

OBSTACLE COURSE SALES CENTER

UPTON HILL REGIONAL PARK
6060 WILSON BOULEVARD ARLINGTON, VA

OWNER

NOVA PARKS
5400 OX ROAD
FAIRFAX STATION, VA 22039
TEL. (703) 359-4606
FAX. (703) 213-0905

ARCHITECT

ZHA ARCHITECTS, PC
4031 UNIVERSITY DRIVE
SUITE # 120
FAIRFAX, VIRGINIA 22030
TEL. (703) 352-1933
FAX. (703) 691-9111

STRUCTURAL

EHLERT/ BRYAN, INC.
1451 DOLLY MADISON BLVD.
SUITE 220
MCLEAN, VA 22101
TEL. (703) 821-9552
FAX. (703) 356-2031

MECH/ELECT/PLUMBING

HURST & ASSOCIATES
308 HILLWOOD AVENUE
FALLS CHURCH, VA 22046
TEL. (703) 534-7872
FAX. (703) 536-3970

PERMIT SUBMISSION
10.23.2019



ABBREVIATIONS

Table of abbreviations for various construction materials and components, including Anchor Bolt, Air Condition, Above Finish Floor, etc.

PROJECT DATA

PROJECT: UPTON HILL REGIONAL PARK BATH HOUSE RENOVATION
OWNER: NORTHERN VIRGINIA REGIONAL PARK AUTHORITY
ARCHITECT: ZHA ARCHITECTS INC.

SCOPE OF WORK: NEW CONSTRUCTION OF STAND ALONE TICKET SALES OFFICE STRUCTURE, AREA A OF THE ENCLOSED STRUCTURE IS 821 SF WITH 1419 SF PARTIALLY ROOFED EXTERIOR DECK.

DRAWING HIERARCHY

- 1. DO NOT SCALE THE DRAWINGS
2. ALL NEW WALL DIMENSIONS ARE TO THE FACE OF STUDS UNLESS NOTED OTHERWISE.
3. NOTES APPLIED TO AN ELEMENT OF DRAWING SHALL APPLY TO ALL SIMILAR INSTANCES OF THAT ELEMENT IN OTHER DRAWINGS UNLESS NOTED OTHERWISE.

CODES

- VIRGINIA UNIFORM STATEWIDE BUILDING CODE 2015
VIRGINIA EXISTING BUILDING CODE 2015
INTERNATIONAL BUILDING CODE 2015
NATIONAL ELECTRICAL CODE 2014

GENERAL NOTES

- 1. GENERAL CONTRACTOR SHALL FURNISH ALL LABOR AND MATERIALS NECESSARY FOR COMPLETE INSTALLATION AS DETAILED HEREIN.
2. THE GENERAL CONTRACTOR SHALL PROVIDE ON-SITE WEATHER-PROTECTED STORAGE SPACE IN LOCATION DIRECTED BY OWNERS REPRESENTATIVE.
3. ALL WORK SHALL BE PERFORMED IN STRICT COMPLIANCE WITH LOCAL AND STATE CODES AND REGULATIONS HAVING JURISDICTION.

CODE ANALYSIS

Table with columns for TYPE OF CONSTRUCTION, USE GROUP, FIRE ALARM, SPRINKLERED, BUILDING HEIGHT AND AREA, NO. OF STORIES, HEIGHT, BUILDING AREA, and various code analysis tables like BUILDING INSULATION SCHEDULE and FIRE RESISTANCE RATINGS.

SYMBOLS

Diagram showing various symbols for details, elevations, sections, and materials, including symbols for detail no., sheet no., section no., wall section, drawing no., title, scale, and detail reference.

MATERIALS

Diagram showing material patterns and their corresponding names: BRICK, CEMENT MORTAR/SAND/PLASTER, CONCRETE MASONRY UNIT (CMU), CONCRETE, RIGID INSULATION, BATT INSULATION, EARTH, GRAVEL, STONE, WOOD FINISH, WOOD ROUGH (CONTINUOUS), WOOD ROUGH (SPACED), METAL - FERROUS (STEEL), METAL - ELEVATION, GYPSUM BOARD, PLYWOOD, CLAY PAVERS, TILE - CERAMIC / STRUCTURAL, RESILIENT MATERIALS ASPHALT, CORK, RUBBER, ETC., ACOUSTICAL TILE, GROUND FACE BLOCK, PREFORMED INSULATED METAL PANEL.

DRAWING INDEX

Table listing drawing sheets: COVER SHEET (CS.1, CS.2), ARCHITECTURAL (A1.1 through A7.2), STRUCTURAL (S1.1 through S3.1), MECHANICAL (M1.1 through M3.1), and ELECTRICAL (E1.1 through E7.1).



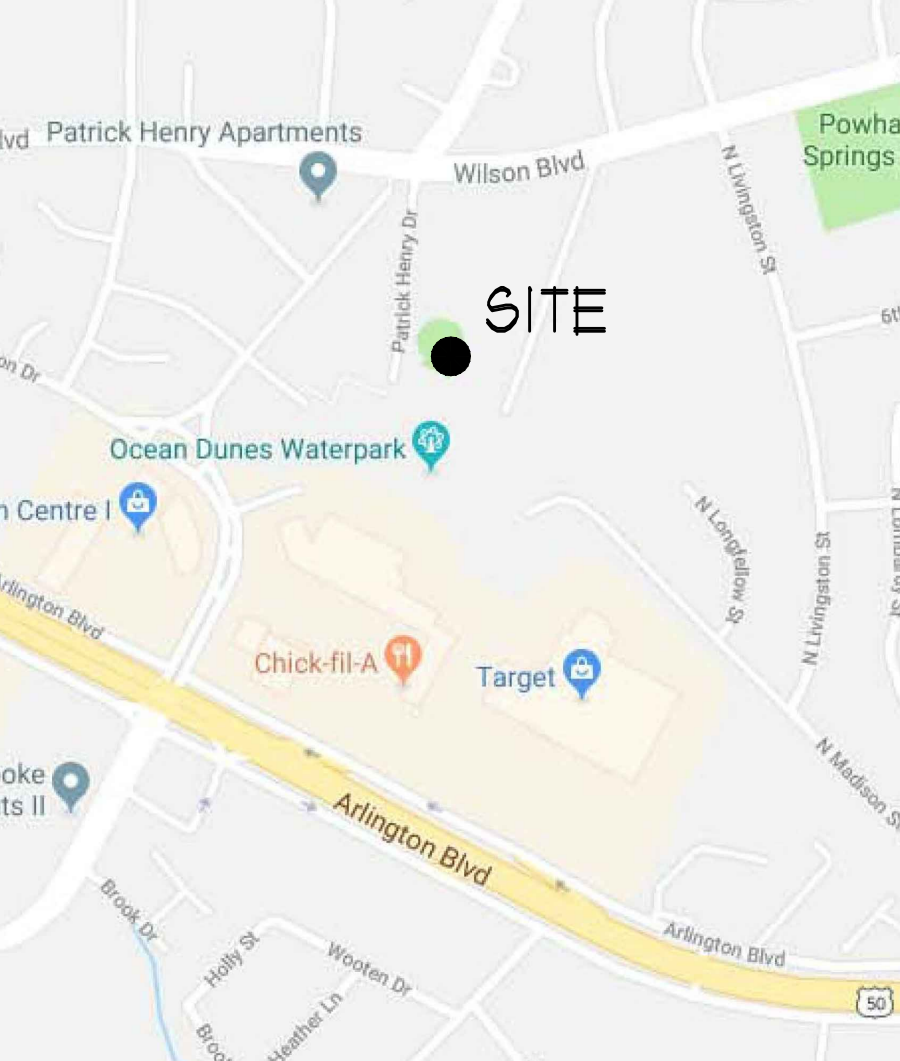
4031 University Drive, Suite 130, Fairfax, VA, 22030
Telephone: (703)952-1939 Fax: (703)951-9171



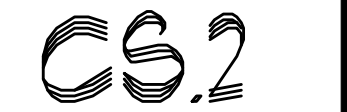
Table with columns for DATE (10/23/19) and DESCRIPTION (PERMIT SUBMISSION).

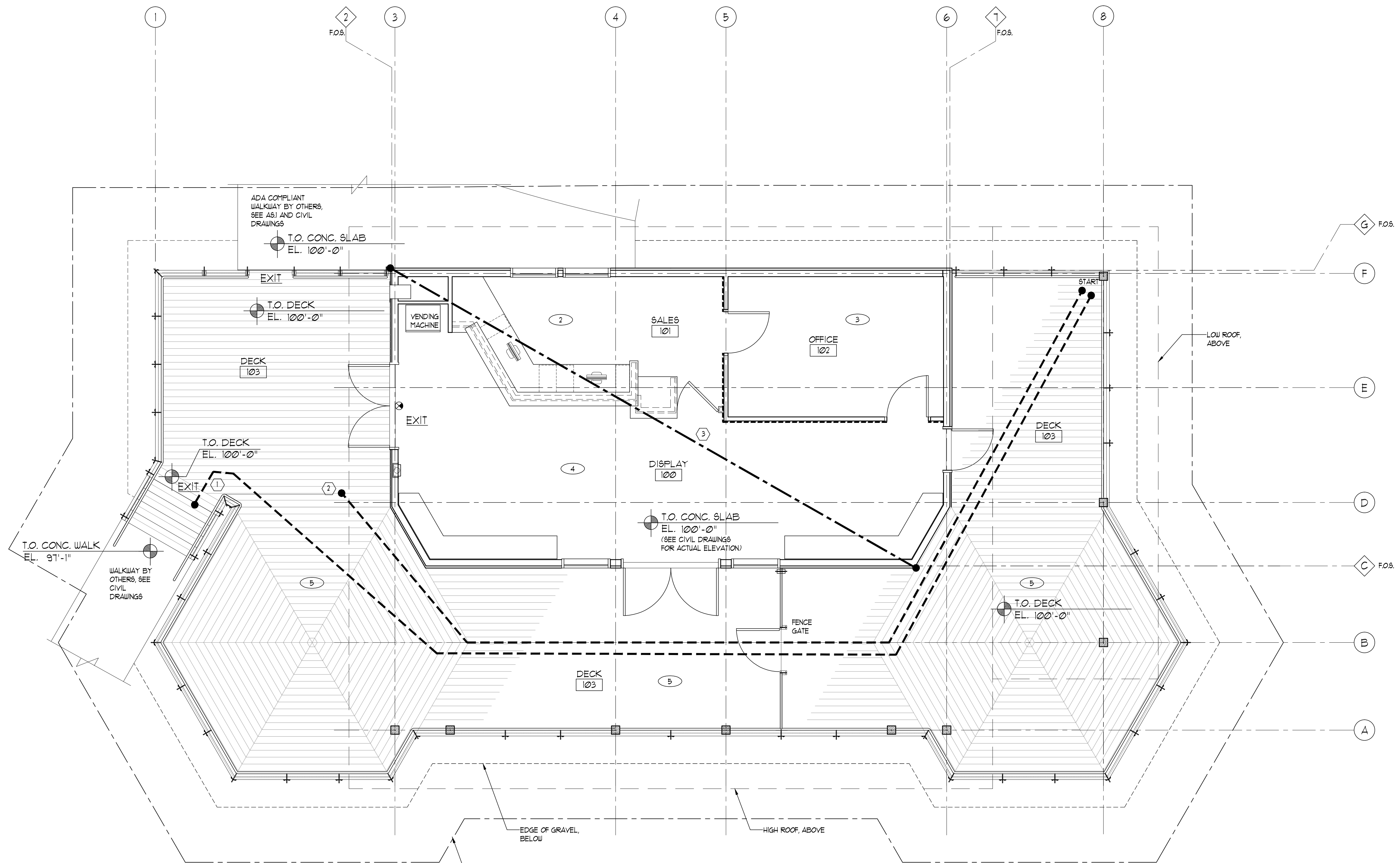


LOCATION MAP

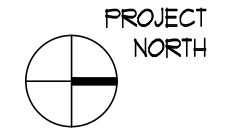


SCALE: AS SHOWN
PROJECT INFO, CODE ANALYSIS & SYMBOLS
DRAWING INDEX & SYMBOLS
PROJECT NUMBER: B09500





LIFE SAFETY PLAN
SCALE: 1/4"=1'-0"



6" LINE OUTSIDE BUILDING FOR DETERMINATION OF GRADE PLANE. GRADE PLANE = ELEV. 96'-0".

LIFE SAFETY SYMBOL KEY			DISTANCE ALLOWED		MAX DISTANCE MEASURED	
①	TRAVEL DISTANCE TO EXIT	200' MAX	86'			
②	COMMON PATH OF TRAVEL	75' MAX	74'			
③	BUILDING DIAGONAL	-	44'			

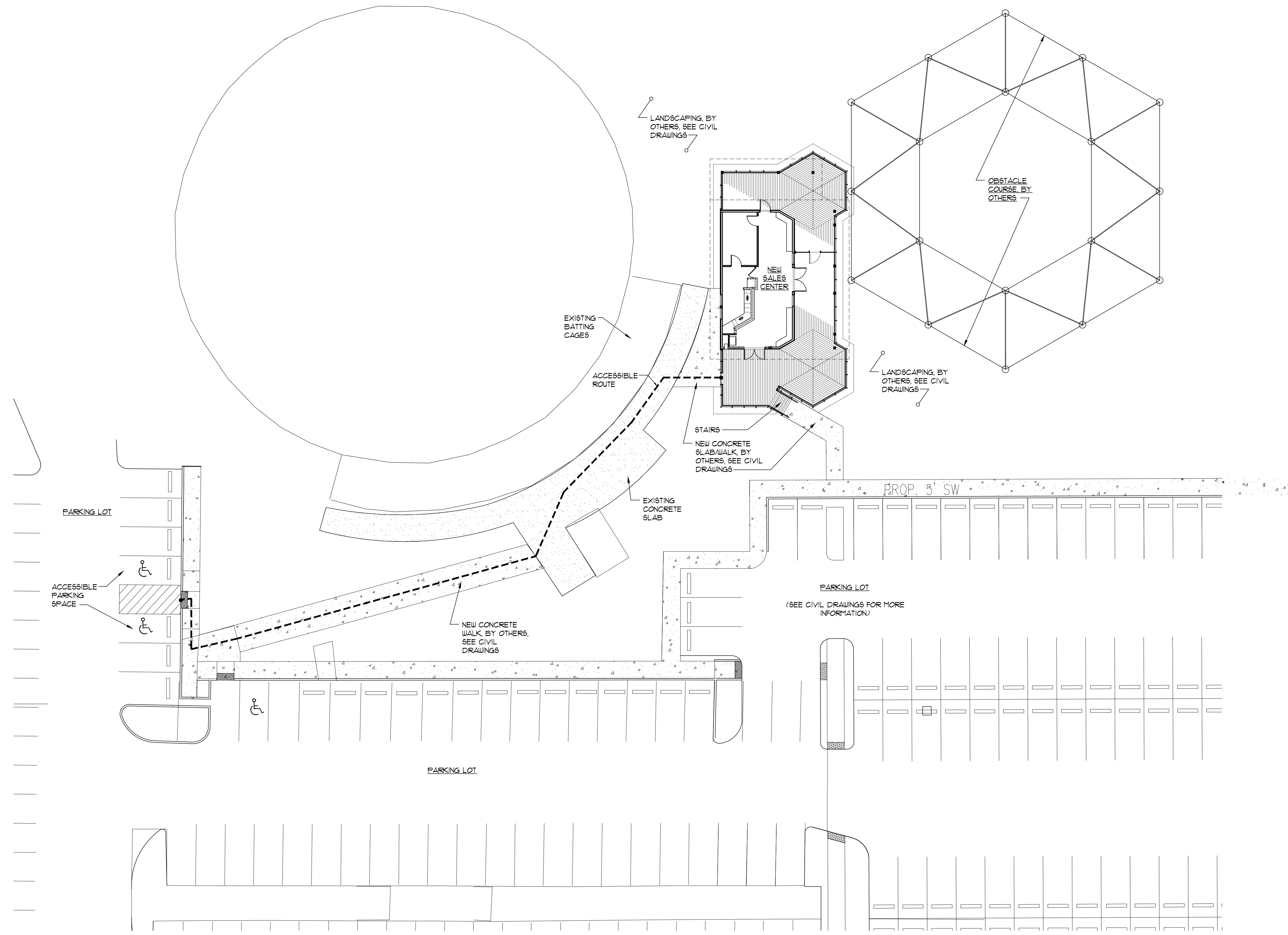
OCCUPANT LOAD		
FUNCTION OF SPACE	LOAD FACTOR	NUMBER OF OCCUPANTS
BUSINESS (GROSS AREA / 100)	603 / 100 SF	6.8 OCCUPANTS TOTAL
MERCANTILE	144 / 60 SF	2.4 OCCUPANTS TOTAL
EXTERIOR DECK	1,479 / 100 SF	14.8 OCCUPANTS TOTAL
TOTAL		24 OCCUPANTS

LIFE SAFETY SYMBOL LEGEND	
●	START
---	PATH OF TRAVEL
⊗	EXIT SIGN
•	NUMBER OF OCCUPANTS DISTRIBUTED IN THIS SPACE

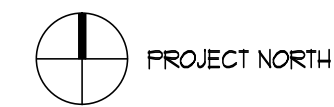
DATE	PERMIT SUBMISSION	DESCRIPTION
10/23/19		



OBSTACLE COURSE SALES CENTER
UPTON HILL REGIONAL PARK
6060 WILSON BOULEVARD, ARLINGTON, VA
PROJECT NUMBER: 190500
SCALE: AS SHOWN
LIFE SAFETY PLAN



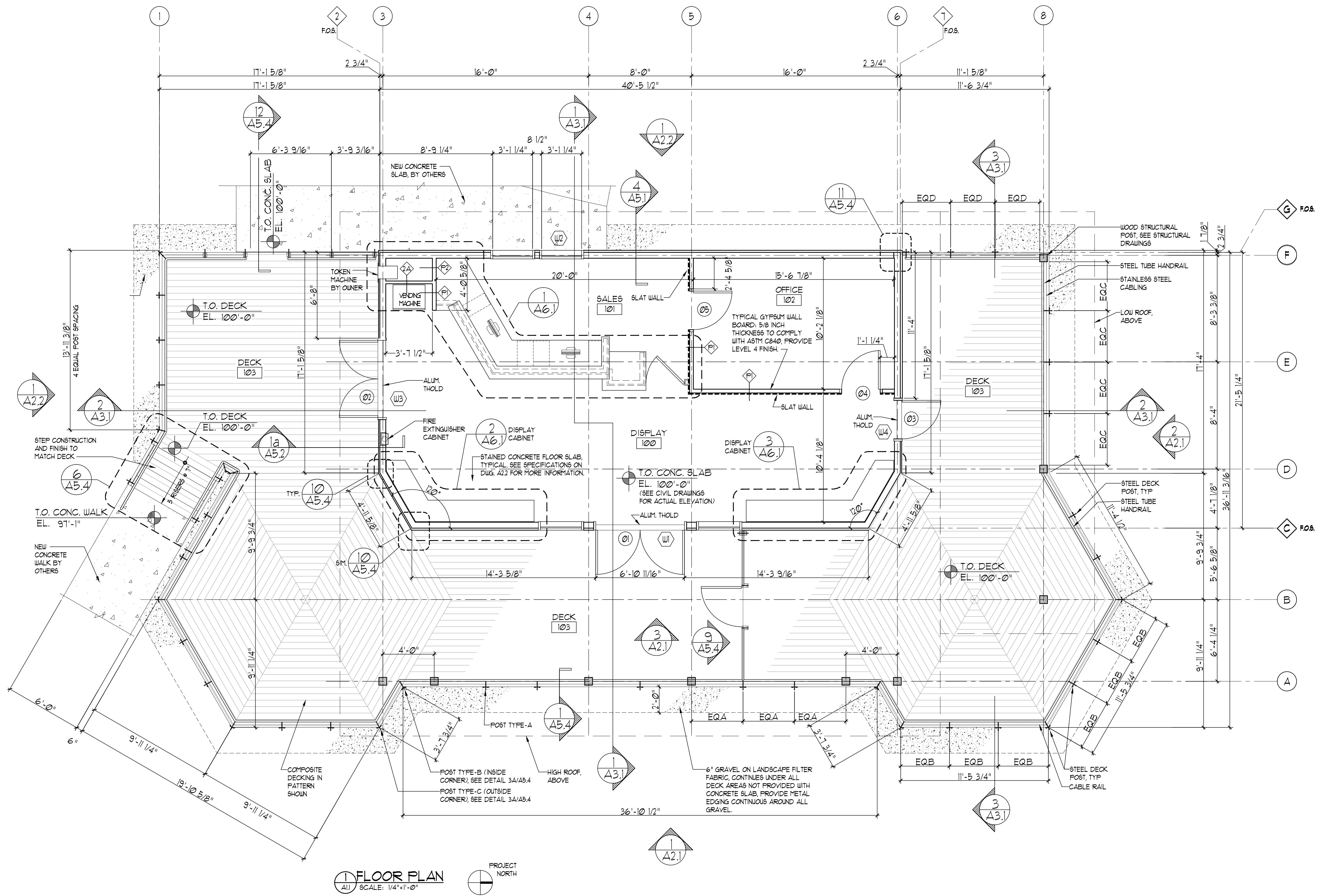
ARCHITECTURAL SITE PLAN
AS.1 SCALE: 1/8"=1'-0"



DATE	PERMIT SUBMISSION	DESCRIPTION
10/23/19		



OBSTACLE COURSE SALES CENTER
UFTON HILL REGIONAL PARK
6060 WILSON BOULEVARD, ARLINGTON, VA
PROJECT NUMBER: 190500
SCALE: AS SHOWN
ARCHITECTURAL SITE PLAN

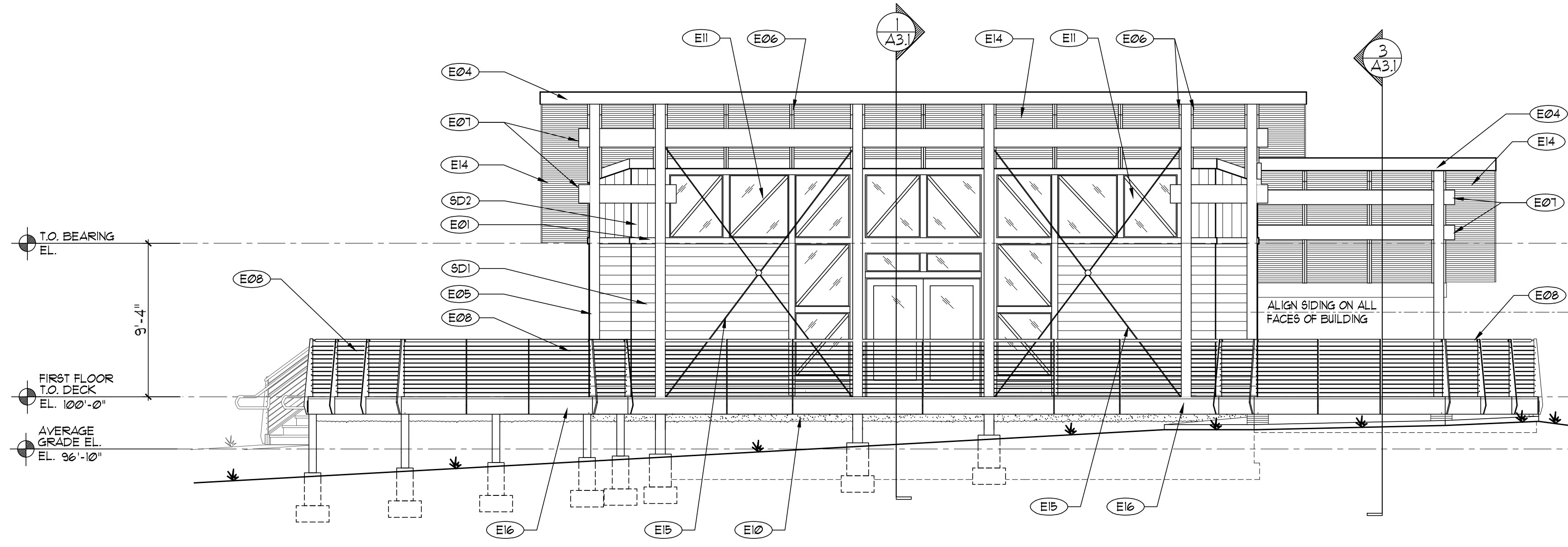


FLOOR PLAN
SCALE: 1/4"=1'-0"
PROJECT NORTH

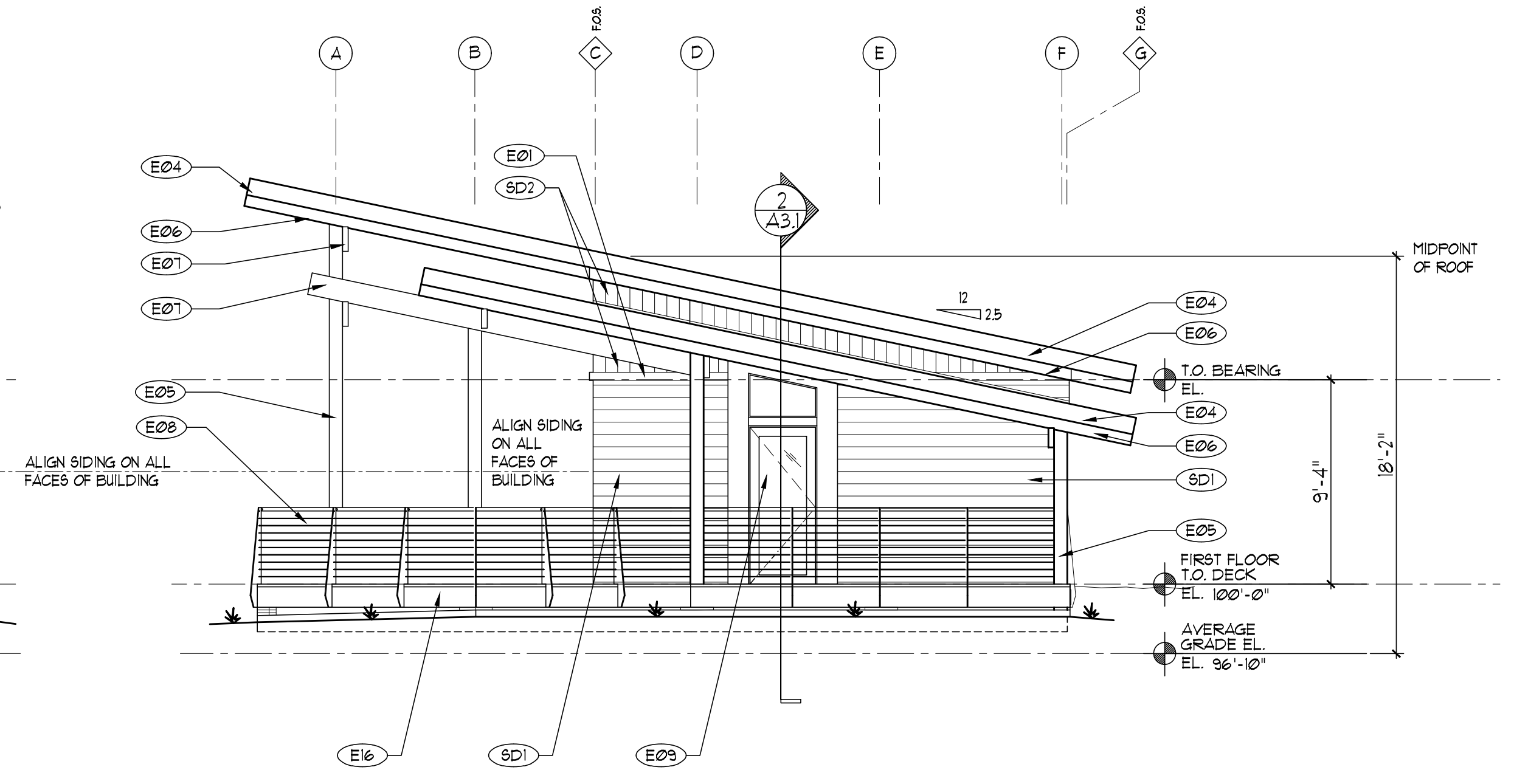
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10/23/19	PERMIT SUBMISSION



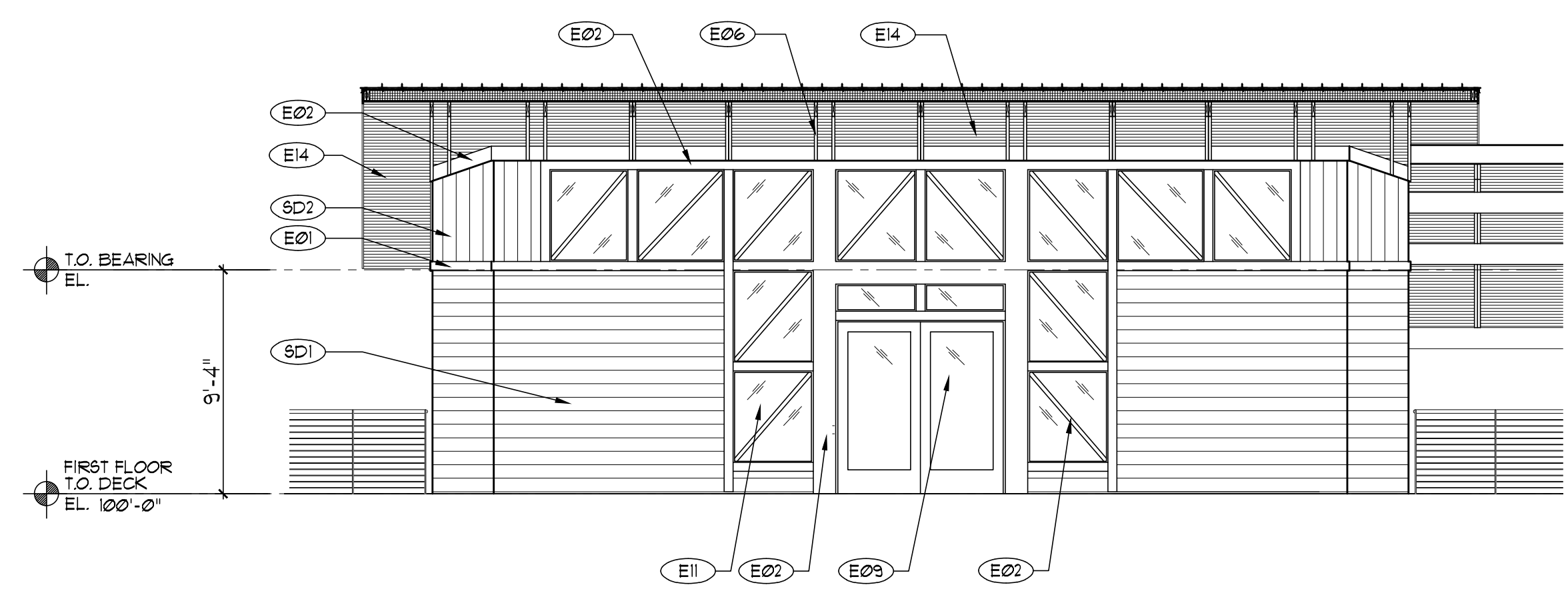
OBSTACLE COURSE SALES CENTER
UPTON HILL REGIONAL PARK
6060 WILSON BOULEVARD, ARLINGTON, VA
PROJECT NUMBER: B0500
SCALE: AS SHOWN
FLOOR PLAN



1 FRONT ELEVATION
A2.1 SCALE: 3/16"=1'-0"



2 SIDE ELEVATION
A2.1 SCALE: 3/16"=1'-0"



3 FRONT ELEVATION
A2.1 SCALE: 3/16"=1'-0"

EXTERIOR FINISH SCHEDULE

BUILDING ELEMENT / MATERIAL	FINISH	ALTERNATE #		MANUFACTURER	NOTE
		ALTERNATE #1	ALTERNATE #2		
E01 CEDAR WOOD TONGUE AND GROOVE SIDING	STAINED (SEE SPECIFICATIONS)	WESTERN RED CEDAR, SELECT KNOTTY GRADE "RED CEDAR"	WESTERN RED CEDAR, SELECT KNOTTY GRADE "SKY GREY"	CABOT / SEMI-TRANSPARENT	FINGER JOINED WOOD NOT ALLOWED.
E02 VERTICAL CEDAR WOOD SIDING	STAINED	WESTERN RED CEDAR, SELECT KNOTTY GRADE "RED CEDAR"	WESTERN RED CEDAR, SELECT KNOTTY GRADE "SKY GREY"	CABOT / SEMI-TRANSPARENT	FINGER JOINED WOOD NOT ALLOWED.
E03 WOOD BAND	STAINED	"SKY GREY"	"ULTRA WHITE"	CABOT / SEMI-TRANSPARENT	
E04 WOOD TRIM	STAINED	"SKY GREY"	"ULTRA WHITE"	CABOT / SEMI-TRANSPARENT	
E05 WOOD STAIR / COMPOSITE	PRE-FINISHED	"BRAZILIAN CHERRY"	"TROPICAL WALNUT"	MVP PROFILE	
E06 CEDAR WOOD FASCIA	STAINED	WESTERN RED CEDAR, SELECT KNOTTY GRADE "SKY GREY"	WESTERN RED CEDAR, SELECT KNOTTY GRADE "PEUTER GREY"	CABOT / SEMI-TRANSPARENT	FINGER JOINED WOOD NOT ALLOWED.
E07 WOOD POST CEDAR	STAINED	"TUSCAN GOLD"	"DARK GREY"	CABOT / SEMI-TRANSPARENT	
E08 ROOF JOIST / RAFTERS	STAINED	"TUSCAN GOLD"	"DARK GREY"	CABOT / SEMI-TRANSPARENT	
E09 WOOD BEAM	STAINED	"TUSCAN GOLD"	"DARK GREY"	CABOT / SEMI-TRANSPARENT	
E10 GUARD RAIL SYSTEM	POWDER COAT	COLOR TBD.	COLOR TBD.	SEE SPECIFICATION	
E11 WOOD DOORS & FRAMES	STAINED	SEE DOOR SCHEDULE	SEE DOOR SCHEDULE		
E12 CMU FOUNDATION WALL	DPR ACRYLIC FINISH, SANDBLAST TEXTURE	COLOR TO BE SELECTED BY ARCHITECT FROM MFG STANDARD COLORS	COLOR TO BE SELECTED BY ARCHITECT FROM MFG STANDARD COLORS	DRYVIT	
E13 WOOD WINDOW	STAINED				
E14 ALUMINUM WINDOWS	PRE-FINISHED	LIGHT BRONZE ANODIZED	LIGHT BRONZE ANODIZED	KAUWEER TRIFAB 451T	
E15 METAL ROOFING	PRE-FINISHED	SLATE GREY	SIERRA TAN 409	ATA5	
E16 WOOD CEILING	STAINED	"SEACOAST GREY"	"LINEN"	CABOT / SEMI-TRANSPARENT	
E17 STEEL CROSS BRACING	PAINTED - SEE SPECIFICATION	COLOR TBD.	COLOR TBD.	SEE SPECIFICATION	
E18 DECK FASCIA	STAINED	"CHESTNUT BROWN"	"PEUTER GREY"	CABOT / SEMI-TRANSPARENT	

CEDAR SIDING INSTALLATION NOTES:

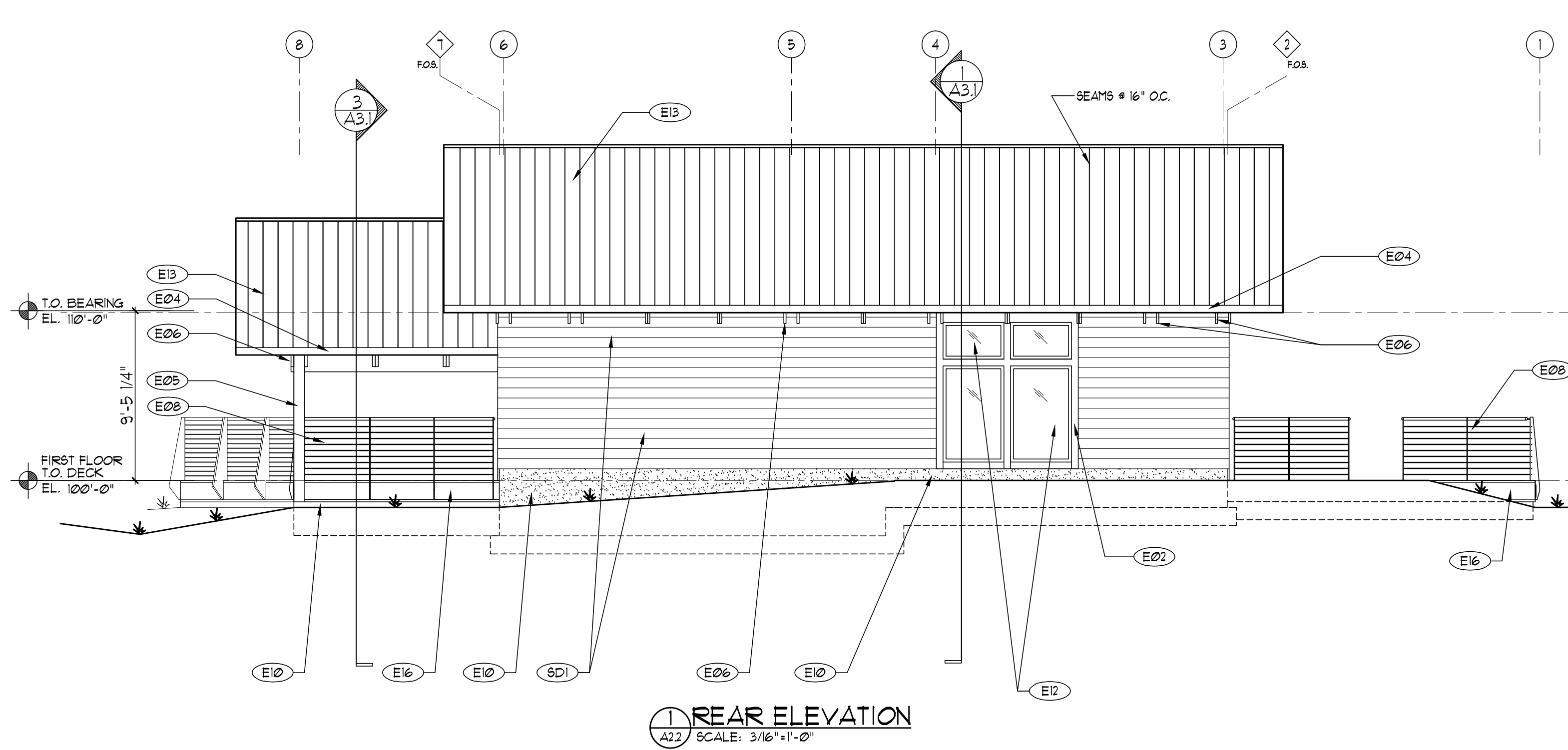
- FINISH WESTERN RED CEDAR ASAPI FACTORY FINISH OR APPLY COATINGS PRIOR TO INSTALLATION IF POSSIBLE. ALWAYS TOUCH UP FIELD CUTS.
- ACCLIMATIZE WESTERN RED CEDAR SIDING BEFORE INSTALLATION.
- FASTENERS: 304 OR 316 GRADE STAINLESS STEEL, ALUMINUM, OR HOT DIPPED GALVANIZED (AS PER ASTM A-153).
- NAIL ALL WESTERN RED CEDAR SIDING INTO 1 1/2" OF SOLID WOOD.
- ENSURE BUTT JOINTS ARE MADE OVER SOLID WOOD TO PROVIDE SECURE NAILING. JOIN TWO PIECES OF SIDING WITH A MITERED BUTT JOINT.
- BLIND NAIL SIDING THROUGH TONGUE EDGE AT 16" O.C. INTO STUDS
- USE FULL LENGTH SECTION OF SIDING TO THE MAXIMUM AMOUNT POSSIBLE
- STAGGER JOINTS EVENLY AND RANDOMLY ACROSS WALLS

DATE	PERMIT SUBMISSION	DESCRIPTION
10/23/19		

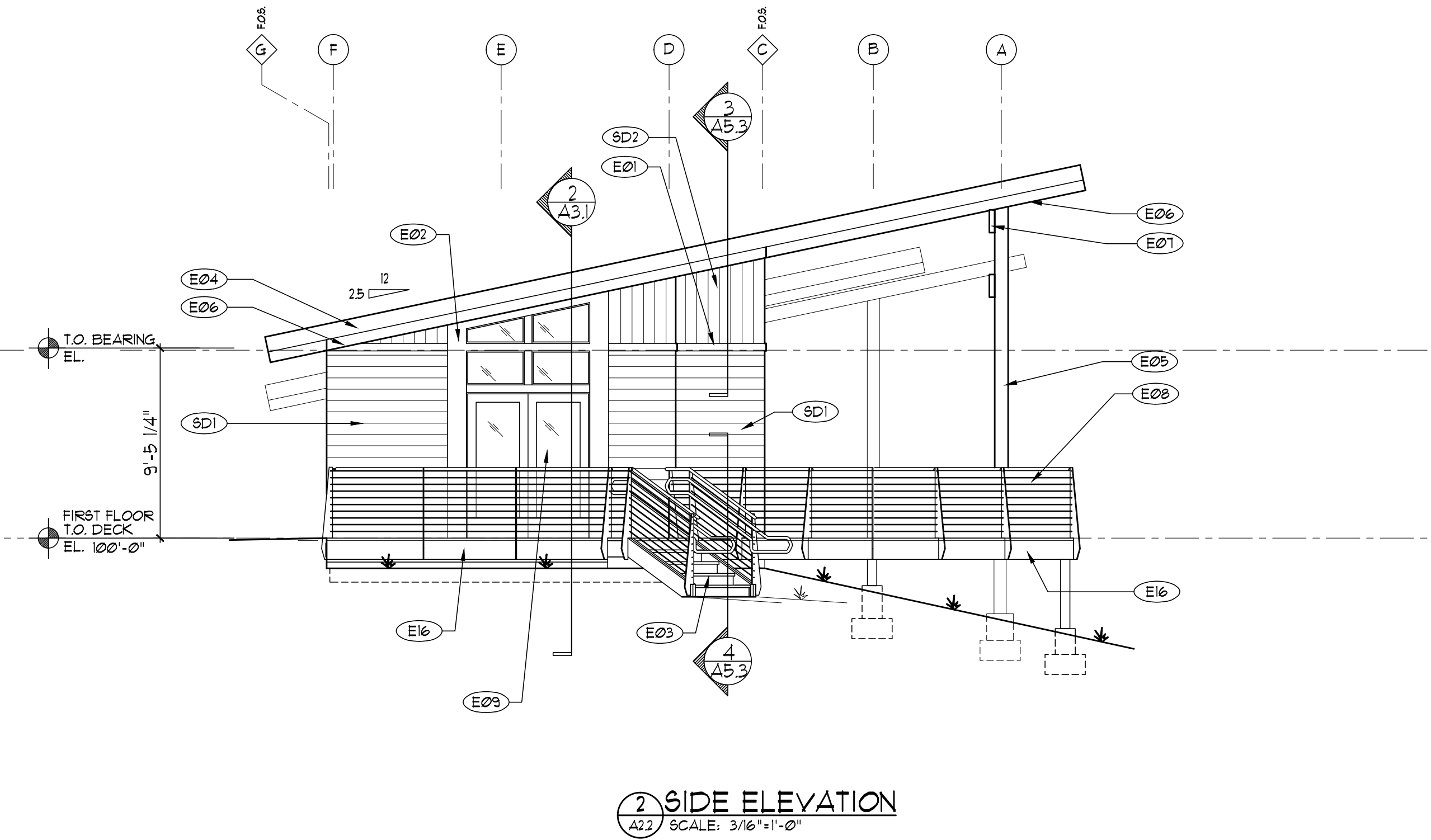


SCALE: AS SHOWN

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6060 WILSON BOULEVARD, ARLINGTON, VA
PROJECT NUMBER: B09500



1 REAR ELEVATION
A22 SCALE: 3/16"=1'-0"



2 SIDE ELEVATION
A22 SCALE: 3/16"=1'-0"

EXTERIOR FINISH SCHEDULE

BUILDING ELEMENT / MATERIAL	FINISH	ALTERNATE #1		ALTERNATE #2		MANUFACTURER	NOTE
		COLOR & DESCRIPTION	COLOR & DESCRIPTION	COLOR & DESCRIPTION	COLOR & DESCRIPTION		
(SD1) CEDAR WOOD TONGUE AND GROOVE SIDING	STAINED (SEE SPECIFICATIONS)	WESTERN RED CEDAR, SELECT KNOTTY GRADE "RED CEDAR"	WESTERN RED CEDAR, SELECT KNOTTY GRADE "SKY GREY"	CABOT / SEMI-TRANSPARENT	FINGER JOINED WOOD NOT ALLOWED.		
(SD2) VERTICAL CEDAR WOOD SIDING	STAINED	WESTERN RED CEDAR, SELECT KNOTTY GRADE "RED CEDAR"	WESTERN RED CEDAR, SELECT KNOTTY GRADE "SKY GREY"	CABOT / SEMI-TRANSPARENT	FINGER JOINED WOOD NOT ALLOWED.		
(E01) WOOD BAND	STAINED	"SKY GREY"	"ULTRA WHITE"	CABOT / SEMI-TRANSPARENT			
(E02) WOOD TRIM	STAINED	"SKY GREY"	"ULTRA WHITE"	CABOT / SEMI-TRANSPARENT			
(E03) WOOD STAIR / COMPOSITE	FRE-FINISHED	"BRAZILIAN CHERRY"	"TROPICAL WALNUT"	MVP PROFILE			
(E04) CEDAR WOOD FASCIA	STAINED	WESTERN RED CEDAR, SELECT KNOTTY GRADE "RED CEDAR"	WESTERN RED CEDAR, SELECT KNOTTY GRADE "FEWTER GREY"	CABOT / SEMI-TRANSPARENT	FINGER JOINED WOOD NOT ALLOWED.		
(E05) WOOD POST CEDAR	STAINED	"TUSCAN GOLD"	"DARK GREY"	CABOT / SEMI-TRANSPARENT			
(E06) ROOF JOIST / RAFTERS	STAINED	"TUSCAN GOLD"	"DARK GREY"	CABOT / SEMI-TRANSPARENT			
(E07) WOOD BEAM	STAINED	"TUSCAN GOLD"	"DARK GREY"	CABOT / SEMI-TRANSPARENT			
(E08) GUARD RAIL SYSTEM	POWDER COAT	COLOR T.B.D.	COLOR T.B.D.	SEE SPECIFICATION			
(E09) WOOD DOORS & FRAMES	STAINED	SEE DOOR SCHEDULE	SEE DOOR SCHEDULE				
(E10) CMU FOUNDATION WALL	DPR ACRYLIC FINISH, SANDBLAST TEXTURE	COLOR TO BE SELECTED BY ARCHITECT FROM MFG STANDARD COLORS	COLOR TO BE SELECTED BY ARCHITECT FROM MFG STANDARD COLORS	DRYVIT			
(E11) WOOD WINDOW	STAINED						
(E12) ALUMINUM WINDOWS	FRE-FINISHED	LIGHT BRONZE ANODIZED	LIGHT BRONZE ANODIZED	KAUINEER TRIFAB 451T			
(E13) METAL ROOFING	FRE-FINISHED	SLATE GREY	SIERRA TAN 409	ATA5			
(E14) WOOD CEILING	STAINED	"SEACOAST GREY"	"LINEN"	CABOT / SEMI-TRANSPARENT			
(E15) STEEL CROSS BRACING	PAINTED - SEE SPECIFICATION	COLOR T.B.D.	COLOR T.B.D.	SEE SPECIFICATION			
(E16) DECK FASCIA	STAINED	"CHESTNUT BROWN"	"FEWTER GREY"	CABOT / SEMI-TRANSPARENT			

CEDAR SIDING INSTALLATION NOTES:

- FINISH WESTERN RED CEDAR AS A FACTORY FINISH OR APPLY COATINGS PRIOR TO INSTALLATION IF POSSIBLE. ALWAYS TOUCH UP FIELD CUTS.
- ACCLIMATIZE WESTERN RED CEDAR SIDING BEFORE INSTALLATION.
- FASTENERS: 304 OR 316 GRADE STAINLESS STEEL, ALUMINUM, OR HOT DIPPED GALVANIZED (AS PER ASTM A-153).
- NAIL ALL WESTERN RED CEDAR SIDING INTO 1 1/2" OF SOLID WOOD.
- ENSURE BUTT JOINTS ARE MADE OVER SOLID WOOD TO PROVIDE SECURE NAILING. JOIN TWO PIECES OF SIDING WITH A MITERED BUTT JOINT.
- BLIND NAIL SIDING THROUGH TONGUE EDGE AT 16" O.C. INTO STUDS
- USE FULL LENGTH SECTION OF SIDING TO THE MAXIMUM AMOUNT POSSIBLE
- STAGGER JOINTS EVENLY AND RANDOMLY ACROSS WALLS

SPECIFICATIONS:

SHEET METAL ROOFING:
PROVIDE COMPLETE SHEET METAL ROOFING SYSTEM INCLUDING MANUFACTURERS RECOMMENDED SEALING TAPE FLASHING TRIM AND JOINT SEALANT. SUBMIT A SAMPLE 12 INCHES LONG BY ACTUAL WIDTH OF UNIT, INCLUDING FINISHED SEAM AND IN REQUIRED PROFILE. INCLUDE FASTENERS, CLEATS, CLIPS, AND OTHER ATTACHMENTS. THE FOLLOWING GUARANTEES SHALL BE PROVIDED BY THE METAL ROOFING MANUFACTURER: DURABILITY OF THE ROOF PANELS AGAINST RUPTURE, STRUCTURAL FAILURE, OR PERFORATION SHALL BE GUARANTEED FOR A PERIOD OF TEN (10) YEARS. THE COLOR FINISH SHALL BE GUARANTEED FOR A PERIOD OF TEN (10) YEARS. PROVIDE MANUFACTURERS WRITTEN WEATHER TIGHTNESS WARRANTY FOR A MAXIMUM OF TEN (10) YEARS AGAINST LEAKS IN ROOFING SYSTEM. WARRANTY SHALL BE SIGNED BY BOTH THE MANUFACTURER OF THE METAL ROOFING SYSTEM AND THE METAL ROOFING SYSTEM INSTALLER. ACCEPTABLE MANUFACTURERS: "STANDING SEAM TEE-PANEL SYSTEM" BERRIDGE MANUFACTURING COMPANY (800-231-8211), "DUTCH SEAM (MSD) PANEL SYSTEM" ATAS INTERNATIONAL, INC. (800-468-1441), "SNAP-ON SEAM 6610-12 PANEL SYSTEM" DIMENSIONAL METALS INC. (DM1) (800-828-1510), "SNAP-CLAD PANELS" PETERSEN ALUMINUM CORPORATION (PAC-CLAD) (800-122-1150). THE ROOF SYSTEM SHALL BE COMPOSED OF THE FOLLOWING: PANELS SHALL BE NOMINAL 16" SEAM ON CENTER WITH SNAP-ON SEAM. FABRICATE FROM 24 GAUGE HOT DIPPED GALVANIZED (G-90) STEEL IN ACCORDANCE WITH ASTM A653. COATING TO BE TWO-COAT, THERMO-CURED, FULL-STRENGTH 10% KYNAR 500 FLUOROPOLYMER COATING. COLOR AS SELECTED BY ARCHITECT FROM MANUFACTURERS STANDARD COLOR SELECTION. PROVIDE SELF-ADHERING SHEET UNDERLAYMENT, POLYETHYLENE FACED, ASTM D1910 MINIMUM OF 30 MILS THICK & SLIP-RESISTING. POLYETHYLENE-FILM-REINFORCED TOP SURFACE LAMINATED TO A HEAT RESISTIVE ADHESIVE, WITH RELEASE-PAPER BACKING; COLD APPLIED. PROVIDE PRIMER WHEN RECOMMENDED BY UNDERLAYMENT MANUFACTURER.

STAINED CONCRETE FLOOR:
PROVIDE CONCRETE ACID STAIN SYSTEM MANUFACTURED BY DIRECT COLORS, INC. 430 EAST 10TH STREET, SHAWNEE, OK 74801, (811) 255-2656, (405) 275-6451, FAX: (405) 275-2815, E-MAIL: INFO@DIRECTCOLORS.COM, WWW.DIRECTCOLORS.COM. PROVIDE ONE PRIME COAT AND TWO FINISH COATS OF DIRECT COLORS WATER BASED POLYURETHANE SEALER. THE FINAL COAT SHALL HAVE DIRECT COLORS NON-SKID ADDITIVE. COLOR T.B.D.

PLASTIC-LAMINATE-FACED ARCHITECTURAL CABINETS:
ARCHITECTURAL WOODWORK STANDARDS GRADE PREMIUM. FRAMELESS CONSTRUCTION. HIGH-PRESSURE DECORATIVE LAMINATE MANUFACTURER: WILSONART STANDARD HORIZONTAL AND VERTICAL GRADE LAMINATES OR APPROVED EQUAL. COLORS TO BE APPROVED BY ARCHITECT. DRAWER SIDES AND BACKS: SOLID-HARDWOOD LUMBER. DRAWER BOTTOMS: HARDWOOD PLYWOOD. PROVIDE SHOP DRAWINGS SHOWING LOCATION OF EACH ITEM, DIMENSIONED PLANS AND ELEVATIONS, LARGE-SCALE DETAILS.

SOLID SURFACING:
MANUFACTURER: WILSONART, GIBRALTER, 1/2" THICK, OR APPROVED EQUAL, COLOR TO BE APPROVED BY ARCHITECT.

CABINET HARDWARE AND ACCESSORIES:
HINGES: STANLEY 1585 - 5 KNUCKLE HINGE OR APPROVED EQUAL WITH PLASTIC INSERTS AT SCREWS.
WIRE FULLS: BACK MOUNTED, SOLID METAL, 5 INCHES (127 MM) LONG, 2-1/2 INCHES (63.5 MM) DEEP, AND 5/16 INCH (8 MM) IN DIAMETER.
CATCHES: MAGNETIC CATCHES, BHM4 A156.9, B03141; SHELF RESTS IN "SHELF RESTS" PARAGRAPH BELOW ARE INSTALLED IN HOLES DRILLED IN CABINET SIDES AND PARTITIONS.
SHELF RESTS: BHM4 A156.9, B040213; METAL, TWO-PIN TYPE WITH SHELF HOLD-DOWN CLIP.
DRAWER SLIDES: BHM4 A156.9, GRADE 140-100 AND GRADE 140-200. SLIDE MOUNTED. FULL-EXTENSION TYPE; ZINC-PLATED-STEEL BALL-BEARING SLIDES. EXPOSED HARDWARE FINISHES: SATIN CHROMIUM PLATED. BHM4 626 FOR BRASS OR BRONZE BASE; BHM4 652 FOR STEEL BASE.

SLATWALL:
"MEGAWALL ALUMINUM SLATWALL". MANUFACTURER: MEGAWALL, INC. (616-647-4130)
A. 1-SIDED ALUMINUM PANEL. COLOR: RAW ALUMINUM
B. GROOVE SPACING: 1-INCH ON CENTERS.
C. INSTALLATION METHOD: HIDDEN FASTENER SYSTEM.

SEALANTS:
POLYURETHANE, COLOR TO MATCH ADJACENT SURFACES. APPROVED MANUFACTURERS: DOW CORNING CORPORATION, GE, PECORA CORPORATION, SIKKA CORPORATION, TREMCO INCORPORATED.

ALUMINUM LANDSCAPE EDGING:
PERMALOC CLEANLINE XL, 3/16 INCH (4.8MM) X 6 INCH (152MM) HIGH, EXTRUDED ALUMINUM, 6063 ALLOY, T-6 HARDNESS, LANDSCAPE EDGING FOR STRAIGHT-LINE AND CURVILINEAR APPLICATIONS IN STRAIGHT PROFILE, AS MANUFACTURED BY PERMALOC CORPORATION, HOLLAND MI 48424, TELEPHONE (800) 356-3660. FINISH: BLACK DURAFLEX.

AIR WATER RESISTANT BARRIER:
DUPONT TYVEK HOMEURAP.

GUARD RAIL SYSTEM:
CUSTOM STEEL CHICAGO STYLE POSTS, ALUMINUM TOP RAIL, STEEL HANDRAILS, POWDER COATED FINISH, STAINLESS STEEL CABLE INFILL AND FITTINGS. AS MANUFACTURED BY KEUKA STUDIOS, FINE ARCHITECTURAL METALWORK, WWW.KEUKA-STUDIOS.COM, 101 RUSH HENRIETTA TOWN LINE RD, RUSH, NY 14543, TEL 1-855-454-5678

EXTERIOR WOOD STAIN:
CABOT SEMI-TRANSPARENT DECK AND SIDING STAIN

ALUMINUM STOREFRONT WINDOW:
KAUINEER TRIFAB 451T

EXTERIOR WOOD DOORS:
JELD WEN "CUSTOM WOOD" DOOR. EXTERIOR GRADE. UNFINISHED ALDERWOOD. SITE FINISH WITH STAIN TO MATCH ADJACENT WOOD FRAMING.

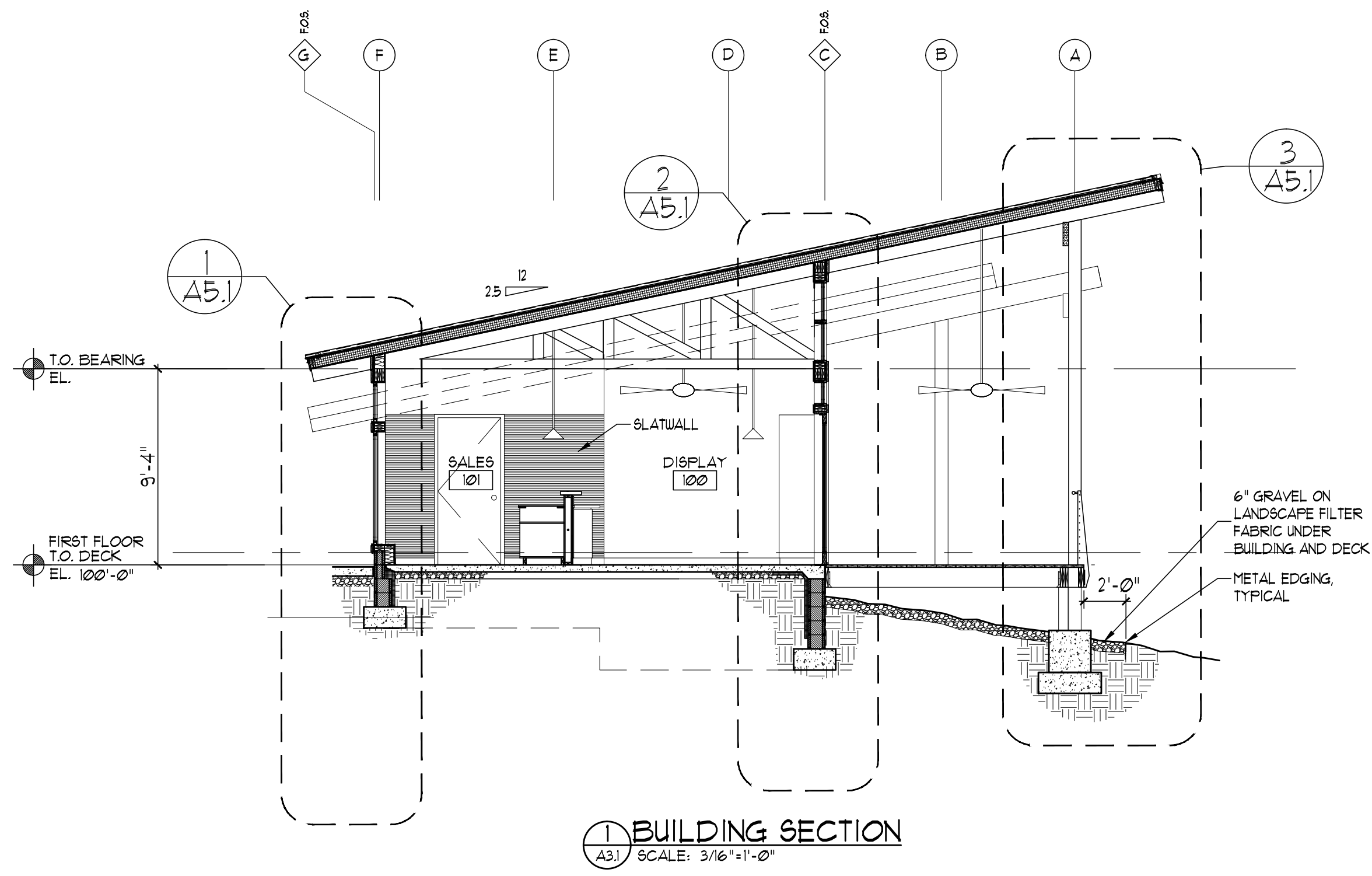
INTERIOR WOOD DOORS:
JELD WEN "CUSTOM WOOD" DOOR. INTERIOR GRADE. UNFINISHED ALDERWOOD. SITE FINISH WITH STAIN TO MATCH EXTERIOR WOOD DOORS.

10/23/19 PERMIT SUBMISSION DATE

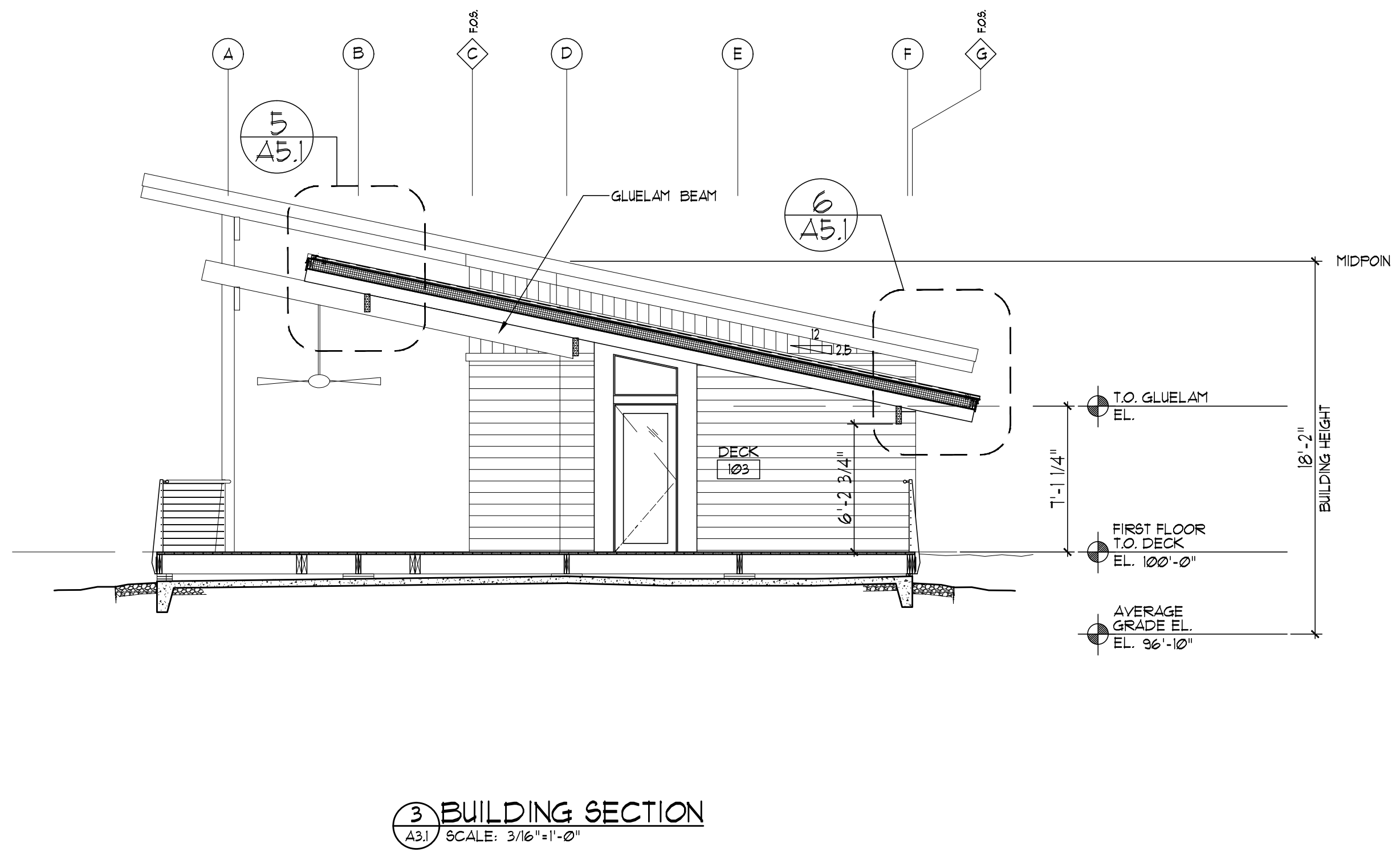


SCALE: AS SHOWN

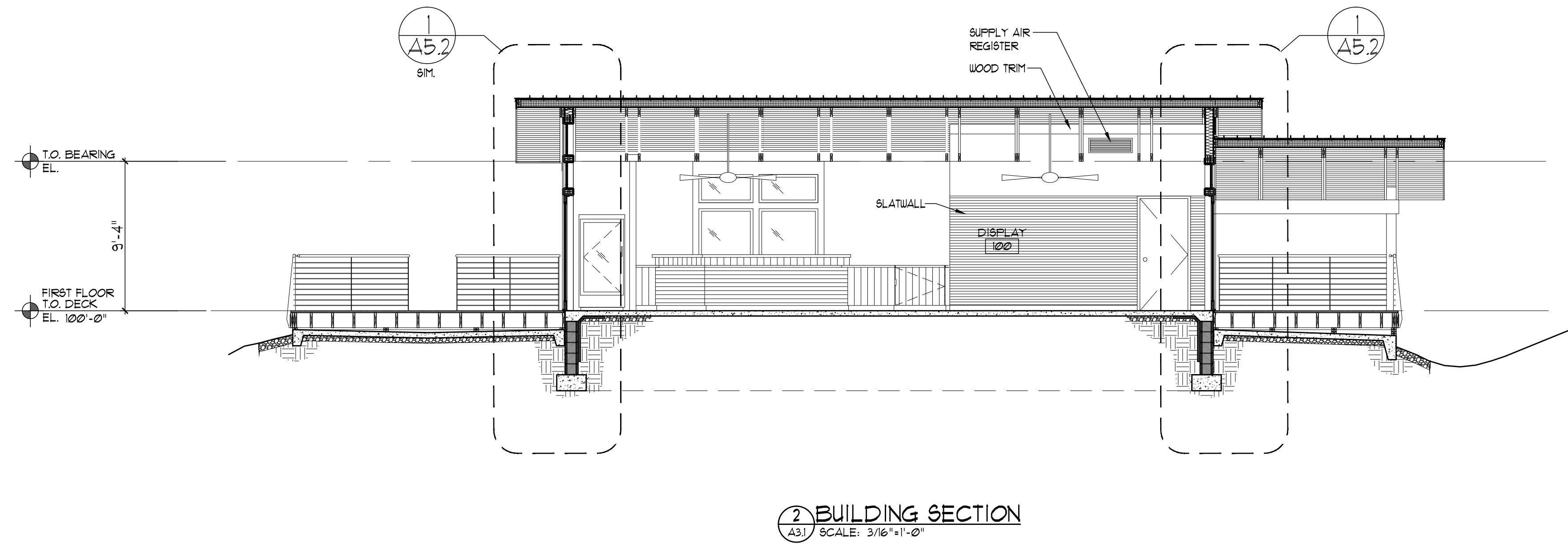
OBSTACLE COURSE SALES CENTER
UFTON HILL REGIONAL PARK
6060 WILSON BOULEVARD, ARLINGTON, VA
PROJECT NUMBER: B09500
EXTERIOR ELEVATIONS



1 BUILDING SECTION
A3.1 SCALE: 3/16"=1'-0"



3 BUILDING SECTION
A3.1 SCALE: 3/16"=1'-0"

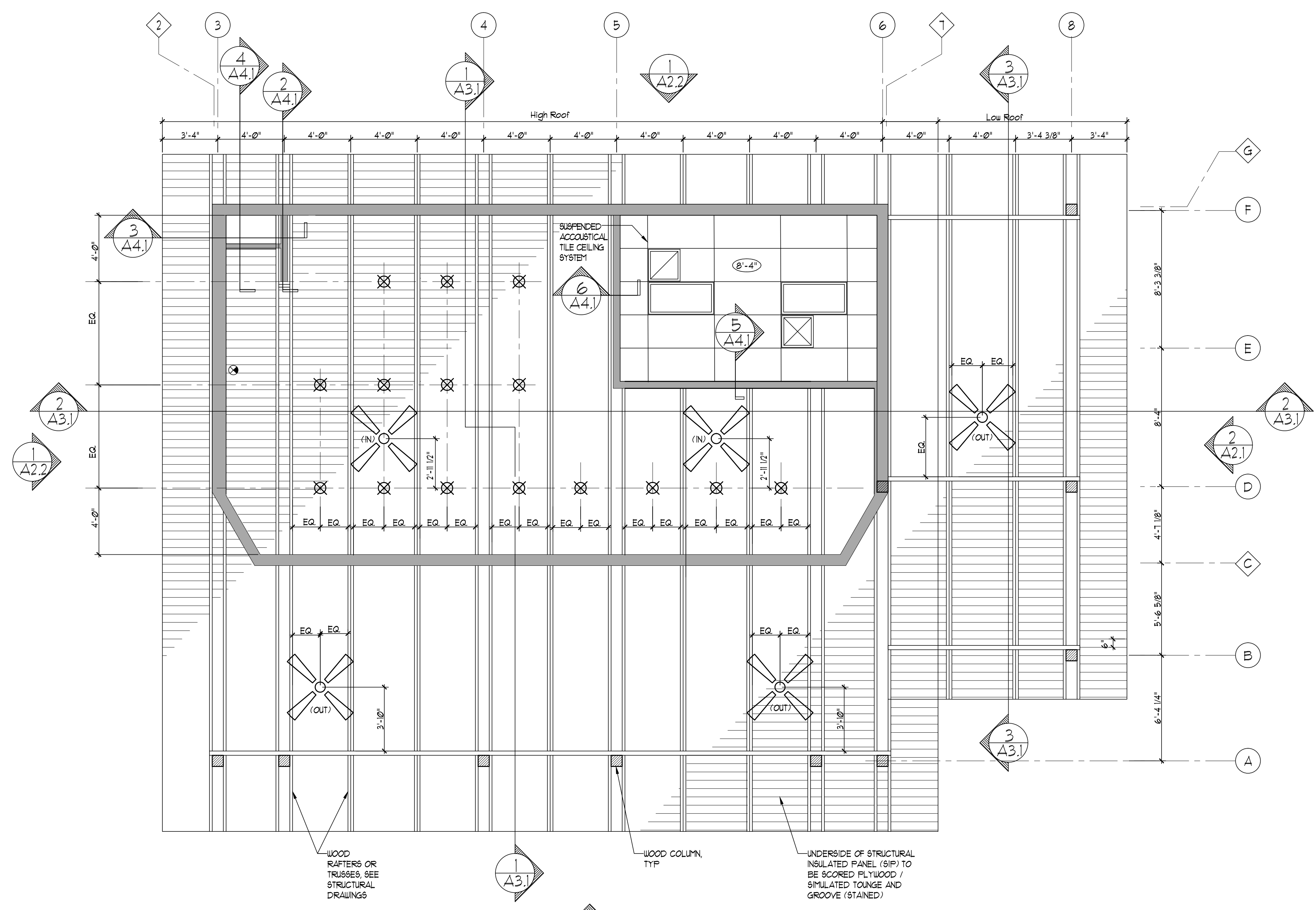


2 BUILDING SECTION
A3.1 SCALE: 3/16"=1'-0"

DATE	PERMIT SUBMISSION	DESCRIPTION
10/23/19		



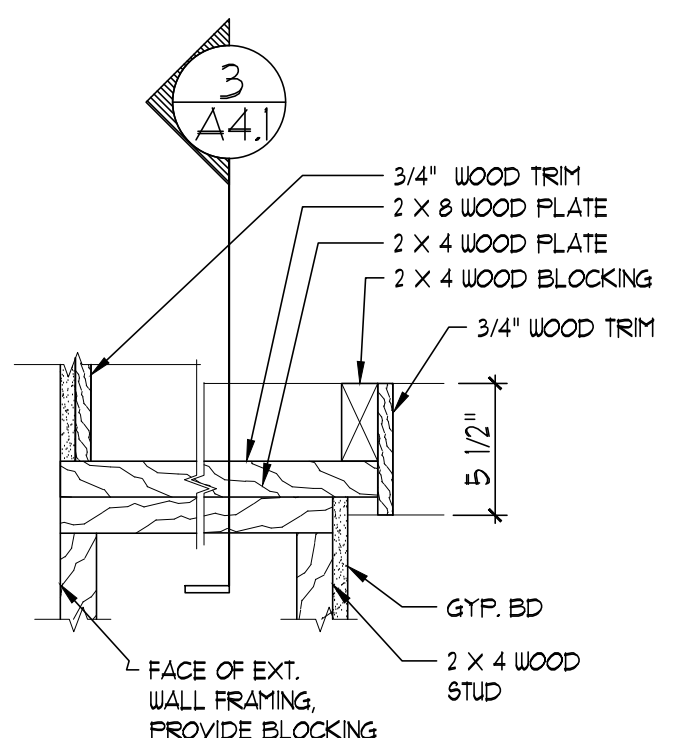
OBSTACLE COURSE SALES CENTER
UFTON HILL REGIONAL PARK
6060 WILSON BOULEVARD, ARLINGTON, VA
PROJECT NUMBER: 190500
SCALE: AS SHOWN
BUILDING SECTIONS



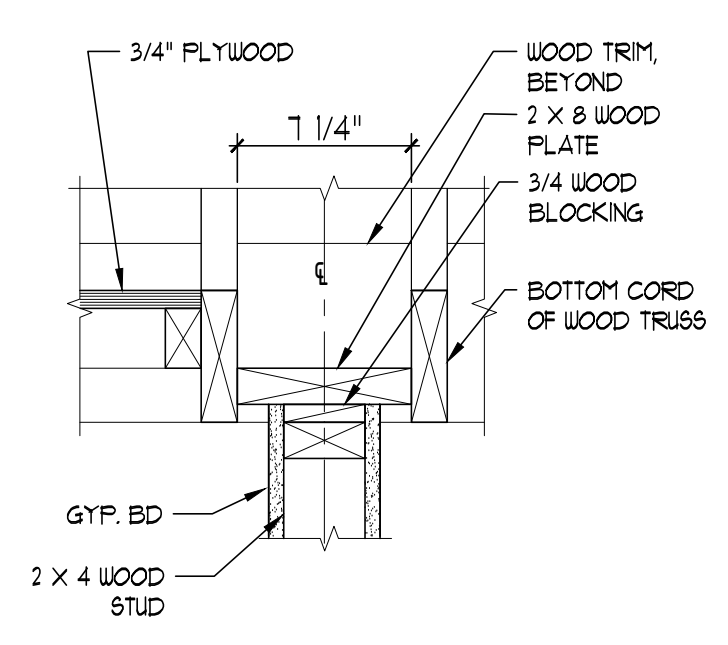
CEILING SYMBOL LEGEND

	PENDANT LIGHT FIXTURE
	EXIT SIGN
	2 X 4 LED LIGHT FIXTURE
	HAIKU (OUTSIDE MODEL) 60 INCH DIAMETER MODEL # FR504. ALL COMPONENTS SHALL BE WHITE, PROVIDE GUY WIRE STABILIZATION KIT, WITH EXTENSION TUBES AS REQUIRED FOR MOUNTING WITH BOTTOM @ 8'-0" AFF. UNIVERSAL TYPE MOUNT.
	HAIKU (INSIDE MODEL) 60 INCH DIAMETER MODEL # 5350. ALL COMPONENTS SHALL BE WHITE, WITH EXTENSION TUBES AS REQUIRED FOR MOUNTING WITH BOTTOM @ 8'-0" AFF. UNIVERSAL TYPE MOUNT.
	WOOD CEILING, STAINED
	EMERGENCY LIGHT FIXTURE
	RETURN GRILLE
	SUPPLY DIFFUSER

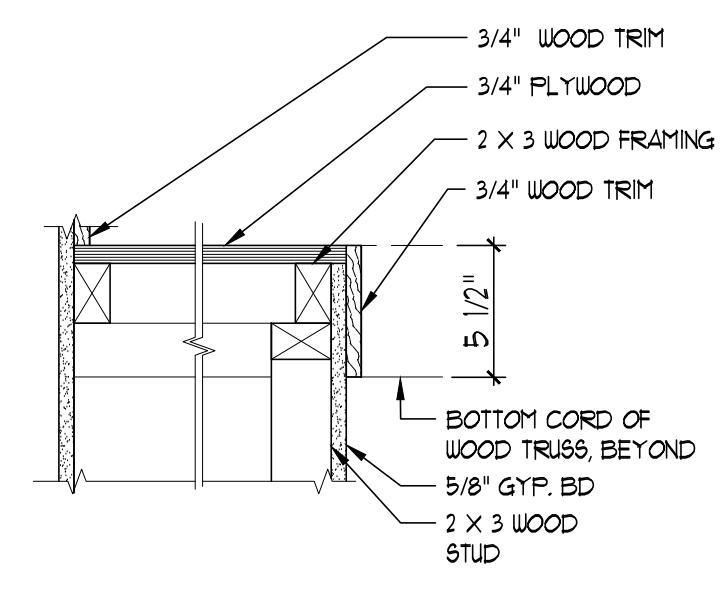
1 REFLECTED CEILING PLAN
 SCALE: 1/4"=1'-0"



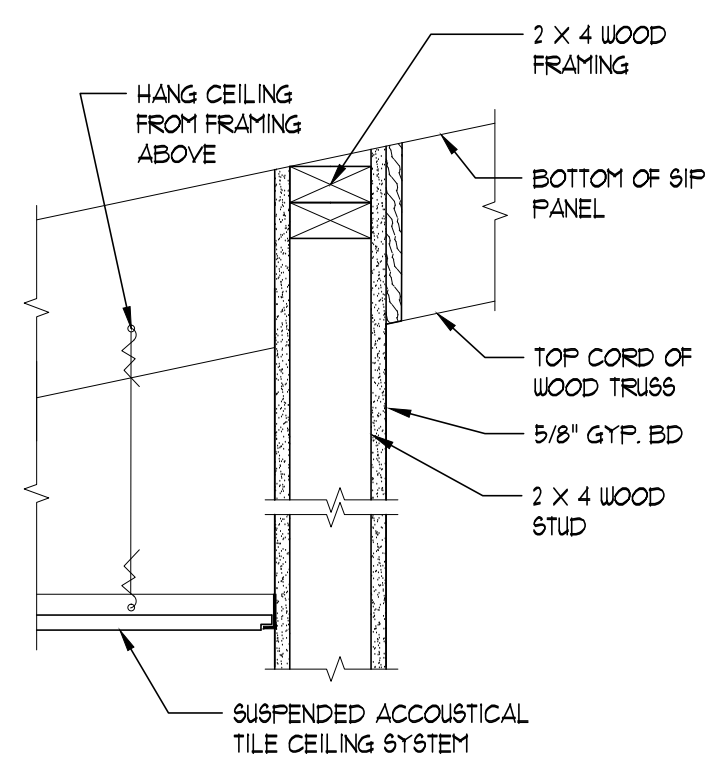
2 PARTITION TOP DETAIL
 SCALE: 1 1/2"=1'-0"



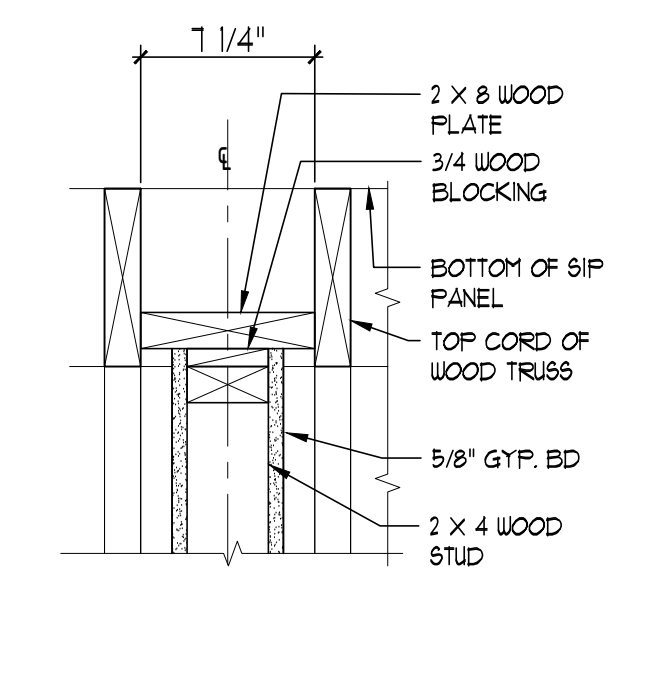
3 PARTITION TOP DETAIL
 SCALE: 1 1/2"=1'-0"



4 PARTITION TOP DETAIL
 SCALE: 1 1/2"=1'-0"



5 PARTITION TOP DETAIL
 SCALE: 1 1/2"=1'-0"



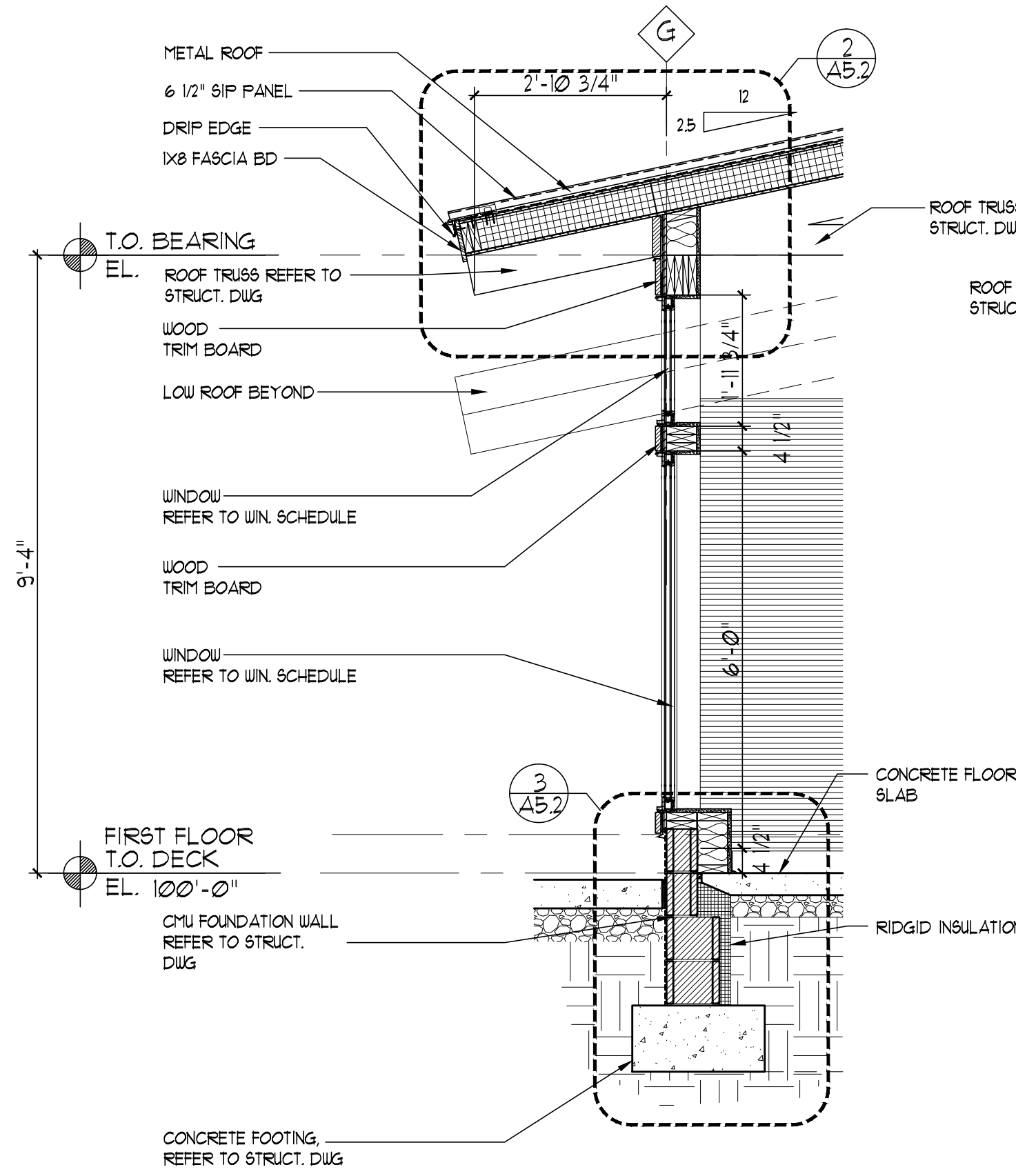
6 PARTITION TOP DETAIL
 SCALE: 1 1/2"=1'-0"

DATE	PERMIT SUBMISSION	DESCRIPTION
10/23/19		

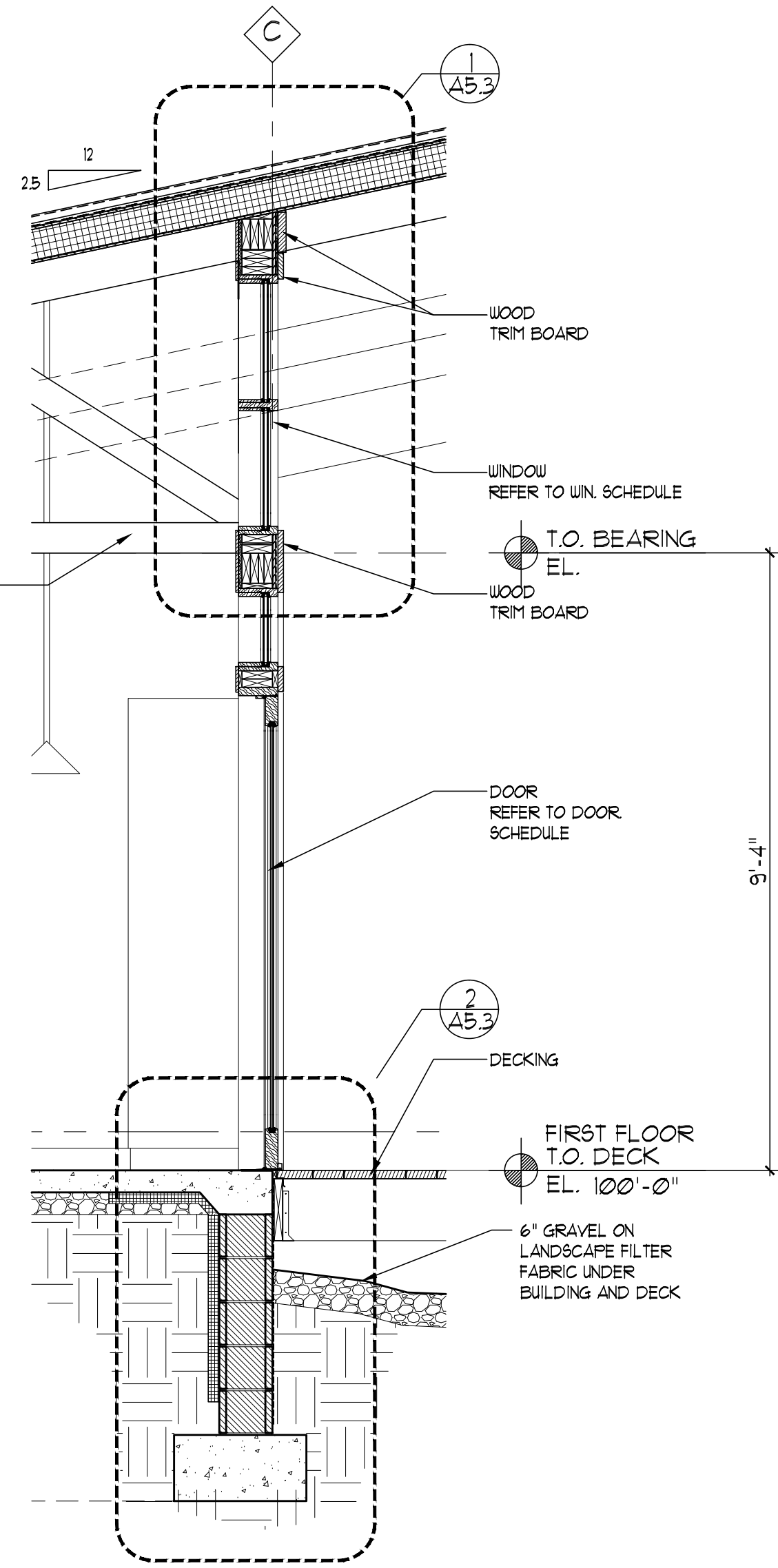


OBSTACLE COURSE SALES CENTER
 UPTON HILL REGIONAL PARK
 6060 WILSON BOULEVARD, ARLINGTON, VA
 PROJECT NUMBER: 18/05-00
 SCALE: AS SHOWN
REFLECTED CEILING PLAN

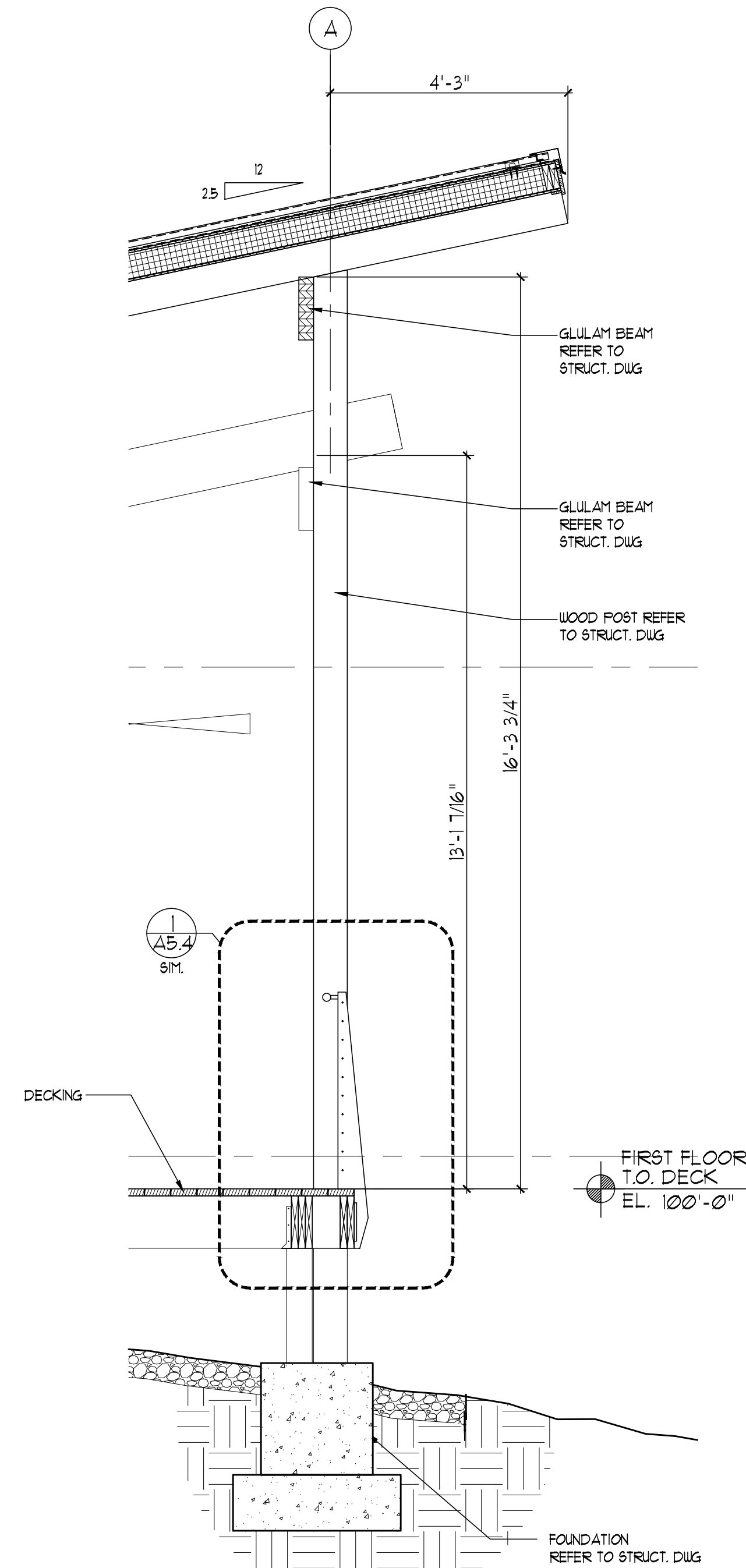
A4.1



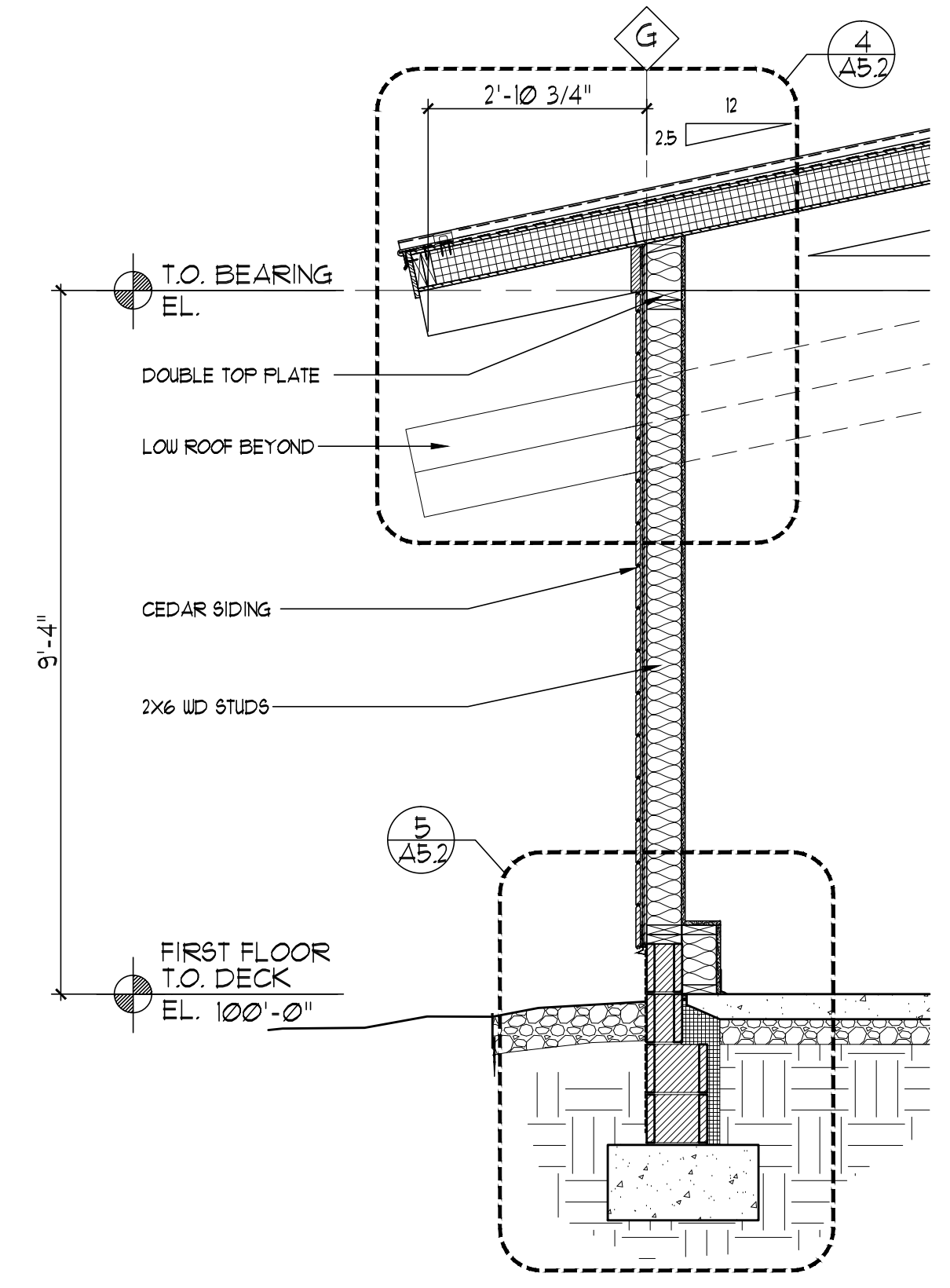
1 WALL SECTION
AS1 SCALE: 1/2"=1'-0"



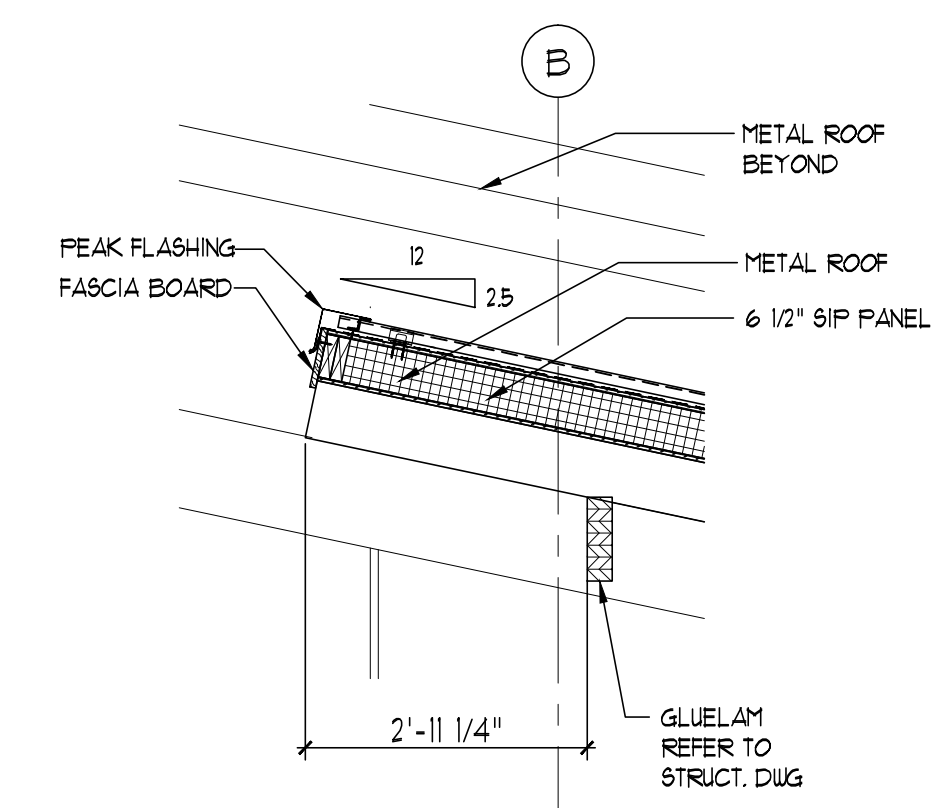
2 WALL SECTION
AS1 SCALE: 1/2"=1'-0"



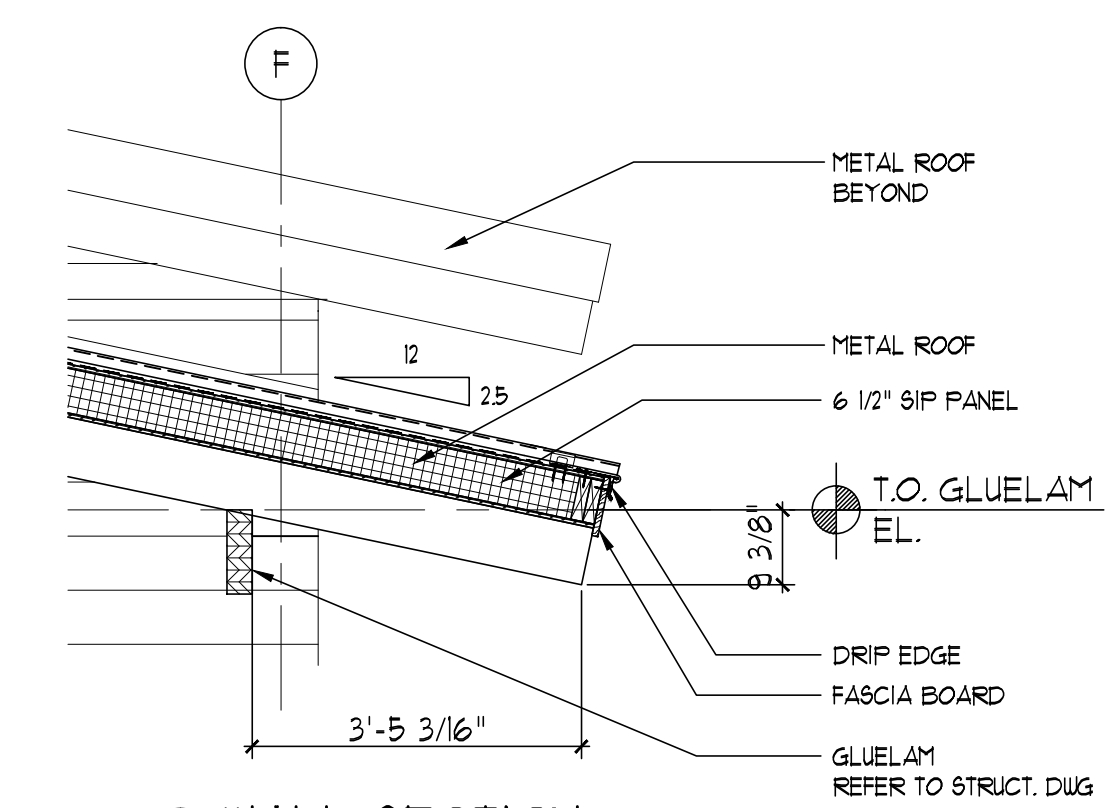
3 WALL SECTION
AS1 SCALE: 1/2"=1'-0"



4 WALL SECTION
AS1 SCALE: 1/2"=1'-0"



5 WALL SECTION
AS1 SCALE: 1/2"=1'-0"



6 WALL SECTION
AS1 SCALE: 1/2"=1'-0"

DATE	DESCRIPTION
10/23/19	PERMIT SUBMISSION



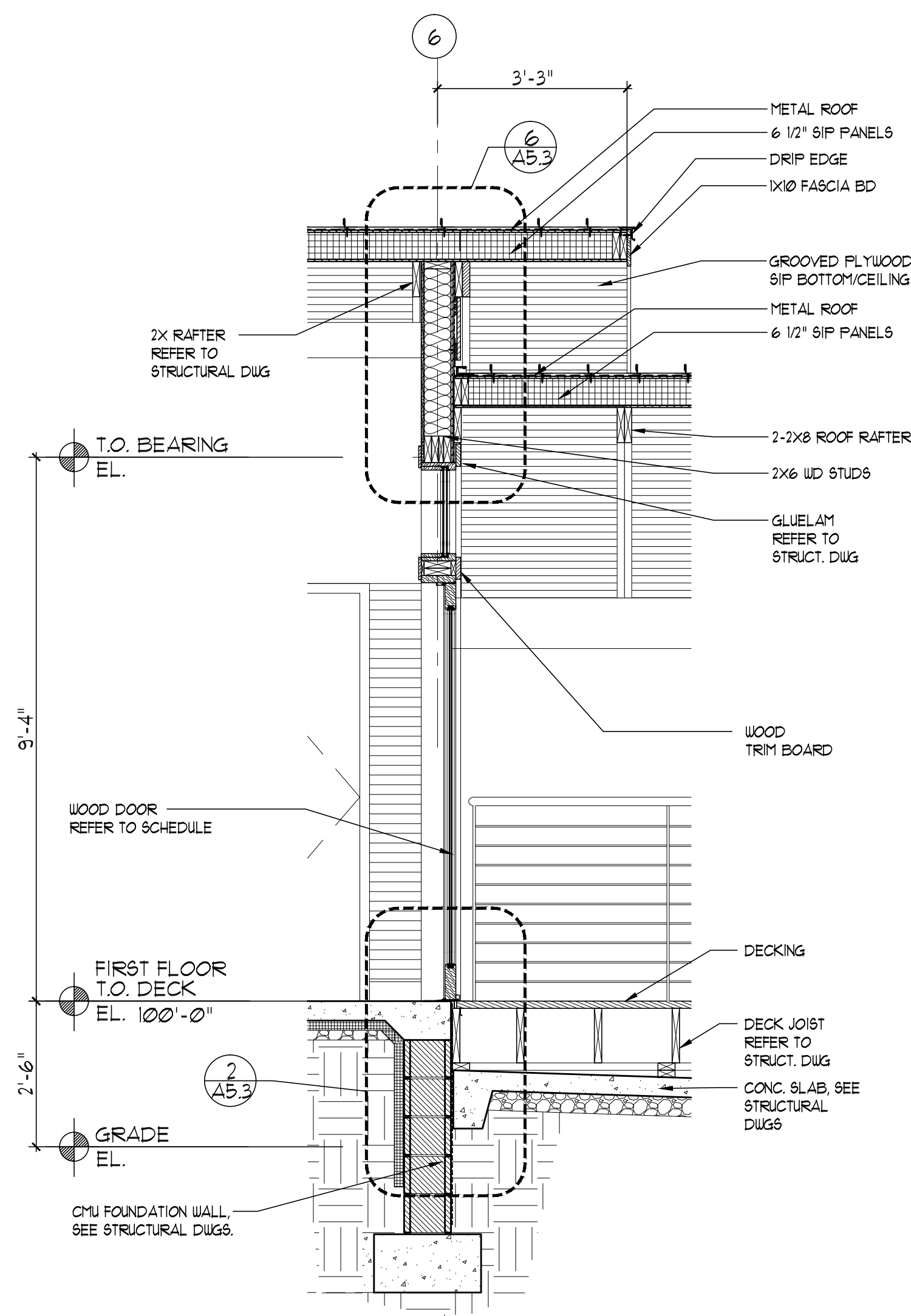
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PROJECT NUMBER: 190500
WALL SECTIONS AND DETAILS
OBSTACLE COURSE SALES CENTER
UPTON HILL REGIONAL PARK
6060 WILSON BOULEVARD, ARLINGTON, VA

DATE	DESCRIPTION
10/23/19	PERMIT SUBMISSION

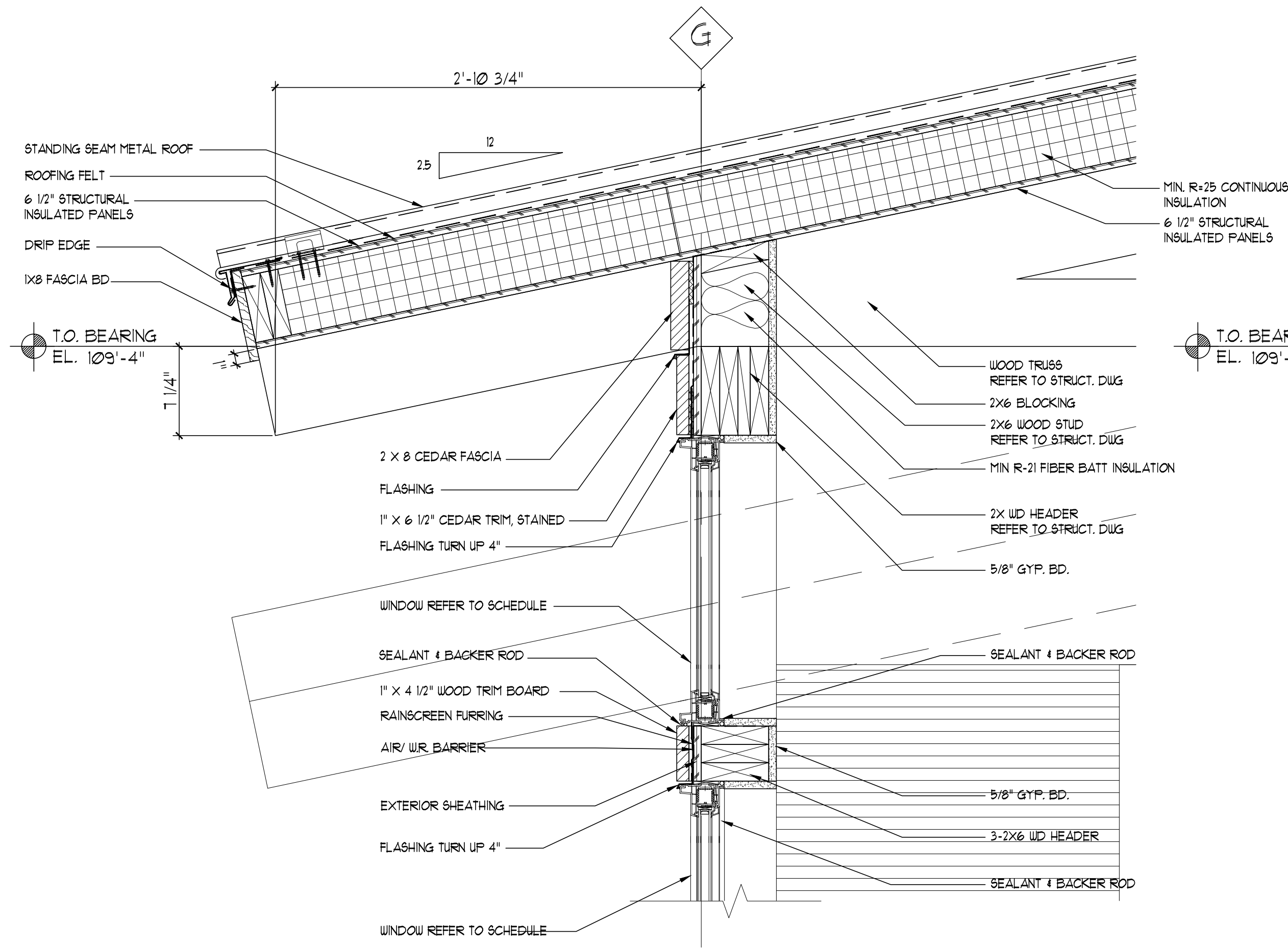


OBSTACLE COURSE SALES CENTER
UFTON HILL REGIONAL PARK
6060 WILSON BOULEVARD, ARLINGTON, VA
PROJECT NUMBER: B09500
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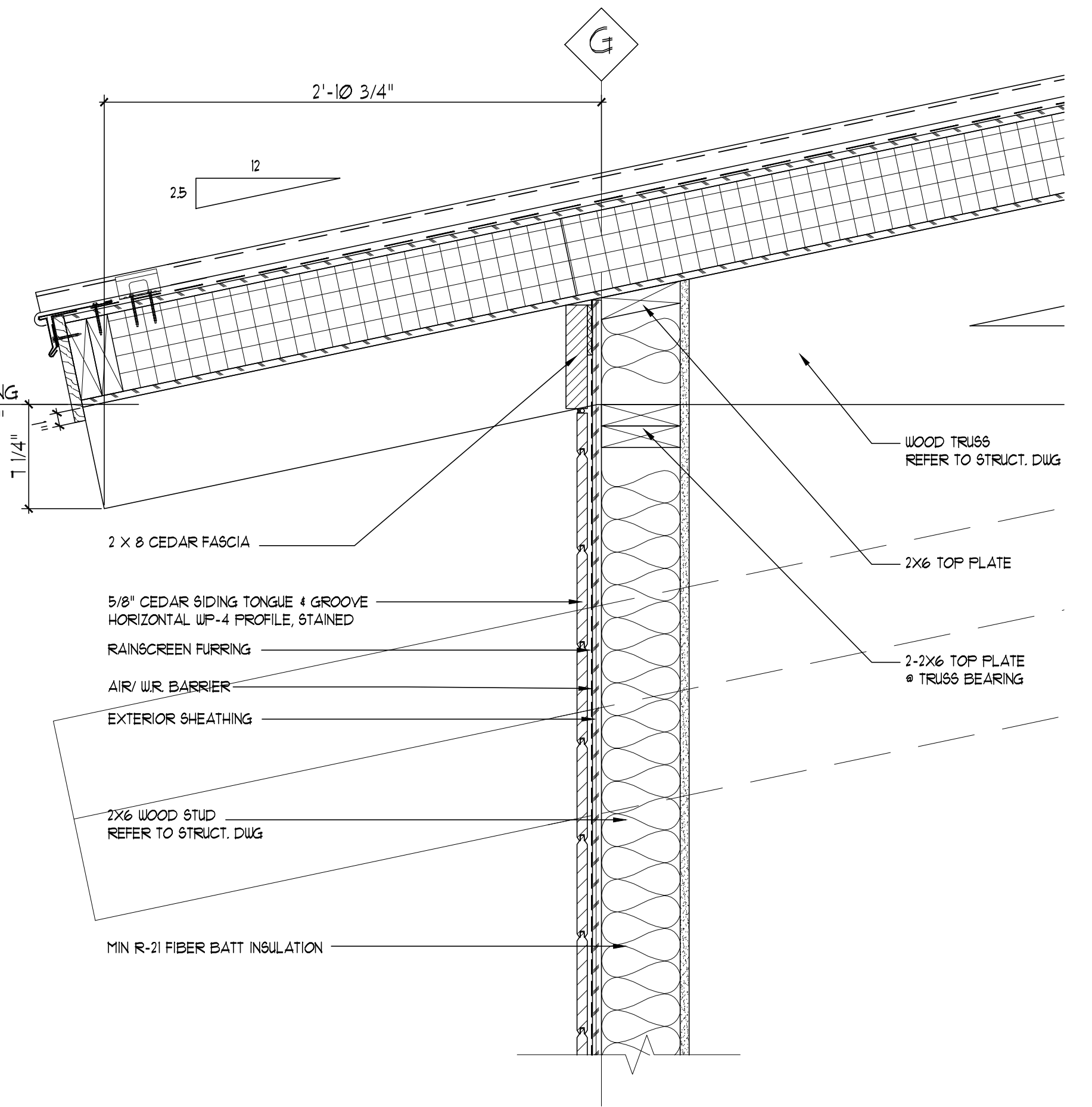
WALL SECTIONS & DETAILS
A5.2



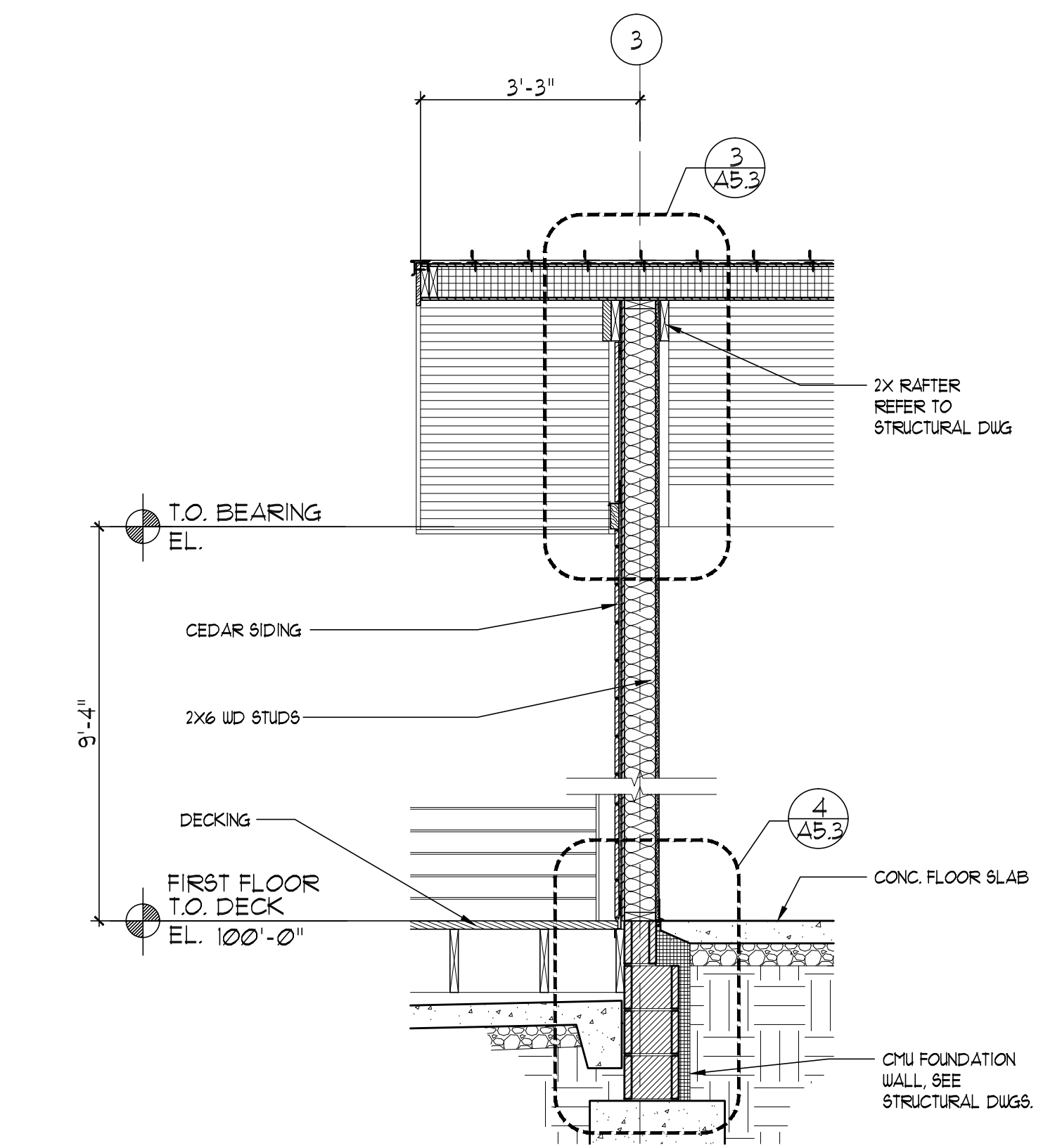
1 WALL SECTION
A5.2 SCALE: 1/2"=1'-0"



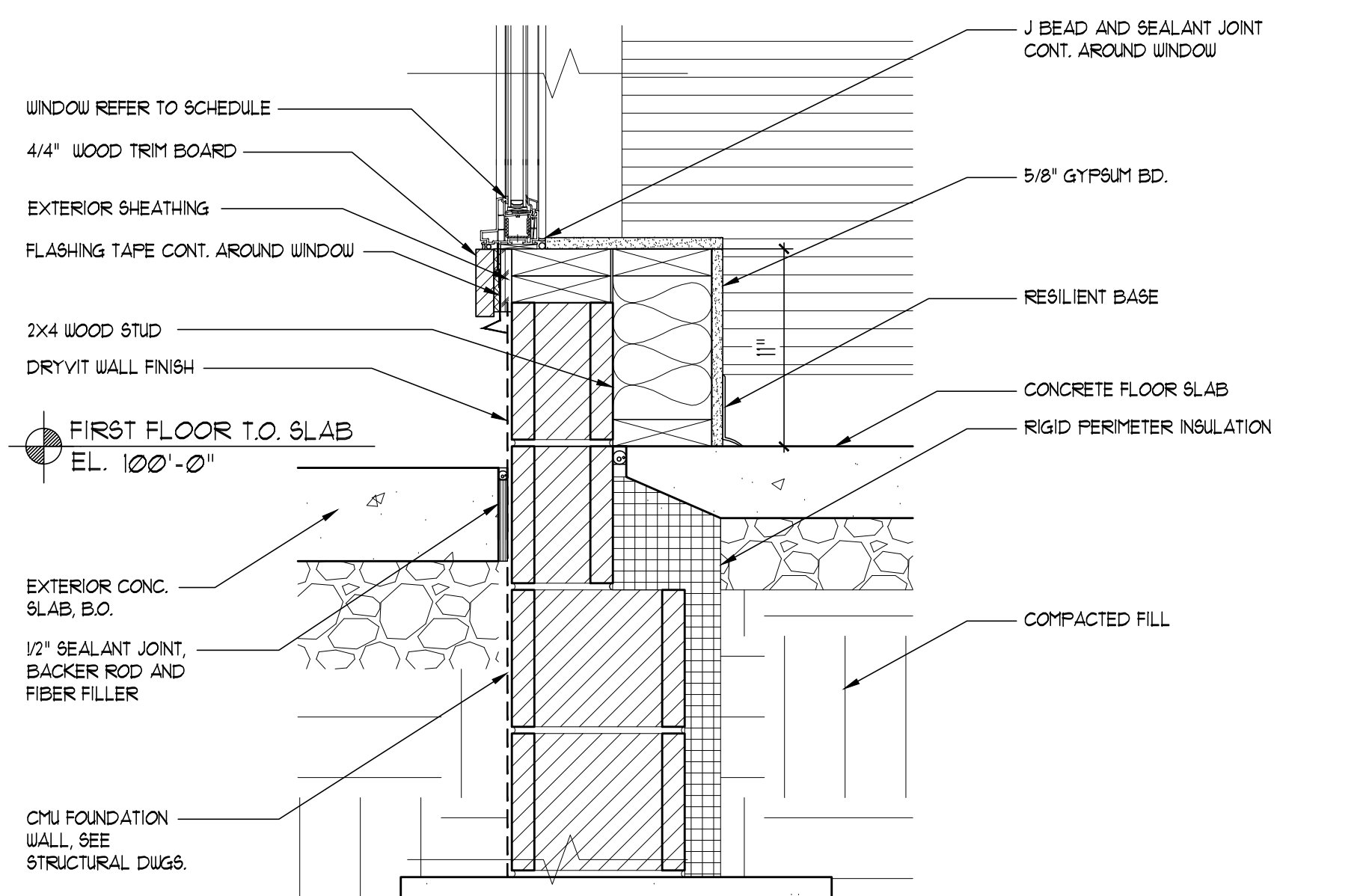
2 SECTION DETAIL
A5.2 SCALE: 1/2"=1'-0"



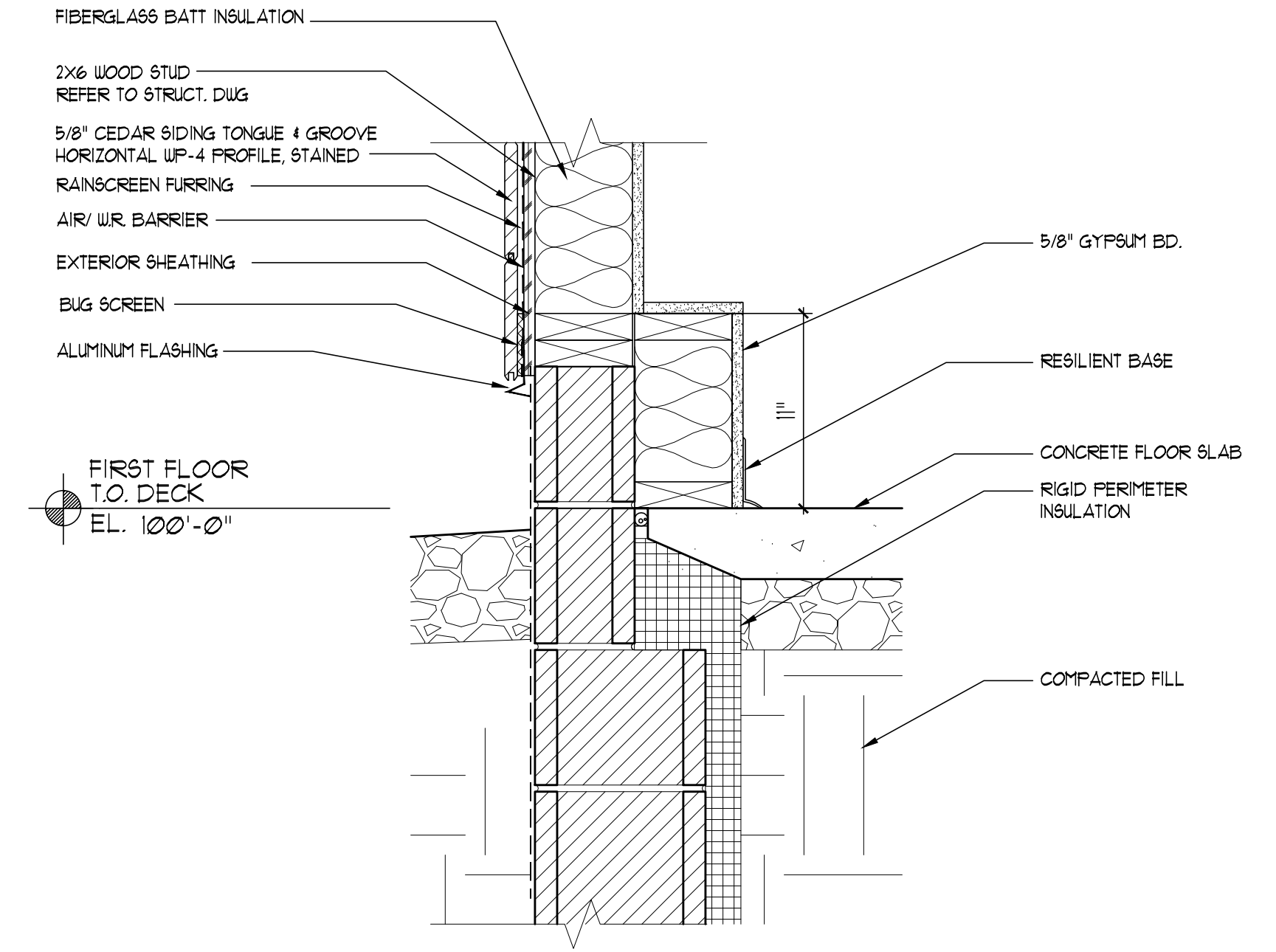
4 SECTION DETAIL
A5.2 SCALE: 1/2"=1'-0"



1a WALL SECTION
A5.2 SCALE: 1/2"=1'-0"



3 SECTION DETAIL
A5.2 SCALE: 1/2"=1'-0"



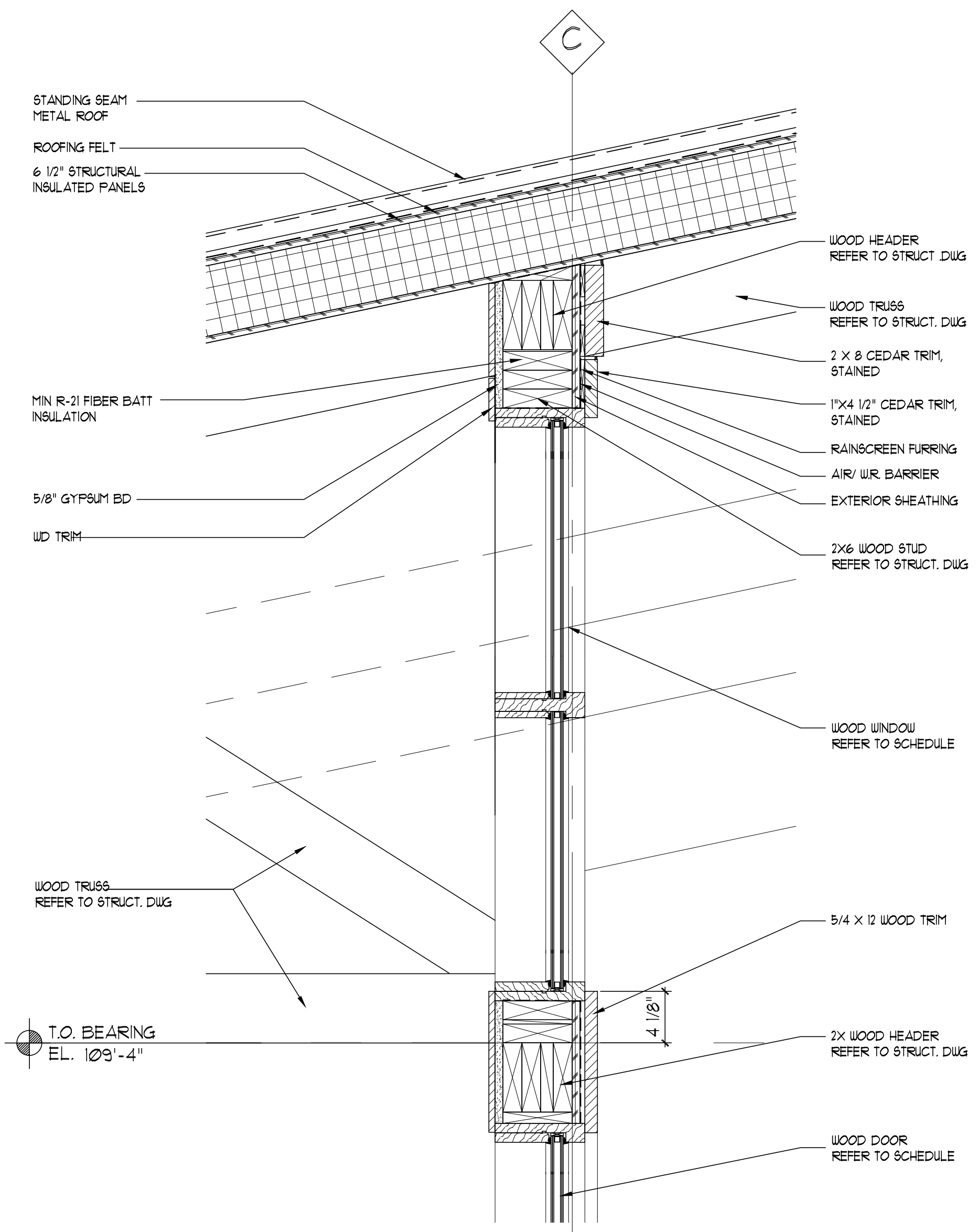
5 SECTION DETAIL
A5.2 SCALE: 1/2"=1'-0"

DATE	DESCRIPTION
10/23/19	PERMIT SUBMISSION

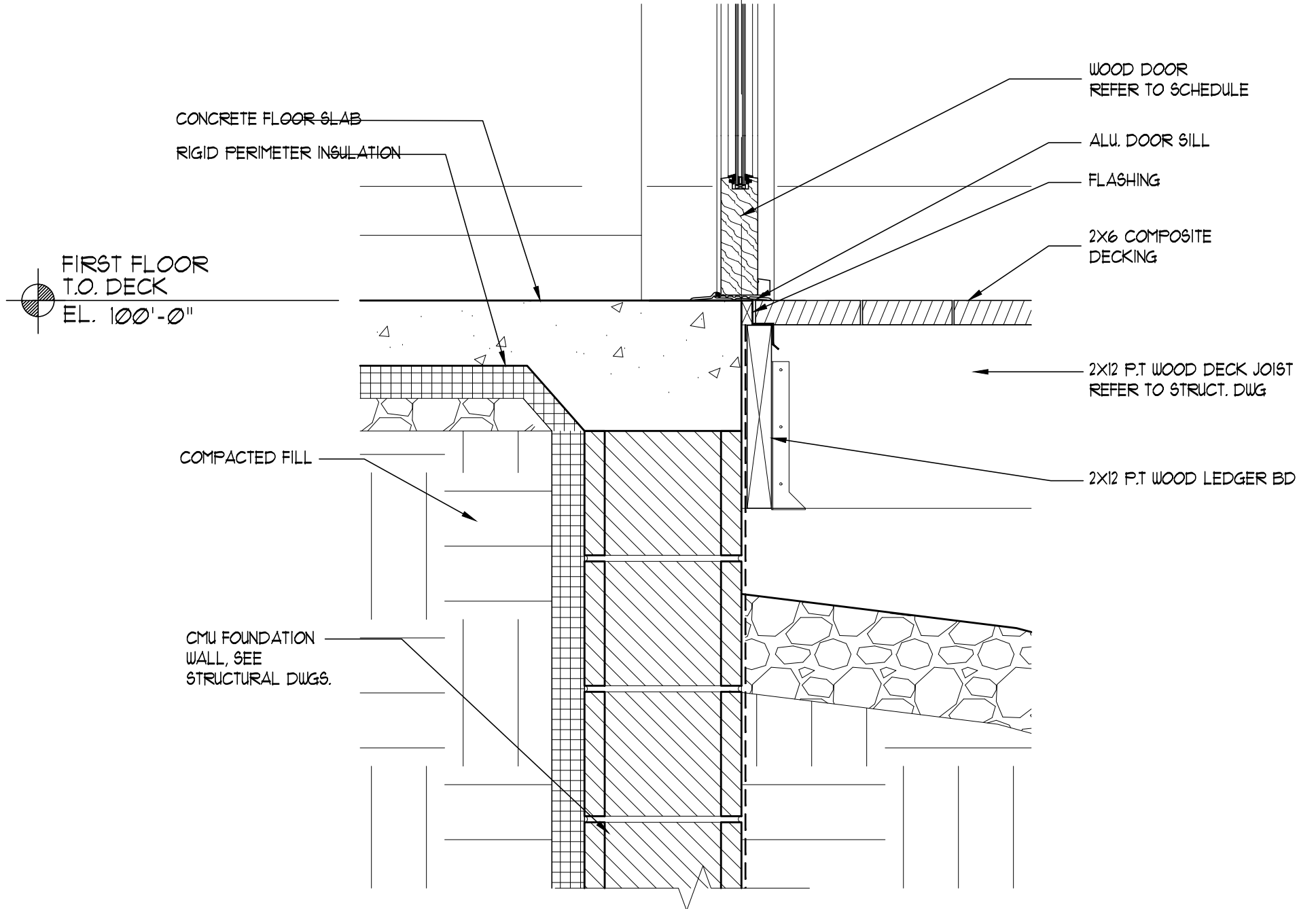


SCALE: AS SHOWN

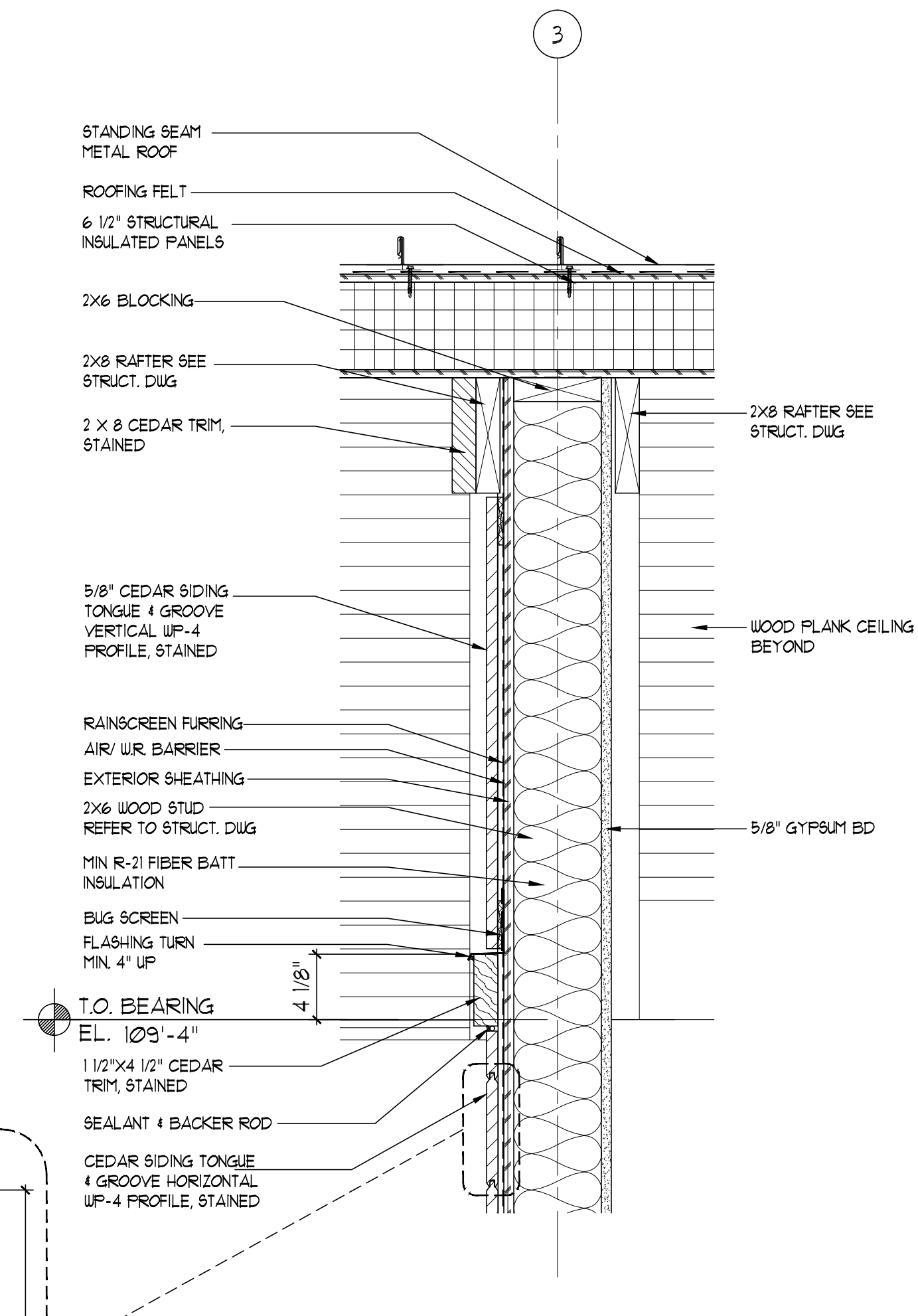
OBSTACLE COURSE SALES CENTER
UPTON HILL REGIONAL PARK
6060 WILSON BOULEVARD, ARLINGTON, VA
PROJECT NUMBER: 000500
WALL SECTIONS & DETAILS



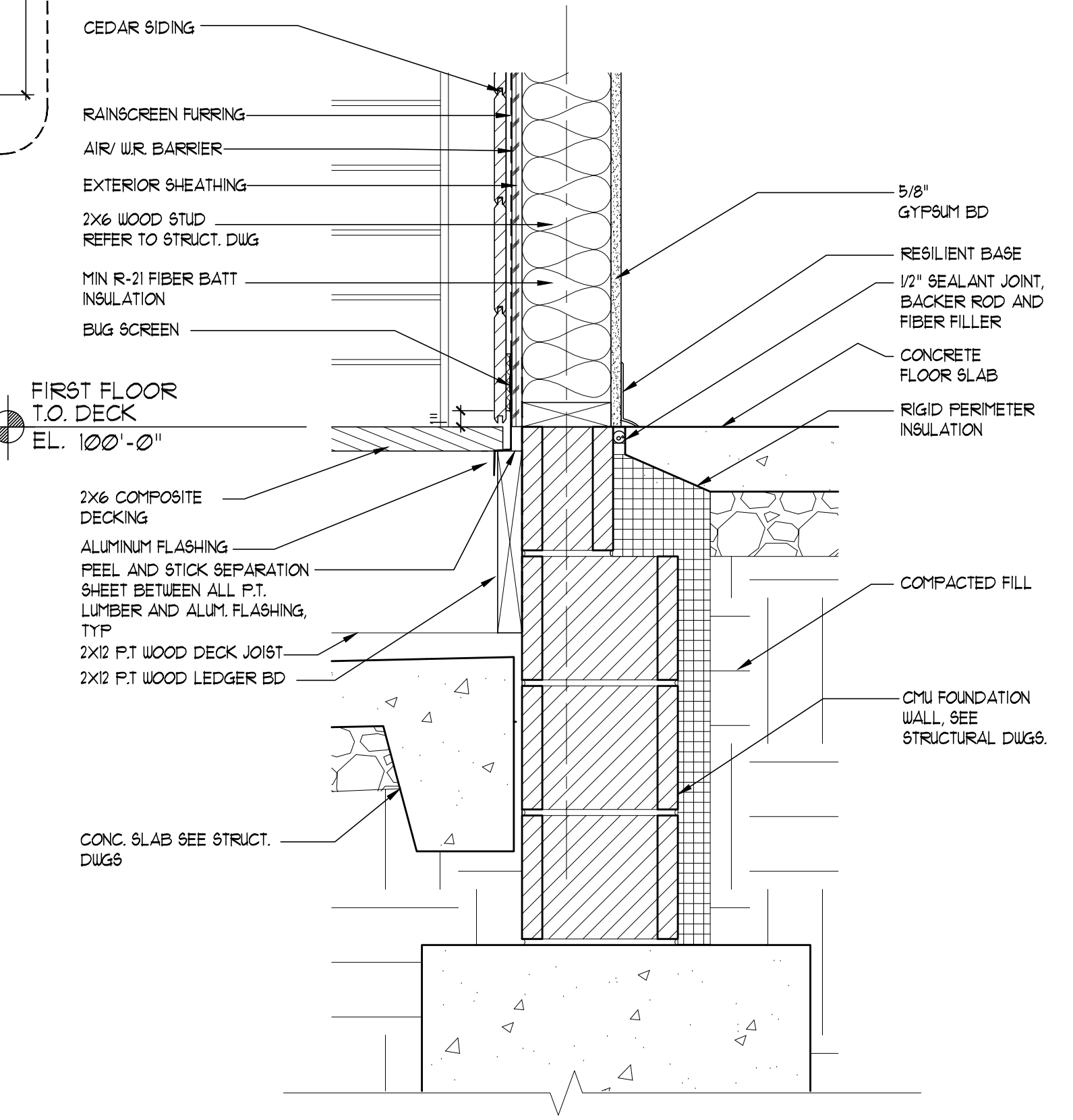
1 SECTION DETAIL
A5.3 SCALE: 1/2" = 1'-0"



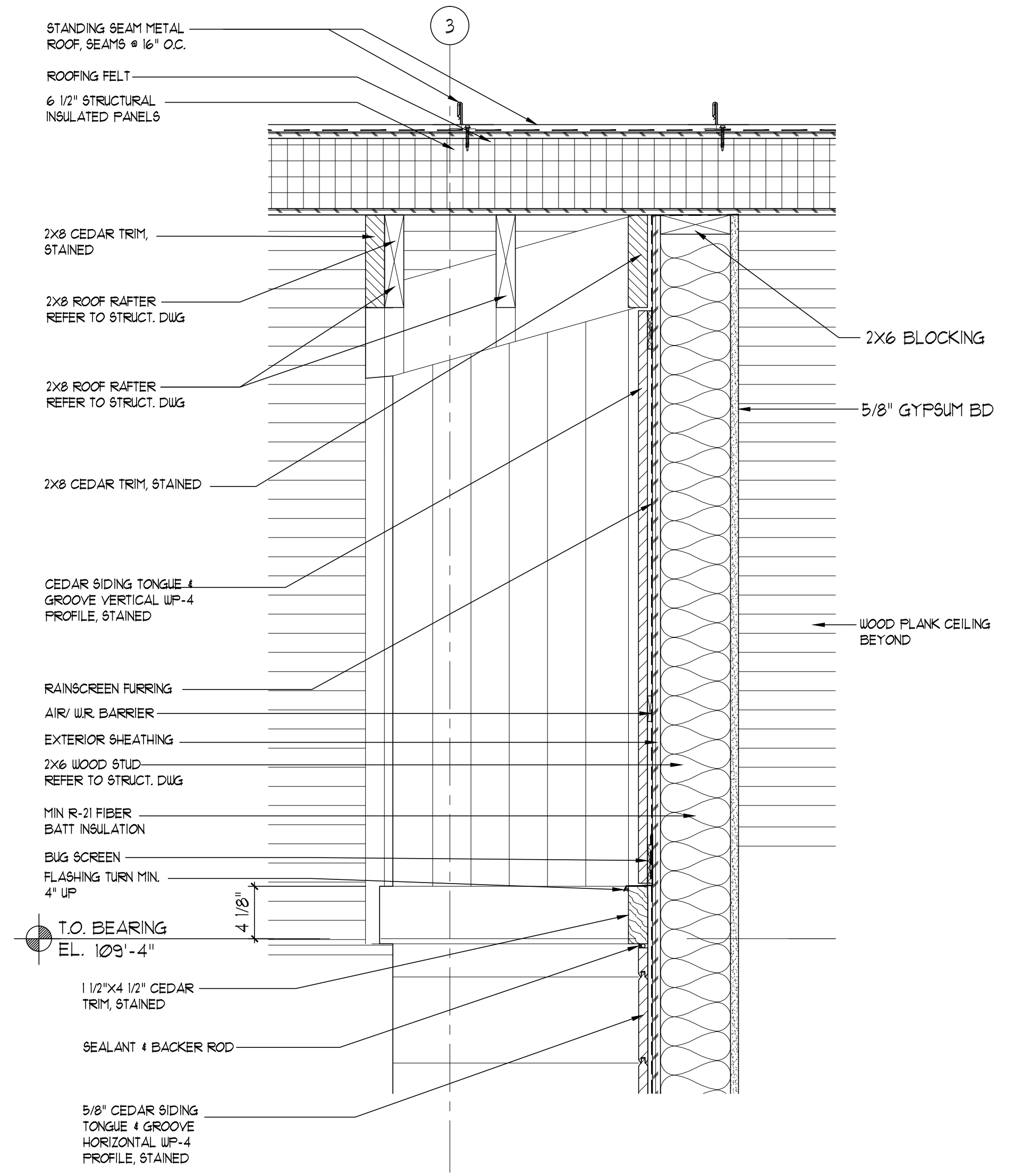
2 SECTION DETAIL
A5.3 SCALE: 1/2" = 1'-0"



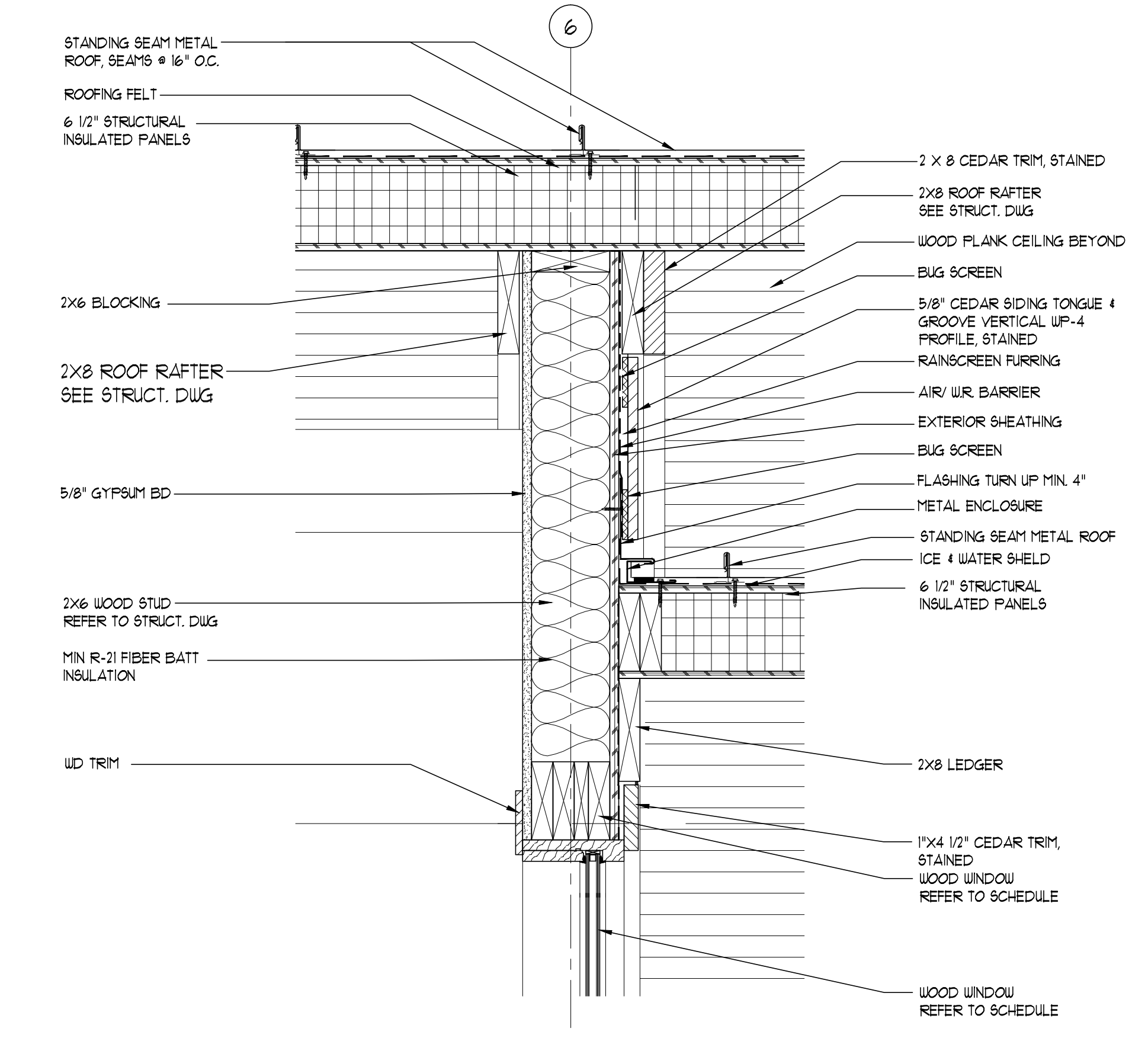
3 SECTION DETAIL
A5.3 SCALE: 1/2" = 1'-0"



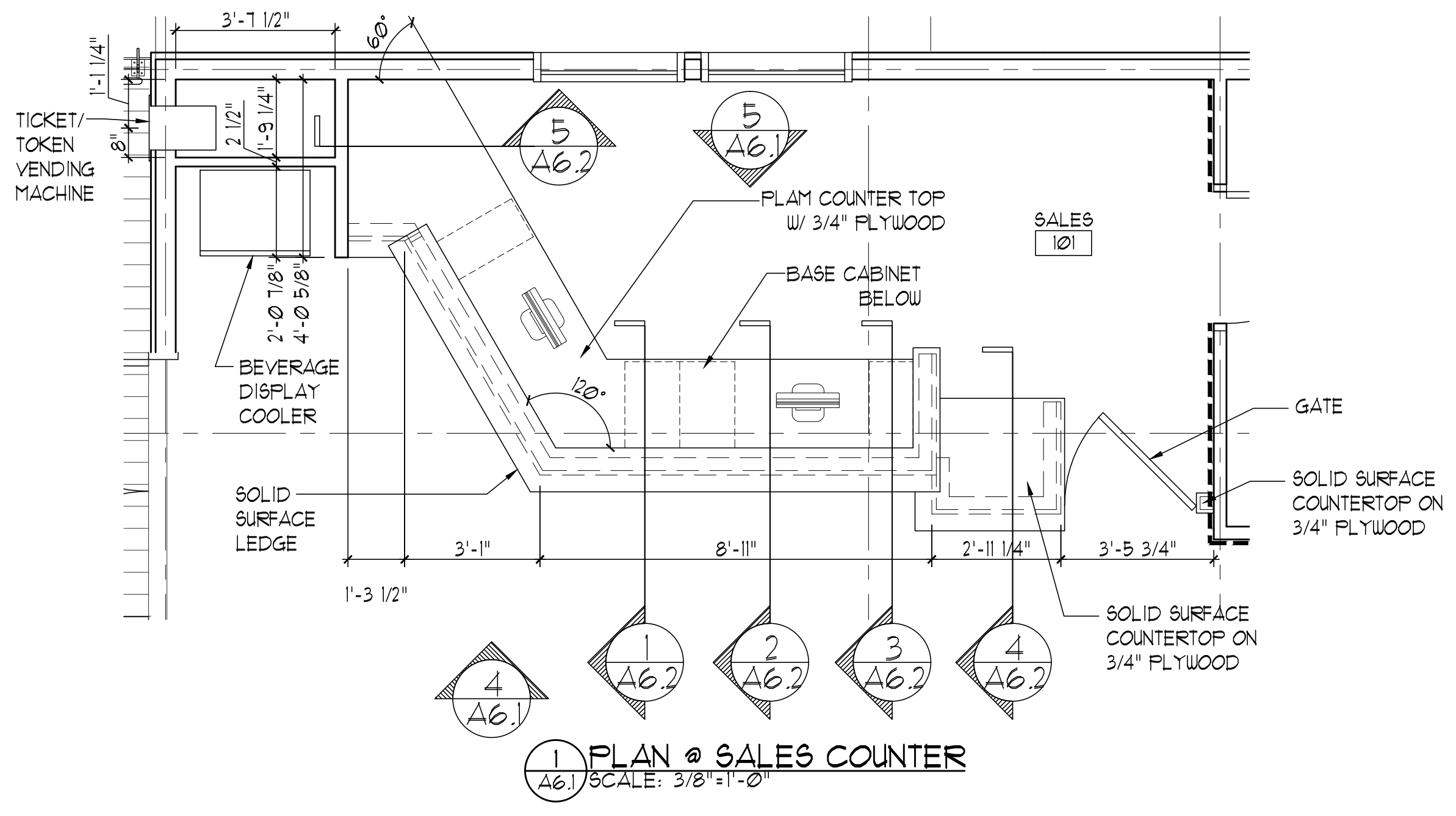
4 SECTION DETAIL
A5.3 SCALE: 1/2" = 1'-0"



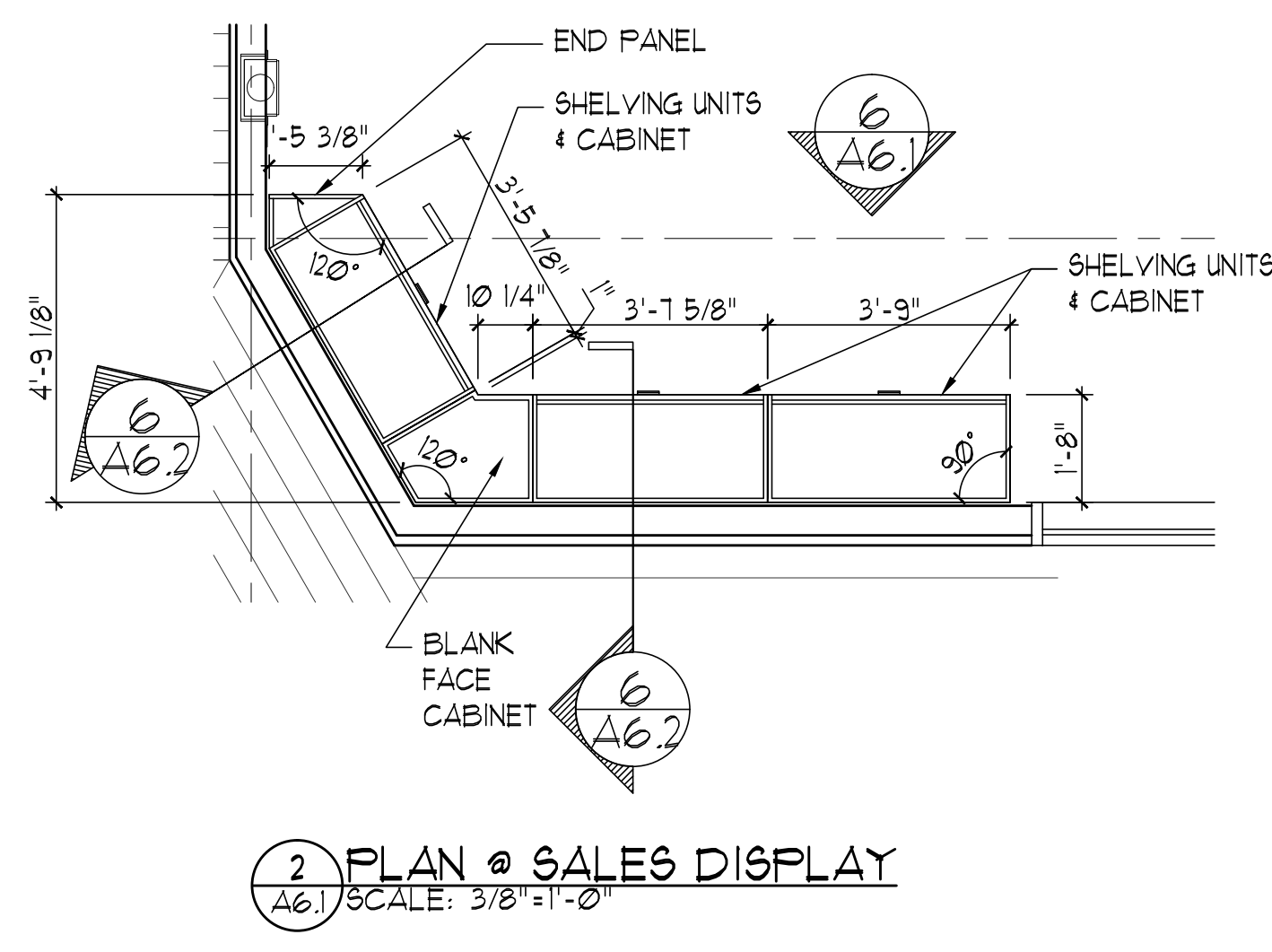
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A5.3 SCALE: 1/2" = 1'-0"



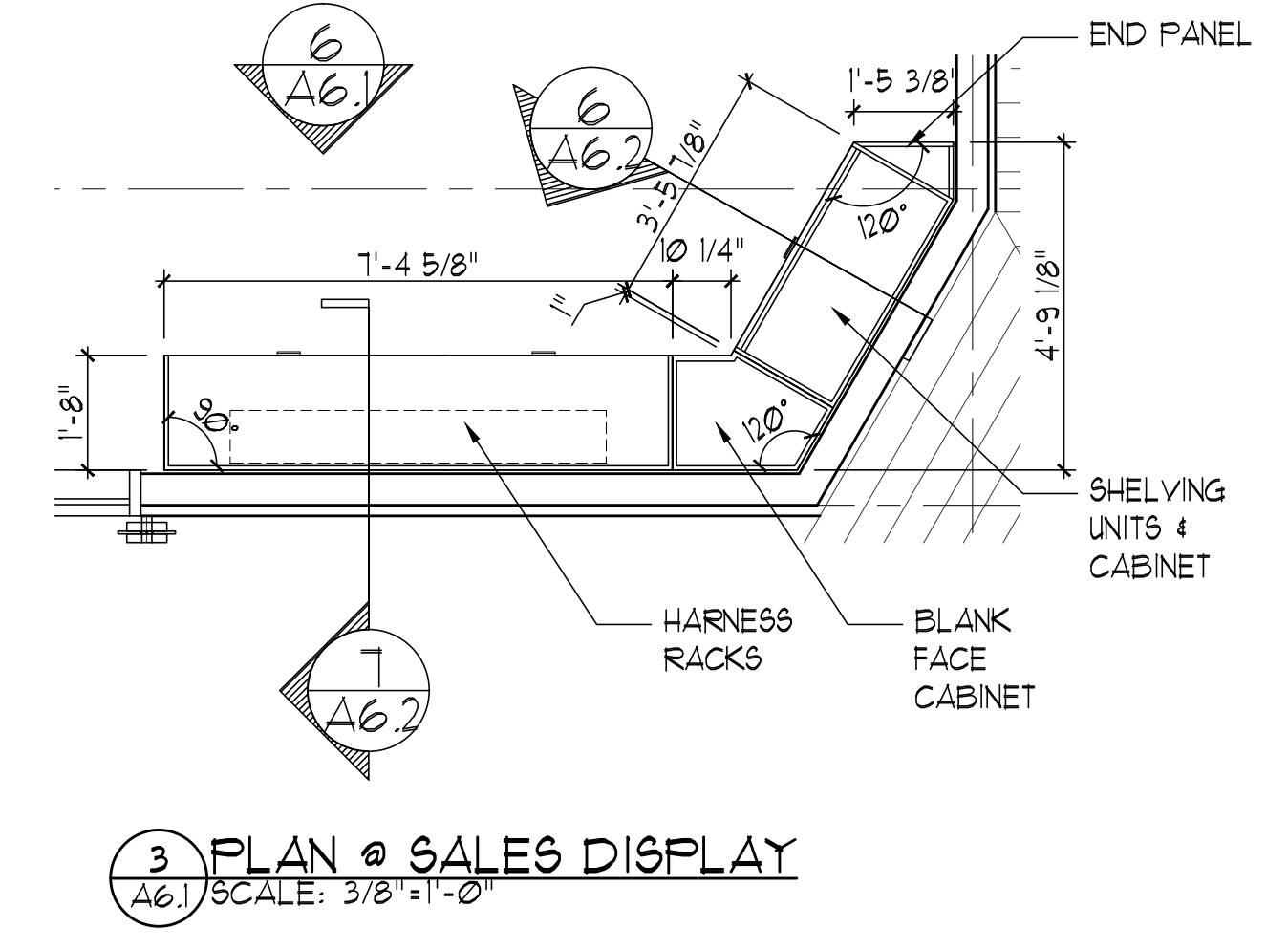
6 SECTION DETAIL
A5.3 SCALE: 1/2" = 1'-0"



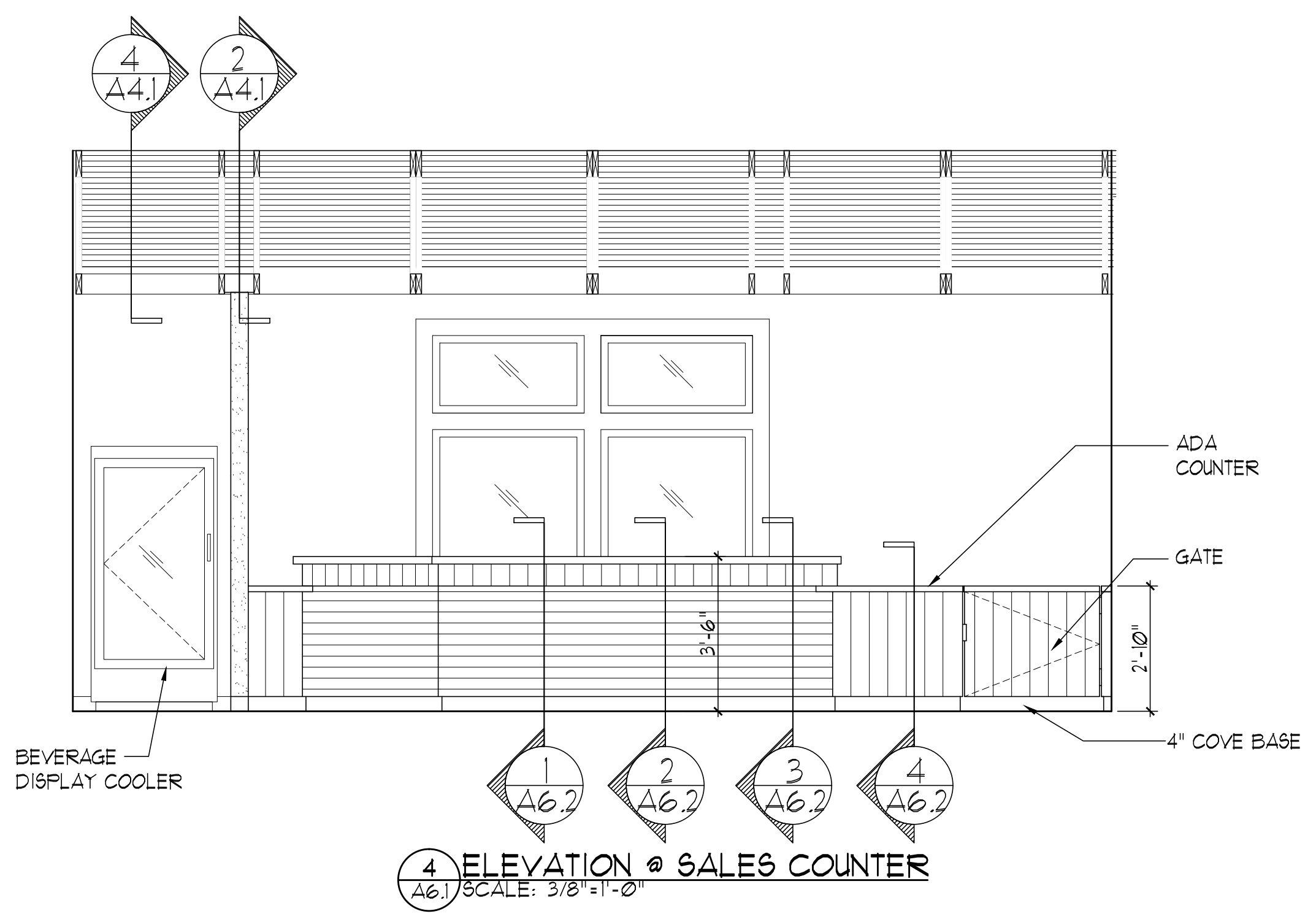
1 PLAN @ SALES COUNTER
A6.1 SCALE: 3/8\"/>



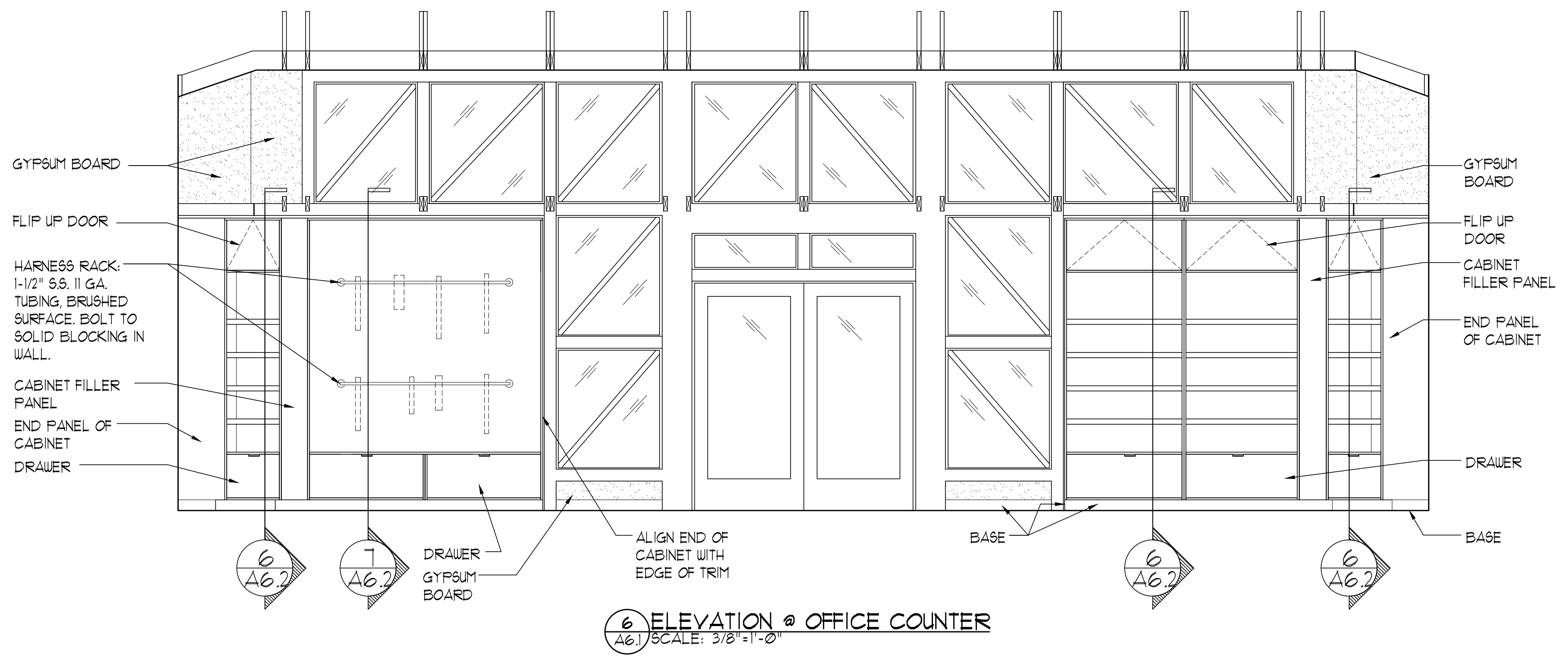
2 PLAN @ SALES DISPLAY
A6.1 SCALE: 3/8\"/>



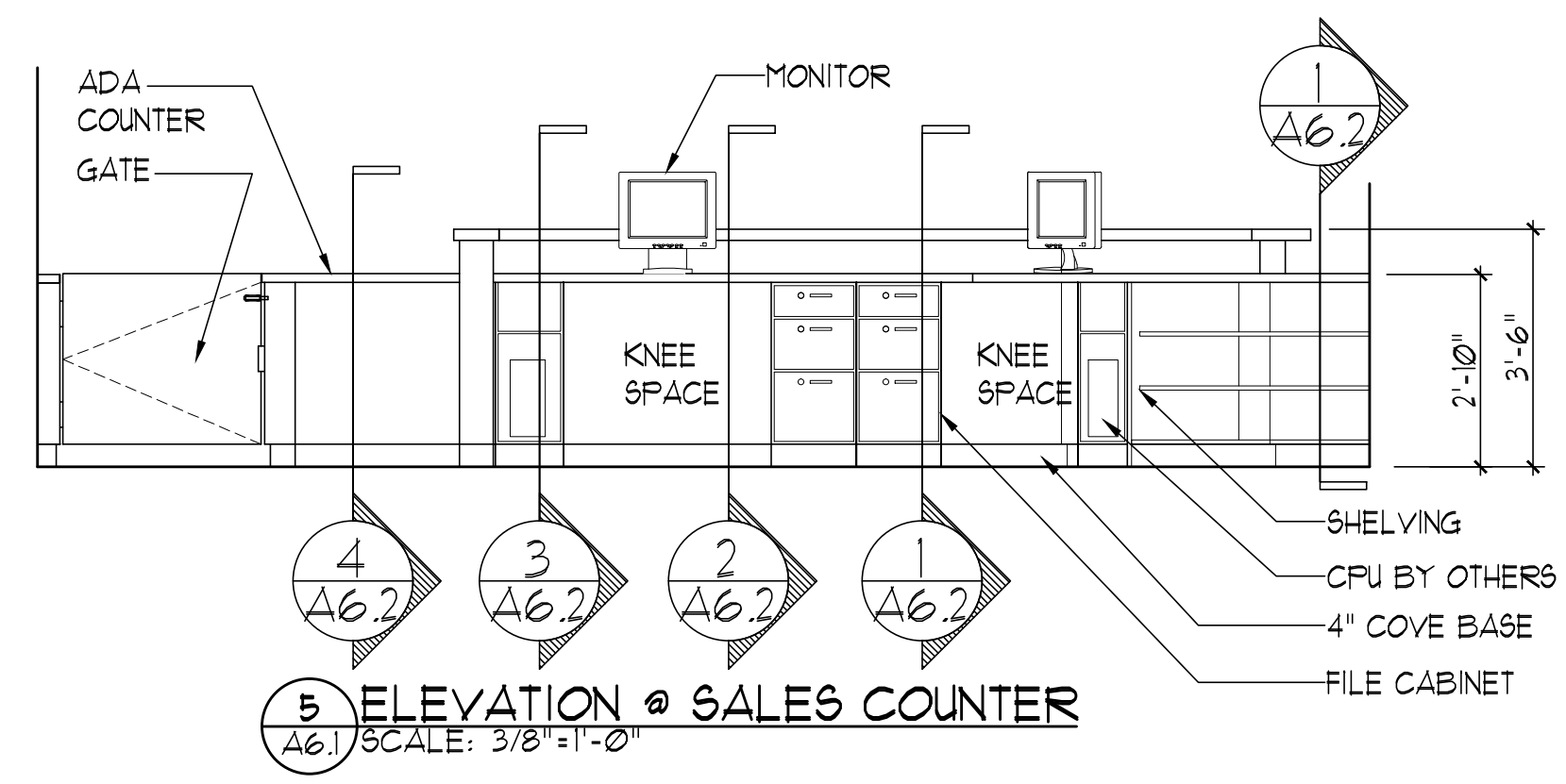
3 PLAN @ SALES DISPLAY
A6.1 SCALE: 3/8\"/>



4 ELEVATION @ SALES COUNTER
A6.1 SCALE: 3/8\"/>



6 ELEVATION @ OFFICE COUNTER
A6.1 SCALE: 3/8\"/>

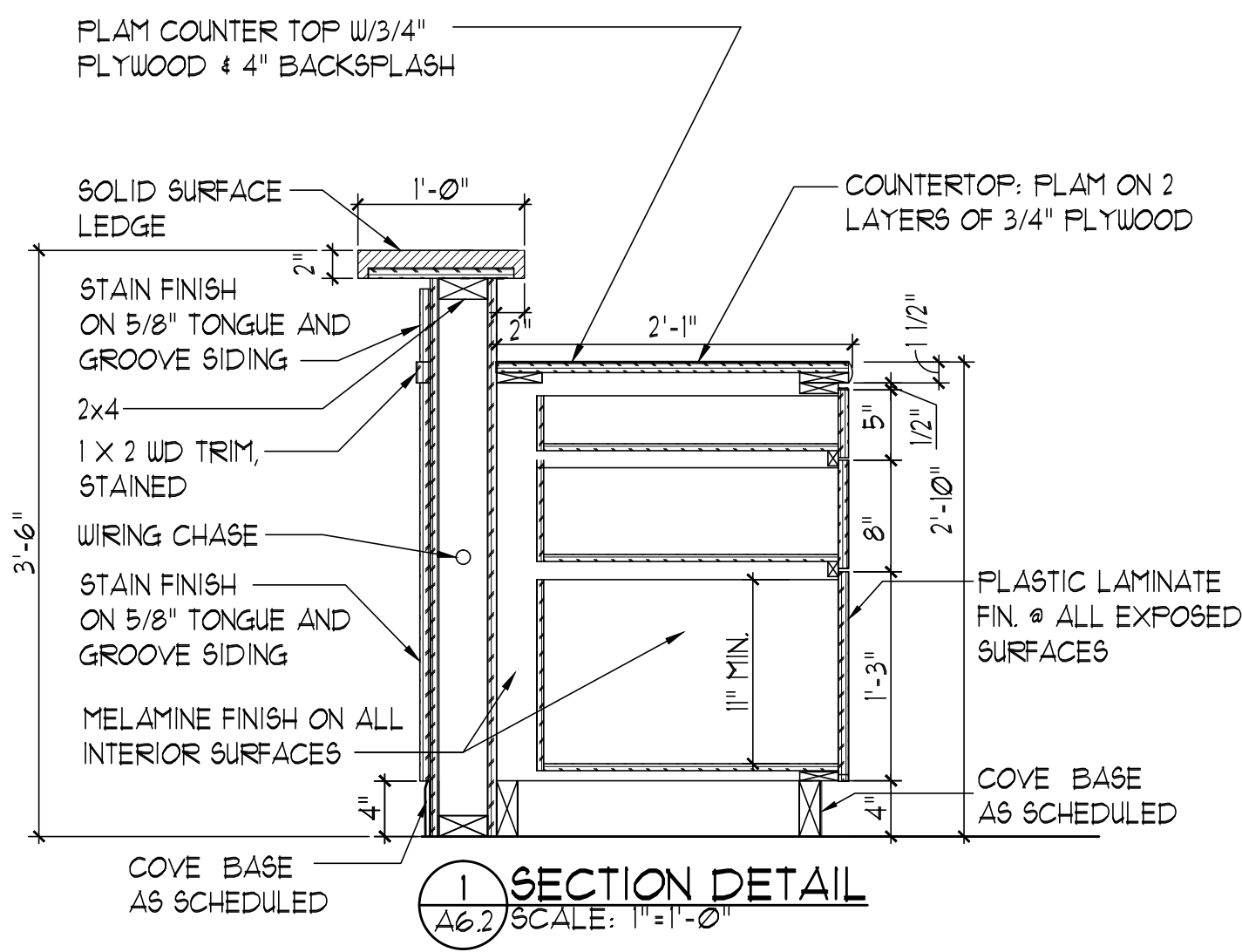


5 ELEVATION @ SALES COUNTER
A6.1 SCALE: 3/8\"/>

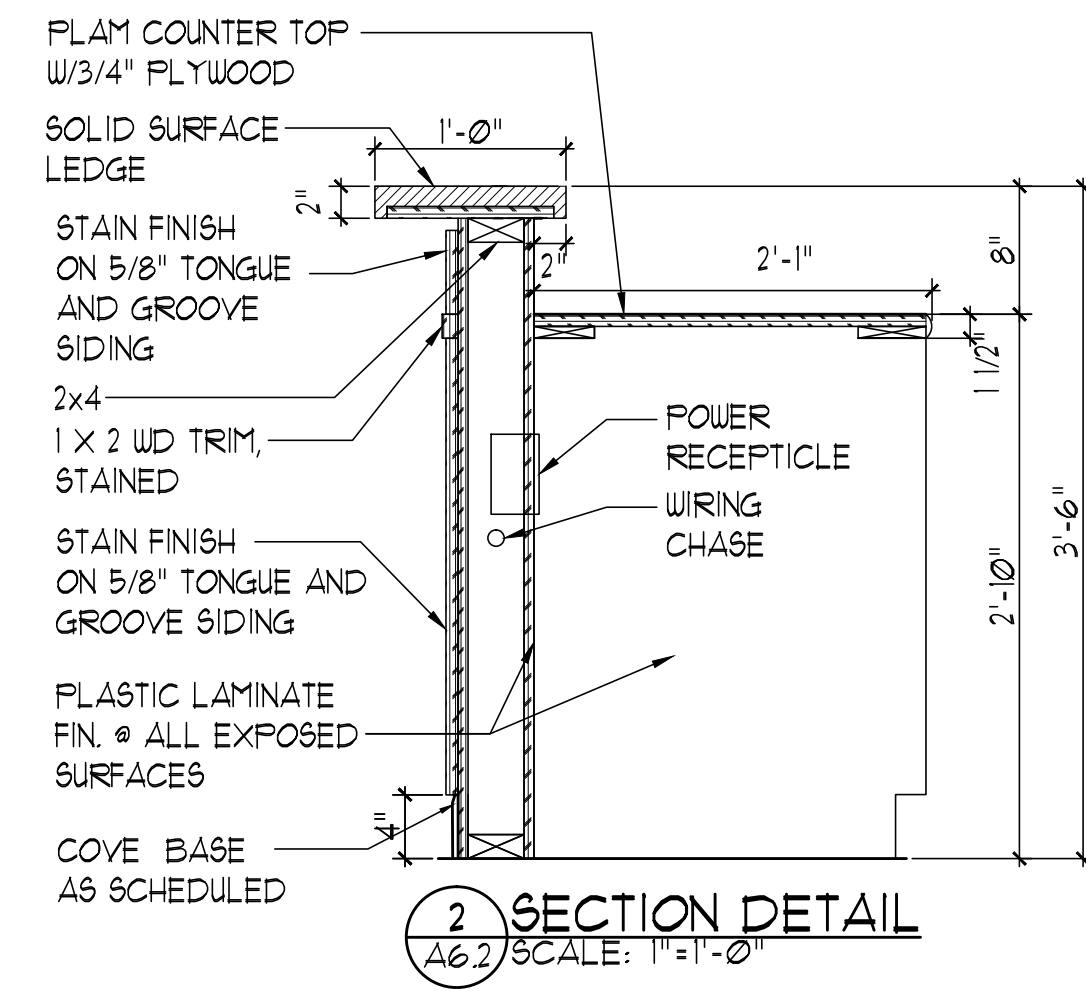
DATE	PERMIT SUBMISSION	DESCRIPTION
10/23/19		



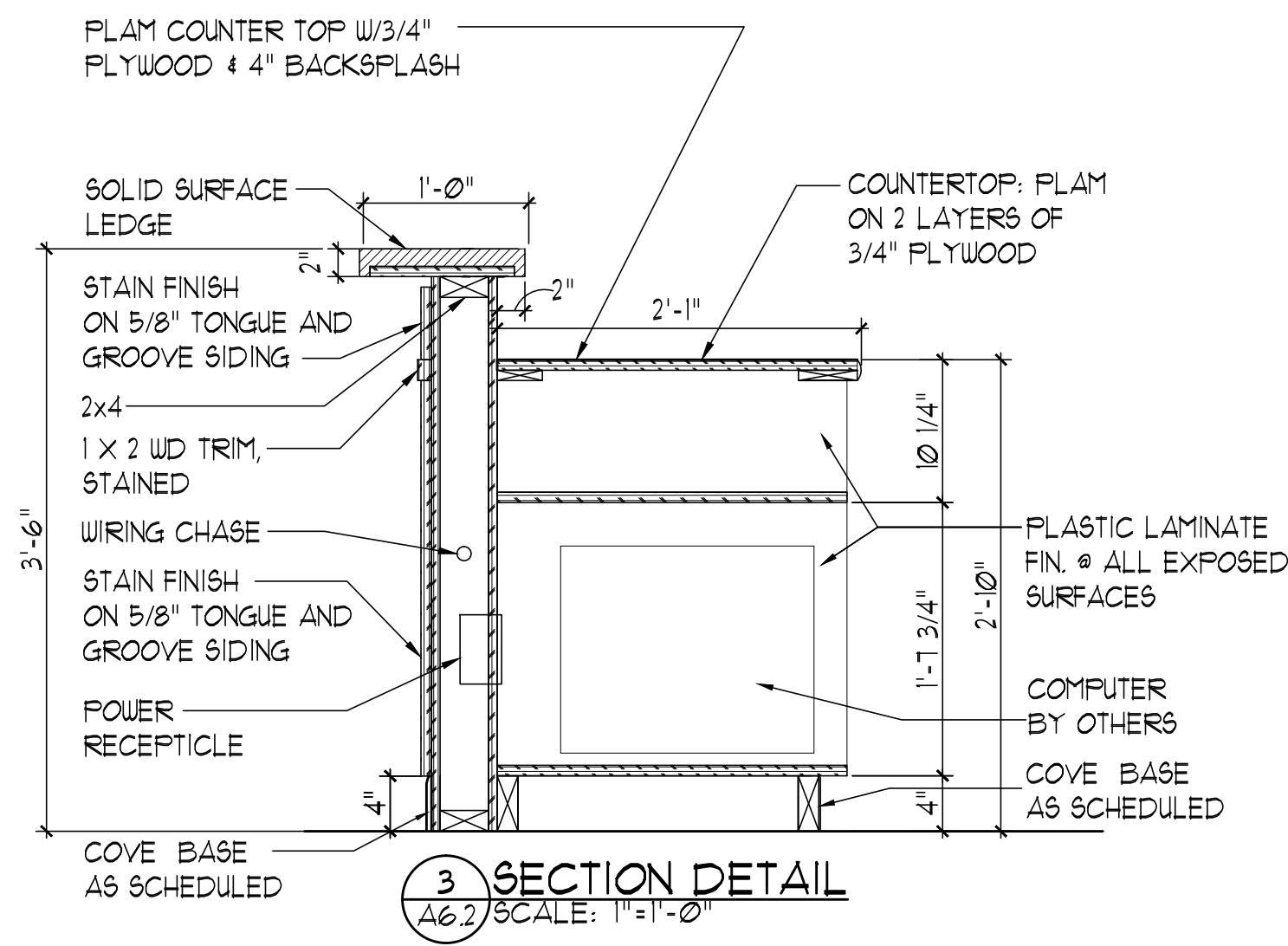
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OBSTACLE COURSE SALES CENTER
UFTON HILL REGIONAL PARK
6060 WILSON BOULEVARD, ARLINGTON, VA
PROJECT NUMBER: 010500
INTERIOR ELEVATIONS,
DETAILS AND MILLWORK



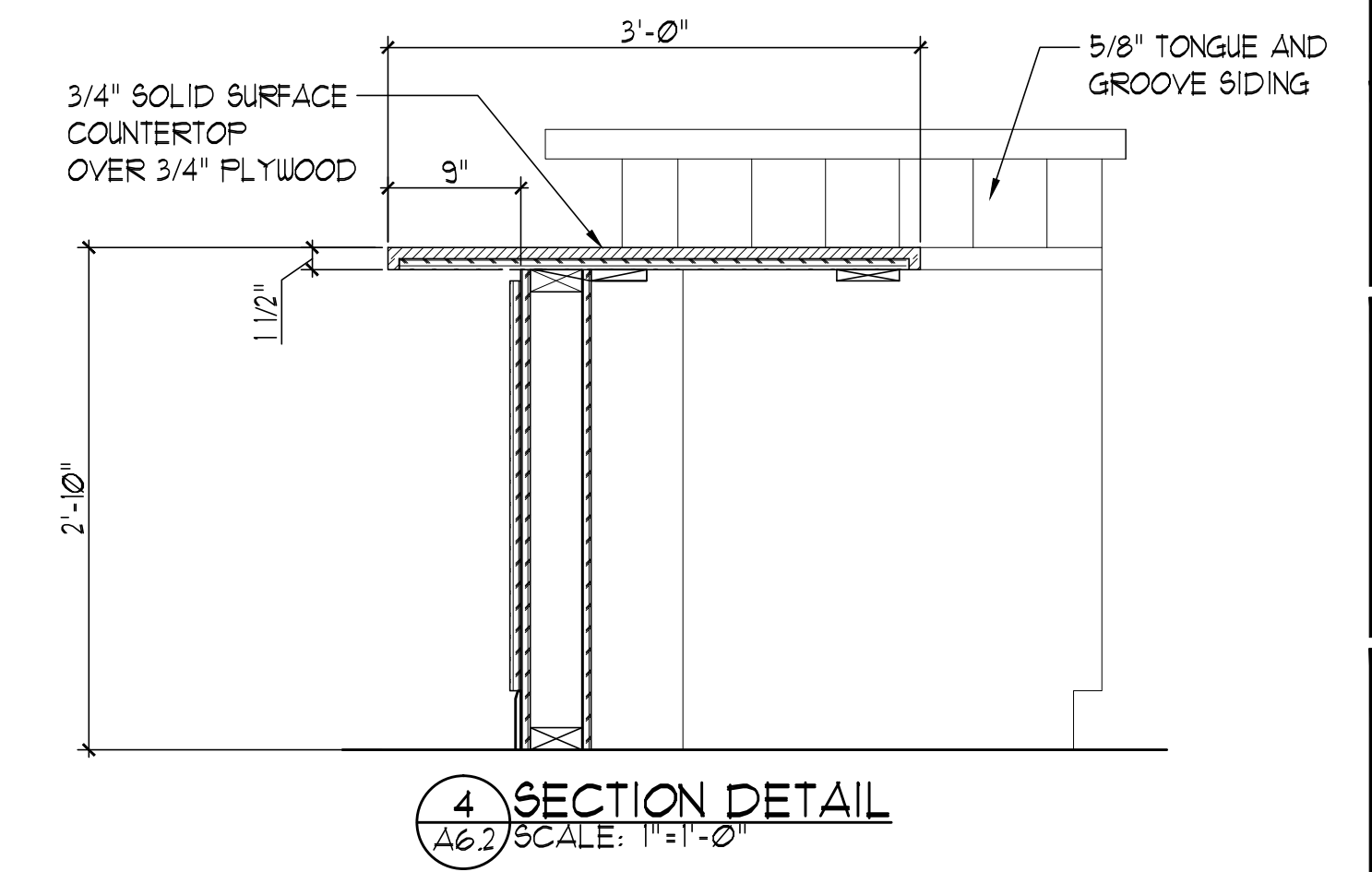
1 SECTION DETAIL
A6.2 SCALE: 1"=1'-0"



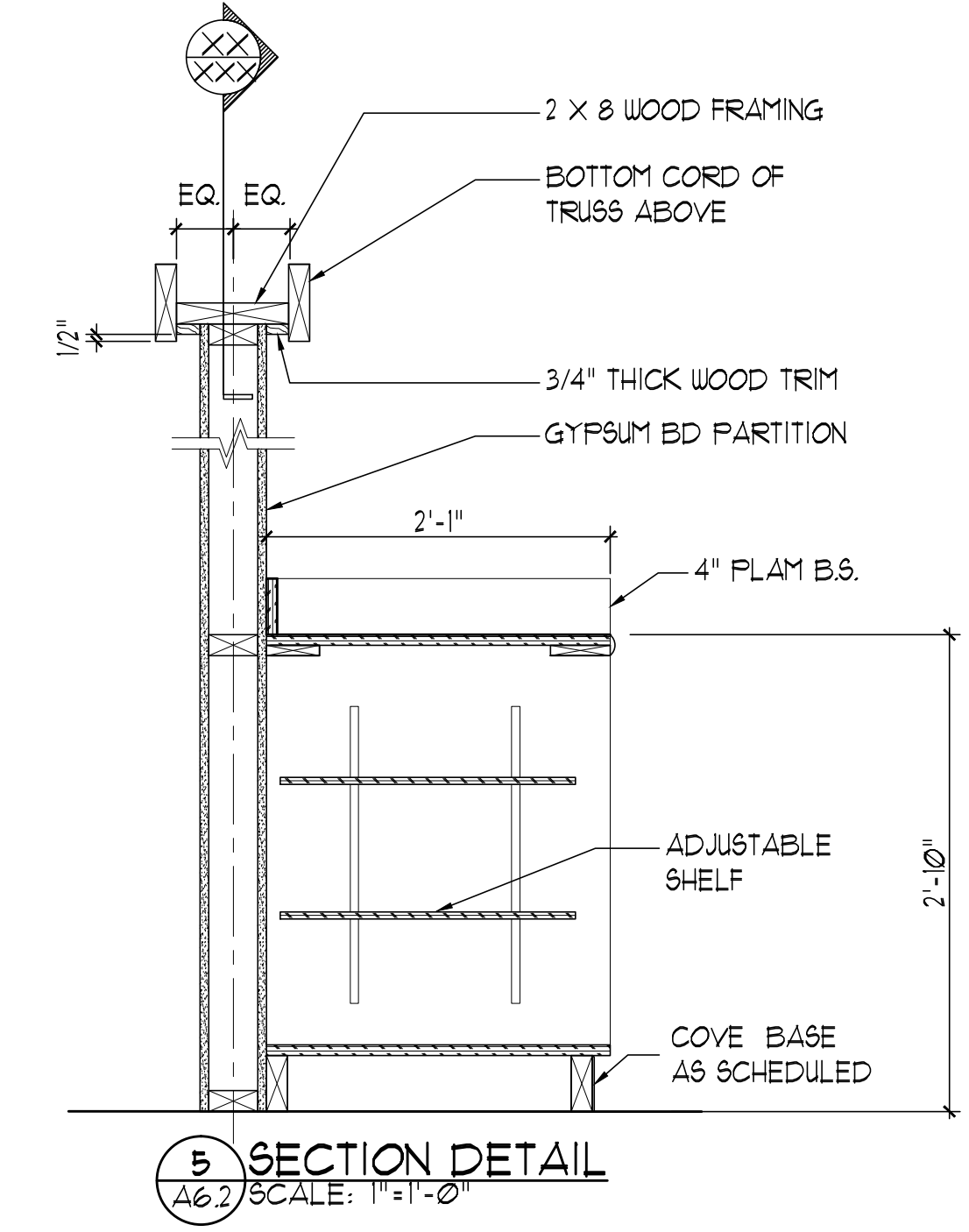
2 SECTION DETAIL
A6.2 SCALE: 1"=1'-0"



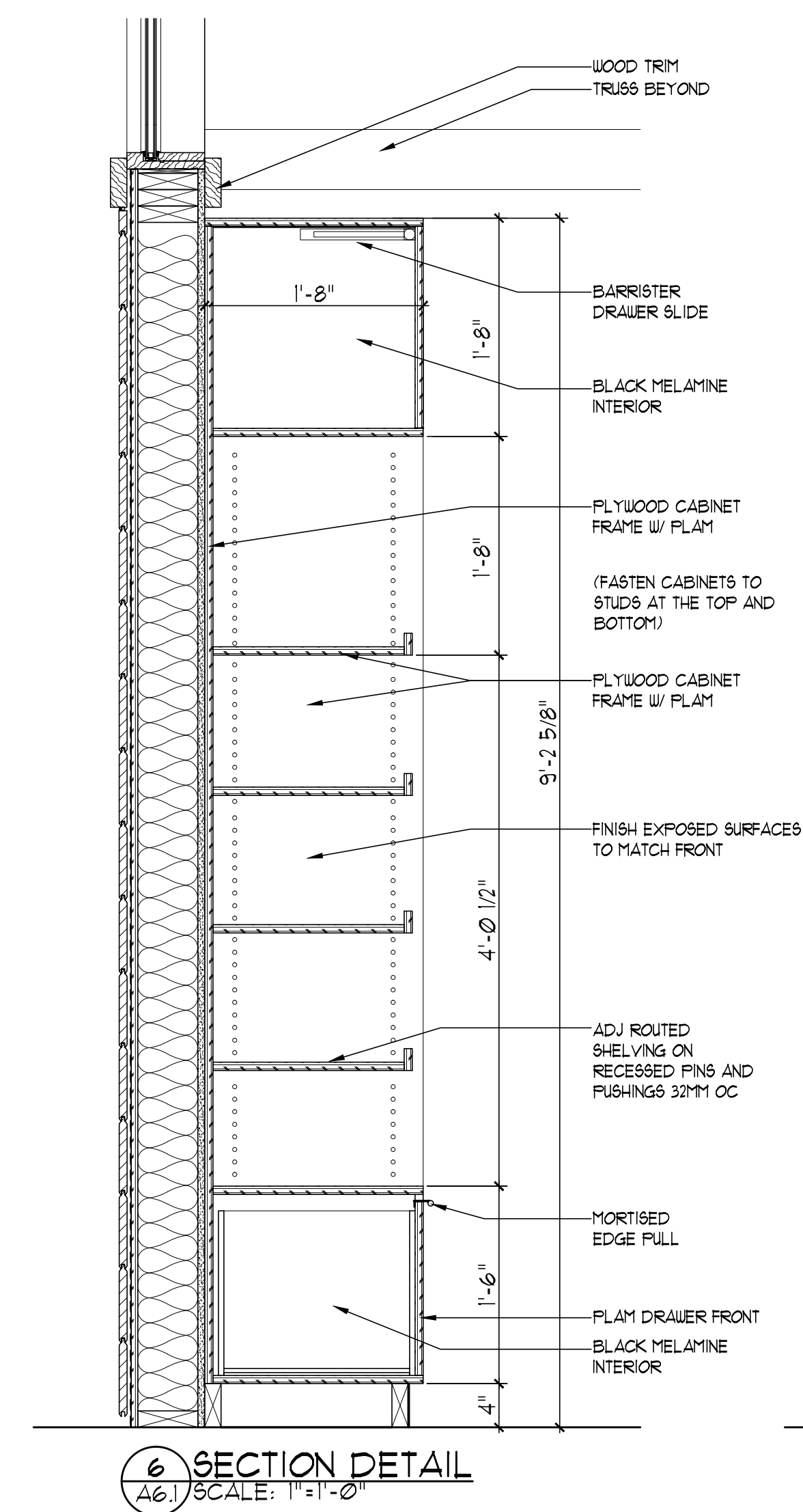
3 SECTION DETAIL
A6.2 SCALE: 1"=1'-0"



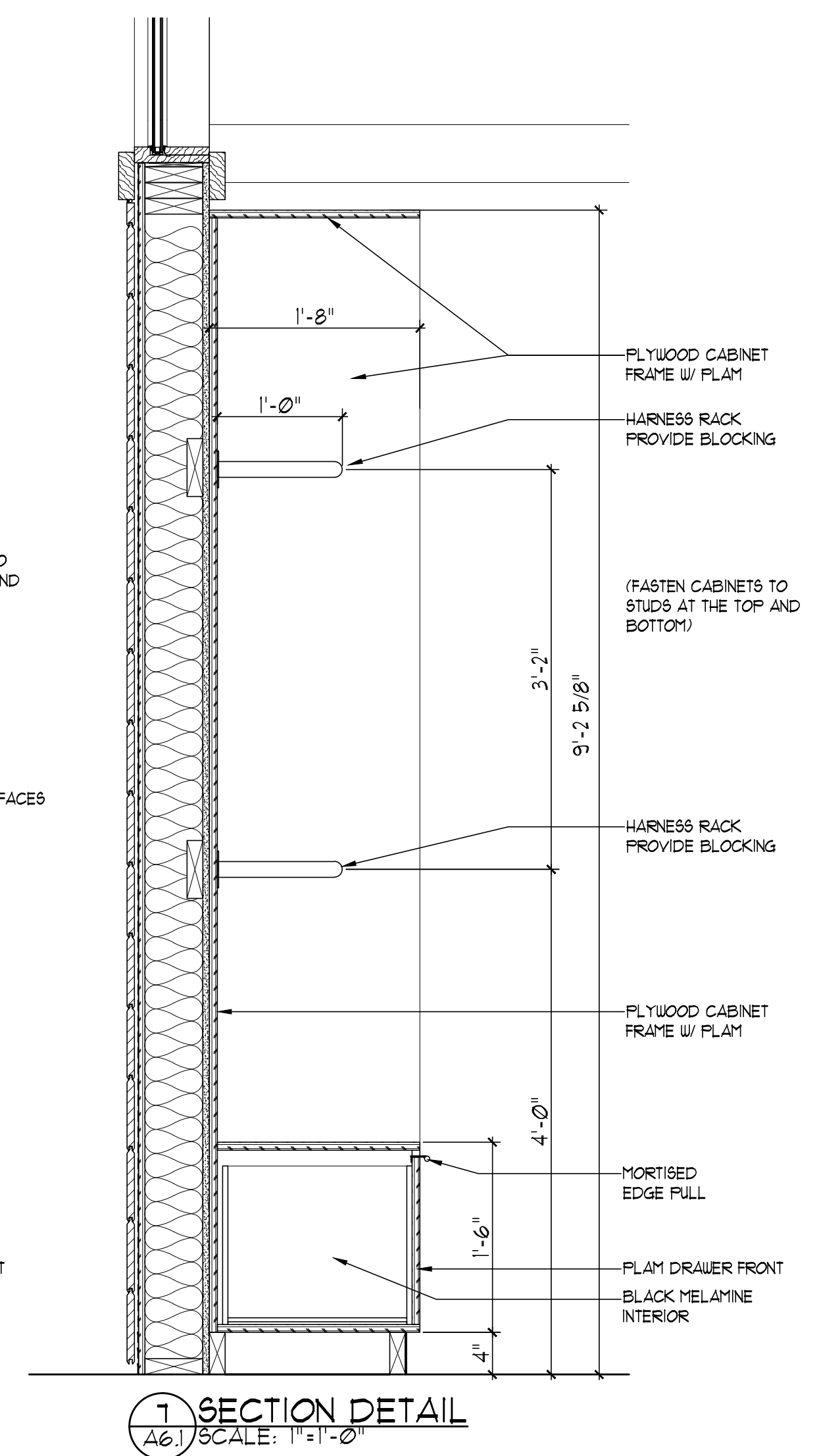
4 SECTION DETAIL
A6.2 SCALE: 1"=1'-0"



5 SECTION DETAIL
A6.2 SCALE: 1"=1'-0"



6 SECTION DETAIL
A6.1 SCALE: 1"=1'-0"



7 SECTION DETAIL
A6.1 SCALE: 1"=1'-0"

ZHA ARCHITECTS
4031 University Drive, Suite 130, Fairfax, VA, 22030
Telephone: (703)262-1933 Fax: (703)891-9171

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COMMONWEALTH OF VIRGINIA
RICHARD E. HURDLE
Lic. No. 0401 015732
ARCHITECT

DATE	PERMIT SUBMISSION	DESCRIPTION
10/23/19		

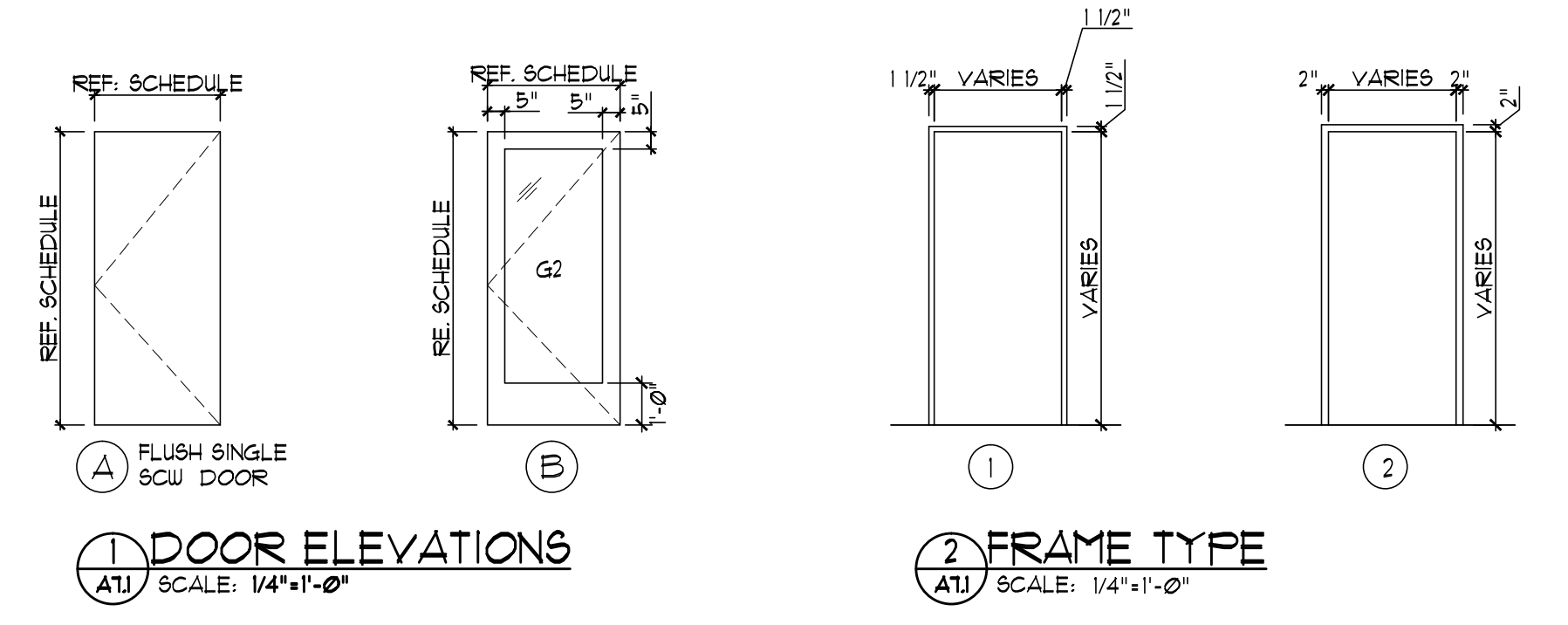


OBSTACLE COURSE SALES CENTER
UFTON HILL REGIONAL PARK
6060 WILSON BOULEVARD, ARLINGTON, VA
PROJECT NUMBER: B0500

SCALE: AS SHOWN

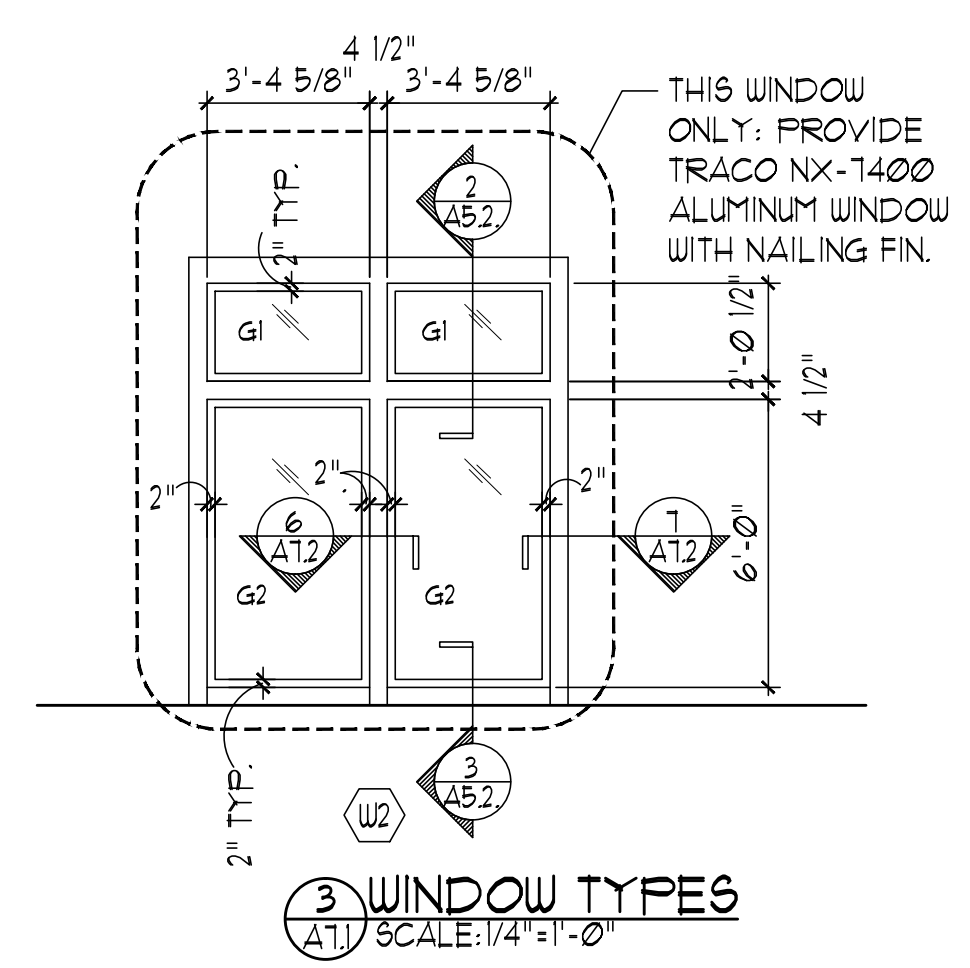
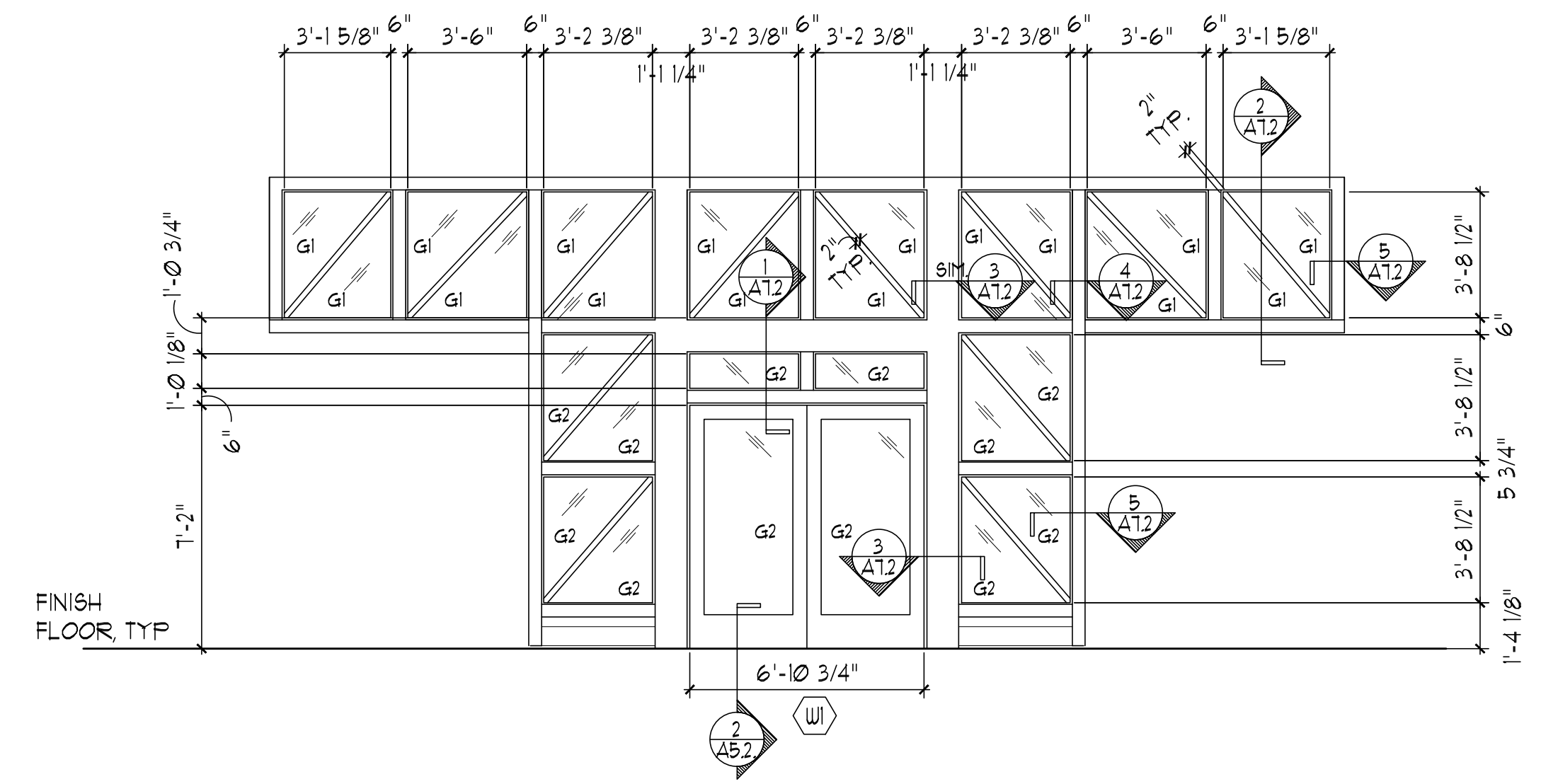
MILLWORK DETAILS

A6.2

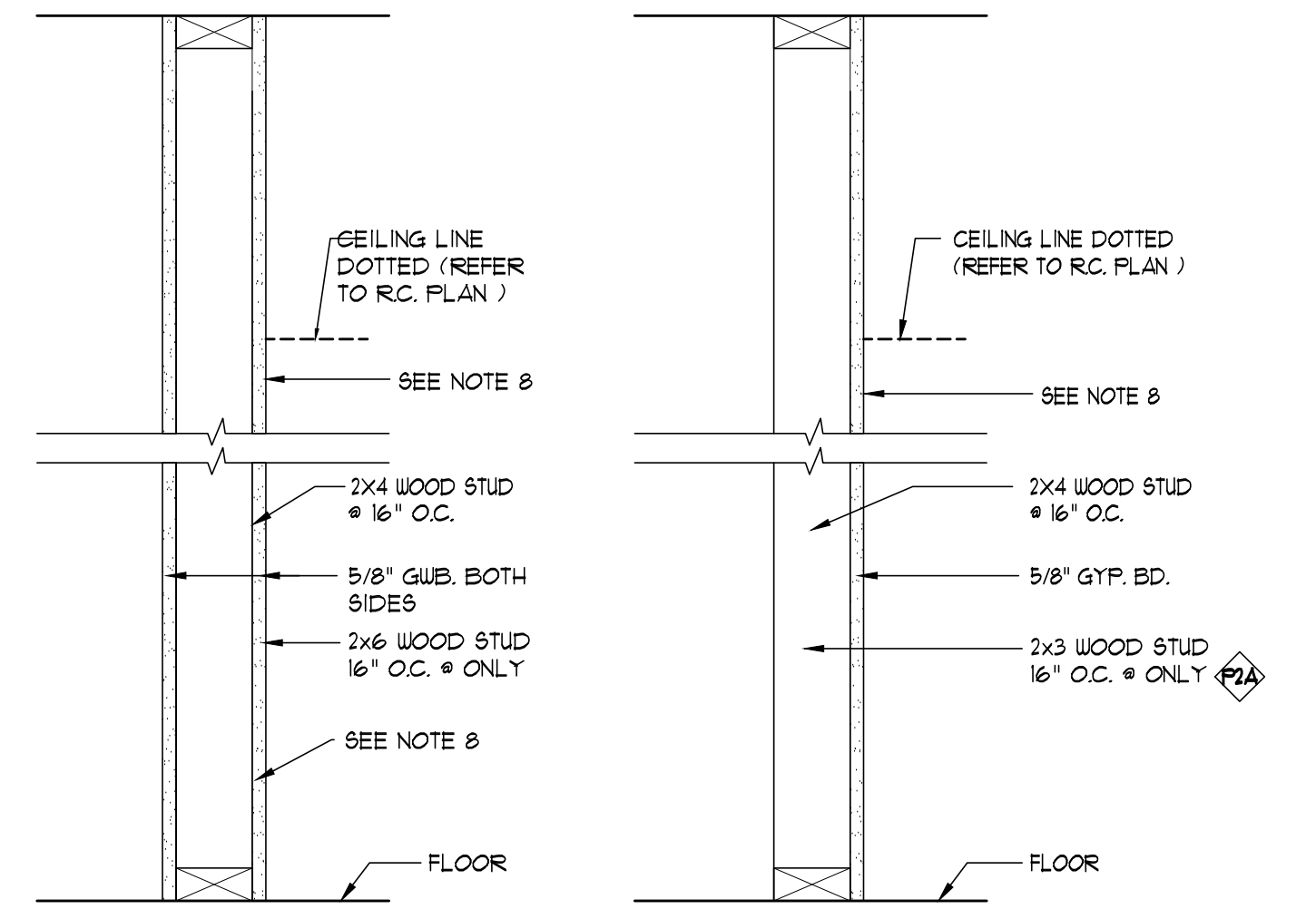
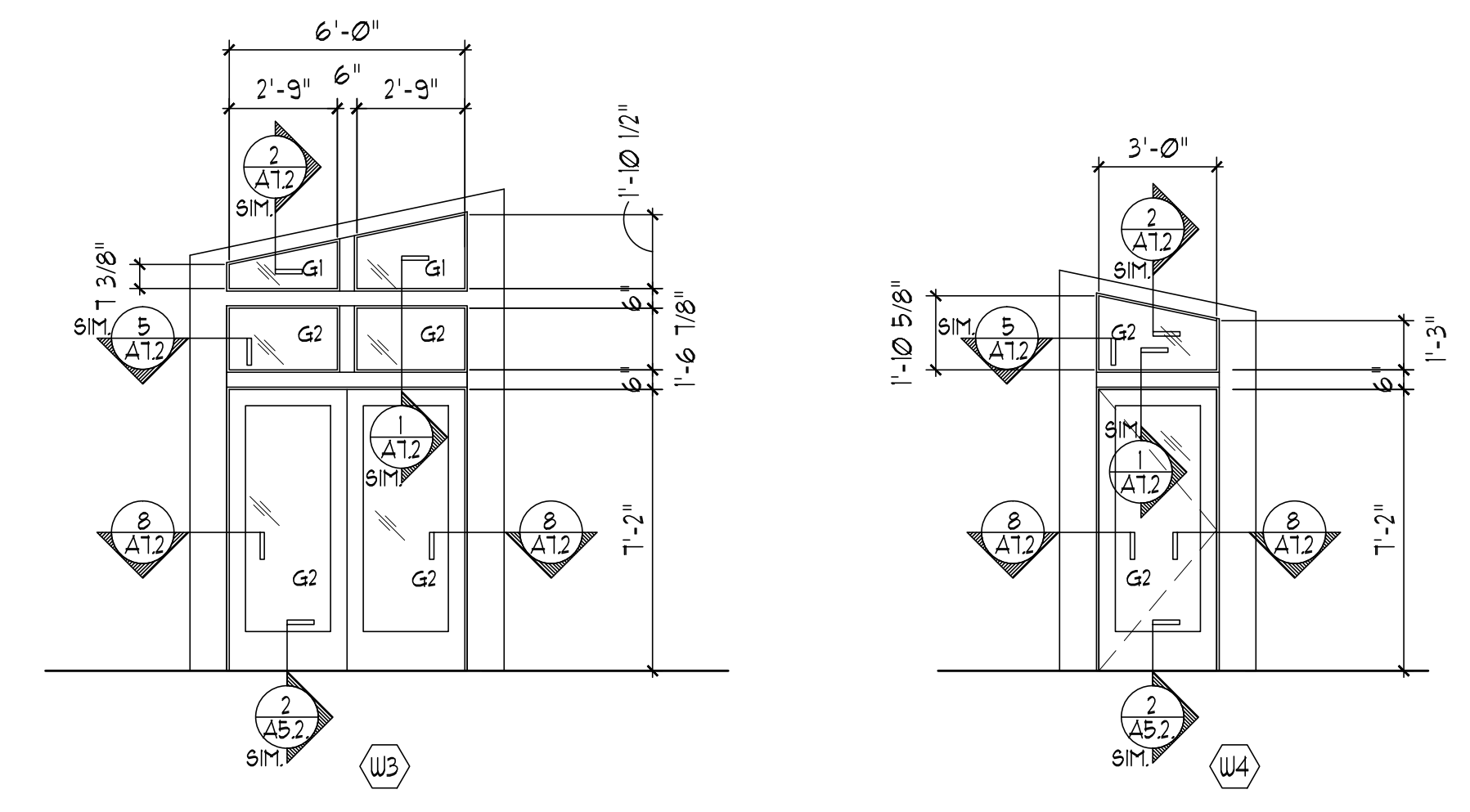


1 DOOR ELEVATIONS
ATI SCALE: 1/4\"/>

2 FRAME TYPE
ATI SCALE: 1/4\"/>



3 WINDOW TYPES
ATI SCALE: 1/4\"/>



NON-RATED PARTITION
FIRE RATING: 0 UL DES. NO.

NON-RATED PARTITION
FIRE RATING: 0 UL DES. NO.

DOOR SCHEDULE

NO.	ROOM NAME	FROM - TO	WIDTH HEIGHT THICK	TYPE	MATERIAL	FINISH	FRAME				REMARKS		
							MATERIAL	FINISH	TYPE	THRESHOLD			
01	DISPLAY	DISPLAY - EXTERIOR	(2) 3'-5 3/8\" x 1'-2\" x 1 3/4\"	B	SQUID/GLS	STAIN	UD	STAIN	1	ALUM.	1/4\"12 3/4\"12	2	THRESHOLD BY STOREFRONT MFG.
02	DISPLAY	DISPLAY - EXTERIOR	(2) 3'-0\" x 1'-2\" x 1 3/4\"	B	SQUID/GLS	STAIN	UD	STAIN	1	ALUM.	1/4\"12 8/4\"12	2	THRESHOLD BY STOREFRONT MFG.
03	DISPLAY	DISPLAY - EXTERIOR	3'-0\" x 1'-2\" x 1 3/4\"	B	SQUID/GLS	STAIN	UD	STAIN	1	ALUM.	1/4\"12 8/4\"12	3	THRESHOLD BY STOREFRONT MFG.
04	DISPLAY	DISPLAY - OFFICE	3'-0\" x 1'-0\" x 1 3/4\"	A	SQUID	STAIN	HM	PTD.	2		1/4\"12 2/4\"12	1	
05	OFFICE	SALES - OFFICE	3'-6\" x 1'-0\" x 1 3/4\"	A	SQUID	STAIN	HM	PTD.	2		1/4\"12 1/4\"12	1	

GENERAL NOTES

- DOORS, THRESHOLDS TO MEET ACCESSIBILITY REQUIREMENTS, U.O.N.
- PROVIDE KICK PLATE @ PUSH SIDE OF THE DOOR
- PROVIDE 3 SILENCERS AT EACH SINGLE SWING DOOR LEAF, SR64 IV
- PROVIDE 1 SILENCER AT EACH DOUBLE DOOR LEAF, SR64 IV
- PROVIDE CLEAR SILICONE SEALANT AT THE BOTTOM OF ALL DOOR FRAMES.
- CHECK AND ADJUST ALL DOOR CLOSERS.
- PROVIDE ADA COMPLIANT DOOR SILLS, PUSH PULL HARDWARE AND CLOSERS.

ABBREVIATIONS USED:

- ALUM. = ALUMINUM
- HM. = HOLLOW METAL
- SQUID. = SOLID CORE WOOD
- MTL. = METAL
- FF. = FACTORY FINISH
- PTD. = PAINTED
- ADA = AMERICANS WITH DISABILITY ACT
- GL. = GLASS

HARDWARE SCHEDULE

PROVIDE BMHA GRADE 2 WITH 626 FINISH ON ALL HARDWARE. ACCEPTABLE MANUFACTURERS: SCHLAGE, CORBIN, SARGENT.

HARDWARE SET #1

- (1) OFFICE LOCK SET
- (3) PAIR HINGES
- (1) FLOOR STOP
- (1) KICK PLATE (PUSH SIDE)

HARDWARE SET #2

- (1) CYLINDRICAL DEADBOLT
- (3) PAIR HINGES
- (2) CLOSERS WITH 90° STOP
- (2) PUSH PULL HANDLE SETS
- (1) PAIR FLUSH BOLTS
- (1) ALUM. SILL (ADA)
- (1) WEATHER STRIP PACKAGE
- (4) KICK PLATES

HARDWARE SET #3

- (1) CYLINDRICAL DEADBOLT
- (15) PAIR HINGES
- (1) CLOSER WITH 90° STOP
- (1) PUSH PULL HANDLE SET
- (1) ALUM. SILL (ADA)
- (1) WEATHER STRIP PACKAGE
- (2) KICK PLATES

KEYING SCHEDULE: ONE (1) KEY SHALL OPEN EVERY DOOR IN THE FACILITY EXCEPT THE OFFICE. THE OFFICE SHALL HAVE SEPARATE KEY.

NOTE: CONFIRM HARDWARE SCHEDULE WITH OWNER. PROVIDE MASTER KEYING SYSTEM PER OWNER REQUIREMENTS.

GLAZING SCHEDULE

MARK	ASSEMBLY TYPE	DESCRIPTION	THICKNESS	COLOR	GLASS TYPE
G1	INSULATED	INSIDE AIR SPACE OUTSIDE	1/4\" 1/2\" 1/4\"	CLEAR	HEAT STRENGTHENED
G2	INSULATED	INSIDE AIR SPACE OUTSIDE	1/4\" 1/2\" 1/4\"	CLEAR	TEMPERED

ROOM FINISH SCHEDULE

ROOM NO.	ROOM NAME	FLOOR	BASE	WALLS	CEILING	REMARKS
100	DISPLAY	STAINED CONCRETE	B-1	P-1	CLG-1	
101	SALES	STAINED CONCRETE	B-1	P-1	CLG-1	
102	OFFICE	STAINED CONCRETE	B-1	P-2	CLG-1	

FINISH INDEX

SYMBOL	MANUFACTURER	TYPE	COLOR	CONTACT	NOTES
P-1	SHERWIN WILLIAMS	EGGSHELL	CLASSIC LIGHT BUFF #SW00950		
P-2	SHERWIN WILLIAMS	EGGSHELL	BAGEL #SW6114		
B-1	JOHNSONITE	4\" RUBBER	GROUNDRED #264	KRISTAN MILLIKAN 913-484-0911	PROVIDE LONG TOE BASE AROUND EXTERIOR WALL. STANDARD TO BASE AT ALL OTHER LOCATIONS
CLG-1	ARMSTRONG	CORTEGA SQUARE EDGE, LAY-IN 24\" X 48\" WITH PRELUDE XL 15/16\" EXPOSED TEE SYSTEM.	WHITE	Armstrong World Industries, Inc. (800-234-5464)	PROVIDE ALL ACCESSORIES FOR A COMPLETE CEILING SYSTEM.

NOTE: ALL PAINTED SURFACES TO RECEIVE ONE COAT OF PRIMER AND TWO COATS OF FINISH.

DATE	PERMIT SUBMISSION	DESCRIPTION
10/23/19		

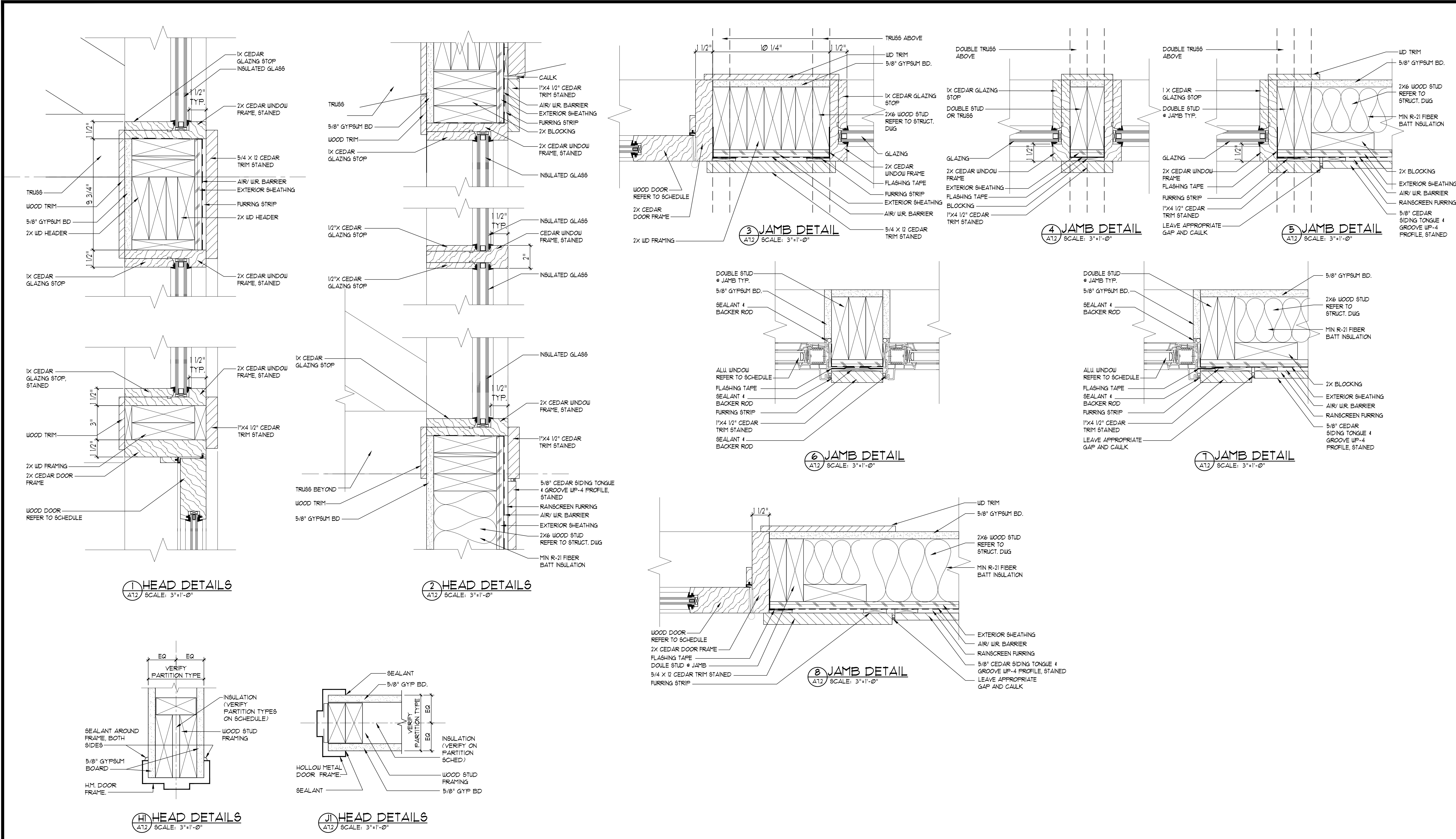


OBSTACLE COURSE SALES CENTER
UFTON HILL REGIONAL PARK
6060 WILSON BOULEVARD, ARLINGTON, VA
PROJECT NUMBER: B05000
SCALE: AS SHOWN
PARTITION/WINDOW/DOOR TYPES, SCHEDULES AND DETAILS

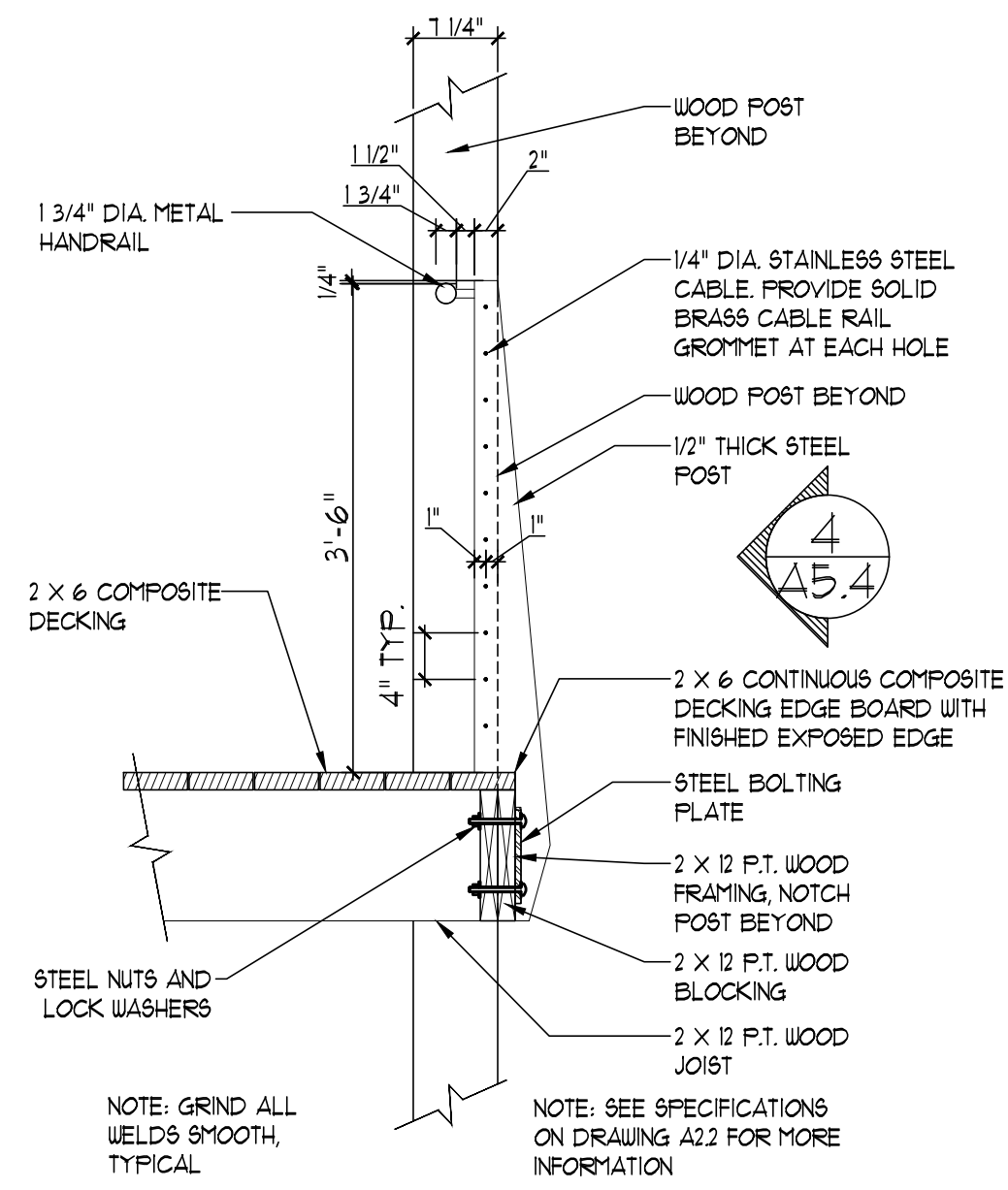
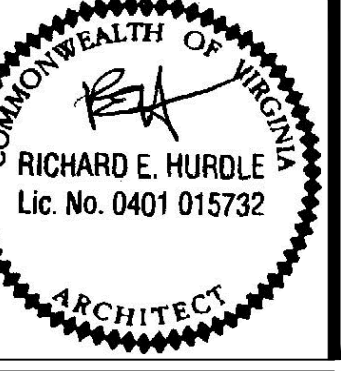
10/23/19	PERMIT SUBMISSION
DATE	DESCRIPTION



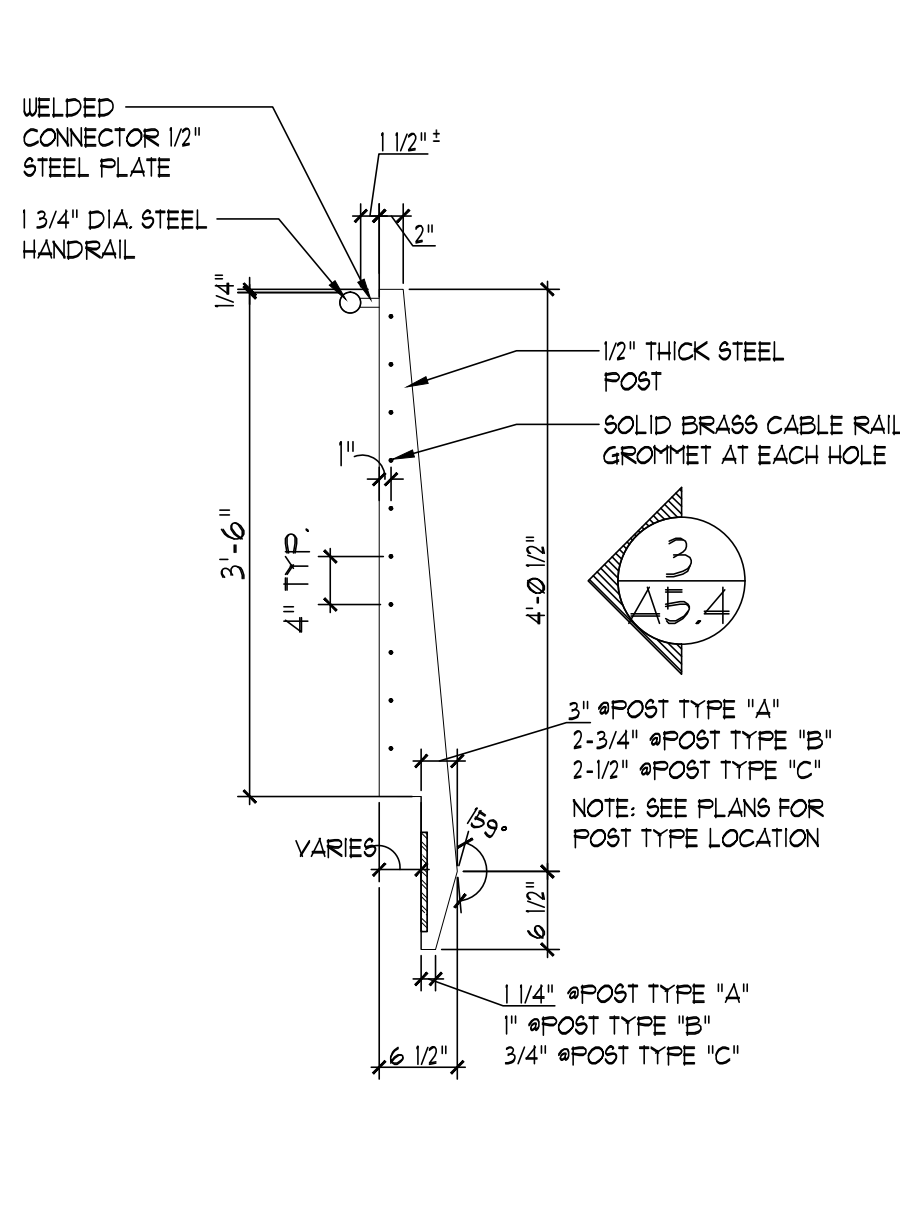
OBSTACLE COURSE SALES CENTER
 UFTON HILL REGIONAL PARK
 6060 WILSON BOULEVARD, ARLINGTON, VA
 PROJECT NUMBER: B05000
 SCALE: AS SHOWN
WINDOW/DOOR DETAILS



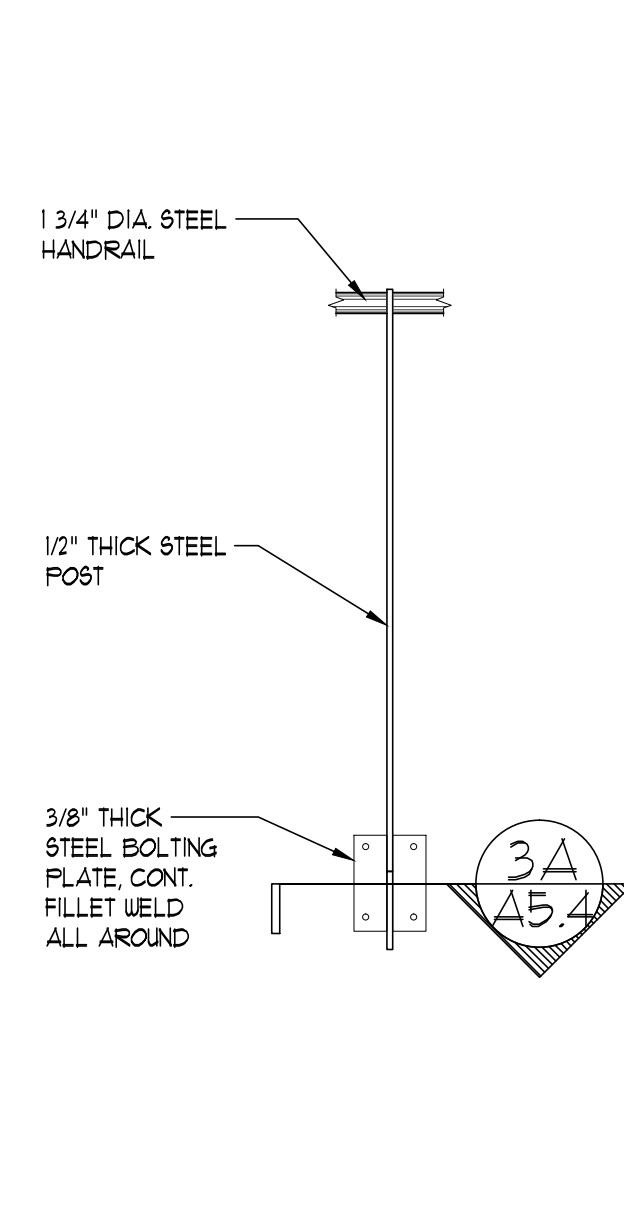
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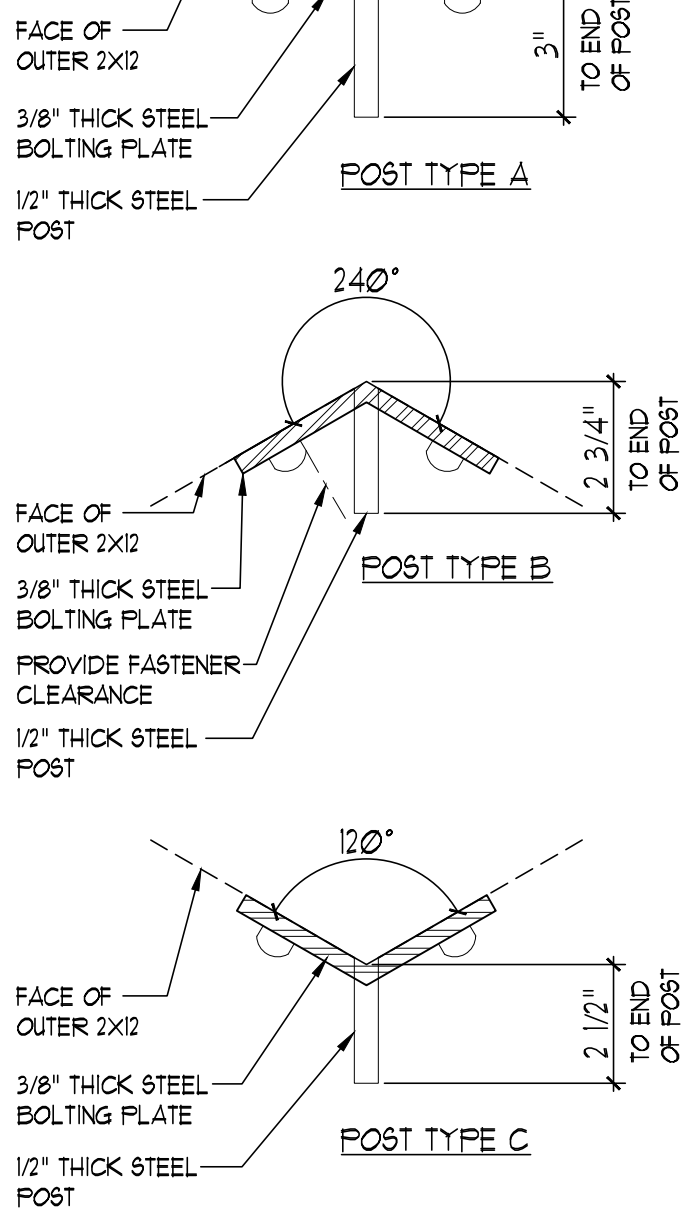
1 GUARDRAIL SECTION
A5.4 SCALE: 3/4"=1'-0"



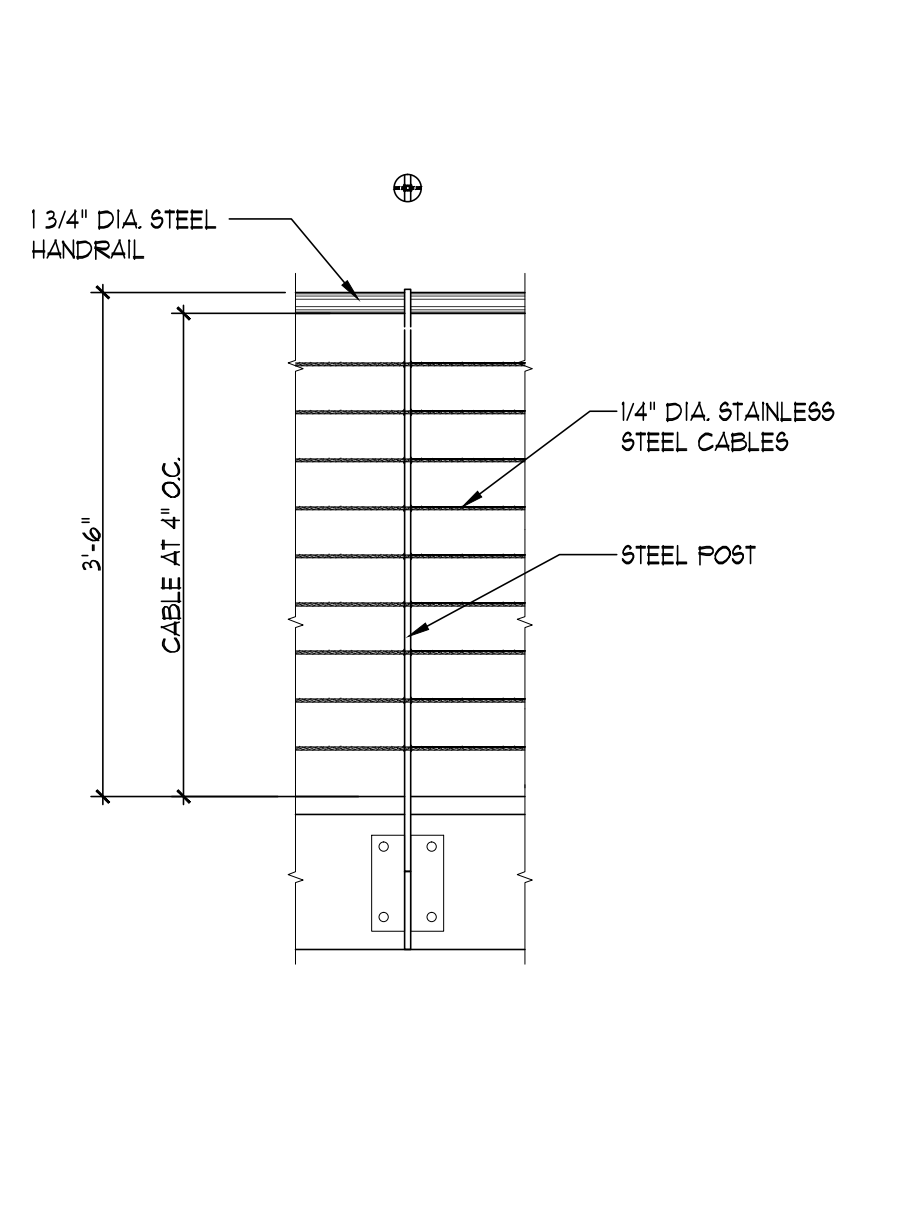
2 GUARDRAIL POST PROFILE.
A5.4 SCALE: 3/4"=1'-0"



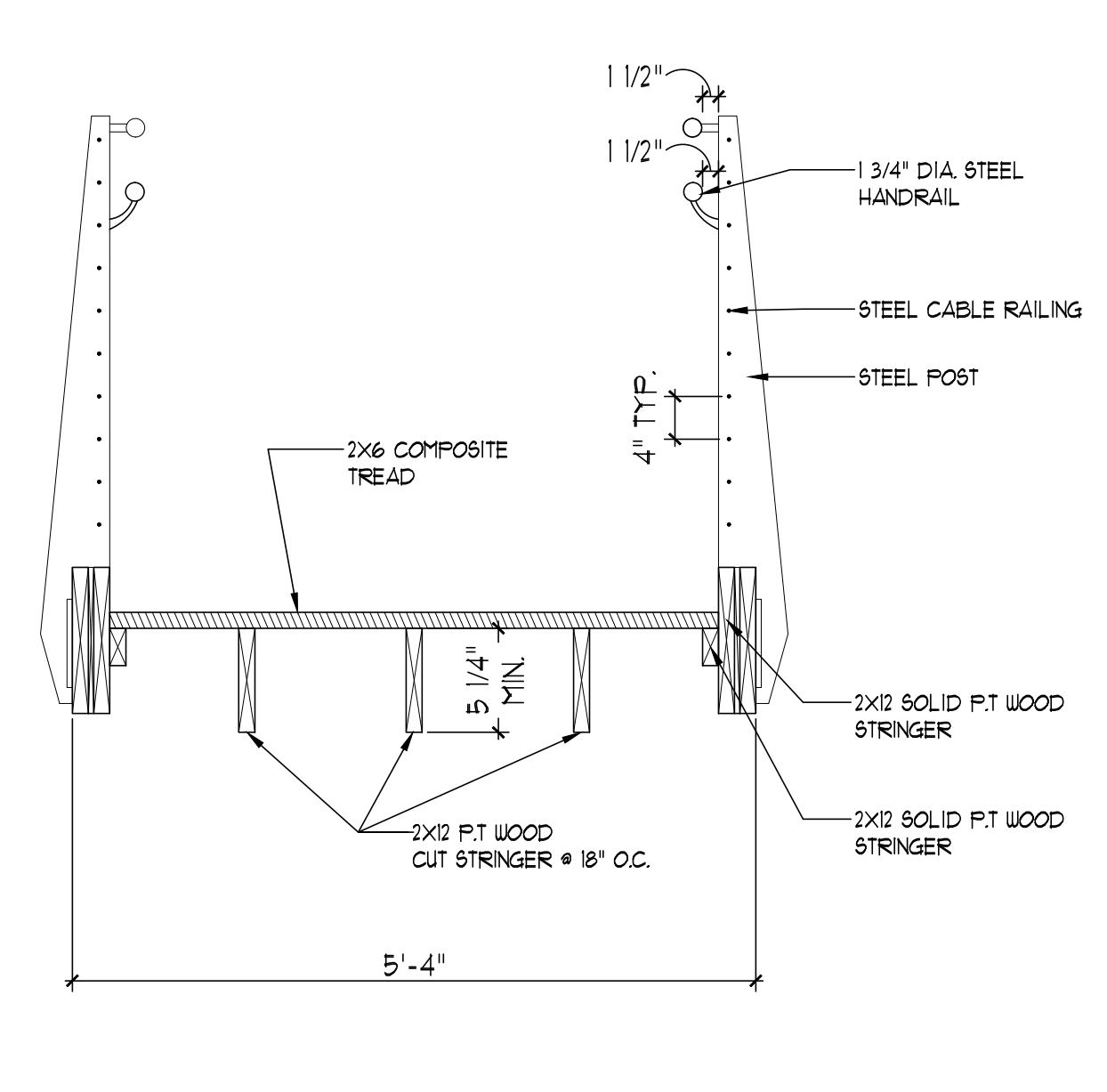
3 GUARDRAIL POST ELEV.
A5.4 SCALE: 3/4"=1'-0"



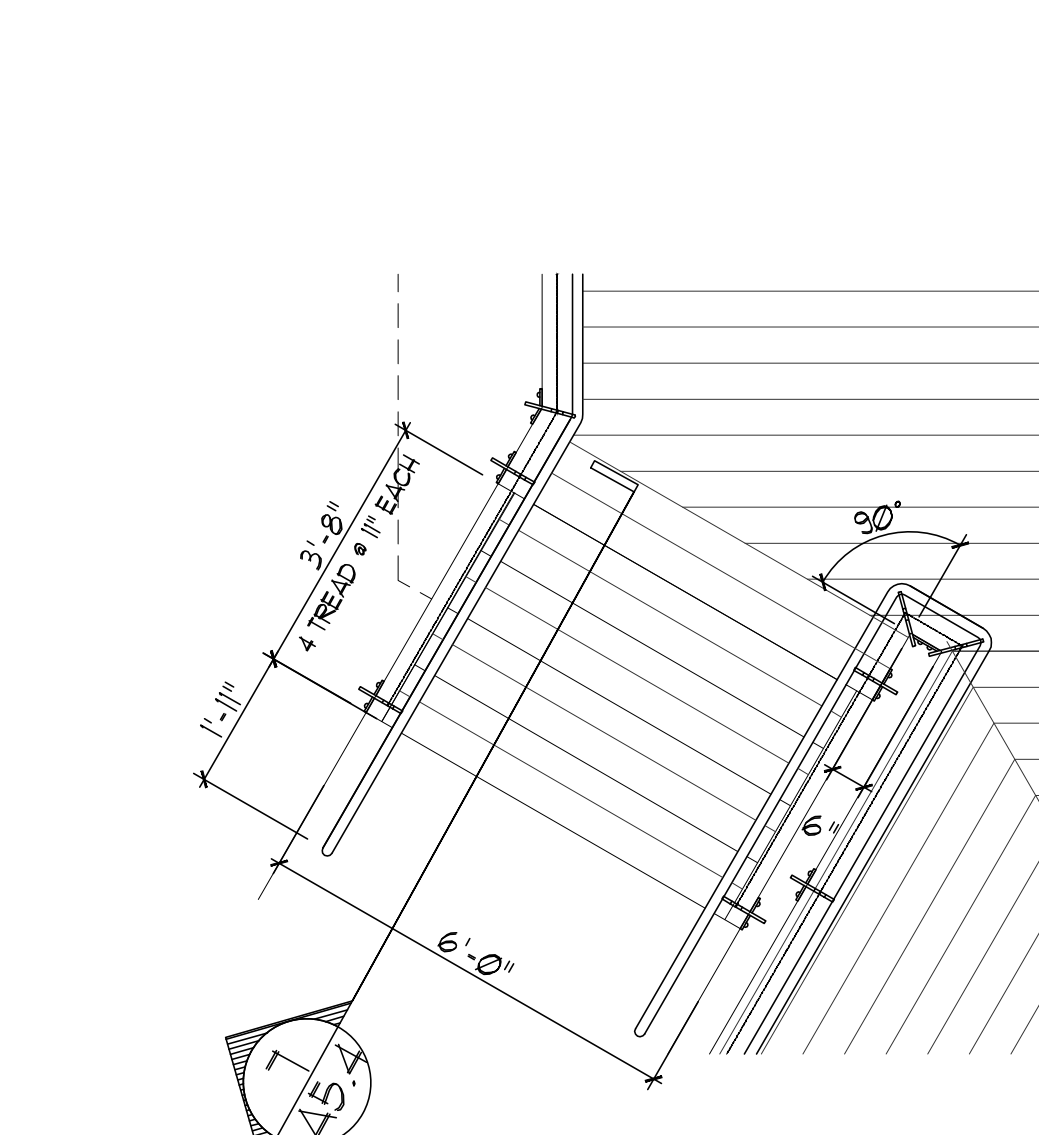
3A POST PLATE DETAIL
A5.4 SCALE: 3/4"=1'-0"



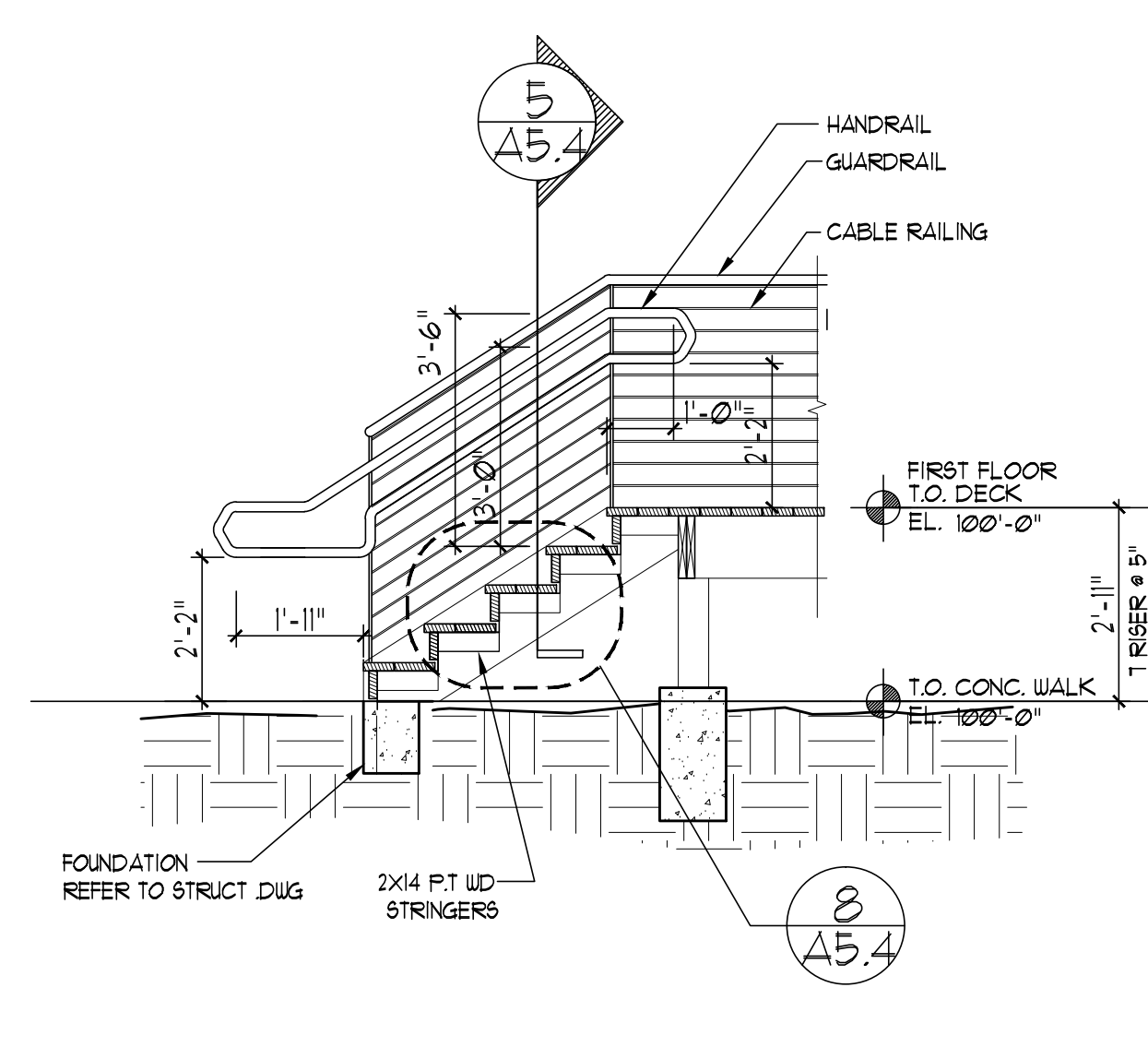
4 GUARDRAIL POST ELEV.
A5.4 SCALE: 3/4"=1'-0"



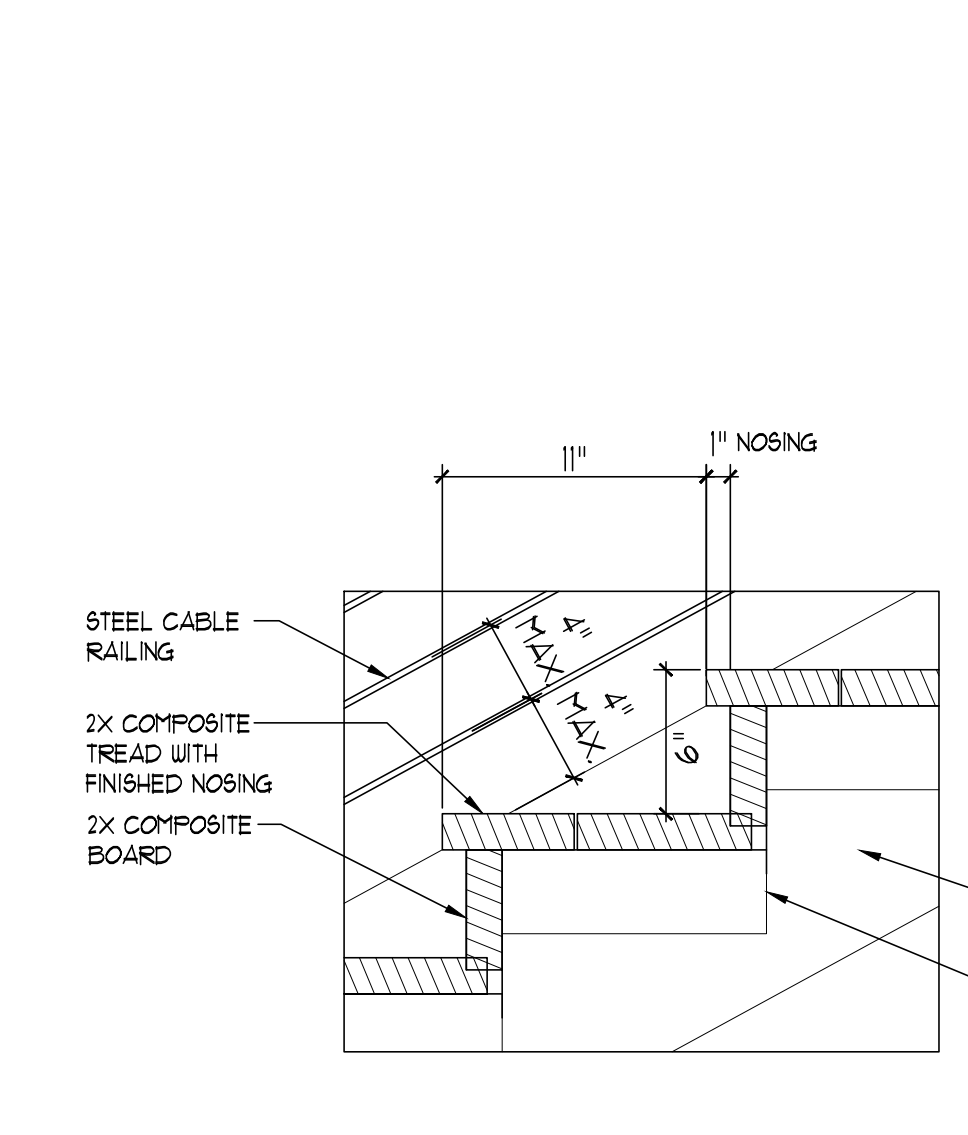
5 SECTION @ STAIR
A5.4 SCALE: 3/4"=1'-0"



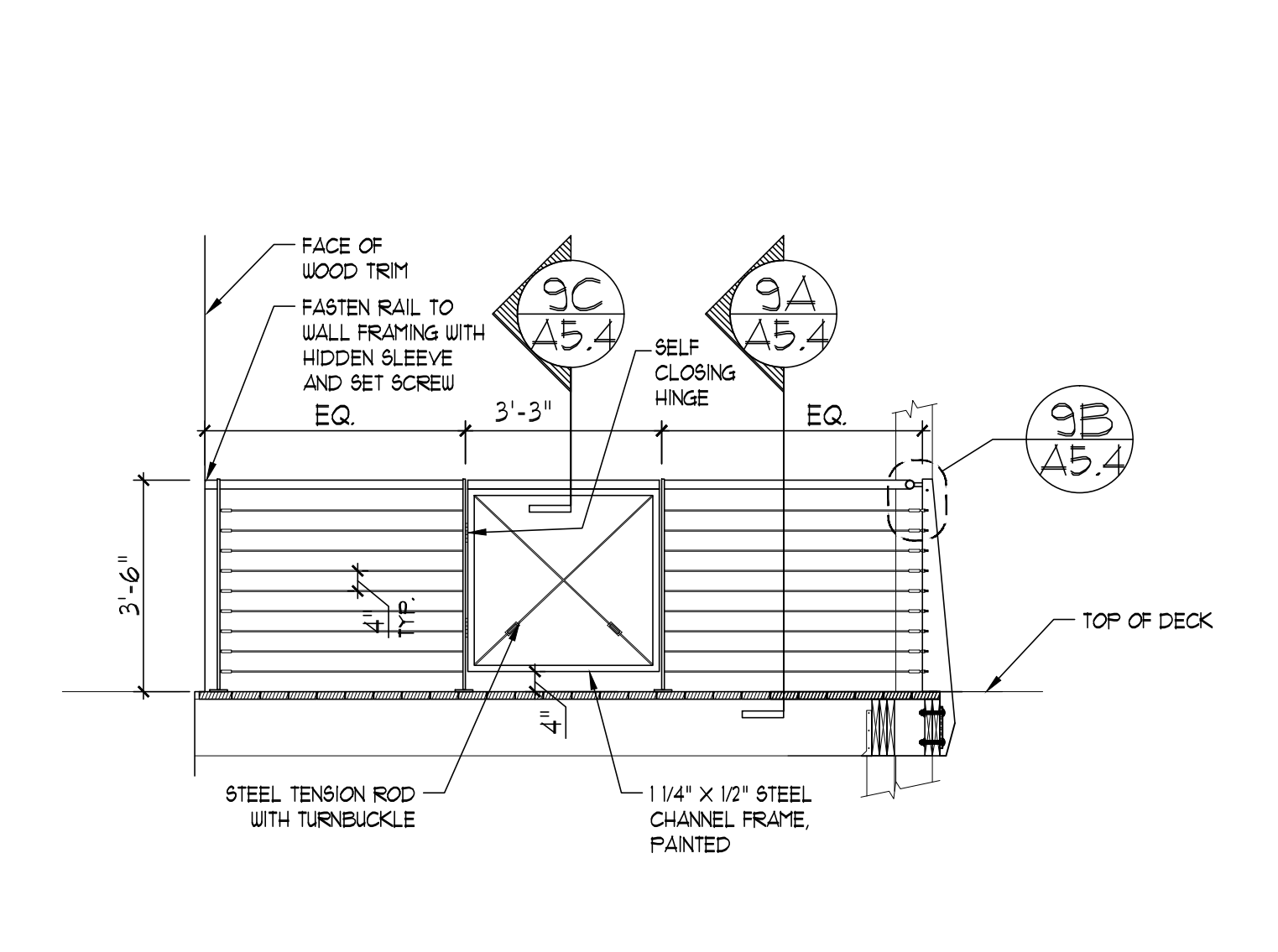
6 PLAN @ STAIR
A5.4 SCALE: 3/8"=1'-0"



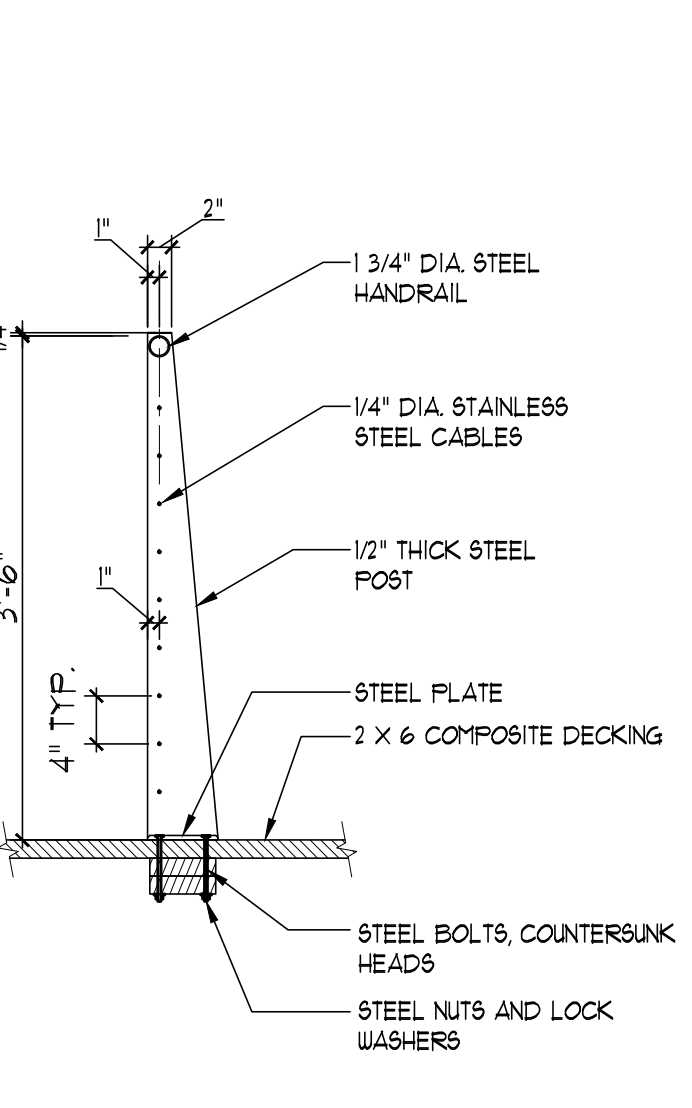
7 SECTION THRU @ STAIR
A5.4 SCALE: 3/8"=1'-0"



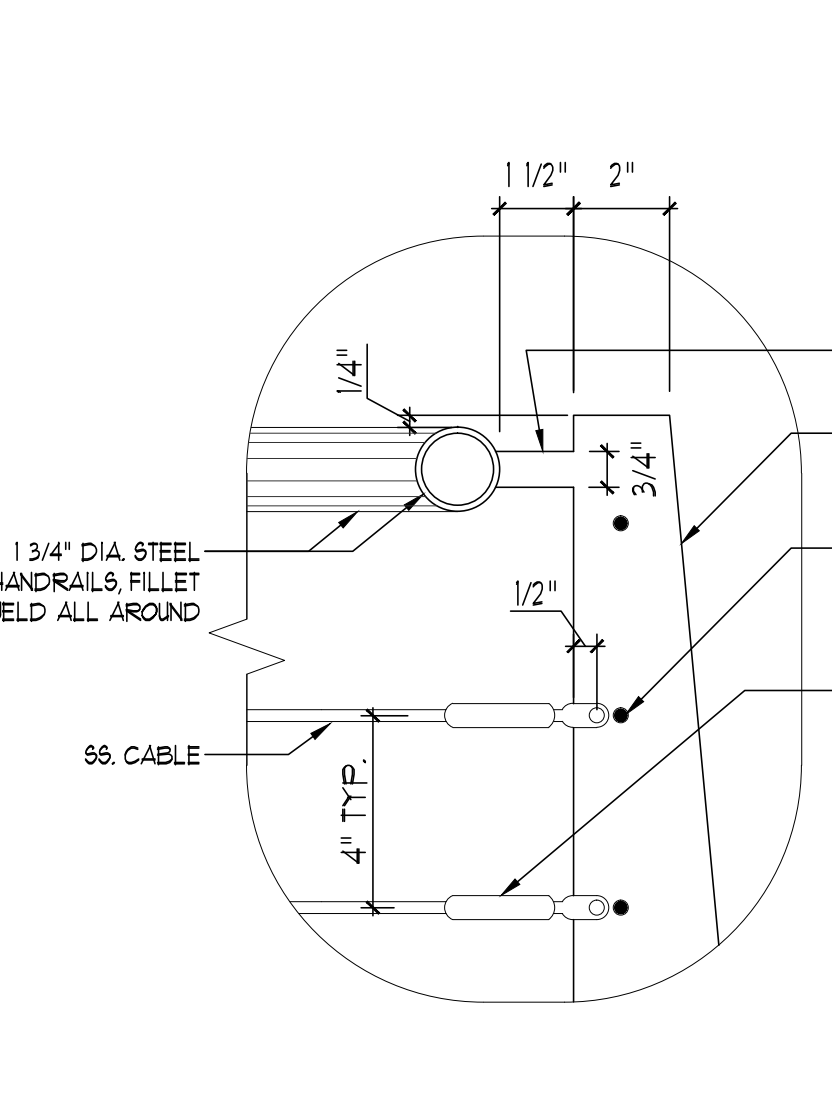
8 STAIR DETAIL
A5.4 SCALE: 1/2"=1'-0"



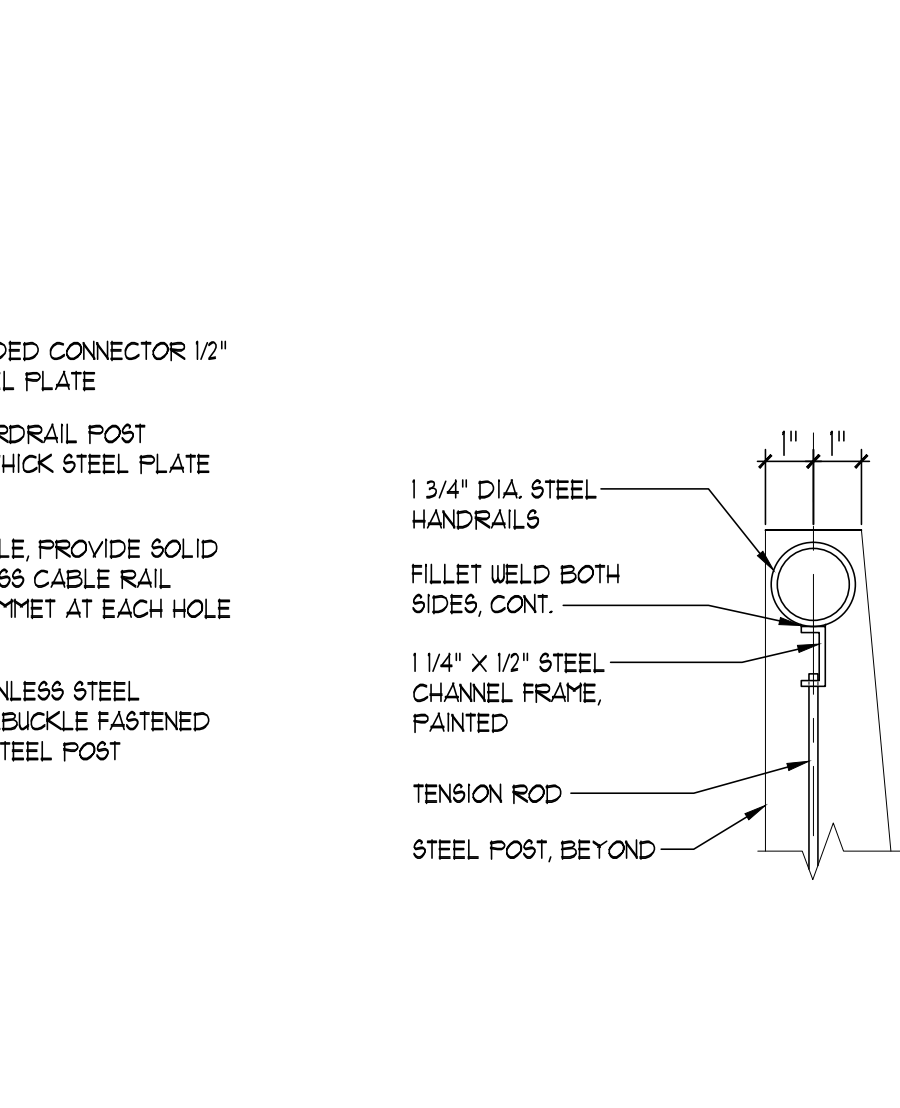
9 ELEVATION OF RAIL
A5.4 SCALE: 3/8"=1'-0"



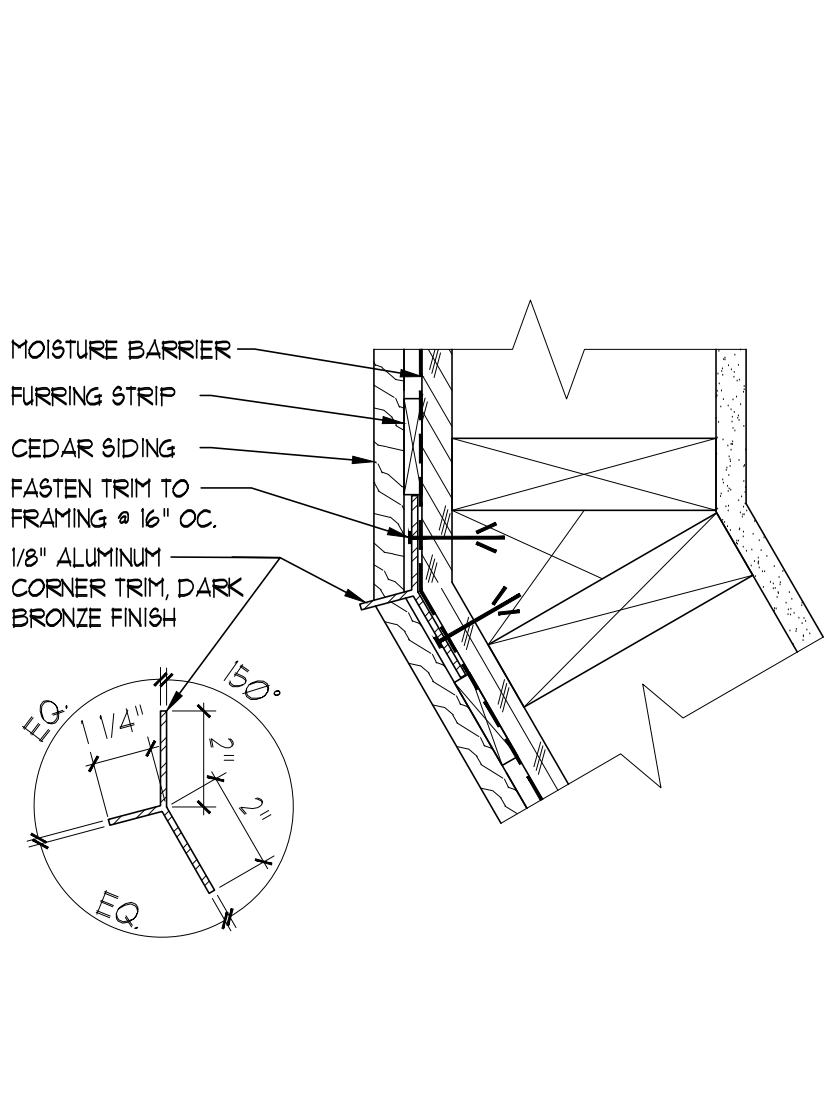
9A FENCE POST
A5.4 SCALE: 3/4"=1'-0"



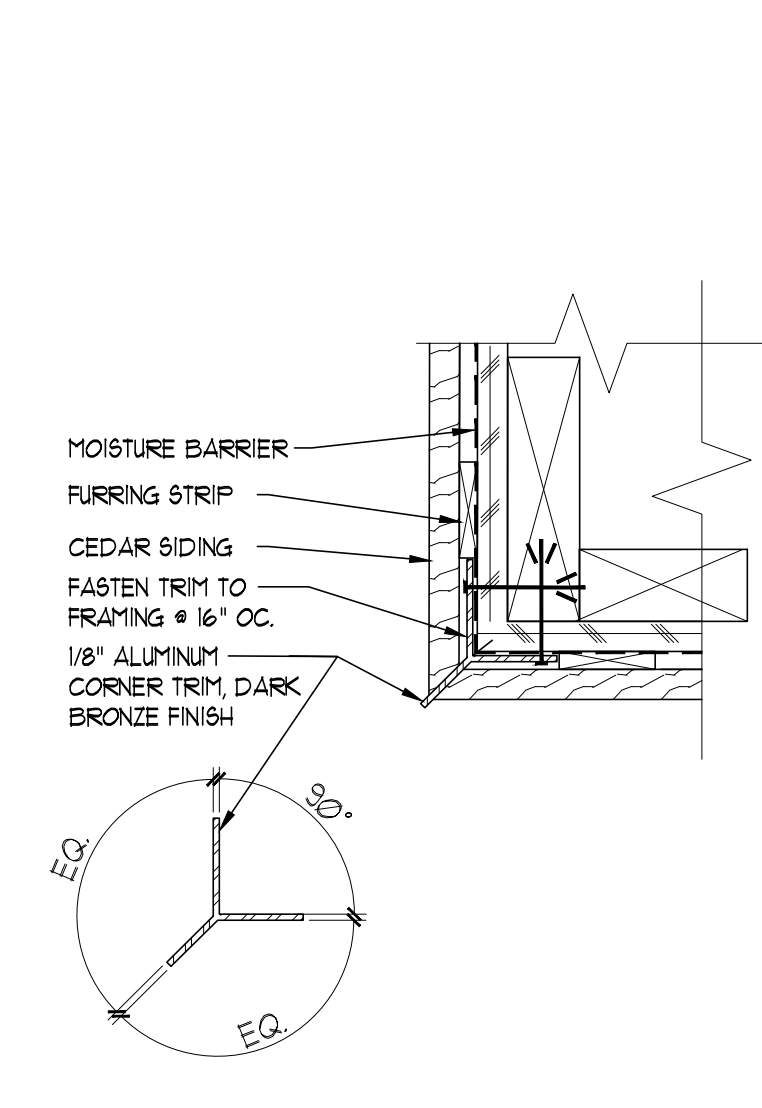
9B FENCE DETAIL
A5.4 SCALE: 3"=1'-0"



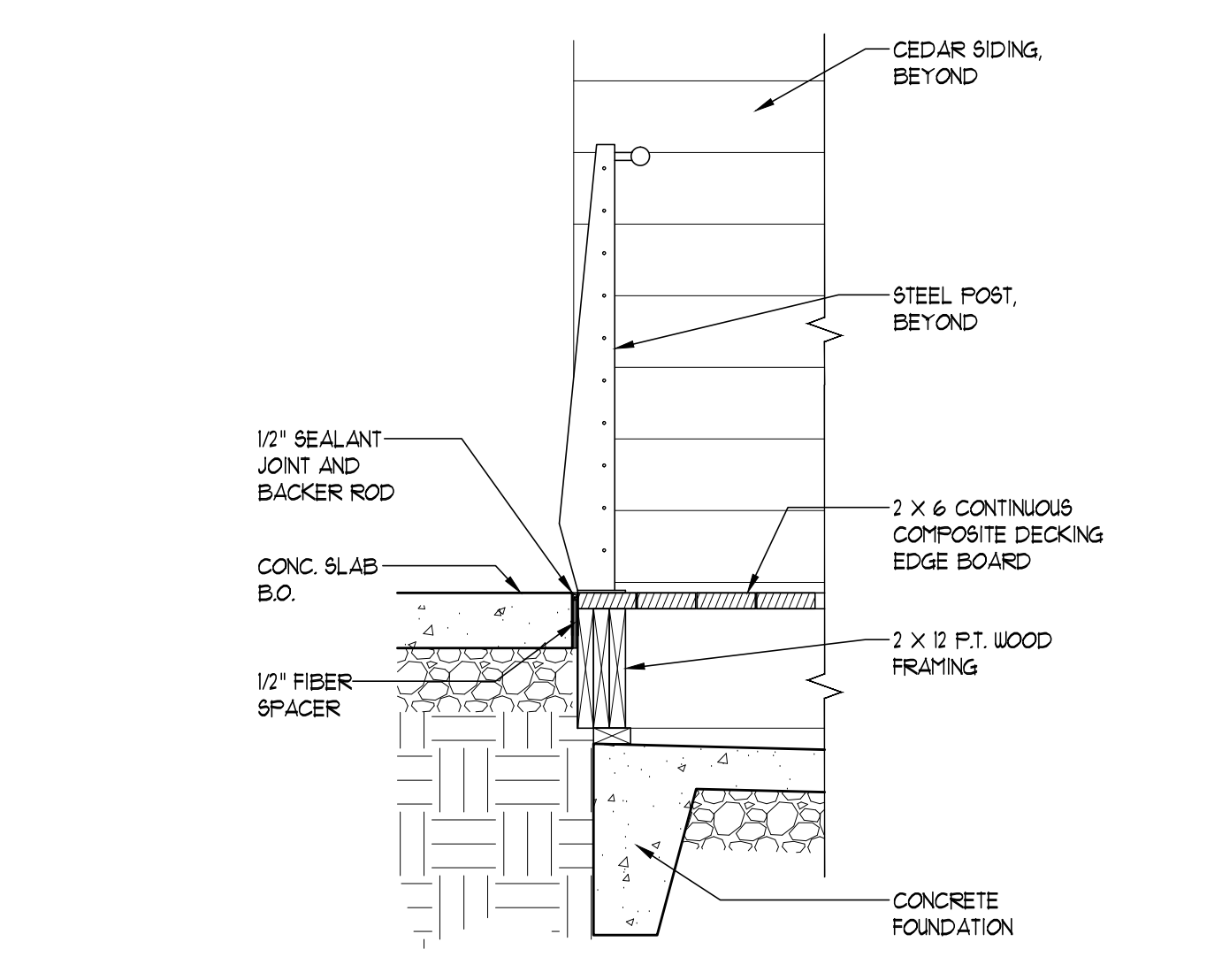
9C GATE FRAME DETAIL
A5.4 SCALE: 3"=1'-0"



10 CORNER TRIM DETAIL
A5.4 SCALE: 3"=1'-0"

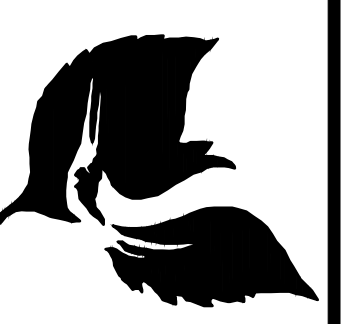


11 CORNER TRIM DETAIL
A5.4 SCALE: 3"=1'-0"

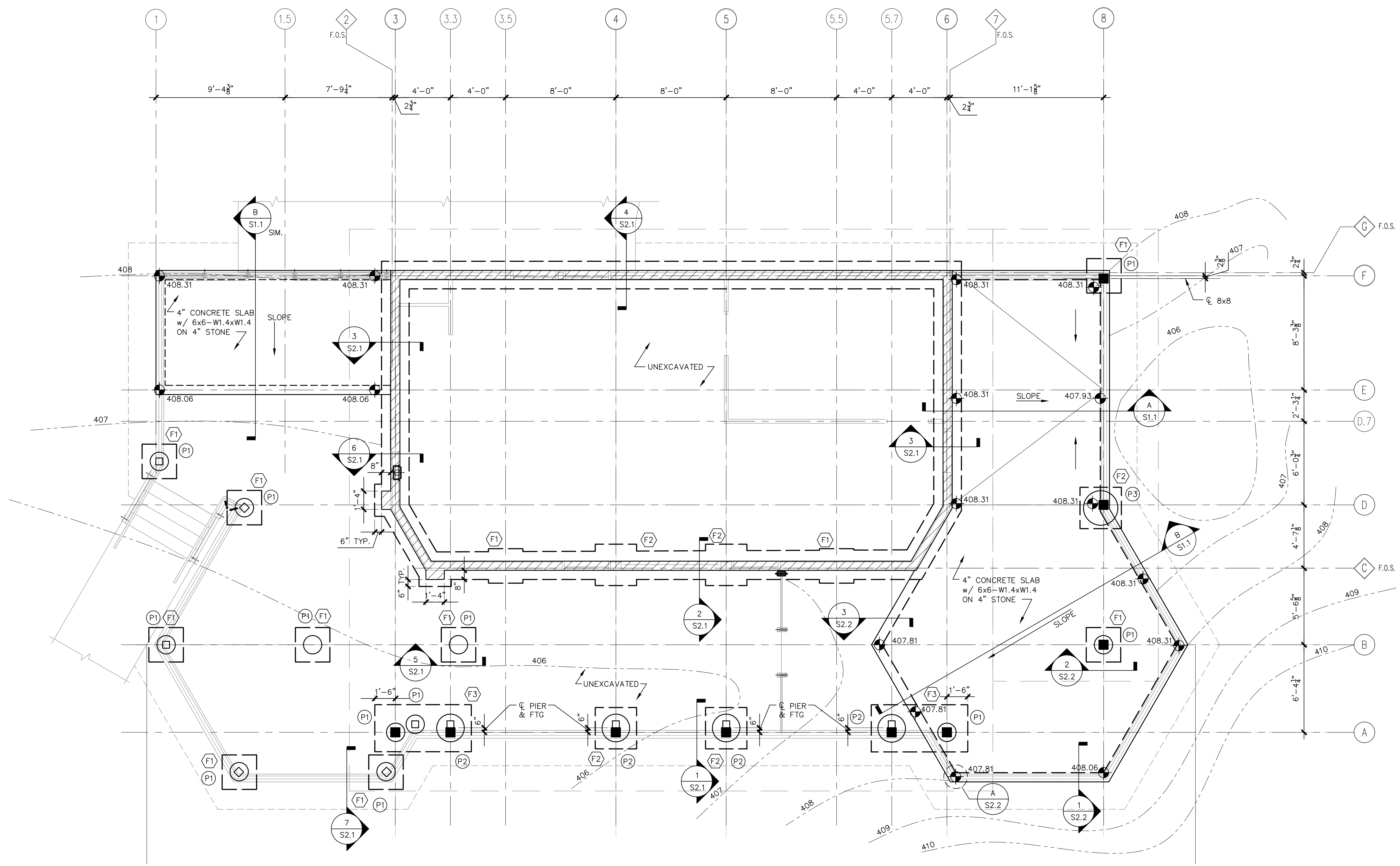


12 GUARDRAIL SECTION
A5.4 SCALE: 3/4"=1'-0"

DATE	DESCRIPTION
10/23/19	PERMIT SUBMISSION



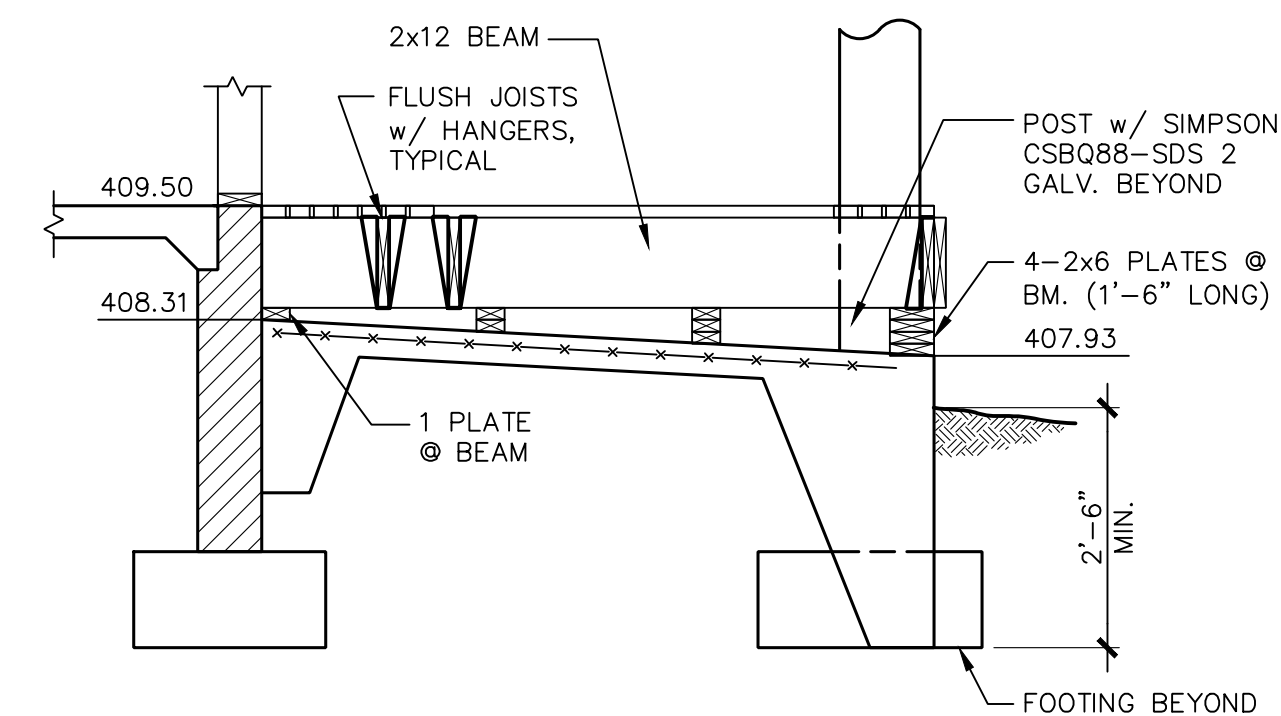
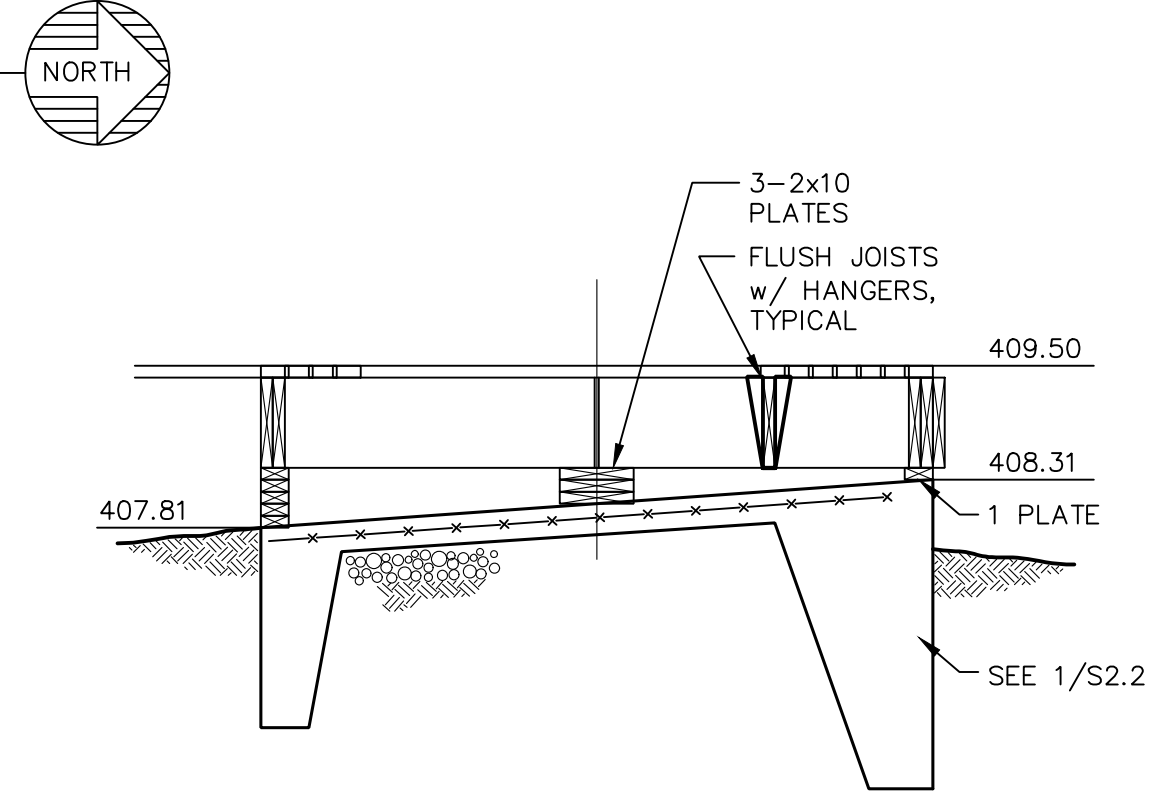
SCALE: AS SHOWN
MISCELLANEOUS DETAILS
PROJECT NUMBER: B105/20
6060 WILSON BOULEVARD, ARLINGTON, VA
UFTON HILL REGIONAL PARK
OBSTACLE COURSE SALES CENTER



FOUNDATION PLAN

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

NOTE:
 1. DENOTES TOP OF SLAB ELEVATION.



DATE	DESCRIPTION
10/23/19	PERMIT SUBMISSION
10/17/19	REVISION
10/10/18	95% PROGRESS SET

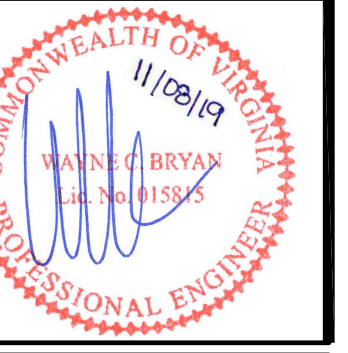
CHECKED-MGS/DESIGNED-REH/APPROVED-AI

SCALE: AS SHOWN

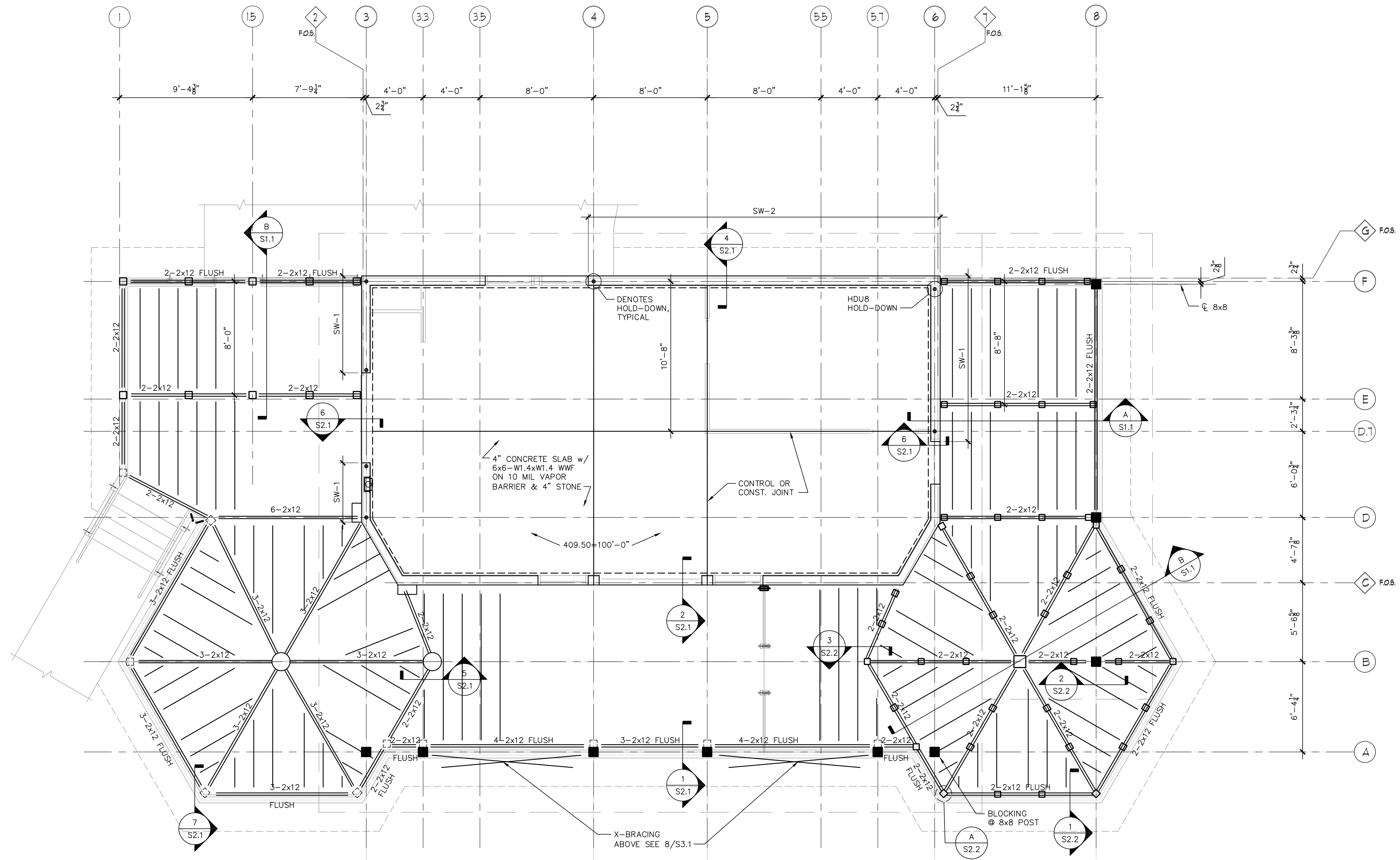
OBSTACLE COURSE SALES CENTER
 UPTON HILL REGIONAL PARK, 6060 WILSON
 BOULEVARD, ARLINGTON, VA

PROJECT NUMBER: 18105.00

FOUNDATION PLAN

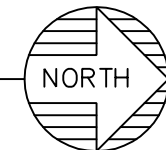


10/23/19	PERMIT SUBMISSION
10/17/19	REVISION
10/10/18	95% PROGRESS SET
DATE	DESCRIPTION
CHECKED - MGS/DESIGNED - REH/APPROVED - AI	



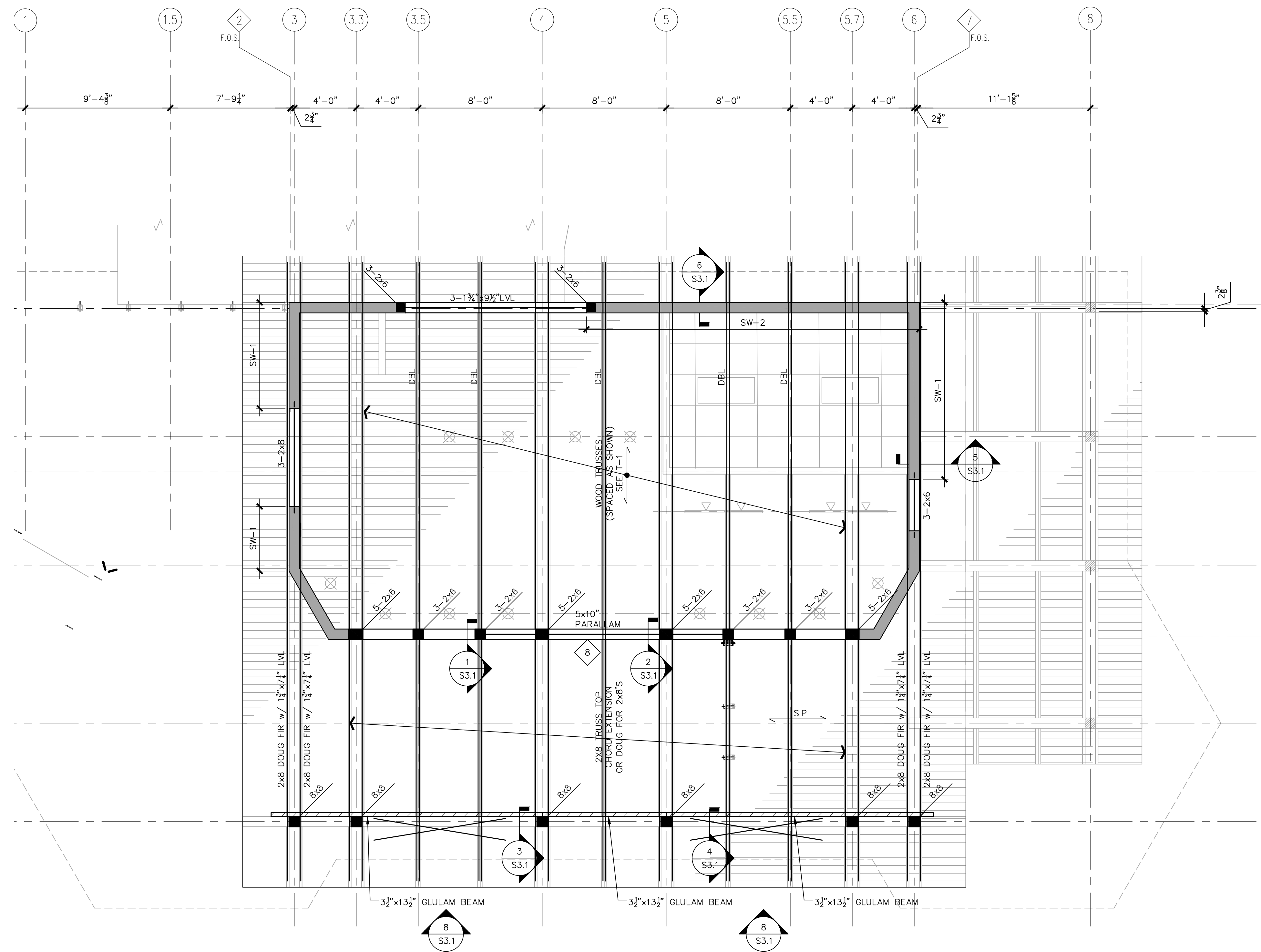
DECK FRAMING PLAN

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

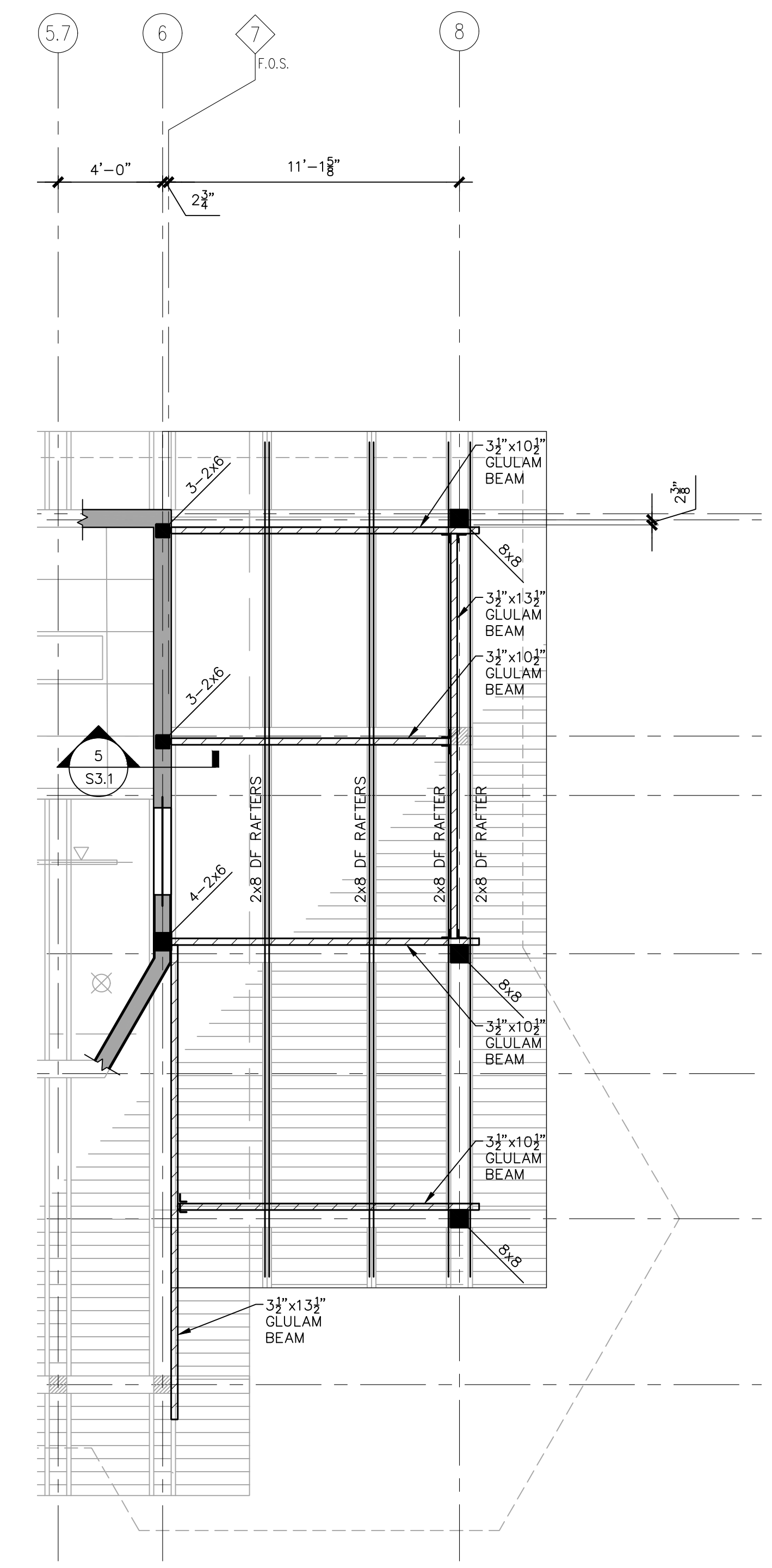
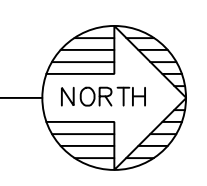


- NOTES:
- ALL FLOOR JOISTS ARE P.T. 2x12 @ 12" O.C.
 - ALL BEAMS ARE DROPPED UNLESS NOTED AS FLUSH
 - DENOTES 6x6 POST BELOW ■ DENOTES 8x8 POST
 - 2x12 BEAMS TO BE CONNECTED TOGETHER AS FOLLOWS:
 2-2x12 - 2 ROWS 12d WALLS @ 16" O.C.
 3-2x12 - 2 ROWS 16d NAILS @ 16" O.C. EA. SIDE
 MORE THAN 3-2x12 - 2 ROWS OF 1/2" GALV. THROUGH BOLTS @ 24" O.C.
 - ALL DECK FRAMING TO BE PRESSURE-TREATED.
 - DENOTES WOOD PLATES x 1'-6" LONG USED TO BUILD DECK UP TO REQUIRED ELEVATION. ATTACH FIRST PLATE WITH 2-1/2"x4" EXP. BOLTS. NAIL SUBSEQUENT WITH 6-16d NAILS.

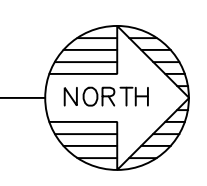
OBSTACLE COURSE SALES CENTER
 UPTON HILL REGIONAL PARK, 6060
 WILSON BOULEVARD, ARLINGTON, VA
 PROJECT NUMBER: 180500
 SCALE: AS SHOWN
DECK FRAMING PLAN



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

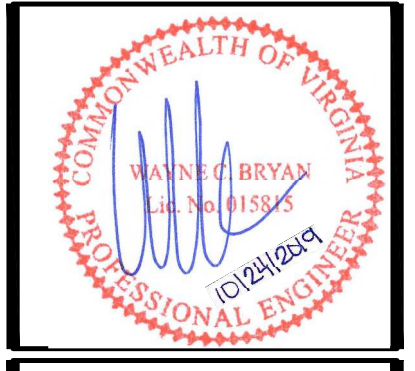


LOW ROOF FRAMING PLAN
SCALE: 1/4" = 1'-0"



ZHA ARCHITECTS
4031 University Drive, Suite 120, Fairfax, VA, 22030
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10/17/19	REVISION	
10/10/18	95% PROGRESS SET	

OBSTACLE COURSE SALES CENTER
UPTON HILL REGIONAL PARK, 6060 WILSON BOULEVARD, ARLINGTON, VA

PROJECT NUMBER: 18105.00

FRAMING PLANS

SCALE: AS SHOWN

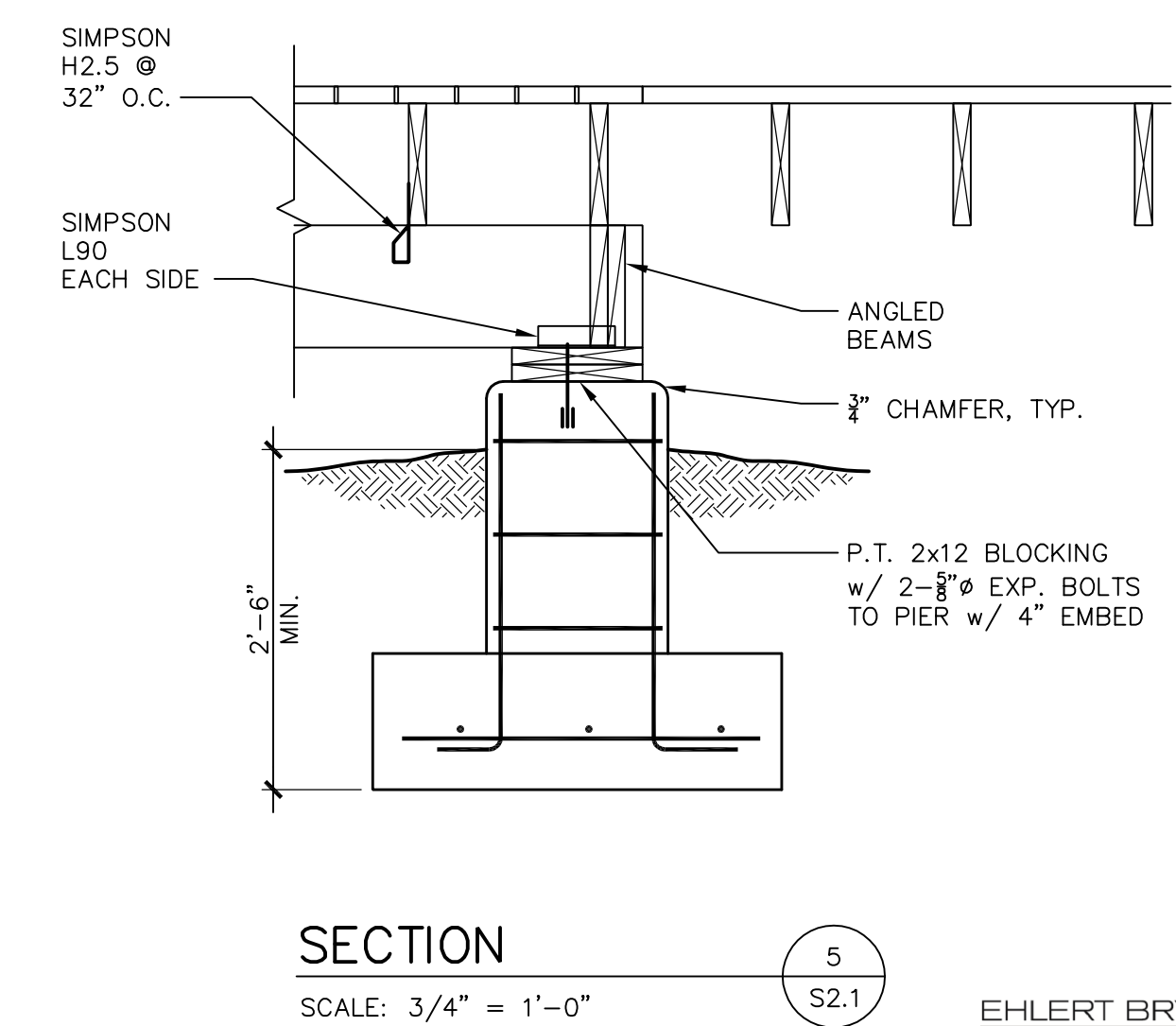
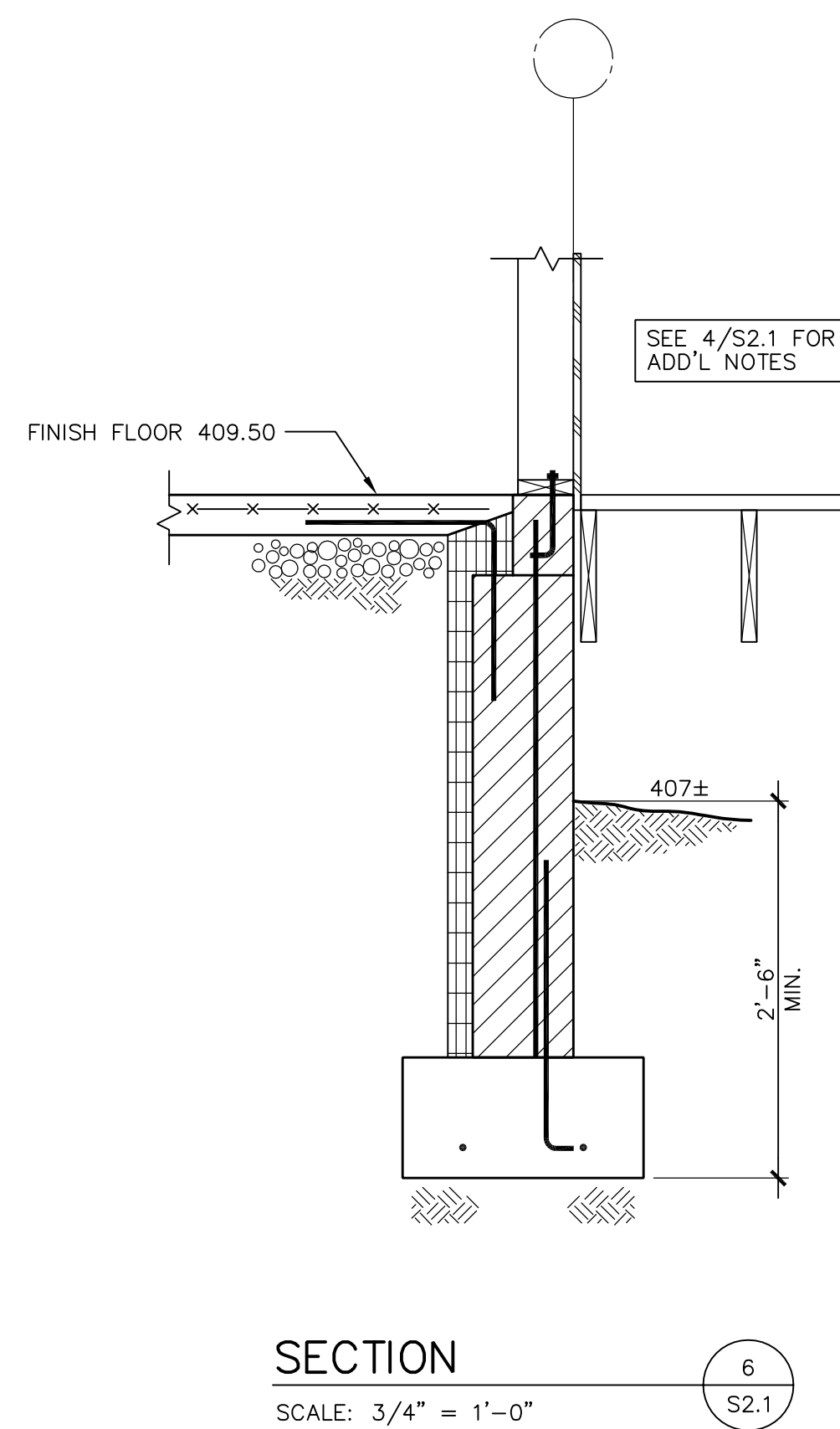
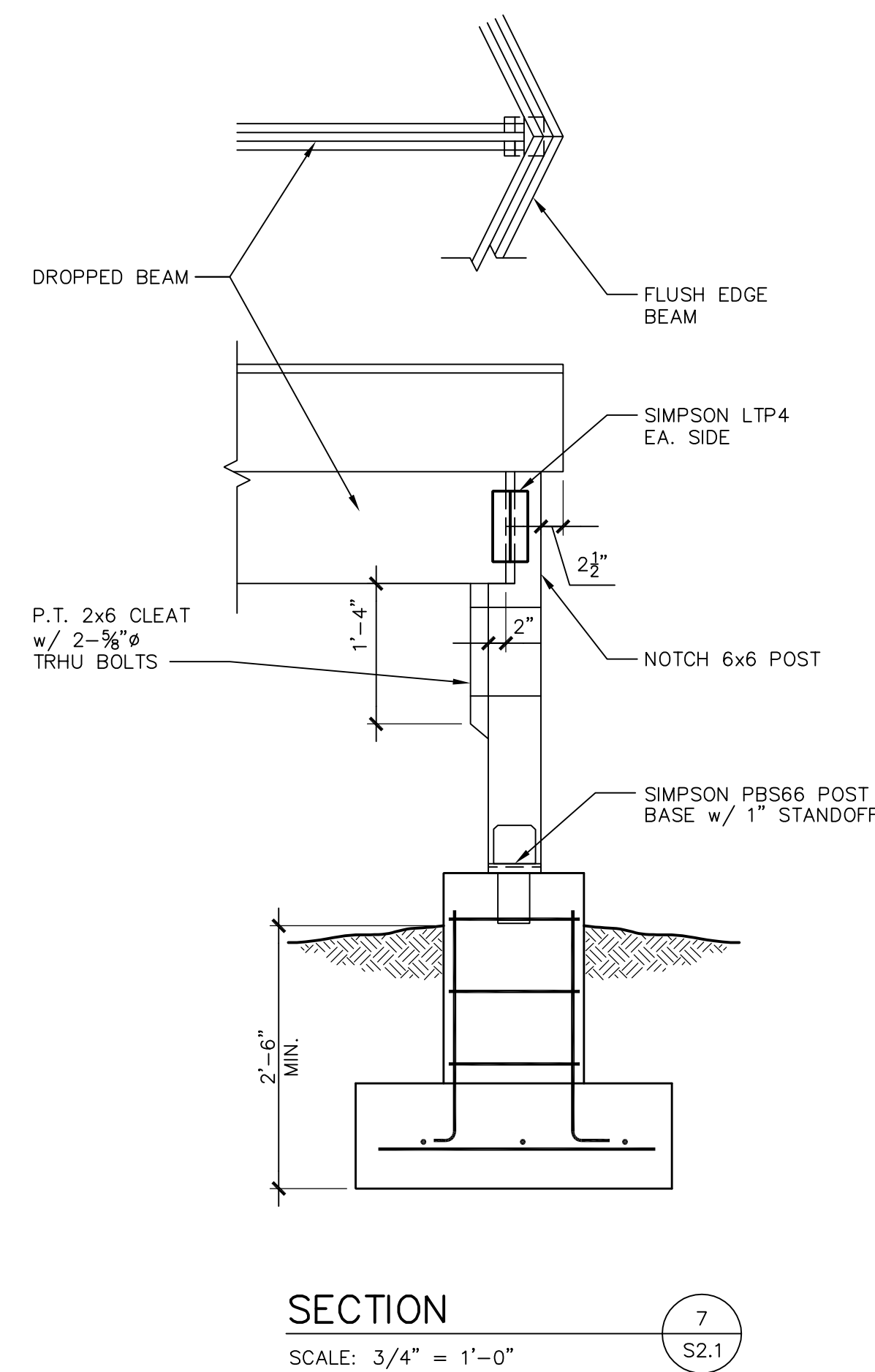
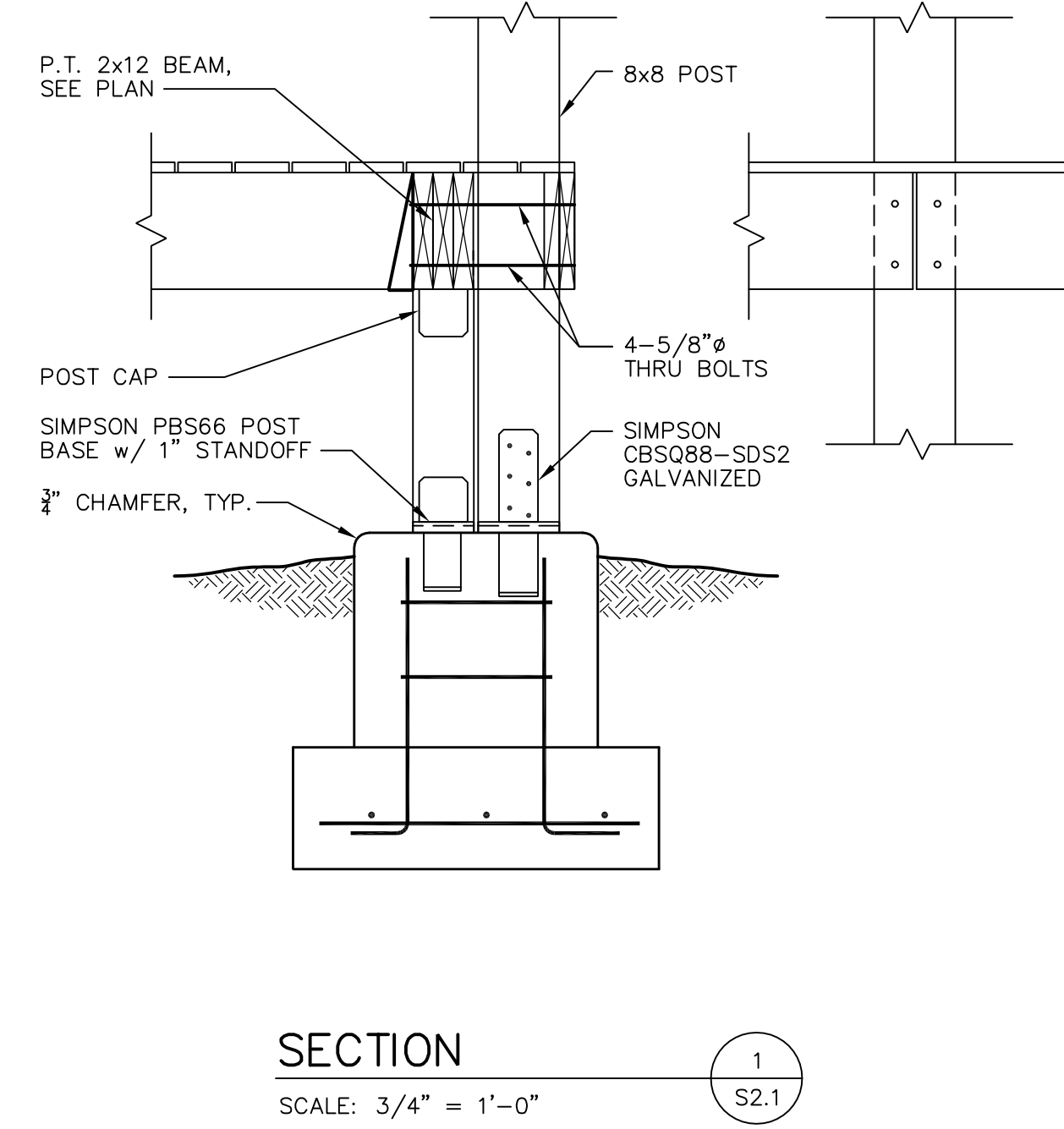
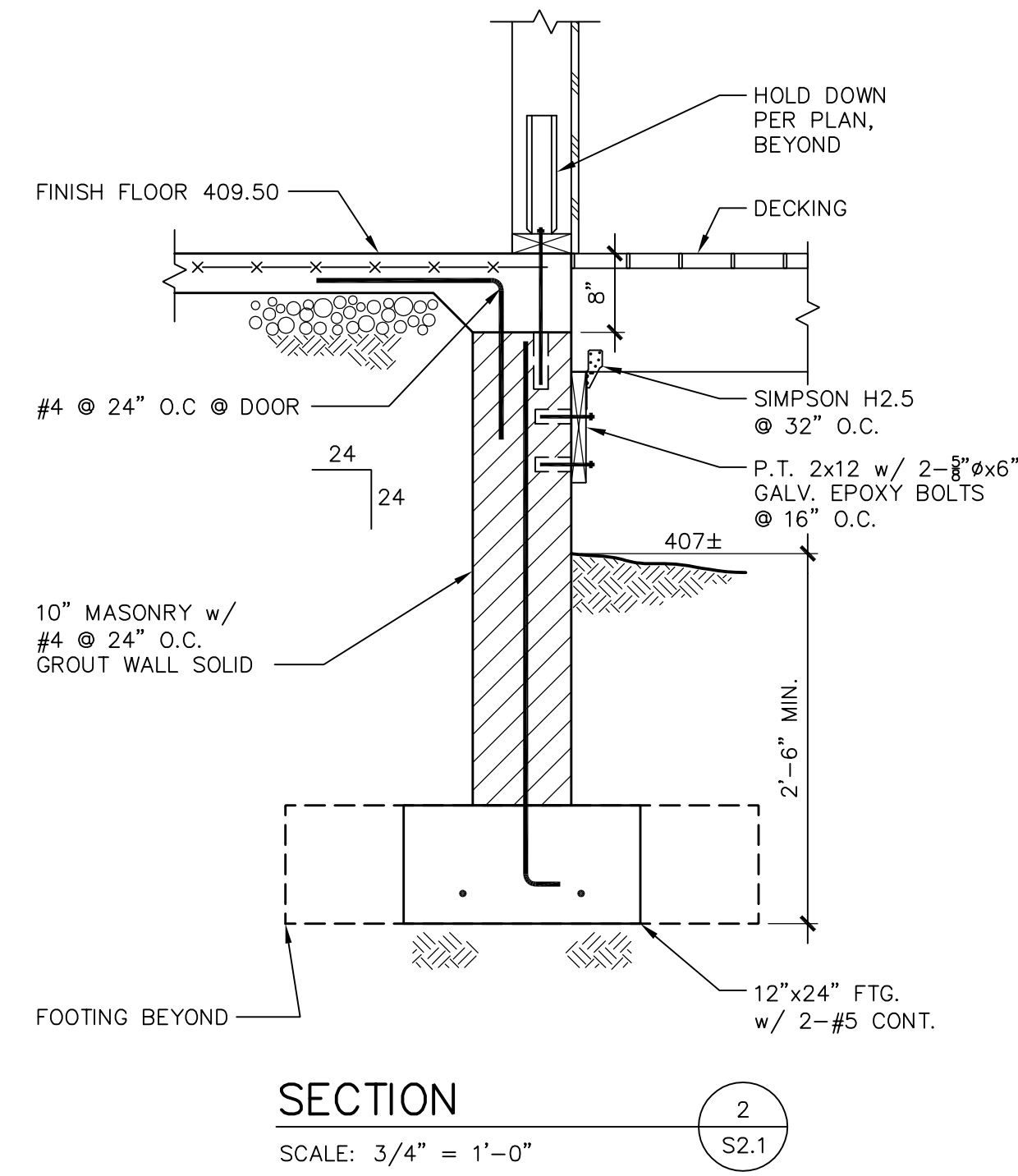
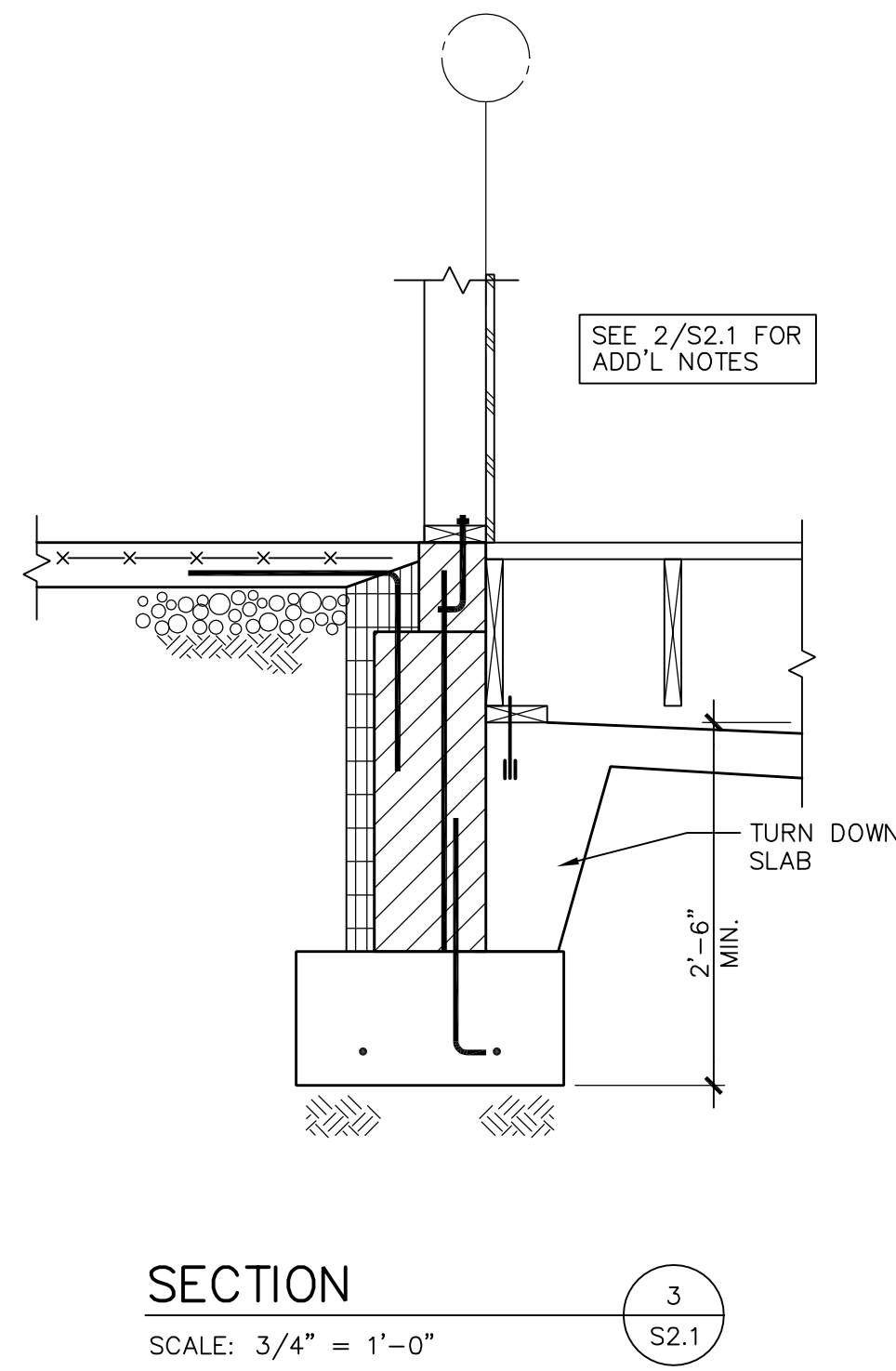
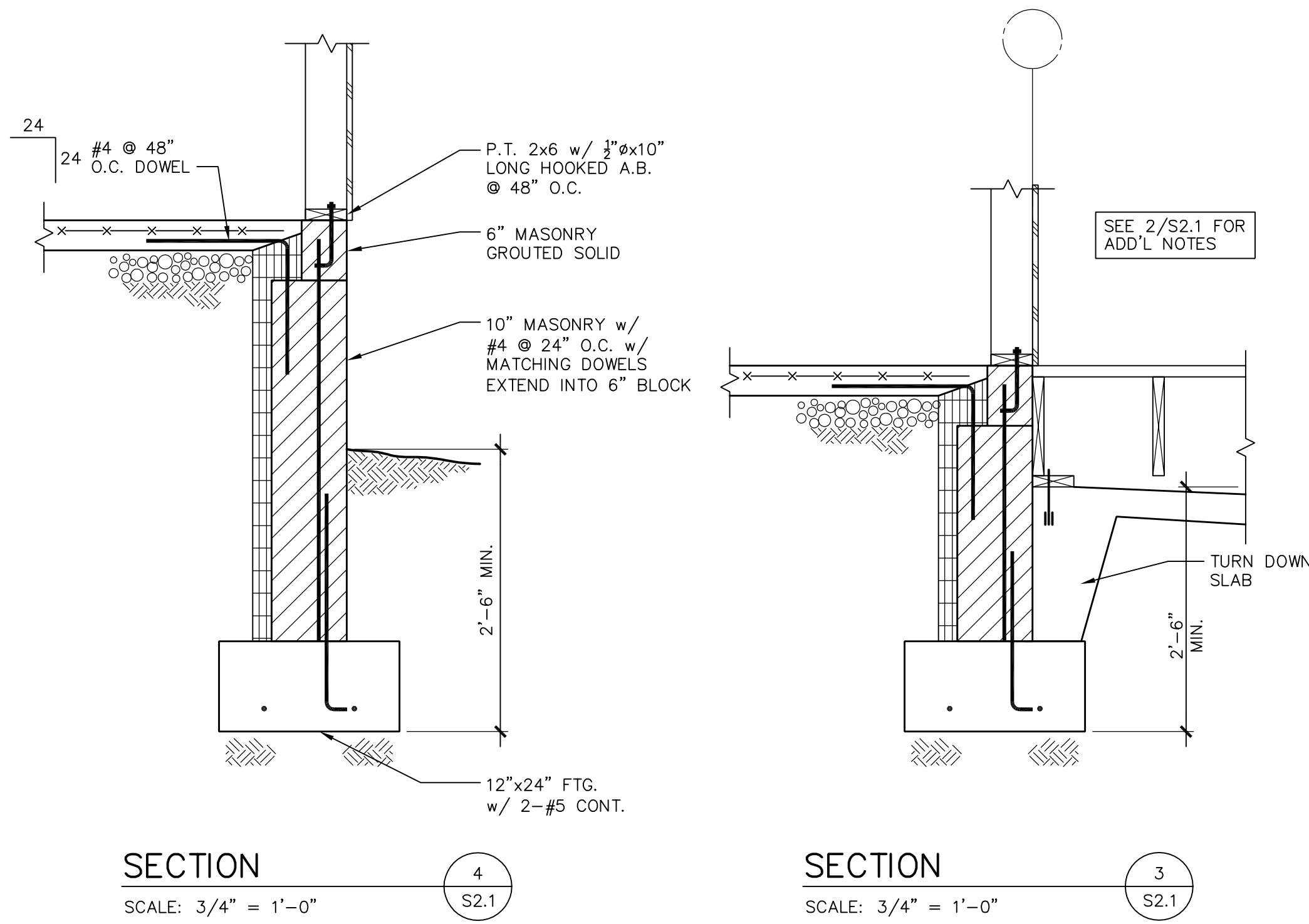
EHLERT BRYAN
consulting structural engineers

8609 Westwood Center Drive, Suite 800
Tysons, VA 22182
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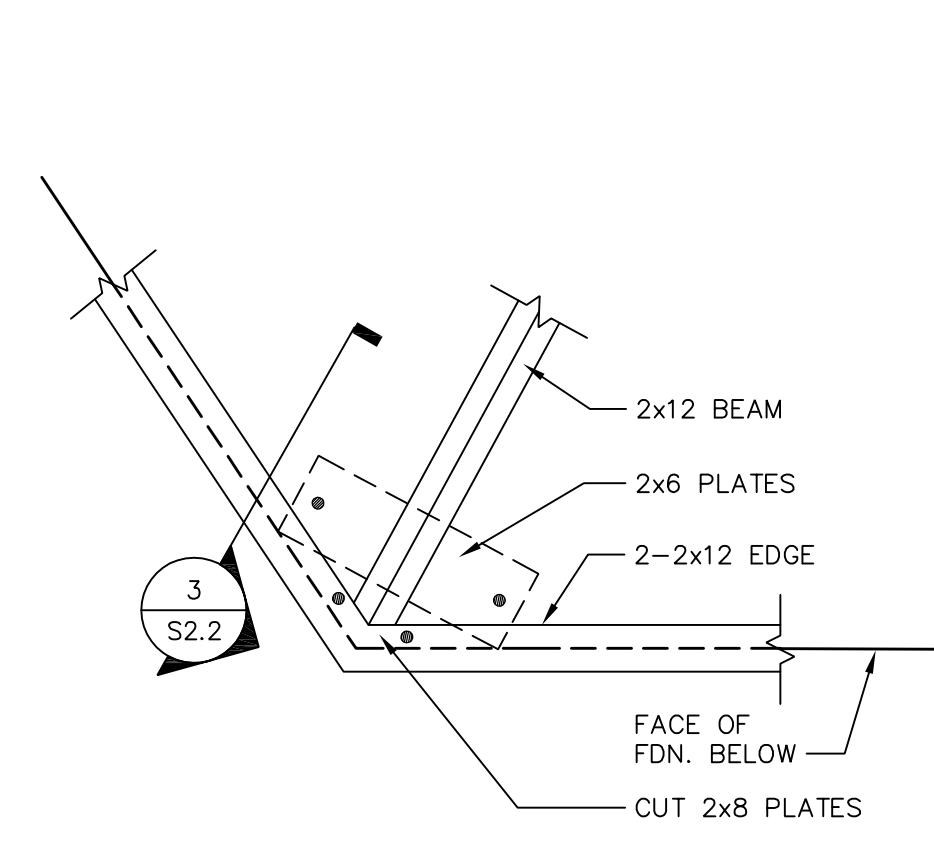
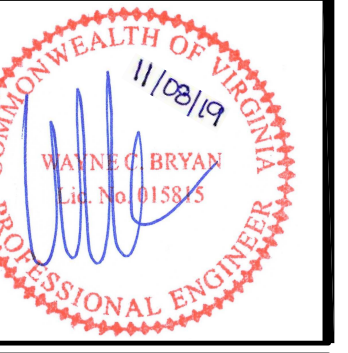
FOOTING SCHEDULE			
MARK	SIZE	BOTTOM REINFORCING	REMARKS
F1	2'-6" x 2'-6" x 12"	3-#4 E.W.	
F2	3'-0" x 3'-0" x 12"	3-#4 E.W.	
F3	3'-6" x 7'-0" x 12"	7-#4 LONG, 4-#4 TRANS 4-#4 TOP TRANSVERSE	

PIER SCHEDULE				
MARK	SIZE	REINFORCING		REMARKS
		VERTICAL	TIES	
P1	16"Ø	4-#5	#3 @ 8" O.C.	
P2	24"Ø	8-#5	#3 @ 8" O.C.	

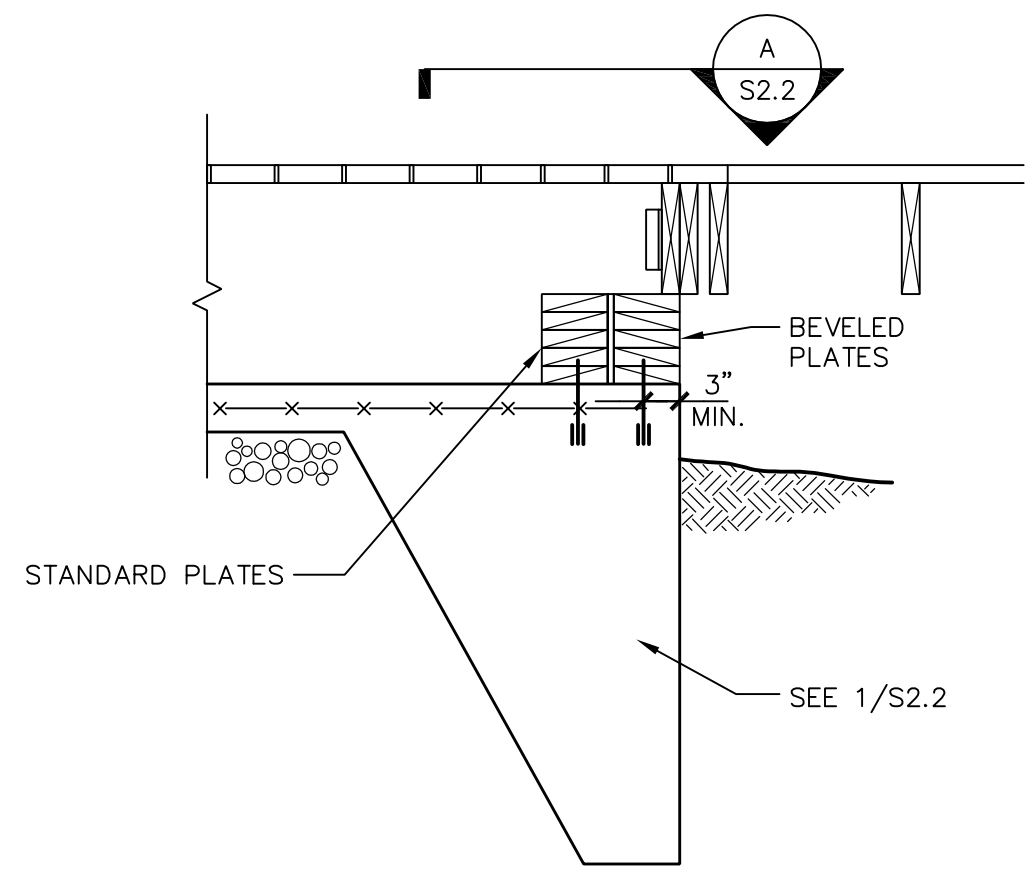


DATE	DESCRIPTION	CHECKED	DESIGNED	REH/APPROVED	AI
10/23/19	PERMIT SUBMISSION				
10/17/19	REVISION				
10/10/18	95% PROGRESS SET				
	DATE				

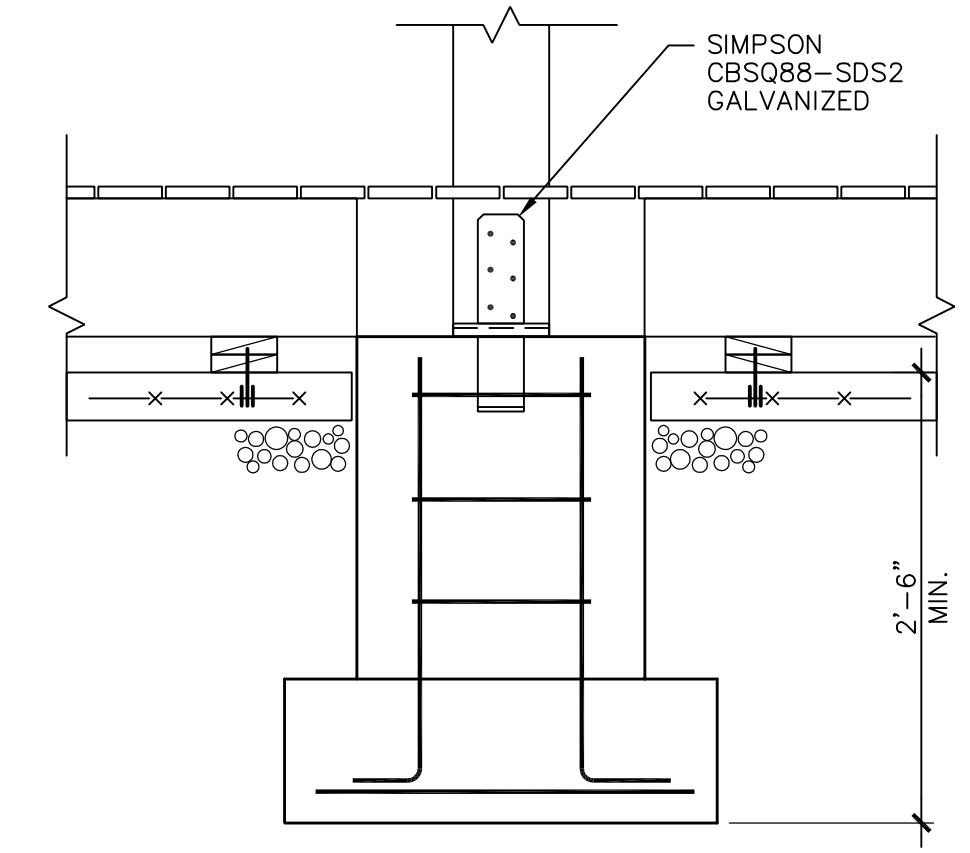
OBSTACLE COURSE SALES CENTER
UPTON HILL REGIONAL PARK, 6060
WILSON BOULEVARD, ARLINGTON, VA
PROJECT NUMBER: 180500
SCALE: AS SHOWN
FOUNDATION SECTIONS



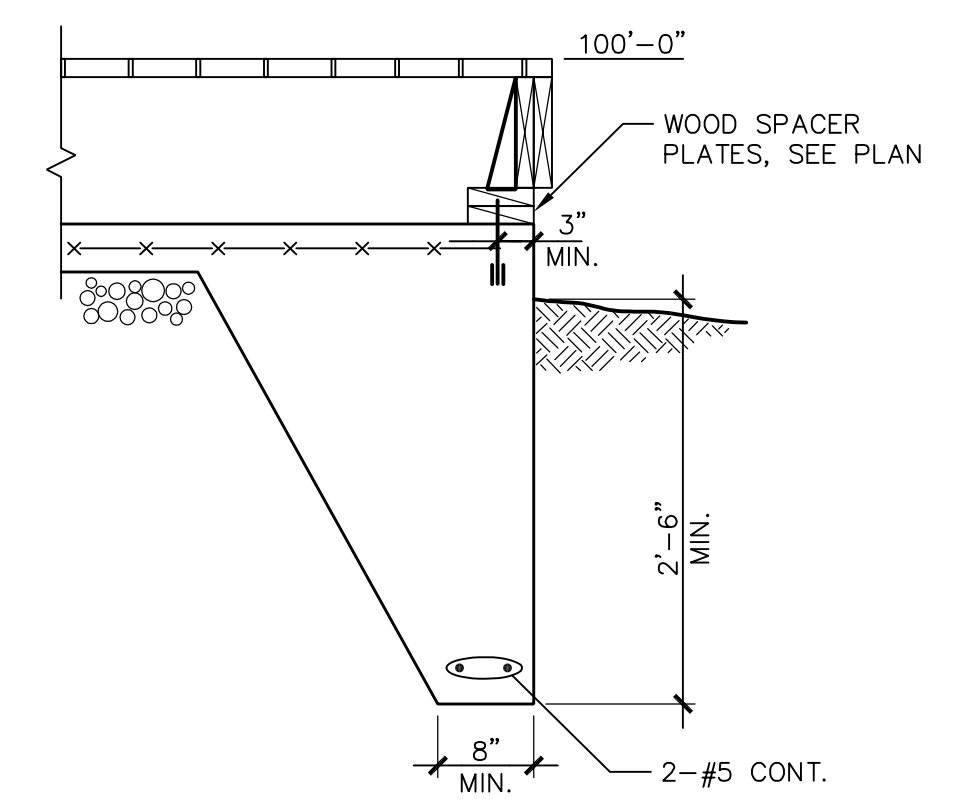
SECTION 3
SCALE: 1" = 1'-0"



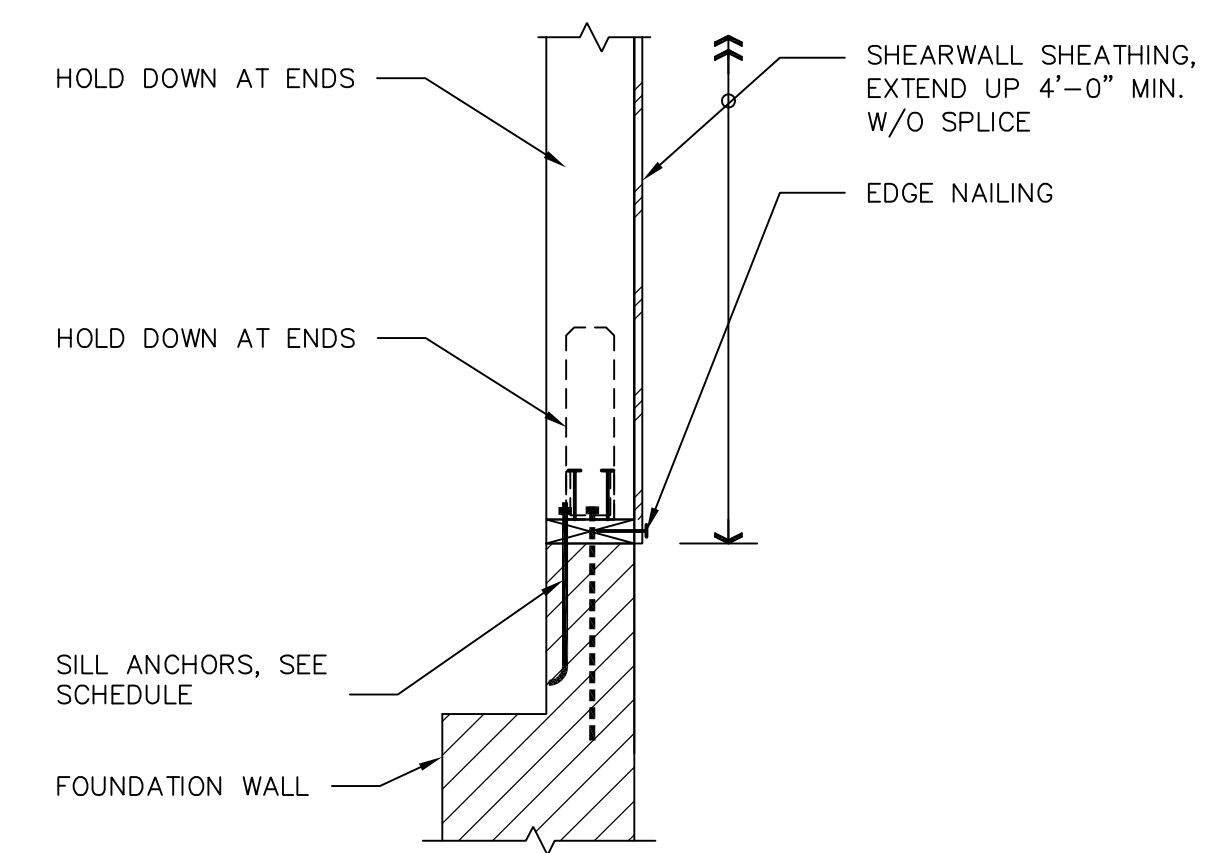
SECTION A
SCALE: 3/4" = 1'-0"



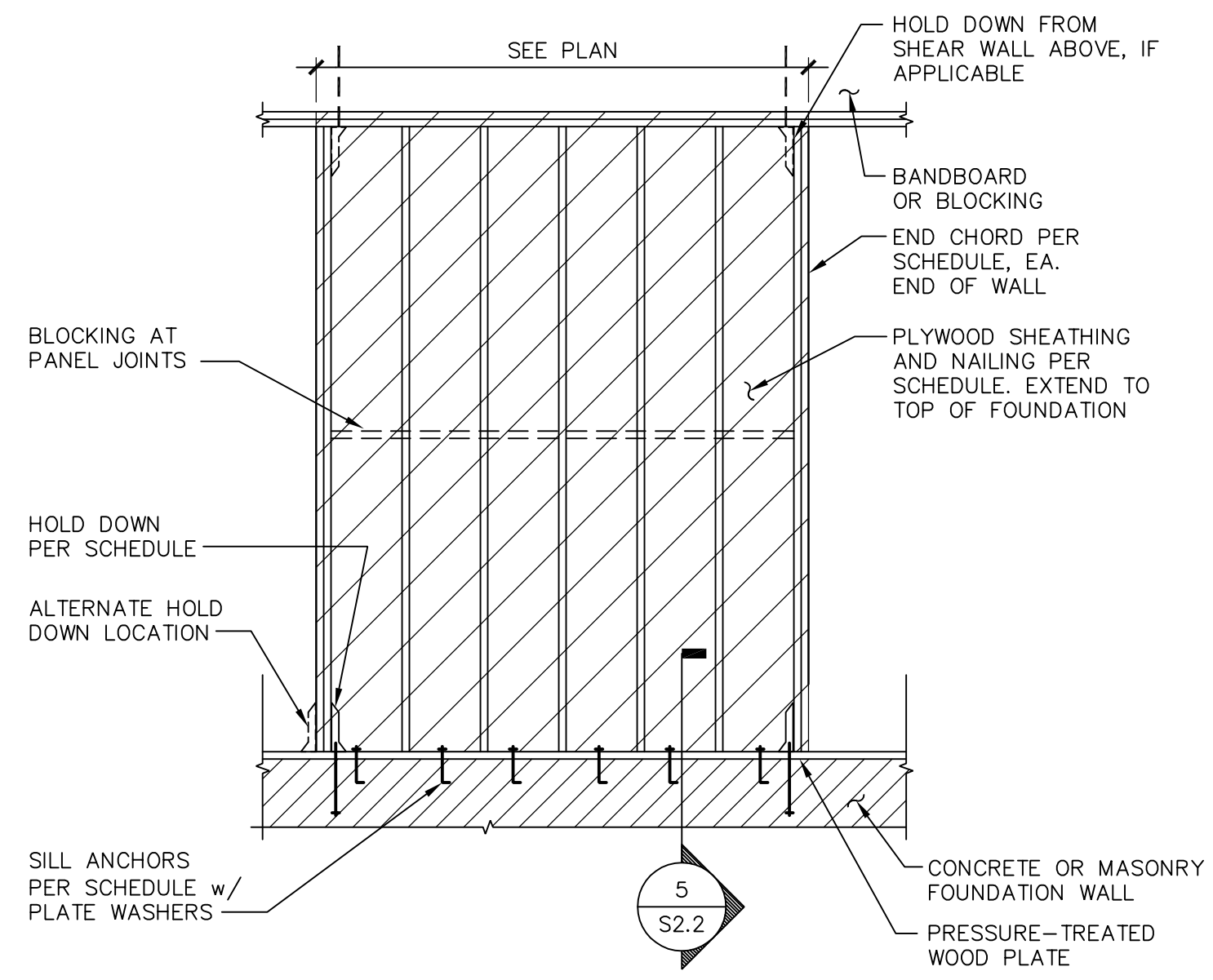
SECTION 2
SCALE: 3/4" = 1'-0"



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



SECTION 5
SCALE: 3/4" = 1'-0"



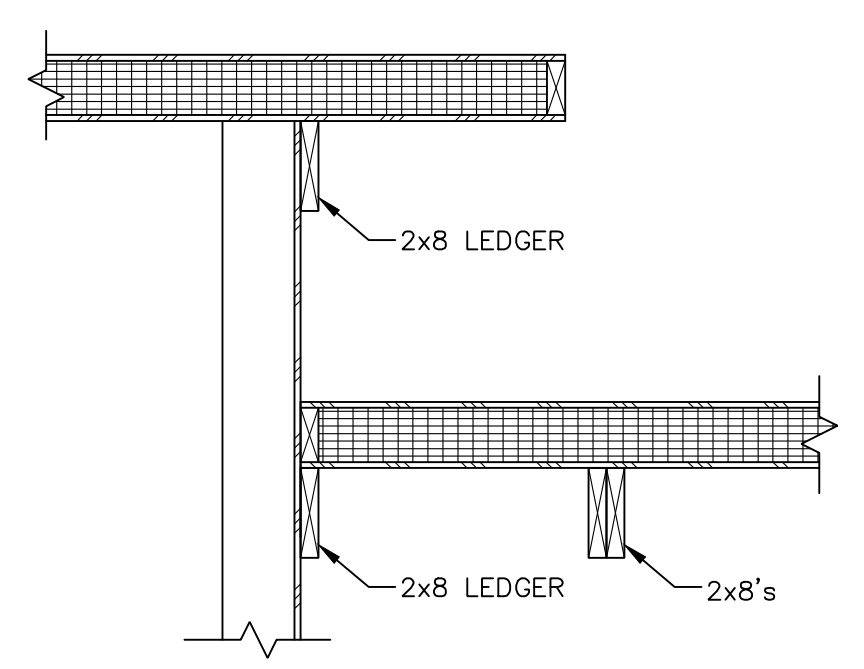
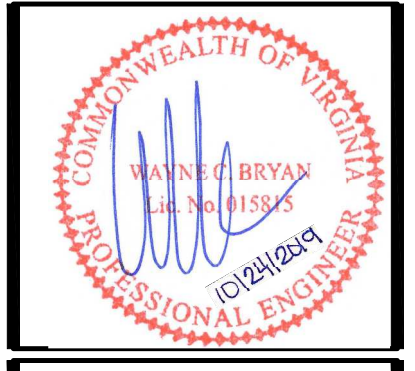
SECTION 4
NOT TO SCALE

MARK	SECTION	LEVEL	SHEATHING TYPE	NAIL SIZE	NAIL SPACING		END CHORD	HOLD DOWN		SILL ANCHORS
					EDGES	FIELD		TYPE	ANCHOR	
SW-1	4/S2.2	FIRST	15/32 PLYWOOD	10d	4"	12"	3-2x6	HDU8-SDS2.5	7/8" x 2'-0" LONG w/ HOOK	1/2" AB @ 16" O.C.
SW-2	4/S2.2	FIRST	15/32 PLYWOOD	10d	6"	12"	2-2x6	HDU2-SDS2.5	5/8" x 16" LONG w/ HOOK	1/2" AB @ 32" O.C.

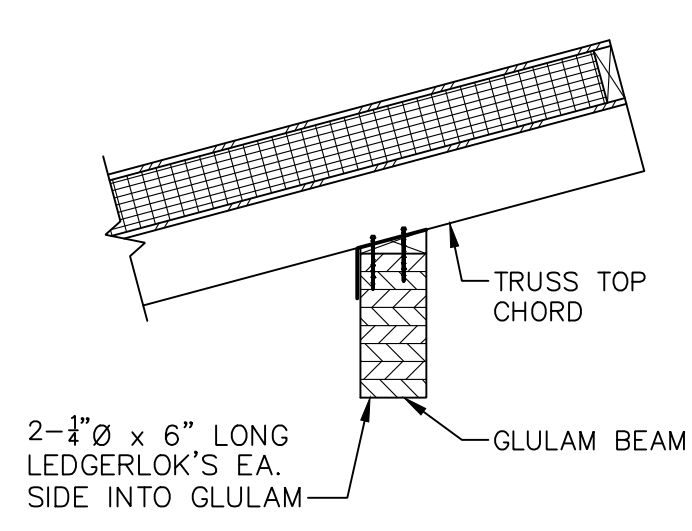
NOTE:
1. ALL SHEATHING JOINTS TO BE BLOCKED.

DATE	DESCRIPTION	CHECKED	DESIGNED	APPROVED
10/23/19	PERMIT SUBMISSION			
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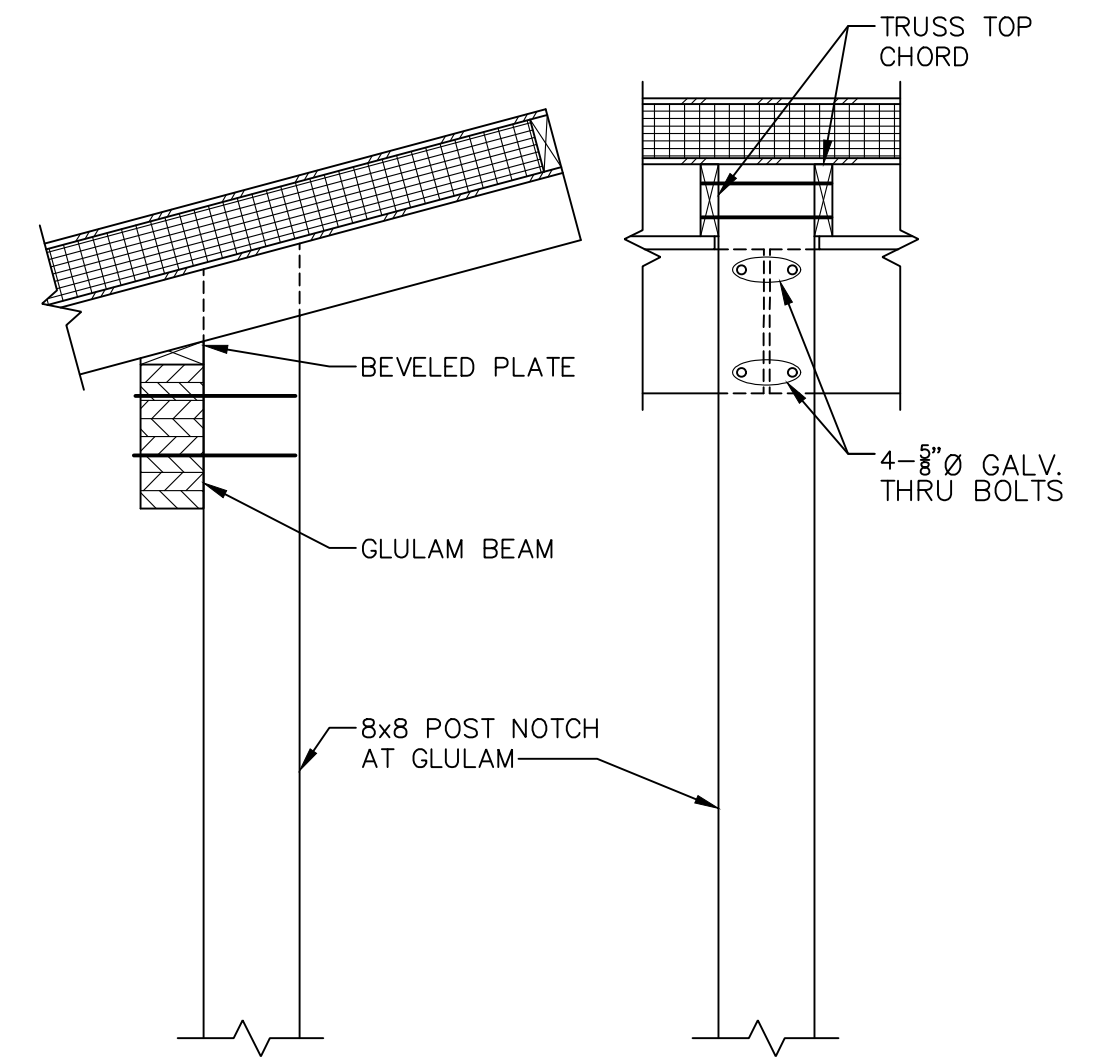
OBSTACLE COURSE SALES CENTER
UPTON HILL REGIONAL PARK, 6060
WILSON BOULEVARD, ARLINGTON, VA
PROJECT NUMBER: 180500
SCALE: AS SHOWN
FOUNDATION SECTIONS



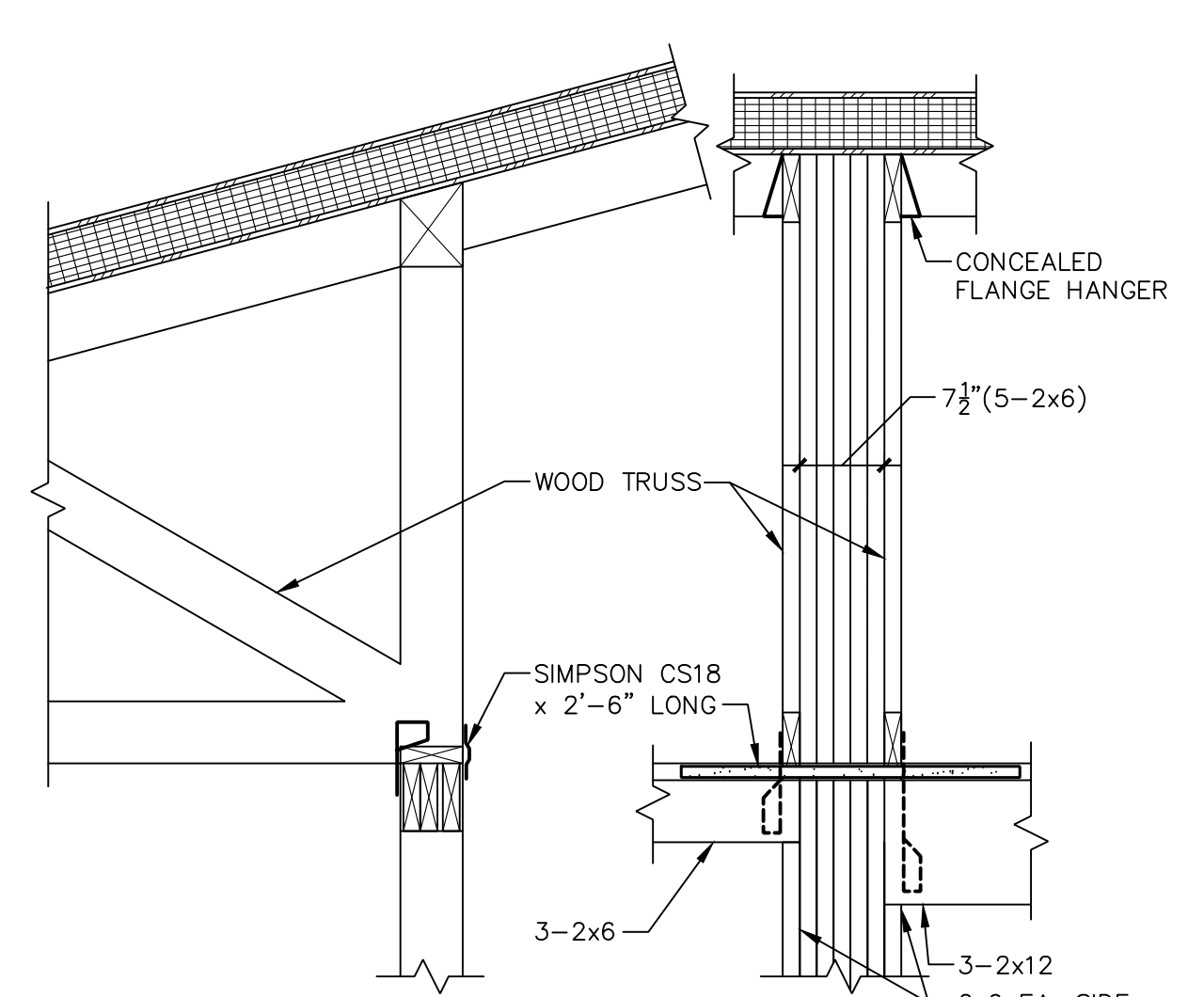
SECTION 5
 SCALE: 3/4" = 1'-0"
 S3.1



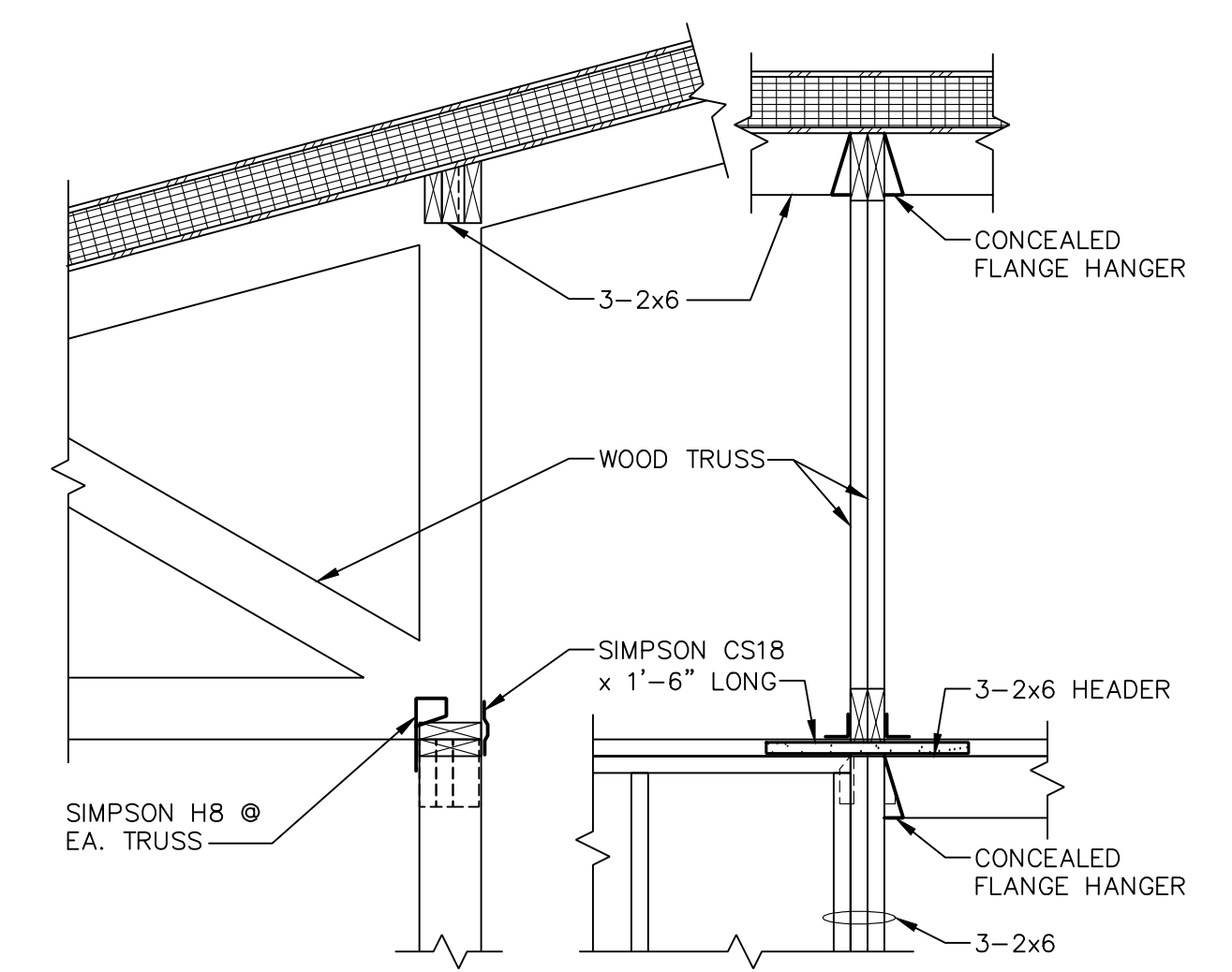
SECTION 4
 SCALE: 3/4" = 1'-0"
 S3.1



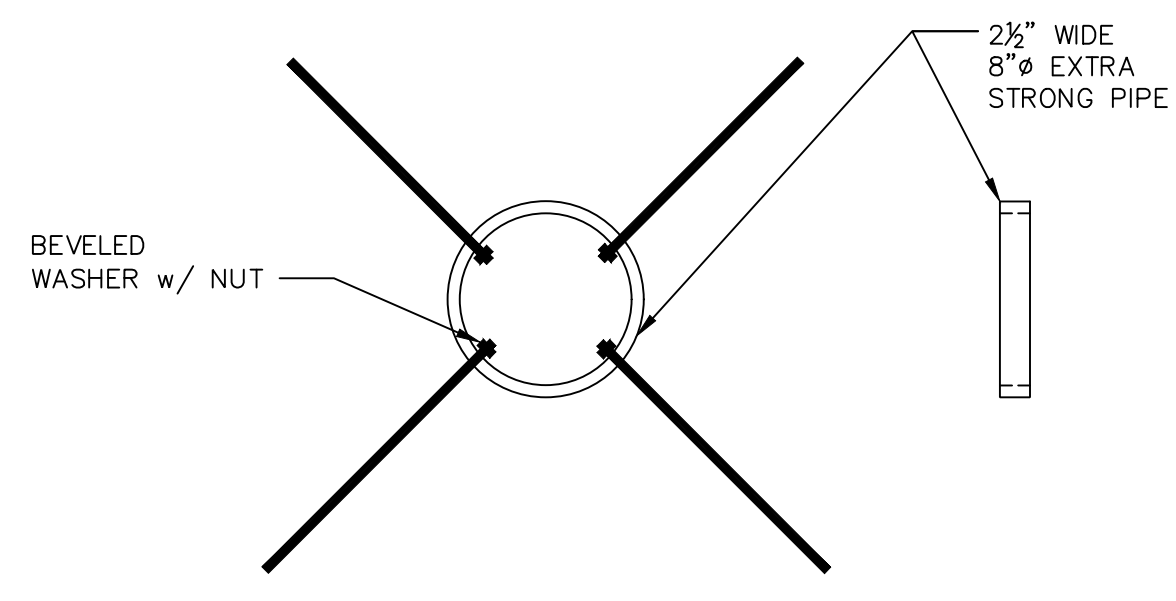
SECTION 3
 SCALE: 3/4" = 1'-0"
 S3.1



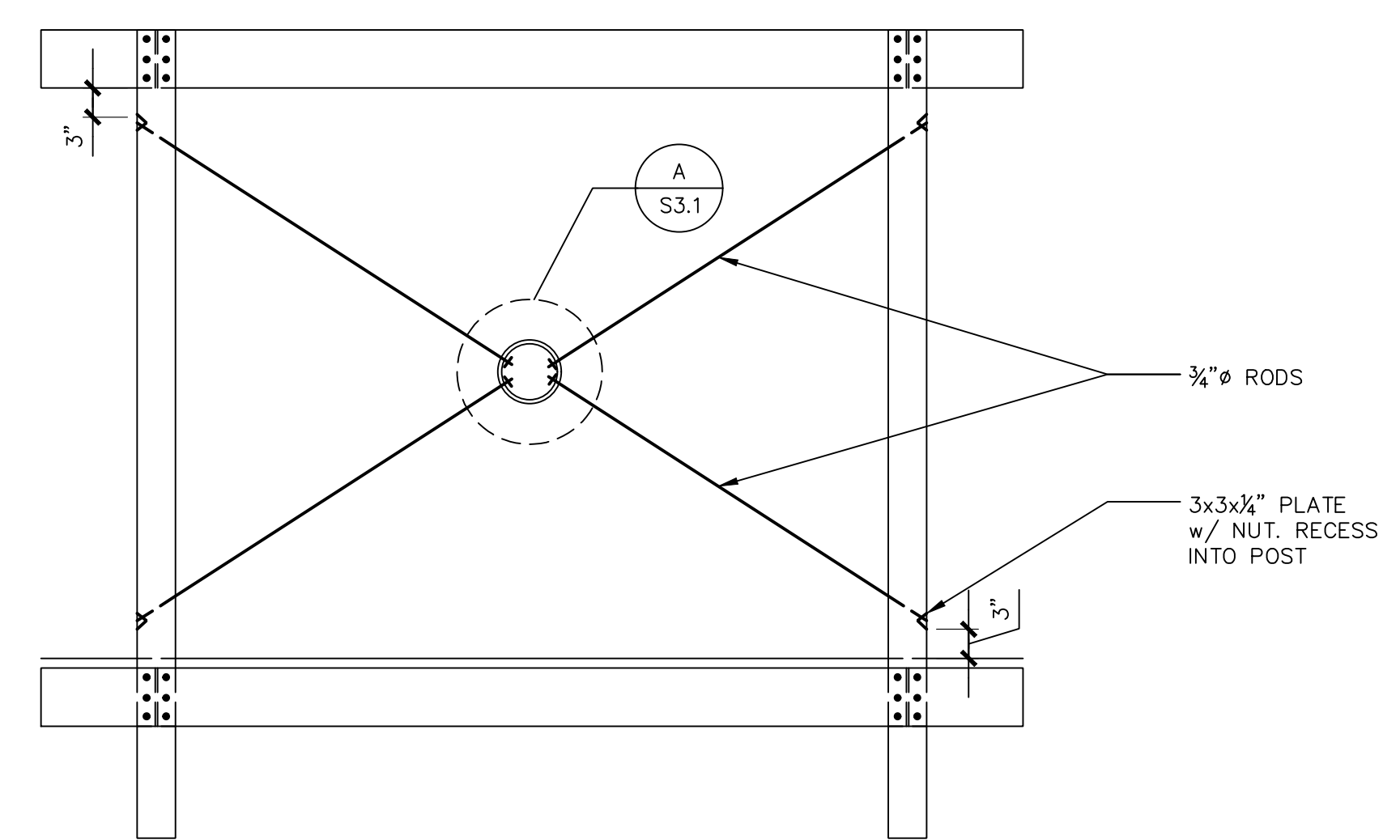
SECTION 2
 SCALE: 3/4" = 1'-0"
 S3.1



SECTION 1
 SCALE: 3/4" = 1'-0"
 S3.1



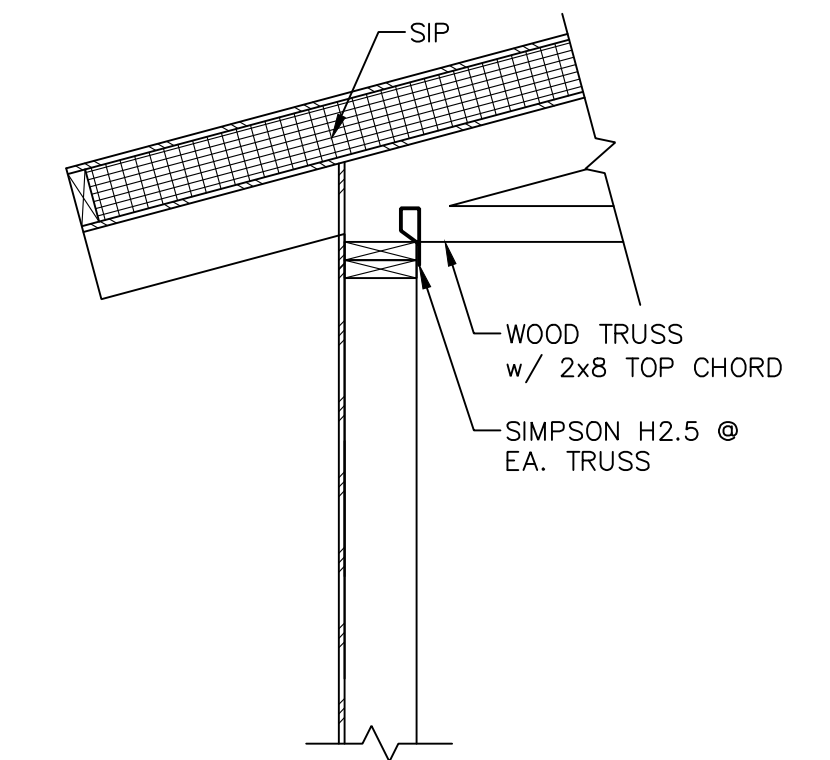
SECTION A
 SCALE: NOT TO SCALE
 S3.1



SECTION 8
 SCALE: NOT TO SCALE
 S3.1

SECTION 7
 SCALE: NONE
 S3.1

NOT USED



SECTION 6
 SCALE: 3/4" = 1'-0"
 S3.1

DATE	DESCRIPTION	CHECKED	DESIGNED	REV	APPROVED
10/23/19	PERMIT SUBMISSION				
11/17/19	REVISION				
11/17/18	95% PROGRESS SET				

OBSTACLE COURSE SALES CENTER
 UPTON HILL REGIONAL PARK, 6060 WILSON
 BOULEVARD, ARLINGTON, VA

PROJECT NUMBER: 18105.00
 SCALE: AS SHOWN

FRAMING SECTIONS

GENERAL MECHANICAL NOTES

- 1). THE MECHANICAL WORK SHALL CONFORM TO THE REQUIREMENTS OF STATE AND LOCAL CODES AND APPLICABLE JURISDICTIONAL BODIES.
2). THE CONTRACTOR SHALL MAKE ALL NECESSARY ARRANGEMENTS AND PAY FOR ALL PERMITS, FEES, CHARGES AND INSPECTION REQUIRED, AS WELL AS APPLICABLE HAULING, RIGGING AND TRANSPORTATION CHARGES APPLICABLE TO HIS WORK.
3). THE PROJECT SHALL BE BID ON THE BASIS OF SPECIFIED PRODUCT(S) WHICH ESTABLISH MINIMUM QUALITY REQUIREMENTS. WHERE MORE THAN ONE PRODUCT NAME IS INDICATED, BIDS SHALL BE BASED ON ONE OF THE NAMED PRODUCTS. ALL MECHANICAL EQUIPMENT SHOWN ON CONTRACT DOCUMENTS SHALL BE NEW, SHALL BE U.L LISTED AND SHALL BE PROVIDED BY THE MECHANICAL CONTRACTOR UNLESS OTHERWISE NOTED.
A). WHERE USE OF AN "ACCEPTABLE EQUAL" PRODUCT REQUIRES CHANGES TO THE BASE BID DESIGN IN ORDER TO INCORPORATE THE PRODUCT INTO THE PROJECT, THE CONTRACTOR SHALL SUBMIT A LAYOUT SHOWING ALL CHANGES TO ARCHITECTURAL, STRUCTURAL, ELECTRICAL, PLUMBING AND MECHANICAL REQUIREMENTS AT NO ADDITIONAL COST TO THE OWNER. THE LAYOUT SHALL ACCOMPANY THE PRODUCT SUBMITTAL DATA. COST OF CHANGES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
B). SUBSTITUTIONS FOR "ACCEPTABLE EQUAL" PRODUCTS NOT SPECIFIED WILL BE CONSIDERED WHEN INCLUDED WITH SUBMISSION OF THE BID AND SHALL BE SUBJECT TO ACCEPTANCE BY THE ENGINEER. PROPOSALS FOR SUBSTITUTIONS SHALL INCLUDE, BUT NOT LIMITED TO, (1) ANY CREDIT OR ADDED COST, (2) PRODUCT IDENTIFICATION (3) CODE COMPLIANCE (4) REFERENCED STANDARD COMPLIANCE AND (5) DESCRIPTION OF ALL CHANGES INCLUDING ARCHITECTURAL, STRUCTURAL, ELECTRICAL AND MECHANICAL REQUIRED TO INCORPORATE SUBSTITUTED PRODUCT INTO THE PROJECT. THE OWNER RESERVES THE RIGHT TO REJECT PROPOSED SUBSTITUTIONS.
C). WHERE "OR EQUAL" PRODUCTS ARE INDICATED, THE BIDDER SHALL SUBMIT A LIST OF PROPOSED EQUAL SUBSTITUTE PRODUCTS WITH THE BID. THE LIST SHALL INCLUDE ADEQUATE SUPPORTING INFORMATION AS PROOF OF EQUALITY IN ORDER TO BE CONSIDERED ACCEPTABLE. NO LATER SUBSTITUTES WILL BE CONSIDERED.
D). SUBSTITUTION SUBMISSIONS OF SPECIFIED EQUAL PRODUCTS SHALL PROVIDE THE SAME GUARANTEE AS SPECIFIED FOR BASE BID PRODUCTS.
SUBSTITUTIONS & SUBMISSION OF SPECIFIED EQUAL PRODUCTS POLICY: ALL EQUIPMENT AND MATERIAL SUBSTITUTIONS NOT SPECIFICALLY APPROVED IN THESE DRAWINGS SHALL REQUIRE THE FOLLOWING TO BE CONSIDERED:
SUBSTITUTIONS MUST BE APPROVED IN WRITING BY THE OWNER BEFORE SUBMISSION FOR ENGINEERING REVIEW. SUBMISSION SHALL BE AS PER SPECIFICATION AND AS CALLED FOR BELOW.
SUBSTITUTIONS & APPROVED EQUALS MUST BE PROVIDED WITH A TABULATION OF ALL PERTINENT INFORMATION ASSOCIATED WITH THE EQUIPMENT OR MATERIAL. TABULATION SHALL SHOW SPECIFIED MATERIAL OR EQUIPMENT CHARACTERISTICS IN COMPARISON WITH PROPOSED EQUIPMENT. INFORMATION SHALL INCLUDE, BUT NOT LIMITED TO ALL ELECTRICAL CHARACTERISTICS, PHYSICAL SIZE, OPERATING CAPACITIES AND PERFORMANCE, COMPLIANCE WITH ALL CODE AND DESIGN REQUIREMENTS, COST SAVINGS TO OWNER, AS APPLICABLE, ETC.
CONTRACTOR SHALL PROVIDE WRITTEN STATEMENT AS TO CONTRACTOR GUARANTEEING AND WARRANTING SUBSTITUTION TO COMPLY WITH ALL DESIGN CRITERIA AND THEIR ACCEPTANCE OF SOLE RESPONSIBILITY FOR ANY COST ASSOCIATED WITH ANY TRADES AS A RESULT OF THE SUBSTITUTION.
REVIEW OF ANY SUBSTITUTION OR APPROVED EQUAL BY ENGINEER SHALL BE FOR GENERAL COMPLIANCE ONLY. CONTRACTOR SHALL HAVE SOLE RESPONSIBILITY FOR SUBSTITUTION'S COMPLIANCE WITH DESIGN REQUIREMENTS OF SPECIFIED EQUIPMENT OR MATERIAL, INCLUDING ANY AND ALL COSTS TO OTHER TRADES AND REQUIRED MODIFICATIONS TO THE PROJECT.
SUBSTITUTIONS SUBMITTED WITHOUT THE REQUIRED INFORMATION LISTED ABOVE SHALL NOT BE REVIEWED AND SHALL BE RETURNED TO THE CONTRACTOR WITH THE CONTRACTOR BEARING ALL COSTS ASSOCIATED WITH ANY DELAY RESULTING.
4). THE CONTRACTOR SHALL VERIFY FIELD CONDITIONS FOR POINTS OF CONNECTIONS, CAPACITIES AND ELEVATIONS OF SYSTEMS. IN ALL AREAS AFFECTED BY THE PROJECT, CUT, PATCH, REPAIR AND/OR REPLACE ALL MATERIALS REQUIRED TO INCORPORATE WORK. FINISHES DAMAGED AS A RESULT OF WORK SHALL BE REPAIRED TO MATCH APPROPRIATE ADJACENT FINISHES. FILL VOIDS AROUND DUCTWORK PENETRATING WALLS WITH FIRE STOPPING MATERIAL (THERMA-FIBER OR EQUAL).
5). MECHANICAL EQUIPMENT AND PRODUCTS SHALL BE LISTED AND/OR LABELED BY AN APPROVED TESTING OR INSPECTION AGENCY IN ACCORDANCE WITH LOCAL AND GOVERNING CODE REQUIREMENTS.
6). THE DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL ARRANGEMENT OF WORK INCLUDED IN THE PROJECT. DO NOT SCALE THE DRAWING. THE CONTRACTOR SHALL ESTABLISH FINAL DIMENSIONS FROM FIELD MEASUREMENTS PRIOR TO STARTING WORK. THE WORD "PROVIDE" AS USED IN THE PROJECT SHALL BE DEFINED AS "FURNISH AND INSTALL".
7). MECHANICAL WORK SHALL BE COORDINATED WITH THE WORK OF ALL OTHER TRADES PRIOR TO INSTALLATION TO AVOID CONFLICTS AND ALLOCATE SPACE REQUIREMENTS.
8). EQUIPMENT AND PRODUCT MANUFACTURER'S RECOMMENDATIONS AND INSTRUCTIONS FOR INSTALLATION AND OPERATION SHALL BE FOLLOWED IN PERFORMING MECHANICAL WORK, UNLESS OTHERWISE INDICATED OR DIRECTED. MATERIALS AND METHODS USED IN THE WORK SHALL BE COMPATIBLE WITH BUILDING CONDITIONS AND COMPLY WITH THE BUILDING CODE REQUIREMENTS, WHICH SHALL BE THE BASIS FOR MINIMUM PRODUCT QUALITY. ALL WORK SHALL BE PERFORMED IN A NEAT AND WORKMANLIKE MANNER BY SKILLED WORKMEN EXPERIENCED IN THEIR TRADE. THE WORK SHALL BE SUBJECT TO THE ACCEPTANCE OF THE OWNER OR THE DULY AUTHORIZED REPRESENTATIVE.
9). DUCTWORK SHALL BE FABRICATED OF GALVANIZED SHEET METAL WITH CONSTRUCTION AND INSTALLATION IN ACCORDANCE WITH SMACNA STANDARDS AND SYSTEM REQUIREMENTS. SHEETMETAL GAGES SHALL CONFORM TO THE MECHANICAL CODE, ASHRAE STANDARDS AND U.L LISTED FIRE RESISTANCE DIRECTORY REQUIREMENTS AS APPLICABLE. DUCTWORK SIZES SHOWN ARE NET CLEAR INSIDE DIMENSIONS. FABRICATE SHEETMETAL FOR INTERNALLY LINED DUCTS TO ALLOW FOR THICKNESS OF INSULATION AND MAINTAIN NET CLEAR DIMENSIONS. CONTRACTOR SHALL VERIFY ACTUAL AVAILABLE DUCT SPACE PRIOR TO FABRICATION AND INSTALLATION OF DUCTWORK. SHOULD A CONFLICT OCCUR THE CONTRACTOR SHALL NOTIFY THE ARCHITECT AND ENGINEER BEFORE CONTINUING. ALL RECTANGULAR DUCTWORK ELBOWS SHALL BE PROVIDED WITH TURNING VANES.
10). DUCTWORK SHALL BE SEALED WITH AN APPROVED DUCT MASTIC OR LIQUID SEALANT AS MANUFACTURED BY UNITED MCGILL CORP. OR APPROVED EQUAL. DUCT SYSTEM LEAKAGE SHALL CONFORM WITH SMACNA HVAC DUCT LEAKAGE TEST MANUAL FOR PRIMARY AIR: CLASS 3" W.G. SEAL CLASS B, LEAKAGE CLASS 12 FOR RECTANGULAR DUCTS AND LEAKAGE CLASS 6 FOR ROUND DUCTS
FOR SECONDARY AIR: CLASS 1" W.G. SEAL CLASS "C", LEAKAGE CLASS 24 FOR RECTANGULAR DUCTS AND CLASS 12 FOR ROUND DUCTWORK.
11). ALL DUCTWORK SHALL BE FABRICATED FROM FIELD CONFIRMED CONDITIONS. NO ALLOWANCE PERMITTED FOR DUCTWORK NOT USED.
12). PROVIDE FIRE AND SMOKE DAMPERS IN HVAC AIR DISTRIBUTION SYSTEMS THAT PENETRATE FIRE OR SMOKE RATED ASSEMBLIES IN ACCORDANCE WITH THE BUILDING AND MECHANICAL CODES. DAMPERS SHALL BE IN ALL SUPPLY / RETURN / EXHAUST / OUTSIDE AIR DUCTS THAT PENETRATE RATED ASSEMBLIES IN ADDITION TO ALL SECONDARY DAMPERS FOR CEILING / WALL AND FLOOR MOUNTED AIR DEVICES. COORDINATE SPECIFIC FIRE RESISTIVE CONSTRUCTION REQUIREMENTS WITH THE FIRE RATED ASSEMBLIES INDICATED ON ARCHITECTURAL DRAWINGS. THROUGH PENETRATIONS FIRESTOP SYSTEMS SHALL CONFORM TO U.L LISTED FIRE RESISTANCE DIRECTORY OR OTHER METHODS ACCEPTABLE TO LOCAL GOVERNING CODE AUTHORITIES.
13). PROVIDE ALL NECESSARY FOUNDATIONS, SUPPORTS, PADS AND BASES AS REQUIRED FOR MECHANICAL EQUIPMENT, PIPING AND DUCTWORK AS PER INTERNATIONAL BUILDING AND MECHANICAL CODE REQUIREMENTS. INSTALL EQUIPMENT, PIPING AND DUCTWORK SO AS TO BE FREE FROM OBJECTIONABLE NOISE AND VIBRATIONS. CONTRACTOR SHALL COORDINATE WORK WITH STRUCTURAL AND ARCHITECTURAL DRAWINGS PRIOR TO ACTUAL WORK.
14). ELECTRIC MOTORS FOR MECHANICAL EQUIPMENT SHALL BE PROVIDED UNDER MECHANICAL WORK UNLESS OTHERWISE NOTED. ALL MOTORS SHALL BE NEMA STANDARD DESIGN FOR QUIET OPERATION AND SIZED TO PROPERLY OPERATE EQUIPMENT AT RATED LOAD. MOTORS WITH BELT DRIVES SHALL BE PROVIDED WITH ADJUSTABLE PULLEYS AND SHAFTS. ELECTRICAL POWER CONNECTIONS FOR MECHANICAL EQUIPMENT SHALL BE PROVIDED UNDER ELECTRICAL WORK.
15). MOTOR STARTERS, RELAYS AND CONTACTORS SHALL BE FURNISHED UNDER THE MECHANICAL WORK AND INSTALLED AND POWERED UNDER THE ELECTRICAL WORK. STARTERS RELAYS AND CONTACTORS SHALL BE COMPLETE WITH LOGS SIZED FOR SPECIFIED CONDUCTORS AND INCLUDE REQUIRED ACCESSORIES (I.E. START-STOP PUSH BUTTON PILOT LIGHTS, H.O.A SWITCH, AUXILIARY CONTACTS AND OVERLOAD PROTECTION). GENERAL PURPOSE NEMA TYPE 1 ENCLOSURES INDOORS, NEMA TYPE 3R ENCLOSURES OUTDOORS. SINGLE PHASE MOTOR STARTERS SHALL BE MANUAL TYPE WITH OVERLOAD PROTECTION, UNLESS OTHERWISE NOTED. THREE PHASE STARTERS SHALL BE MAGNETIC FULL VOLTAGE, NON-REVERSING, UNLESS OTHERWISE NOTED. STARTERS FOR MECHANICAL SYSTEMS SHALL BE AS MANUFACTURED BY SQUARE-D, GENERAL ELECTRIC OR CUTLER HAMMER. STARTERS SHALL CONFORM TO NEMA STANDARDS AND NATIONAL ELECTRIC CODE (N.E.C.) REQUIREMENTS. STARTER CONTROL AND INTERLOCK WIRING SHALL BE PROVIDED UNDER THE MECHANICAL WORK.
16). DUCT SMOKE DETECTORS SHALL BE INSTALLED IN ALL AIR DISTRIBUTION SYSTEMS WITH A DESIGN CAPACITY OF 2000 CFM OR GREATER IN ACCORDANCE TO THE MECHANICAL CODE AND NATIONAL FIRE PREVENTION CODE NFPA 72. DUCT SMOKE DETECTORS SHALL BE "DUAL CONTACTS" TYPE (FOR TIE-IN TO FIRE ALARM SYSTEM AND FOR FAN SHUT-DOWN), COMPLETE WITH SAMPLING TUBE, REMOTE RESET, REMOTE PILOT INDICATOR (FOR CONCEALED APPLICATIONS), U.L LISTED FOR INTENDED USE AND COMPLETELY COMPATIBLE WITH FIRE ALARM SYSTEM. DUCT SMOKE DETECTORS SHALL BE PROVIDED AND INSTALLED UNDER THE MECHANICAL WORK AND WIRED AND POWERED UNDER THE ELECTRICAL WORK. PROVIDE SMOKE DAMPER AT ALL SMOKE BARRIER PENETRATION AS PER BUILDING CODE.
17). PROVIDE AUTOMATIC TEMPERATURE CONTROL SYSTEM(S) FOR HVAC EQUIPMENT UNDER MECHANICAL WORK. CONTROL DEVICES SHALL BE PROVIDED BY UNIT MANUFACTURER UNLESS OTHERWISE NOTED. HVAC EQUIPMENT NOT PROVIDED WITH CONTROL DEVICES SHALL BE PROVIDED WITH DEVICES AS MANUFACTURED BY "TRANE" OR APPROVED EQUAL. DEVICES SHALL BE FULLY COMPATIBLE AND SUITABLE FOR INTENDED USE. CONTROL WIRING SHALL BE PROVIDED IN ACCORDANCE WITH THE N.E.C. FOR 24 VOLT CONTROL SYSTEM(S). WIRING SHALL BE A MINIMUM 22 AWG, COLOR CODED AND INSTALLED IN CONDUIT WHERE SUBJECT TO PHYSICAL DAMAGE OR WHERE REQUIRED TO AVOID PLENUM SPACES. EXTEND ALL LOW VOLTAGE WIRING UNBROKEN BETWEEN EACH CONTROL DEVICE AND EQUIPMENT TERMINAL STRIP. INSTALLATION OF CONTROL SYSTEM(S), WIRING AND DEVICES SHALL BE BY A CERTIFIED CONTROLS CONTRACTOR WITH A MINIMUM OF FIVE (5) YEARS EXPERIENCE IN THE INSTALLATION AND SERVICING OF PIPING.
18). PIPING SHOWN IS SCHEMATIC AND DOES NOT INDICATE EVERY OFFSET, ELBOW, UNION, VALVE, TRAP, ACCESS PANEL, ETC., THAT IS REQUIRED FOR A COMPLETE WORKING SYSTEM. PROVIDE ITEMS AND FITTINGS THAT ARE REQUIRED TO INSTALL THE PIPING SYSTEM WITHIN THE SPACE PROVIDED AND THAT ARE REQUIRED FOR A COMPLETE SYSTEM. PIPING SHALL BE PROPERLY SECURED IN ACCORDANCE WITH "MSS" STANDARD SP-89. PROVIDE PIPE SADDLES AND HIGH DENSITY BLOCKING AT HANGERS FOR INSULATED PIPING.
19). PROVIDE REFRIGERANT PIPING IN ACCORDANCE WITH THE EQUIPMENT MANUFACTURER'S REQUIREMENTS. VERIFY LINE SIZES FOR EQUIPMENT USED. PIPING SHALL BE COPPER TYPE "ACR" WITH FORGED OR WROUGHT COPPER FITTINGS CONFORMING TO ASTM B280 AND COPPER DEVELOPMENT ASSOCIATION STANDARDS. JOINTS SHALL BE MADE WITH SILVER SOLDER SILFOS OR APPROVED EQUAL. REFRIGERANT PIPING JOINTS IN CONCEALED SPACES ARE NOT ACCEPTABLE.
20). CONDENSATE DRAIN PIPING SHALL BE COPPER TYPE "M" WITH LEAD-FREE (95/5) SOLDERED JOINTS. PIPING AND FITTINGS SHALL CONFORM TO ASTM B88 AND THE COPPER DEVELOPMENT ASSOCIATION STANDARDS.
21). INSULATION MATERIALS SHALL BE "CERTAIN-TIED" OR APPROVED EQUAL. INSULATION MATERIALS SHALL HAVE A FLAME SPREAD RATING NOT MORE THAN 25 AND A SMOKE DEVELOPED RATING OF NOT MORE THAN 50. PROVIDE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND AS FOLLOWS :
DUCTWORK :
A). SUPPLY/RETURN & O.A. AIR DUCTS (CONCEALED) : INSULATE WITH NOMINAL TWO (2) INCH THICK TYPE 75 STANDARD DUCTWRAP WITH "FSK" FACING, VAPOR BARRIER, MINIMUM 1-1/2" INSTALLED THICKNESS WITH 5.6 'R' VALUE.
B). SUPPLY/RETURN & O.A. AIR DUCTS : INSULATE WITH ONE (1) INCH THICK, TYPE 200 "ULTRA-LITE" ACOUSTICAL DUCT LINER WITH 100% ADHESIVE COVERAGE AND MECHANICAL FASTENERS. MINIMUM INSTALLED 'R' VALUE OF 3.7.
C). SUPPLY/RETURN & O.A. AIR DUCTS (CONCEALED IN ATTIC/CRAWL/ROOF CEILING SPACE) : INSULATE WITH NOMINAL THREE (3) INCH THICK TYPE 75 STANDARD DUCT WRAP WITH "FSK" FACING, VAPOR BARRIER. MINIMUM 2-1/4" INSTALLED THICKNESS WITH 8.5 'R' VALUE.
D). SUPPLY/RETURN/EXHAUST/OUTSIDE AIR DUCTS (EXPOSED TO WEATHER CONDITIONS) : INSULATE DUCTWORK EXTERIOR WITH SEMI-RIGID FIBERGLASS BOARD INSULATION, TYPE IB300, 3.0 LBS./CU.FT DENSITY, MINIMUM 2" INSTALLED THICKNESS WITH 8.5 'R' VALUE. PROVIDE WEATHERPROOF FINISH AS MANUFACTURED BY FOSTER'S "MONOLAR" 60-95 COATINGS (MIN. OF 3 COATS) OR APPROVED EQUAL.
E). PROVIDE FIRST 12'-0" OF SUPPLY AND RETURN DUCT FROM HVAC/RTU UNIT W/ 1" ACOUSTICAL LINING. ADJUST DUCT SIZES IN ADDITION TO OTHER DUCT INSULATION WRAP.
F). PROVIDE FLEX DUCT CONNECTOR ON ALL SUPPLY, RETURN AND OUTSIDE AIR DUCT CONNECTIONS TO RTU'S, AHU'S, FANS, MAU'S AND SIMILAR AIR HANDLING EQUIPMENT.
PIPING :
A). CONDENSATE DRAIN : INSULATE WITH CLOSED CELL FLEXIBLE ELASTOMERIC PIPE INSULATION, 1/2" THICK. (DO NOT INSULATE CONDENSATE DRAIN PIPING BELOW GRADE OR LOCATED OUTSIDE)
B). REFRIGERANT PIPING (SUCTION LINE) : INSULATE PIPING WITH "CLOSED-CELL" FLEXIBLE ELASTOMERIC INSULATION, 1.5" THICK. PROVIDE WITH WEATHER RESISTANT FINISH ON INSULATION EXPOSED TO OUTDOORS; INSULATION SHALL BE ARMSTRONG, HALSTEAD OR APPROVED EQUAL - ROUND DUCT TO HAVE ACOUSTICAL LINING - FACTORY MANUFACTURED.
22). INSTRUCTION AND IDENTIFICATION : WRITTEN INSTRUCTIONS IN A SINGLE BINDER DESCRIBING THE PROPER OPERATION AND MAINTENANCE OF EQUIPMENT AND SYSTEMS SHALL BE PROVIDED TO THE OWNER AT THE COMPLETION OF THE WORK. THE CONTRACTOR SHALL DEMONSTRATE AND INSTRUCT THE OPERATION OF SYSTEMS TO THE OWNER'S REPRESENTATIVE. ALL VALVES, CONTROLS, ETC., SHALL BE PERMANENTLY IDENTIFIED AND LABELED WITH METAL TAGS OR ENGRAVED NAMEPLATES AS APPLICABLE. COORDINATE WITH HVAC ZONE SCHEDULE.
23). UPON COMPLETION OF THE INSTALLATION, AIR SYSTEMS SHALL BE ADJUSTED AND BALANCED TO PROVIDE THE AIR QUANTITIES INDICATED. PROVIDE VOLUME DAMPERS, SPLITTER DAMPERS AND/OR VOLUME EXTRACTORS AS INDICATED OR REQUIRED FOR BALANCING. BALANCING WORK SHALL BE PERFORMED BY A CERTIFIED BALANCING CONTRACTOR WHO IS A MEMBER IN GOOD STANDING OF ABC, NEBB OR SMACNA. BALANCING WORK SHALL BE IN COMPLIANCE WITH THE STANDARD PROCEDURE MANUAL PUBLISHED BY TESTING AND BALANCING ORGANIZATION AFFILIATED WITH THE BALANCING CONTRACTOR. SUBMIT APPROPRIATE FIELD DATA ON STANDARD FORMS OF T & B ORGANIZATION IN ACCORDANCE WITH STANDARD PROCEDURES. CONTRACTOR TO PROVIDE OWNER W/ 5 COPIES OF REPORT.
24). PROJECT PREMISES SHALL BE THOROUGHLY CLEANED AND READY FOR OCCUPANCY INCLUDING ALL FINISHES OF EQUIPMENT PROVIDED AS PART OF THE CONTRACTORS WORK. PROVIDE ONE (1) NEW SET OF CLEAN AIR FILTERS FOR PROJECT CLOSE OUT.
25). THE CONTRACTOR SHALL GUARANTEE ALL MATERIALS AND WORKMANSHIP FOR A PERIOD OF ONE (1) YEAR FROM THE DATE OF ACCEPTANCE BY THE OWNER AND SHALL REPAIR OR REPLACE AT NO ADDITIONAL COST TO THE OWNER ANY PART THEREOF WHICH MAY BECOME DEFECTIVE DURING THE PERIOD OF GUARANTEE, ORDINARY WEAR AND TEAR EXCEPTED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR AND PAY FOR ANY DAMAGES RESULTING FROM OR CAUSED BY DEFECTS IN HIS/HER WORK.
26). ALL GAS FIRED APPLIANCE VENTS USED FOR THE PRODUCTS OF COMBUSTION FOR MECHANICAL EQUIPMENT SHALL BE POSITIVE PRESSURE, INSULATED, STAINLESS STEEL TYPE, A.C.A. CERTIFIED, U.L. LISTED. CONTRACTOR SHALL COORDINATE SIZE, ROUTING, INSTALLATION AND CONNECTION SIZE TO APPLIANCE PRIOR TO PURCHASING, FABRICATION AND INSTALLATION OF VENT.
27). PROVIDE ACCESS DOORS IN ALL GYPSUM BOARD CEILINGS, WALL AND FLOOR ASSEMBLIES REQUIRED FOR SERVICING/ACCESS OF MECHANICAL EQUIPMENT AND ASSOCIATED DEVICES. ACCESS DOOR SHALL BE SUITABLE FOR USE IN ASSEMBLY INSTALLED IN AND SHALL MATCH FIRE RATING (IF APPLICABLE) OF ASSEMBLY.
28). REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR FINAL LOCATION OF AIR DISTRIBUTION DEVICES SHOWN ON MECHANICAL DRAWINGS. CONTRACTOR SHALL NOTIFY THE ENGINEER SHOULD A CONFLICT OCCUR.

GENERAL EQUIPMENT INSTALLATION NOTES

- ALL FIRE AND SMOKE DAMPERS TO BE U.L. LISTED AND LABELED AND IN COMPLIANCE WITH INTERNATIONAL MECHANICAL CODE.
- PROVIDE FLUSH ACCESS DOORS FOR ALL DAMPERS, VALVES AND OTHER CONCEALED MECHANICAL EQUIPMENT REQUIRING ADJUSTMENT AND INSPECTION. DOORS SHALL BE FINISHED TO SURROUNDING FINISHES OR AS REQUIRED BY ARCHITECTURAL DRAWINGS. ACCESS DOORS TO HAVE U.L. FIRE RATING EQUAL TO SURROUNDING SURFACES.
- PROVIDE IDENTIFICATION AND LABELS FOR ALL ACCESS DOORS IN DUCTWORK TO ACCESS FIRE/SMOKE DAMPERS.
- NO FLEX DUCT ALLOWED ABOVE DRYWALL CEILING. ALL DUCTWORK TO BE GALVANIZED STEEL SIZE AS PER SMACNA & IBC. MAX FLEX DUCT LENGTH 6'-0".
- DUCTWORK LAYOUT IS TO BE CAREFULLY COORDINATED WITH OTHER TRADES INCLUDING STRUCTURAL, PLUMBING, ELECTRICAL AND SPRINKLER. DUCTWORK LAYOUT TO BE FABRICATED FROM FIELD CONFIRMED DIMENSIONS.

CONDENSATE DRAINAGE

- ALL HVAC UNITS TO HAVE HARD PIPED COPPER CONDENSATE DRAINAGE SYSTEM. MINIMUM PIPE SIZE SHALL BE 1" PLUS INSULATION. CONDENSATE SHALL BE PIPED TO STORM DRAINAGE SYSTEM. CONTRACTOR TO PROVIDE SHOP DRAWINGS (1/8" SCALE) INDICATING PROPOSED LAYOUT OF CONDENSATE PIPING SYSTEM. CONTRACTOR TO PROVIDE CONDENSATE PUMPS AS REQUIRED W/ POWER.
- ALL CONDENSATE PIPING TO BE SIZED AND PITCHED PER IBC.
- CONDENSATE PUMPS LOCATED IN PLENUMS TO BE "PLENUM" RATED.
- CONTRACTOR SHALL PROVIDE IN HIS PRICE ALL ELECTRICAL AND PLUMBING WORK REQUIRED FOR A COMPLETE AND OPERATIONAL CONDENSATE REMOVAL SYSTEM.

VENTILATION AIR

ALL OCCUPIED SPACES ARE DESIGNED TO COMPLY WITH IBC, CHAPTER 4, SECTION 403 & TABLE 403.3 REQUIREMENTS.

SYMBOLS

(ALL SYMBOLS MAY NOT APPEAR ON PROJECT DRAWINGS)

Diagram showing various mechanical symbols for ductwork, piping, and miscellaneous equipment. Includes categories like DUCTWORK, PIPING, MISCELLANEOUS, and VAV BOX DESIGNATIONS with corresponding symbols and descriptions.

MECHANICAL/ELECTRICAL COORDINATION REQUIREMENTS

MECHANICAL CONTRACTOR WITHIN 20 DAYS OF RECEIPT OF CONTRACT TO PROVIDE TO THE ELECTRICAL CONTRACTOR A COMPLETE SET OF MECHANICAL EQUIPMENT SHOP DRAWINGS FOR ALL MECHANICAL EQUIPMENT REQUIRING ELECTRICAL CONNECTIONS OR POWER. SHOP DRAWINGS SHALL SHOW ALL REQUIRED ELECTRICAL CONNECTIONS, MINIMUM CIRCUIT AMPS, WIRE SIZES, OVER CURRENT PROTECTION, CONNECTION TYPES AND ANY OTHER INFORMATION REQUIRED FOR THE PROPER EQUIPMENT INSTALLATION AND OPERATION.
MECHANICAL AND ELECTRICAL CONTRACTORS SHALL COORDINATE THIS INFORMATION AND PREPARE A CONNECTION SCHEDULE FOR SUBMISSION AND REVIEW BY ENGINEER BEFORE PROCEEDING WITH WORK.

ABBREVIATIONS

(ALL ABBREVIATIONS MAY NOT APPEAR ON PROJECT DWGS)

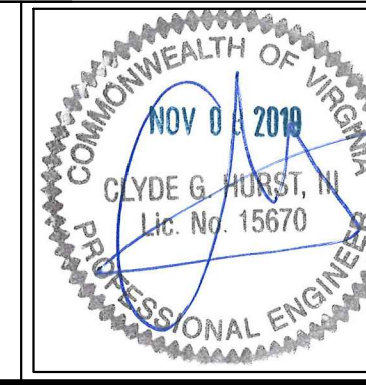
Table of abbreviations for mechanical and electrical symbols. Columns include abbreviations (e.g., A/C, ACCU, AD) and their corresponding full names (e.g., AIR CONDITIONING UNIT, AIR COOLED CONDENSING UNIT).

HURST ENGINEERS

308 HILLWOOD AVE. FALLS CHURCH, VA. 22046 (703) 534-7872

HE Project Number: 18-97

NOTE: THE CONSTRUCTION OF THIS PROJECT REQUIRES THE CONTRACTOR TO COORDINATE WORK SHOWN ON THIS DRAWING WITH THAT OF ALL OTHER TRADES. IN ADDITION, ALL PIPING, CONDUITS, DUCTWORK, ETC., ARE TO BE INSTALLED WITHIN THE JOISTS / GIRDERS AND TO MAINTAIN THE MINIMUM REQUIRED CLEARANCES, U.O.N. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING THE ARCHITECT W/ COORDINATION DRAWING DEVELOPED BY SUB CONTRACTORS & REFLECTING ALL TRADES. CHANGES RESULTING FROM CONFLICTS WITH OTHER TRADES AND WORK, IN THE EVENT OF ANY CONFLICTS THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ARCHITECT IN WRITING FOR CLARIFICATION BEFORE PROCEEDING.



M1.1

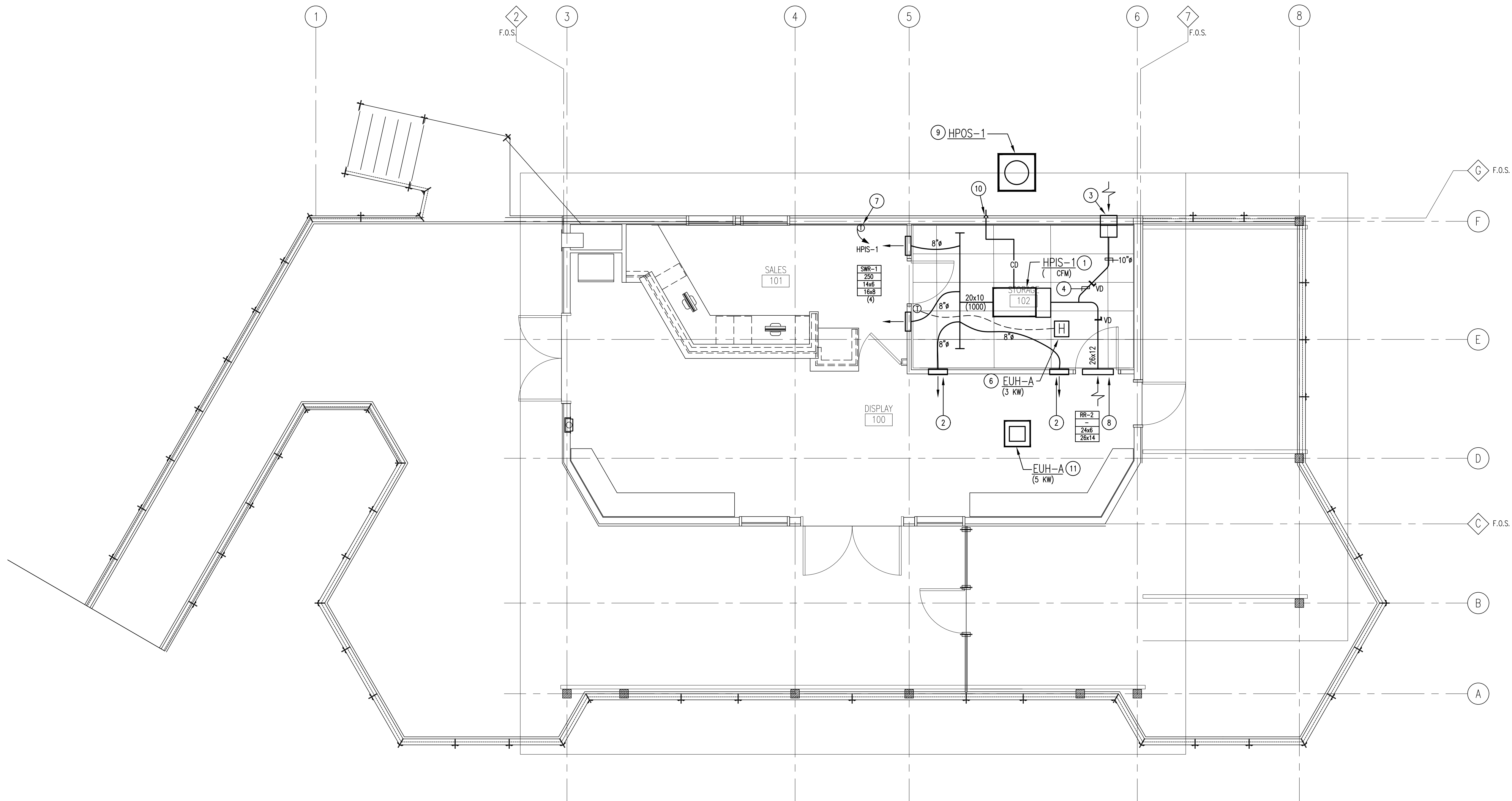


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Table with columns for PERMIT SUBMISSION, 95% PROGRESS SET, and CHECKED BY: COH III. Includes dates 10/23/19 and 10/10/18.

SCALE: AS SHOWN
OBSTACLE COURSE, SALES CENTER, UPTON HILL REGIONAL PARK, 6060 WILSON BOULEVARD, ARLINGTON, VA
PROJECT NUMBER: 18105.00
COVER SHEET
MECHANICAL



FIRST FLOOR PLAN - MECHANICAL

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

KEYED NOTES:

- ① SPLIT SYSTEM HEAT PUMP INDOOR UNIT CEILING MOUNTED.
- ② SIDEWALL REGISTER (SWR) LOCATE 6" BELOW ROOF STRUCTURE.
- ③ OUTSIDE AIR INTAKE LOUVER 14x14 WITH 14x14x10 INSULATED PLENUM.
- ④ OUTSIDE AIR DUCT - INSULATED.
- ⑤ ELECTRIC WALL HEATER - RECESSED.
- ⑥ ELECTRIC UNIT HEATER. HANG BELOW STRUCTURE.
- ⑦ WALL MOUNTED THERMOSTAT.
- ⑧ RETURN AIR REGISTER HIGH IN STRUCTURE.
- ⑨ SPLIT SYSTEM HEAT PUMP OUTDOOR UNIT ON CONCRETE PAD.
- ⑩ CONDENSATE DRAIN (INSULATED) DOWN IN WALL TO DISCHARGE AT 6" ABOVE GRADE. PROVIDE SPLASH BLOCK.
- ⑪ ELECTRIC DOWN FLOW HEATER DISCHARGE FLUSH WITH BOTTOM CORD OF TRUSS.

HURST ENGINEERS

308 HILLWOOD AVE.
FALLS CHURCH, VA. 22046
(703) 534-7872

HE Project Number: 18-97

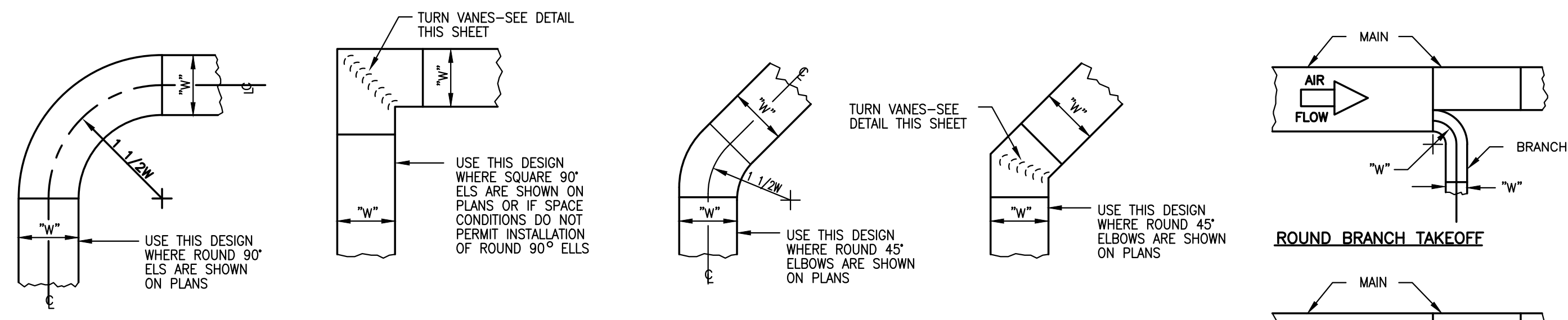
NOTE:
THE CONSTRUCTION OF THIS PROJECT REQUIRES THE CONTRACTOR TO COORDINATE WORK SHOWN ON THIS DRAWING WITH THAT OF ALL OTHER TRADES. IN ADDITION, ALL PIPING, CONDUITS, DUCTWORK, ETC., ARE TO BE INSTALLED WITHIN THE JOISTS / GIRDERS AND TO MAINTAIN THE MINIMUM REQUIRED CLEARANCES. U.O.N. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING THE ARCHITECT W/ COORDINATION DRAWING DEVELOPED BY SUB CONTRACTORS & REFLECTING ALL TRADES. CHANGES RESULTING FROM CONFLICTS WITH OTHER TRADES AND WORK. IN THE EVENT OF ANY CONFLICTS THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ARCHITECT IN WRITING FOR CLARIFICATION BEFORE PROCEEDING.



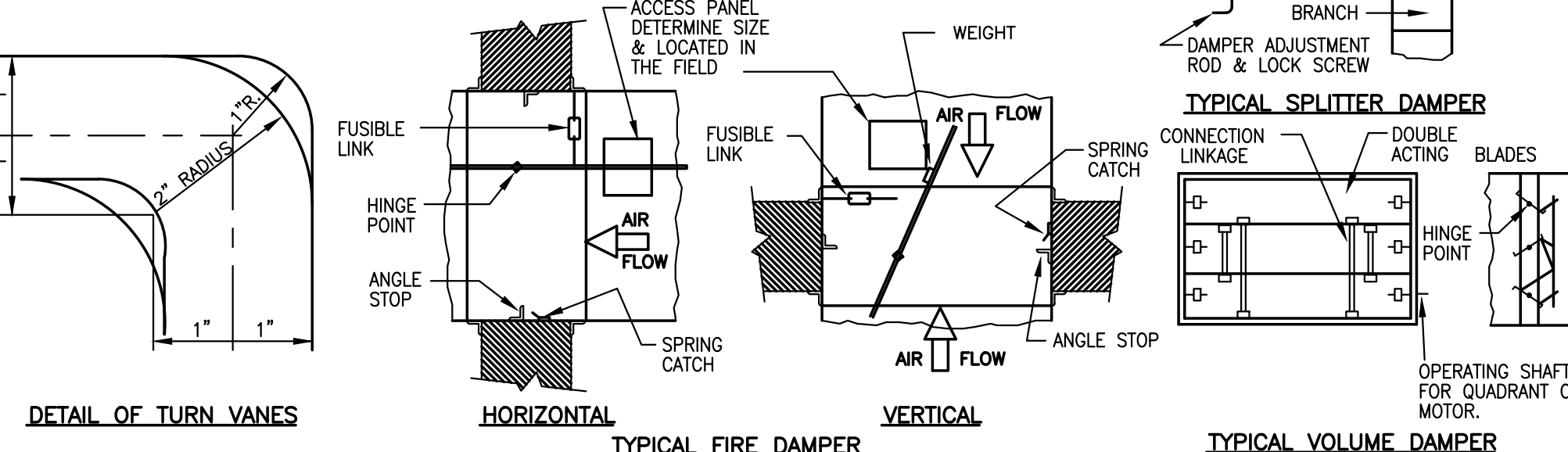
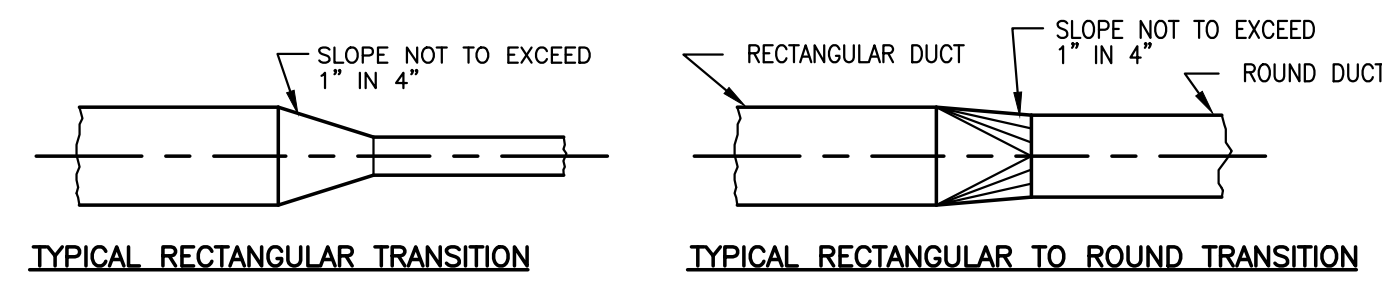
DATE	DESCRIPTION	CHECKED BY:	APPROVED BY:
10/23/19	PERMIT SUBMISSION	COH III	COH III
10/10/18	95% PROGRESS SET	COH III	COH III
		HEL	

OBSTACLE COURSE SALES CENTER
UPTON HILL REGIONAL PARK, 6060 WILSON
BOULEVARD, ARLINGTON, VA
PROJECT NUMBER: 18105.00
SCALE: AS SHOWN
FIRST FLOOR PLAN
MECHANICAL

M3.1



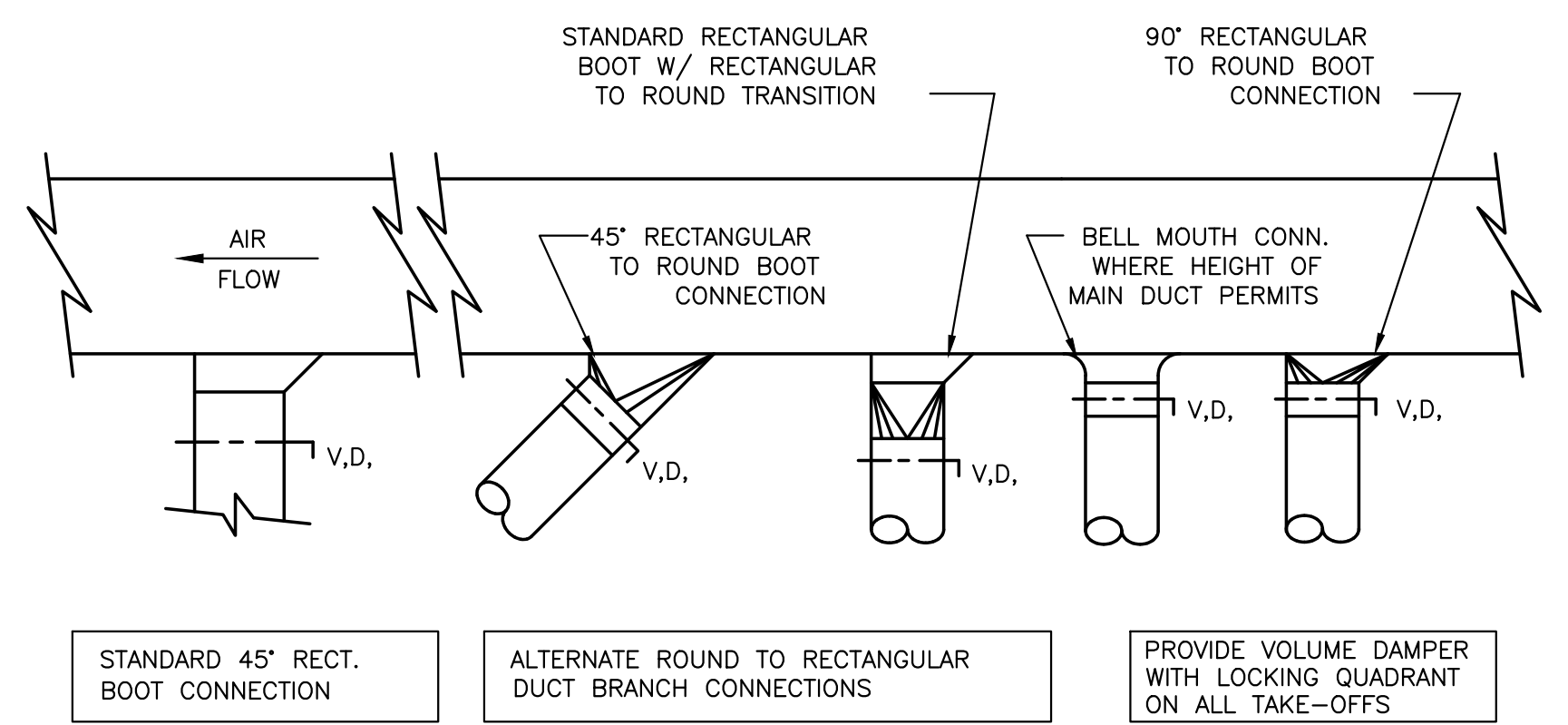
CONSTRUCTION OF 90° ELBOWS **CONSTRUCTION OF 45° ELBOWS**



DETAILS OF THE LOW VELOCITY DUCT LAYOUT
NOT TO SCALE

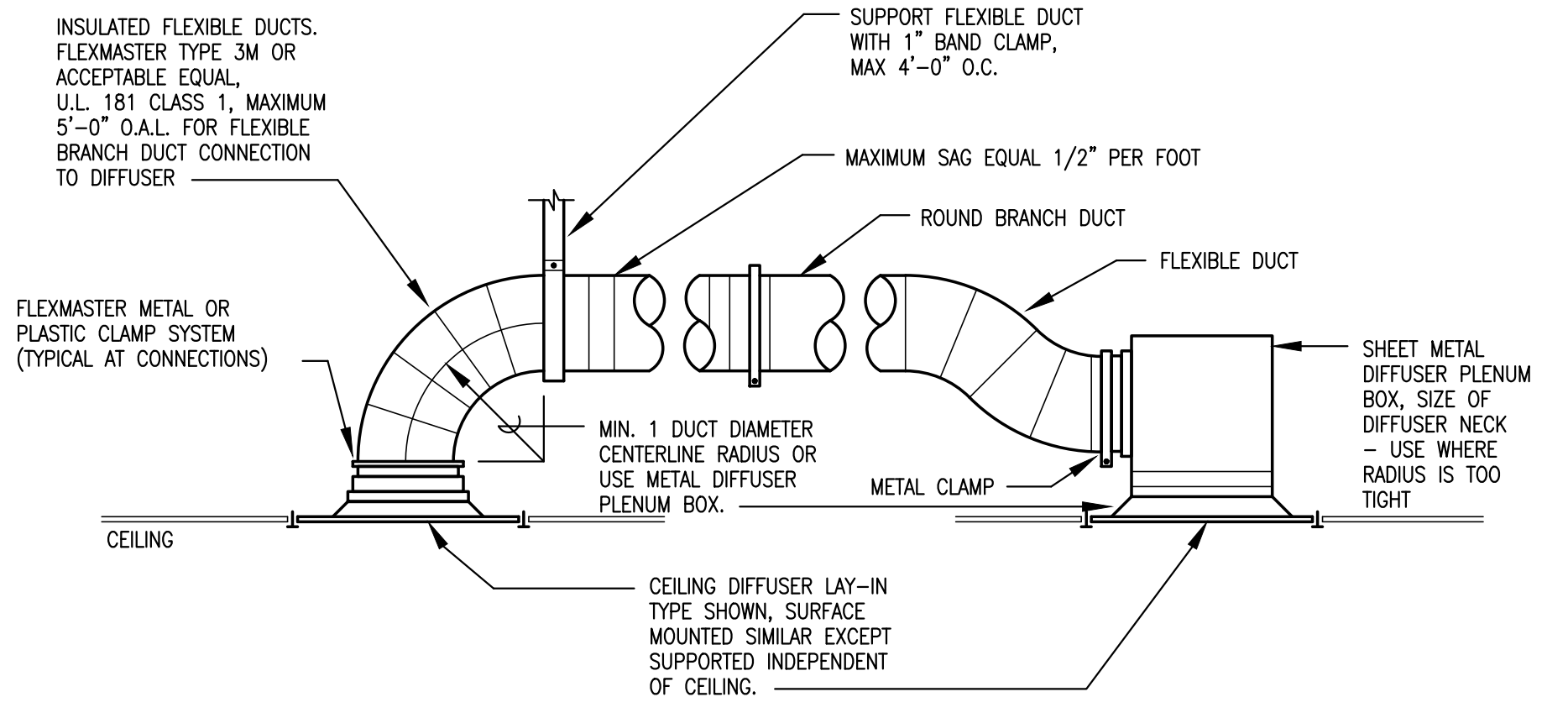
SQUARE BRANCH TAKEOFF CONSTRUCTION OF BRANCH TAKEOFFS FROM MAIN

- INSTALLATION NOTES**
1. ALL DUCTS SHALL BE CONSTRUCTED AND ERECTED IN A NEAT AND WORKMANLIKE MANNER.
 2. DUCTS SHALL BE CONSTRUCTED OF THE WEIGHTS, GAGES AND MATERIAL SHOWN IN THE SCHEDULE ON THESE DRAWINGS.
 3. THE DIMENSION SHOWN FOR ALL DUCTS IN PLAN GIVE THE WIDTH FIRST AND THEN THE HEIGHT.
 4. DUCT RISERS SHOULD BE SUPPORTED BY ANGLES AT EVERY FLOOR.
 5. AIR TURN SHALL BE INSTALLED IN ALL ABRUPT ELBOWS TO PREVENT TURBULENCE.
 6. DUCTS SHALL BE SECURELY ATTACHED TO THE BUILDING CONSTRUCTION IN AN APPROVED MANNER.
 7. DIVERGING TRANSITION PIECES SHALL BE MADE AS GRADUAL AS POSSIBLE.
 8. INSTALL FIRE DAMPERS IN ACCORDANCE WITH UL 555.
 9. ACCESS PANELS SHOULD BE PLACED BEFORE AND/OR AFTER EQUIPMENT INSTALLED IN THE DUCT.
 10. DUCT AREA SHOULD NOT BE DECREASED MORE THAN 10 PERCENT WHEN OBSTRUCTIONS CANNOT BE AVOIDED, AND THEN A STREAMLINED FITTING SHOULD BE USED.
 11. FLEXIBLE FABRIC CONNECTIONS (OR EQUAL) SHOULD BE USED ON BOTH INLETS AND OUTLETS OF ALL FANS AND AIR HANDLING UNITS.
 12. JOINTS AND SEAMS OF SUPPLY DUCTS SHALL BE FASTENED SECURELY AND MADE AIR TIGHT.



STANDARD 45° RECT. BOOT CONNECTION ALTERNATE ROUND TO RECTANGULAR DUCT BRANCH CONNECTIONS PROVIDE VOLUME DAMPER WITH LOCKING QUADRANT ON ALL TAKE-OFFS

BRANCH DUCT TAKE-OFF DETAIL
NOT TO SCALE



CEILING DIFFUSER/ FLEXIBLE DUCT CONNECTOR DETAIL
NO SCALE

DUCT CONSTRUCTION MINIMUM SHEET METAL THICKNESSES

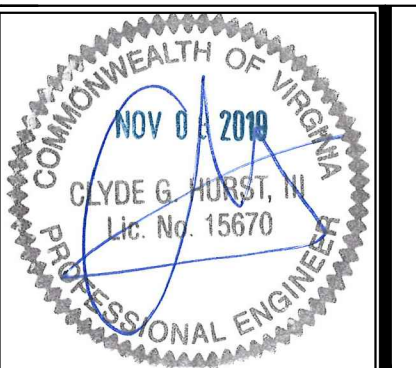
RECTANGULAR DUCTS			
MAXIMUM SIZE (INCHES)	STEEL (MINIMUM THICKNESS, NOMINAL)		ALUMINUM (MINIMUM THICKNESS, NOMINAL)
	THROUGH 12	0.022 INCH (26 GAGE, GALV.)	
13 THROUGH 30	0.028 INCH (24 GAGE, GALV.)		0.025 INCH (NO. 22 B&S GAGE)
31 THROUGH 54	0.034 INCH (22 GAGE, GALV.)		0.032 INCH (NO. 20 B&S GAGE)
55 THROUGH 84	0.040 INCH (20 GAGE, GALV.)		0.040 INCH (NO. 18 B&S GAGE)
OVER 84	0.052 INCH (18 GAGE, GALV.)		0.051 INCH (NO. 16 B&S GAGE)
ROUND DUCTS			
MAXIMUM SIZE (INCHES)	SPIRAL SEAM DUCT		FITTINGS (MINIMUM THICKNESS, NOMINAL)
	STEEL (MINIMUM THICKNESS, NOMINAL)	LONGITUDINAL SEAM DUCT (MINIMUM THICKNESS, NOMINAL)	
THROUGH 12	0.019 INCH (28 GAGE, GALV.)	0.022 INCH (26 GAGE, GALV.)	0.022 INCH (26 GAGE, GALV.)
13 THROUGH 18	0.022 INCH (26 GAGE, GALV.)	0.028 INCH (24 GAGE, GALV.)	0.028 INCH (24 GAGE, GALV.)
19 THROUGH 28	0.028 INCH (24 GAGE, GALV.)	0.034 INCH (22 GAGE, GALV.)	0.034 INCH (22 GAGE, GALV.)
29 THROUGH 36	0.034 INCH (22 GAGE, GALV.)	0.040 INCH (20 GAGE, GALV.)	0.040 INCH (20 GAGE, GALV.)
37 THROUGH 52	0.040 INCH (20 GAGE, GALV.)	0.052 INCH (18 GAGE, GALV.)	0.052 INCH (18 GAGE, GALV.)

DATE	DESCRIPTION	CHECKED BY:	APPROVED BY:
10/23/19	PERMIT SUBMISSION	COH III	COH III
10/10/18	95% PROGRESS SET	COH III	COH III
		REL	REL

OBSTACLE COURSE SALES CENTER
UPTON HILL REGIONAL PARK, 6060 WILSON
BOULEVARD, ARLINGTON, VA
PROJECT NUMBER: 18105.00
SCALE: AS SHOWN
DETAILS
MECHANICAL

HURST ENGINEERS
308 HILLWOOD AVE.
FALLS CHURCH, VA. 22046
(703) 534-7872

NOTE:
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M5.1

AIR HANDLING UNIT (AHU) & HEAT PUMP INDOOR SECTION (HPIS) SCHEDULE

UNIT NO.	MODEL & MANUF.	AIR QUANTITY		FAN			COOLING CAPACITY		HEATING CAPACITY				ELECTRICAL CHARACTERISTICS					NOTES	SERVING	
		SA CFM	OA CFM	ESP	HP (WATTS)	AMPS	TOTAL (MBH)	SENS. (MBH)	REVERSE CYCLE (MBH)	AUXILIARY HEAT			V	Ø	FLA	MCA	MOCP			
HPIS-1	MITSUBISHI PVFY-P36NAMU-E	1000	200	0.5	N/A	3.4	36	28	42	N/A	N/A	N/A	N/A	208	1	3.4	4.4	15	2, 6, 12, 13, 14, 15, 22, 23	SALES
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

1. PROVIDE UNIT WITH ECONOMIZER
 2. PROVIDE UNIT WITH PROGRAMMABLE 7 DAY THERMOSTAT
 3. PROVIDE UNIT WITH ELECTRIC HEAT - (FUSED DISCONNECT AS REQUIRED)
 4. PROVIDE UNIT WITH CONDENSATE PUMP WITH HIGH WATER CUT-OFF. PIPE TO NEAREST APPROVED STORM DRAIN LOCATION.
 5. WALL HUNG
 6. CEILING HUNG
 7. RECESSED CEILING GRID INSTALLATION.
 8. PROVIDE SPECIAL SOUND PROOFING PACKAGE.
 9. PROVIDE W/ FRESH AIR INTAKE DUCT & POWER VENTILATOR
 10. PROVIDE CONTROL INTERFACE W/ NOWAR SYSTEM.
 11. ELECTRIC HEAT TO BE ON SEPARATE CIRCUIT WITH FUSED DISCONNECT AS REQUIRED.

12. PROVIDE WITH GALVANIZED STEEL DRIP PAN WITH ONE 1" DRAIN AND 1" DRIP PAN LIP. PAN TO EXTEND 4" BEYOND AHU AND REFRIGERANT COIL ON ALL SIDES. PITCH PAN TOWARD DRAIN.
 13. PROVIDE WATER SENSOR WITH AHU CUT-OFF AND AUDIBLE ALARM IN DRIP PAN.
 14. PROVIDE W/ DISCONNECT (FUSED AS REQUIRED)
 15. REFRIGERANT - 410A.
 16. PROVIDE W/ HUMIDISTAT.
 17. PROVIDE W/ ADJACENT SPACE SUPPLY AIR DUCT.
 18. SEE SEQUENCE OF OPERATION NOTE FOR CONTROL OF THIS UNIT.
 19. PROVIDE PARTS # PAR-21MAA AND MAC-3971F-E.
 20. PROVIDE WITH HOT GAS REHEAT OPTION.
 21. PROVIDE WITH BC CONTROLLER.
 22. PROVIDE WITH FILTER BOX.
 23. PROVIDE MERV 8 FILTERS ON ALL UNITS DURING CONSTRUCTION. REPLACE ALL FILTERS WITH MERV 13 AT COMPLETION OF CONSTRUCTION.

NOTE:
 IF ELECTRIC HEAT REQUIRES SEPERATE CIRCUIT CONTRACTOR SHALL INCLUDE IN PRICE PROVISIONS FOR SEPERATE CIRCUIT, COMPLETE & OPERATIONAL.

SPLIT SYSTEM OUTDOOR SECTION (HPOS) & CONDENSING UNIT (CU) SCHEDULE

UNIT MARK	MANUFACTURER MODEL	COOLING CAPACITY (MBH)	REVERSE CYCLE HEATING (MBH)	ELECTRICAL DATA								INDOOR UNIT SERVED	MAX. WT. (LBS)	NOTES	SERVING	REFRIGERANT TYPE	DESIGN EER (SEER)	DESIGN COP (HSPF)	ASHRAE EER (SEER)	ASHRAE COP (HSPF)		
				NO. COMP.	COMP. RLA	COMP. LRA	NO. COND. FANS	COND. FAN FLA	V	Ø	FLA										MCA	MOCP
HPOS-1	MITSUBISHI PUMY-P36NHMU	36	42	1	18.6	N/A	1	1.56	208	1	20.2	31	40	HPIS-1	350	1, 3, 14, 15, 16, 17, 30, 31	SALES	410A	14.2	3.9	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

1. PROVIDE WITH DISCONNECT SIZED AS PER NEC.
 2. PROVIDE WITH MOTOR MASTER HEAD CONTROL.
 3. PROVIDE LOW AMBIENT CONTROLLERS.
 4. PROVIDE CRANKCASE HEATER.
 5. PROVIDE WITH HIGH AND LOW PRESSURE SWITCHES
 6. PROVIDE WITH WINTER START CONTROL
 7. PROVIDE WITH TIME DELAY RELAY
 8. PROVIDE COMPRESSOR START ASSIST - CAPACITOR AND RELAY
 9. EVAPORATOR FREEZE THERMOSTAT
 10. PROVIDE FILTER-DRYER (B-FLOW ON HEAT PUMP)
 11. PROVIDE PHASE/ VOLTAGE MONITOR.
 12. PROVIDE W/ HOT GAS REHEAT.

13. PROVIDE WITH SOUND HOOD.
 14. PROVIDE WITH UNIT RISER
 15. PROVIDE WITH CONDENSER COIL GUARD
 16. VARIABLE SPEED COMPRESSOR.
 17. REFRIGERANT 410A.
 18. PROVIDE W/ AUTO CHANGE OVER, 7 DAY PROGRAMMABLE THERMOSTAT.
 19. PROVIDE WITH 120V CONVEENCE OUTLET.
 20. UNIT TO BE SUITABLE FOR LONG LINE APPLICATION. PROVIDE FACTORY APPROVED LONG LINE REFRIG. LINE SIZING
 21. PROVIDE WITH LIQUID LINE SOLENOID VALVE.
 22. COORDINATE NEW DIGITAL CONTROLS WITH EXISTING BUILDING ENERGY MANAGEMENT SYSTEM.
 23. PROVIDE WITH GAGE PANEL PACKAGE.
 24. PROVIDE WITH EVAPORATOR COIL SUITABLE FOR INDOOR UNIT.

25. PROVIDE WITH WIND BAFFLE.
 26. PROVIDE WITH 4 BRANCH HEADER.
 27. PROVIDE WITH 8 BRANCH HEADER.
 28. SUPPLYING MULTIPLE HPOS UNITS. PROVIDE WITH REFRIG. PIPING CONNECTIONS & CONTROL
 29. PROVIDE WITH REFRIGERANT HEADER AS REQUIRED.
 30. PROVIDE WITH FACTORY REPRESENTATIVE CLOSE-IN INSPECTION & STARTUP.
 31. PROVIDE WITH LOW AMBIENT WIND BAFFLES.

ELECTRIC HEATER SCHEDULE

UNIT MARK	MANUFACTURER MODEL NO.	MBH	ELECTRICAL DATA			MOUNTING	NOTES
			KW	AMPS	V Ø		
EUH-A	QMARK MUH0581	17.1	5	24.1	208 1	CEILING HUNG	1, 2, 3, 9
ECH-A	QMARK CDF548	10.2	3	14.2	208 1	CEILING HEATER	1, 2, 3, 8, 11
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

1. PROVIDE POWER DISCONNECT SWITCH
 2. PROVIDE REMOTE THERMOSTAT (WHITE COLOR)
 3. HIGH TEMP CUT OFF
 4. INTEGRAL THERMOSTAT - TAMPERPROOF
 5. PROVIDE WITH STARTER
 6. 14 GAUGE SECURITY COVER.
 7. SURFACE MOUNTING KIT
 8. TRIM KIT

9. PROVIDE UNIVERSAL WALL / CEILING MOUNTING BRACKET.
 10. WALL RECESSED MOUNTING
 11. CEILING RECESSED MOUNTING
 12. WALL SURFACE MOUNTING
 13. PLENUM MOUNTED & RATED.
 14. PROVIDE ACCESS PANEL.
 15. VERTICAL DISCHARGE.

AIR DISTRIBUTION DEVICE SCHEDULE

TYPE	DESCRIPTION	CFM RANGE	NECK	FACE	MFR MODEL (*)	NOTES
CD-1, 2	SQUARE/RECT. CEILING DIFFUSER	AS SHOWN	AS SHOWN	LOUVER	TITUS TMSA-AA	1*, 2*, 3, 4, 5, 9, 12, 13
CD-3	ROUND CEILING DIFFUSER	AS SHOWN	AS SHOWN	LOUVER	TITUS TMRA-AA	1*, 2*, 3, 4, 5, 9, 12, 13
CR-1	CEILING REGISTER (SUPPLY)	AS SHOWN	AS SHOWN	BARS SINGLE DEFL	TITUS 301 FS	1, 2, 3, 4, 5, 7, 13
SWR-1	SIDEWALL REGISTER	AS SHOWN	AS SHOWN	AERO BARS DOUBLE DEFL	TITUS 272RS	1/2*, 3, 4, 5, 7, 13, 15
SWR-2	SIDEWALL REGISTER	AS SHOWN	AS SHOWN	BARS SINGLE DEFL	TITUS 301 FS	1/2*, 3, 4, 5, 7, 13
RR-1	RETURN AIR DEVICE (CEILING)	AS SHOWN	AS SHOWN	PERFORATED	TITUS PAR-AA	1/2*, 3, 4, 5, 13
RR-2	RETURN REGISTER (CEILING / WALL)	AS SHOWN	AS SHOWN	BARS AT 35° DEFL	TITUS 350-FL	1/2*, 3, 4, 5, 6, 13
RR-3	RETURN REGISTER W/ FILTER	AS SHOWN	AS SHOWN	BARS AT 35° DEFL	TITUS 350 FLF1	2, 3, 4, 6, 20, 21
ER-1	EXHAUST REGISTER (CEILING / WALL)	AS SHOWN	AS SHOWN	PERFORATED	TITUS PAR-AA	1/2*, 3, 4, 5, 13
ER-2	EXHAUST REGISTER (CEILING / WALL)	AS SHOWN	AS SHOWN	BARS AT 35° DEFL	TITUS 355FL	1/2*, 3, 4, 5, 6, 13
TG-1	TRANSFER GRILLE (CEILING)	AS SHOWN	AS SHOWN	PERFORATED	TITUS PAR-AA	1/2*, 3, 4, 5, 13
TG-2	TRANSFER GRILLE (CEILING / WALL)	AS SHOWN	AS SHOWN	BARS AT 0° DEFL	TITUS 350-ZFL	1/2*, 3, 4, 5, 6, 13
RP	RETURN PANEL (CEILING)	AS SHOWN	AS SHOWN	AS SHOWN	TITUS PAR-AA	1/2*, 3, 4, 13
LD-1	LINEAR DIFFUSER (1-SLOT)	AS SHOWN	AS SHOWN	AS SHOWN	TITUS FL-15-JT	2, 4, 22
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-

NOTES:
 1. LAY-IN CEILING CONSTRUCTION. (*)
 2. SURFACE MOUNTING ON CEILING OR EXPOSED. (*)
 3. WHITE ENAMEL FINISH.
 4. ALUMINUM CONSTRUCTION.
 5. OPPOSED BLADE VOLUME DAMPER.
 6. HORIZONTAL FACE BARS WITH DEFLECTION.
 7. VERTICAL FACE BARS.
 8. EXPOSED FACE VANES
 9. 4-WAY DIRECTIONAL THROW (UNLESS OTHERWISE SHOWN)
 10. NON-DUCTED
 11. SQUARE NECK CONNECTION.
 12. ROUND NECK CONNECTION
 13. NECK TYPE AS SHOWN ON DRAWINGS.
 14. FULL RADIUS THROW
 15. DOUBLE DEFLECTION THROW.

16. VERTICAL TO HORIZONTAL AIR PATTERN ADJUSTMENT.
 17. FLUSH MOUNT - FLANGE AS REQUIRED.
 18. BIRD SCREEN
 19. 45% NET AREA MIN.
 20. FILTER TYPE REGISTER SUPPLY W/ FILTER.
 21. PROVIDE W/ SPARE FILTER
 22. LINEAR DIFFUSER W/ FACTORY PLENUM & JET THROW.
 23. LINEAR DIFFUSER W/ INSULATED DUCT PLENUM.

* - CONTRACTOR SHALL VERIFY CEILING CONSTRUCTION TYPE PRIOR TO PURCHASING AND INSTALLATION. REFER TO ARCHITECTURAL DRAWINGS AND REFLECTED CEILING PLANS FOR CEILING TYPES.

MECHANICAL/ELECTRICAL COORDINATION REQUIREMENTS

MECHANICAL CONTRACTOR WITHIN 20 CALENDAR DAYS OF RECEIPT OF CONTRACT TO PROVIDE TO THE ELECTRICAL CONTRACTOR A COMPLETE SET OF MECHANICAL EQUIPMENT SHOP DRAWINGS FOR ALL MECHANICAL EQUIPMENT REQUIRING ELECTRICAL CONNECTIONS OR POWER. SHOP DRAWINGS SHALL SHOW ALL REQUIRED ELECTRICAL CONNECTIONS, MINIMUM CIRCUIT AMPS, WIRE SIZES, OVER CURRENT PROTECTION, CONNECTION TYPES AND ANY OTHER INFORMATION REQUIRED FOR THE PROPER EQUIPMENT INSTALLATION AND OPERATION.

MECHANICAL AND ELECTRICAL CONTRACTORS SHALL COORDINATE THIS INFORMATION AND PREPARE A CONNECTION SCHEDULE FOR SUBMISSION AND REVIEW BY ENGINEER BEFORE PROCEEDING WITH WORK.



4031 University Drive, Suite 120, Fairfax, VA, 22030
 Telephone: (703)920-1930 Fax: (703)991-9171

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DATE	DESCRIPTION	DESIGNED BY:	CHECKED BY:	APPROVED BY:
10/23/19	PERMIT SUBMISSION			
10/10/18	95% PROGRESS SET			

SCALE: AS SHOWN

OBSTACLE COURSE SALES CENTER
 UPTON HILL REGIONAL PARK, 6060 WILSON BOULEVARD, ARLINGTON, VA

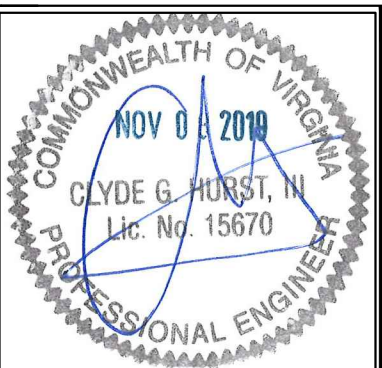
PROJECT NUMBER: 18105.00

SCHEDULES
 MECHANICAL

HURST ENGINEERS

308 HILLWOOD AVE.
 FALLS CHURCH, VA. 22046
 (703) 534-7872

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M4.1

HE Project Number: 18-97

GENERAL NOTES

- 1. CONTRACTOR TO COORDINATE ALL EQUIPMENT SERVICE LAYOUT WITH KITCHEN EQUIPMENT DRAWINGS.
2. CONTRACTOR TO PROVIDE IN WRITING TO ARCHITECT ANY DISCREPANCIES OR AMBIGUITIES. CONTRACTOR SHALL NOT PROCEED WITH ITEMS NEEDING CLARIFICATION UNTIL DIRECTION RECEIVED FROM ARCHITECT. CONTRACTOR SHALL ALLOW FOR 10 BUSINESS DAYS FOR ARCHITECT'S RESPONSE.
3. GENERAL CONTRACTOR SHALL PROVIDE IN WRITING DOCUMENTATION THAT CAREFUL COORDINATION BETWEEN ALL SUBCONTRACTORS HAS OCCURRED BEFORE COMMENCING WORK. CONTRACTOR SHALL IDENTIFY ALL AREAS OF CONFLICT BETWEEN VARIOUS TRADES.
4. CONTRACTOR SHALL COORDINATE ALL LIGHTING CONTROLS WITH OWNER BEFORE PURCHASE AND INSTALLATION WORK BEGINS.

PANELBOARD NOTES

- 1. PANEL BOARDS SHALL BE PROVIDED WITH COPPER BUSSES, S/N EQUIPMENT GROUND BUS AND ISOLATED GROUND BUS.
2. PANELBOARDS SHALL BE EQUIPPED WITH QUICK REMOVAL DOORS, MANUFACTURER'S NAME PLATE WITH CHARACTERISTICS AND ALL KEYS ALIKE.
3. CONTRACTOR SHALL VERIFY MOUNTING OF ALL PANELBOARDS PRIOR TO RELEASE FOR FABRICATION.
4. PANELBOARDS SHALL BE SUITABLE FOR FLUSH AND/OR SURFACE MOUNTING.
5. PANELBOARDS SHALL BE PROVIDED WITH A TYPEWRITTEN DIRECTORY. HANDWRITTEN IS NOT ACCEPTABLE.
6. PANELBOARDS SHALL BE PROVIDED WITH PHENOLIC PLASTIC ETCHED NAMEPLATES WITH THE FOLLOWING: (1) PANEL DESIGNATION (2) PANEL SOURCE OF SUPPLY WITH CIRCUIT NUMBER (3) PANEL FEEDER SIZE
7. CONTRACTOR SHALL CHECK ALL PANELBOARD BUSES FOR UNBALANCED CONDITIONS AND BALANCE PANEL BETWEEN PHASES AS CLOSE AS POSSIBLE. SUBMIT AMPERE READINGS FOR EACH PANELBOARD TO ELECTRICAL ENGINEER FOR REVIEW AND APPROVAL.
8. FAULT CURRENT RATING: a) MAIN SERVICE 65K b) PANEL BOARD 65K U. O. N.
9. ALL PANELBOARDS SHOWN DOUBLE SECTION SHALL BE CABLE TIED.
10. ALL BRANCH CIRCUIT TO BE LABELED IN PANEL GUTTER SPACE.
11. HOUSE PANELBOARD CIRCUIT BREAKERS SHALL BE BOLT-ON TYPE AND ALL BREAKERS FOR HVAC EQUIPMENT SHALL BE HACR TYPE, U.O.N.
12. THE UNGROUNDED AND GROUNDED CIRCUIT CONDUITS OF EACH MULTI WIRE BRANCH CIRCUIT SHALL BE GROUPED BY CABLE TIES OR SIMILAR MEANS IN AT LEAST ONE LOCATION WITHIN THE PANELBOARD OR OTHER POINT OF ORIGINATION PER NEC 210.4(D)

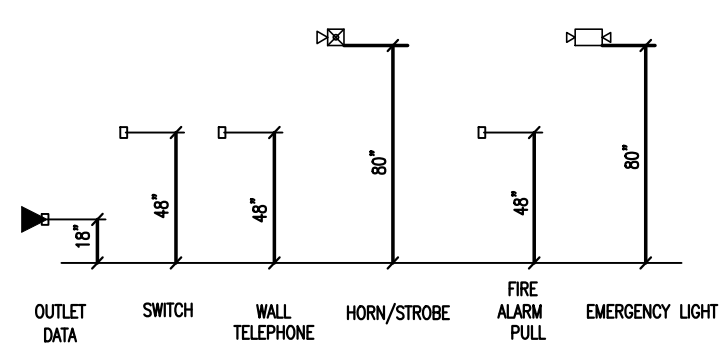
LIGHTING CONTROL SYSTEMS

- SOS SWITCH WITH OCCUPANCY SENSOR. AUTOMATIC "ON" CONTROL & AUTOMATIC "OFF" CONTROL. OFF CONTROL ADJUSTABLE BETWEEN 1 MINUTE & 30 MINUTES. PRESET FOR 30 MINUTE. SWITCH TO HAVE MANUAL OFF/ON OVERRIDE. BASIS OF DESIGN BEC.
SWS SWITCH WITH OCCUPANCY SENSOR. MANUAL "ON" AUTOMATIC "OFF". OFF CONTROL ADJUSTABLE BETWEEN 1 MINUTE & 30 MINUTES. PRESET FOR 30 MINUTE. SWITCH TO HAVE MANUAL OFF/ON OVERRIDE. BASIS OF DESIGN BEC.
OS OCCUPANCY SENSOR. CEILING MOUNTED. VOLTAGE AS REQUIRED. OFF CONTROL ADJUSTABLE BETWEEN 1 MINUTE & 30 MINUTES. PRESET FOR 30 MINUTE. SWITCH TO HAVE MANUAL OFF/ON OVERRIDE. BASIS OF DESIGN BEC. OCCUPANCY SENSOR TO PROVIDE CONTROL TO SWITCH POWER PACK.
OSB OCCUPANCY SENSOR. HIGH BAY MOUNTED. WIDE BEAM. CONNECT TO POWER PACK SENSOR. SENSOR ADJUSTABLE BETWEEN 1 & 30 MINUTES. PRESET TO 30 MINUTES.
SOSB MINUTES. PRESET FOR 30 MINUTE. SWITCH TO HAVE MANUAL OFF/ON OVERRIDE. BASIS OF DESIGN BEC. PROVIDE SIZE ON CONTROL. AUTOMATIC CONTROL AND SIZE MANUAL CONTROL.
SPP SWITCH POWER PACK (1) PRIMARY (A) SECONDARY SENSORS: - MANUAL (VACUANCY) AUTOMATIC OCCUPANCY MODE SWITCH. - SINGLE SWITCHING. - BEC MODEL PP-1

2012 IECC Lighting Power Density Compliance

Table with 4 columns: Fixture Type, VA per Light, Quantity, Total VA. Rows include A, B/B1, and a total design wattage of 696.

Total Design Wattage 696
Total Square Footage 830
Design VA per Square Foot 0.8
IECC MAXIMUM WATTS PER SQUARE FOOT 1.3



TYPICAL MOUNTING HEIGHTS - PUBLIC SPACES NO SCALE

SYMBOLS LIST

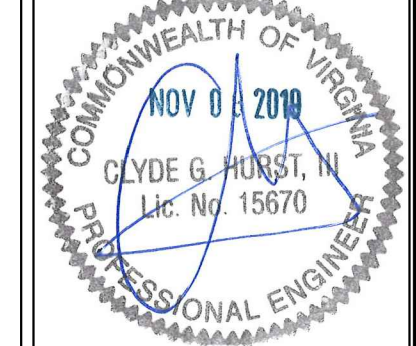
- 2x4 FLUORESCENT PARABOLIC EMERGENCY LIGHTING FIXTURE.
2x4 FLUORESCENT PARABOLIC LIGHTING FIXTURE.
2x2 FLUORESCENT PARABOLIC EMERGENCY LIGHTING FIXTURE.
2x2 FLUORESCENT PARABOLIC LIGHTING FIXTURE.
2x4 FLUORESCENT DIRECT/ INDIRECT EMERGENCY LIGHTING FIXTURE.
2x4 FLUORESCENT DIRECT/ INDIRECT LIGHTING FIXTURE.
2x2 FLUORESCENT DIRECT/ INDIRECT EMERGENCY LIGHTING FIXTURE.
2x2 FLUORESCENT DIRECT/ INDIRECT LIGHTING FIXTURE.
TRACK LIGHT
PENDANT LIGHT FIXTURE.
FLUORESCENT STRIP LIGHTING FIXTURE.
FLUORESCENT STRIP EMERGENCY LIGHTING FIXTURE.
DOWNLIGHT LIGHTING FIXTURE.
WALL MOUNTED LIGHTING FIXTURE.
WALL MOUNTED EMERGENCY LIGHT FIXTURE.
WALL MOUNTED FLUORESCENT LIGHTING FIXTURE.
POLE MOUNTED 1 OR 2 HEAD LIGHT FIXTURE.
DOWNLIGHT WALL WASH LIGHT FIXTURE.
EXIT LIGHTING FIXTURE-SINGLE FACE - WITH INTEGRAL BATTERY OR CONNECTED TO EMERGENCY CIRCUIT - CEILING OR WALL MOUNTED - ARROWS INDICATE DIRECTION - LED TYPE.
COMBINATION OF EMERGENCY LIGHT FIXTURE WITH BATTERY PACK.
EXIT LIGHTING FIXTURE-DOUBLE FACE-WITH INTEGRAL BATTERY OR CONNECTED TO EMERGENCY CIRCUIT. REMOTE EMERGENCY LIGHT BATTERY PACK. PROVIDE WITH ACCESS PANEL AS REQUIRED.
EMERGENCY LIGHT - 2 HEAD WITH 90 MINUTE BATTERY. UNIT TO COMPLY WITH NEC.
SINGLE POLE FLUSH DIMMER SWITCH SLIDING TYPE + 48" AFF.
SINGLE POLE FLUSH TOGGLE SWITCH. +48" AFF
DENOTES 50% SWITCHING OF FIXTURES BY EACH SWITCH. (INCLUDES 3-WAY SWITCHING)
3-WAY FLUSH TOGGLE SWITCH.
4-WAY FLUSH TOGGLE SWITCH.
THERMAL MOTOR SWITCH-SIZE AS REQUIRED.
KEYED SWITCH.
S SINGLE POLE FLUSH TOGGLE SWITCH WITH OCCUPANCY SENSOR +48" AFF. DUAL TECHNOLOGY.
SVS VACUANCY SENSOR WITH "ON" WALL SWITCH PER EEC.
OS CEILING MOUNTED OCCUPANCY SENSOR. COOPER CONTROLS - VOLTAGE AS REQUIRED, DUAL TECHNOLOGY.
SPP SWITCH PACK COOPER CONTROLS SP20-MV.
OSB HIGH BAY OCCUPANCY SENSOR - LEVITON PHR HIGH BAY SENSOR 120/277/480V SUITABLE - 24V SUITABLE WHEN USED WITH SUPER DUTY POWER PACK.
SPPB LEVITON SUPER DUTY POWER PACK. OPP20 - SUITABLE FOR USE WITH PHR HIGH BAY SENSOR - 20A 120/277/480V
DUPLEX RECEPTACLE TO BE MOUNTED AT 18" A.F.F., U.O.N. 120V 20 AMP NEMA 5-20R
CEILING RECEPTACLE
WALL OUTLET WITH DOUBLE DUPLEX RECEPTACLE- 2P, 3W, 125V, GROUNDING TYPE
DUPLEX RECEPTACLE MOUNTED 44" AFF
SPECIAL RECEPTACLE. SEE ELECTRICAL POWER SCHEDULE FOR DETAILS
DUPLEX RECEPTACLE WITH GROUND FAULT INTERRUPTER PROTECTION LEVITON 8599-L
ISOLATED GROUND CEILING MOUNTED DUPLEX RECEPTACLE
ISOLATED GROUND DUPLEX RECEPTACLE 18" A.F.F.
DUPLEX RECEPTACLE, 2P, 3W, 125V, 20A, COLOR WHITE WITH THE TOP HALF SWITCHED.
WEATHER PROOF GF I DUPLEX RECEPTACLE
TAMPER RESISTANT DUPLEX RECEPTACLE 125V, 20A, PER NEC 406.12
HOSPITAL GRADE DUPLEX RECEPTACLE 125V, 20A WITH HFCV CABLE
SINGLE RECEPTACLE MOUNTED AT 44" 2P, 3W, 20A, 125V.
MECHANICAL CONTROL 120V CONNECTION MTD. ABOVE CEILING.
DATA WALL OUTLET (+18" AFF) WITH ONE INCH EMPTY CONDUIT W/ PULL STRING UP TO 4" ABOVE CEILING. -STRING SHALL BE TAGGED FOR INDICATION. HIGH SPEED INTERNET CONNECTION. LOW VOLTAGE WIRING.
POWER AND DATA COMBINATION FLOOR BOX. WIREMOLD #RC4ATCS/COM 75
OVERHEAD PROJECTOR DATA & POWER.
QUAD POWER AND DATA COMBINATION FLOOR BOX. WIREMOLD #RC4ATCS/COM 75
TEL/DATA OUTLET (18" AFF) WITH ONE 1 INCH EMPTY CONDUIT WITH PULL STRING UP TO 4" ABOVE CEILING. CONDUIT NOT REQUIRED ABOVE CEILING.
VOICE WALL OUTLET (+18" AFF) WITH ONE INCH EMPTY CONDUIT W/ PULL STRING STUBBED ABOVE CEILING. -STRING SHALL BE TAGGED FOR INDICATION. " W" DENOTES 48" AFF, "H" INDICATES HOUSE PHONE.
ISOLATED, INSULATED GROUND FOR I. G. RECEPETS.
CONCEALED BRANCH CIRCUIT WIRING IN WALLS OR ABOVE CEILING-CROSSMARKS AND NUMERALS INDICATE NUMBER AND ANG SIZE OF CONDUCTORS RESPECTIVELY- 2#12 AWG + 1#12 AWG G MOUNTED WHEN RUN IS UNMARKED.
CONCEALED WIRING IN SLAB.
HOMERUN WIRING TO DESIGNATED PANELBOARD-NUMERALS INDICATE CIRCUIT NUMBERS. SEE FEEDER CONNECTION SIZE SCHEDULE.
MAKE FINAL CONNECTION
208/120 VOLT PANELBOARD
480/277 VOLT PANELBOARD
MOTOR CONNECTION.
SAFETY SWITCH: FSS FUSIBLE, NFSS-NONFUSIBLE.
COMBINATION STARTER DISCONNECT SWITCH.
MOTOR STARTER +48" AFF - FURNISHED UNDER MECHANICAL WORK. INSTALLED AND FINAL CONNECTION UNDER ELECTRICAL WORK.
JUNCTION BOX WALL, CEILING OR FLOOR MOUNTED
MOTORIZED DAMPER COORDINATE ELECTRICAL REQUIREMENTS WITH MECHANICAL CONTRACTOR
BUZZER PUSH BUTTON FOR AUDIO VISUAL DOOR BELL SYSTEM +48" AFF
OVER RIDE SWITCH FOR AUDIO VISUAL DOOR BELL SYSTEM +48"AFF
TRANSFORMER IN NEMA 1 ENCLOSURE FOR AUDIO VISUAL DOOR BELL SYSTEM MTD. ABV.
DOOR BUZZER WITH VISUAL DEVICE FOR VISUAL DOOR BELL SYSTEM +80AFF
WALL MOUNTED TELEVISION OUTLET +7" AFF.
FLUSH MOUNTED PHOTO CELL
WALL MOUNTED THE CLOCK
WALL MOUNTED CONTACTOR
ACCESS CONTROLS
CARD READER WITH 120V POWER
SMOKE DAMPER - PROVIDE 120V POWER - COORDINATE WITH MECHANICAL CONTRACTOR
POWER POLE
FURNITURE POWER TELE/DATA FEED FROM WALL +18" A.F.F., COORDINATE WITH FURNITURE LAYOUT.
FLOOR FURNITURE POWER/TELE/DATA FEED FROM FLOOR. COORDINATE WITH FURNITURE LAYOUT WIREMOLD #FATCIBS DUAL SERVICE FURNITURE FEED POKE-THEY SERIES WITH ALL REQUIRED ACCESSORIES.
FSS FUSED SAFETY SWITCH
NFSS NON-FUSED SAFETY SWITCH
CP CHILD PROOF
NOTE:
1. THE LETTERS NEXT TO EACH LIGHTINGS FIXTURE INDICATES LIGHTING FIXTURE TYPE SHOWN ON LIGHTING FIXTURE SCHEDULE.
2. LETTERS NEXT TO RECEPTABLES, VOICE AND DATA OUTLETS SHALL DENOTE AS FOLLOWS: W = WALL MOUNTED +48" AFF.

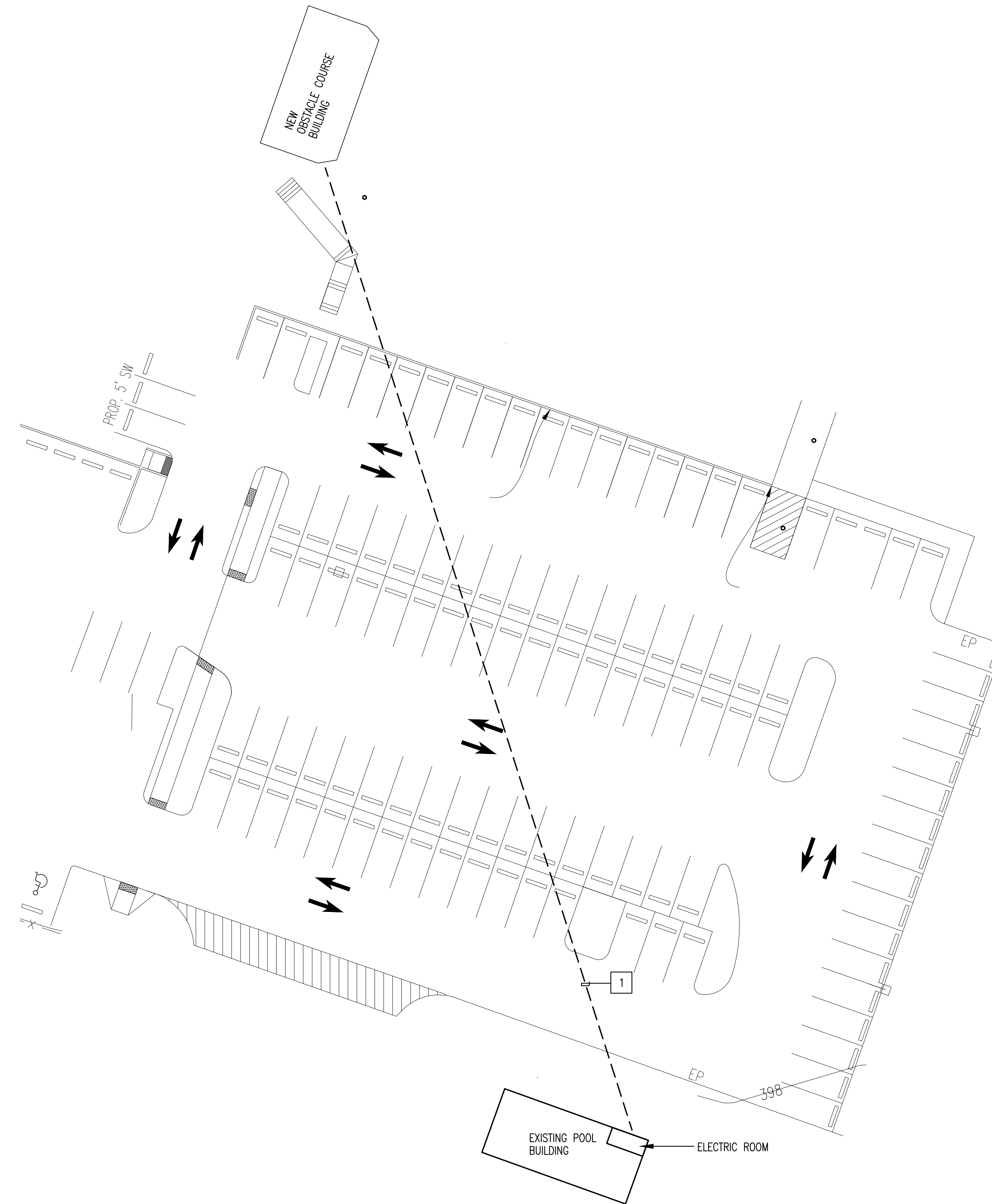
LIGHTING FIXTURE SCHEDULE

Table with 10 columns: TYPE (MARK), DESCRIPTION, MANUFACTURER, CATALOG NO., LAMPS (TYPE, WATTS, VOLTS), MOUNTING, REMARKS, INPUT WATTS. Rows include DOWN LIGHT PENDANT 6"9, 2x4 LED, 2x4 LED W/ EMERGENCY BATTERY, WALL MOUNTED EXIT SIGN, EMERGENCY EGRESS LIGHTS-WALL PACK, and EXTERIOR LITE.

HURST ENGINEERS
308 HILLWOOD AVE.
FALLS CHURCH, VA. 22046
(703) 534-7872

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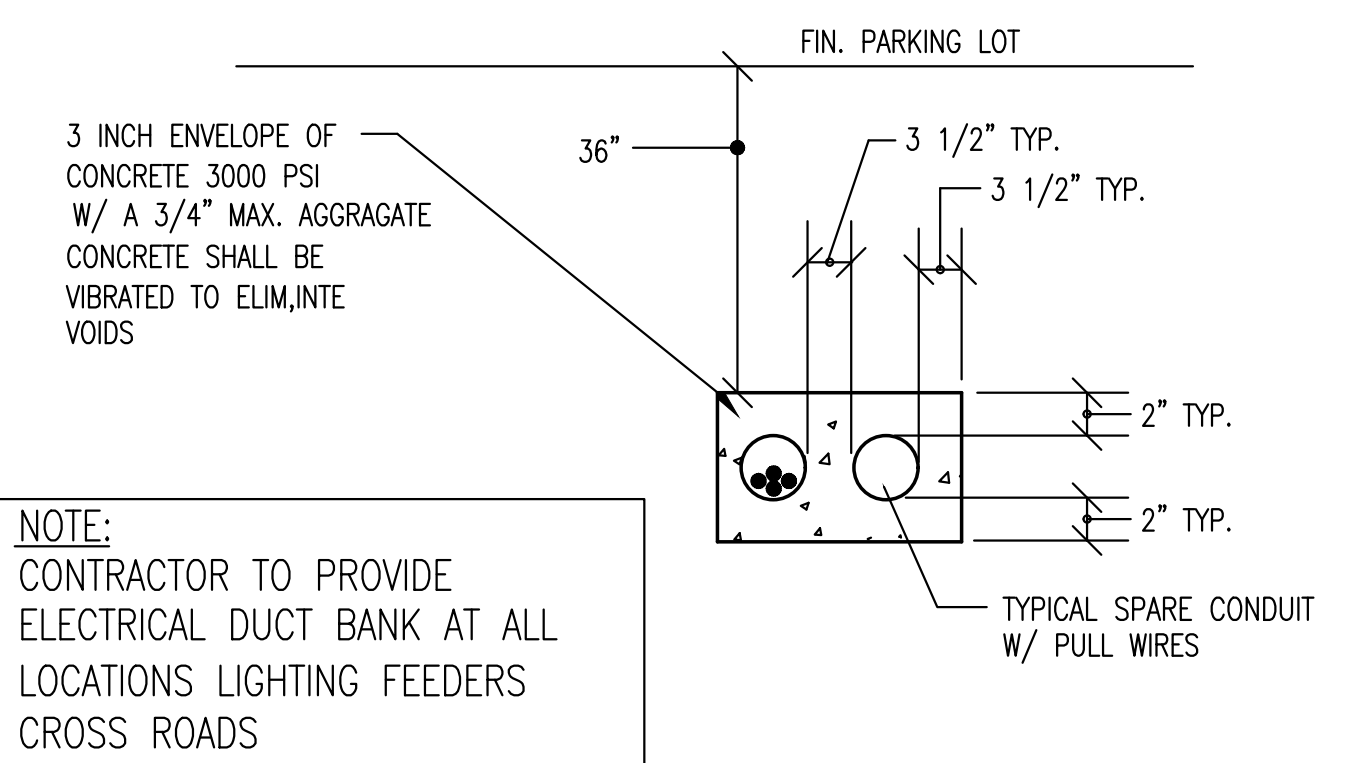




SITE PLAN - ELECTRICAL
SCALE: 1"=20'-0"

SHEET NOTES

- 1 NEW CONCRETE 2 WAY DUCTBANK FOR OBSTACLE COURSE BUILDING SERVICE. ROUTE TO NEW BUILDING FROM EXISTING POOL BUILDING - SEE DETAIL THIS DRAWING.



SECTION "A" - "A"
NO SCALE

NOTE:
CONTRACTOR TO PROVIDE ELECTRICAL DUCT BANK AT ALL LOCATIONS LIGHTING FEEDERS CROSS ROADS

1. CONTRACTOR SHALL PROVIDE MAIN INCOMING UNDER CONCRETE INKED IN DUCT BANK WITH FEEDERS PER NEC ARTICLE 300-5 230-8.
2. ALL INSTALLATION WORK SHALL ALSO COMPLY WITH POWER CO. REQUIREMENTS.
3. ALL CONDUIT TO BE 4" PVC SCHEDULE 40 WITH SPACER UNLESS OTHERWISE SHOWN.
2. SEAL WATER TIGHT AND FOR GAS LEAK PER POWER CO REQUIREMENTS.

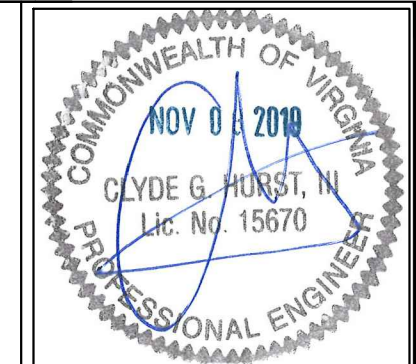
ELECTRICAL DUCT BANK DETAIL
NO SCALE

DATE	DESCRIPTION	CHECKED BY:	APPROVED BY:
10/23/19	PERMIT SUBMISSION	COH III	COH III
10/10/18	95% PROGRESS SET	COH III	COH III
		REL	

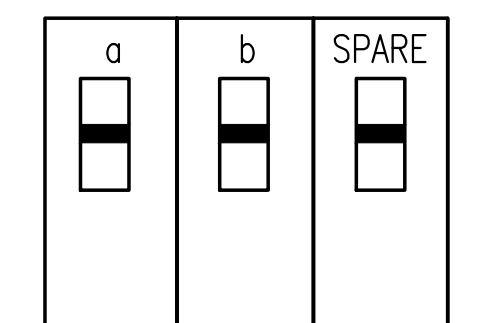
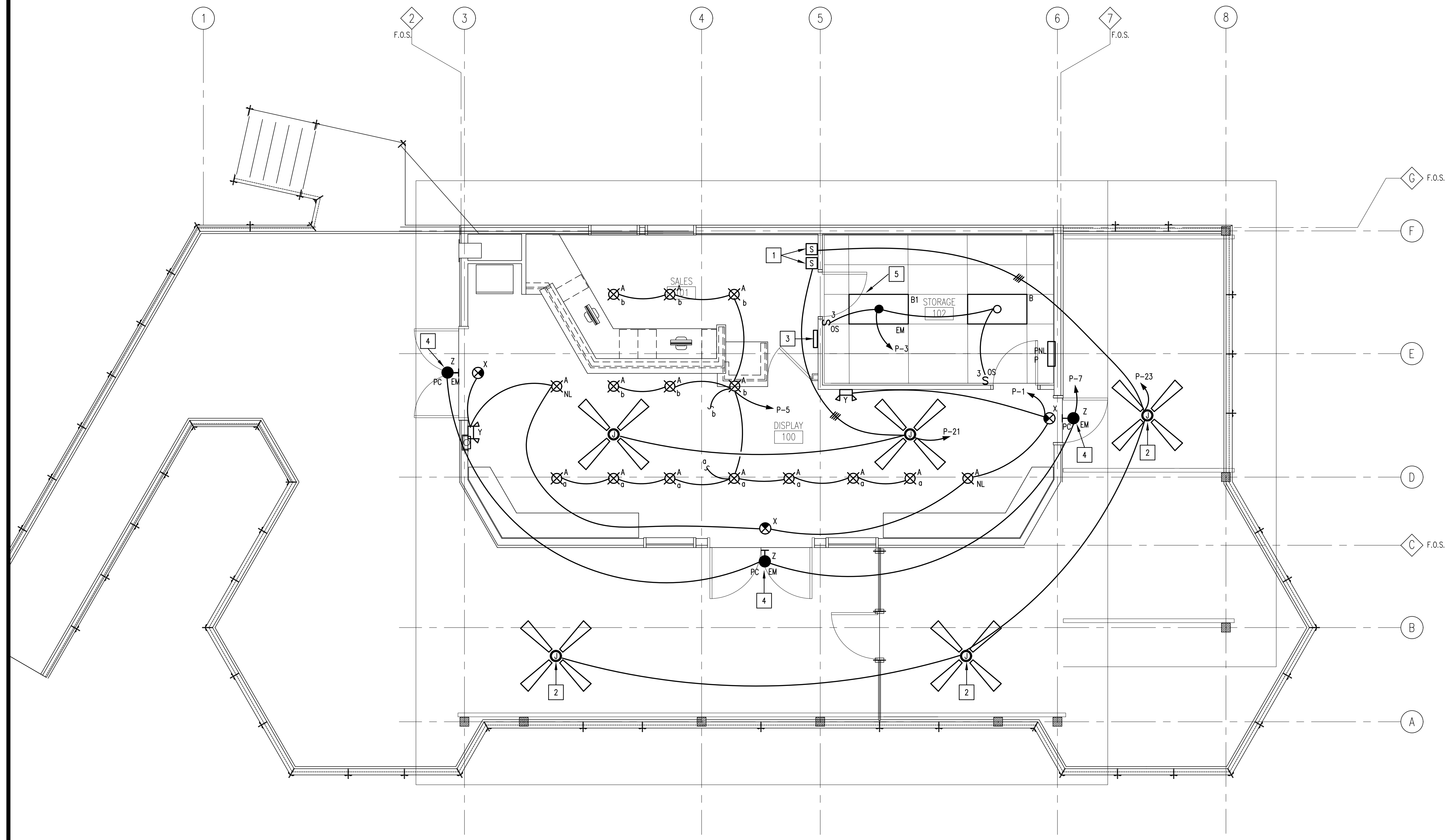
OBSTACLE COURSE SALES CENTER
UPTON HILL REGIONAL PARK, 6060 WILSON
BOULEVARD, ARLINGTON, VA
PROJECT NUMBER: 18105.00
SCALE: AS SHOWN
SITE PLAN
LIGHTING

HURST ENGINEERS
308 HILLWOOD AVE.
FALLS CHURCH, VA. 22046
(703) 534-7872

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HE Project Number: 18-97



44" A.F.F.
FINISHED FLOOR

SWITCHING DETAIL AT WORK ROOM
NO SCALE

- NOTES:
- 1 PROVIDE LUTRON NOVA SWITCHES. (S) & DIMMER (D) - 1600 WATT. PROVIDE DIMMERS SUITABLE FOR ALL FIXTURES WITH DIMMING BALLAST.

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

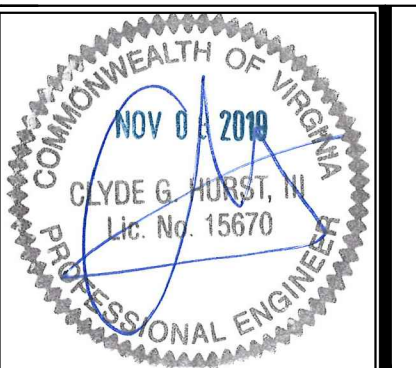
SHEET NOTES	
1	PADDLE FAN SPEED CONTROLLER. COORDINATE NUMBER OF FEEDERS WITH FAN MANUFACTURERS.
2	PADDLE FAN PROVIDE WITH JUNCTION BOX SUITABLE FOR FAN CEILING USE.
3	TO WALL MOUNTED DIMMERS. SEE LAYOUT THIS DRAWING.
4	EXTERIOR EGRESS LIGHT WITH EMERGENCY BATTERY AND PHOTOCELL.
5	NL FIXTURE - MOUNT UP IN STRUCTURE.

DATE	DESCRIPTION	CHECKED BY:	APPROVED BY:
10/23/19	PERMIT SUBMISSION	COH III	COH III
10/10/18	95% PROGRESS SET	COH III	COH III
		REL	REL

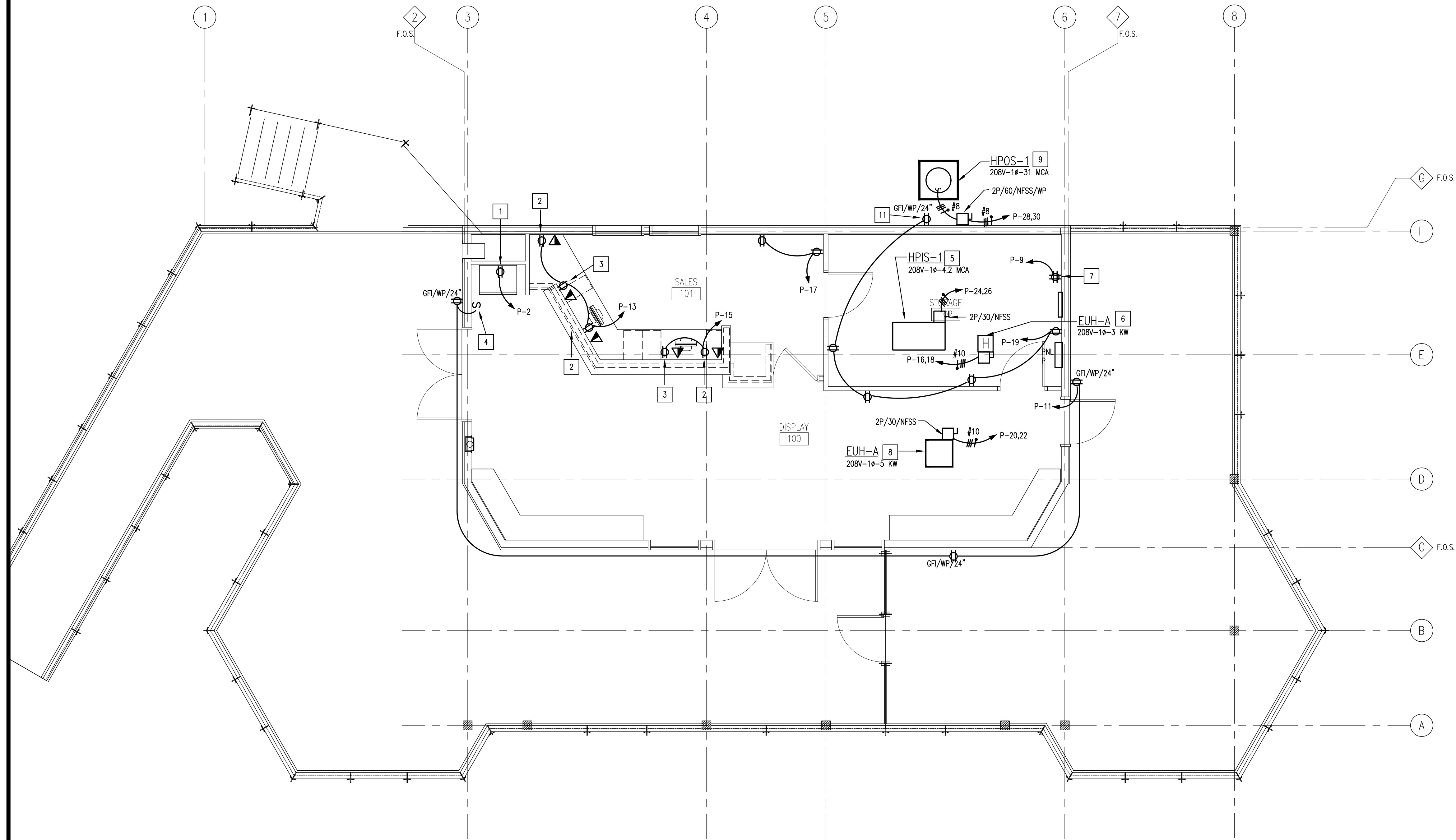
SCALE: AS SHOWN
PROJECT NUMBER: 18105.00
OBSTACLE COURSE SALES CENTER
UPTON HILL REGIONAL PARK, 6060 WILSON BOULEVARD, ARLINGTON, VA
FIRST FLOOR PLAN
LIGHTING

HURST ENGINEERS
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E3.1



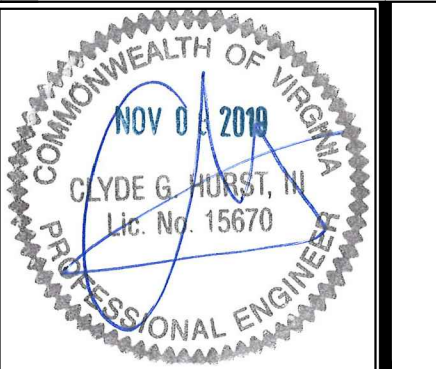
FIRST FLOOR PLAN – POWER
SCALE: 1/4"=1'-0"

SHEET NOTES	
1	VENDING MACHINE ON GFI C/B.
2	POS POWER AND DATA AT COUNTER TOP COORDINATE WITH ARCHITECTURAL DRAWINGS.
3	POWER AND DATA BELOW COUNTER.
4	RECEPTACLE SHUT OFF SWITCH.
5	SPLIT SYSTEM HEAT PUMP INDOOR SECTION.
6	ELECTRIC UNIT HEATER CEILING HUNG.
7	TELECOM RECEPTACLE
8	ELECTRIC CEILING HEATER UP IN STRUCTURE.
9	SPLIT SYSTEM HEAT PUMP OUTDOOR UNIT.
10	WALL MOUNTED ELECTRIC UNIT HEATER.
11	SERVICE RECEPTACLE.

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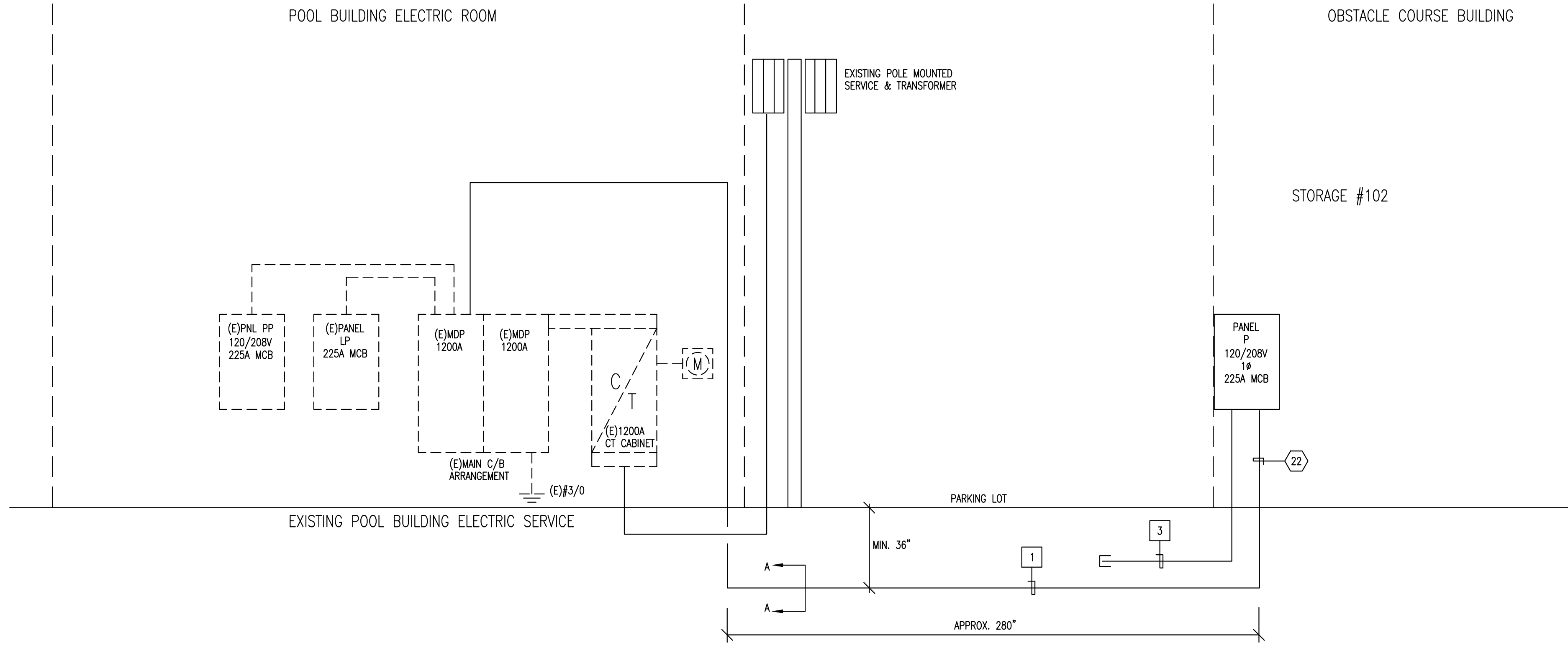


DATE	DESCRIPTION	CHECKED BY:	APPROVED BY:
10/23/19	PERMIT SUBMISSION	COH III	COH III
10/10/18	95% PROGRESS SET	COH III	COH III
		DESIGNED BY: REL	DRAWN BY: REL

OBSTACLE COURSE SALES CENTER
UPTON HILL REGIONAL PARK, 6060 WILSON
BOULEVARD, ARLINGTON, VA
PROJECT NUMBER: 18105.00
SCALE: AS SHOWN
FIRST FLOOR PLAN
POWER

E4.1

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POWER RISER DIAGRAM - ELECTRICAL

NO SCALE

RISER NOTES	
1	(2)WAY CONCRETE DUCTBANK - SEE DETAIL.
2	NEW OBSTACLE COURSE BUILDING ELECTRIC PANEL.
3	(2)4" C. WITH PULLSTRING CAPPED FOR FUTURE BATTERY CAGE.

LEGEND OF FEEDER SIZES-COPPER CONDUCTORS					
FEEDER SYMBOL	CONDUCTORS (3 PHASE, 3 WIRE) WITH GROUND	RACEWAY SIZE	CONDUCTORS (3 PHASE, 4 WIRE) WITH GROUND	RACEWAY SIZE	NOMINAL AMPERE RATING
1	3#6 & 1#10 GND.	1"			60
2			4# 6 & 1#10 GND.	1"	
3	3#4 & 1#8 GND.	1"			70
4			4# 4 & 1#8 GND.	1 1/4"	
5	3# 1 & 1#6 GND.	1 1/4"			100
6			4# 2 & 1#6 GND.	1 1/2"	
7	3# 1 & 1#6 GND.	1 1/2"			125
8			4# 1 & 1#6 GND.	1 1/2"	
9	3# 1/0 & 1#6 GND.	1 1/2"			150
10			4# 1/0 & 1#6 GND.	2"	
11	3# 2/0 & 1#6 GND.	2"			175
12			4# 2/0 & 1#6 GND.	2"	
13	3# 3/0 & 1#6 GND.	2"			200
14			4# 3/0 & 1#6 GND.	2"	
15	3# 4/0 & 1#4 GND.	2"			225
16			4# 4/0 & 1#4 GND.	2 1/2"	
17	3-250 KCMIL & 1#4 GND.	2 1/2"			250
18			4-250 KCMIL & 1#4 GND.	3"	
19	3-350 KCMIL & 1#4 GND.	3"			300
20			4-350 KCMIL & 1#4 GND.	3"	
21	3-500 KCMIL & 1#3 GND.	3"			350
22			4-600 KCMIL & 1#3 GND.	4"	
23	3-600 KCMIL & 1#3 GND.	3"			400
24			4-600 KCMIL & 1#3 GND.	4"	
25	6-250 KCMIL & 2#2 GND.	2-2 1/2"			500
26			8-250 KCMIL & 2#2 GND.	2-3"	
27	6-350 KCMIL & 2#1 GND.	2-3"			600
28			8-350 KCMIL & 2#1 GND.	2-3"	
29	6-600 KCMIL & 2#1/0 GND.	2-4"			800
30			8-600 KCMIL & 2#1/0 GND.	2-4"	
31	9-400 KCMIL & 3#2/0 GND.	3-3"			1000
32			12-400 KCMIL & 3#2/0 GND.	3-3"	
33	9-600 KCMIL & 3#3/0 GND.	3-4"			1200
34			12-600 KCMIL & 3#3/0 GND.	3-4"	
35	12-600 KCMIL & 4#4/0 GND.	4-4"			1600
36			16-600 KCMIL & 4#4/0 GND.	4-4"	
37	15-600 KCMIL & 5-250 KCMIL GND.	5-4"			2000
38			20-600 KCMIL & 5-250 KCMIL GND.	5-4"	
39	18-600 KCMIL & 6-350 KCMIL GND.	6-4"			2500
40			24-600 KCMIL & 6-350 KCMIL GND.	6-4"	
41	24-600 KCMIL & 8-400 KCMIL GND.	8-4"			3000
42			32-500 KCMIL & 8-400 KCMIL GND.	8-4"	
43	24-600 KCMIL & 8-500 KCMIL GND.	8-4"			3200
44			32-600 KCMIL & 8-500 KCMIL GND.	8-4"	
45	27-600 KCMIL & 9-500 KCMIL GND.	9-4"			3500
46			36-600 KCMIL & 9-500 KCMIL GND.	9-4"	
47	30-600 KCMIL & 10-500 KCMIL GND.	10-4"			4000
48			40-600 KCMIL & 10-500 KCMIL GND.	10-4"	
A	REFER TO TRANSFORMER FEEDER SCHEDULE PRIMARY SIDE INFORMATION				
B	REFER TO TRANSFORMER FEEDER SCHEDULE SECONDARY SIDE INFORMATION				
C	REFER TO TRANSFORMER FEEDER SCHEDULE GROUNDING INFORMATION				

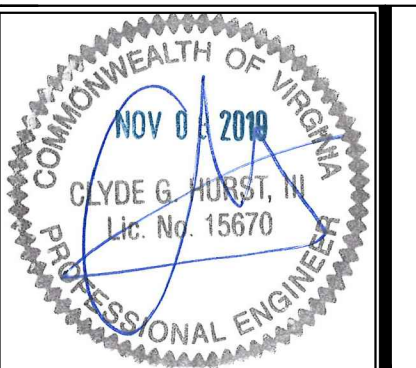
MECHANICAL/ELECTRICAL COORDINATION REQUIREMENTS

MECHANICAL CONTRACTOR WITHIN 20 CALENDAR DAYS OF RECEIPT OF CONTRACT TO PROVIDE TO THE ELECTRICAL CONTRACTOR A COMPLETE SET OF MECHANICAL EQUIPMENT SHOP DRAWINGS FOR ALL MECHANICAL EQUIPMENT REQUIRING ELECTRICAL CONNECTIONS OR POWER. SHOP DRAWINGS SHALL SHOW ALL REQUIRED ELECTRICAL CONNECTIONS, MINIMUM CIRCUIT AMPS, WIRE SIZES, OVER CURRENT PROTECTION, CONNECTION TYPES AND ANY OTHER INFORMATION REQUIRED FOR THE PROPER EQUIPMENT INSTALLATION AND OPERATION.

MECHANICAL AND ELECTRICAL CONTRACTORS SHALL COORDINATE THIS INFORMATION AND PREPARE A CONNECTION SCHEDULE FOR SUBMISSION AND REVIEW BY ENGINEER BEFORE PROCEEDING WITH WORK.

HURST ENGINEERS
308 HILLWOOD AVE.
FALLS CHURCH, VA. 22046
(703) 534-7872

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OBSTACLE COURSE SALES CENTER
UPTON HILL REGIONAL PARK, 6060 WILSON BOULEVARD, ARLINGTON, VA
PROJECT NUMBER: 18105.00
SCALE: AS SHOWN
POWER RISER DIAGRAM
ELECTRICAL

DATE	DESCRIPTION	CHECKED BY:	APPROVED BY:
10/23/19	PERMIT SUBMISSION	COH III	COH III
10/10/18	95% PROGRESS SET	COH III	COH III
		REL	

Panelboard Schedule										Type and Size Specifications														
POOL BLDG. (E) MDP Panel					Location ELECTRIC RM-POOL BLDG.					Voltage 120/208					Surface Mount Existing					3 Phase - 4 Wire - Copper Bussing				
1897_(E)MDP.xls					Feed from DVP C/T					Main Size 1200 Amp					Main Circuit Breaker Feeder See Riser					AIC 65K				
Load Name	Poles	Trips	Item Load in VA				Phase Loads			Phase Loads			Item Load in VA				Poles	Trips	Load Name					
(E) WATER HEATER (36 KW)	3	125	Rec	Light	Mech	Misc	A	B	C	A	B	C	Rec	Light	Mech	Misc	2	3	100	SLIDE TURBINE 20 HP (E)				
(E) PANEL P	3	200					0	0	0	0	0	0					4							
(E) PANEL LP	3	200					0	0	0	0	0	0					8	3	70	SPARY PAD TURBINE 15 HP (E)				
(2) SPARE	3	100					0	0	0	0	0	0					14	3	60	SPRAY PAD FILTER PUMP 10 HP (E)				
(1) OBSTACLE COURSE BUILDING	3	225					0	0	0	0	0	0					20	3	50	POOL ACTIVITY PUMP 7.5 HP (E)				
(E) MINI GOLF	3	400					0	0	0	0	0	0					26	3	50	BUCKET PUMP 5 HP (E)				
(E) CONCESSION PANEL	2	60					0	0	0	0	0	0					30							
SPACE ONLY W/ PROVS.	1						0	0	0	0	0	0					32	3	60	LAP POOL PUMP 10 HP (E)				
SPACE ONLY W/ PROVS.	1						0	0	0	0	0	0					34							
SPACE ONLY W/ PROVS.	1						0	0	0	0	0	0					36							
SPACE ONLY W/ PROVS.	1						0	0	0	0	0	0					38	3	60	POOL PUMP 10 HP (E)				
SPACE ONLY W/ PROVS.	1						0	0	0	0	0	0					40							
SPACE ONLY W/ PROVS.	1						0	0	0	0	0	0					42	2	100	SHOP POWER (E)				
SPACE ONLY W/ PROVS.	1						0	0	0	0	0	0					44	2	100	SHOP POWER (E)				
SPACE ONLY W/ PROVS.	1						0	0	0	0	0	0					46							
SPACE ONLY W/ PROVS.	1						0	0	0	0	0	0					48	1		SPACE ONLY W/ PROVS.				
SPACE ONLY W/ PROVS.	1						0	0	0	0	0	0					50	1		SPACE ONLY W/ PROVS.				
SPACE ONLY W/ PROVS.	1						0	0	0	0	0	0					52	1		SPACE ONLY W/ PROVS.				
SPACE ONLY W/ PROVS.	1						0	0	0	0	0	0					54	1		SPACE ONLY W/ PROVS.				
Totals																								

Demand Load Calculations

Lighting Load 0 0 calc at 125%

Receptacle Load 0 0 10 KVA @ 100%

0 remaining bal @50%

Mechanical Load 0 0 calc at 100%

Misc Circuit Load 0 0 calc at 100%

Misc 2 0 calc at 100%

Misc 3 0 calc at 100%

0 Total Demand Load

Phase Totals - KVA

A 0.00

B 0.00

C 0.00

Total 0.00

Panel Size Calculations

Total Demand Load 0

Factored Voltage 360

Total Demand Amps 0.0

Highest Phase Amps 0.0

Connected Load Amps 0.0

Spare Capacity % 0%

Panel Amps 0 Amps required to be at 80% capacity of Demand per NEC

General Notes (1) EXISTING SPARE 100A C/B TO BE REMOVED REPLACED WITH NEW 225AMP C/B FIELD CONFIRM FRAME CAPACITY.
(2) EXISTING C/B TO BE REMOVED & RELOCATED TO PANEL & SERVICE

Panelboard Schedule										Type and Size Specifications														
ISTACLE COURSE BLDG. 'P' Panel					Location STORAGE #102					Voltage 120/208					Surface Mount New					1 Phase - 3 Wire - Copper Bussing				
1897_P.xls					Feed from MDP - POOL BUILDING					Main Size 225 Amp					Main Circuit Breaker Feeder See Riser					AIC 44K				
Load Name	Poles	Trips	Item Load in VA				Phase Loads			Phase Loads			Item Load in VA				Poles	Trips	Load Name					
(1) EMERGENCY/NL LIGHTS	1	20	Rec	Light	Mech	Misc	A	B	C	A	B	C	Rec	Light	Mech	Misc	2	1	20	VENDING MACHINE (1) (2)				
STORE ROOMLIGHTS	1	20					360			360								4	1	20	SPARE			
SALES LIGHTS	1	20					90			90								6	1	20	SPARE			
(1) EXTERIOR EGRESS LTS	1	20					1120			1120								8	1	20	SPARE			
TELECOM RECEIPT	1	20					120			120								10	1	20	SPARE			
EXTERIOR RECEIPT	1	20					540			540								12	2	30	SPARE			
SALES RECEIPT	1	20					540			540								14						
SALES RECEIPT	1	20					540			540								16	2	20	ECH-A			
SALES RECEIPT	1	20					540			540								18			(208V-1PH-3 KW)			
STORAGE RECEIPT	1	20					900			900								20	2	30	EUH-A			
PADDLE FANS INTERIOR	1	20					1000			1000								22			(208V-1PH-5 KW)			
PADDLE FANS EXTERIOR	1	20					1000			1000								24	2	15	HPIS-1			
SPARE	1	20					0			0								26			(208V-1PH-4.2 MCA)			
SPARE	1	20					0			0								28	2	40	HPIS-1			
SPARE	1	20					0			0								30			(208V-1PH-31 MCA)			
SPARE	1	20					0			0								32	1	20	SPARE			
SPARE	1	20					0			0								34	1	20	SPARE			
SPARE	1	20					0			0								36	1	20	SPARE			
SPARE	1	20					0			0								38	1	20	SPARE			
FUTURE BATTERY CAGE	3	100					0			0								40	1	20	SPARE			
							0			0								42	1	20	SPARE			
							0			0								44	2	100	SHOP POWER (E)			
Totals			3060	1690			2800			4360	3190		8400	9800			16800	1400						

Demand Load Calculations

Lighting Load 1,690 2,113 calc at 125%

Receptacle Load 3,060 3,060 10 KVA @ 100%

0 remaining bal @50%

Mechanical Load 16,800 16,800 calc at 100%

Misc Circuit Load 4,200 4,200 calc at 100%

Misc 2 0 calc at 125%

Misc 3 0 calc at 100%

26,173 Total Demand Load

Phase Totals - KVA

A 12.76

B 12.99

Total 25.75

Panel Size Calculations

Total Demand Load 26,173

Factored Voltage 208

Total Demand Amps 125.8

Highest Phase Amps 108.3

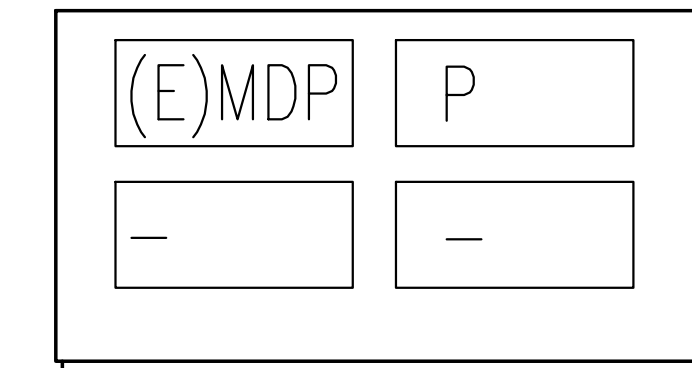
Connected Load Amps 123.8

Spare Capacity % 0%

Panel Amps 157 Amps required to be at 80% capacity of Demand per NEC

General Notes (1) PROVIDE C/B LOCK (2) GFI C/B

DEMAND USAGE PER NEC 220.87		
MONTH	DEMAND (KW)	AMPS
1	12	32
2	12	34
3	28	78
4	37	102
5	67	186
6	116	322
7	119	331
8	114	316
9	111	308
10	34	94
11	11	31
12	11	31
MAXIMUM 12 MONTH DEMAND	119 KW	
PER NEC 119 KW X 1.25	= 149 KW (413 A)	
NEW LOAD	25.9 KW = (72 A)	
TOTAL DEMAND LOAD	175 KW (486 A)	



MECHANICAL/ELECTRICAL COORDINATION REQUIREMENTS

MECHANICAL CONTRACTOR WITHIN 20 CALENDAR DAYS OF RECEIPT OF CONTRACT TO PROVIDE TO THE ELECTRICAL CONTRACTOR A COMPLETE SET OF MECHANICAL EQUIPMENT SHOP DRAWINGS FOR ALL MECHANICAL EQUIPMENT REQUIRING ELECTRICAL CONNECTIONS OR POWER. SHOP DRAWINGS SHALL SHOW ALL REQUIRED ELECTRICAL CONNECTIONS, MINIMUM CIRCUIT AMPS, WIRE SIZES, OVER CURRENT PROTECTION, CONNECTION TYPES AND ANY OTHER INFORMATION REQUIRED FOR THE PROPER EQUIPMENT INSTALLATION AND OPERATION.

MECHANICAL AND ELECTRICAL CONTRACTORS SHALL COORDINATE THIS INFORMATION AND PREPARE A CONNECTION SCHEDULE FOR SUBMISSION AND REVIEW BY ENGINEER BEFORE PROCEEDING WITH WORK.

HURST ENGINEERS

308 HILLWOOD AVE.
FALLS CHURCH, VA. 22046
(703) 534-7872

NOTE:
THE CONSTRUCTION OF THIS PROJECT REQUIRES THE CONTRACTOR TO COORDINATE WORK SHOWN ON THIS DRAWING WITH THAT OF ALL OTHER TRADES. IN ADDITION, ALL PIPING, CONDUITS, DUCTWORK, ETC., ARE TO BE INSTALLED WITHIN THE JOISTS / GIRDERS AND TO MAINTAIN THE MINIMUM REQUIRED CLEARANCES, U.O.N. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING THE ARCHITECT W/ COORDINATION DRAWING DEVELOPED BY SUB CONTRACTORS & REFLECTING ALL TRADES. CHANGES RESULTING FROM CONFLICTS WITH OTHER TRADES AND WORK, IN THE EVENT OF ANY CONFLICTS THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ARCHITECT IN WRITING FOR CLARIFICATION BEFORE PROCEEDING.

HE Project Number: 18-97

OBSTACLE COURSE SALES CENTER
UPTON HILL REGIONAL PARK, 6060 WILSON
BOULEVARD, ARLINGTON, VA

PROJECT NUMBER: 18105.00

SCALE: AS SHOWN

PANELBOARD SCHEDULES
ELECTRICAL

E7.1