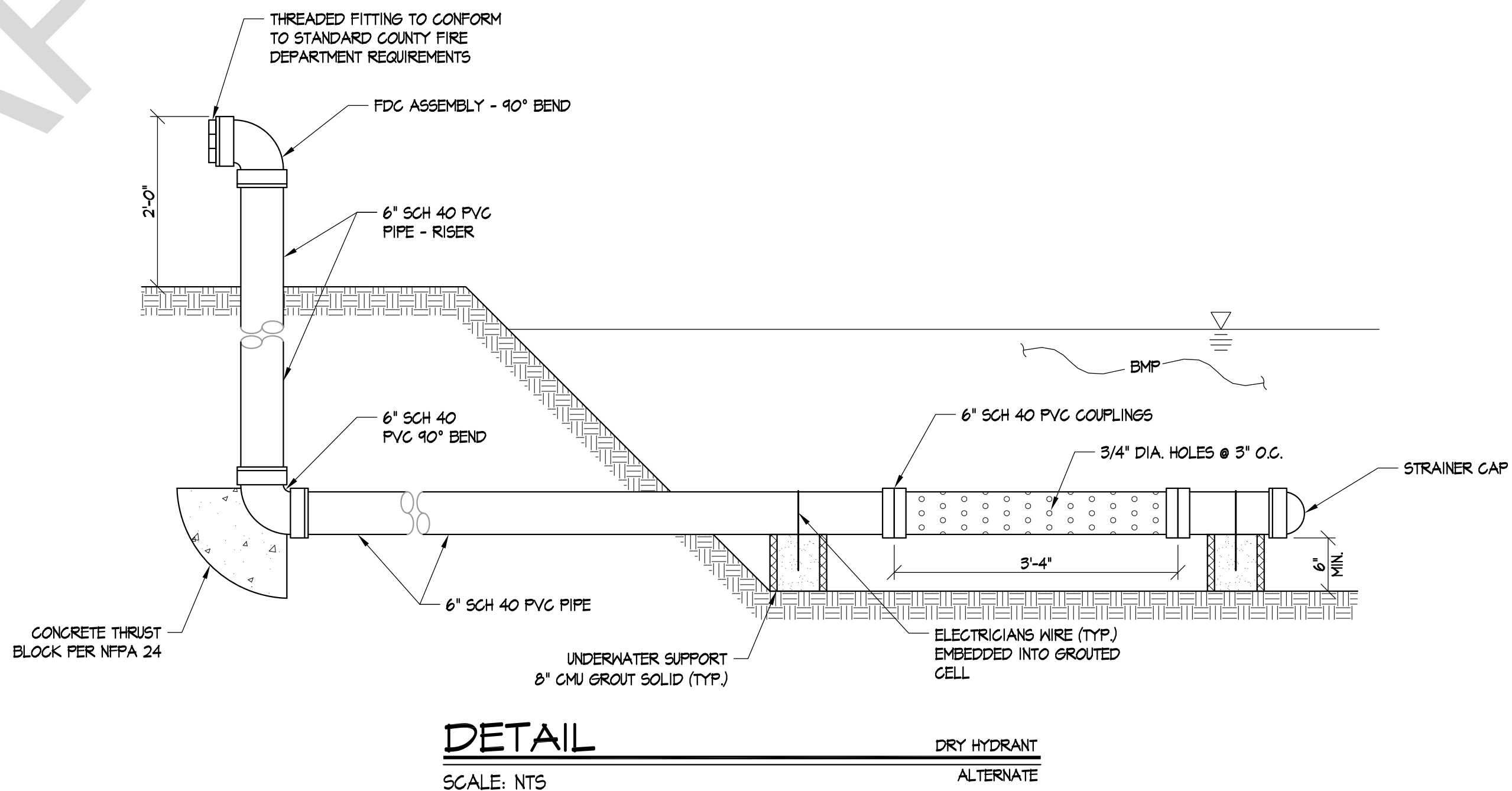


FIRST FLOOR PLAN

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

NOTES:

- ROOM 101 IS THE BURN ROOM. NO BURNING IS ALLOWED IN ROOMS 101, 102, 103, 104, 105, 106, THE MONITORING EQUIPMENT ROOM, OR ON THE STAIRS OR LANDING.
- DOORS SHALL BE HOT DIPPED GALV. METAL WITH CONTINUOUSLY WELDED SEAMS AND GALV. STEEL ANGLE SUPPORT FRAME. DOORS SHALL HAVE PULLS ON EACH SIDE AS WELL AS A LOCKABLE LATCH THAT IS OPERABLE FROM BOTH SIDES.
- WINDOW SHUTTERS SHALL BE HOT DIPPED GALV. METAL WITH CONTINUOUSLY WELDED SEAMS AND GALV. STEEL ANGLE FRAME SUPPORT. WINDOW SHUTTERS SHALL HAVE WINDOW SHUTTER PULLS ON EACH SIDE AS WELL AS A LOCKABLE LATCH THAT IS OPERABLE FROM BOTH SIDES.



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Project Title
COMMONWEALTH OF VIRGINIA LIVE FIRE TRAINING STRUCTURE PROTOTYPE 4 CLASS B FUEL

SUB-CONSULTANT'S LOGO



Department of Fire Programs

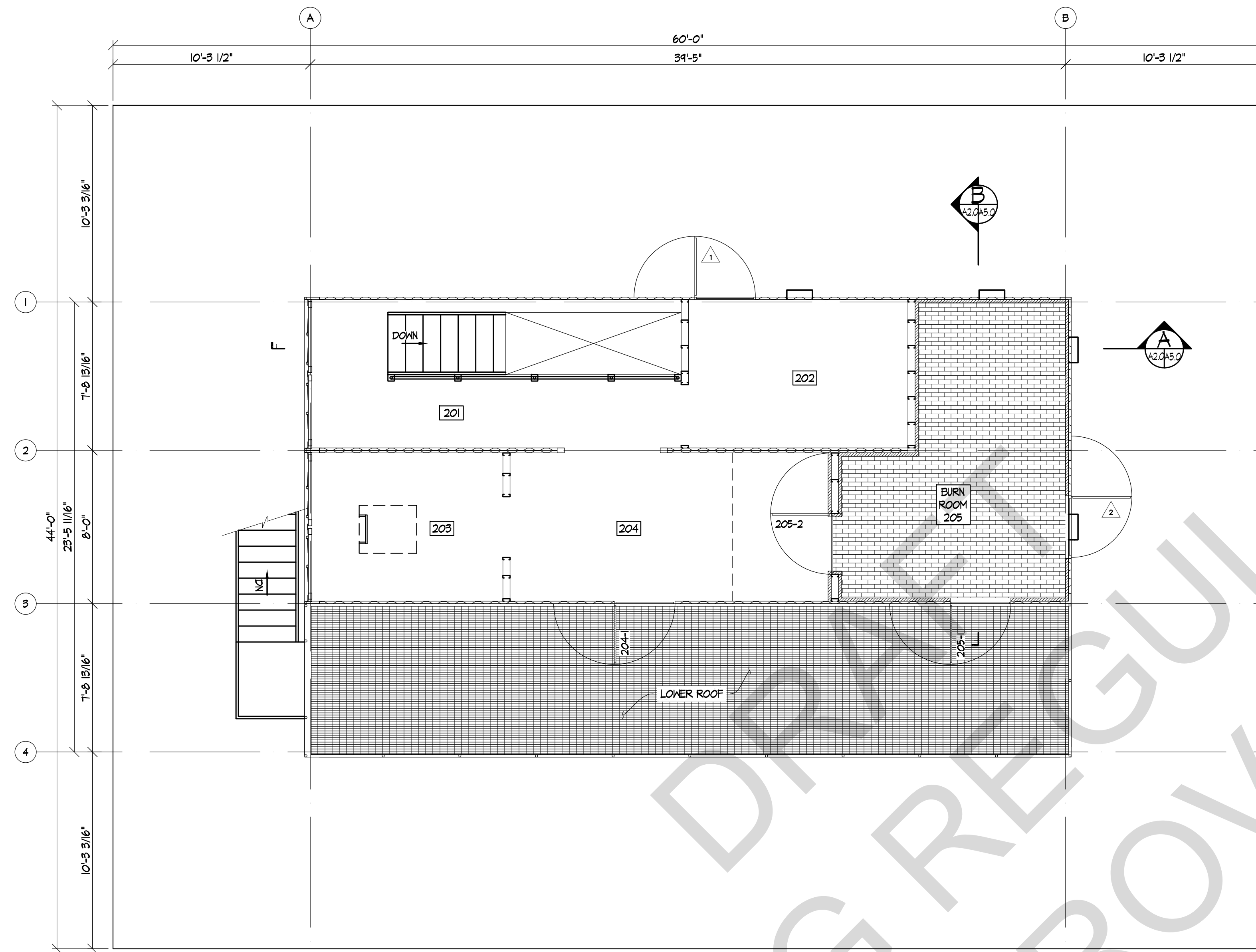
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No.	REVISIONS	Date

Sheet Title
FIRST FLOOR PLAN
CITY/COUNTY VIRGINIA
Drawn By: ATA Approved By: MAM
Checked By: MAM Date: 01/31/24

PROFESSIONAL SEAL

Sheet No.
A1.0
4 of 16



SECOND FLOOR/LOWER ROOF PLAN

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

NOTES:

1. INTERIOR ELEVATED FLOOR SLABS SHALL BE CONCRETE SLAB OVER METAL DECK DESIGNED TO SUPPORT THE SUPERIMPOSED LIVE LOADS INDICATED ON SHEET AO.2.
2. EXTERIOR LOW FLAT ROOF SHALL BE WATERTIGHT LIGHT GAGE METAL PANELS COVERED WITH GALV. GRIP STRUT DIAMOND PLANKS.
3. ROOM 205 IS A BURN ROOM. NO BURNING IS ALLOWED IN ROOMS 201, 202, 203, & 204, ON THE STAIRS, LANDING OR ON THE LOWER ROOF.
4. REFER TO SHEET AS.0 FOR POST AND GUARDRAIL ELEVATION LOCATIONS.
5. DOORS SHALL BE HOT DIPPED GALV. METAL WITH CONTINUOUSLY WELDED SEAMS AND GALV. STEEL ANGLE SUPPORT FRAME. DOORS SHALL HAVE PULLS ON EACH SIDE AS WELL AS A LOCKABLE LATCH THAT IS OPERABLE FROM BOTH SIDES.
6. WINDOW SHUTTERS SHALL BE HOT DIPPED GALV. METAL WITH CONTINUOUSLY WELDED SEAMS AND GALV. STEEL ANGLE FRAME SUPPORT. WINDOW SHUTTERS SHALL HAVE WINDOW SHUTTER PULLS ON EACH SIDE AS WELL AS A LOCKABLE LATCH THAT IS OPERABLE FROM BOTH SIDES.

PRIME PROFESSIONAL FIRM LOGO

Project Title
COMMONWEALTH OF VIRGINIA LIVE FIRE TRAINING STRUCTURE PROTOTYPE 4 CLASS B FUEL

SUB-CONSULTANT'S LOGO



Department of Fire Programs

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No.	REVISIONS	Date

Sheet Title
SECOND FLOOR/LOWER ROOF PLAN

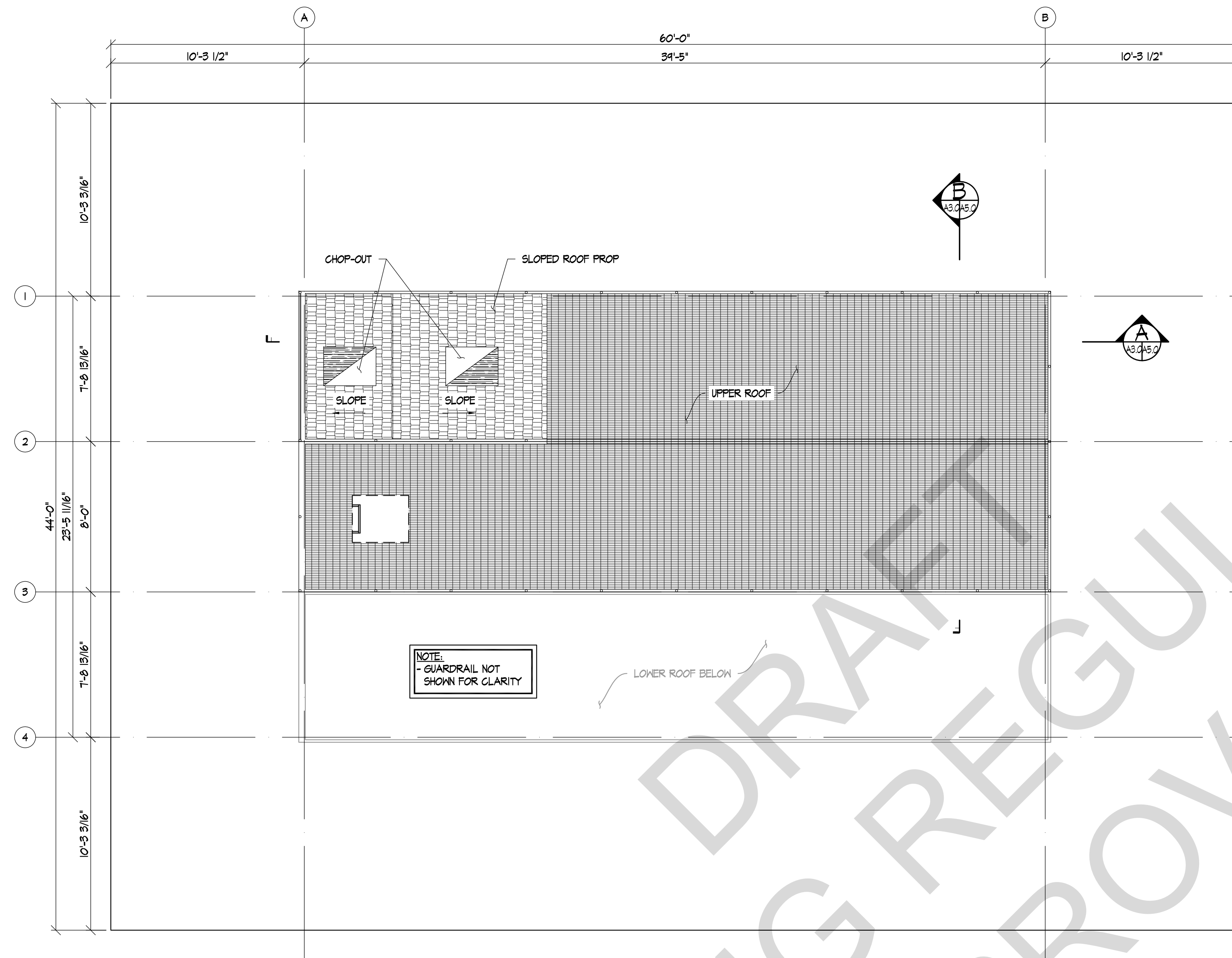
CITY/COUNTY VIRGINIA

Drawn By: ATA Approved By: MAM

Checked By: MAM Date: 01/31/24

PROFESSIONAL SEAL

Sheet No.
A2.0
5 of 16



UPPER ROOF PLAN W/ SLOPED ROOF PROP

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

NOTES:

1. NO BURNING IS ALLOWED ON THE UPPER ROOF OR BELOW THE SLOPED ROOF PROP.
2. EXTERIOR UPPER FLAT ROOF SHALL BE WATERTIGHT LIGHT GAGE METAL PANELS COVERED WITH GALV. GRIP STRUT DIAMOND PLANKS.
3. REFER TO SHEET A4.0 FOR POST AND GUARDRAIL ELEVATION LOCATIONS.
4. SLOPED ROOF PROP SHALL BE 3/4" TONGUE AND GROOVE PLYWOOD COVERED WITH COMPOSITE ASPHALT SHINGLES AND SHALL BE DESIGNED TO SUPPORT THE SUPERIMPOSED LIVE LOADS INDICATED ON SHEET A0.2.

PRIME PROFESSIONAL FIRM LOGO

Project Title
 COMMONWEALTH OF VIRGINIA LIVE FIRE TRAINING STRUCTURE PROTOTYPE 4 CLASS B FUEL

SUB-CONSULTANT'S LOGO



Department of Fire Programs

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No.	REVISIONS	Date

Sheet Title
 UPPER ROOF PLAN W/ SLOPED ROOF PROP

CITY/COUNTY VIRGINIA
 Drawn By: ATA Approved By: MAM
 Checked By: MAM Date: 01/31/24

PROFESSIONAL SEAL

Sheet No.
A3.0
 6 of 16

PRIME PROFESSIONAL FIRM LOGO

Project Title
COMMONWEALTH OF VIRGINIA LIVE FIRE TRAINING STRUCTURE PROTOTYPE 4 CLASS B FUEL

SUB-CONSULTANT'S LOGO



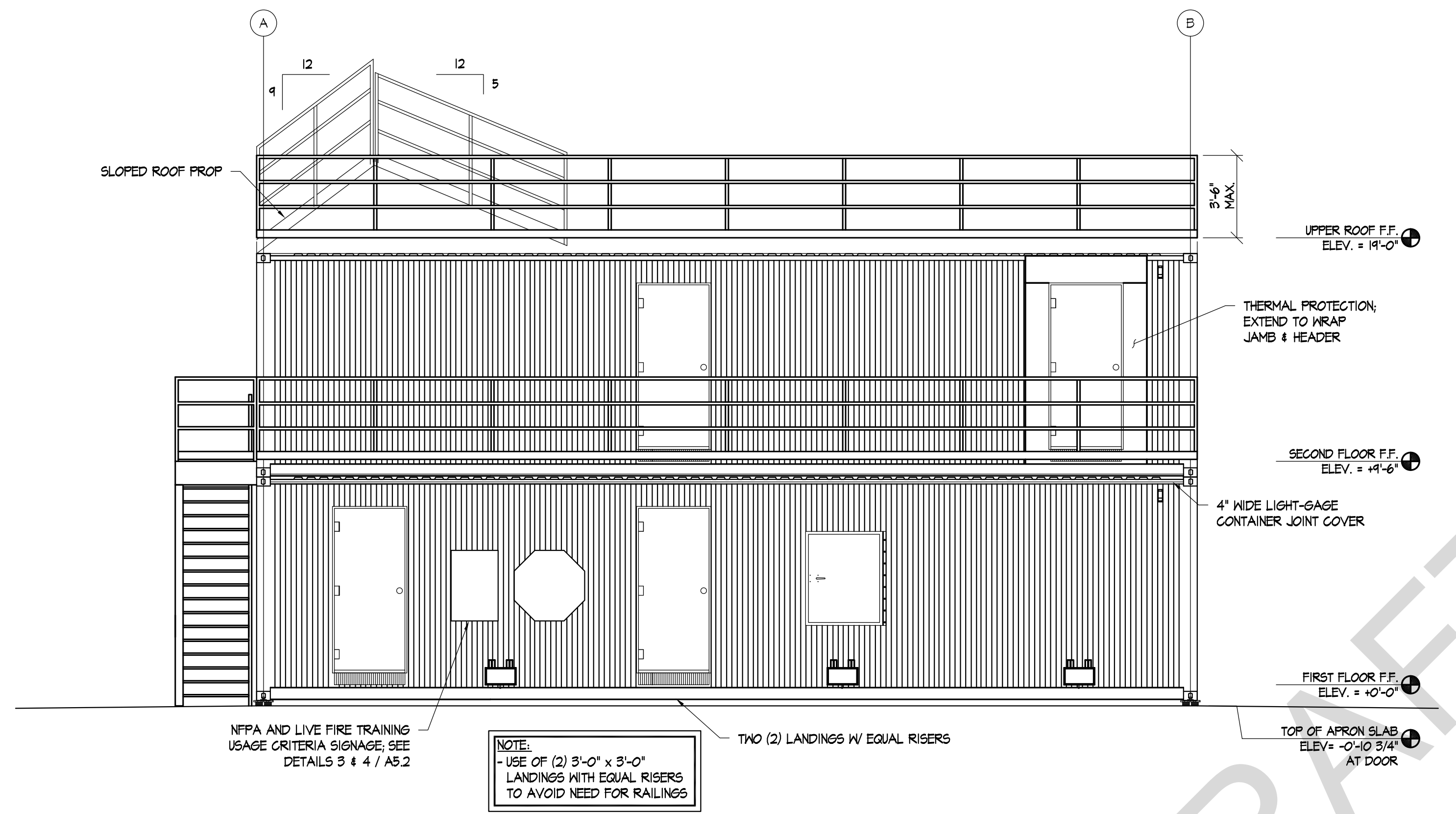
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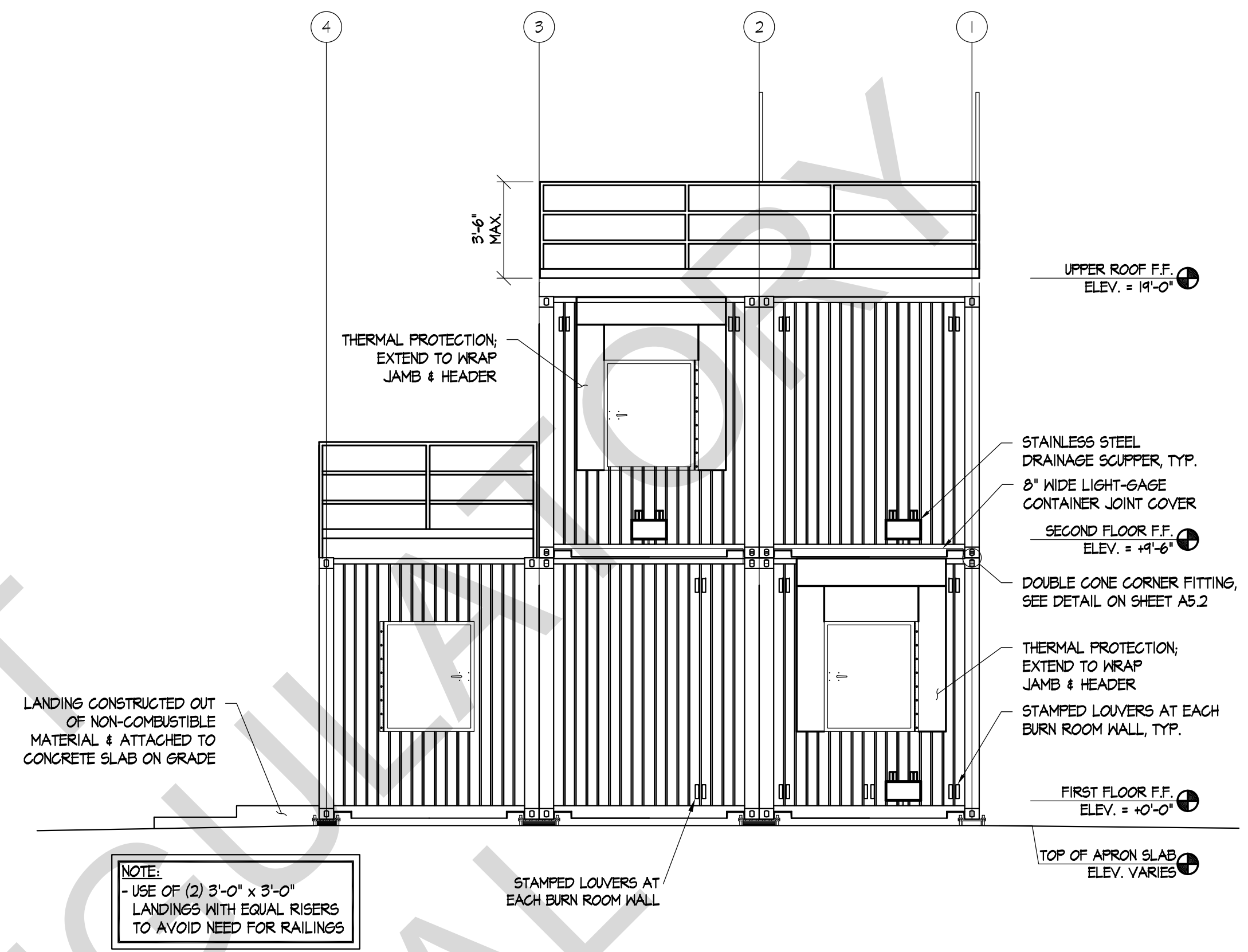
No.	REVISIONS	Date

Sheet Title
BUILDING ELEVATIONS
 CITY/COUNTY VIRGINIA
 Drawn By: ATA Approved By: MAM
 Checked By: MAM Date: 01/31/24

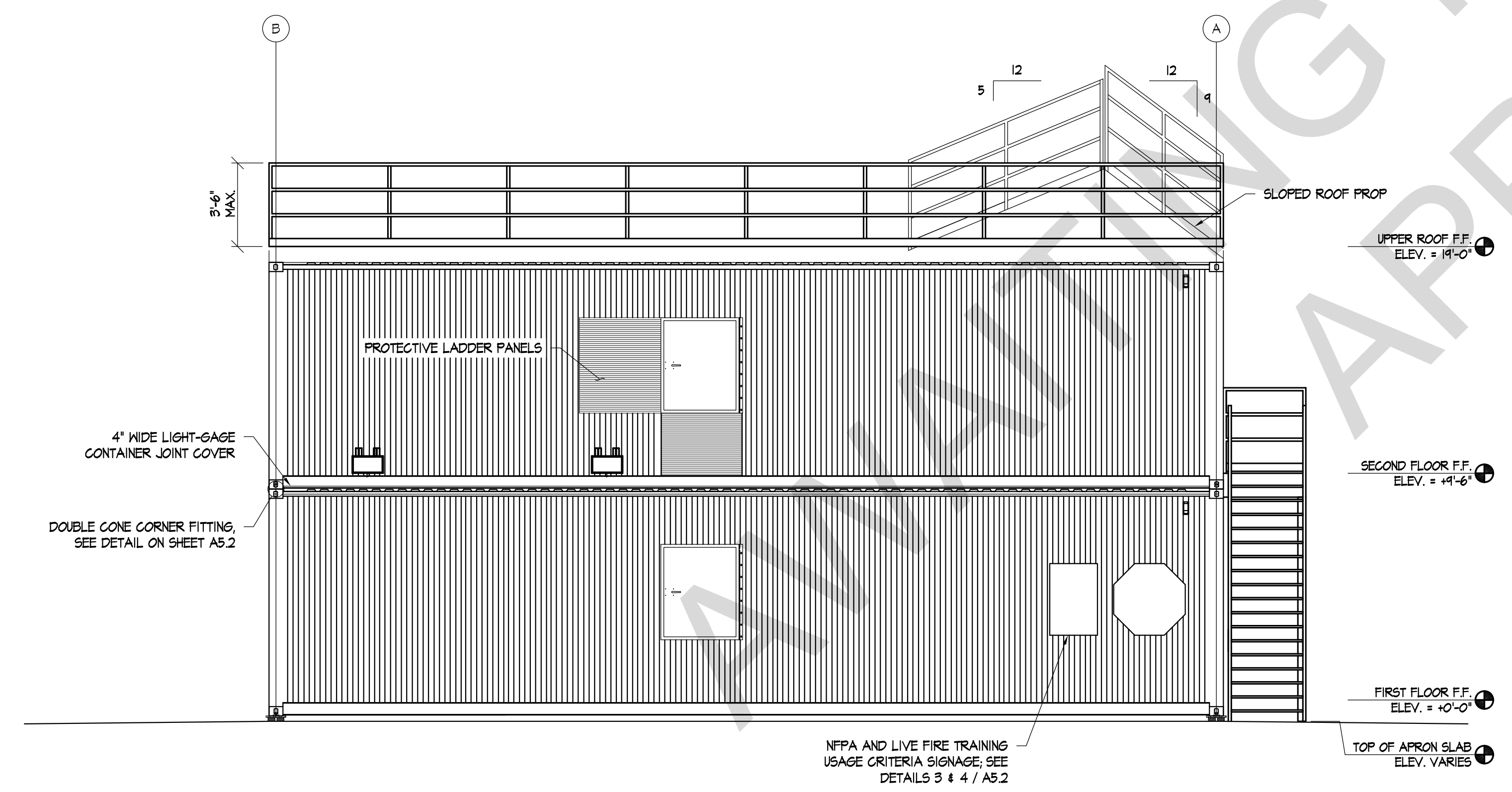
Sheet No.
A4.0
 7 of 16



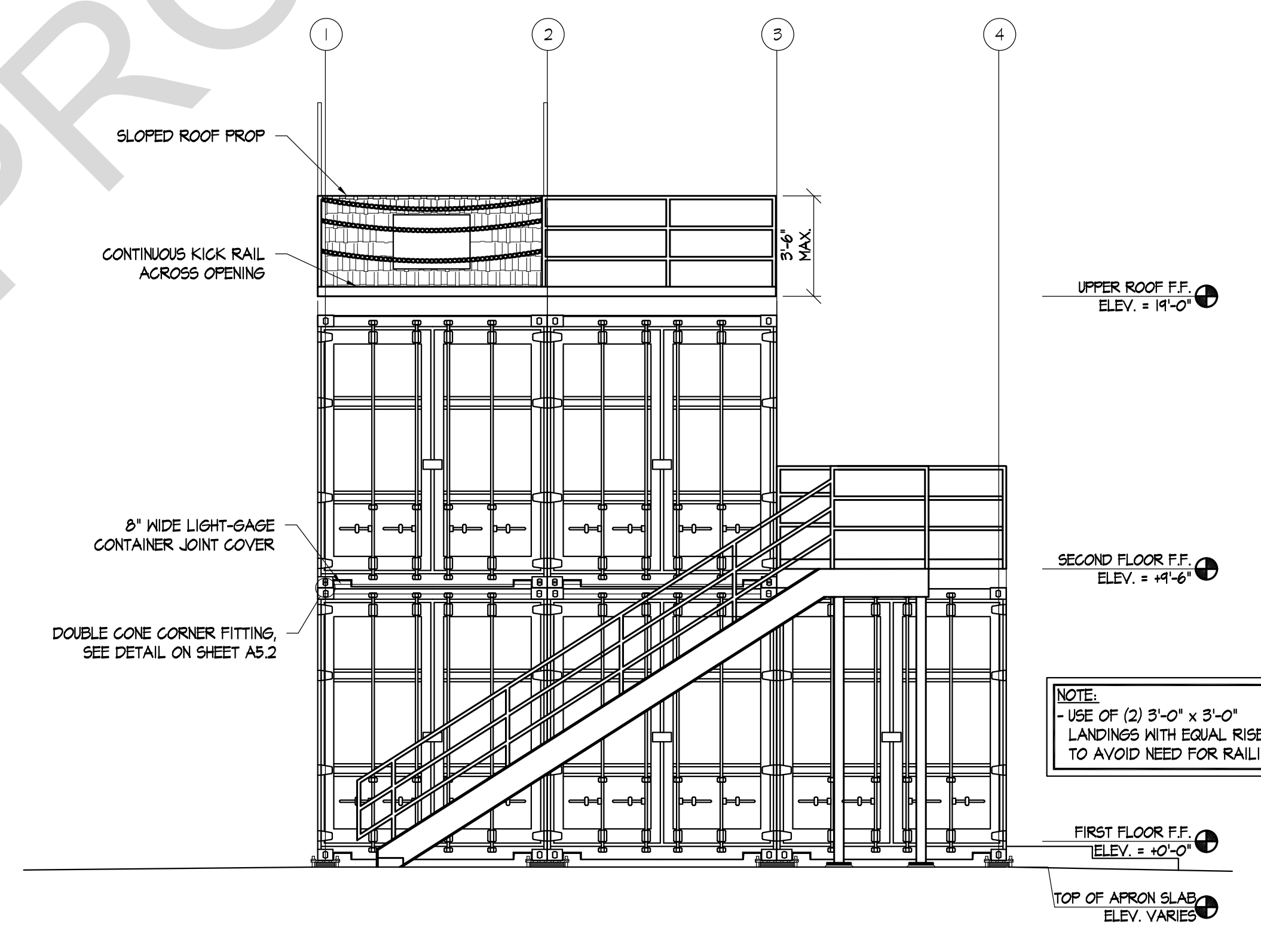
FRONT ELEVATION
 SCALE: 1/4" = 1'-0"



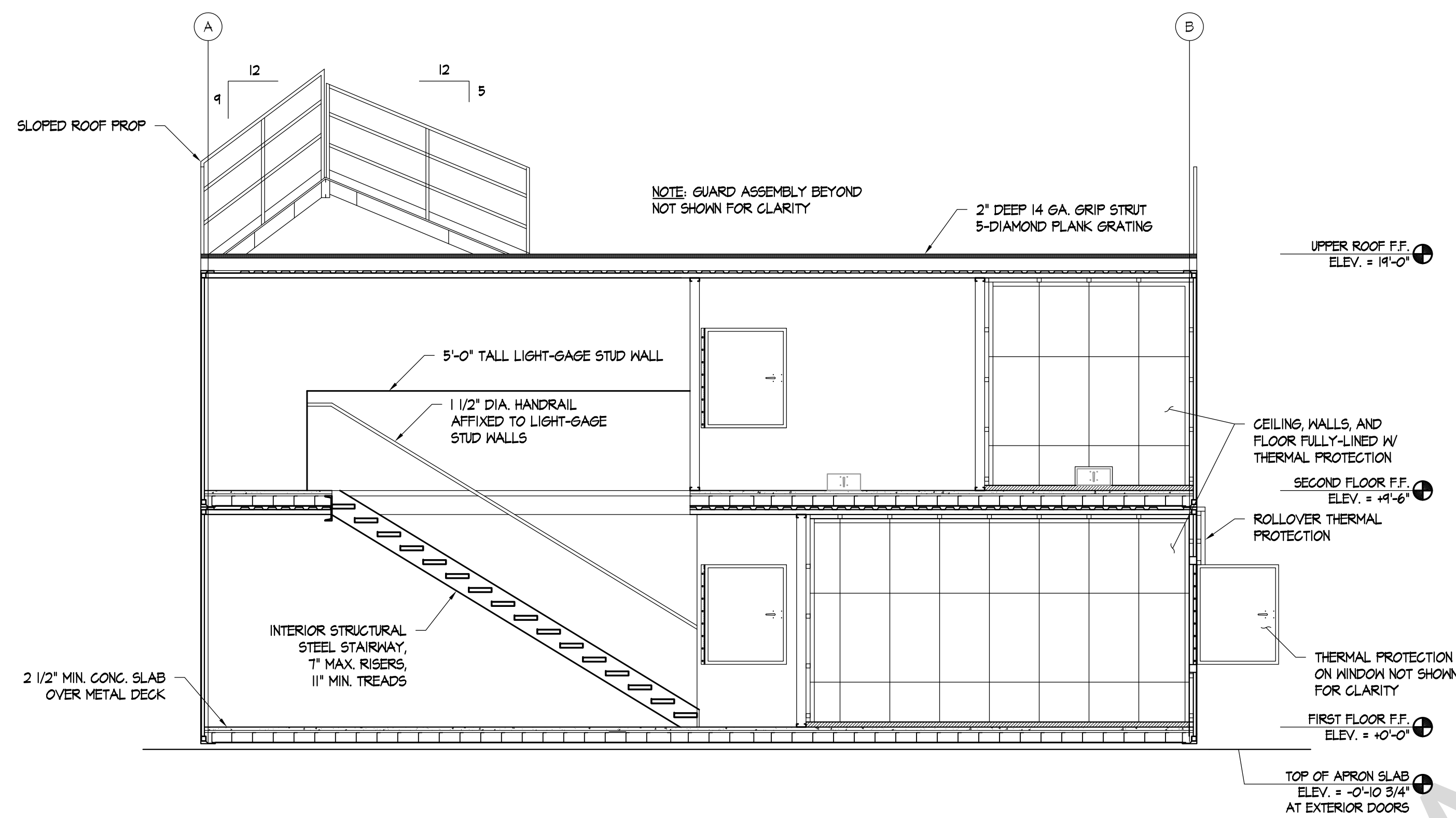
RIGHT ELEVATION
 SCALE: 1/4" = 1'-0"



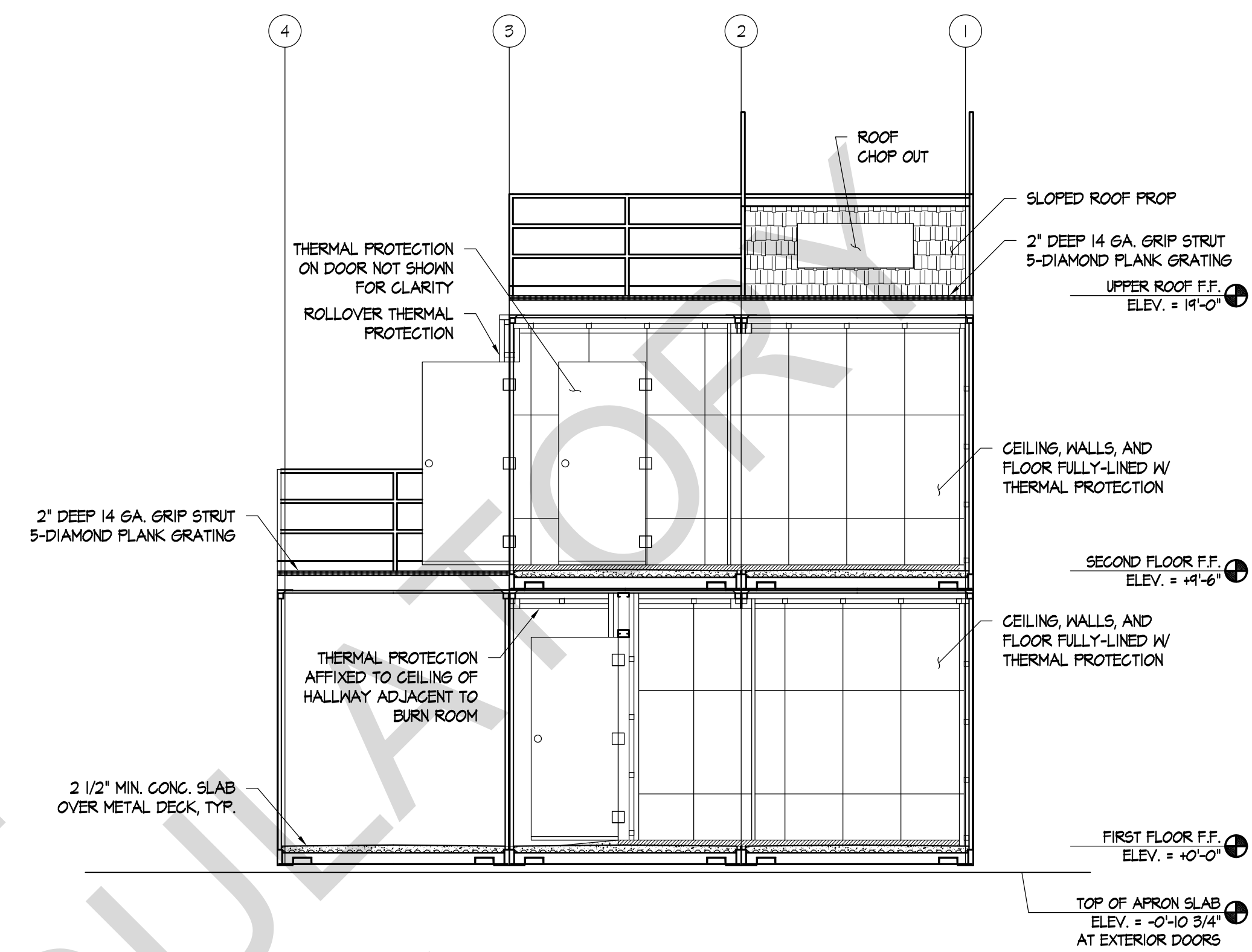
REAR ELEVATION
 SCALE: 1/4" = 1'-0"



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



SECTION
SCALE: 1/4" = 1'-0"
A1.0, A2.0, A3.0, A5.0



SECTION
SCALE: 1/4" = 1'-0"
A1.0, A2.0, A3.0, A5.0

DRAFT REGULATORY Awaiting Approval

PRIME PROFESSIONAL FIRM LOGO

Project Title
COMMONWEALTH OF VIRGINIA LIVE FIRE TRAINING STRUCTURE PROTOTYPE 4 CLASS B FUEL

SUB-CONSULTANT'S LOGO



Department of Fire Programs

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No.	REVISIONS	Date

Sheet Title
BUILDING SECTIONS

CITY/COUNTY VIRGINIA
 Drawn By: ATA Approved By: MAM
 Checked By: MAM Date: 01/31/24

PROFESSIONAL SEAL

Sheet No.
A5.0
8 of 16

PRIME PROFESSIONAL FIRM LOGO

Project Title
COMMONWEALTH OF VIRGINIA LIVE FIRE TRAINING STRUCTURE PROTOTYPE 4 CLASS B FUEL

SUB-CONSULTANT'S LOGO



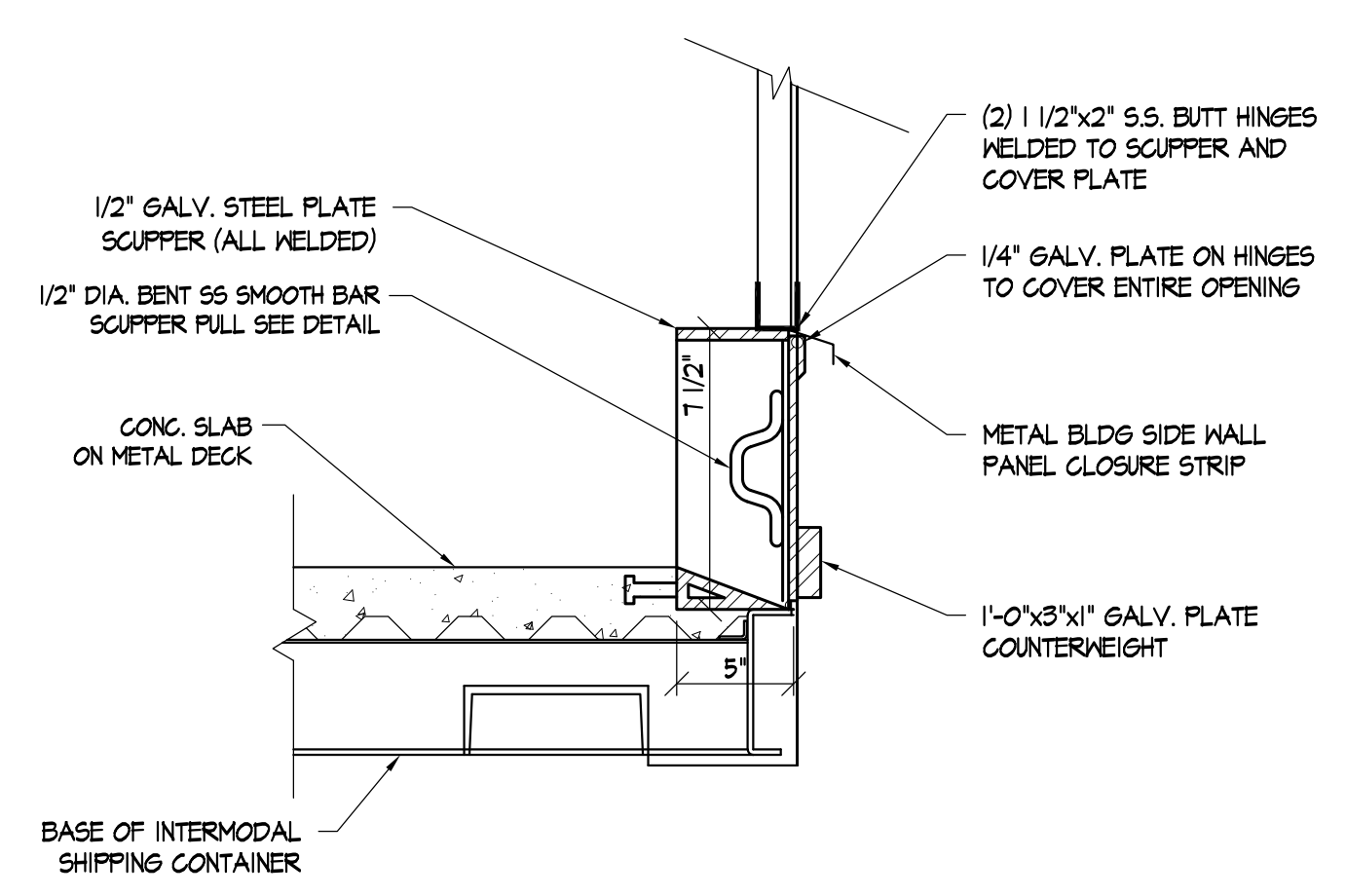
Department of Fire Programs

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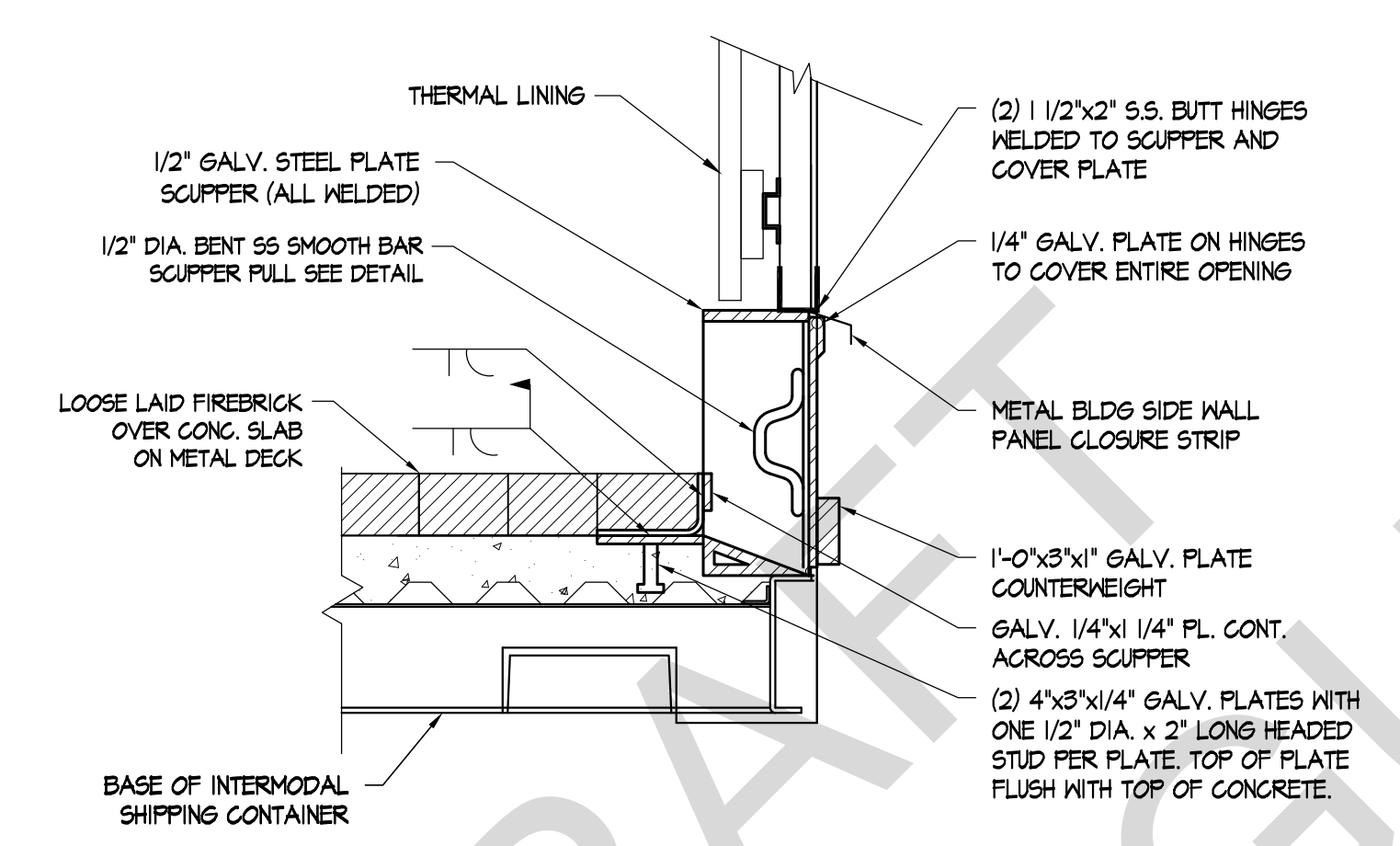
No.	REVISIONS	Date

Sheet Title
SCUPPER, RAMP, & THERMAL LINING DETAILS
 CITY/COUNTY VIRGINIA
 Drawn By: ATA Approved By: MAM
 Checked By: MAM Date: 01/31/24

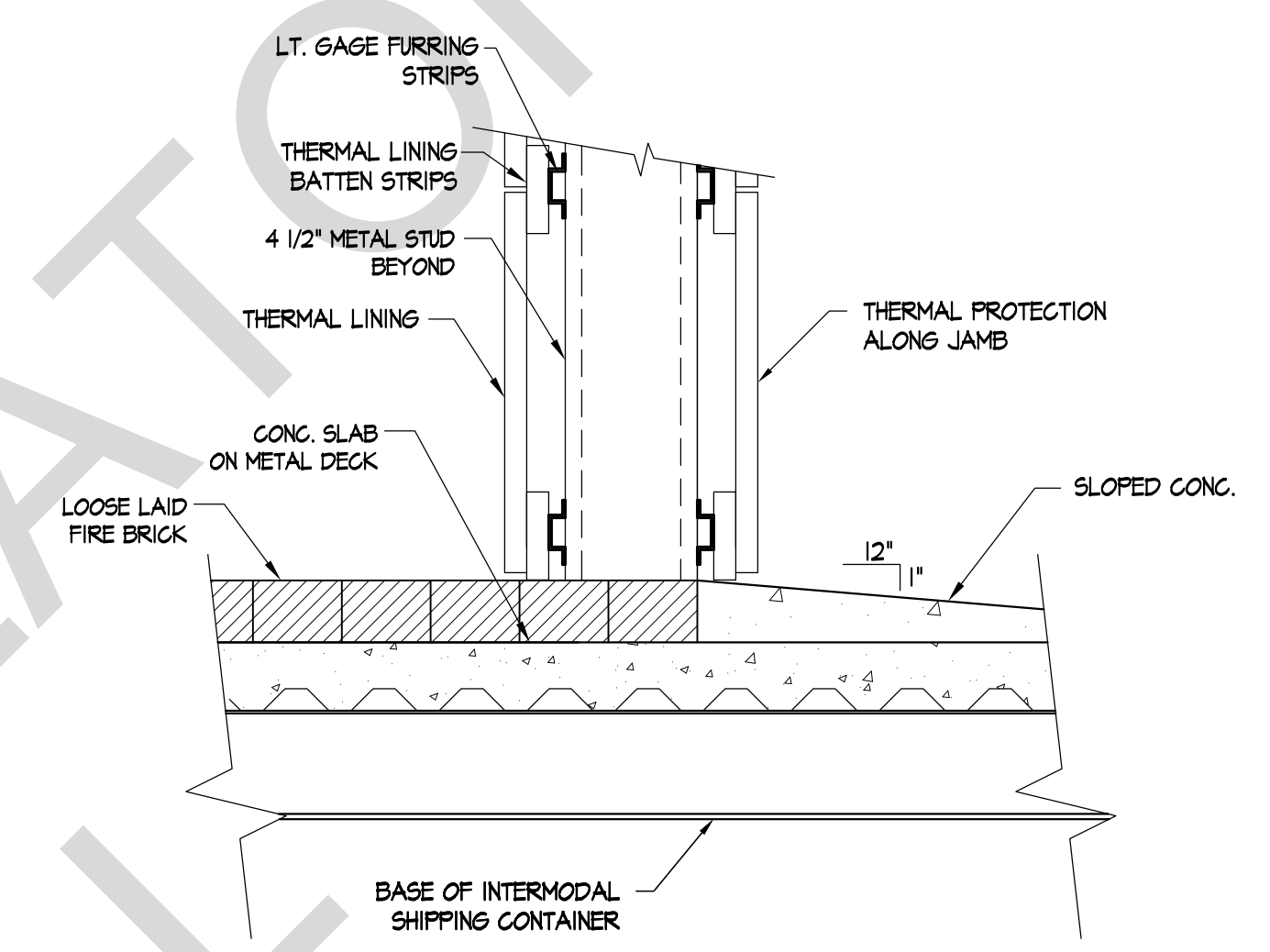
Sheet No.
A5.1
 9 of 16



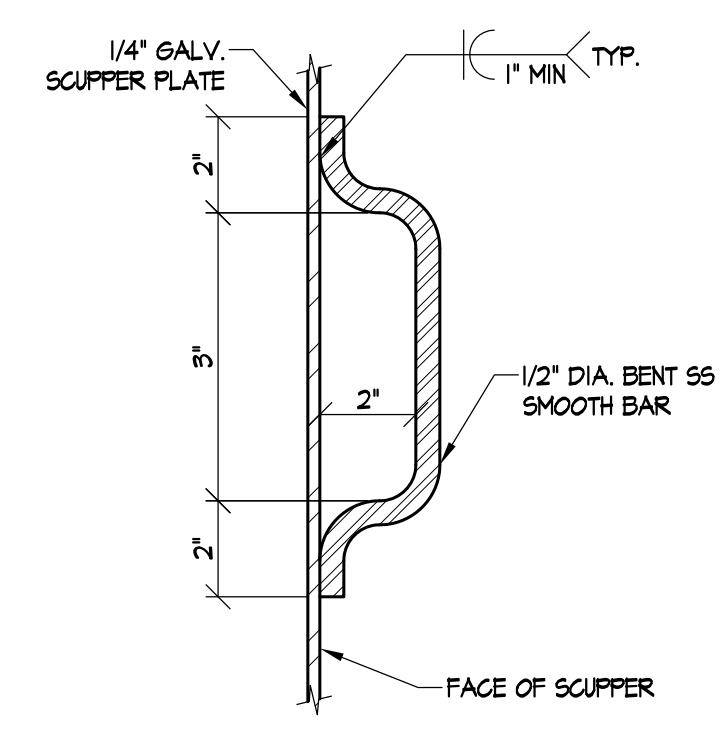
DETAIL SCUPPER W/O THERMAL PROTECTION
 SCALE: 1 1/2" = 1'-0"



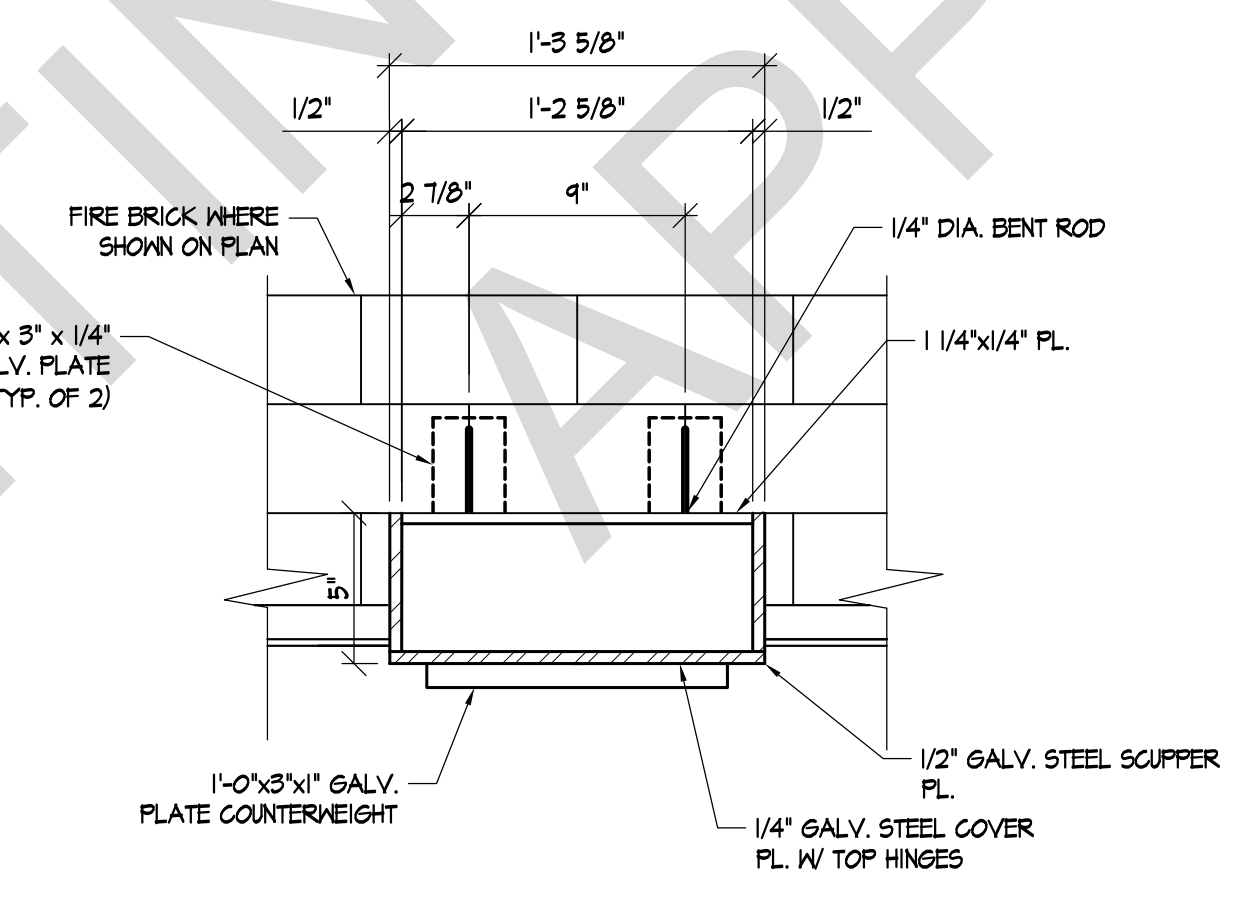
DETAIL SCUPPER W/ THERMAL PROTECTION
 SCALE: 1 1/2" = 1'-0"



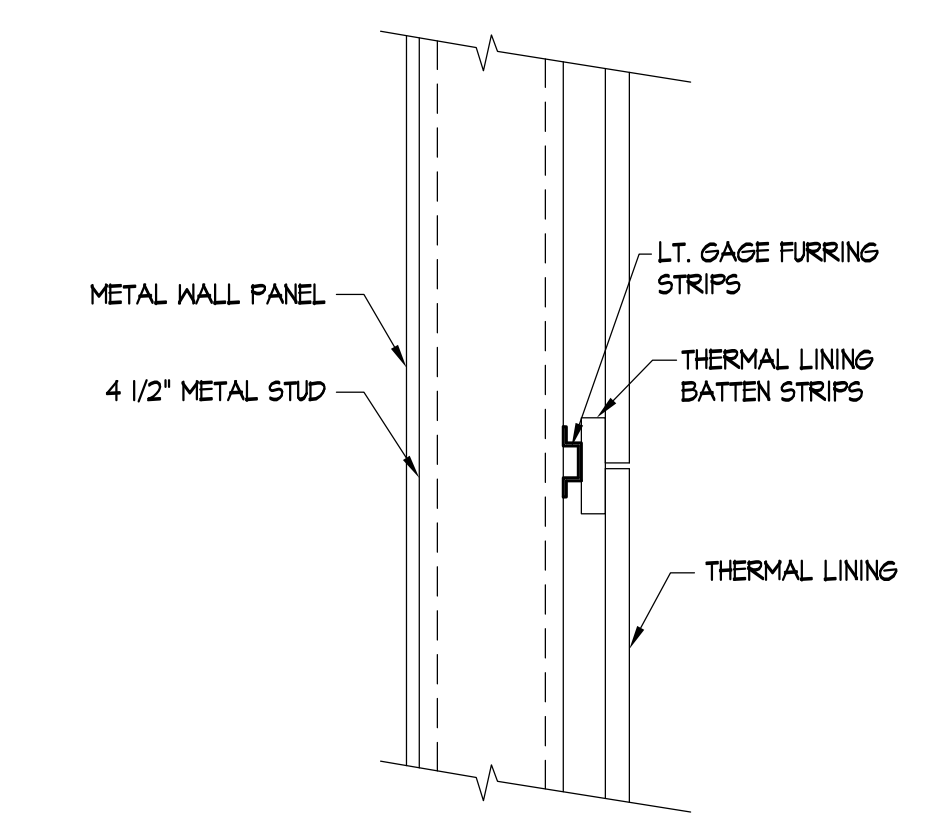
DETAIL CONG. RAMP @ BURN ROOM DOOR
 SCALE: 1 1/2" = 1'-0"



DETAIL SCUPPER FULL
 SCALE: 3" = 1'-0"

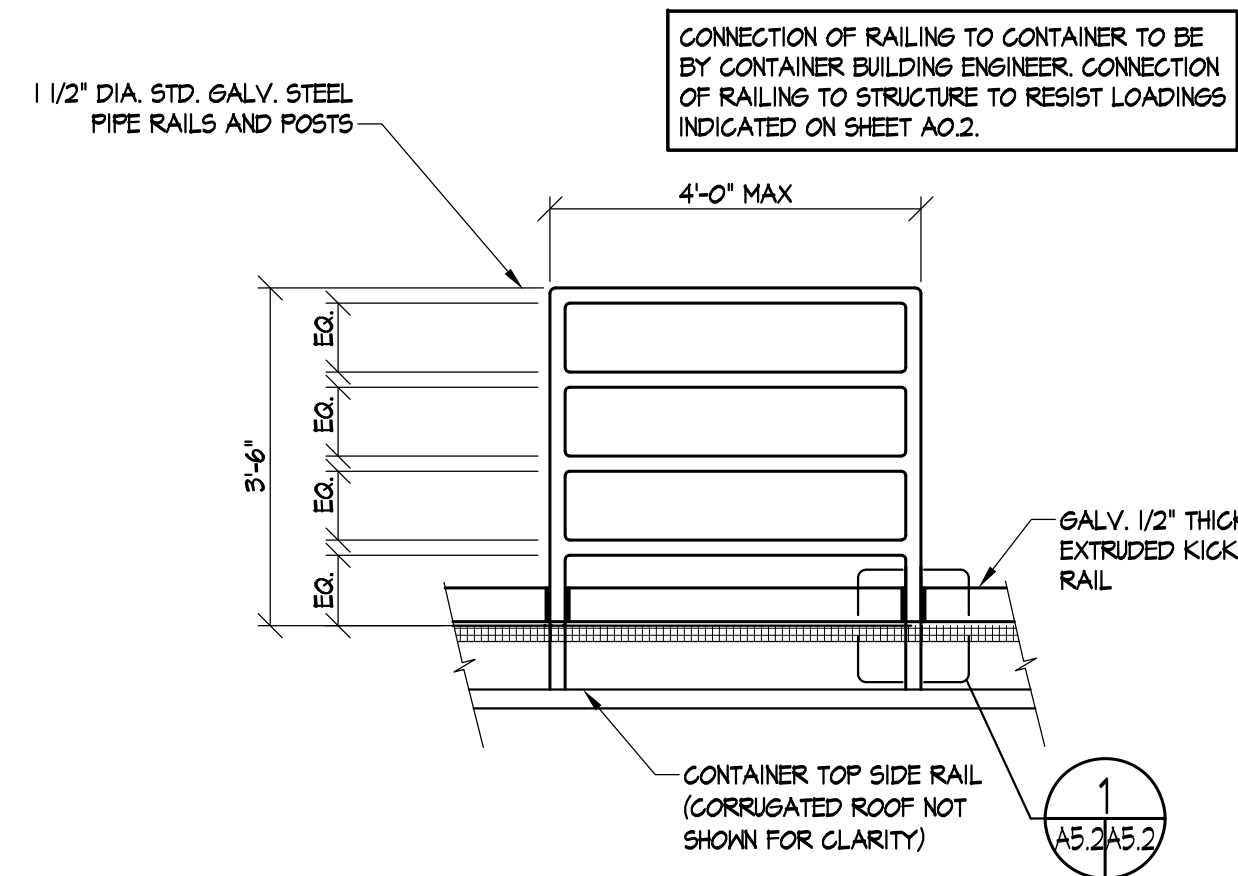


PLAN SCUPPER W/ FIREBRICK
 SCALE: 1 1/2" = 1'-0"

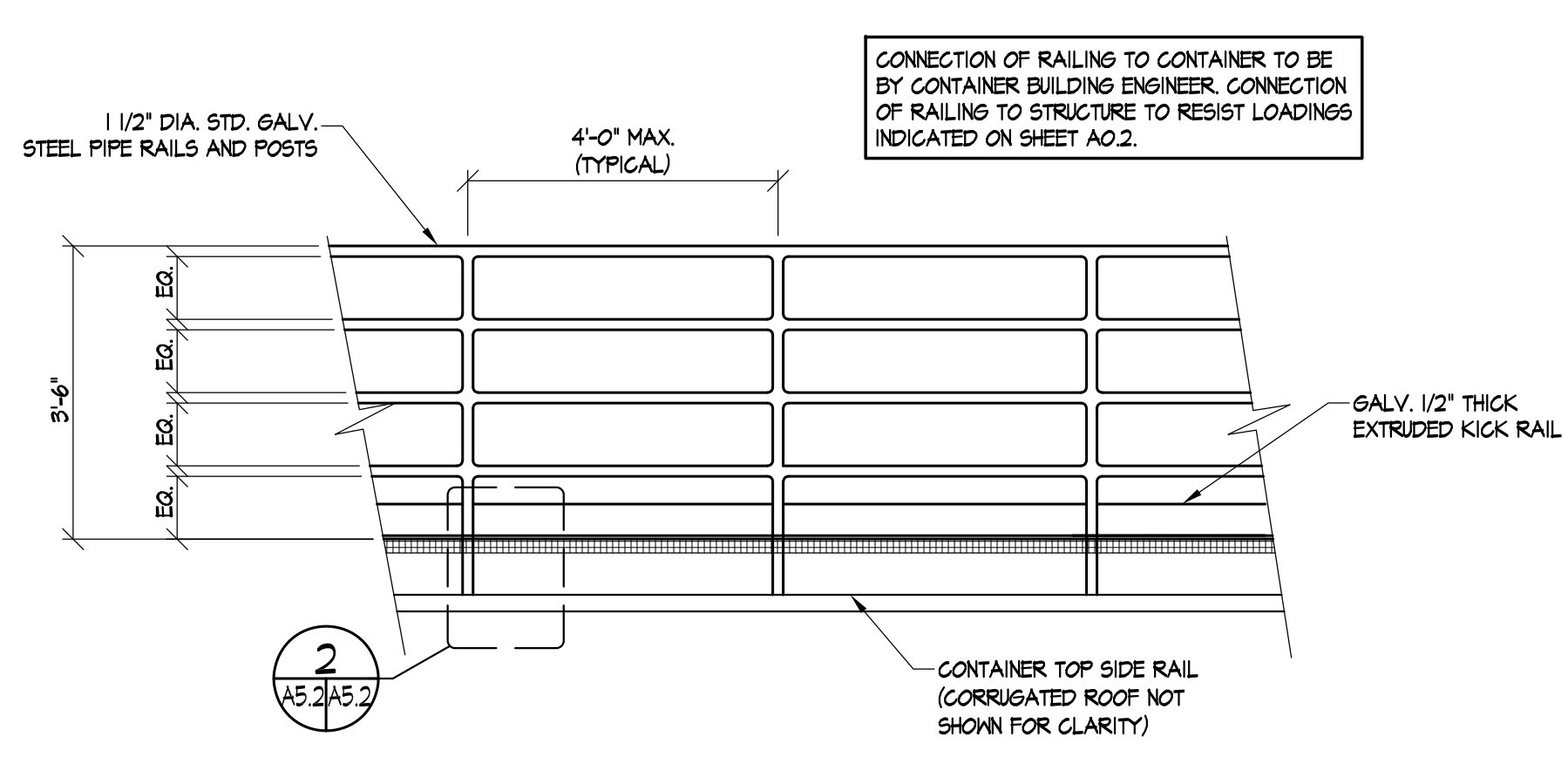


DETAIL INTERIOR BURN ROOM WALL THERMAL LINING
 SCALE: 1 1/2" = 1'-0"

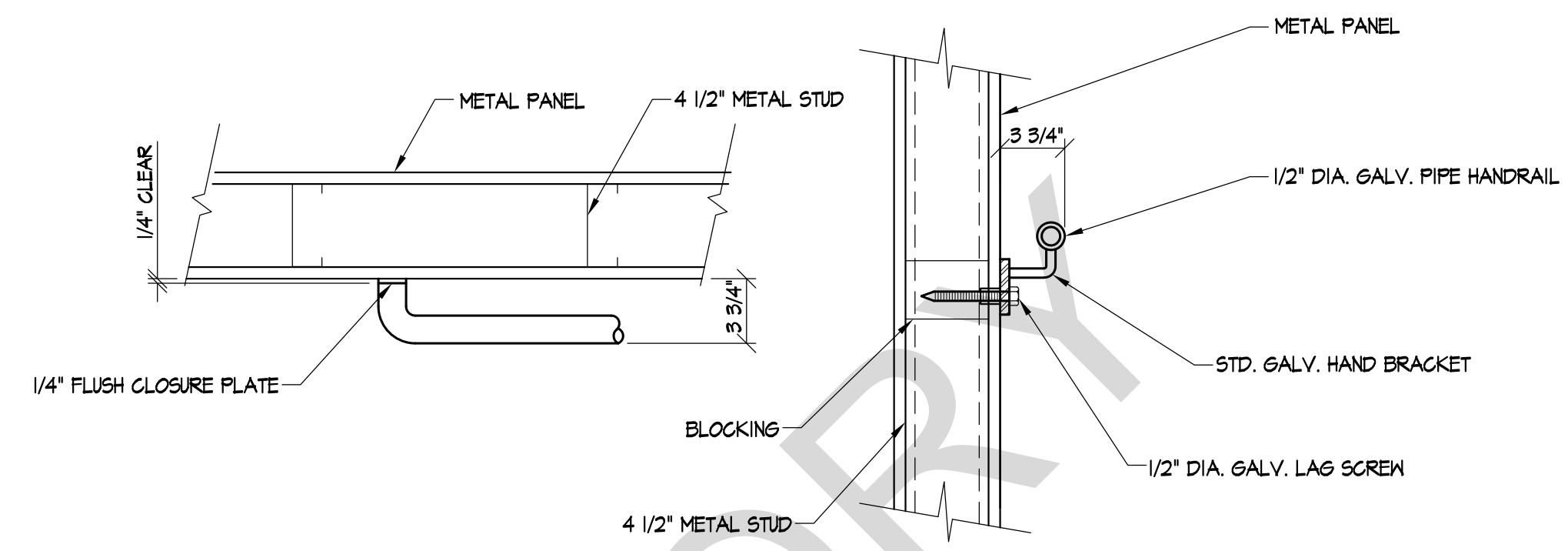
AWAITING REGULATORY APPROVAL



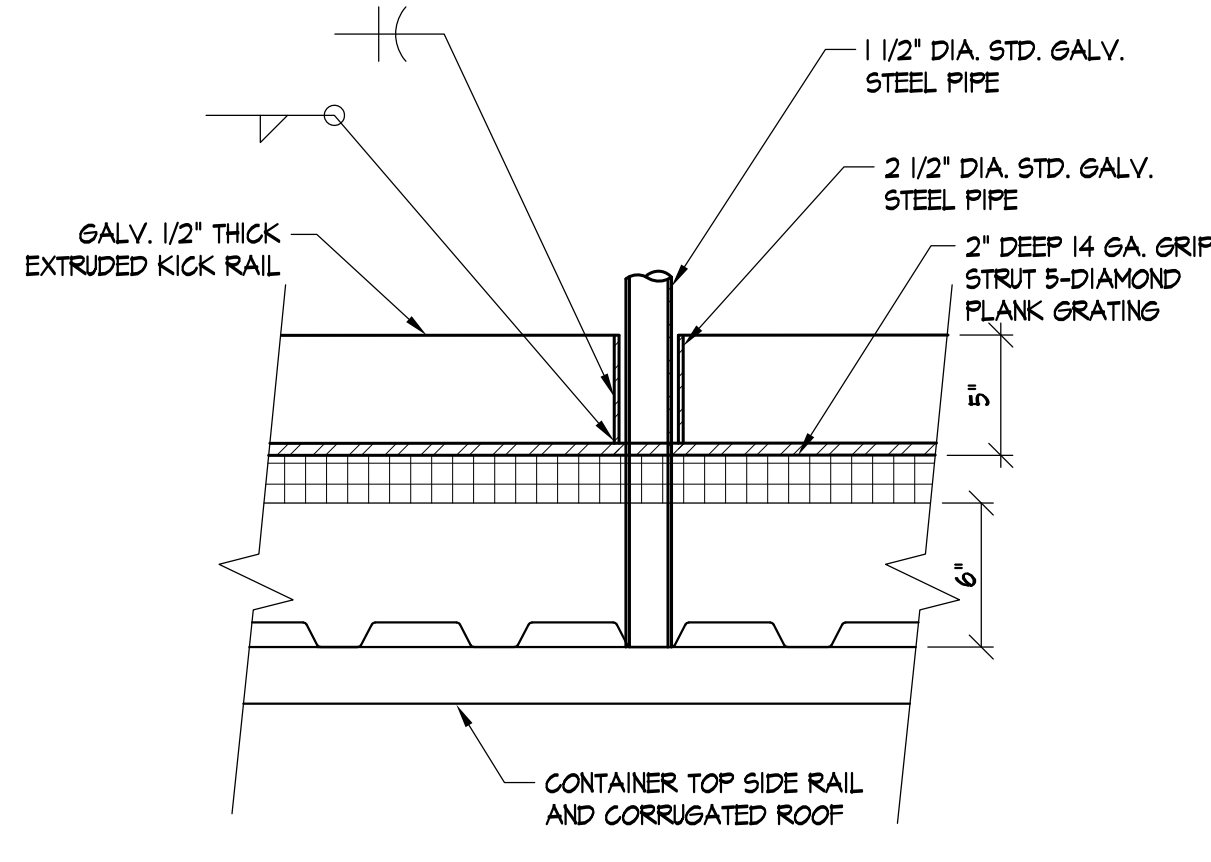
DETAIL REMOVABLE GUARDRAIL
SCALE: 1/2" = 1'-0"



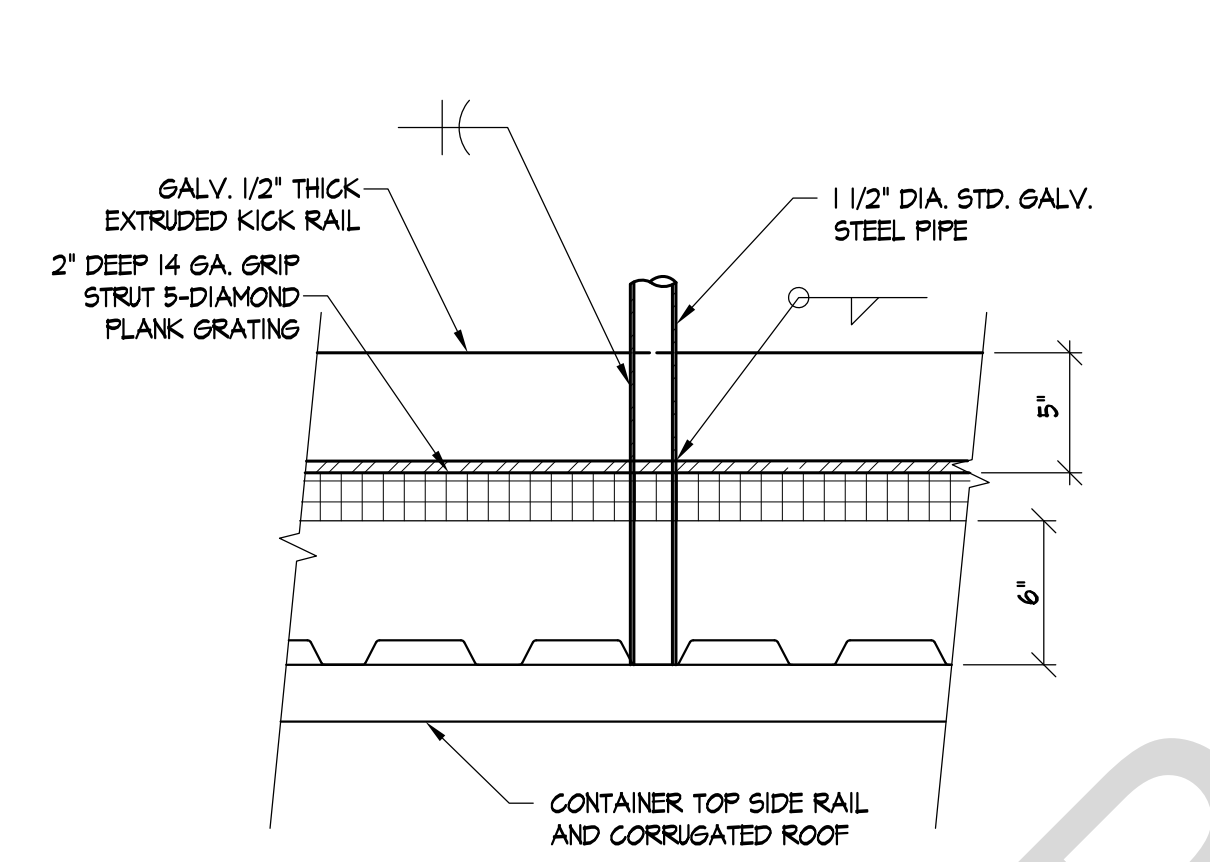
DETAIL TYPICAL GUARDRAIL
SCALE: 1/2" = 1'-0"



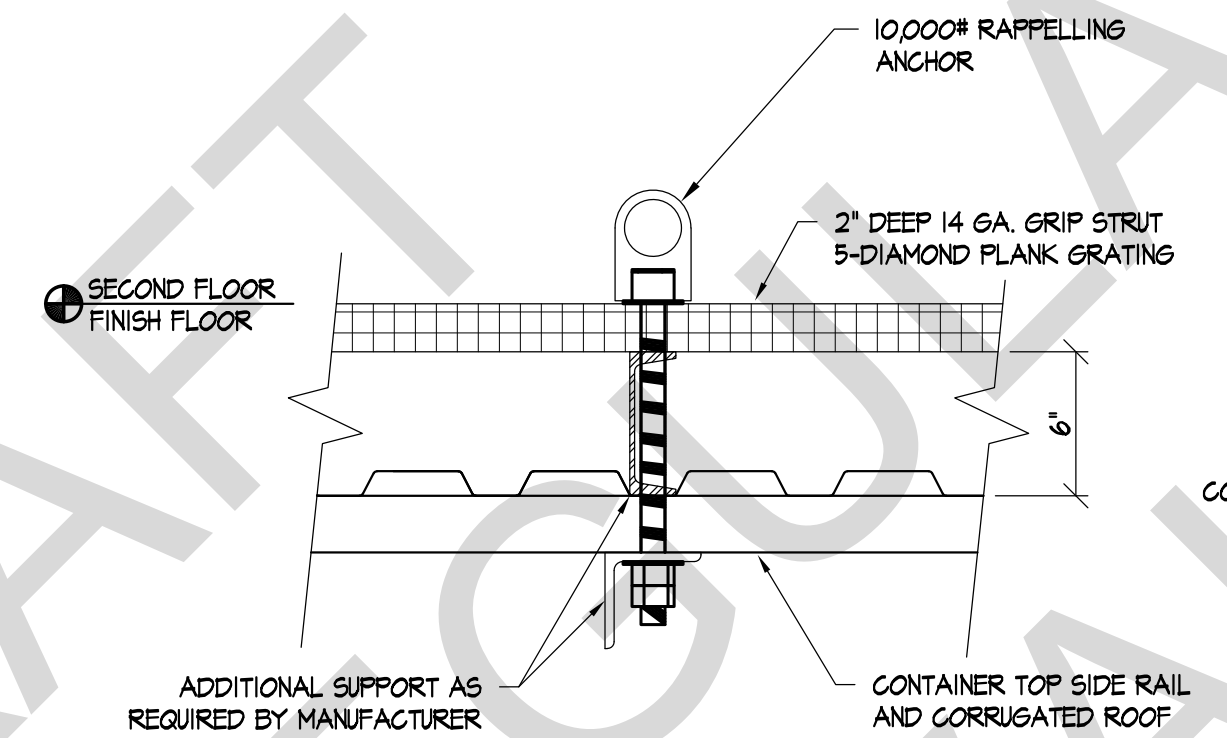
DETAIL INTERIOR HAND RAIL
SCALE: 1 1/2" = 1'-0"



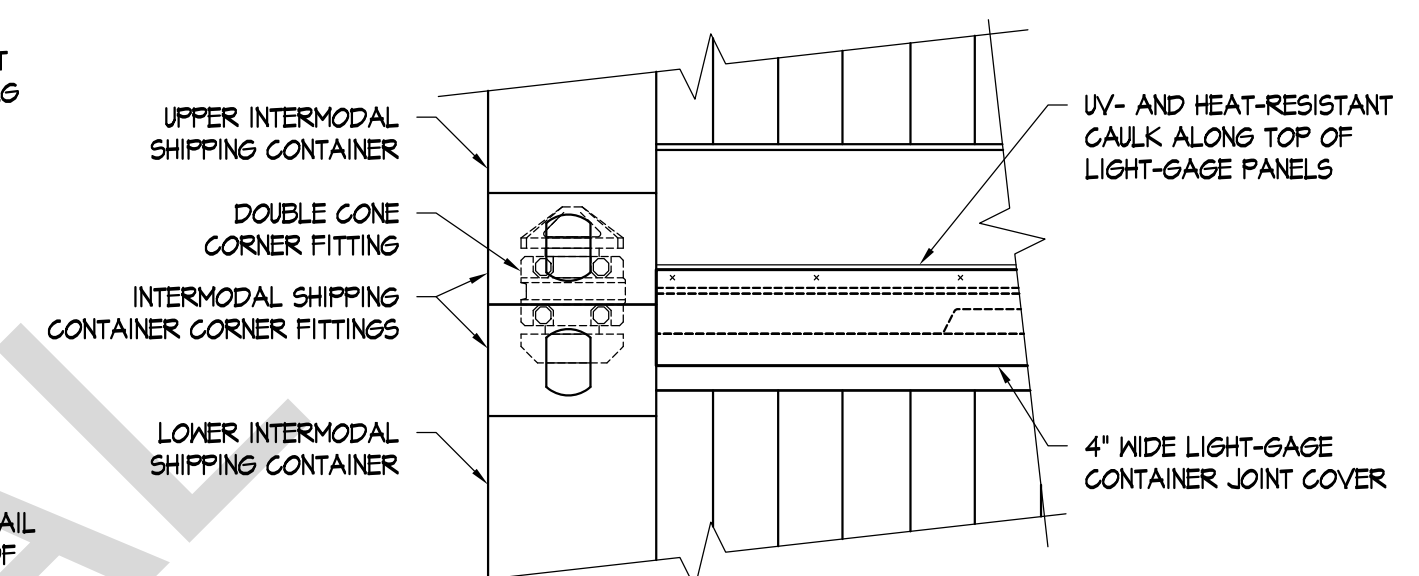
DETAIL REMOVABLE GUARDRAIL
SCALE: 1 1/2" = 1'-0"



DETAIL TYP. GUARDRAIL
SCALE: 1 1/2" = 1'-0"



DETAIL RAPELLING ANCHOR INSTALLATION DETAILS
SCALE: 1 1/2" = 1'-0"



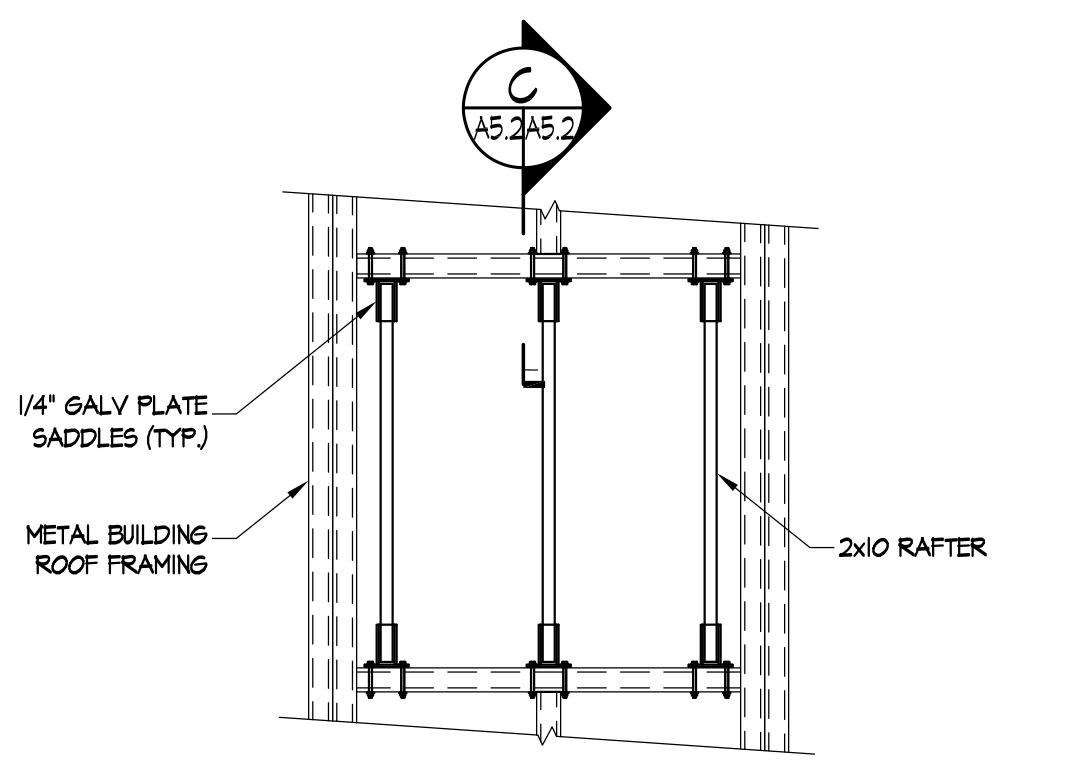
DETAIL STACKED CONTAINER CONNECTION
SCALE: 1 1/2" = 1'-0"

DETAIL REMOVABLE GUARDRAIL
SCALE: 1 1/2" = 1'-0"

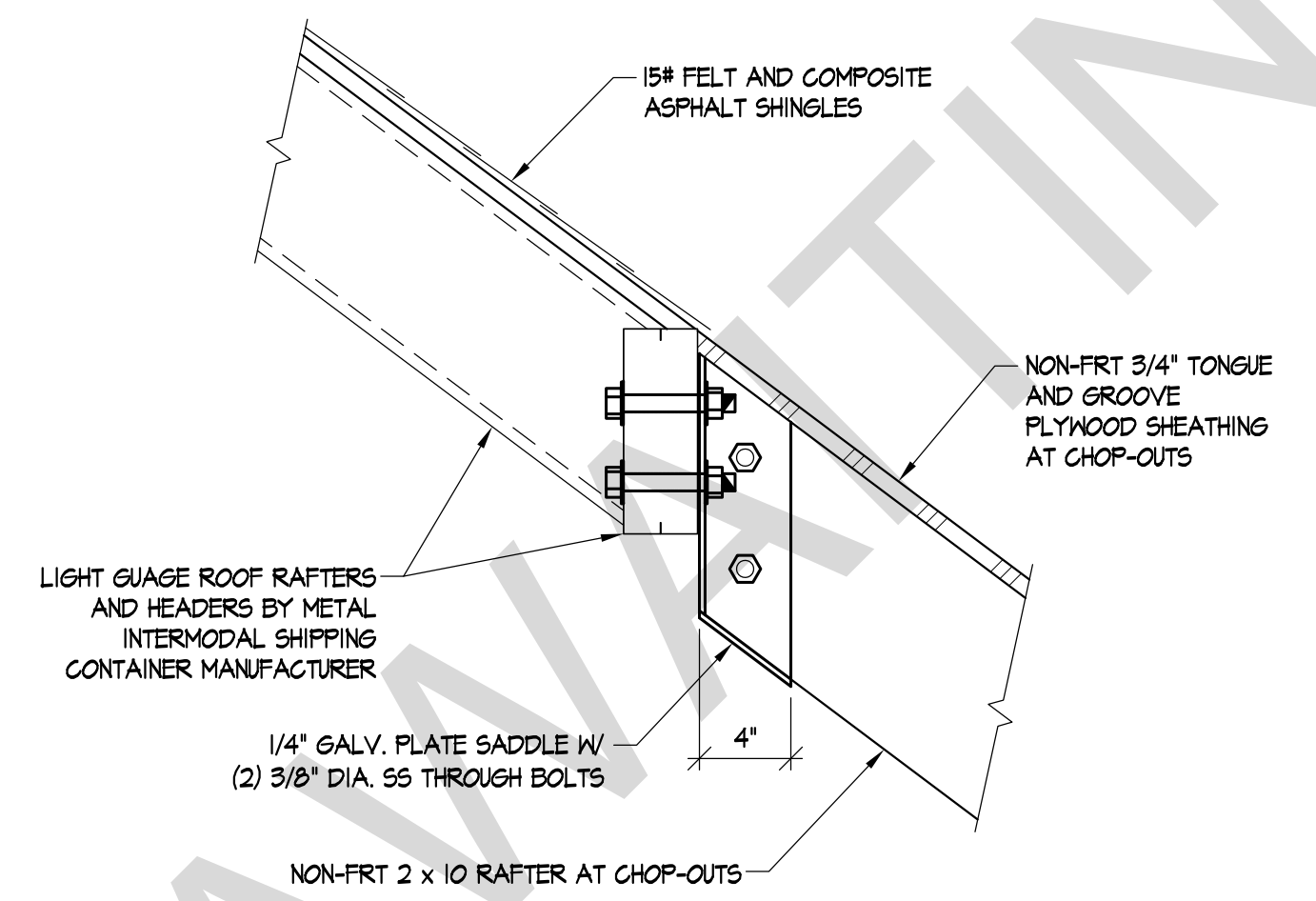
DETAIL TYP. GUARDRAIL
SCALE: 1 1/2" = 1'-0"

DETAIL RAPELLING ANCHOR INSTALLATION DETAILS
SCALE: 1 1/2" = 1'-0"

DETAIL STACKED CONTAINER CONNECTION
SCALE: 1 1/2" = 1'-0"



DETAIL CHOP OUT OPENING
SCALE: 1/2" = 1'-0"



SECTION C
SCALE: 1 1/2" = 1'-0"



DETAIL NFPA 1403 SIGNAGE
SCALE: 1 1/2" = 1'-0"

LIVE FIRE TRAINING USAGE CRITERIA

THE BUILDING HAS BEEN DESIGNED FOR THE FOLLOWING USAGE CRITERIA

1. MAXIMUM NUMBER OF LIVE FIRE TRAINING DAYS PER YEAR = UNLIMITED
2. MAXIMUM NUMBER OF LIVE FIRE TRAINING EVOLUTIONS PER DAY = 10
3. MAXIMUM DURATION OF EACH LIVE FIRE TRAINING EVOLUTION = 20 MINUTES
4. MAXIMUM SUSTAINED CEILING TEMPERATURE DURING LIVE FIRE TRAINING = 550°F
5. MAXIMUM CEILING TEMPERATURE SPIKE DURING LIVE FIRE TRAINING = 100°F
6. ONLY CLASS "B" FUEL MATERIALS SHALL BE USED FOR LIVE FIRE TRAINING
7. LIVE FIRE TRAINING SHALL BE IN ACCORDANCE WITH NFPA 1403 AND THE WRITTEN GUIDELINES OF THE VIRGINIA DEPARTMENT OF FIRE PROGRAMS
8. LIVE FIRE TRAINING SHALL OCCUR IN BURN ROOMS ONLY. BURN ROOMS ARE 104 AND 204. NO FIRES ARE ALLOWED IN ROOMS 101, 102, 103, 201, 202, 203, MONITORING EQUIPMENT ROOM, ON THE STAIRS, LANDINGS OR ON THE LOW ROOF.
9. BURN BUILDING PROP IS EQUIPPED W/ STROBE LIGHT & SIREN SET TO GO OFF WHEN TEMPERATURES EXCEED ACCEPTABLE LEVELS. IN THE EVENT OF TRIGGERING THE SIREN & STROBE, THE TRAINING EVOLUTION SHALL BE TERMINATED AND THE HEAT SOURCE IMMEDIATELY EXTINGUISHED.
10. NO TRAINING THAT INCLUDES TEAR GAS, EXPLOSIVES, FIRE ARMS, OR FORCED ENTRY SHALL OCCUR WITHIN OR NEAR THE BUILDING.
11. NO VEHICLES SHALL BE ALLOWED WITHIN 15'-0" OF THE BUILDING.
12. REPLACE ALL DAMAGED THERMAL LININGS PRIOR TO CONDUCTING FURTHER LIVE FIRE TRAINING EVOLUTIONS.

DETAIL USE CRITERIA SIGNAGE
SCALE: 3" = 1'-0"



Project Title
COMMONWEALTH OF VIRGINIA LIVE FIRE TRAINING STRUCTURE PROTOTYPE 4 CLASS B FUEL



Department of Fire Programs

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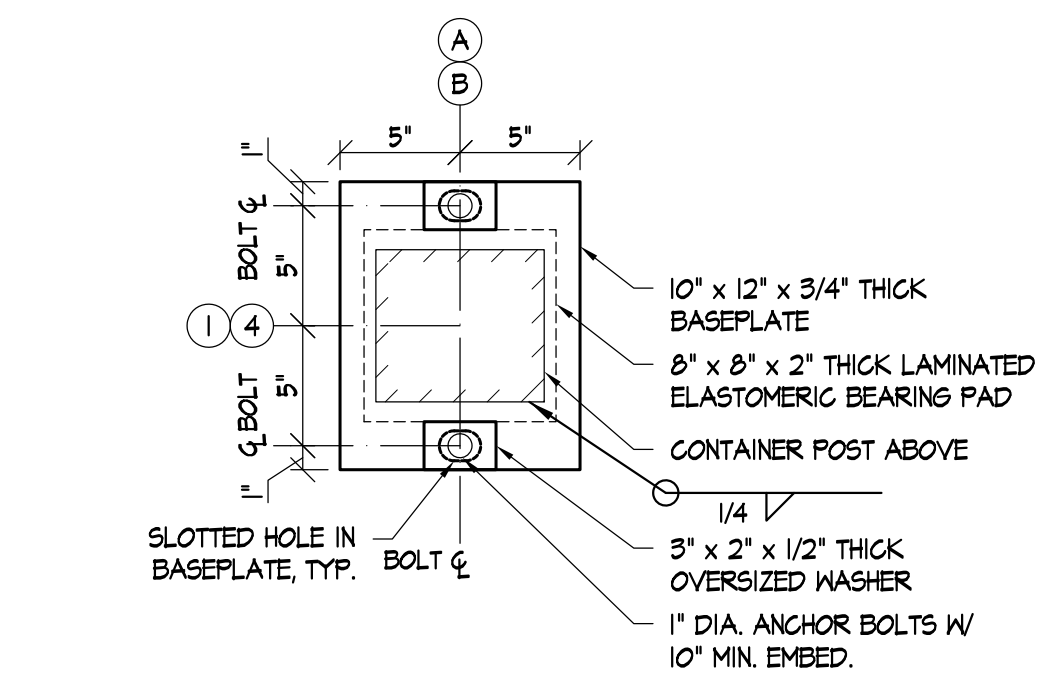
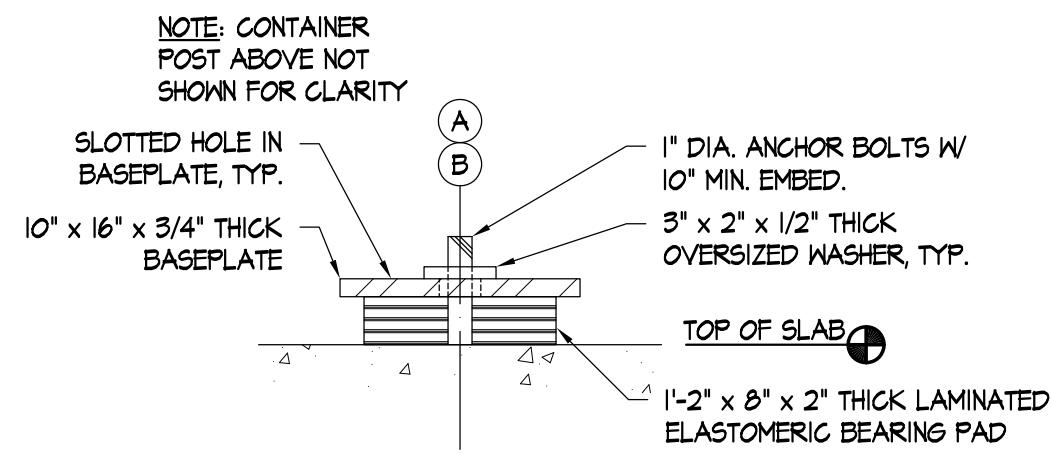
No.	REVISIONS	Date

Sheet Title
SIGNAGE, RAILING & CHOP OUT DETAILS

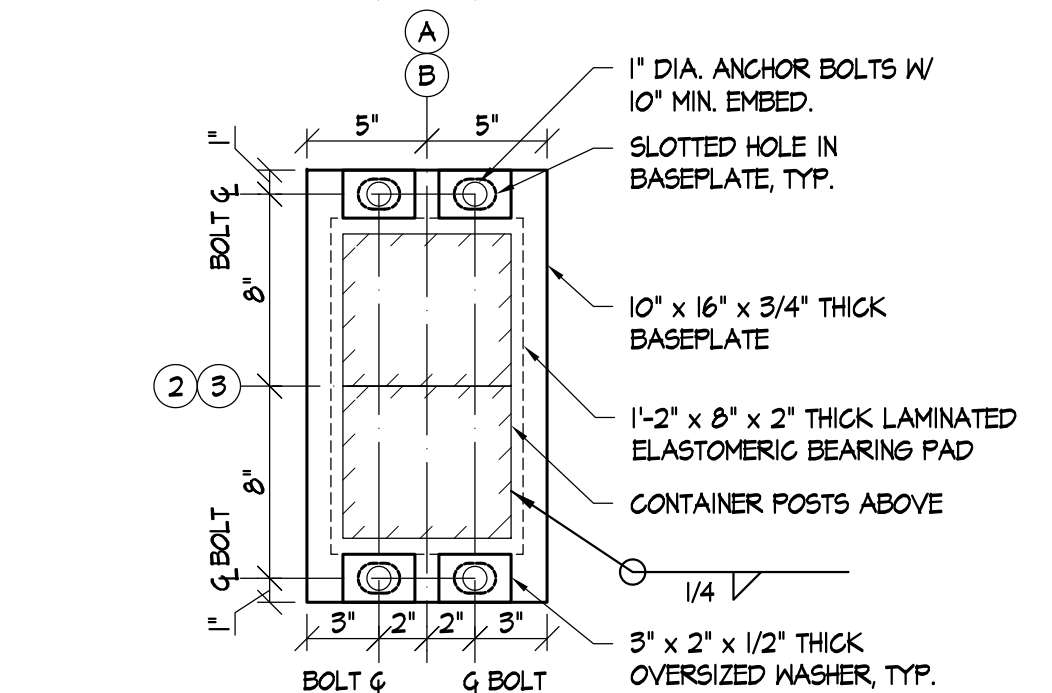
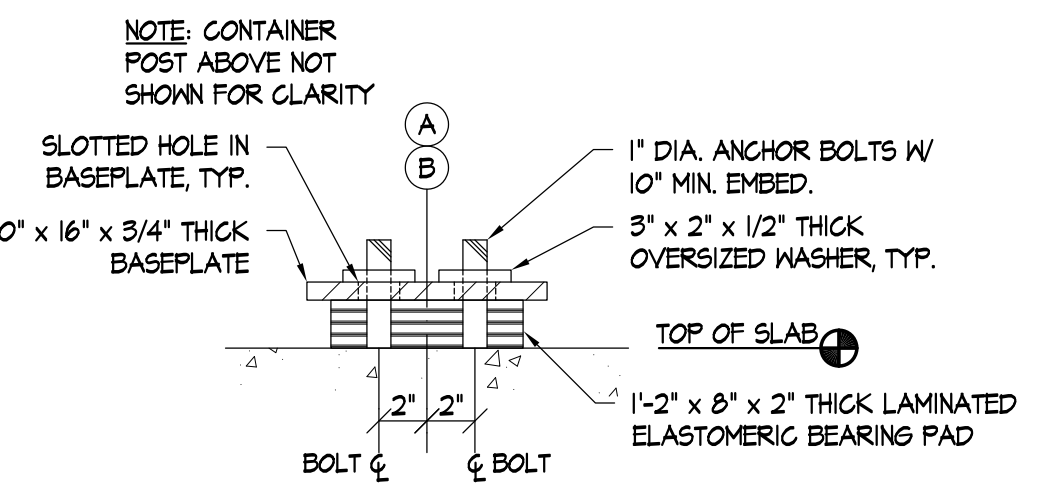
CITY/COUNTY: VIRGINIA
 Drawn By: ATA Approved By: MAM
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Sheet No.
A5.2
10 of 16

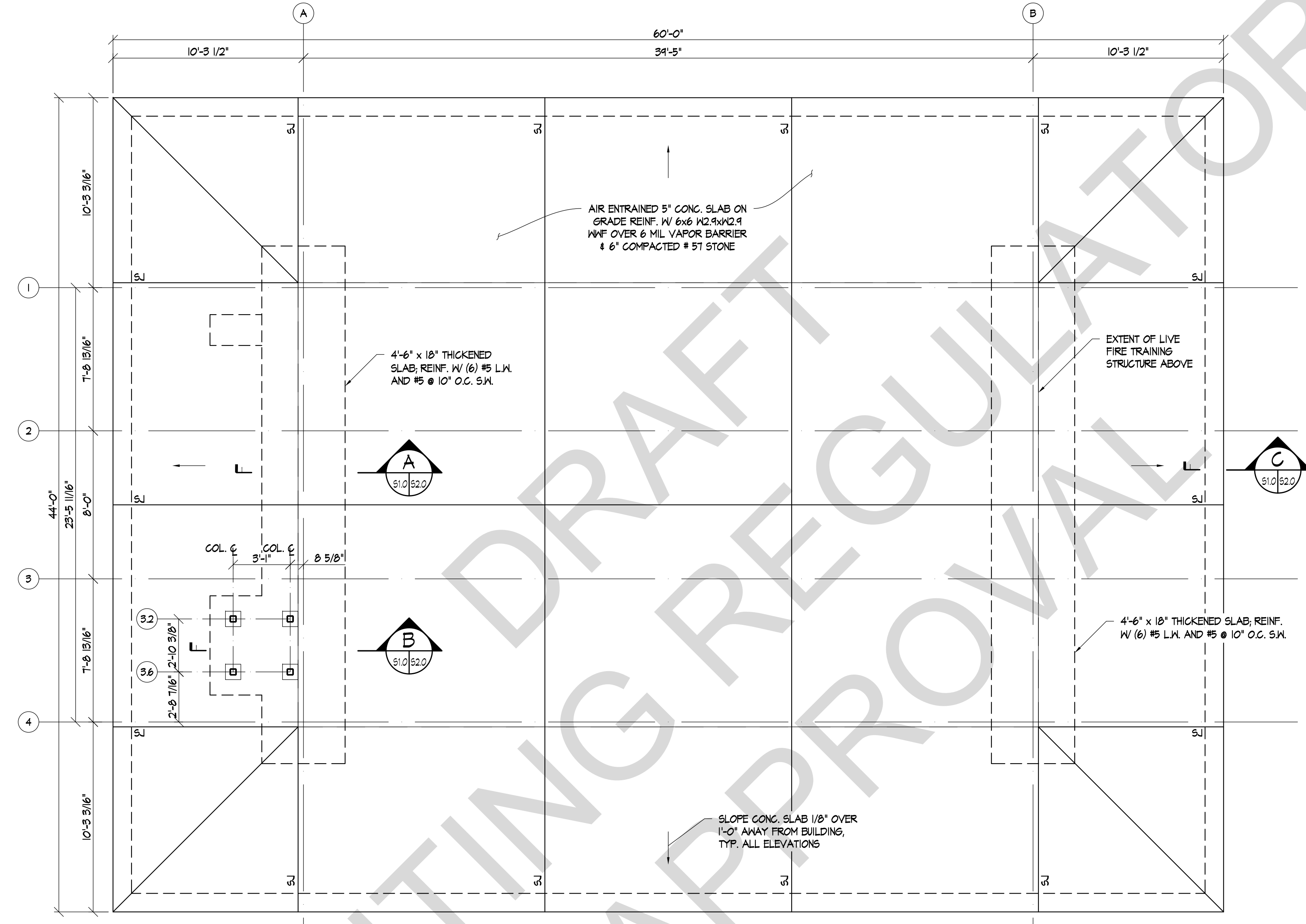


DETAIL BASE PLATE
SCALE: 1 1/2" = 1'-0"
SINGLE POST



DETAIL BASE PLATE
SCALE: 1 1/2" = 1'-0"
DOUBLE POST

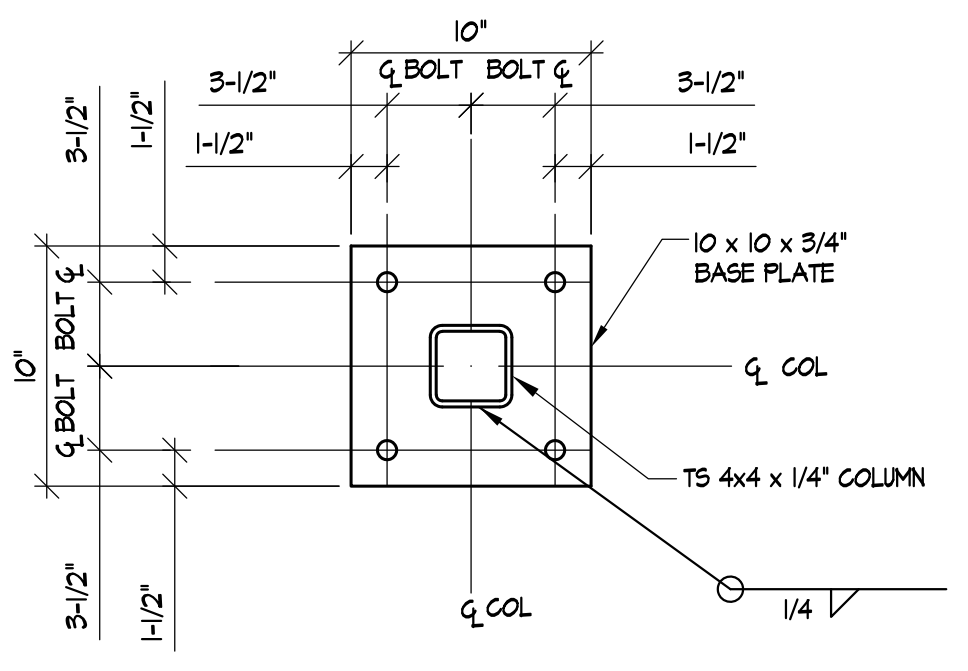
- LAMINATED ELASTOMERIC BEARING PAD NOTES:**
- ALL LAMINATED ELASTOMERIC BEARING PADS SHALL BE OF 55 DUROMETER (HARDNESS) ELASTOMER. STEEL LAMINATE SHALL CONFORM TO ASTM A101, GRADE 36 OR BETTER.
 - LAMINATED ELASTOMERIC BEARING PADS SHALL BE MOLDED AS A SINGLE UNIT.
 - AREA OF CONCRETE SLAB ON GRADE ON WHICH BEARING PADS WILL BE MOUNTED SHALL BE FINISHED TO A TRULY LEVEL PLATE AT THE EXACT REQUIRED ELEVATION. IF FULL CONTACT IS NOT ACHIEVED AFTER THE INTERMODAL SHIPPING CONTAINERS ARE ERECTED, FIELD ADJUSTMENTS SHALL BE MADE BY THE CONTRACTOR TO ENSURE FULL CONTACT.
 - WELDING WHILE THE LAMINATED BEARING PAD IS IN CONTACT WITH THE METAL IS DISCOURAGED. WHERE WELDING IS REQUIRED, TEMPERATURE INDICATING MAX PENS OR OTHER SUITABLE MEANS SHALL BE UTILIZED TO ENSURE THE PAD NOT BE EXPOSED TO TEMPERATURES GREATER THAN 250°F.
 - ALL BEARINGS SHALL BE MARKED PRIOR TO SHIPPING AND SHALL BE PERMANENT AND VISIBLE AFTER THE BEARING IS INSTALLED.



FOUNDATION PLAN

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

- NOTES:**
- FOUNDATION PROVIDED FOR INTERMODAL SHIPPING CONTAINER STRUCTURE.
 - SEE SHEET A10 FOR SLAB ELEVATIONS AND SLOPES.
 - SLOPE TOP & BOTTOM OF SLAB TO MAINTAIN THICKNESS INDICATED.
 - DIMENSIONS TO COLUMN LINES A & B AND GRID LINES 1 & 4 ARE INTENDED TO BE TO THE CENTER OF THE COUPLING.



DETAIL COL. BASE PLATE
SCALE: 1 1/2" = 1'-0"

PRIME PROFESSIONAL FIRM LOGO

Project Title
COMMONWEALTH OF VIRGINIA LIVE FIRE TRAINING STRUCTURE PROTOTYPE 4 CLASS B FUEL

SUB-CONSULTANT'S LOGO



Department of Fire Programs

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Sheet Title
FOUNDATION PLAN

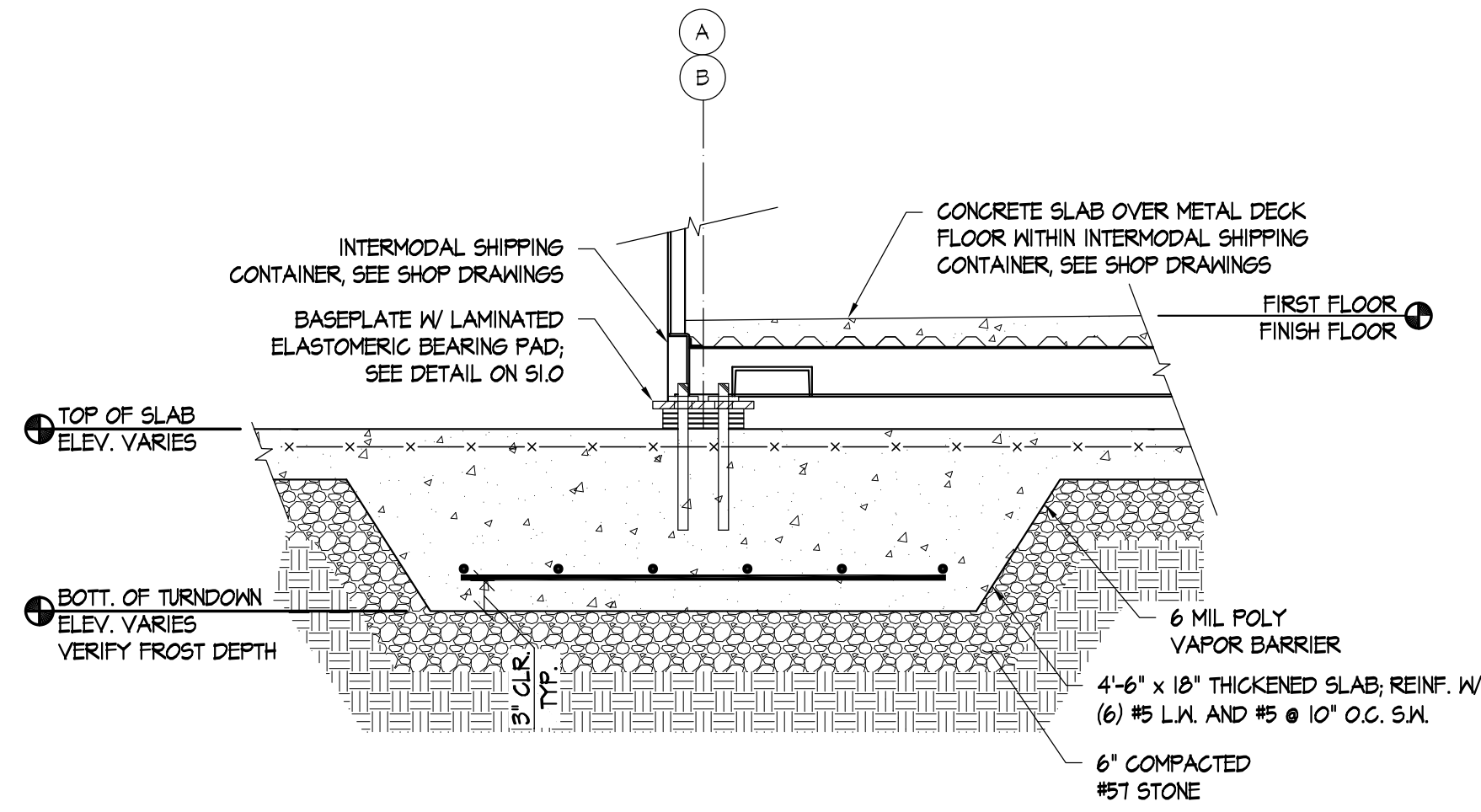
CITY/COUNTY VIRGINIA
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Sheet No.

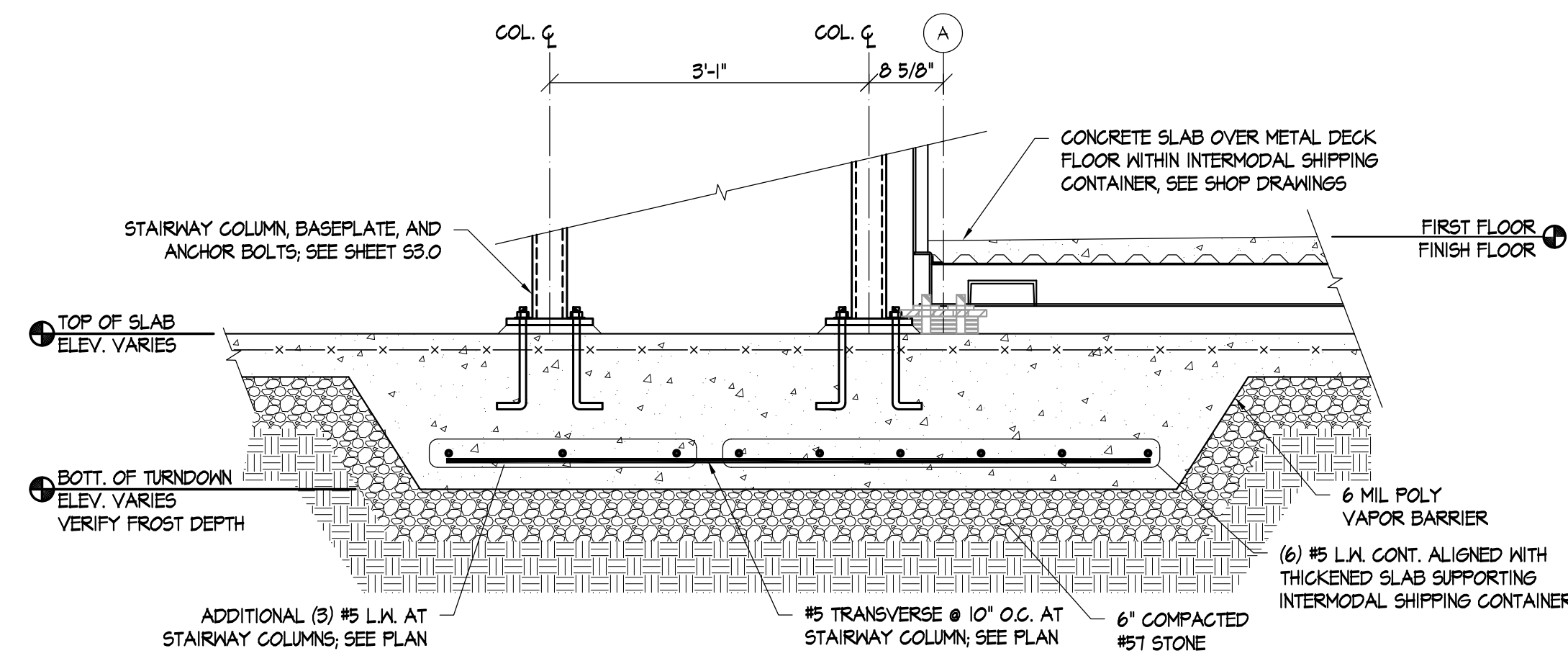
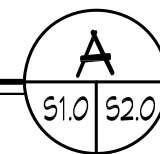
S1.0

11 of 16



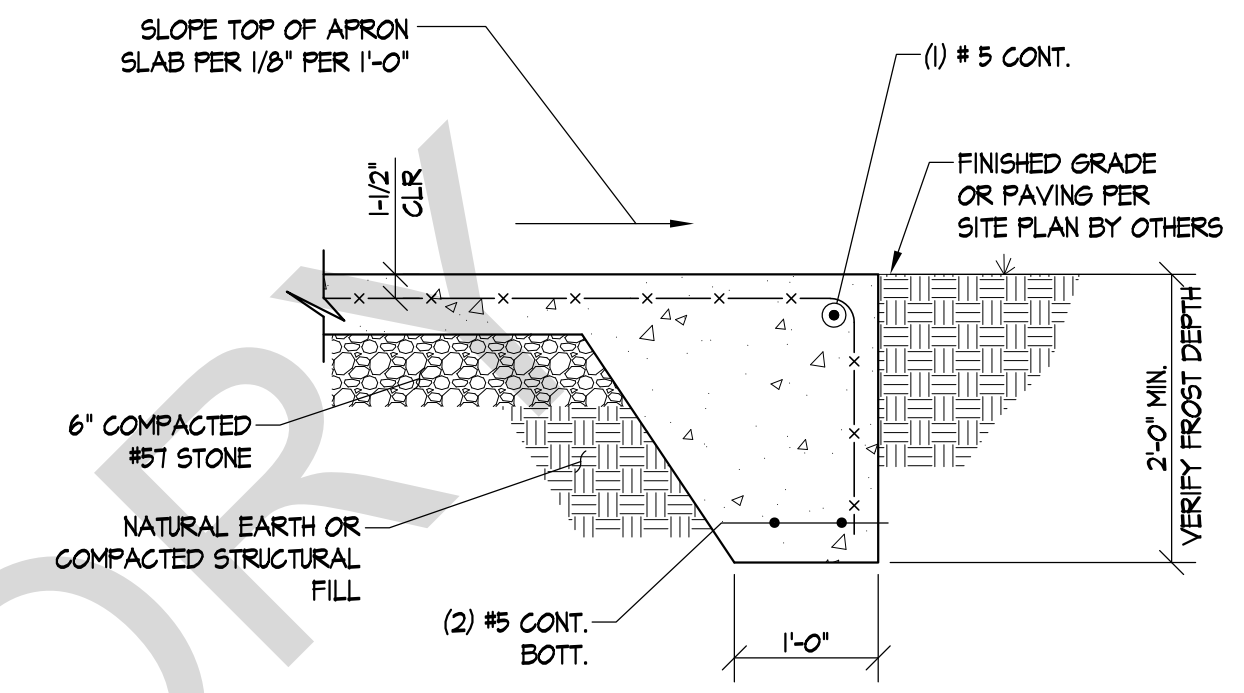
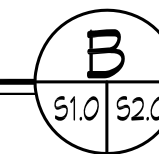
SECTION

SCALE: 3/4" = 1'-0"



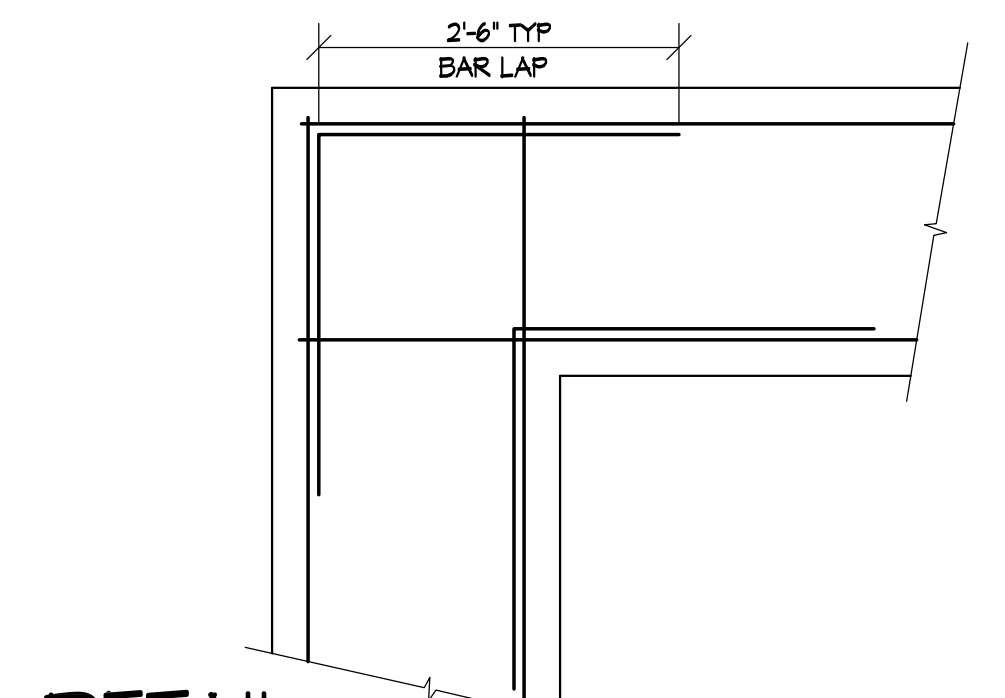
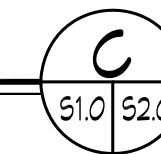
SECTION

SCALE: 3/4" = 1'-0"



SECTION

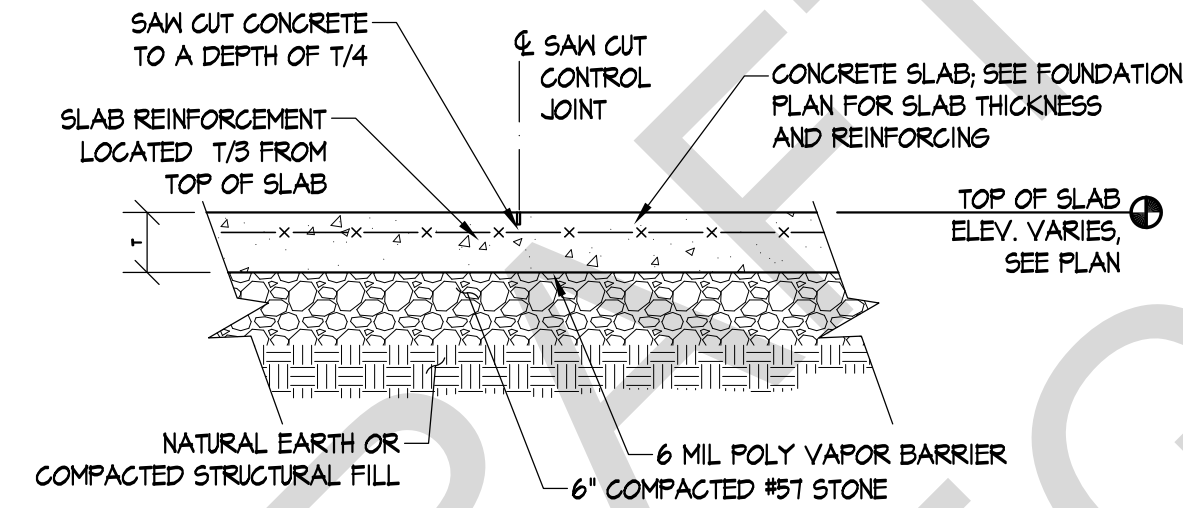
SCALE: 3/4" = 1'-0"



DETAIL

SCALE: 3/4" = 1'-0"

CORNER BAR
FOOTING REINF. SPLICE



DETAIL

SCALE: 3/4" = 1'-0"

SAW CUT JOINT

PRIME PROFESSIONAL FIRM LOGO

Project Title
COMMONWEALTH OF VIRGINIA LIVE FIRE TRAINING STRUCTURE PROTOTYPE 4 CLASS B FUEL

SUB-CONSULTANT'S LOGO



Department of Fire Programs

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Sheet Title
FOUNDATION SECTIONS & DETAILS

CITY/COUNTY VIRGINIA
 Drawn By: ATA Approved By: MAM
 Checked By: MAM Date: 01/31/24

PROFESSIONAL SEAL

Sheet No.
S2.0
12 of 16

PRIME PROFESSIONAL FIRM LOGO

Project Title
COMMONWEALTH OF VIRGINIA LIVE FIRE TRAINING STRUCTURE PROTOTYPE 4 CLASS B FUEL

SUB-CONSULTANT'S LOGO



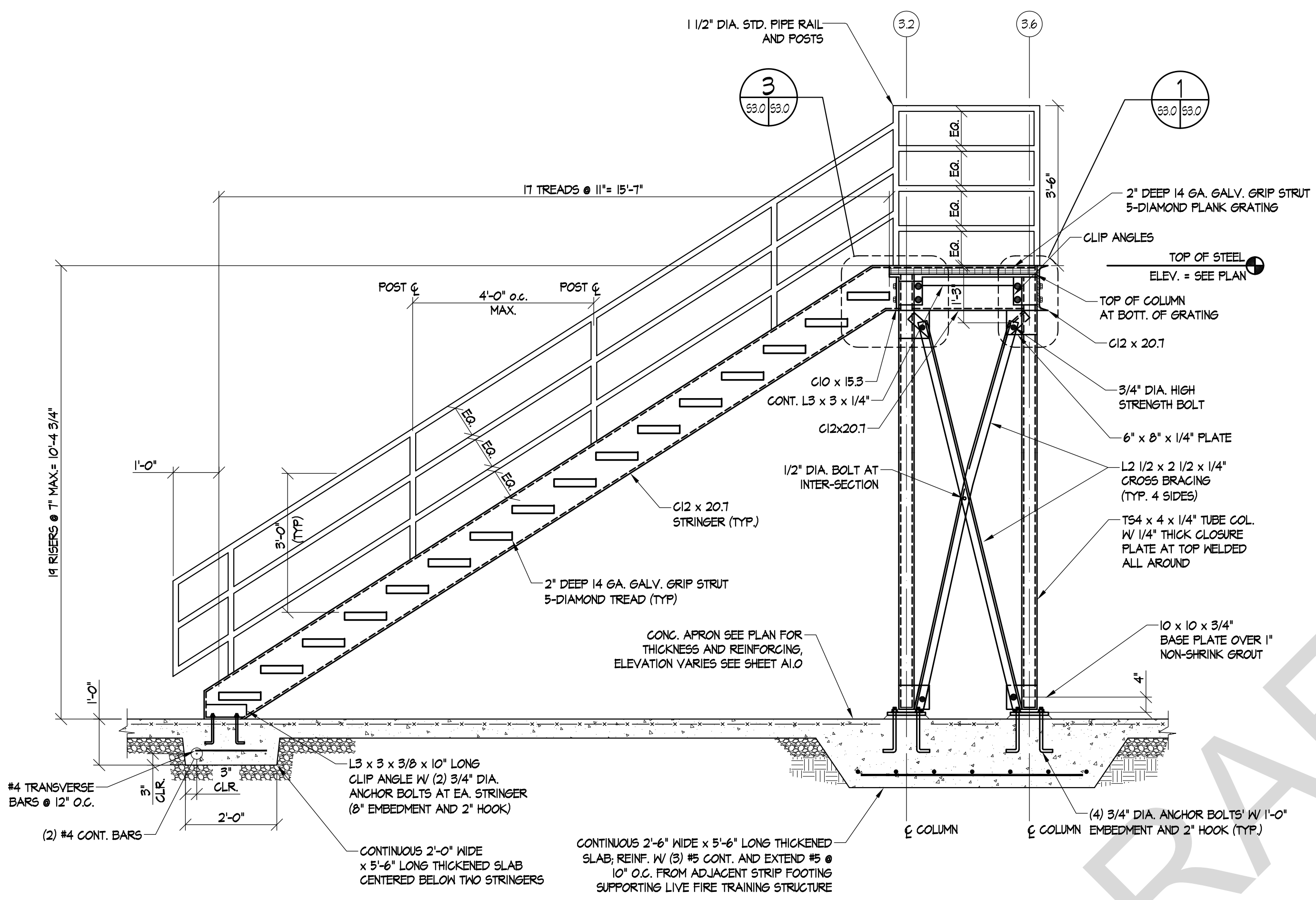
Department of Fire Programs

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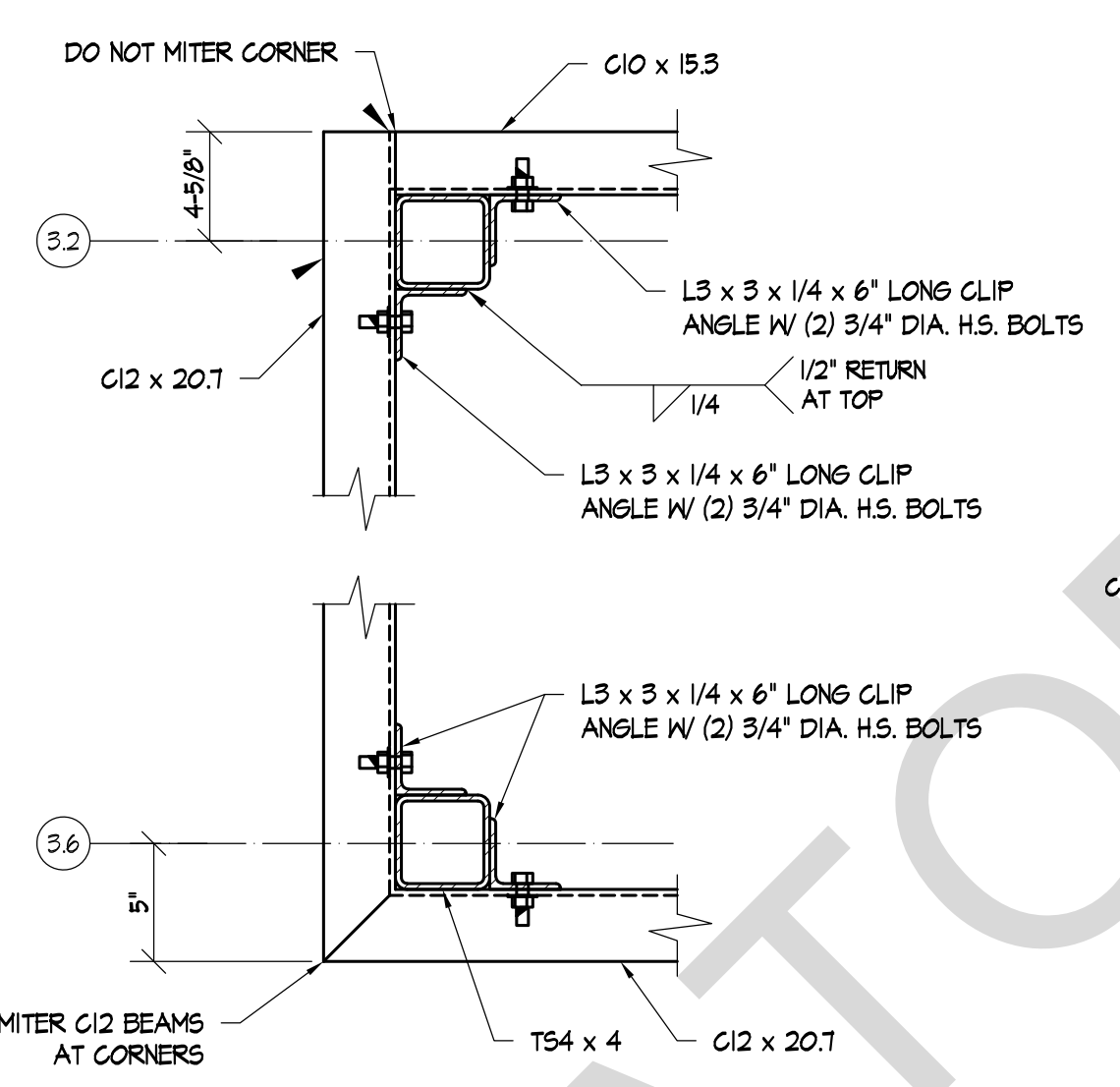
Sheet Title
EXTERIOR STEEL STAIR ELEVATION, SECTIONS, & DETAILS
 CITY/COUNTY VIRGINIA
 Drawn By: ATA Approved By: MAM
 Checked By: MAM Date: 01/31/24

Sheet No.
S3.0
 13 of 16

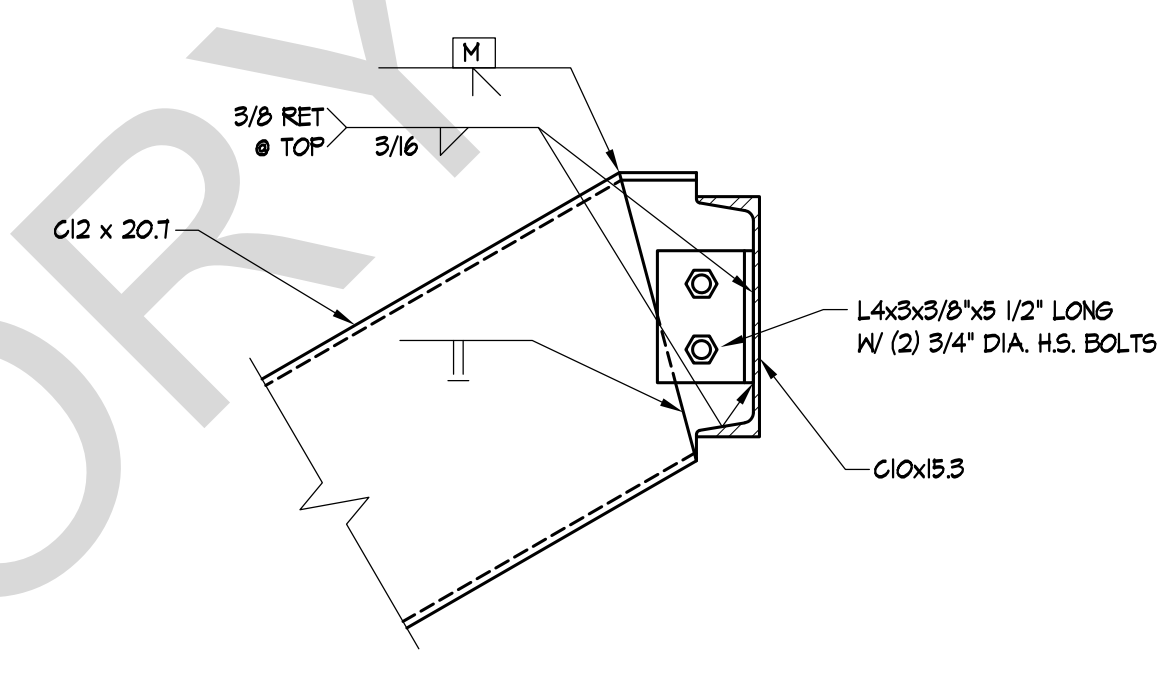


NOTE:
 ALL STEEL AND GRATING IN THIS SECTION SHALL BE GALVANIZED UNO.

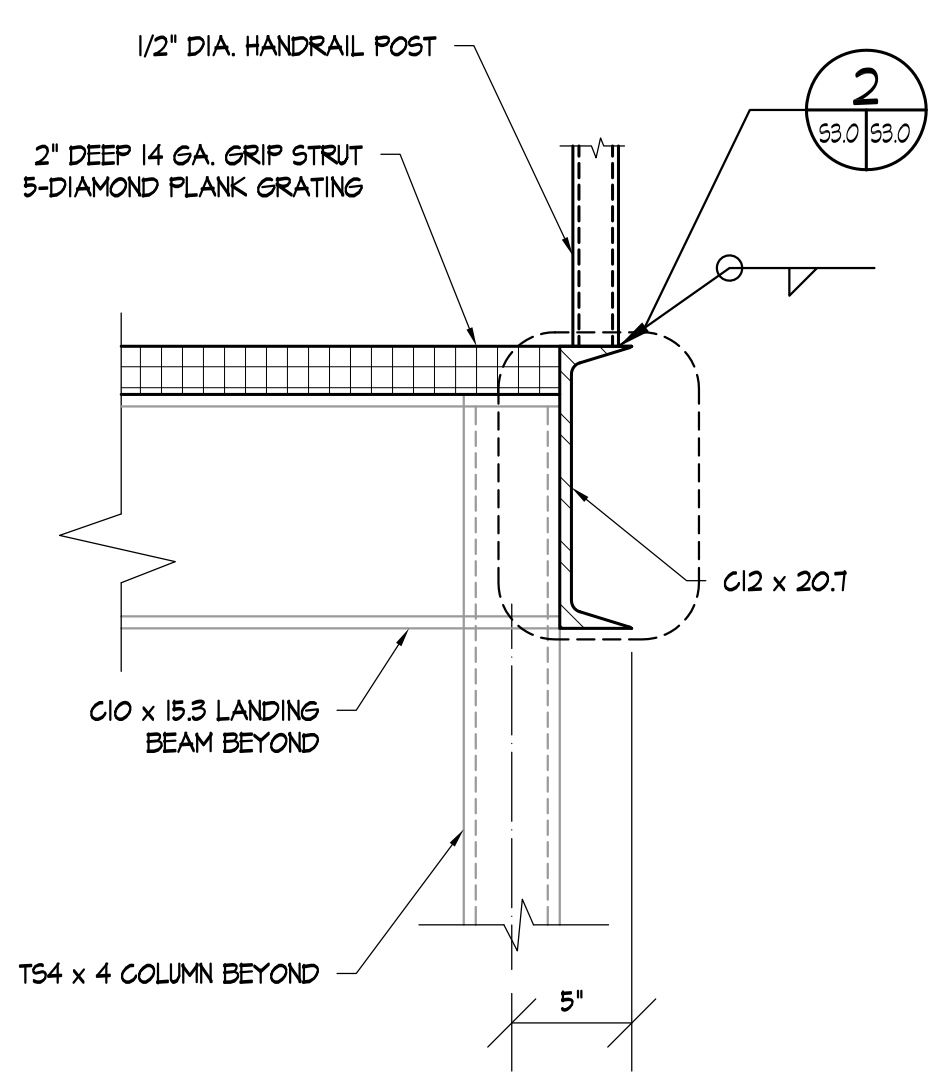
ELEVATION EXTERIOR STAIRS
 SCALE: 1/2" = 1'-0"



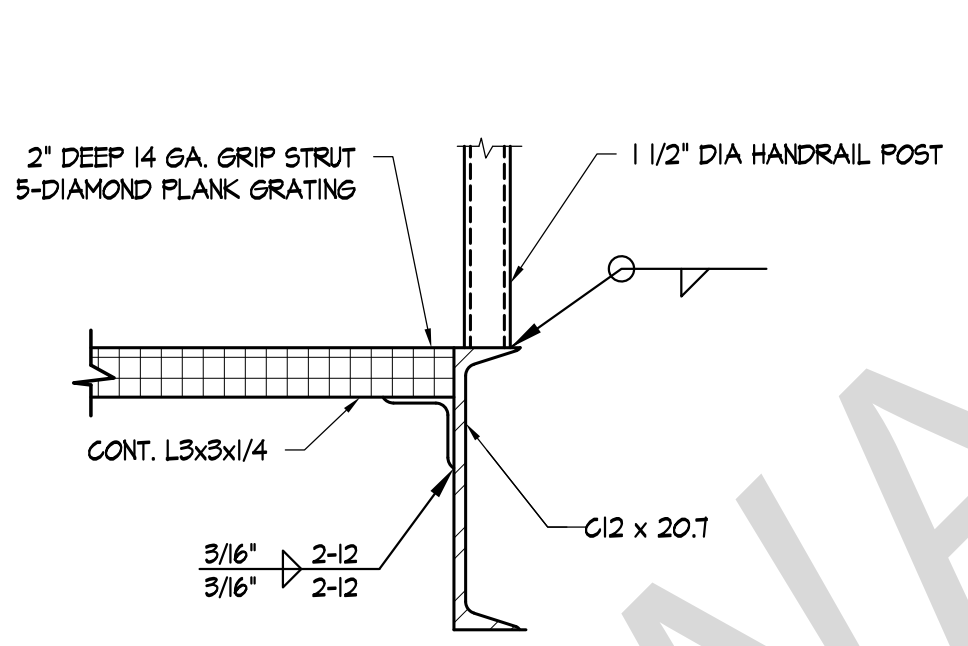
DETAIL LANDING BEAMS TO COLUMNS
 SCALE: 1 1/2" = 1'-0"



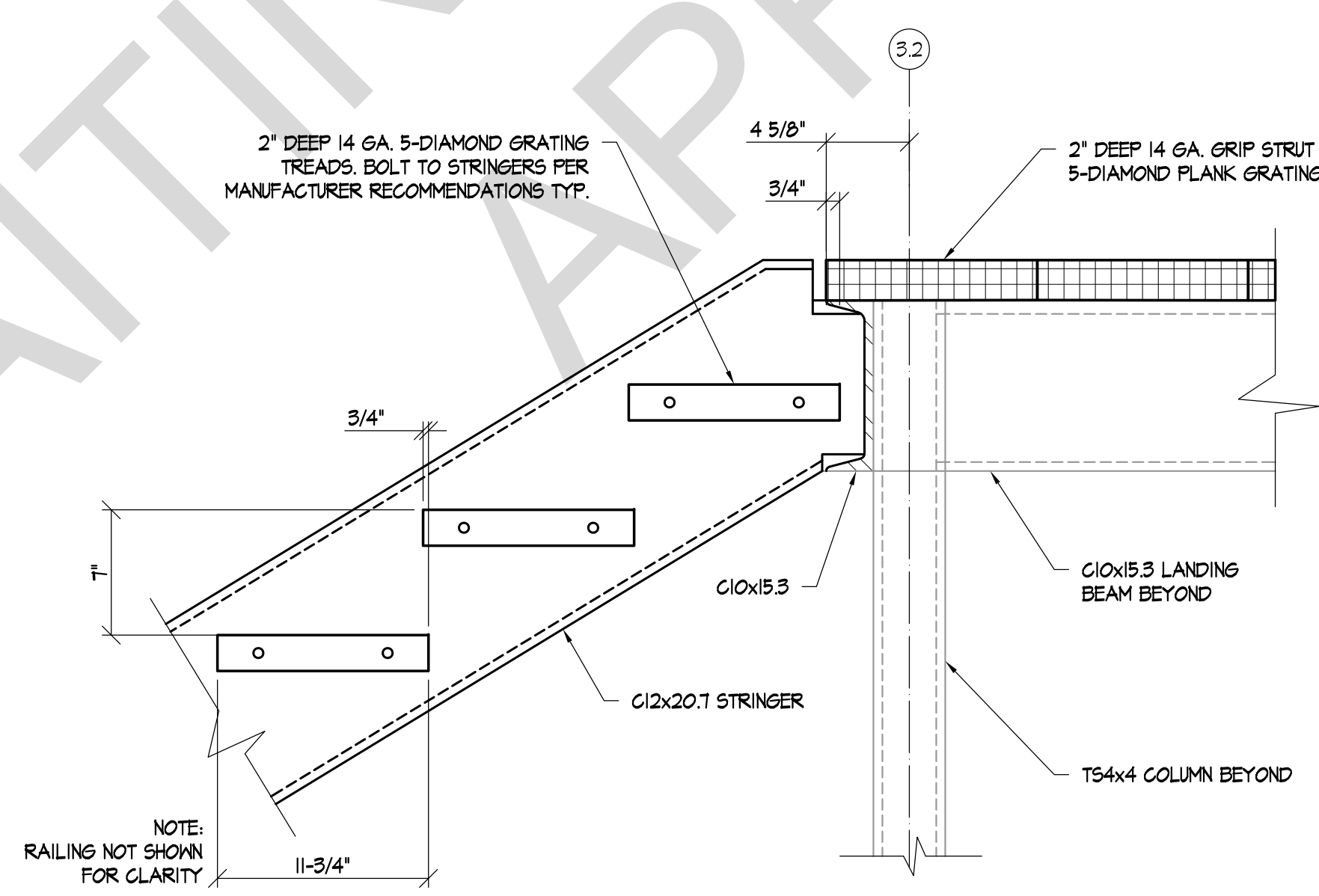
DETAIL STAIR STRINGER SPLICE AND CONNECTION
 SCALE: 1 1/2" = 1'-0"



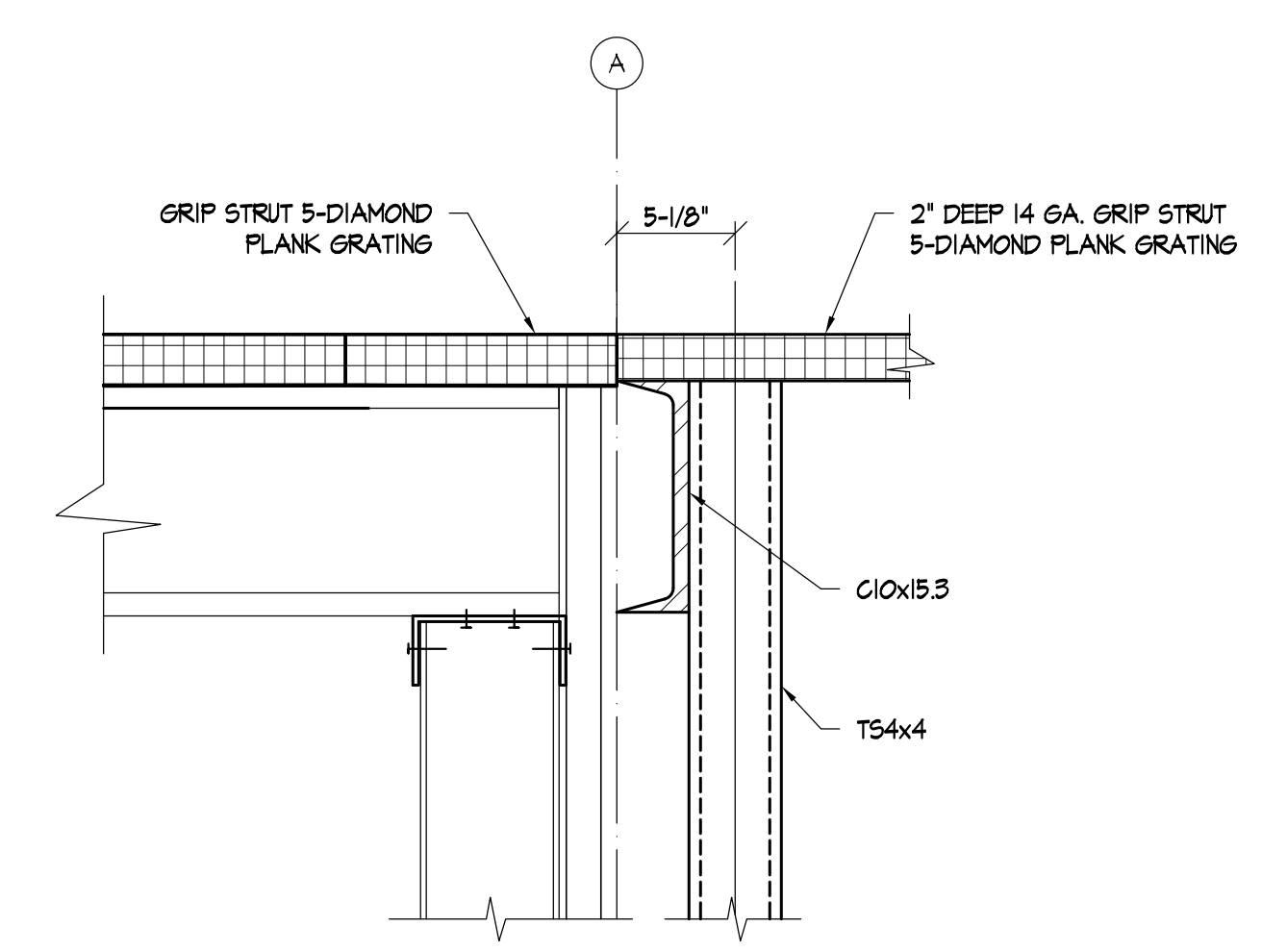
DETAIL 1
 SCALE: 1 1/2" = 1'-0"



DETAIL 2
 SCALE: 1 1/2" = 1'-0"



DETAIL 3
 SCALE: 1 1/2" = 1'-0"



DETAIL
 SCALE: 1 1/2" = 1'-0"

PRIME PROFESSIONAL FIRM LOGO

Project Title
COMMONWEALTH OF VIRGINIA LIVE FIRE TRAINING STRUCTURE PROTOTYPE 4 CLASS B FUEL

SUB-CONSULTANT'S LOGO



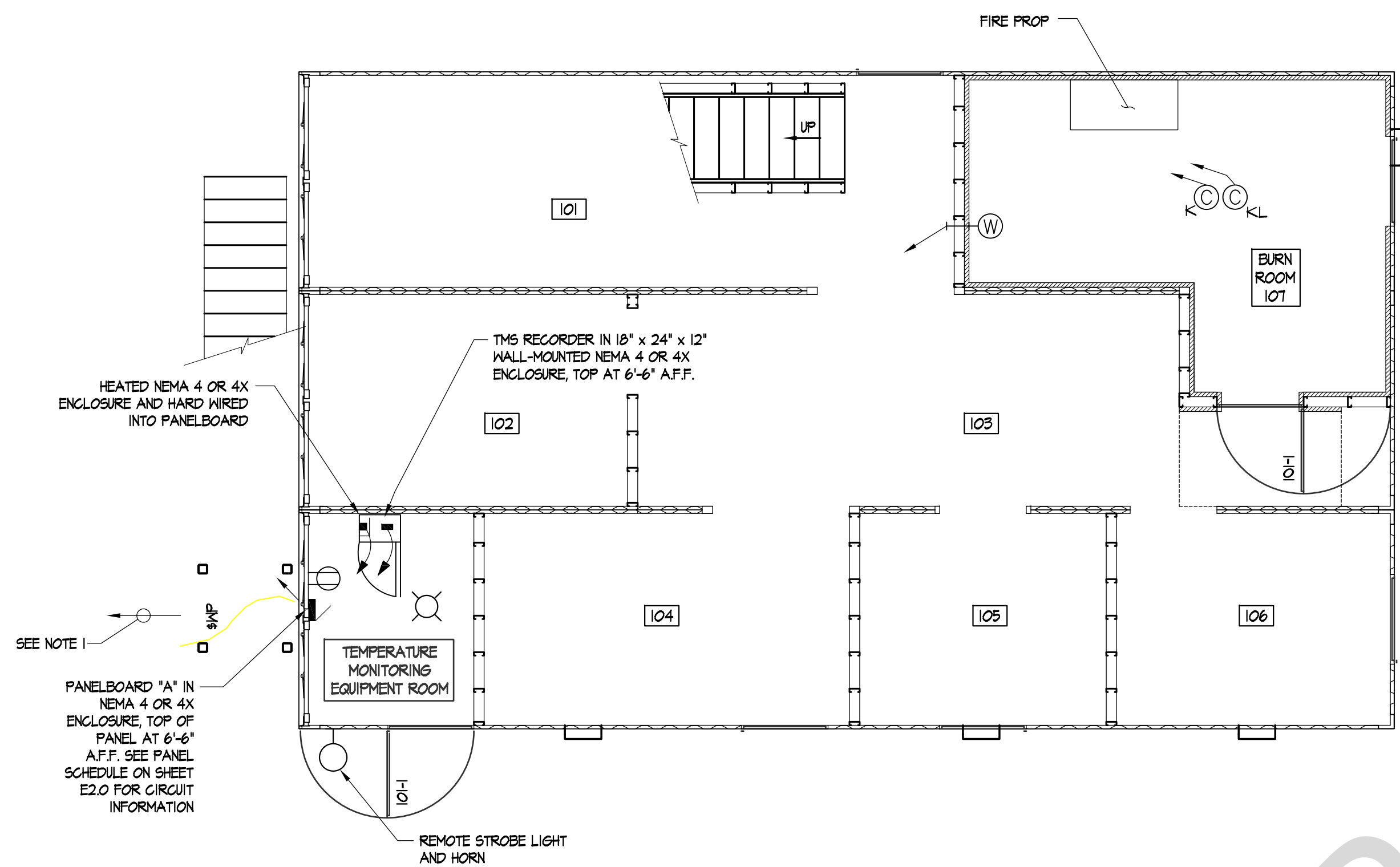
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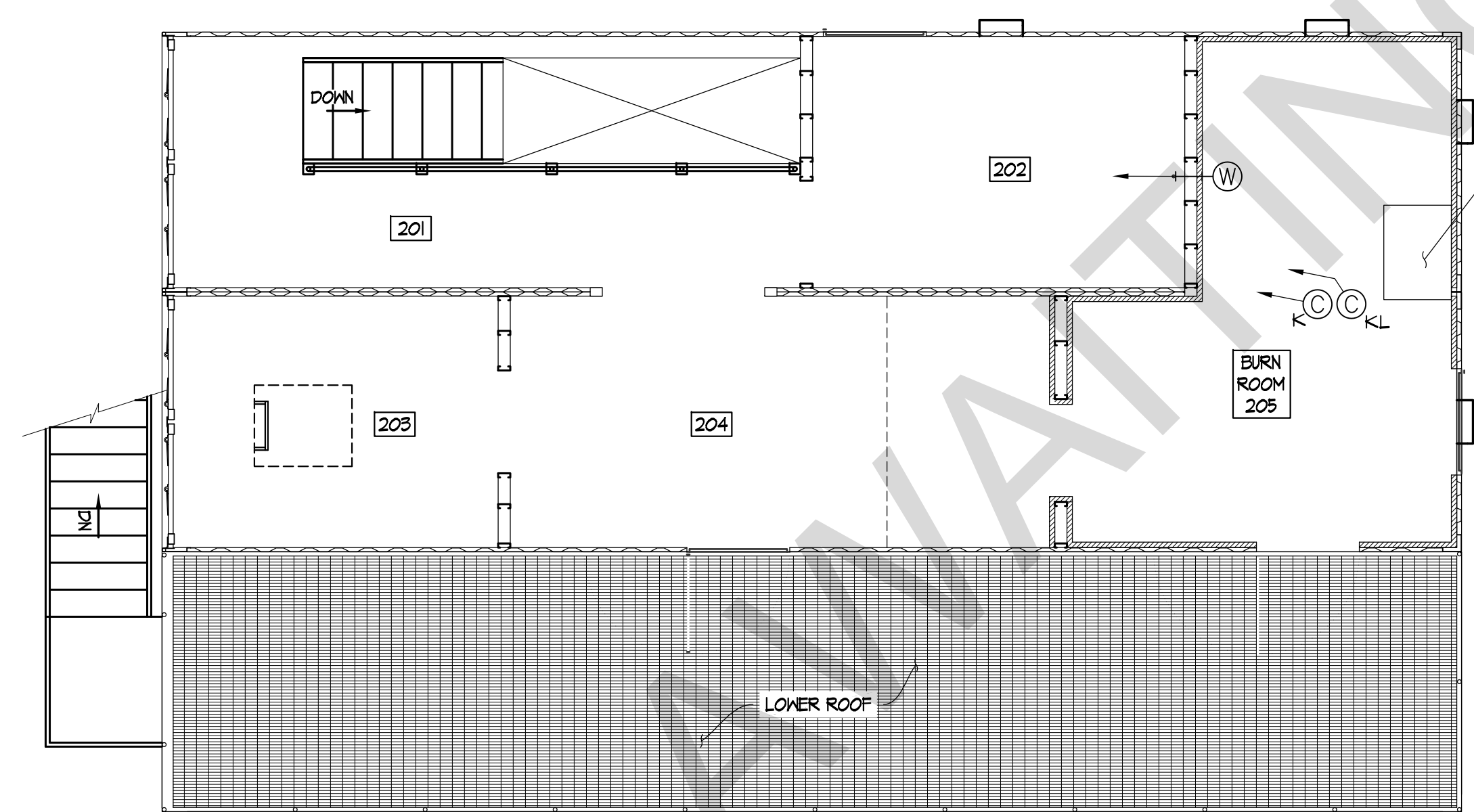
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Sheet Title
FIRST & SECOND FLOOR ELECTRICAL PLAN, NOTES SYMBOLS & ABBREVIATIONS
 CITY/COUNTY VIRGINIA
 Drawn By: ATA Approved By: MAM
 Checked By: MAM Date: 01/31/24

Sheet No.
E1.0
 14 of 16



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



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

ELECTRICAL NOTES:

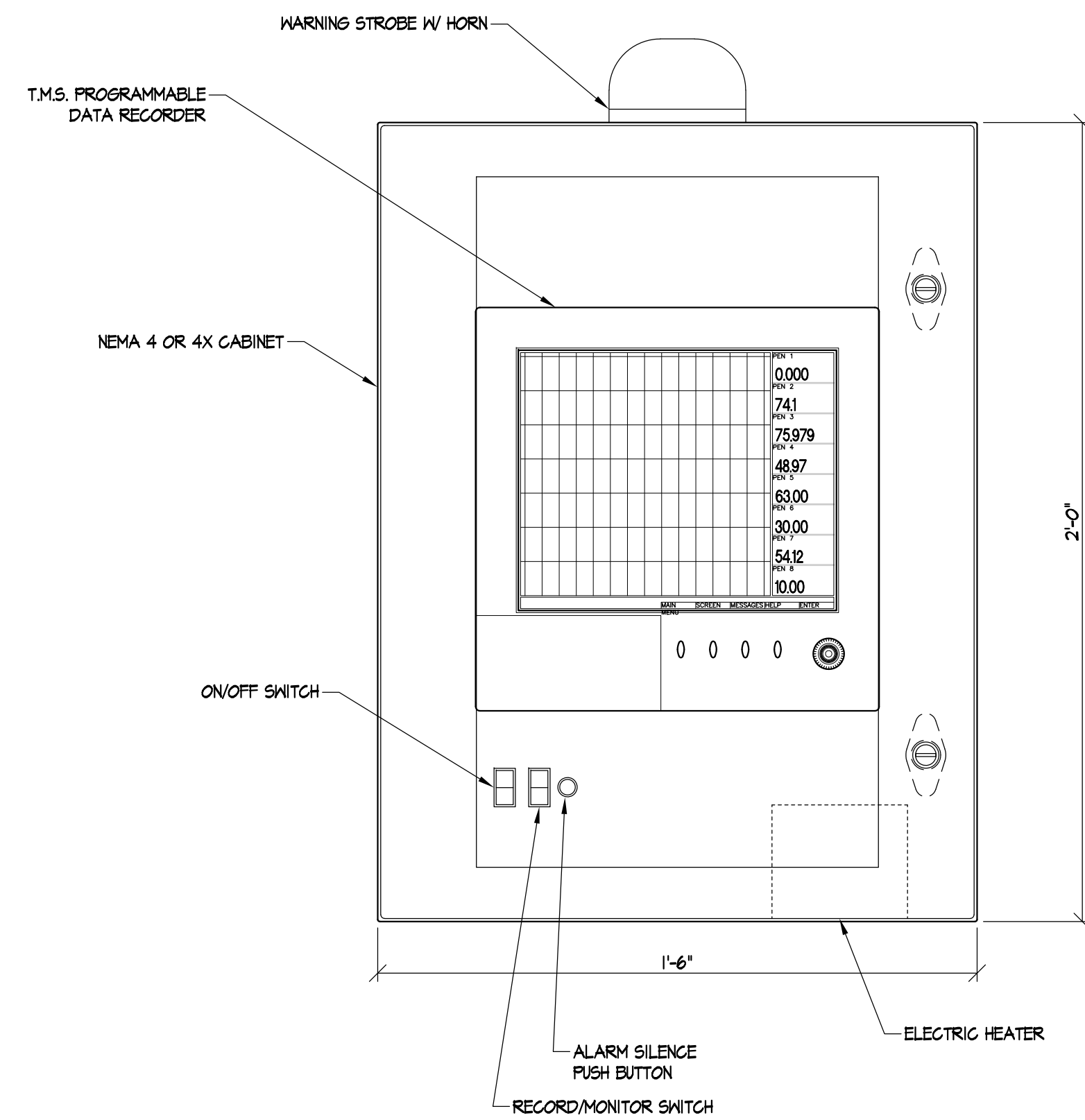
- ELECTRICAL PANEL "A" SHALL BE 120/208 VOLT 3 PHASE, 4 WIRE 200AMP MAIN CIRCUIT BREAKER, 30 POLE PANEL. CONTRACTOR SHALL COORDINATE POWER SOURCE TO PANEL AND SIZE FEEDER TO ACCOMMODATE VOLTAGE DROP. CONDUIT SHALL BE RUN AT A MINIMUM OF 36" BELOW GRADE AND SHALL BE PVC COATED RIGID STEEL.
- CONTRACTOR SHALL PROVIDE AN ALTERNATE PRICE FOR INSTALLATION OF EXTERIOR DUPLEX RECEPTACLES. RECEPTACLES SHALL BE RECESSED MOUNTED. PROVIDE CAST IRON RECEPTACLE WITH DIE CAST ALUMINUM COVERPLATE. DUPLEX RECEPTACLE SHALL BE CERAMIC AND HEAVY DUTY TYPE.
- ALL ELECTRICAL FIXTURES SHALL BE G.F.C.I.
- ALL WIRING SHALL COMPLY WITH THE APPLICABLE NATIONAL, STATE, AND LOCAL ELECTRICAL CODES. USE MINIMUM OF #12 AWG IN 1/2 INCH RIGID STEEL CONDUITS, UNLESS OTHERWISE NOTED.

ABBREVIATIONS:

- A. AMPERE (S)
- A.F.F. ABOVE FINISHED FLOOR
- A.I.C. AMPERE INTERRUPTING CAPACITY
- AWG AMERICAN WIRE GAUGE
- G.F.I. GROUND FAULT INTERRUPT
- GND GROUND
- MCB MAIN CIRCUIT BREAKER
- #WP WEATHERPROOF SINGLE POLE 20 AMP SWITCH. SURFACE MOUNTED 42" MOUNTING HEIGHT A.F.F.
- T.L. THERMAL LINING
- T.M.S. TEMPERATURE MONITORING SYSTEM
- V VOLT (S)
- W WATT
- WP WEATHERPROOF (NEMA 4X)

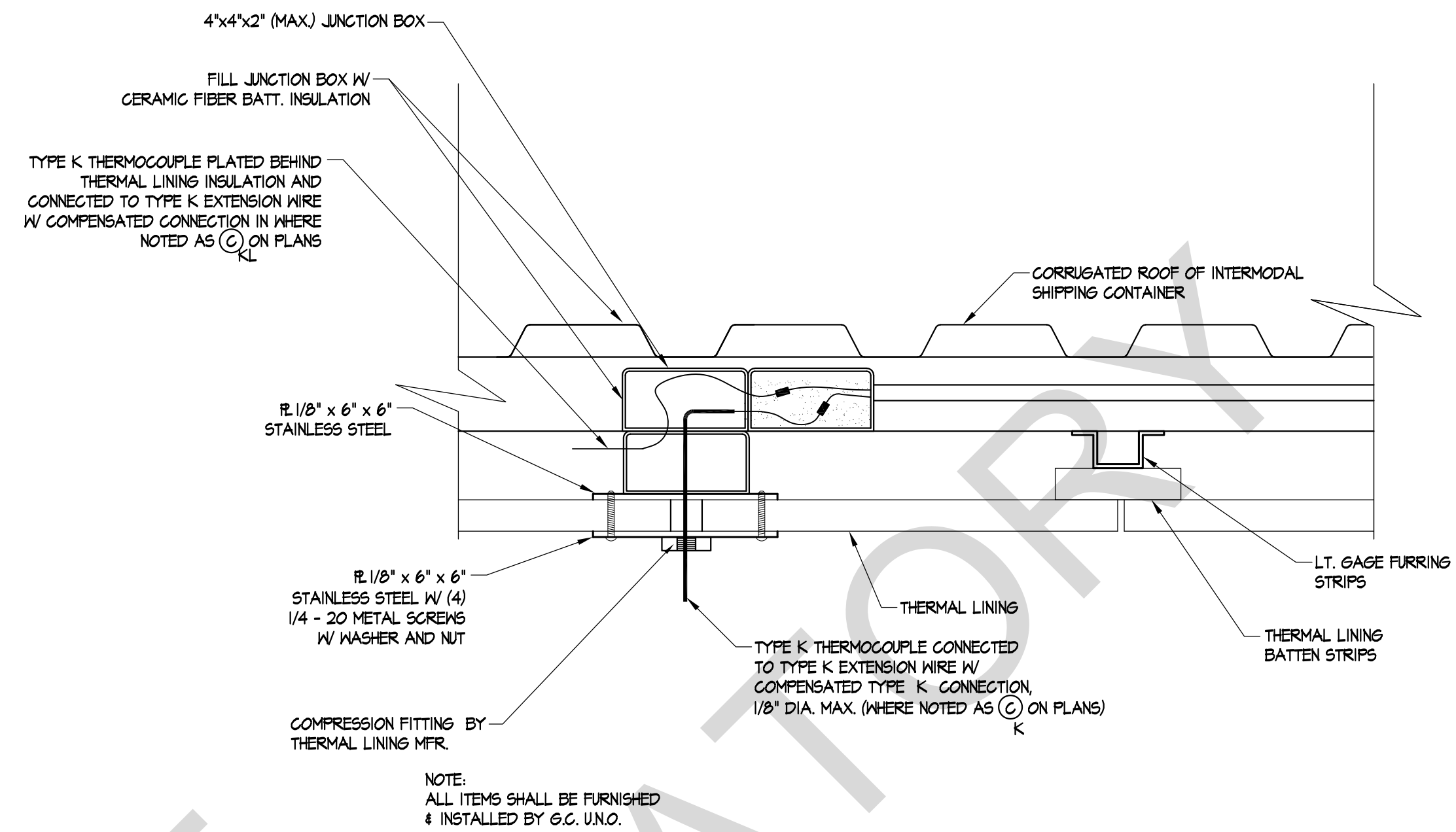
SYMBOLS:

- WEATHERPROOF CEILING MOUNTED, 100W, 120V, INCANDESCENT FIXTURE.
- WEATHERPROOF DUPLEX RECEPTACLE, 20A, 125V, GROUNDING TYPE HAVING NEMA TYPE 5-20 R CONFIGURATION SURFACE MOUNTED, 18" MOUNTING HEIGHT A.F.F.
- JUNCTION BOX
- CONDUIT TURNED UP
- CONDUIT TURNED DOWN
- CONDUIT RUN TO RECORDER FOR TEMPERATURE MONITORING SYSTEM U.O.N.
- WALL-MOUNTED TYPE K DUPLEX THERMOCOUPLE, 60" A.F.F. SEE 1-16/17 U.O.N.
- RECESSED CEILING-MOUNTED TYPE K DUPLEX THERMOCOUPLE SEE 2-16/17
- RECESSED CEILING-MOUNTED TYPE K DUPLEX THERMOCOUPLE SEE 2-16/17
- PLACED BEHIND INSULATION OF THERMAL LINING SEE 2-16/17
- EXISTING METER
- BRANCH CIRCUIT CONDUIT WITH 2 #12 AWG + GROUND WIRE U.O.N. RUN EXPOSED TO PANELBOARD CONNECTION POINT
- REMOTE STROBE LIGHT & HORN

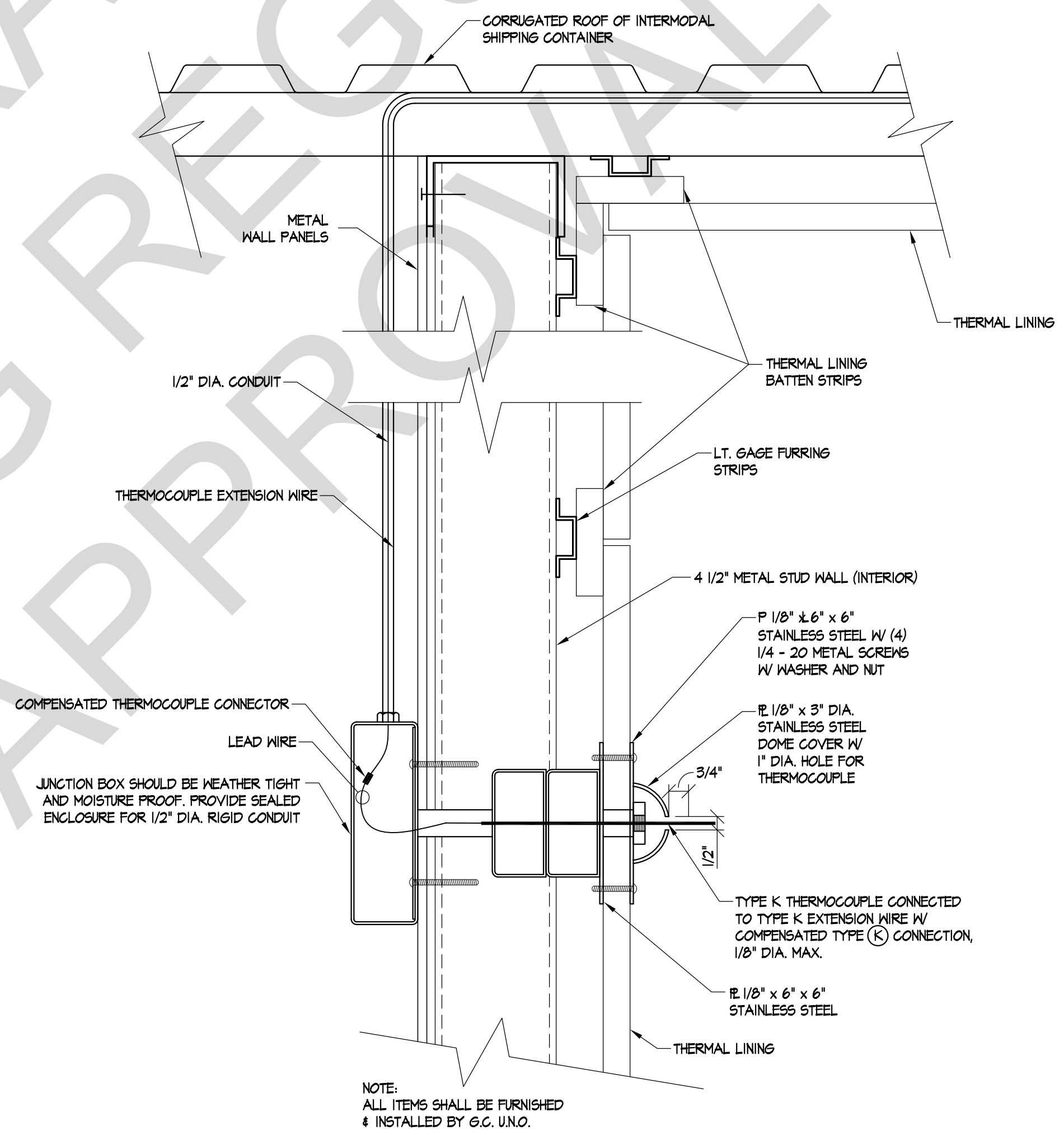


ELEVATION T.M.S. INDICATOR PANEL
SCALE: 3" = 1'-0"

PANELBOARD SCHEDULE LP-1											
LOCATION: 105			FED FROM: SHED MEB			[1]- GFI					
SERVICE: 208Y/120V 3-P 4-W			NEUTRAL BUS: 100%			[2]- SHUNT TRIP					
MAIN LUGS: A			GROUND BUS: STANDARD			[3]- BREAKER LOCK					
MAIN BUS TYPE: -			MOUNTING: SURFACE			[4]- HACR					
INTERRUPT RATING: -			ENCLOSURE: NEMA 1								
AIC											
DESCRIPTION	CCT. NO.	CIRCUIT BREAKER	CIRCUIT LOAD	CONNECTED LOAD (VA)			CIRCUIT LOAD	CIRCUIT BREAKER	CCT. NO.	DESCRIPTION	(E)
T.M.S. PANEL	(N)	1	20A-IP	500	680		180	20A-IP	2	RECEPTACLE	
		3	20A-IP					20A-IP	4		
		5	20A-IP					20A-IP	6		
		7	20A-IP					20A-IP	8		
		9	20A-IP					20A-IP	10		
		11	20A-IP					20A-IP	12		
		13	20A-IP					20A-IP	14		
		15	20A-IP					20A-IP	16		
		17	20A-IP					20A-IP	18		
		19	20A-IP					20A-IP	20		
		21	20A-IP					20A-IP	22		
		23	20A-IP					20A-IP	24		
		25	20A-IP					20A-IP	26		
		27	20A-IP					20A-IP	28		
		29	20A-IP					20A-IP	30		
				680							
TOTAL VA PER PHASE											



DETAIL
SCALE: 3" = 1'-0"



DETAIL
SCALE: 3" = 1'-0"

PRIME PROFESSIONAL FIRM LOGO

Project Title
COMMONWEALTH OF VIRGINIA LIVE FIRE TRAINING STRUCTURE PROTOTYPE 4 CLASS B FUEL

SUB-CONSULTANT'S LOGO



Department of Fire Programs

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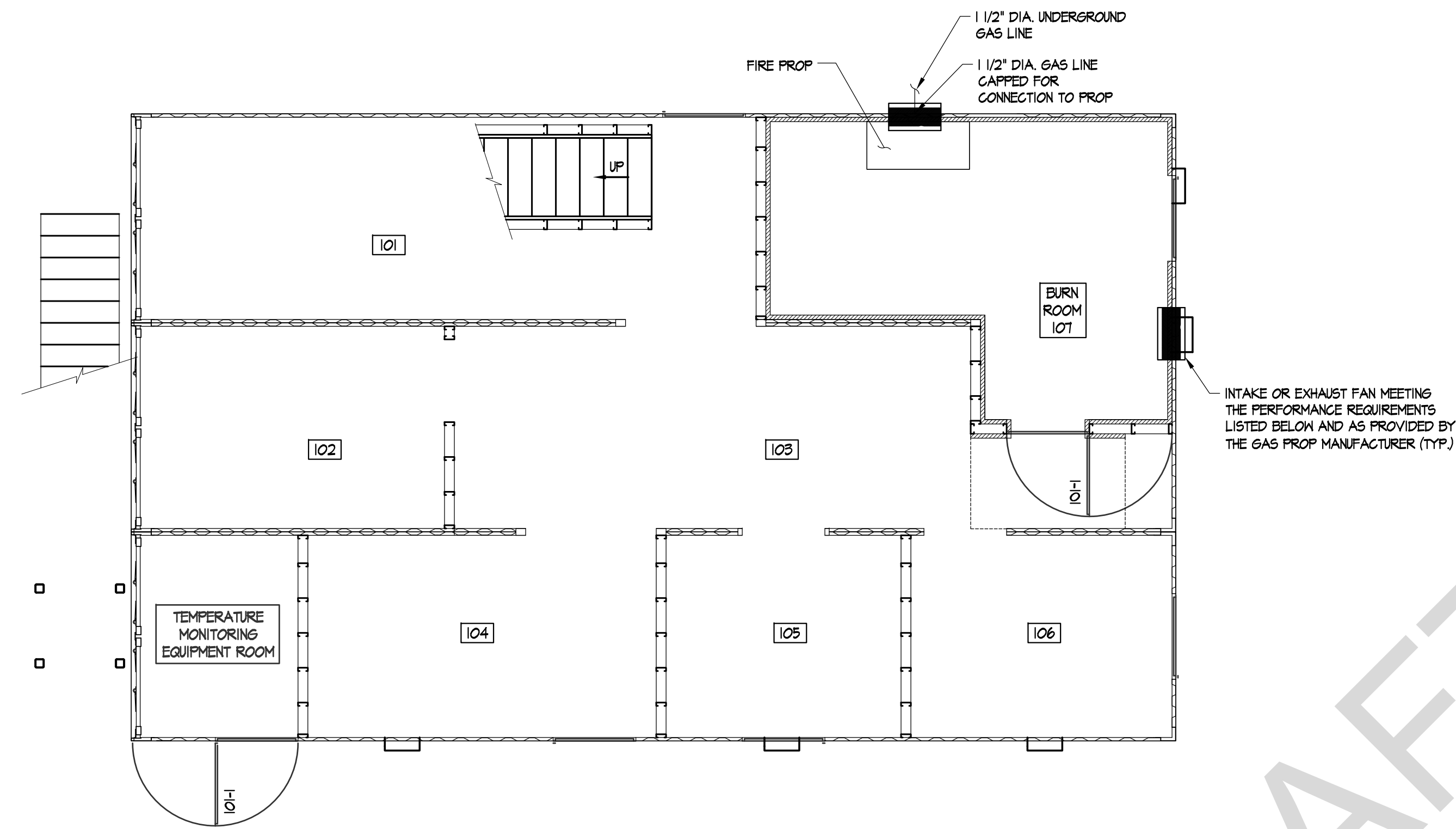
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Sheet Title
ELECTRICAL DETAILS & PANELBOARD SCHEDULE
CITY/COUNTY VIRGINIA
Drawn By: ATA Approved By: MAM
Checked By: MAM Date: 01/31/24

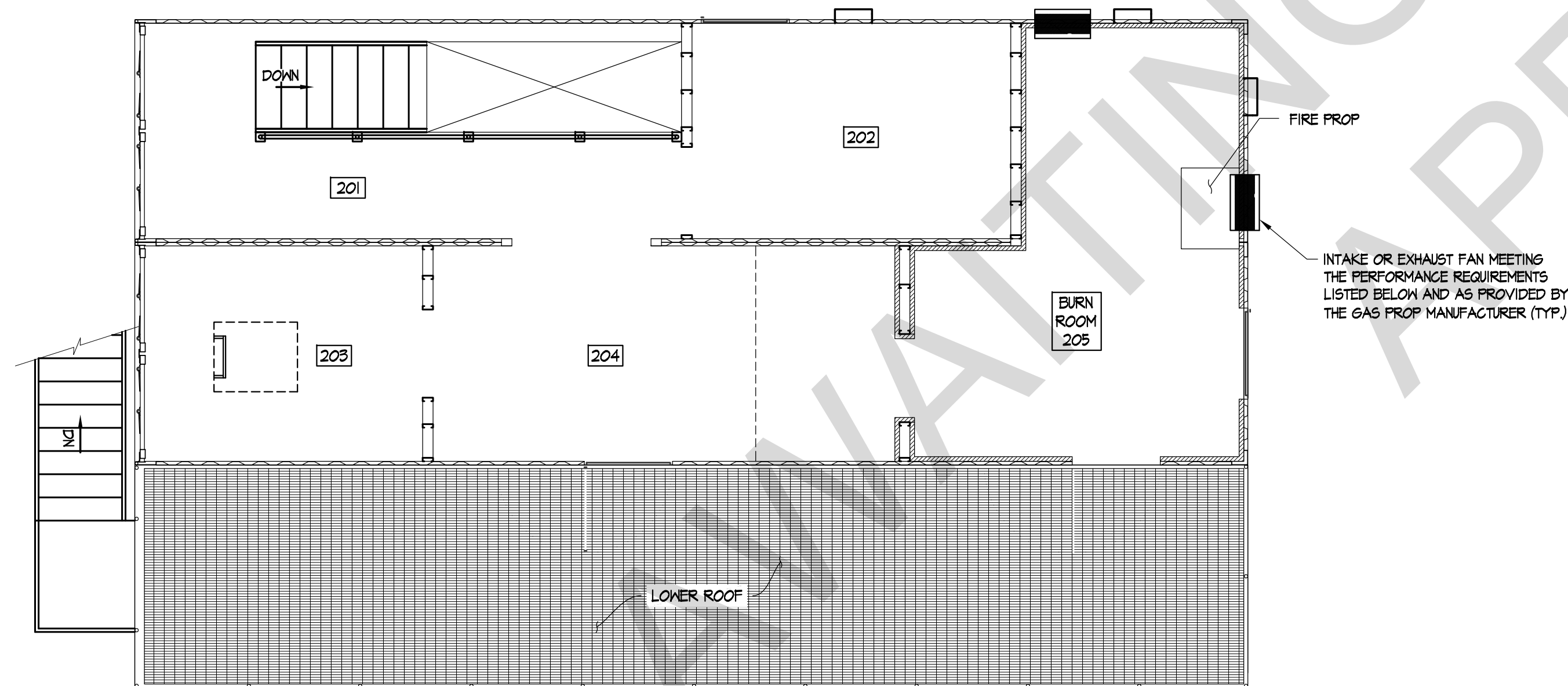
PROFESSIONAL SEAL

Sheet No.
E2.0
15 of 16



FIRST FLOOR MECHANICAL PLAN

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



SECOND FLOOR MECHANICAL PLAN

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

MECHANICAL NOTES:

1. THE AUTOMATED LIVE FIRE CLASS B FUEL SYSTEM SHALL BE EQUIPPED WITH A VENTILATION SYSTEM TO REMOVE EXCESS HEAT, COMBUSTION BY-PRODUCTS, AND UNBURNED GAS FROM EACH TRAINING COMPARTMENT WITHIN THE BUILDING AND VENTILATION SYSTEM SHALL BE DESIGNED TO FULLY PURGE EACH TRAINING COMPARTMENT AT THE RATE OF ONE (1) AIR CHANGE PER MINUTE AS PER NFPA 1403. THE LIVE FIRE TRAINING SYSTEM SHALL CONTROL THE OPERATION AND MONITOR THE AIRFLOW OF THE VENTILATION SYSTEM IN THE BURN BUILDING. THE VENTILATION SYSTEM SHALL ONLY BE ACTIVATED DURING THE FOLLOWING CONDITIONS:
 - A) TO FULLY PURGE THE TRAINING COMPARTMENTS AT POWER UP.
 - B) TO FLUSH THE BURN BUILDING PRIOR TO TRAINING.
 - C) TO FULLY PURGE THE TRAINING COMPARTMENTS WHEN EXCESSIVE GAS OR TEMPERATURE LEVELS ARE DETECTED DURING TRAINING.
2. THE LIVE FIRE CLASS B FUEL SYSTEM SHALL HAVE A COMPARTMENT TEMPERATURE DETECTION SENSOR THAT MONITORS TEMPERATURES AT 5' A.F.F. IF TEMPERATURES IN THE TRAINING COMPARTMENT EXCEED 550° THE VENTILATION SYSTEM SHALL RUN. IF TEMPERATURES AT THE 5' LEVEL EXCEED 700°, THE SYSTEM SHALL SHUTDOWN AND THE VENTILATION SYSTEM SHALL RUN UNTIL TEMPERATURES ARE REDUCED.
3. THE LIVE FIRE CLASS B FUEL SYSTEM SHALL HAVE A HARD-WIRED EMERGENCY SHUTDOWN CIRCUIT THROUGHOUT THE FACILITY TO PROVIDE WIDESPREAD ACCESS TO SHUTDOWN (E-STOP) PUSH BUTTONS. E-STOP PUSH BUTTONS SHALL BE LOCATED AT THE ENTRANCE(S) TO EACH TRAINING COMPARTMENT, ON THE SCENARIO CONTROL ASSEMBLIES, AND ON EACH CONTROL PENDANT. THE EFFECT OF PUSHING ANY E-STOP BUTTON SHALL CAUSE ALL BURNER CONTROL VALVES TO CLOSE, FACILITY GAS SUPPLY TO BE SECURED AND SMOKE PRODUCTION TO STOP. VENTILATION FANS WILL AUTOMATICALLY RUN AT MAXIMUM ONCE THE E-STOP PUSH BUTTON HAS BEEN ACTIVATED. THE VENTILATION SYSTEM WILL RUN CONTINUOUSLY AT MAXIMUM LEVEL UNTIL THE E-STOP HAS BEEN MANUALLY RESET AND SAFE OPERATING CONDITIONS EXIST.
4. THE LIVE FIRE CLASS B FUEL SYSTEM SHALL HAVE A GAS DETECTION SYSTEM WHICH CONTINUALLY MONITORS UNBURNED GLASS 'B' FUEL LEVELS IN THE TRAINING COMPARTMENTS AND ANY EQUIPMENT ROOMS WHERE GLASS 'B' FUEL LINES ARE INSTALLED. A MINIMUM OF TWO (2) GAS SENSORS SHALL BE SUPPLIED PER TRAINING COMPARTMENT. IF GAS LEVELS REACH 10% LEL, THE VENTILATION SYSTEM SHALL RUN. IF GAS LEVELS REACH 25% LEL, THE VENTILATION SYSTEM SHALL RUN AT MAXIMUM SPEED AND ALL GAS VALVES SHALL CLOSE. THE VENTILATION SYSTEM SHALL CONTINUOUSLY RUN UNTIL GAS LEVELS ARE REDUCED BELOW 10% LEL.
5. THE LIVE FIRE CLASS B FUEL SYSTEM FUEL CONTROL ASSEMBLY SHALL CONNECT TO THE CLASS 'B' FUEL SUPPLY LINE. THE FUEL CONTROL ASSEMBLY SHALL CONSIST OF BOTH HIGH AND LOW PRESSURE SWITCHES. THE LINE PRESSURE SHALL BE MONITORED FOR ABNORMAL CONDITIONS AND SHALL SHUT DOWN THE SYSTEM IF THE LINE PRESSURE IS TOO HIGH OR TOO LOW. SHOULD A HIGH-PRESSURE CONDITION EXIST, THE VENTILATION SYSTEM SHALL START AND AN EMERGENCY SHUTDOWN SHALL OCCUR.
6. A MINIMUM OF TWO (2) EXTINGUISHING AGENT SENSORS SHALL BE LOCATED IN EACH BURN ROOM WITH ONE (1) DIRECTLY WITHIN THE BURN PROP. THE OUTPUT OF THESE SENSORS SHALL BE UTILIZED BY THE INSTRUCTOR TO DETERMINE THE EFFECTIVENESS OF AGENT APPLICATION WITH REGARD TO RATE AT WHICH FIRE IS EXTINGUISHED.
7. ALL COMPONENTS IN THIS SYSTEM SHALL PERFORM WITHIN THE FOLLOWING MINIMUM STANDARDS:
 - A) CONTROL ROOM EQUIPMENT:
 - TEMPERATURE: 65 TO 85° F (OPERATING)
 - 20 TO 125° F (STORAGE)
 - HUMIDITY: 0 TO 45% (NON-CONDENSING)
 - B) OUTDOOR EQUIPMENT:
 - TEMPERATURE: 20 TO 100° F (OPERATING)
 - 20 TO 125° F (STORAGE)
 - HUMIDITY: 0 TO 100%
 - C) COMPARTMENT EQUIPMENT:
 - TEMPERATURE: 52° F TO MAX. (OPERATING)
 - 20 TO 125° F (STORAGE)
 - HUMIDITY: 0 TO 100%
 - D) MECHANICAL: ALL TRAINING COMPARTMENT EQUIPMENT SHALL WITHSTAND DIRECT HOSE PRESSURE OF 100 PSI AT 150 GPM FROM A DISTANCE OF THREE (3) FEET.
 - E) TOTAL TRAINING SYSTEM: MTBF (MEAN TIME BETWEEN FAILURES) > 500 HOURS (OPERATING).
 - F) MTR (MEAN TIME TO REPAIR) < 30 MINUTES (WHEN REPAIRS ARE PERFORMED BY QUALIFIED SERVICE PERSONNEL).

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Department of Fire Programs

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Sheet Title
MECHANICAL PLANS & NOTES
CITY/COUNTY: VIRGINIA
Drawn By: ATA Approved By: MAM
Checked By: MAM Date: 01/31/24

Sheet No.
M1.0
16 of 16

PROFESSIONAL SEAL