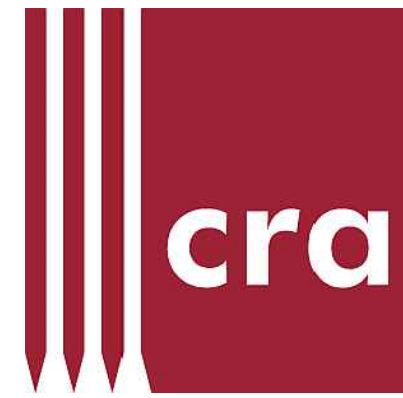


Cedar Ridge High School Outdoor Agricultural Lab

1125 New Grady Brown School Road Orange County Board of Education Hillsborough, North Carolina



100 Europa Drive
Suite 565
Chapel Hill, NC 27517
919.401.8586
www.cra-ae.com

CRA Associates, Inc.

100 Europa Drive, Suite 565, Chapel Hill, NC 27517 (919) 401-8586

Architects and Civil Engineers

Bennett-Pless

1331 Sunday Drive, Suite 121, Raleigh, NC 27607 (919) 832-5587

Structural Engineers

RNM Consulting Engineers, Inc.

94 Main Street, Canton, NC 28716 (828) 492-0677

Electrical Engineers



Bid Set

January 10, 2024

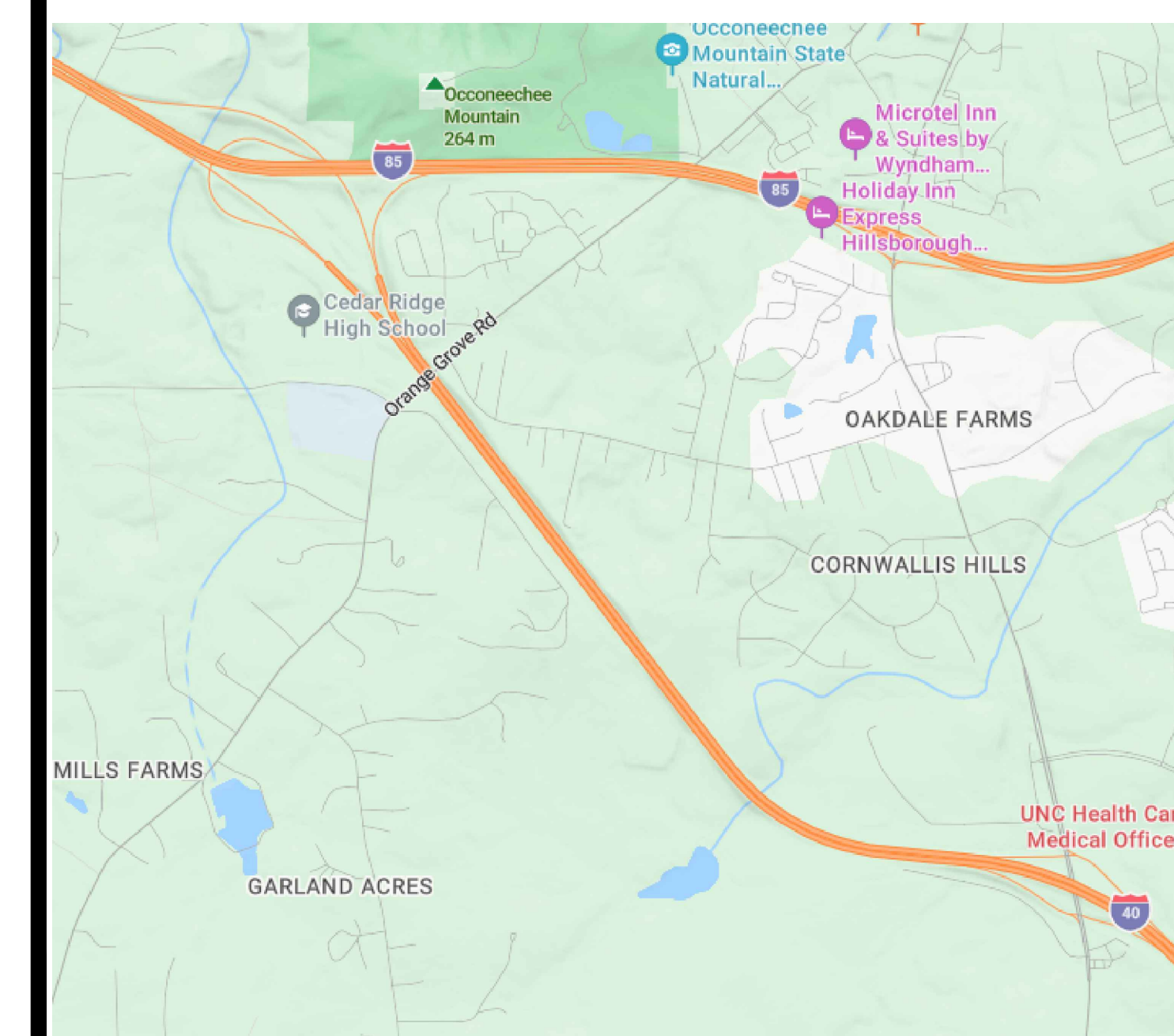
LIST OF DRAWINGS

G000	Cover Sheet	STRUCTURAL
CIVIL		S0.0 General Notes
C1.0	Existing Conditions Plan	S1.0 Foundation and Framing Plan Details
C2.0	Site Plan	ARCHITECTURAL
C2.1	Enlarged Site Plan	A100 Plans & Details
C2.2	Site Details	A200 Building Elevations & Section
C3.0	Grading and Storm Drainage Plan	A300 Wall Sections & Details
		ELECTRICAL
		E0.1 Electrical Symbols, Schedules, Notes, Riser & Plan

SYMBOL LEGEND

	Spot Elevation
	Elevation Target
	Detail Target

LOCATOR MAP



Cedar Ridge High School
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Orange County Schools
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Cover and Code Information Sheet

sheet
G000

project no. 2231

date 1/10/24

2018 APPENDIX B BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS (EXCEPT 1 AND 2-FAMILY DWELLINGS AND TOWNHOUSES)

(Reproduce the following data on the building plans sheet 1 or 2)

Name of Project: Cedar Ridge High School Outdoor Agricultural Lab
Address: 1125 New Grady Brown School Road, Hillsborough, NC Zip Code 27278
Proposed Use: New High School Outdoor Lab
Owner/Authorized Agent: Patrick Florence Phone: (919) 251-1998 E-Mail:patrick.florence@orange.k12.nc.us
Owned By: City/County Private State
Code Enforcement Jurisdiction: City County: Orange State

LEAD DESIGN PROFESSIONAL: Kenneth E. Redfoot, AIA, CRA Associates, Inc.
RESIDENT: [blank] NAME: [blank] LICENSE # [blank] TELEPHONE # [blank] E-MAIL [blank]
Architectural: CRA Associates, Inc. Ken Redfoot, AIA 6565 (919) 401-8586 kredfoot@cra-ae.com
Civil: CRA Associates, Inc. Mike Hummel, PE 13350 (919) 401-8586 mhummel@cra-ae.com
Electrical: RNM Consulting Engineers, Inc. Jason S. Dornin, PE 32221 (828) 492-0677 jsdornin@rnm-engineers.com
Fire Alarm: [blank]
Plumbing: [blank]
Mechanical: [blank]
Fire Protection: LHC Structural Engineers, Inc. Robert Lester, PE 14526 (919) 832-5587 rlester@lhcengineers.com
Retaining Walls - 5' High: [blank]
Other: [blank]

2018 NC BUILDING CODE: New Building
2018 NC EXISTING BUILDING CODE: N/A
CONSTRUCTED: (date) N/A
RENOVATED: (date) N/A
CURRENT OCCUPANCY(S) (Ch. 3):
PROPOSED OCCUPANCY(S) (Ch. 3):
OCCUPANCY CATEGORY (Table 1604.5): Current: N/A Proposed: N/A

BASIC BUILDING DATA
Construction Type: V-B
Sprinklers: No
Standpipes: No
Primary Fire District: No
Special Inspections Required: No
Flood Hazard Area: No

FLOOR	EXISTING (SQ FT)	NEW (SQ FT)	SUB-TOTAL
3 rd Floor			
2 nd Floor			
1 st Floor	2,288		2,288
Basement	N/A		N/A
TOTAL	2,288		2,288

2018 NC Administrative Code and Policies

ALLOWABLE AREA

Primary Occupancy Classification(s): Educational N/A N/A N/A N/A
Accessory Occupancy Classification(s): Assembly A-3
Incidental Uses (Table 509):
Special Uses (Chapter 4 - List Code Sections):
Special Provisions: (Chapter 5 - List Code Sections):
Mixed Occupancy: No Separation: Select one Exception:
Non-Separated Use (508.1)
Actual Area of Occupancy A + Actual Area of Occupancy B
Allowable Area of Occupancy A Allowable Area of Occupancy B ≤ 1

STORY NO.	DESCRIPTION AND USE	(A) BLDG. AREA PER STORY (ACTUAL)	(B) TABLE 506.2 ¹ AREA	(C) AREA FOR FRONTAGE INCREASE ^{1,2}	(D) ALLOWABLE AREA PER STORY OR UNLIMITED ^{2,3}
1	First Floor	2,288	6,000	4,500	10,500

¹ Frontage area increases from Section 506.2 are computed thus:
a. Perimeter which fronts a public way or open space having 20 feet minimum width = 194'-0" (F)
b. Total Building Perimeter = 194'-0" (P)
c. Ratio (F/P) = 1.00 (F/P)
d. W = Minimum width of public way = 30'-0" (W)
e. Percent of frontage increase $I_f = 100(F/P - 0.25) \times W/30 = 75\%$
² Unlimited area applicable under conditions of Section 507.
³ Maximum Building Area = total number of stories in the building x D (maximum 3 stories) (506.2).
⁴ The maximum area of open parking garages must comply with Table 406.5.4. The maximum area of air traffic control towers must comply with Table 412.3.1.
⁵ Frontage increase is based on the unsprinklered area value in Table 506.2.

ALLOWABLE HEIGHT

	ALLOWABLE	SHOWN ON PLANS	CODE REFERENCE
Building Height in Feet (Table 504.3)	40	17'-7 1/4"	
Building Height in Stories (Table 504.4)	1	1	

¹ Provide code reference if the "Shown on Plans" quantity is not based on Table 504.3 or 504.4.

2018 NC Administrative Code and Policies

FIRE PROTECTION REQUIREMENTS

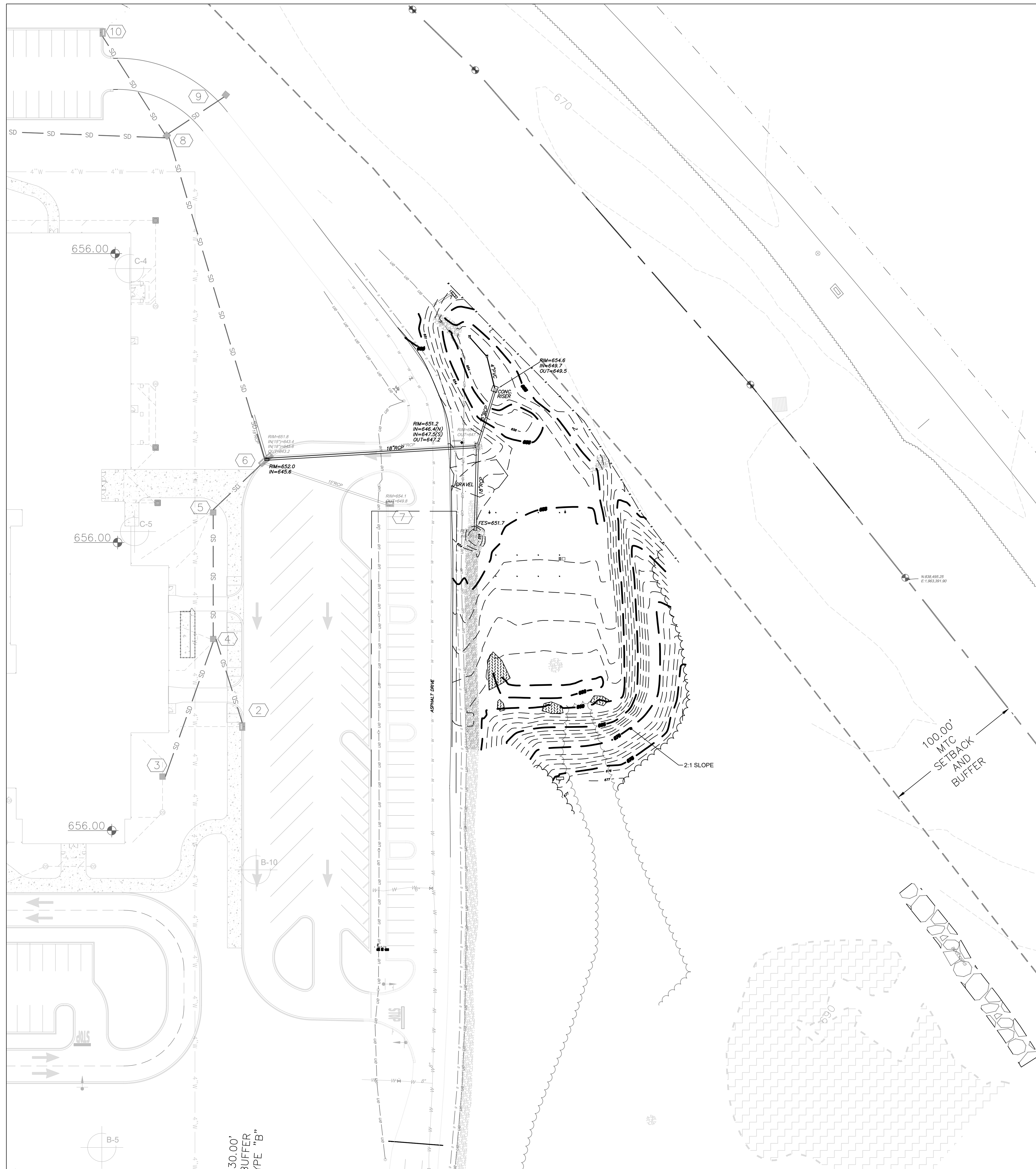
BUILDING ELEMENT	FIRE SEPARATION DISTANCE (FEET)	REQ'D	RATING PROVIDED (W/REDUCTION)	DETAIL # AND SHEET #	DESIGN # FOR RATED ASSEMBLY	SHEET # FOR RATED PENETRATION	SHEET # FOR RATED JOINTS
Structural Frame, including columns, girders, trusses		0					
Bearing Walls							
Exterior							
North		N/A					
East		N/A					
West		N/A					
South		N/A					
Interior		0					
Nonbearing Walls and Partitions		0					
Exterior walls							
North		N/A					
East		N/A					
West		N/A					
South		N/A					
Interior walls and partitions		N/A					
Floor Construction		0					
Including supporting beams and joists							
Floor Ceiling Assembly		0					
Columns Supporting Floors		0					
Roof Construction, including supporting beams and joists		0					
Roof Ceiling Assembly		0					
Columns Supporting Roof		0					
Shaft Enclosures - Exit		N/A					
Shaft Enclosures - Other		N/A					
Corridor Separation		N/A					
Exit Enclosure Fire Barrier Separation		N/A					
Party-Fire Wall Separation		N/A					
Smoke Barrier Separation		N/A					
Smoke Partition		N/A					
Transit/Dwelling Unit/Sleeping Unit Separation		N/A					
Incidental Use Separation		N/A					

* Indicate section number permitting reduction

LIFE SAFETY SYSTEM REQUIREMENTS

Emergency Lighting:	Yes
Exit Signs:	No
Fire Alarm:	No
Smoke Detection Systems:	No
Carbon Monoxide Detection:	No

2018 NC Administrative Code and Policies

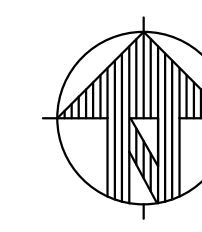


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EXISTING CONDITIONS LEGEND

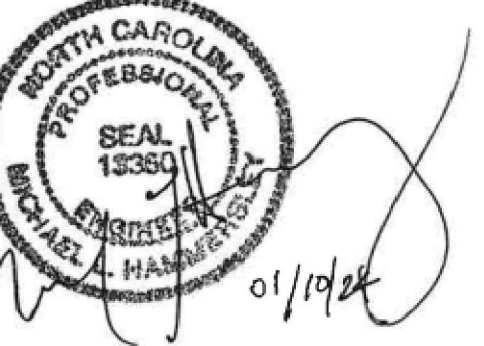
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- BOLLARD
- CURB INLET
- CATCH BASIN
- ⊗ FIRE HYDRANT
- ⊗ LIGHT POLE
- ⊗ WATER VALVE
- ⊗ SIGN
- ⊗ HANDICAP ACCESS
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- ⊗ GAS VALVE
- ⊗ BOLLARD (SQ.)
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SCALE: 1" = 30'-0"
 30 15 0 30 60



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no.	revisions

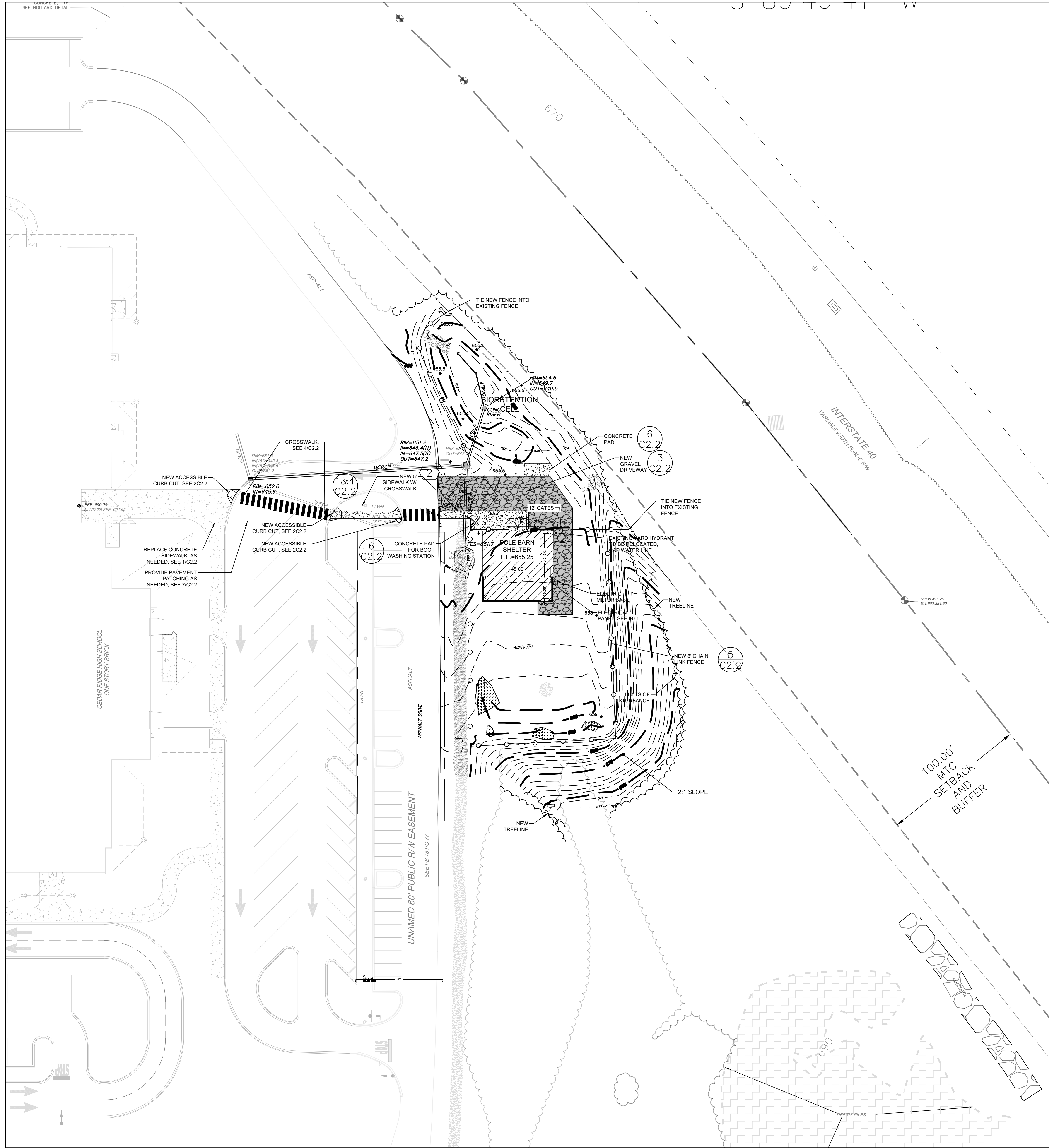
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C1.0
 sheet
**EXISTING
 CONDITIONS**

project no. 2231

date 1/10/24



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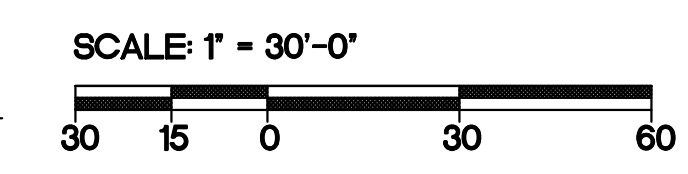
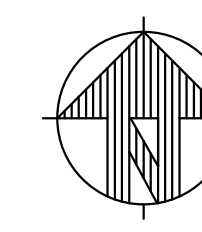
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SITE LEGEND

- CONCRETE SIDEWALK
- PROPOSED PARKING
- PROPOSED BUILDING
- PROPOSED GRAVEL
- PROPOSED FENCE
- PROPOSED TREELINE
- LIMITS OF DISTURBANCE

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C2.0
sheet
SITE PLAN

project no. 2231

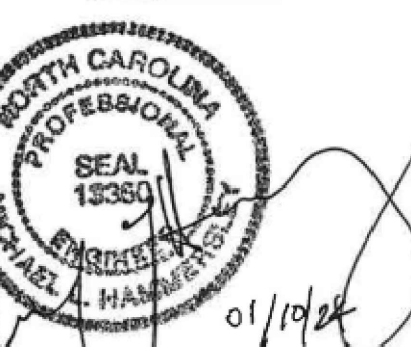
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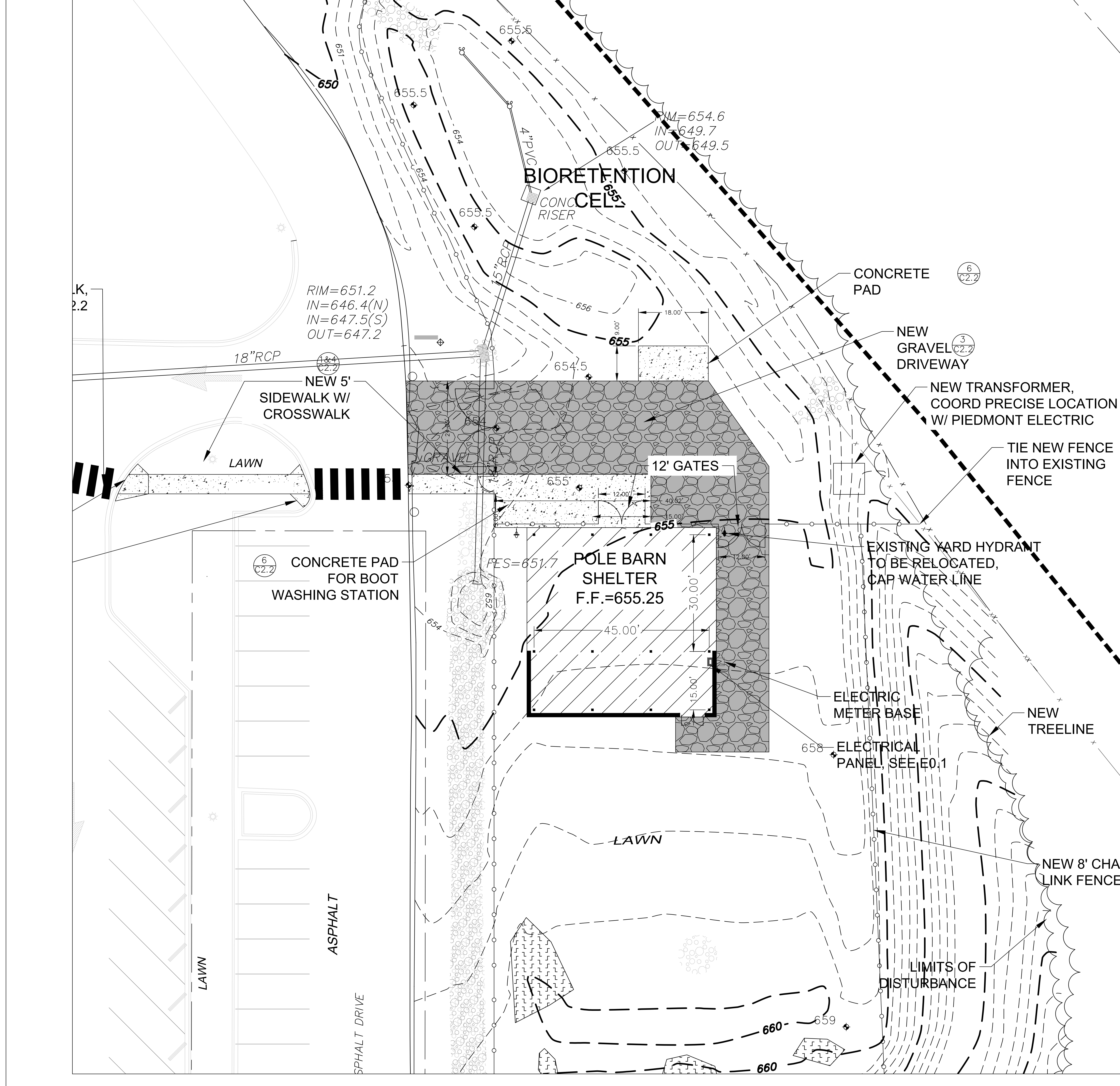
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sheet
ENLARGED SITE
PLAN

project no. 2231

date 1/10/24

Bid Set

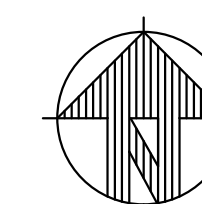


SITE LEGEND

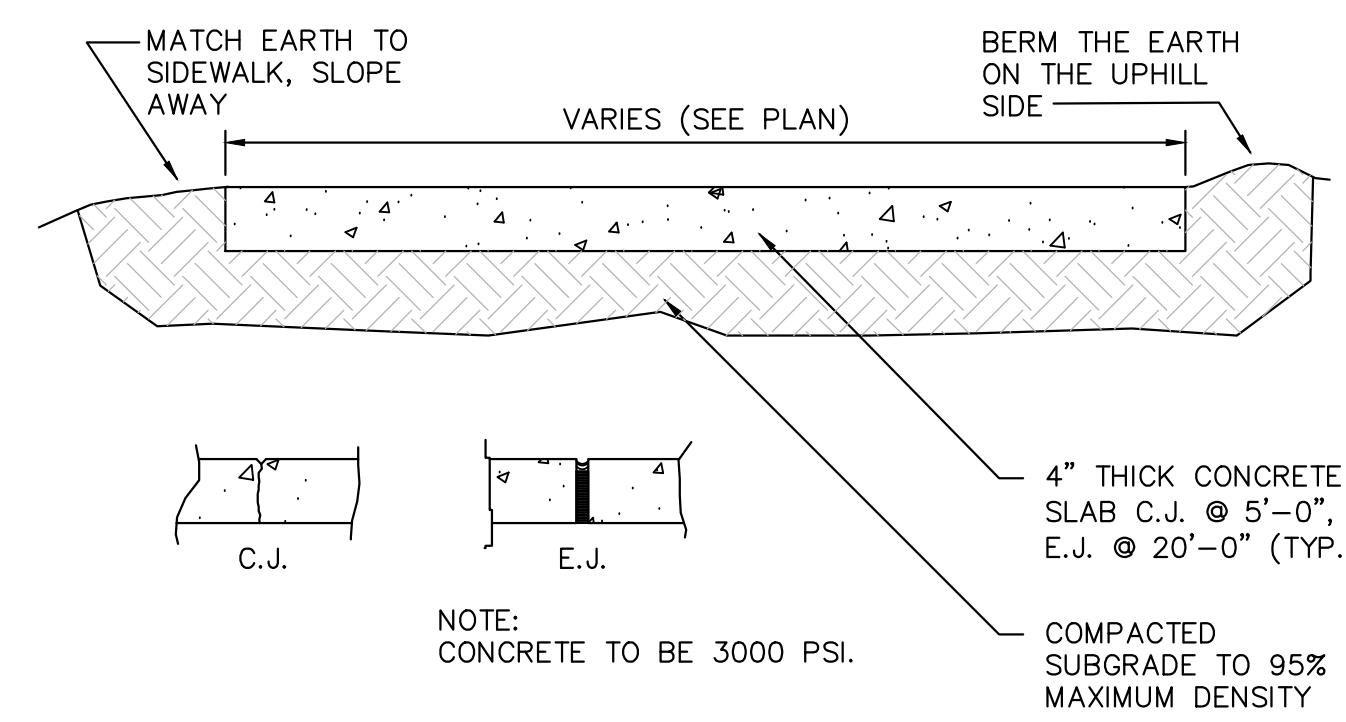
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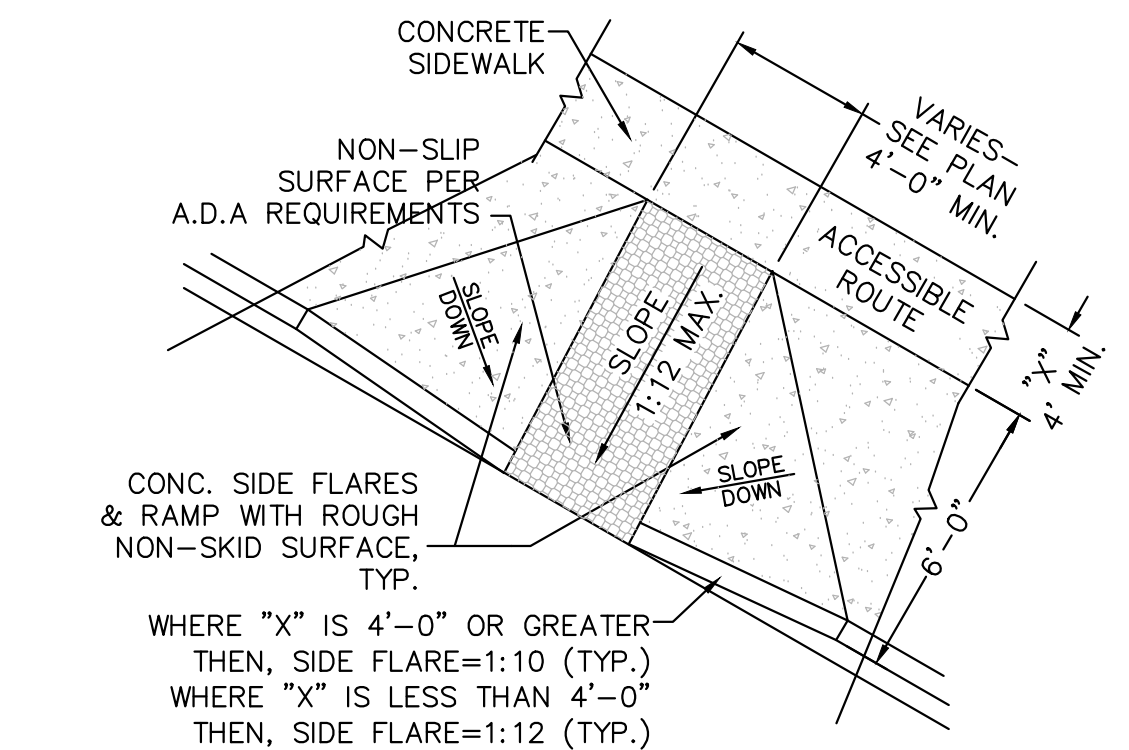
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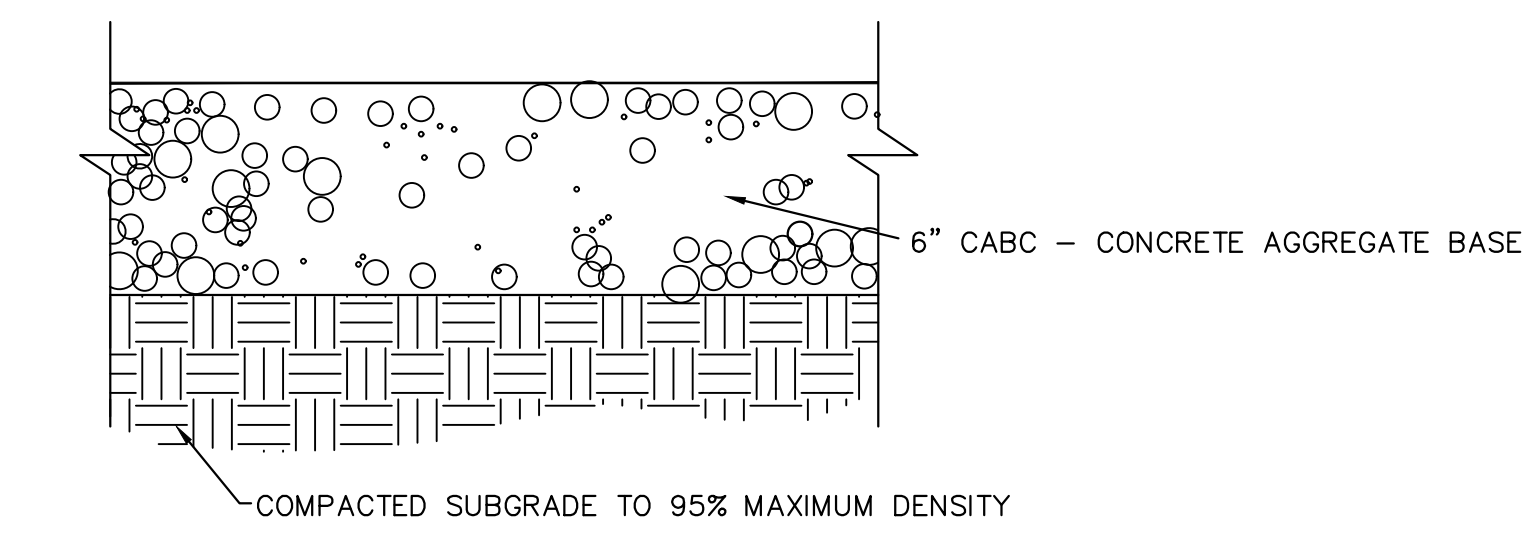
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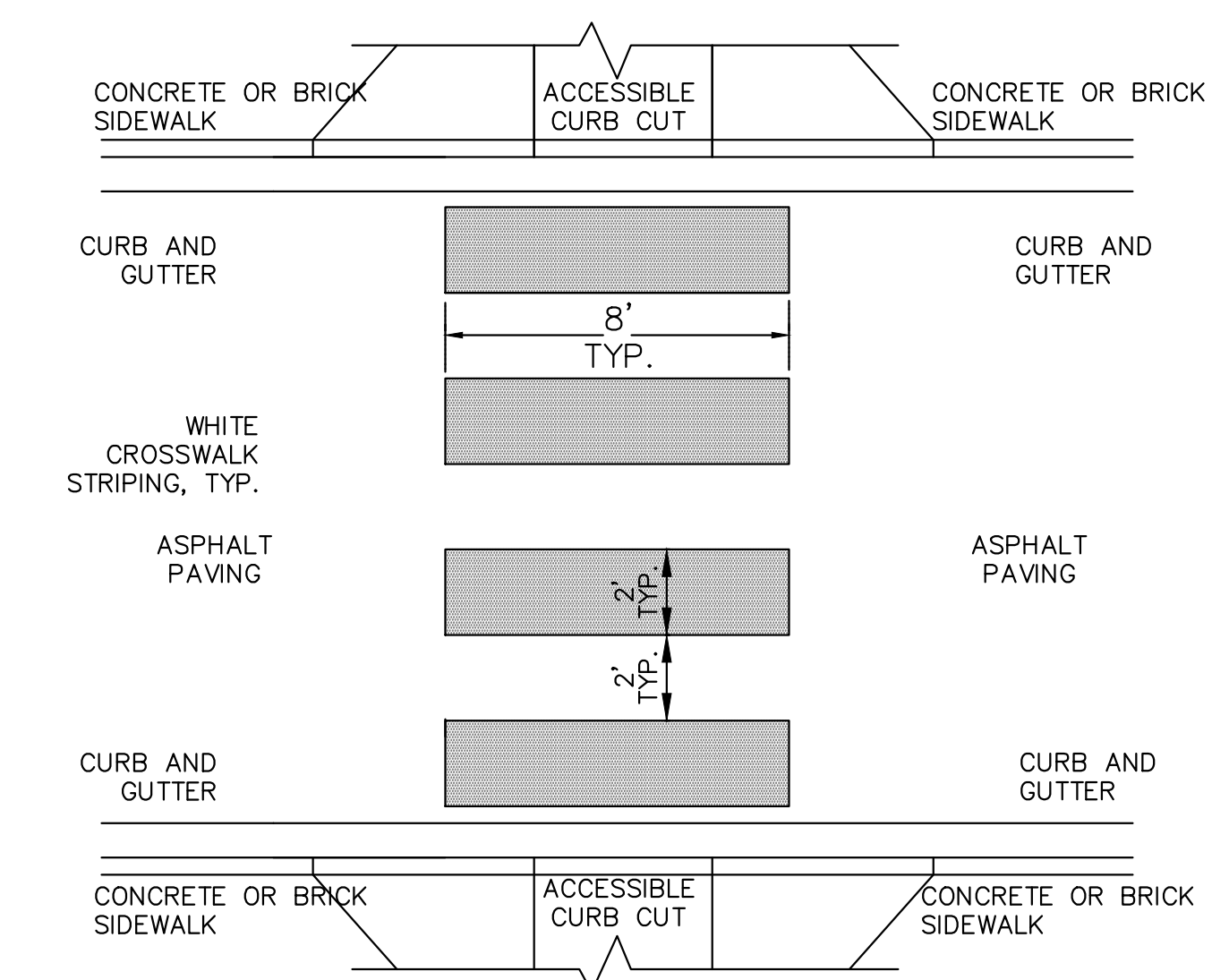
1 CONCRETE SIDEWALK
C2.2 SCALE: N.T.S. 0000/DW-02/02505A02.DWG



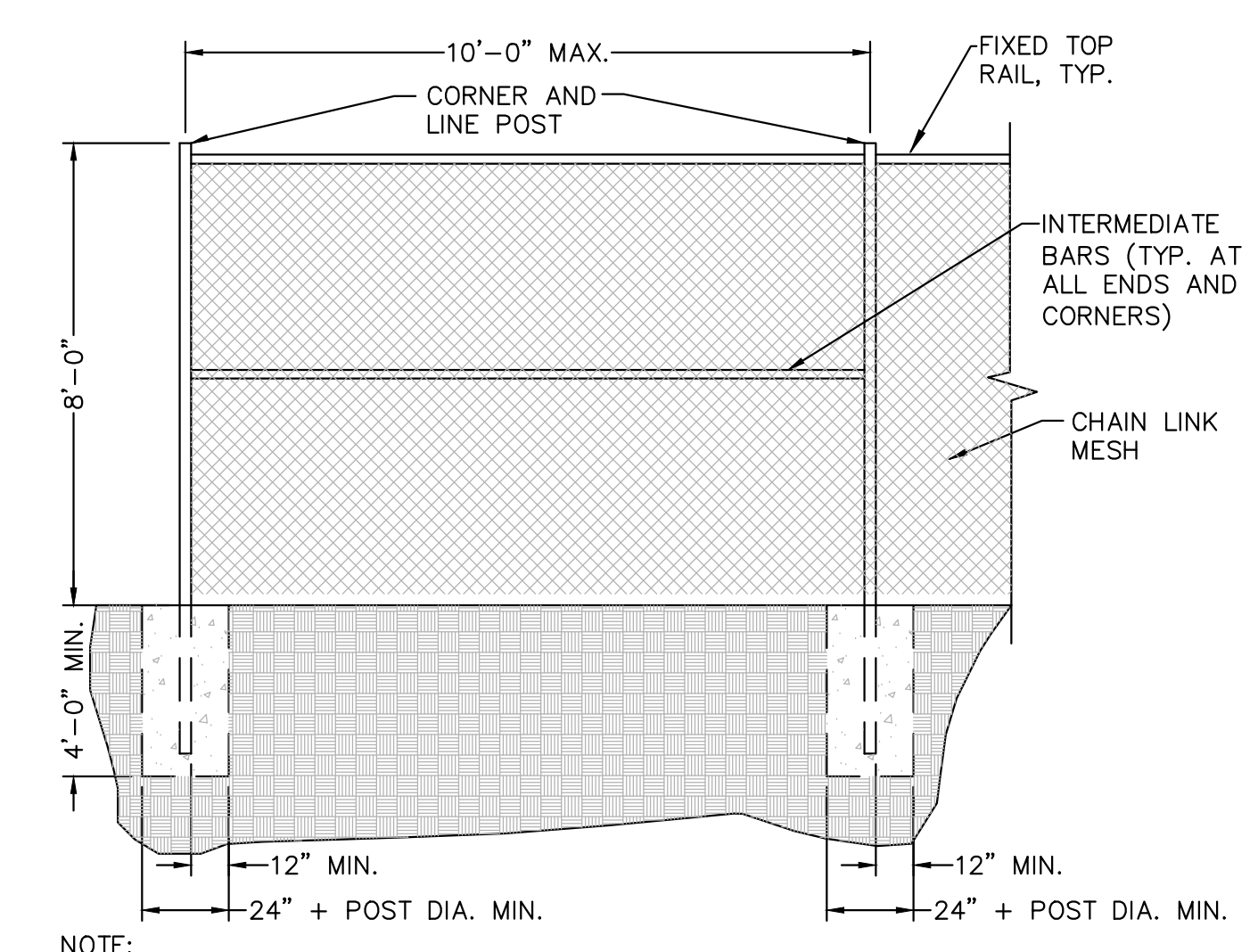
2 TYPICAL ACCESSIBLE CURB CUT
C2.2 SCALE: N.T.S. 0000/DW-02/02500A09.DWG



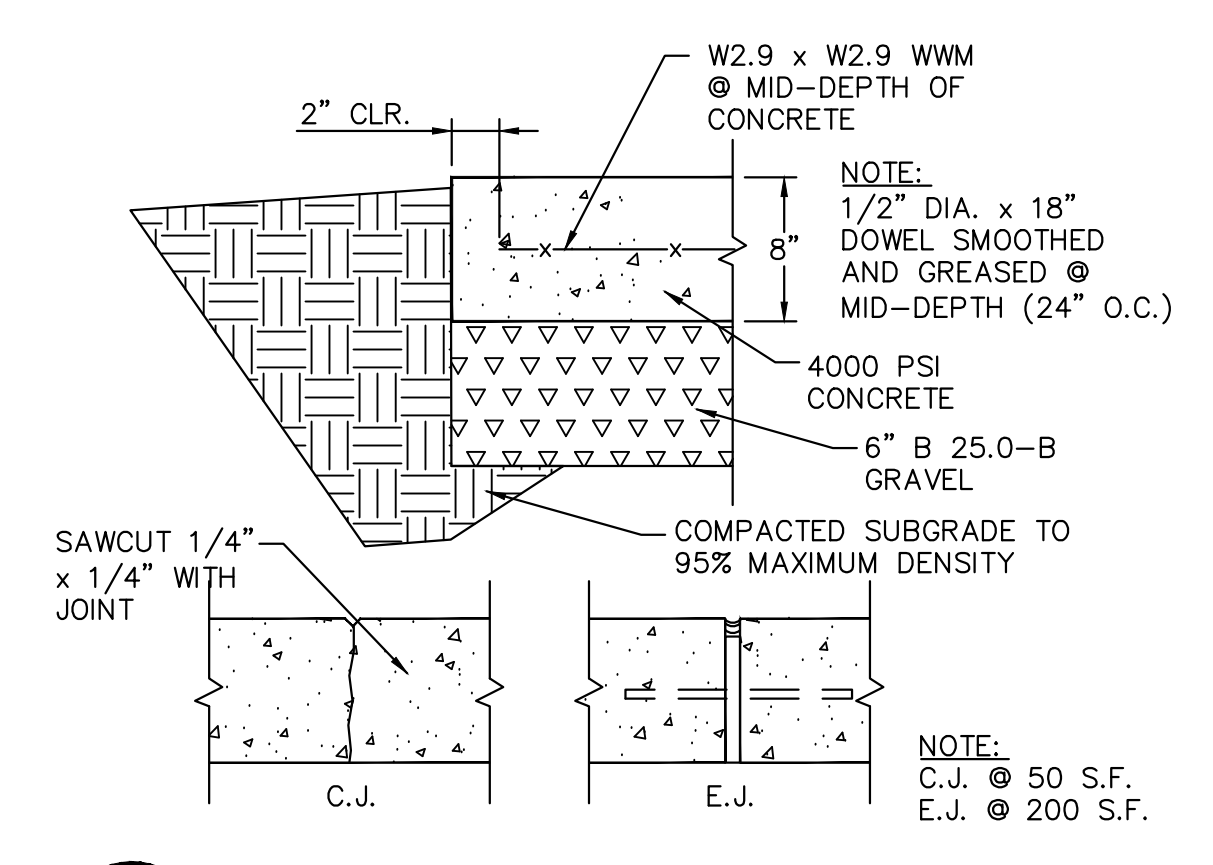
3 GRAVEL PARKING
C2.2 SCALE: N.T.S. 0000/DW-02/02500A09.DWG



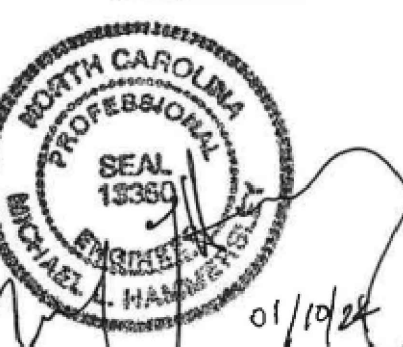
4 CROSSWALK STRIPING DETAIL
C2.2 SCALE: N.T.S. 0000/DW-02/02505A08.DWG



5 8' HIGH CHAIN LINK FENCE
C2.2 SCALE: N.T.S. 0000/DW-02/02830A16.DWG



6 CONCRETE PAVING
C2.2 SCALE: N.T.S. 0000/DW-02/02505A08.DWG



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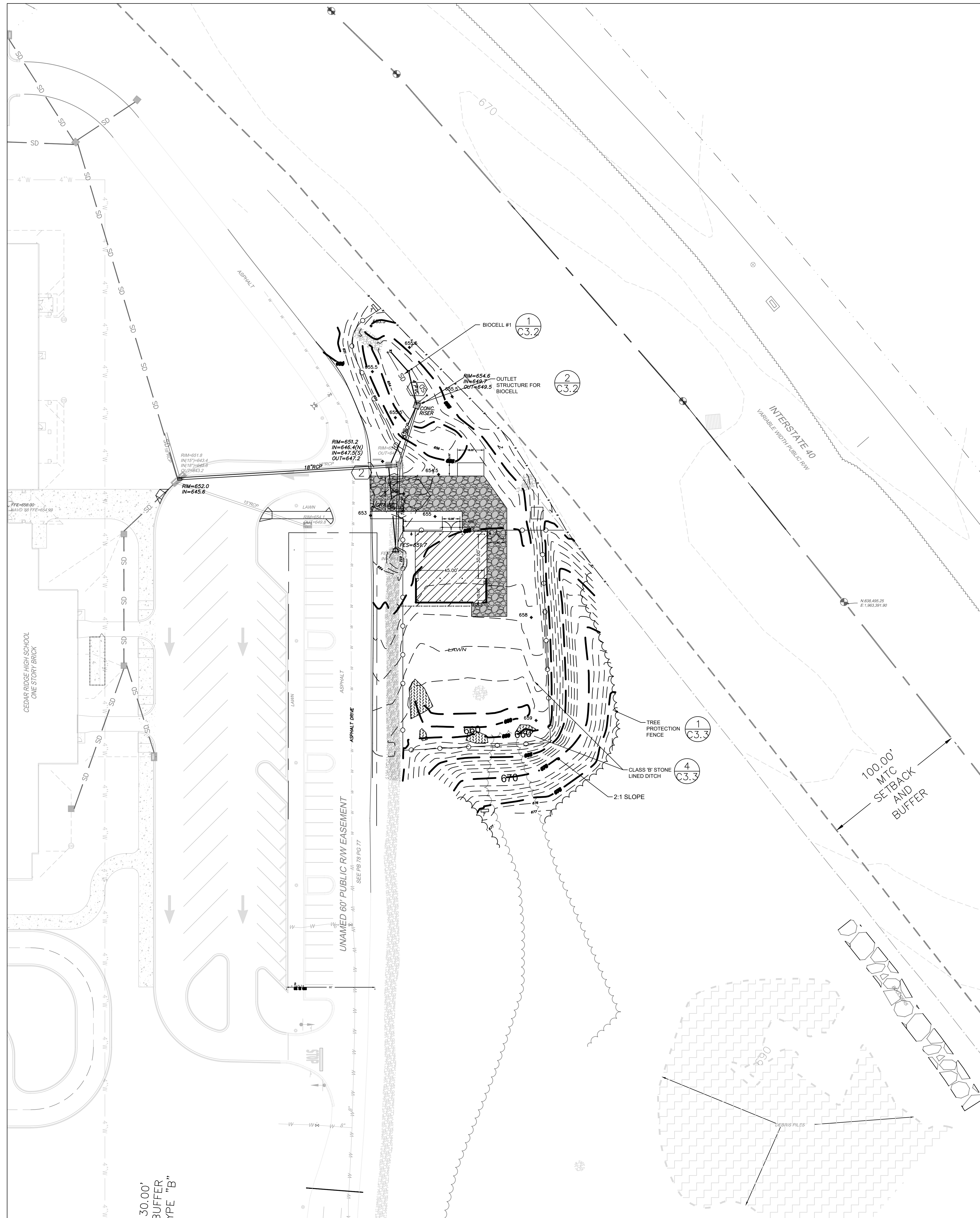
drawn checked

C2.2

sheet
SITE PLAN
DETAILS

project no. 2231

date 1/10/24



- CONSTRUCTION WASTE:**
- BY ORANGE COUNTY ORDINANCE, CLEAN WOOD WASTE, SCRAP METAL, AND CORRUGATED CARDBOARD; ALL PRESENT IN CONSTRUCTION WASTE MUST BE RECYCLED.
 - BY ORANGE COUNTY ORDINANCE, ALL HAULERS OF CONSTRUCTION WASTE MUST BE PROPERLY LICENSED.
 - PRIOR TO ANY DEMOLITION OR CONSTRUCTION ACTIVITY ON SITE THE APPLICANT WILL HOLD A PRE-DEMOLITION/PRE-CONSTRUCTION CONFERENCE WITH THE COUNTY'S SOLID WASTE STAFF. THIS MAY ME THE SAME MEETING HELD WITH OTHER DEVELOPMENT OFFICIALS.
 - THE PRESENCE OF ANY ASBESTOS CONTAINING MATERIAL ('ACM') OR OTHER HAZARDOUS MATERIALS IN CONSTRUCTION AND DEMOLITION WASTE SHALL BE HANDLED IN ACCORDANCE WITH ANY AND ALL LOCAL, STAT, AND FEDERAL REGULATIONS AND GUIDELINES.

- GENERAL NOTES:**
- TOPOGRAPHIC SURVEY INFORMATION PROVIDED BY RILEY SURVEYING, DATED FEBRUARY 6, 2019.
 - PRIOR TO BIDDING ON WORK AT THE SITE, THE CONTRACTOR SHALL VISIT THE SITE TO FIELD VERIFY THE EXISTING CONDITIONS.
 - PRIOR TO START OF WORK CONTRACTOR SHALL MEET WITH OWNER, ARCHITECT, & ENGINEER FOR A PRE-CONSTRUCTION MEETING.
 - NO WORK SHALL TAKE PLACE ON THE SITE UNTIL THE CONTRACTOR HAS CONTACTED NORTH CAROLINA 811 AND THE TOWN OF HILLSBOROUGH TO LOCATE UTILITIES.
 - ANY INTERRUPTION OF UTILITY SERVICE SHALL BE APPROVED AT LEAST 48 HOURS PRIOR TO WORK IN THAT AREA.
 - ANY SIGNIFICANT CHANGES IN ACTUAL SITE CONDITIONS FROM THOSE SHOWN ON THE PLANS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER OF RECORD.
 - ALL EXISTING WALKS, PAVEMENT, CURB, ETC. WHICH ARE DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED TO MATCH EXISTING CONDITIONS.
 - ALL EXISTING FENCING, PAVEMENT, ETC. THAT IS REMOVED BY THE CONTRACTOR SHALL BE DISPOSED OF PROPERLY.
 - PROVIDE POSITIVE DRAINAGE AWAY FROM NEW AND EXISTING BUILDINGS.
 - CONTRACTOR STAGING AREAS SHALL BE RETURNED TO ORIGINAL CONDITION AT THE COMPLETION OF ALL WORK.
 - RESEED ALL DISTURBED AREAS AT COMPLETION OF ALL WORK.
 - ADJUST ALL EXISTING & NEW UTILITIES TO BE FLUSH WITH FINISHED GRADES, TYPICAL.
 - USE PAVEMENT PATCHING DETAIL FOR ALL UTILITY CUTS THROUGH EXISTING ASPHALT.
 - SAWCUT EXISTING ASPHALT ADJACENT TO PAVEMENT PATCHING.
 - NO WATERCOURSE OR 100-YEAR FLOOD PLAIN AS MAPPED BY F.E.M.A. OR AS DEFINED BY ANY FEDERAL, STATE, OR LOCAL AUTHORITY IS LOCATED ON THIS PROPERTY.

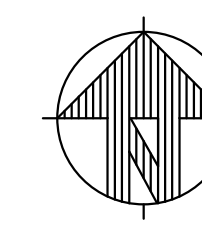
TOTAL DISTURBED AREA: 0.50 ACRES

GRADING LEGEND

- CONCRETE SIDEWALK
- PROPOSED BUILDING
- CONTOUR & LABEL
- SPOT ELEVATION
- PROPOSED STORM DRAIN
- PROPOSED FENCE
- CLEANOUT
- CURB INLET
- DROP INLET
- LIMITS OF DISTURBANCE
- TREE PROTECTION FENCE

EXISTING CONDITIONS LEGEND

- EXISTING IRON PIPE
- BOLLARD
- CURB INLET
- CATCH BASIN
- FIRE HYDRANT
- LIGHT POLE
- WATER VALVE
- SIGN
- HANDICAP ACCESS
- ELECTRIC MANHOLE
- ELECTRIC BOX
- GAS VALVE
- BOLLARD (SQ.)
- TREE (SIZE AND TYPE)
- TRANSFORMER
- UNDERGROUND GAS PIPE
- UNDERGROUND ELECTRIC WIRE(S)
- CHAINLINK FENCE
- OVERHANG
- TREE LINE
- UNDERGROUND WATER PIPE
- RIP-RAP
- STORM DRAIN



SCALE: 1" = 30'-0"
 30 15 0 30 60



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drawn checked

C3.0
 sheet
**GRADING AND
 STORM DRAINAGE
 PLAN**

project no. 2231

date 1/10/24

DESIGN CRITERIA

LOCATION: ORANGE COUNTY, NORTH CAROLINA
BUILDING CODE: 2018 NORTH CAROLINA STATE BUILDING CODE
(2015 IBC WITH NORTH CAROLINA AMENDMENTS)

RICK CATEGORY II
BASIC LATERAL FORCE RESISTING SYSTEM:
TIMBER FRAMES

DESIGN LIVE LOADS
ROOF 20 PSF
FLOORS 80 PSF
STORAGE 100 PSF

ROOF SNOW LOAD
 $P_s = 15$ PSF
 $C_e = 0.9$
 $I_e = 1.1$
 $C_t = 1.0$

RAIN ON SNOW
15 PSF

WIND LOAD
 $V = 115$ MPH (3 SECOND GUST)
EXPOSURE C
DESIGN (DESIGN/ULTIMATE) WIND BASE SHEAR:
 $V_x = 20.4k$ $V_y = 16.0k$
INTERNAL PRESSURE COEFFICIENT = 0 (±0.18 FOR ENCLOSED DESIGN TO ACCOMMODATE FUTURE WALLS) COMPONENTS & CLADDING PER ASCE 7-10 FIGURES 30.4.

WIND LOADS ON COMPONENTS & CLADDING FOR GIVEN TRIBUTARY AREAS (psf)						
	ZONE	10 SQ FT	20 SQ FT	60 SQ FT	100 SQ FT	500 SQ FT
ROOF	1	+25.6/-20.1	+25.6/-20.1	+25.6/-20.1	+25.6/-20.1	+25.6/-20.1
	2	+39.5/-31.2	+39.5/-31.2	+39.5/-31.2	+39.5/-31.2	+39.5/-31.2
	3	+51.3/-40.2	+51.3/-40.2	+39.5/-31.2	+39.5/-31.2	+39.5/-31.2
ROOF CHANG	2	N/A	N/A	N/A	N/A	N/A
	3	N/A	N/A	N/A	N/A	N/A
WALL	4	+28.9/-31.3	+28.9/-31.3	+25.8/-28.3	+23.2/-25.7	+21.5/-24.0
	5	+28.9/-38.6	+28.9/-38.6	+25.8/-32.6	+23.2/-27.4	+21.5/-24.0

- DETERMINE WIND LOADS ON COMPONENTS IN ACCORDANCE WITH THE NCSCC AND ASCE-7 OR WITH THIS TABLE. REFERENCE ASCE 7-10 FIGURES 30.4. TRIBUTARY AREA = GREATER OF LxW OR $LxL/3$.
- DESIGN FOR ALLOWABLE CAPACITY USING LOADS FROM ASCE-7 OR FROM THIS TABLE.
- DEFLECTIONS MAY BE CALCULATED BASED ON 70% OF THESE LOADS.
- POSITIVE PRESSURES ARE DIRECTED TOWARD THE INTERIOR. NEGATIVE LOADS ARE DIRECTED AWAY FROM THE INTERIOR. NEGATIVE ROOF LOADS ARE UPLIFT LOADS.
- NET UPLIFT IS EQUAL TO THE GROSS UPLIFT LOAD CALCULATED FROM ASCE-7 OR FROM THIS TABLE MINUS 60% OF THE ROOF DEAD LOAD.

SEISMIC CRITERIA
SEISMIC DESIGN VALUES DETERMINED UTILIZING 2008 USGS HAZARD DATA
SPECTRAL RESPONSE ACCELERATIONS $S_s = 0.154$ $S_1 = 0.077$
SITE CLASS C
SPECTRAL RESPONSE COEFFICIENTS $S_{dh} = 0.165$ $S_{d1} = 0.123$
SEISMIC DESIGN CATEGORY B
DESIGN ULTIMATE SEISMIC BASE SHEAR: $V_p = TBDK$ $V_s = TBDK$
IMPORTANCE FACTOR $I_p = 1.0$
DESIGN SEISMIC RESPONSE COEFFICIENT $C_s = 0.071$
RESPONSE MODIFICATION FACTOR $R = 1.5$

SPECIAL INSPECTION REQUIREMENTS

THE FOLLOWING SYSTEMS ARE SUBJECT TO THE SPECIAL INSPECTION REQUIREMENTS OF THE NCSCC, CHAPTER 17.

GENERAL NOTES

GENERAL

- DESIGN, FURNISH, AND INSTALL TEMPORARY SHORING, BRACING, AND OTHER TEMPORARY SUPPORTS REQUIRED FOR CONSTRUCTING THE STRUCTURE AND TO MAINTAIN THE STABILITY THROUGHOUT ALL PHASES OF CONSTRUCTION UNTIL THE STRUCTURE IS COMPLETED. ALL TEMPORARY SUPPORTS ARE TO BE REMOVED UNLESS NOTED OTHERWISE.
- USE STRUCTURAL DRAWINGS IN CONJUNCTION WITH THE ARCHITECTURAL DRAWINGS AND THE DRAWINGS OF OTHER TRADES.
- COORDINATE WITH OTHER TRADES THE ACTUAL LOCATIONS AND SIZES OF OPENINGS AND PENETRATIONS REQUIRED BY THEIR WORK.
- COORDINATE WITH OTHER TRADES THE ACTUAL LOCATIONS AND ELEVATIONS OF BURIED SERVICES PASSING NEAR FOUNDATIONS, UNDERGROUND SERVICES WHICH PASS BENEATH WALL FOOTINGS SHALL HAVE AT LEAST 12" OF CLEARANCE BELOW THE BOTTOM OF THE FOOTING. WHERE THIS IS NOT ACHIEVED, EITHER STEP THE FOOTING DOWN BENEATH THE SERVICE OR INSTALL A STEEL PIPE SLEEVE FOR THE SERVICE TO PASS THROUGH. SLEEVES ARE FURNISHED AND INSTALLED BY THE TRADE INSTALLING THE SERVICE. NO SERVICE IS TO BE INSTALLED BENEATH COLUMN FOOTINGS UNLESS APPROVED BY THE ARCHITECT.
- COORDINATE WITH OTHER TRADES THE ACTUAL LOCATIONS AND TYPES OF ATTACHMENTS AND ANCHORS THAT ARE REQUIRED BY THE TRADES TO FASTEN THEIR WORK TO THE STRUCTURE.
- MODIFICATIONS TO STRUCTURAL COMPONENTS AND INSTALLATION OF PENETRATIONS THROUGH STRUCTURAL MEMBERS ARE NOT PERMITTED WITHOUT PRIOR APPROVAL OF THE ARCHITECT.
- VERIFY ACTUAL DIMENSIONS, ELEVATIONS, AND CONDITIONS OF EXISTING CONSTRUCTION PRIOR TO PROCEEDING WITH WORK OR ORDERING MATERIALS WHICH COULD BE AFFECTED BY EXISTING CONDITIONS.

FOUNDATIONS

- THE FOUNDATION DESIGN IS BASED ON REPORT OF SUBSURFACE INVESTIGATION PREPARED BY FROEHLING & ROBERTSON, INC. DATED DECEMBER 17, 2015.
- ALL FOOTINGS SHALL BE PLACED ON UNDISTURBED SOIL OR COMPACTED STRUCTURAL FILL. ALLOWABLE BEARING PRESSURE IS 2000 PSF.
- ALL STRUCTURAL EARTH FILL SHALL BE PLACED IN LOOSE LIFTS NOT EXCEEDING 8 INCHES AND BE COMPACTED TO AT LEAST 95 PERCENT OF THE SOIL'S STANDARD PROCTOR OR MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D-698. THE TOP 12 INCHES OF FILL IN LOAD BEARING AREAS SHOULD BE COMPACTED TO AT LEAST 98 PERCENT OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY. ALL STRUCTURAL FILL MATERIAL SHALL BE COMPACTED AT A MOISTURE CONTENT WITHIN 3 PERCENT OF THE SOIL'S OPTIMUM MOISTURE CONTENT (AS DETERMINED BY ASTM D-698). ALL STRUCTURAL FILL SHALL BE PLACED UNDER THE FULL-TIME CONTROL OF AN ENGINEERING TECHNICIAN WORKING UNDER THE DIRECTION OF A GEOTECHNICAL ENGINEER. THE PLACEMENT AND COMPACTION OF ALL FILL MATERIAL SHALL BE MONITORED AND TESTED IN ORDER TO CONFIRM THAT THE RECOMMENDED DEGREE OF COMPACTION IS BEING OBTAINED. IF AN IMPORTED STRUCTURAL FILL IS REQUIRED TO COMPLETE SITE GRADING, IT SHALL BE APPROVED BY THE PROJECT GEOTECHNICAL ENGINEER PRIOR TO USE. IMPORTED STRUCTURAL FILL SHOULD TYPICALLY CONSIST OF LOW PLASTICITY SOIL (LL<50, PI<25), HAVE A STANDARD PROCTOR MAXIMUM DRY DENSITY OF AT LEAST 100 PCF, AND BE FREE OF ORGANIC AND OTHER DELETERIOUS MATERIALS. IF CLEAN SAND FILL IS NECESSARY TO REPLACE LOWER CONSISTENCY SOILS IN THE BUILDING AREA, THE SAND SHOULD CONTAIN LESS THAN 10 TO 12 PERCENT FINES.

FOUNDATIONS (CONT.)

- FINISHED SUBGRADES IN BUILDING AREAS RECEIVING MORE THAN 7 FEET OF FILL SHALL BE MONITORED FOR SETTLEMENT DUE TO THE FILL LOADING. SETTLEMENT MONUMENTS SHOULD BE INSTALLED AT THE TOP OF THE FILL IMMEDIATELY UPON FILL COMPLETION WITH SETTLEMENT MEASUREMENTS TAKEN AT LEAST TWO PER WEEK UNTIL SETTLEMENTS HAVE STABILIZED. CONSTRUCTION F BUILDING FOUNDATIONS AND PAVEMENTS SHALL NOT OCCUR UNTIL IT IS CONFIRMED THAT SETTLEMENT DUE TO NEW FILL HAS STABILIZED. NO FOUNDATIONS SHALL BE PLACED IN WATER OR ON FROZEN GROUND.
- ALL FOOTING EXCAVATIONS ARE TO BE FINISHED BY HAND.
- ALL FINISHED FOUNDATION EXCAVATIONS SHALL BE INSPECTED AND APPROVED BY THE ARCHITECT OR HIS DESIGNATE BEFORE ANY CONCRETE IS PLACED.
- UNLESS OTHERWISE NOTED, ALL FOOTINGS AND PILASTERS SHALL BE CENTERED UNDER SUPPORTED MEMBERS.
- DOWELS FROM FOUNDATIONS INTO PIERS, COLUMNS, BUTTRESSES, OR WALLS ABOVE SHALL BE THE SAME SIZE AND NUMBER AS VERTICAL REINFORCEMENT IN PIERS, COLUMNS, BUTTRESSES, OR WALLS ABOVE, EXCEPT AS OTHERWISE SHOWN ON THE DRAWINGS.
- CAREFULLY FOLLOW THE REQUIREMENTS OF THE SPECIFICATIONS FOR BACKFILL UNDER OR ADJACENT TO ANY PORTION OF THE BUILDING.
- WHERE FOUNDATION ELEMENTS ARE TO HAVE FILL ON BOTH SIDES, EACH SIDE SHALL BE FILLED SIMULTANEOUSLY, MAINTAINING A COMMON ELEVATION.
- COORDINATE UNDERFLOOR DRAIN REQUIREMENTS WITH ARCHITECTURAL AND MECHANICAL DRAWINGS AND THE REQUIREMENTS OF THE GEOTECHNICAL ENGINEER.
- CONTRACTOR SHALL PROVIDE CONTINUOUS CONTROL OF SURFACE AND UNDERGROUND WATER AS REQUIRED DURING CONSTRUCTION SUCH THAT THE WORK IS DONE IN THE DRY.

WOOD FRAMING

- MATERIALS
A. DIMENSION LUMBER: #2 SYP 19% M.C.
B. STEEL CONNECTORS G90 GALVANIZED FOR EXPOSED CONNECTIONS; G80 GALVANIZED FOR ALL OTHER APPLICATIONS.
C. PSL COLUMNS; TRUSS JOIST PLUS PSL WITH WOLMANIZED PRESERVATIVE PROTECTION. AWWA USE CATEGORY UC4B. SERVICE LEVEL 2.
- SILLS AND MEMBERS EXPOSED DIRECTLY TO MOISTURE OR IN DIRECT CONTACT WITH CONCRETE OR MASONRY SHALL BE PRESERVATIVE TREATED.
- PLYWOOD SHALL CONFORM TO THE LATEST EDITION OF U.S. PRODUCT STANDARD PS-1. INSTALL IN STAGGERED PATTERN. NAIL TO SUPPORTING AFTERS @ BOUNDARY AND SUPPORTED EDGES W/8d COMMON NAILS @ 6" NAIL TO SUPPORTING RAFTERS @ INTERMEDIATE FRAMING W/8d COMMON NAILS @ 12".
- FRAMING CONNECTIONS SHALL BE SIMPSON COMPANY OR EQUAL, OF THE CATALOG DESIGNATIONS INDICATED. INSTALL MANUFACTURERS STANDARD NAILS IN ALL HOLES PROVIDED UNLESS OTHERWISE NOTED.
- NAILS SHALL BE STRONGHOLD, GALVANIZED COMMON NAILS OF THE SIZES INDICATED.
- ALL BOLTS AND LAG SCREWS SHALL BE AMERICAN STANDARD MANUFACTURE.
- BOLT HOLES IN WOOD SHALL BE DRILLED 1/16" MAXIMUM OVERSIZE. HOLES FOR SCREWS AND LAG SCREWS SHALL BE FIRST BORED FOR THE SAME DEPTH AND DIAMETER OF THE SHANK, THEN THE REMAINDER OCCUPIED BY THE THREADED PORTION SHALL BE BORED NOT LARGER IN DIAMETER THAN THE ROOF OF THE THREAD. ALL SCREW SHALL BE SCREWED, NOT DRIVEN INTO PLACE.
- PROVIDE WASHERS UNDER ALL NUTS AND HEADS OF BOLTS AND LAG SCREWS. WASHERS SHALL BE EITHER ROUND MALLEABLE IRON OR SQUARE CUT STEEL WASHERS 1/4" THICK X3 FASTENER DIAMETERS.
- ALL TIMBER FRAMING SHALL BE ACCURATELY CUT, NOTCHED, OR DAPPED AS INDICATED. NO OVERCUT IS PERMITTED FOR NOTCHES OR DAPPS. MEMBERS SHALL FIT TIGHT AND TRUE. EXAMINE MEMBERS FOR DETRIMENTAL DAMAGE BEFORE INSTALLATION, AND AVOID NATURAL DEFECTS AT CONNECTIONS. WHERE STEEL PLATES OCCUR, THEY SHALL BE USED AS THE TEMPLATE FOR BORING HOLES.
- DESIGN FABRICATION AND CONSTRUCTION SHALL CONFORM TO THE "NATURAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION" CURRENT EDITION AS RECOMMEND BY THE NATIONAL LUMBER MANUFACTURER'S ASSOCIATION.
- ROOF SHEATHING SHALL BE NAILED AS INDICATED ON DRAWINGS.
- BEARING WALL TOP PLATES SHALL BE CONTINUOUS.

CAST-IN-PLACE

- MATERIALS
A. PORTLAND CEMENT: ASTM C150, TYPE I.
B. FLY ASH: ASTM A618, CLASS C OR F.
C. NORMAL-WEIGHT AGGREGATE: ASTM ASTM C33, CLASS 3M.
D. LIGHTWEIGHT AGGREGATE EXPANDED SHALE OR SLATE: ASTM C330
E. REINFORCING STEEL: ASTM A615 GRADE 60.
F. REINFORCING STEEL, WELDABLE: ASTM A706.
G. WELDED WIRE FABRIC: ASTM A185, FLAT SHEETS.
H. UNDER-SLAB DRAINAGE FILL: 4" WASHED CRUSHED STONE, MAXIMUM AGGREGATE SIZE OF 3/4".
I. VAPOR BARRIER: ASTM E1745, CLASS B, FIVE-PLY, NYLON OR POLYESTER CHORD, 10 MILS THICKNESS.
J. WATERSTOP: SELF EXPANDING.
- CONCRETE MIXES
A. FOOTINGS 3000 PSI NW
B. SLABS-ON-GRADE: 3000 PSI NW.
C. SLABS-ON-GRADE EXPOSED TO WEATHER: 4500 PSI NW, AIR-ENTRAINED
- PERFORM CONCRETE WORK IN ACCORDANCE WITH ACI 318 AND ACI 301.
- PROVIDE CONCRETE COVER AS FOLLOWS:
A. CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH: 3".
B. CONCRETE EXPOSED TO EARTH OR WEATHER:
a. #6 OR SMALLER: 1 1/2".
b. #6 OR LARGER: 2".
- PROVIDE CONTINUOUS REINFORCEMENT WHEREVER POSSIBLE. SPLICE ONLY AS SHOWN OR APPROVED. MINIMUM LAP LENGTHS, EXPRESSED IN NUMBER OF BAR DIAMETERS, SHALL BE AS FOLLOWS:

BAR SIZE	NORMAL WT. CONCRETE STRENGTH, f_c (PSI)		
	3000	4000	5000
#6 OR SMALLER	57 DIA.	49 DIA.	44 DIA.
#7 OR LARGER	71 DIA.	62 DIA.	55 DIA.

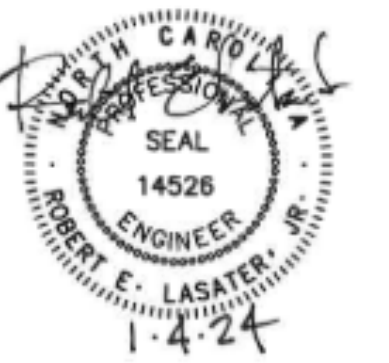
- MULTIPLY THE ABOVE LENGTHS BY 1.3 FOR TOP BARS AND BY 1.3 FOR LIGHTWEIGHT CONCRETE. WHERE BARS OF UNEQUAL DIAMETER ARE LAPPED, USE THE LAP LENGTH OF THE SMALLER BAR. THE ABOVE LENGTHS ARE CLASS "B" TENSION LAP SPLICES BASED ON GRADE 60 BARS WITH A COVER OF AT LEAST 1 BAR DIA. AND SPACING AT LEAST 3 BAR DIA. LAP LENGTHS SHALL BE INCREASED IN ACCORDANCE WITH ACI 318 IF COVER IS LESS THAN 1 BAR DIA. OR SPACING IS LESS THAN 3 BAR DIA.
- ACCURATELY INSTALL AND PROPERLY SECURE ANCHORS, BEARING PLATES, SLEEVES, AND OTHER EMBEDDED ITEMS.
 - ACCURATELY LOCATE AND BLOCK OUT OPENINGS AND PENETRATIONS. COORDINATE WITH OTHER TRADES FOR ANCHORS, EMBEDDED ITEMS, SLEEVES, AND PENETRATIONS REQUIRED AND/OR FURNISHED BY THE OTHER TRADES.
 - PROVIDE CONTRACTION JOINTS IN SLABS-ON-GRADE WHERE INDICATED ON THE PLANS. PROVIDE A JOINT DEPTH EQUAL TO AT LEAST 25% OF THE SLAB THICKNESS.
 - INSTALL AND SEAL VAPOR BARRIER IN ACCORDANCE WITH ASTM E1643 AND MANUFACTURER'S INSTRUCTIONS. LAP JOINTS 6" AND SEAL WITH MANUFACTURER'S RECOMMENDED TAPE.
 - FLOOR FINISHES:
A. FLOAT FINISH: SURFACES TO RECEIVE A TROWEL FINISH, TO BE COVERED WITH FLUID-APPLIED OR SHEET WATERPROOFING, OR TO BE COVERED WITH BUILT-UP OR MEMBRANE ROOFING.
B. TROWEL FINISH: SURFACES EXPOSED TO VIEW OR COVERED WITH RESILIENT FLOORING, CARPET, WOOD FLOORING, PAINT, SEALER, OR OTHER THIN FILM FINISH.
C. TROWEL AND FINE-BROOM FINISH: SURFACES TO BE COVERED WITH QUARRY OR CERAMIC TILE INSTALLED BY THE THIN-SET OR THICK-SET METHOD.
D. BROOM FINISH: EXTERIOR CONCRETE PLATFORMS, STEPS, AND RAMPS
 - FINISH SLABS FLAT AND LEVEL



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Cedar Ridge High School
Outdoor Agricultural Lab
Orange County Schools
1125 New Grady Brown School Road
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GENERAL NOTES

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S001

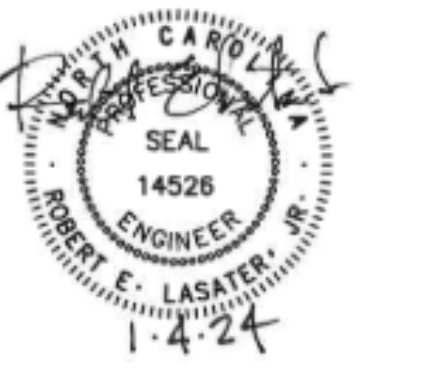
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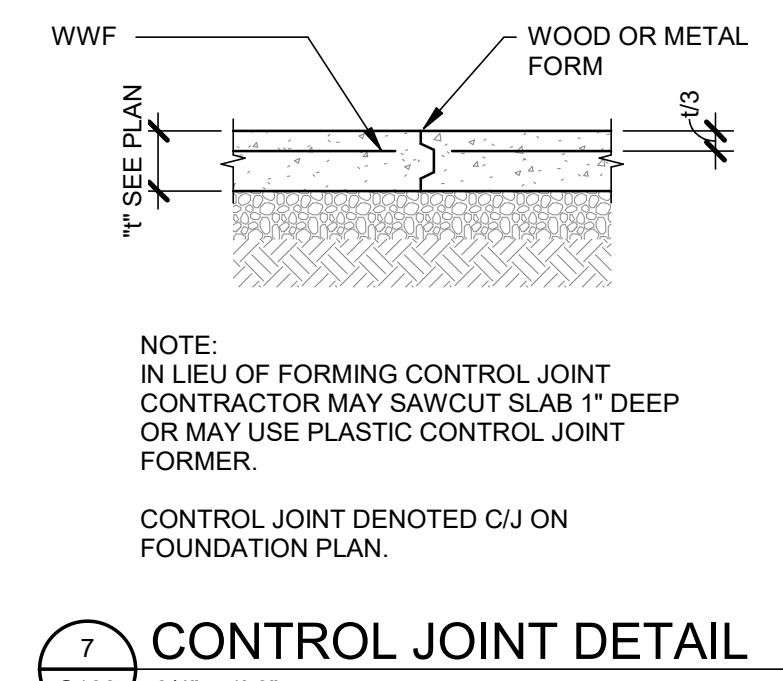
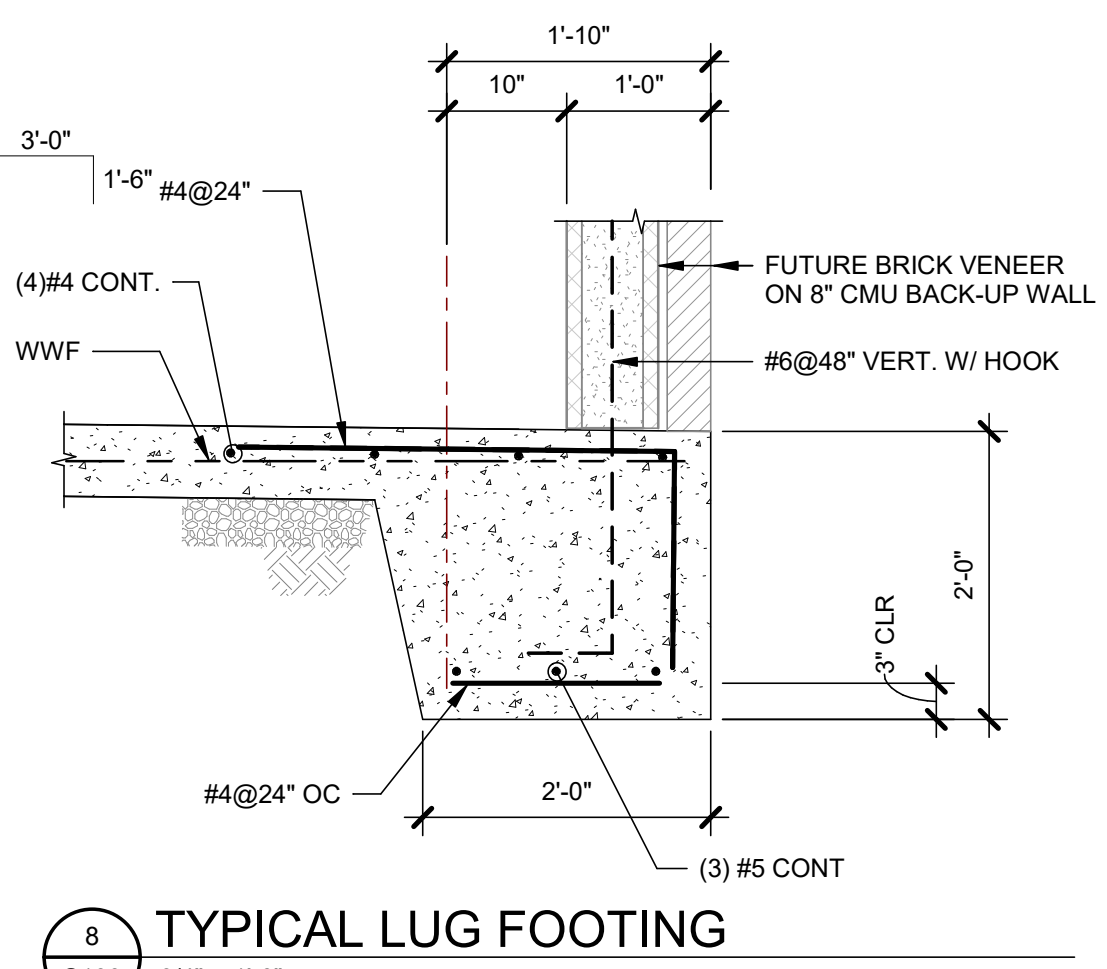
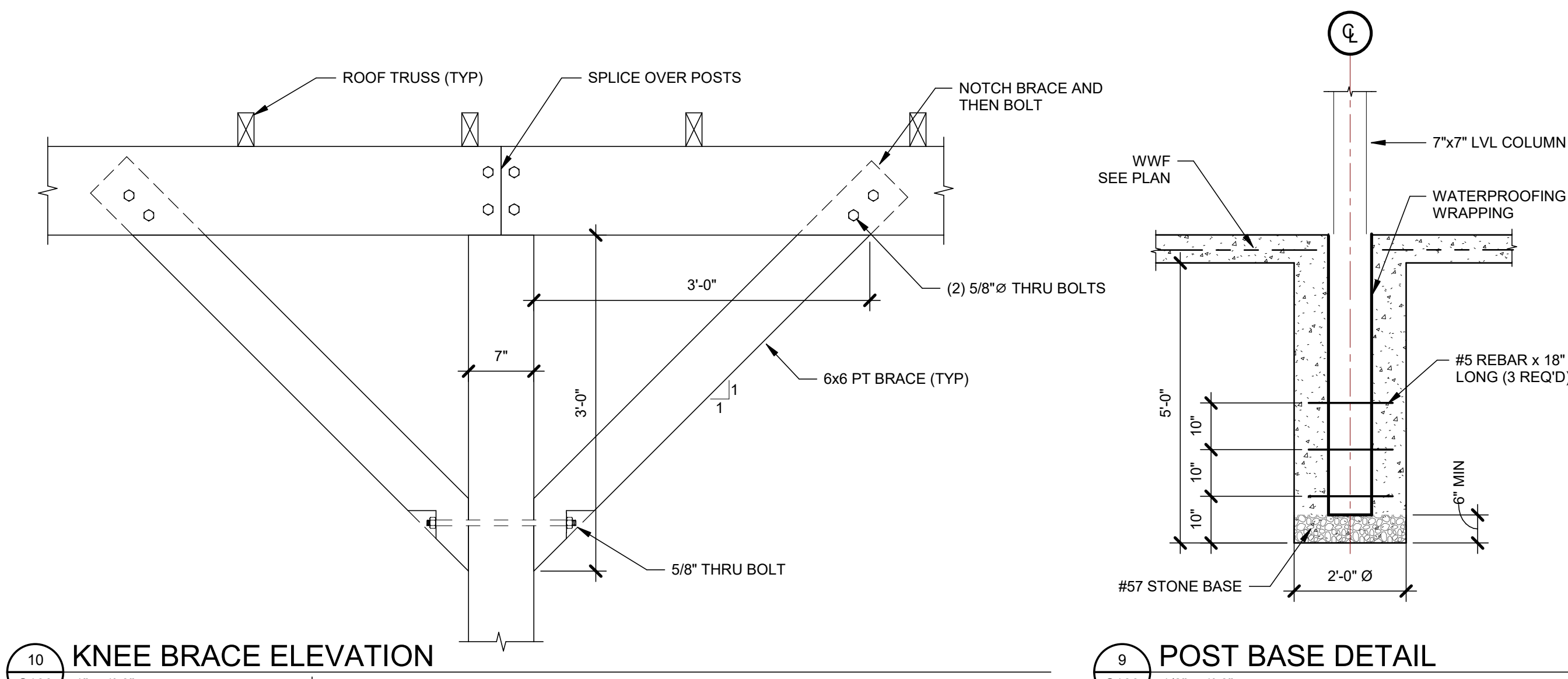
PLANS & DETAILS

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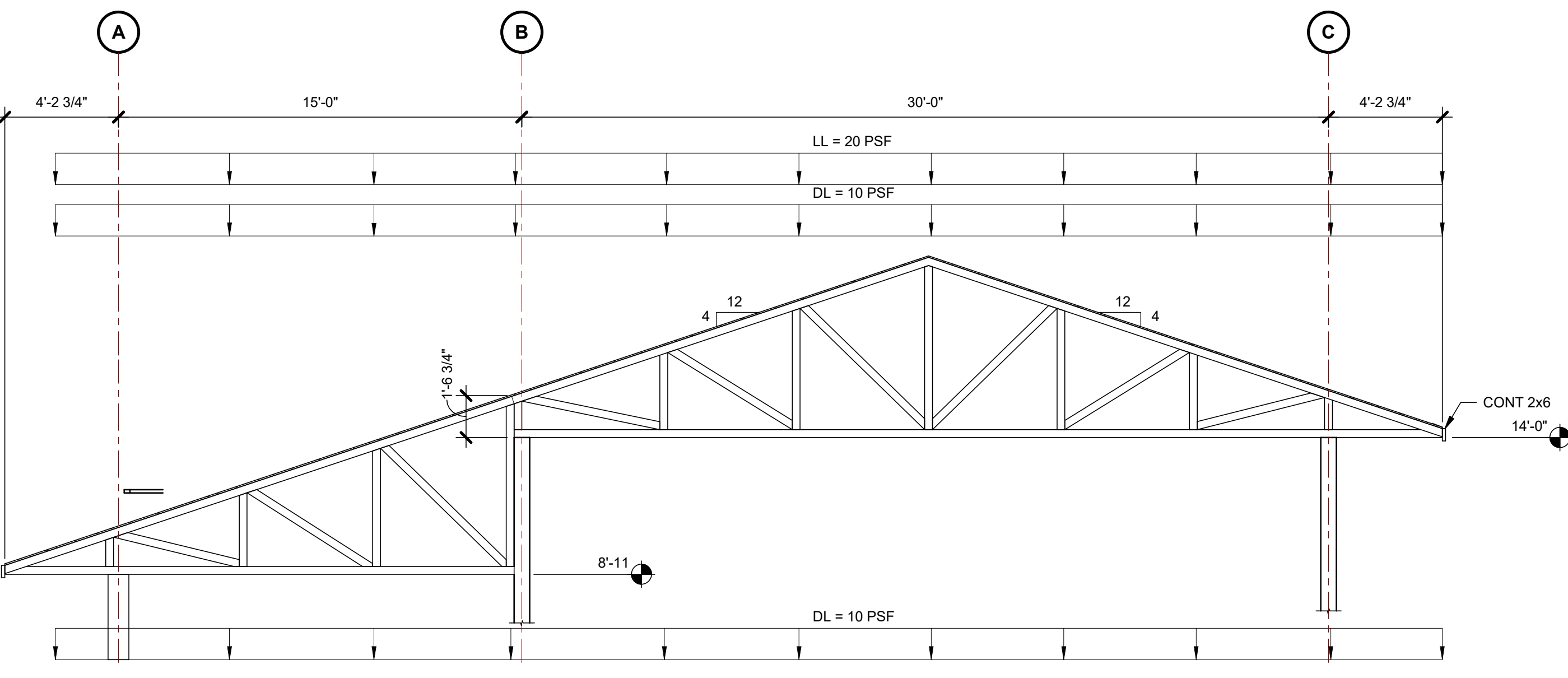
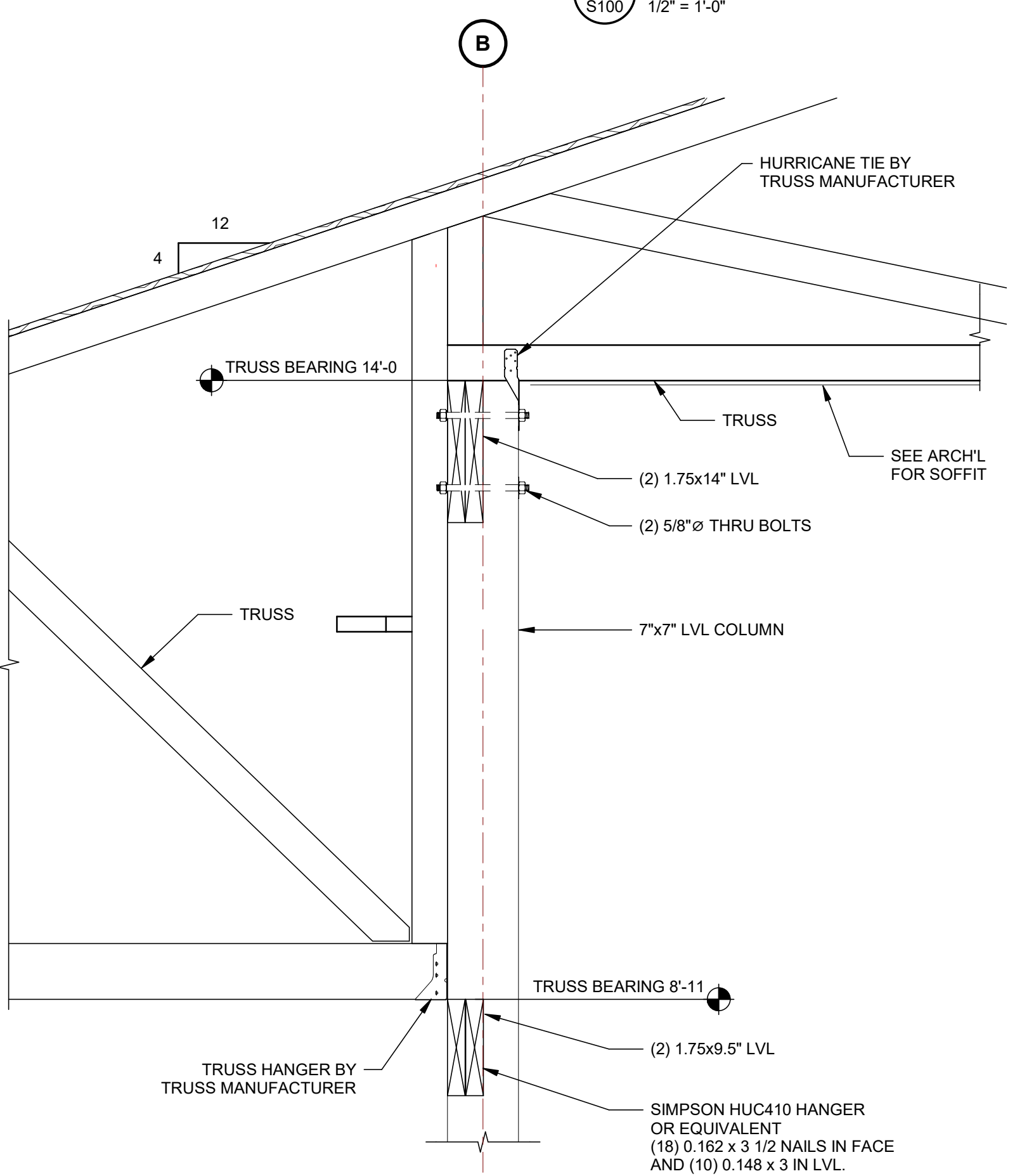
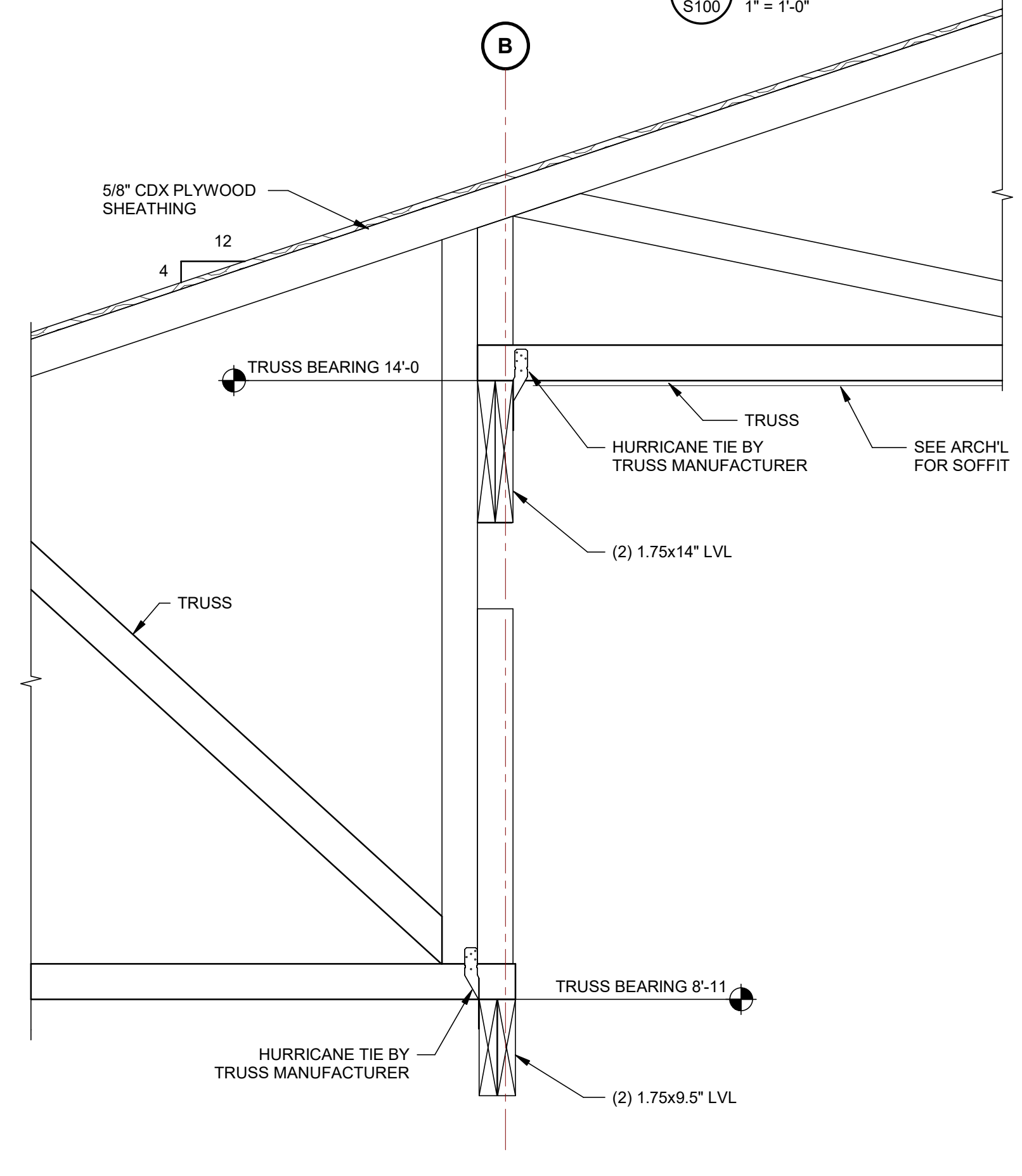
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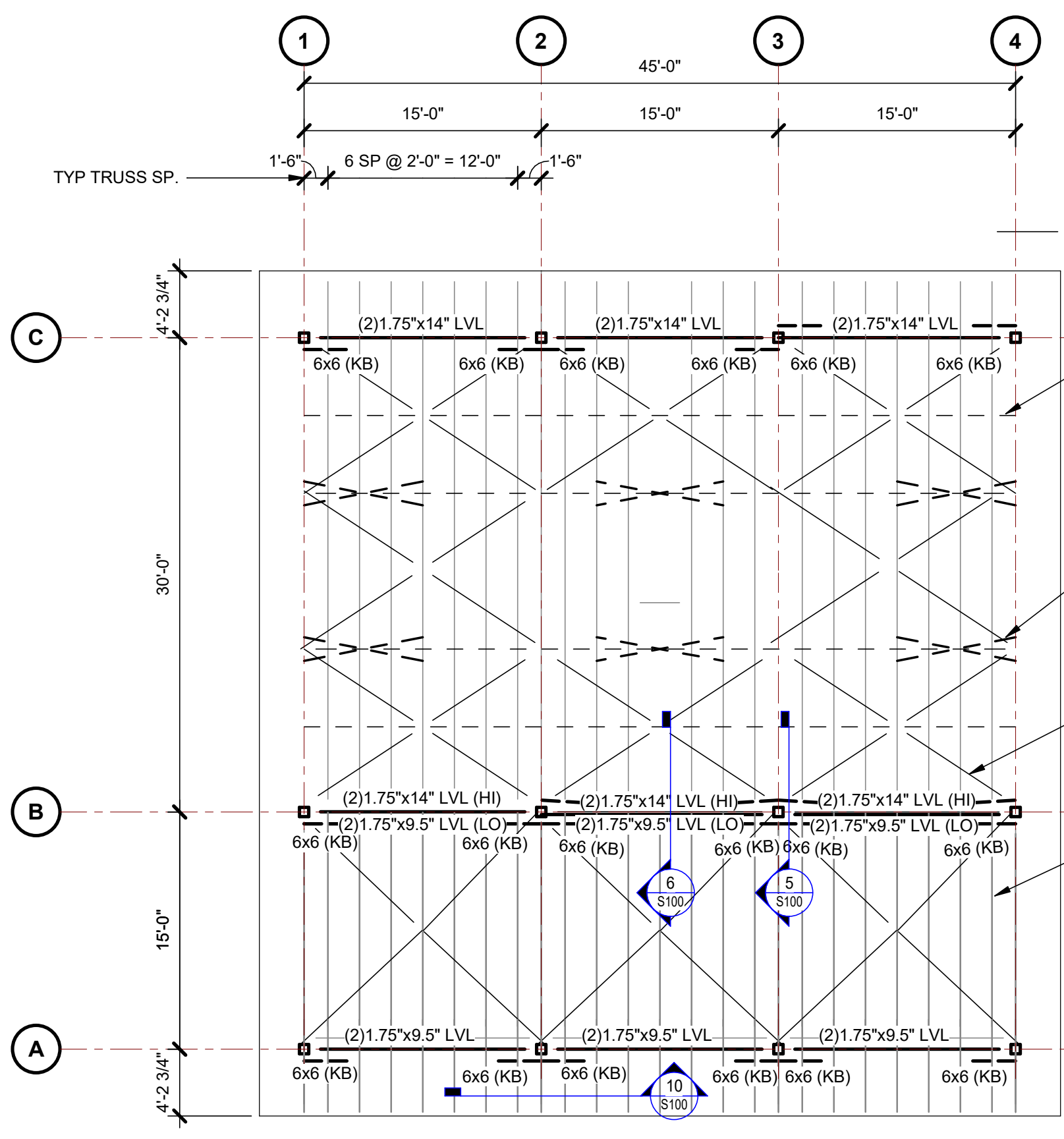
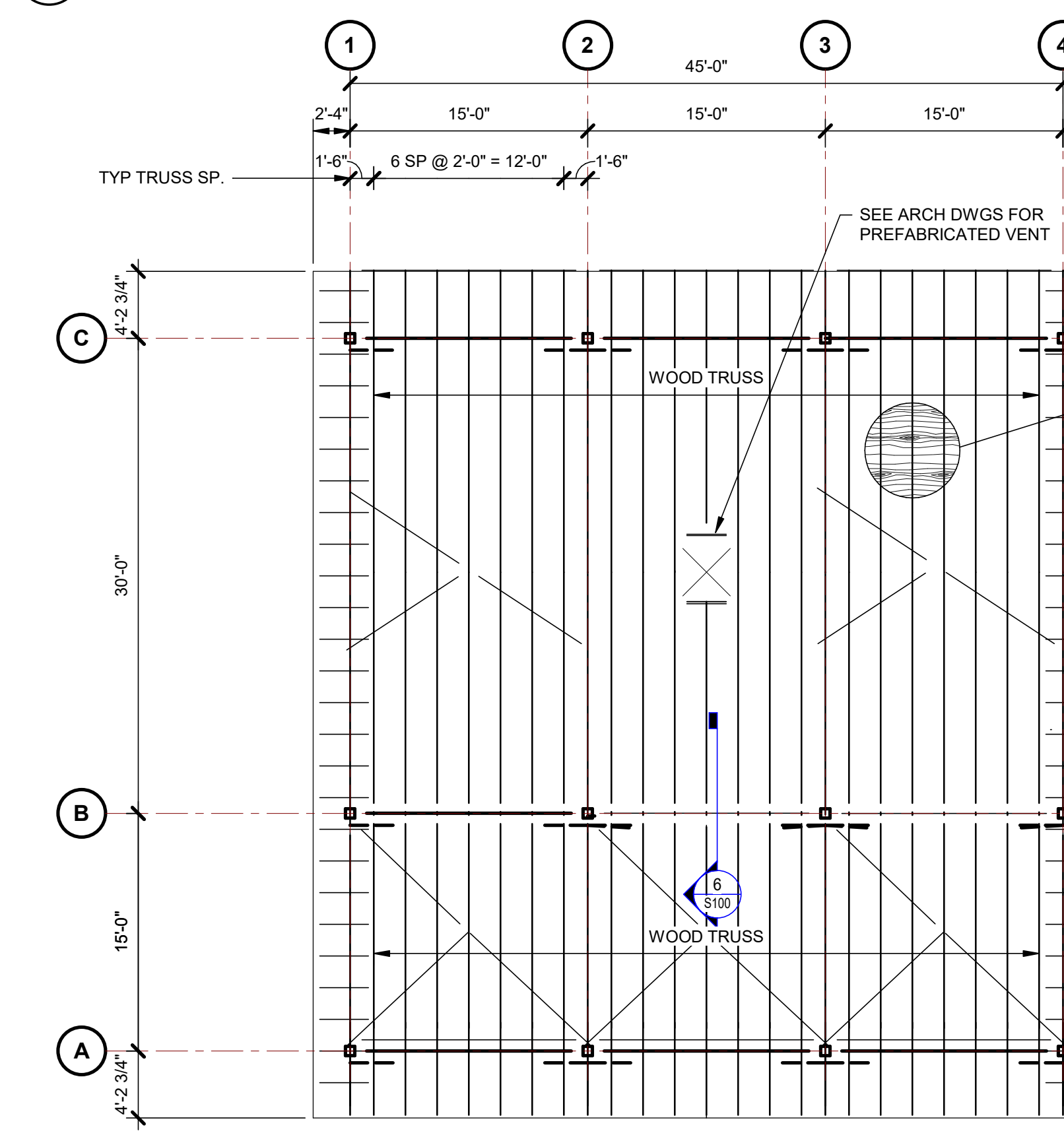


NOTE:
IN LIEU OF FORMING CONTROL JOINT CONTRACTOR MAY SAWCUT SLAB 1" DEEP OR MAY USE PLASTIC CONTROL JOINT FORMER.
CONTROL JOINT DENOTED CJ ON FOUNDATION PLAN.



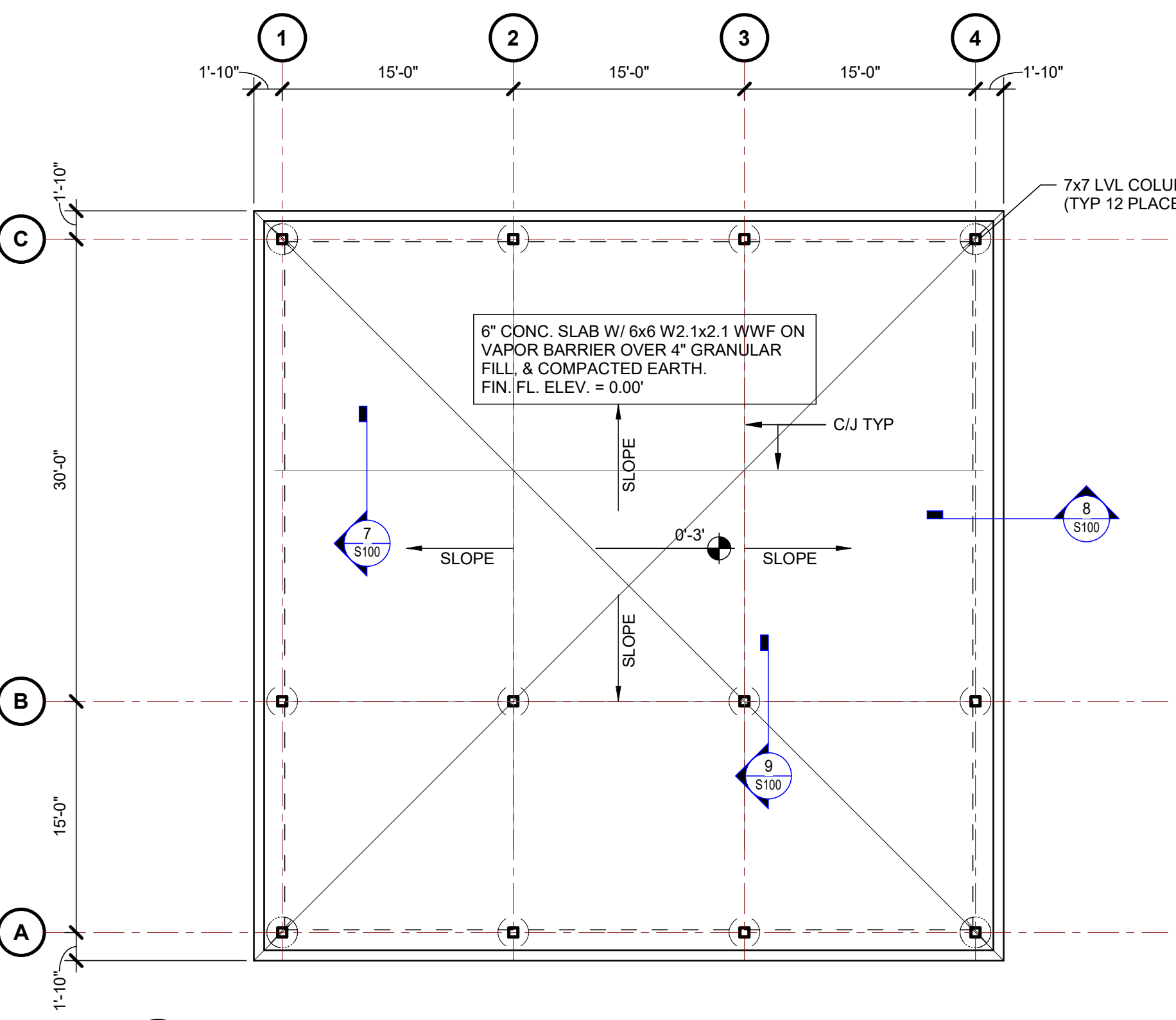
TRUSS NOTES:

- TYP TRUSS LOADS ARE SHOWN ON THE DRAWING. IN ADDITION, THE WIND LOADING AS PRESCRIBED IN THE NORTH CAROLINA STATE BUILDING CODE FOR 115MPH SHALL BE APPLIED.
- ALL TRUSS MEMBERS SHALL NOT BE LESS THAN 2x4.
- ALL BRACING MEMBERS SHALL NOT BE LESS THAN 2x4.
- ALL BRACING MEMBERS SHALL BE NAILED AT EACH TRUSS MEMBER WITH NO LESS THAN (2) 16d NAILS.
- ALL CONNECTIONS SHALL BE MADE WITH APPROVED FRAMING ANCHORS.
- TRUSS CONNECTION PLATES SHALL BE DESIGNED AND FURNISHED IN ACCORDANCE WITH THE "TRUSS PLATE INSTITUTE".
- ALL TRUSSES SHALL BE BRACED DURING ERECTION IN ACCORDANCE WITH "COMMENTARY AND RECOMMENDATIONS" BWT-76 OF THE TRUSS PLATE INSTITUTE INC.
- ALL PROVISIONS OF THE NORTH CAROLINA STATE BUILDING CODE, THE NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION AND STANDARDS AND RECOMMENDATIONS OF THE TRUSS PLATE INSTITUTE SHALL BE ADHERED TO.
- COMPLETE DESIGN CALCULATIONS, SEALED BY A NORTH CAROLINA PROFESSIONAL ENGINEER, FRAMING PLAN AND BRACING PLAN SHALL BE PROVIDED TO THE CONTRACTOR BY THEIR TRUSS SUPPLIER.



BOTTOM CHORD BRACING NOTES:

- DENOTES BOTTOM CHORD HORIZONTAL BRACING (WIND BEAM). MEMBER SIZE IS 2x4.
- DENOTES BOTTOM CHORD HORIZONTAL DIAGONAL BRACING. MEMBER SIZE IS 2x4 U.O.N.
- DENOTES VERTICAL DIAGONAL BRACING IN PLANE OF WEB MEMBER. MEMBER SIZE IS 2x4 U.O.N. BRACING SHALL BE SLOPED AT 45°.
- LATERAL BRACING TO REDUCE BUCKLING LENGTH OF INDIVIDUAL TRUSS COMPRESSION MEMBERS SHALL BE SPECIFIED & DESIGNED BY TRUSS MANUFACTURER AND SUPPLIED BY THE CONTRACTOR.



FOUNDATION NOTES:

- CJ DENOTES SLAB CONTROL / CONSTRUCTION JOINT SEE DETAIL 5/S100.
- SEE DETAIL 7/S100 FOR POST EMBEDMENT DETAIL.
- SLOPE SLAB PER ARCHT.

WOOD FRAMING

- MATERIALS:
- DIMENSIONAL LUMBER: #2 SYP 19% M.C. PRESSURE-PRESERVATIVE TREATED.
- STEEL CONNECTORS: G40 GALVANIZED FOR EXPOSED CONNECTIONS, ZMAX FOR SIMPSON CONNECTORS OR APPROVED EQUAL.
- LVL BEAMS SHALL BE VERSA-LAM 2.1E 3100 BY BOISE CASCADE.
- LVL COLUMNS SHALL BE VERSA-LAM 1.8E 2650 BY BOISE CASCADE OR 1.8E PARALLAM PSL COLUMNS BY TRUS-JOIST.



100 europa drive
suite 565
chapel hill, nc 27517
919.401.8586
www.cra-ae.com



Cedar Ridge High School
Outdoor Agricultural Lab
Orange County Schools
1125 New Grady Brown School Road
Hillsborough, North Carolina



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drawn gjh checked kct

Plans & Details

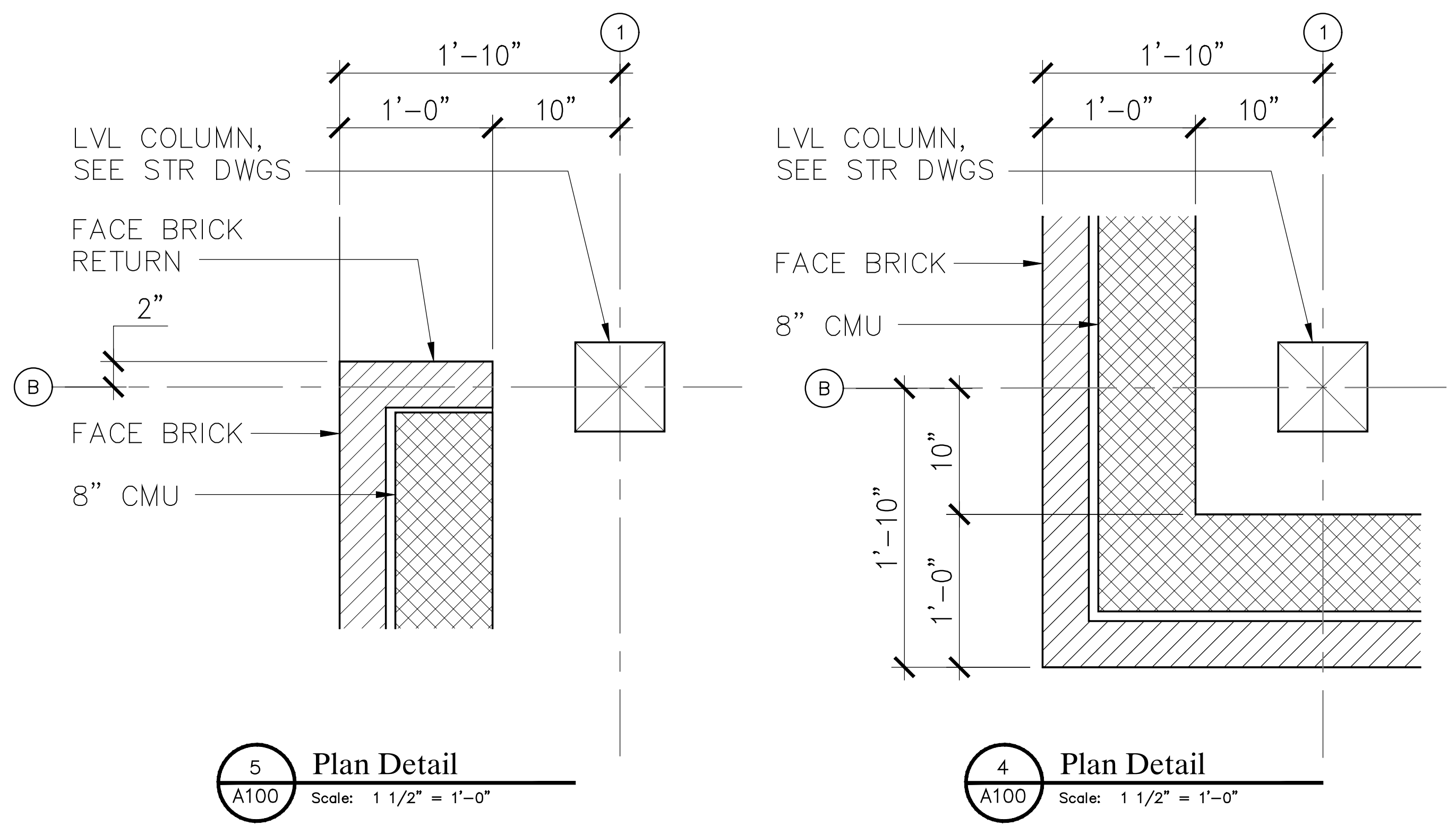
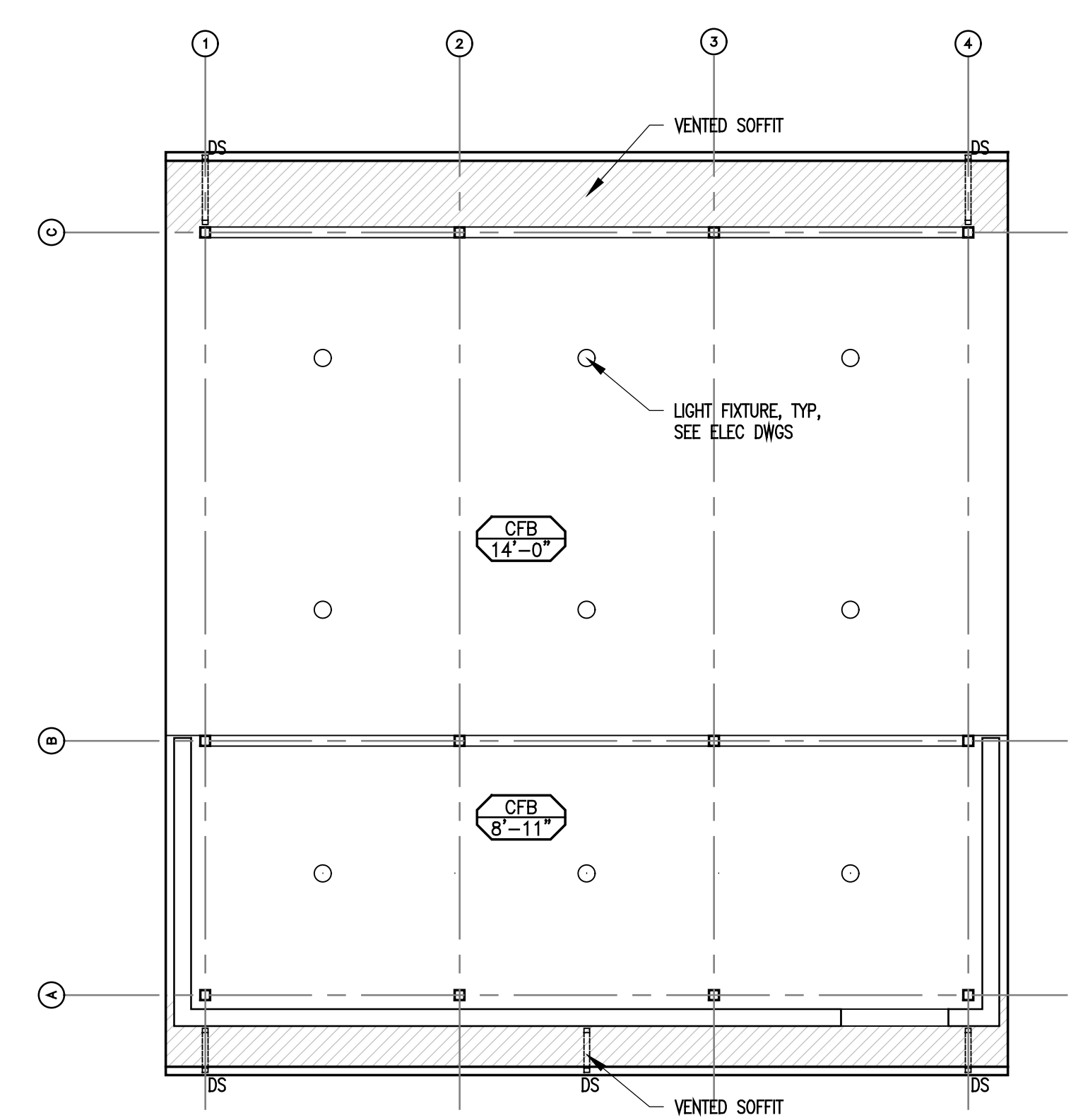
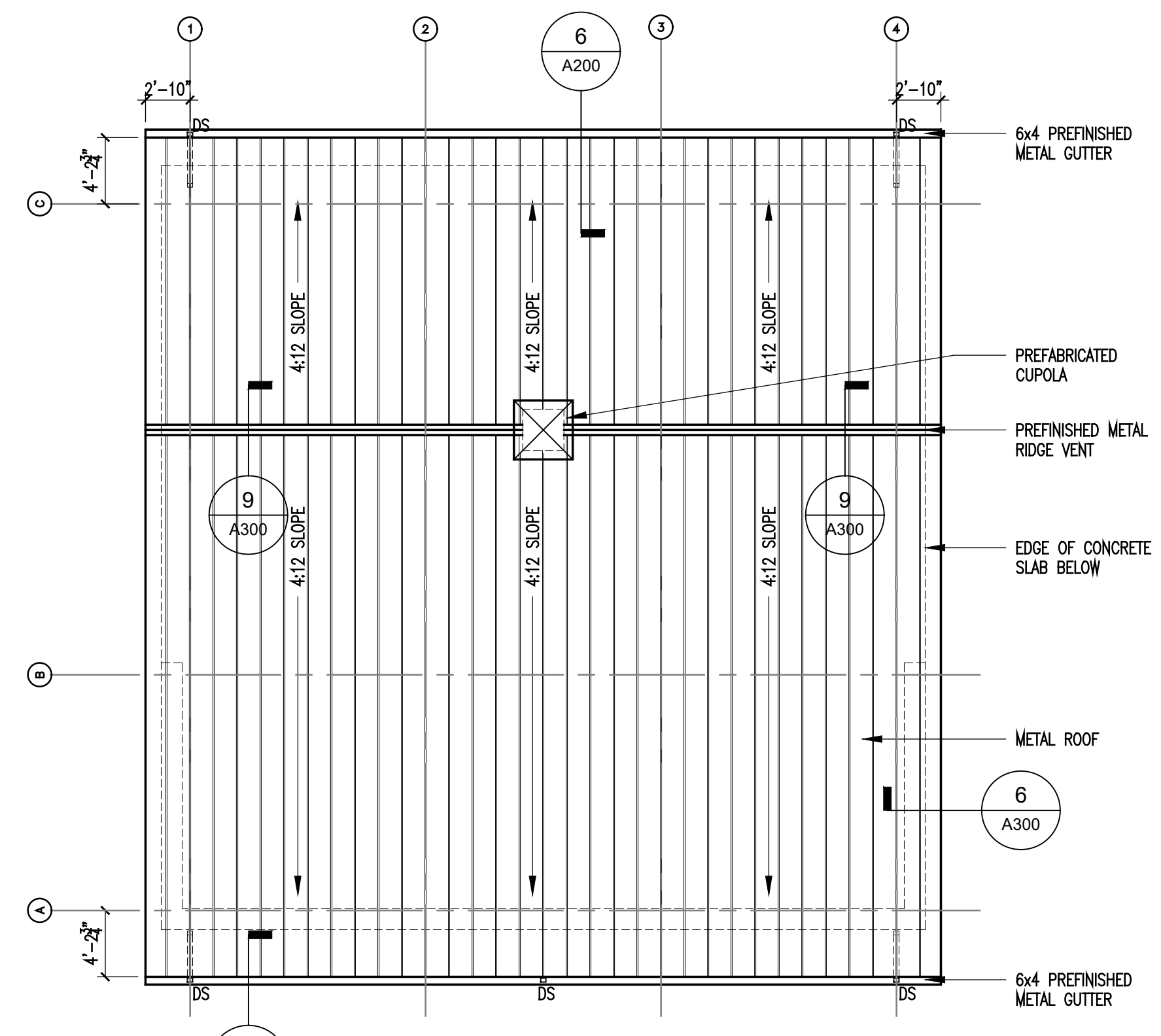
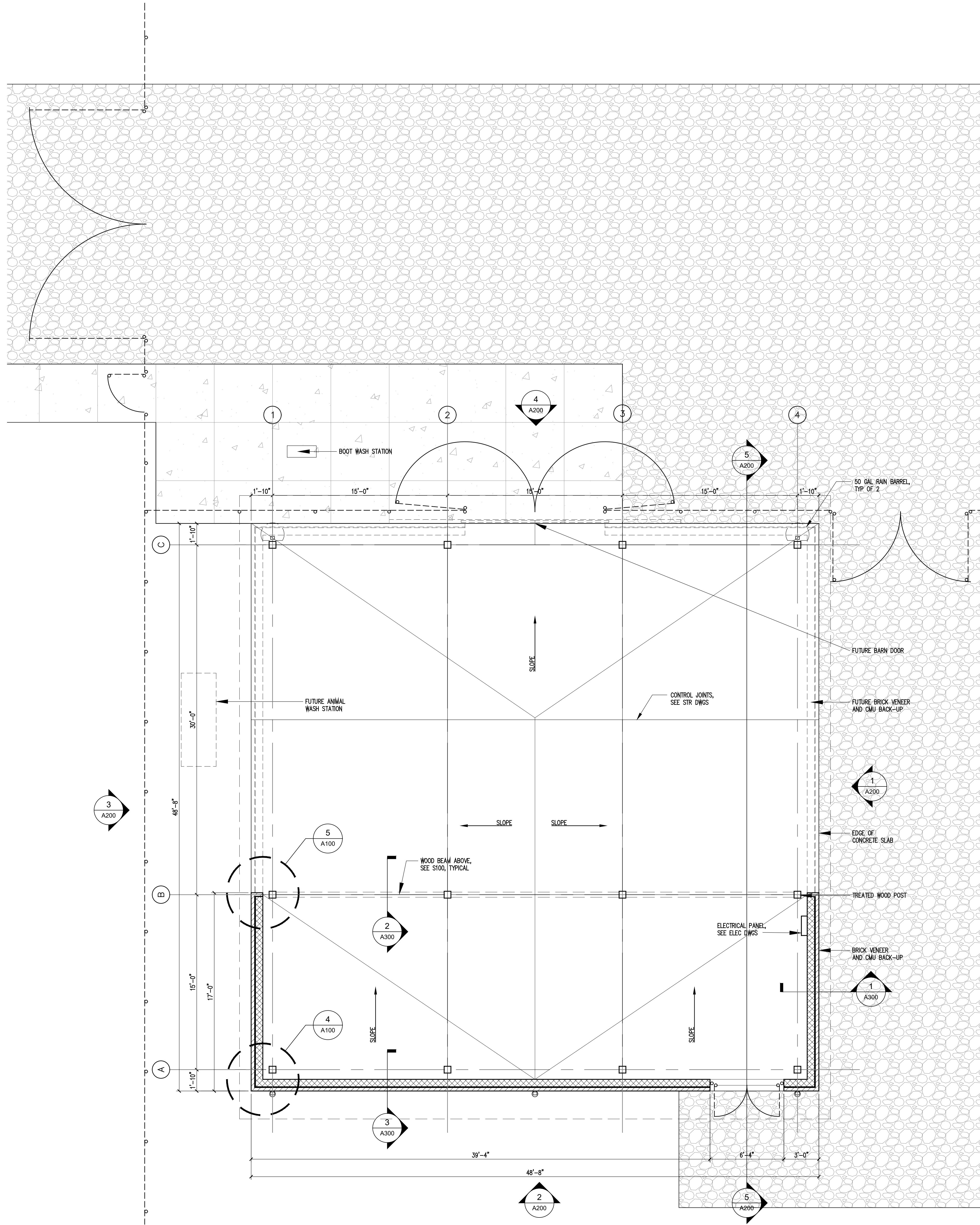
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A100

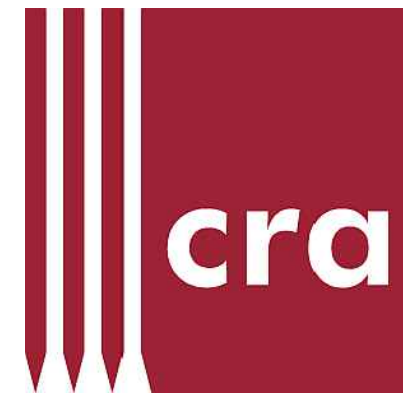
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date 1/10/24

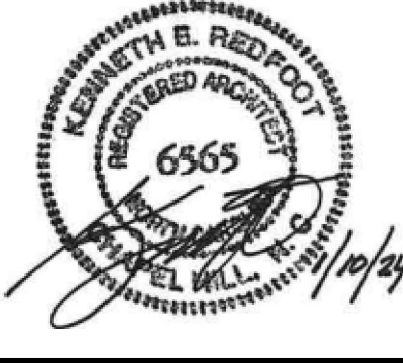
Bid Set



CFB = CEMENT FIBER BOARD, PAINTED



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drawn checked
lct

Elevations
Building Sections
& Details

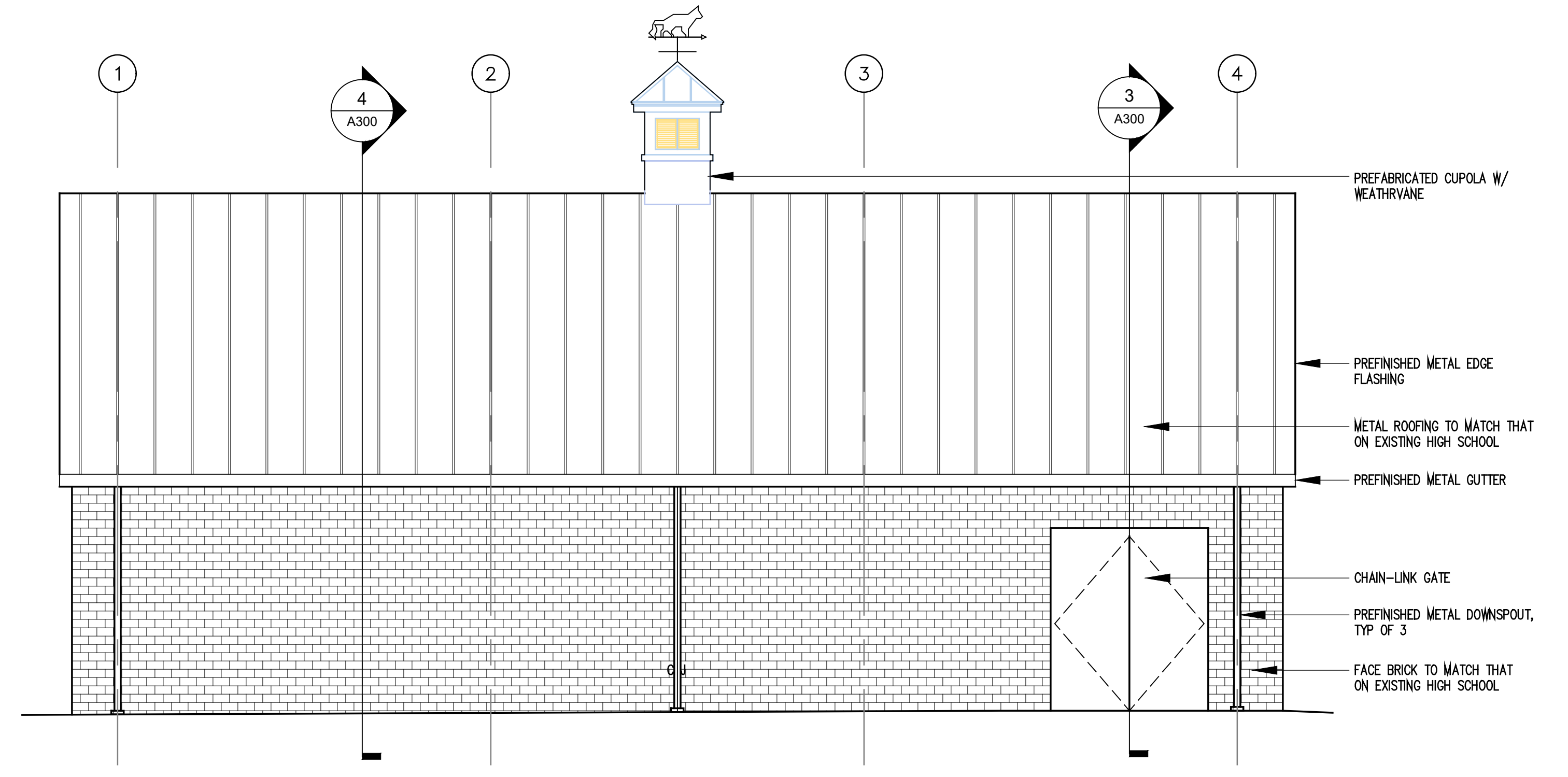
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A200

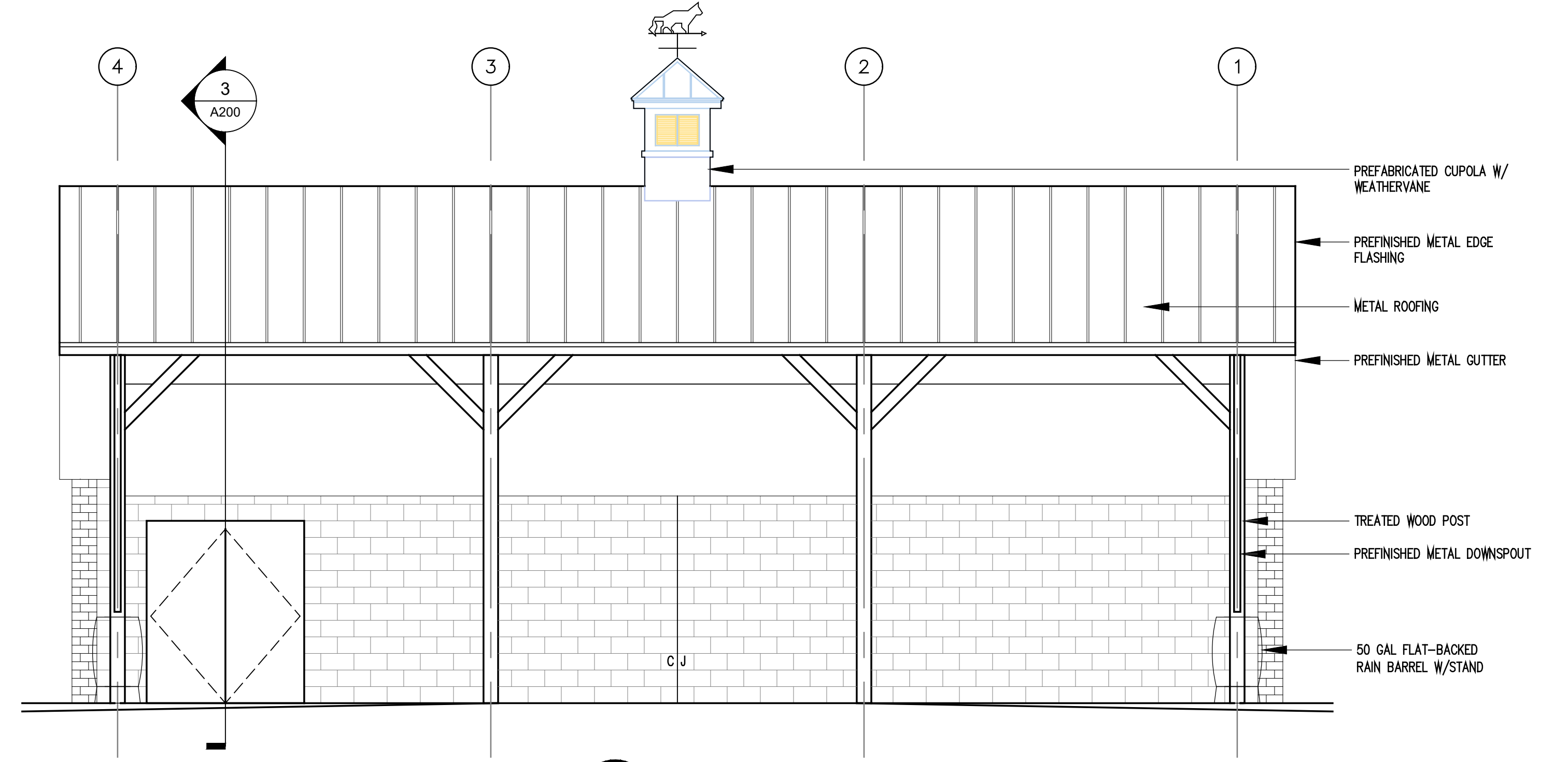
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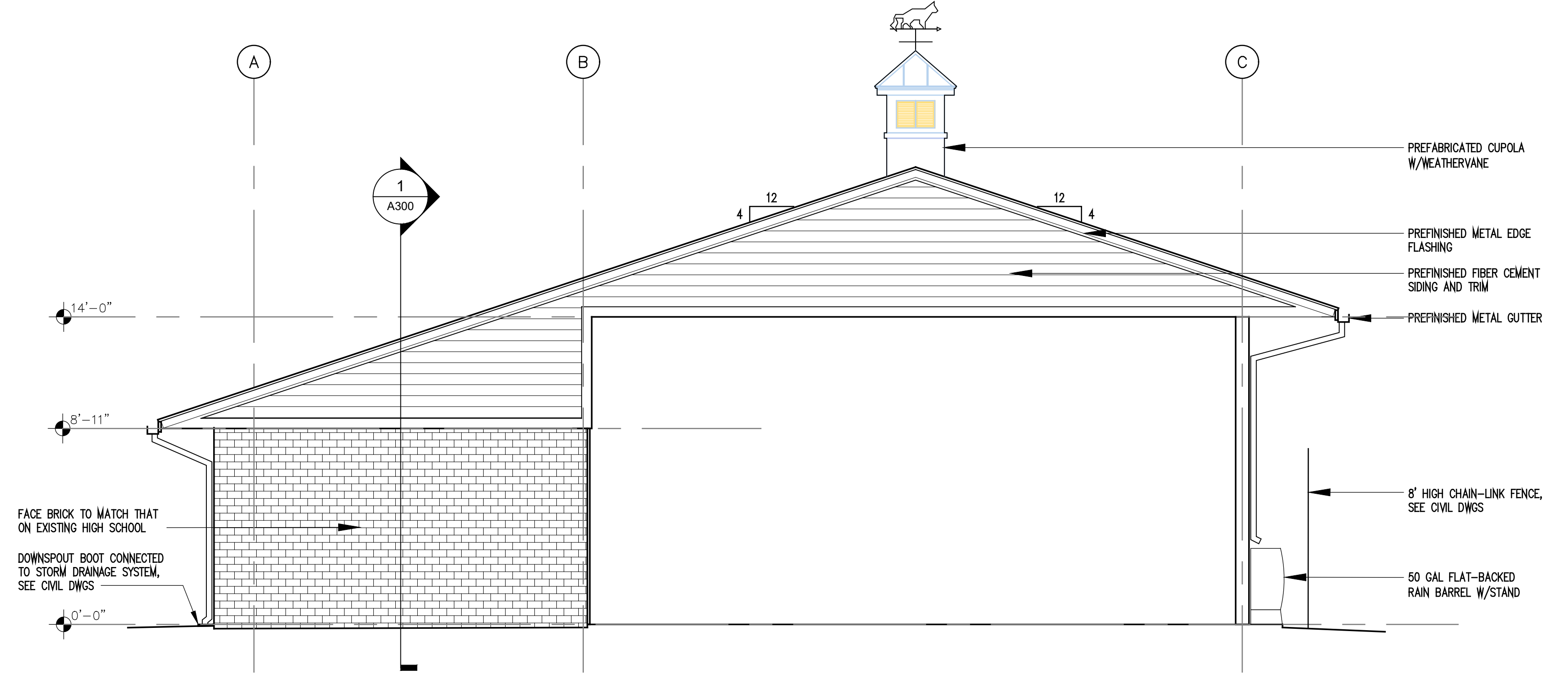
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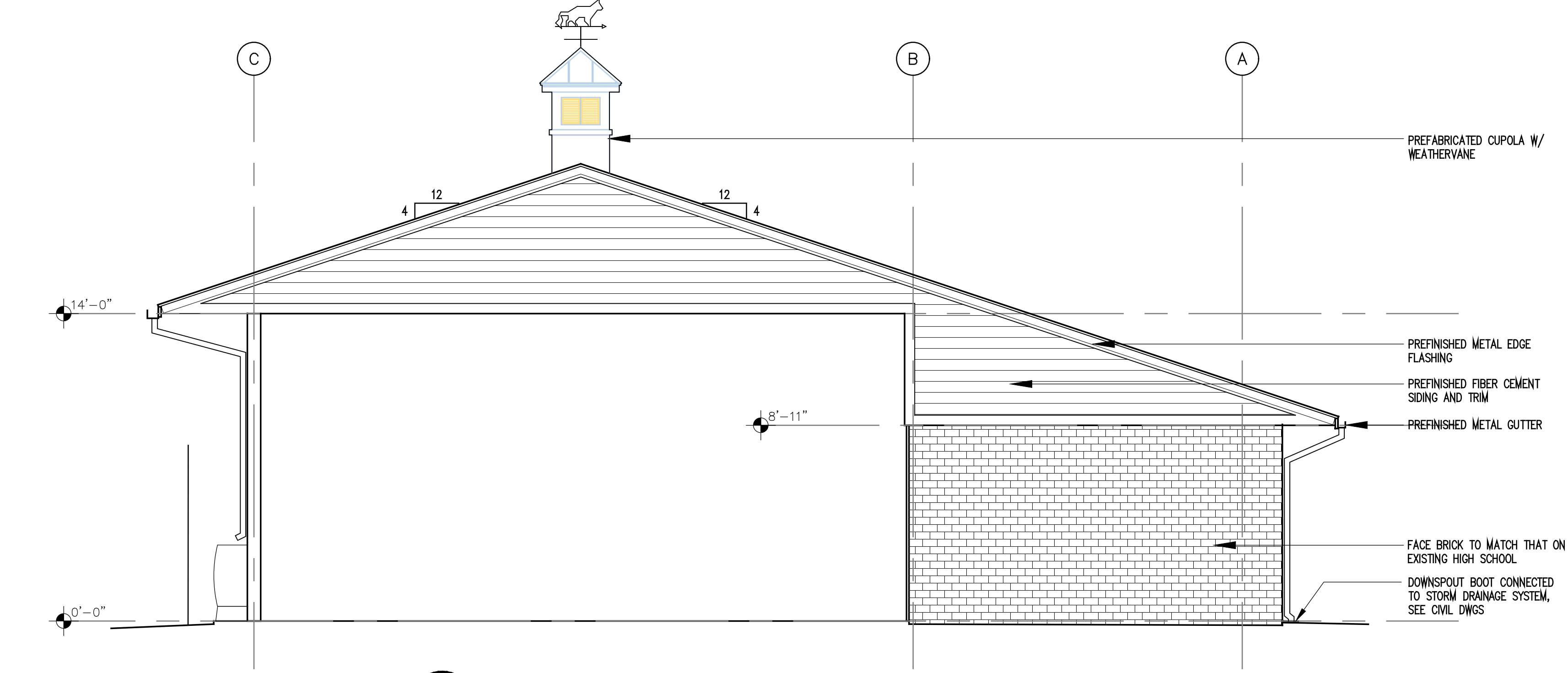
2 South Elevation
A200 Scale: 1/4" = 1'-0"



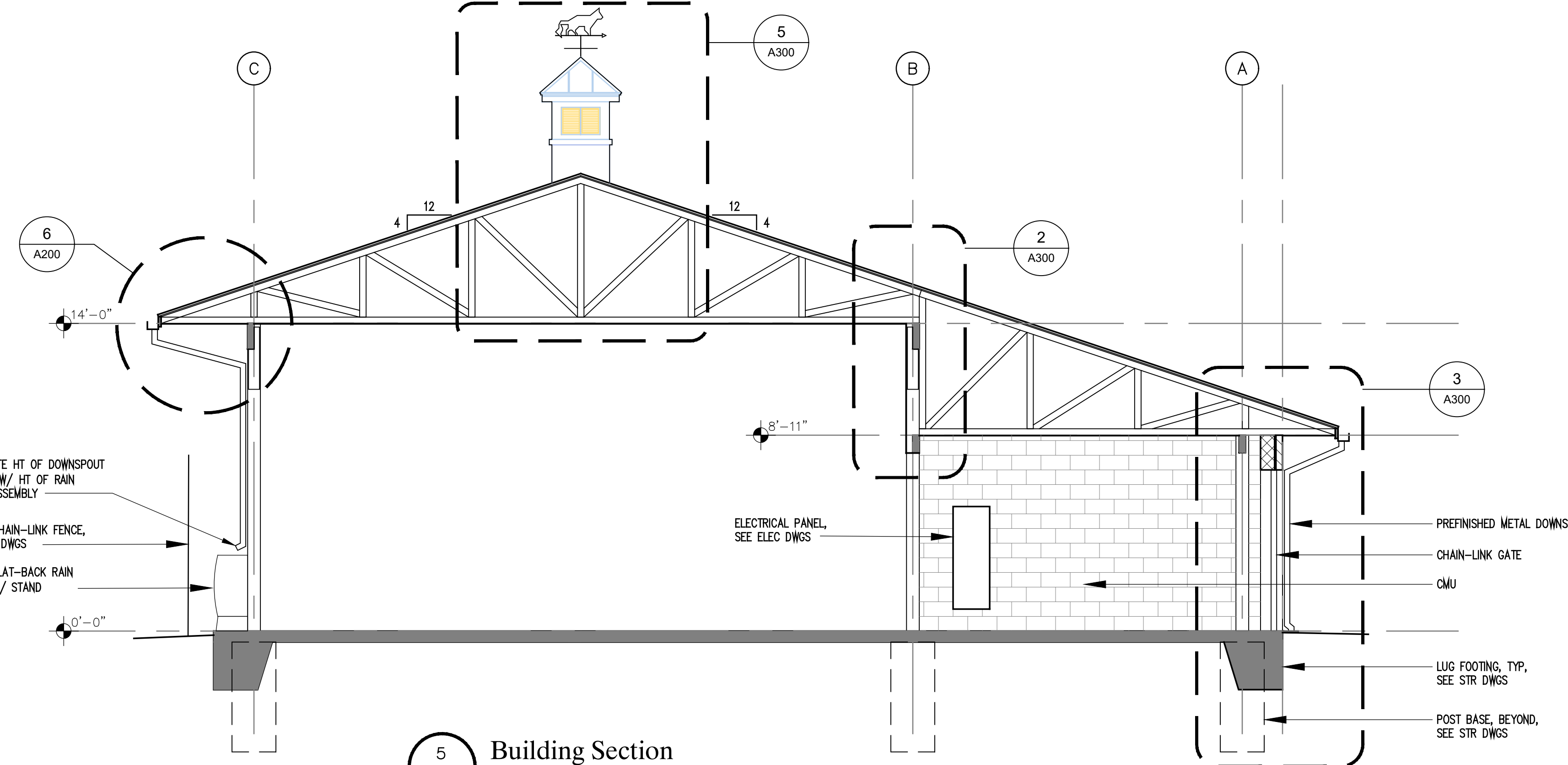
4 North Elevation
A200 Scale: 1/4" = 1'-0"



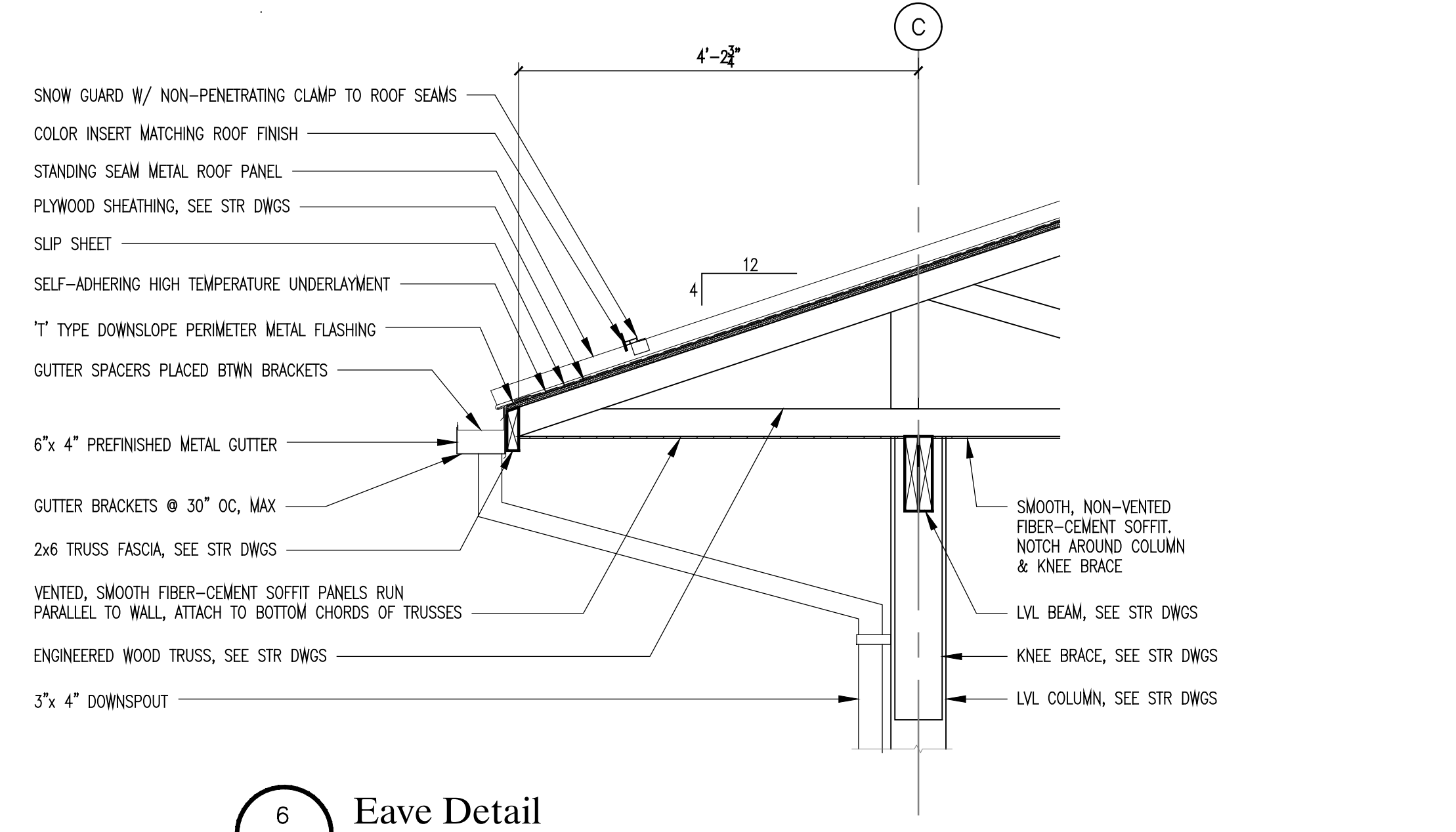
1 East Elevation
A200 Scale: 1/4" = 1'-0"



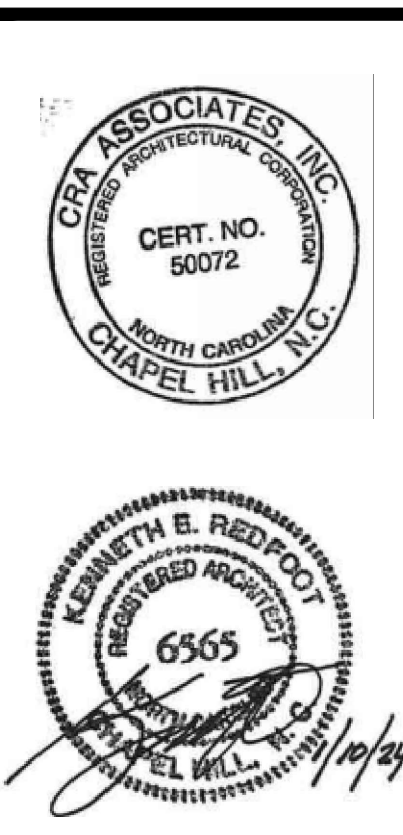
3 West Elevation
A200 Scale: 1/4" = 1'-0"



5 Building Section
A200 Scale: 1/4" = 1'-0"



6 Eave Detail
A200 Scale: 3/4" = 1'-0"



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drawn: [initials] checked: [initials]

Wall Sections & Details

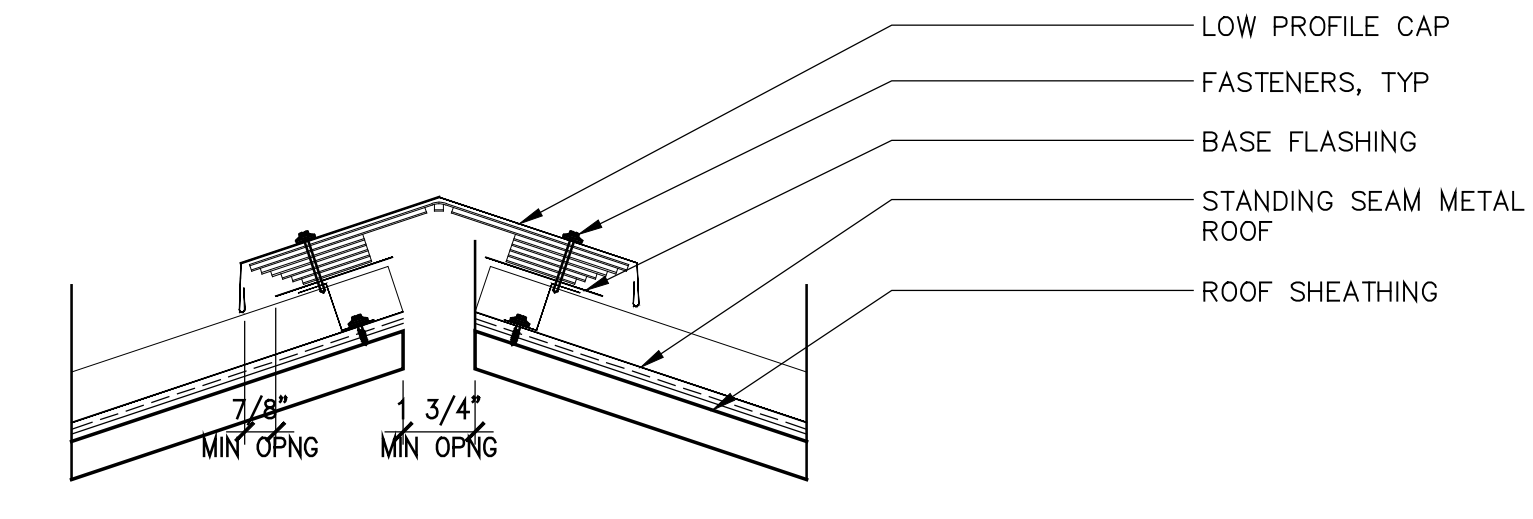
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A300

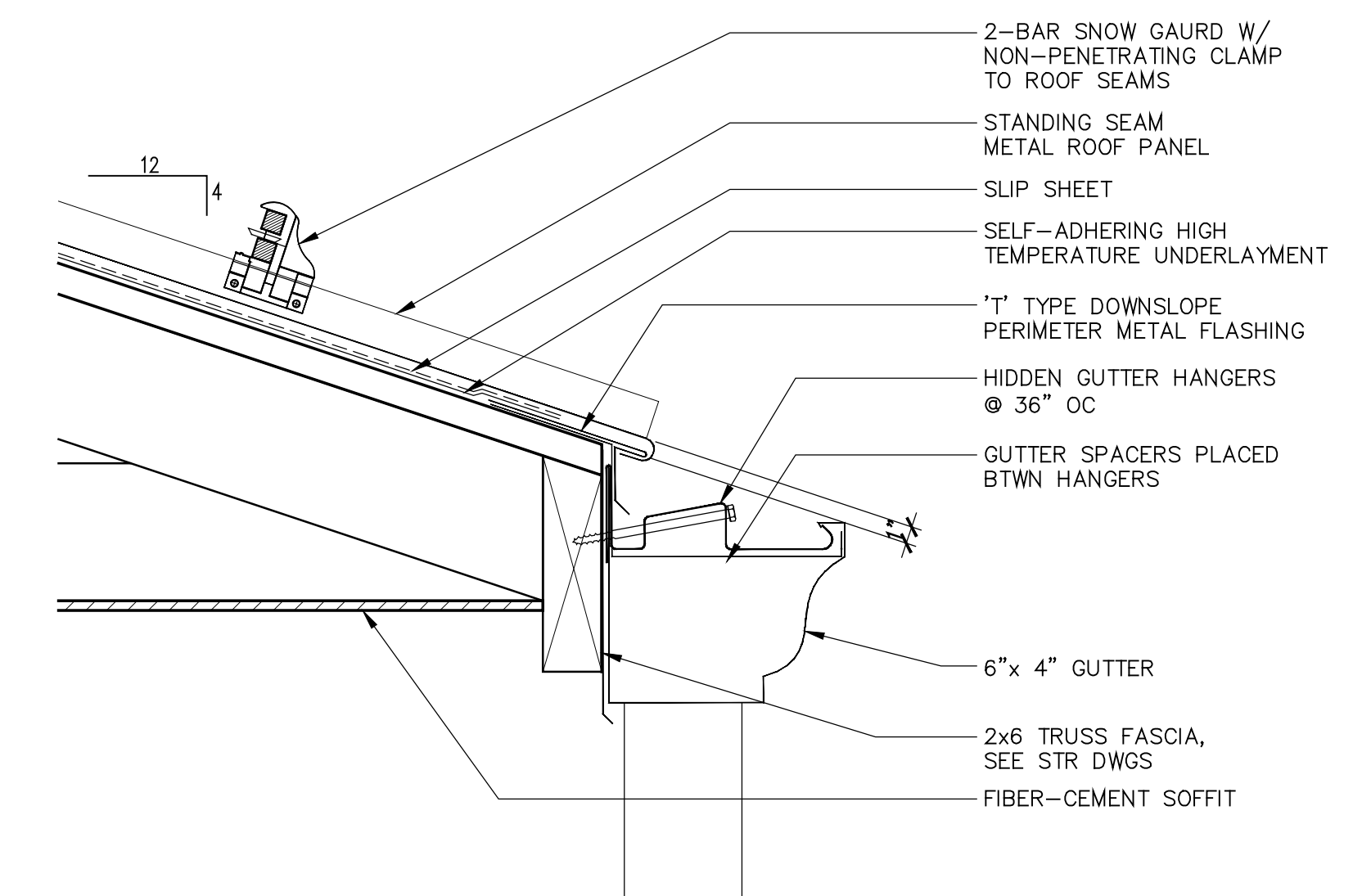
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date 1/10/24

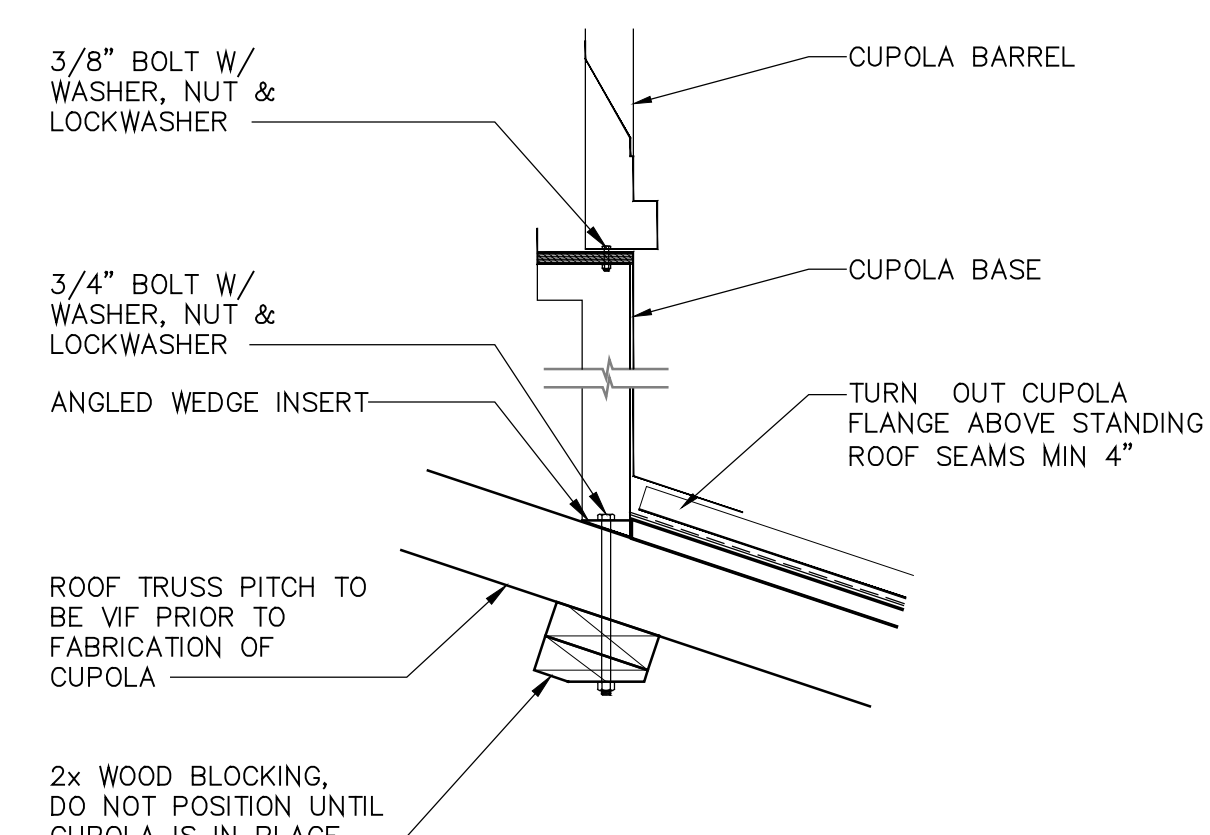
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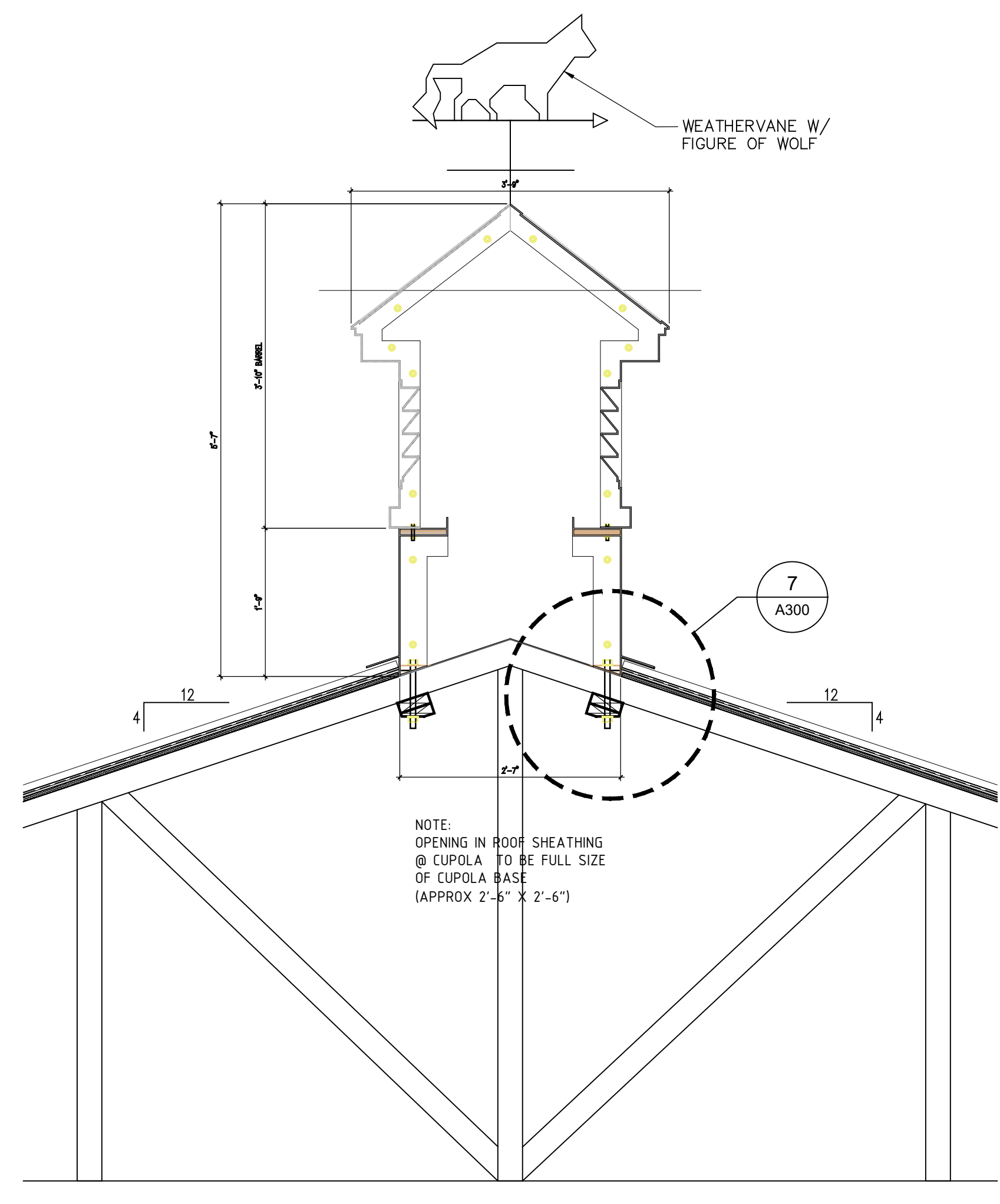
9 Ridge Ventilation System
A300 Scale: 3" = 1'-0"



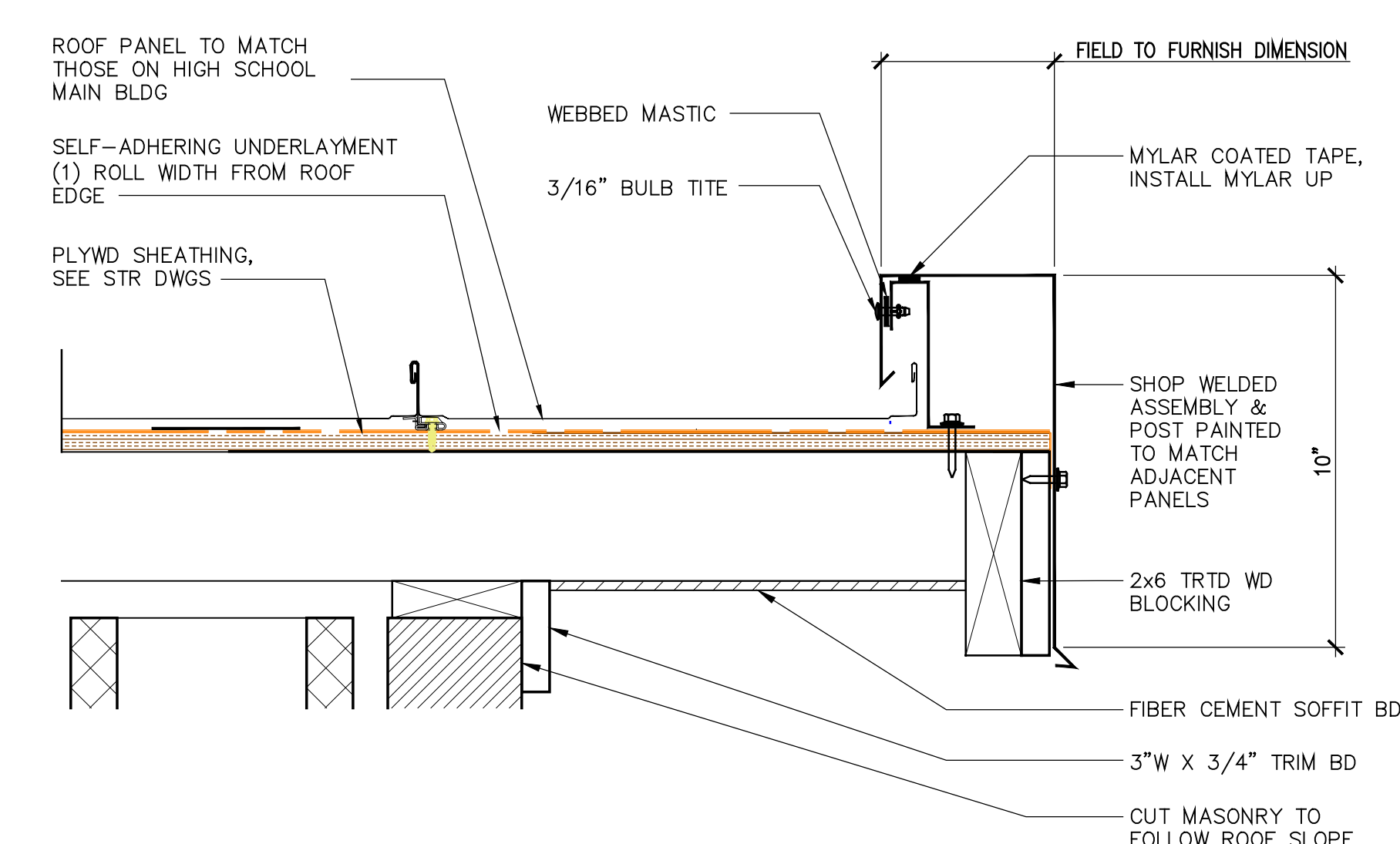
8 Roof Edge Detail w/ Gutter & Snow Guard
A300 Scale: 3" = 1'-0"



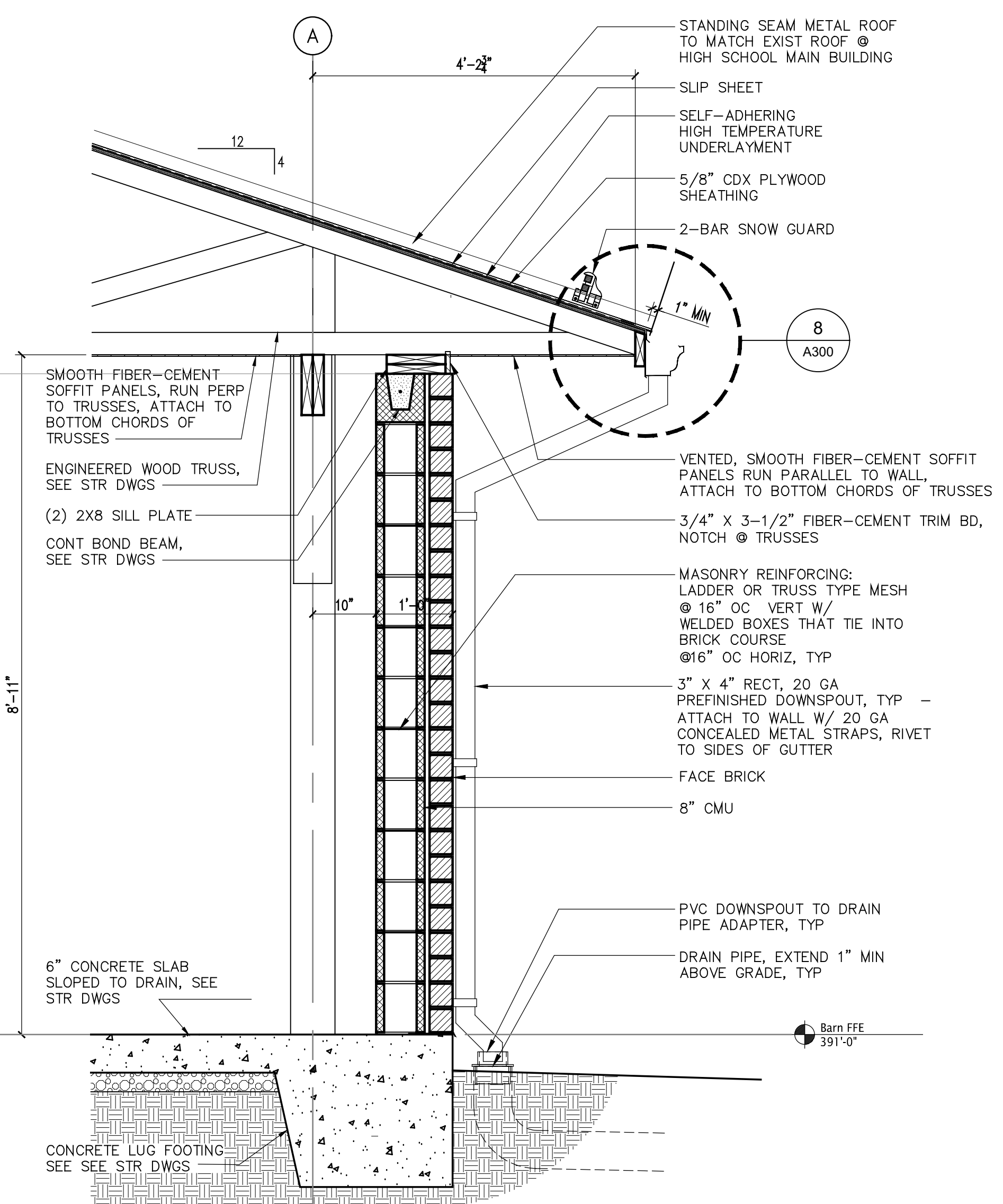
7 Cupola Attachment Detail
A300 Scale: 1 1/2" = 1'-0"



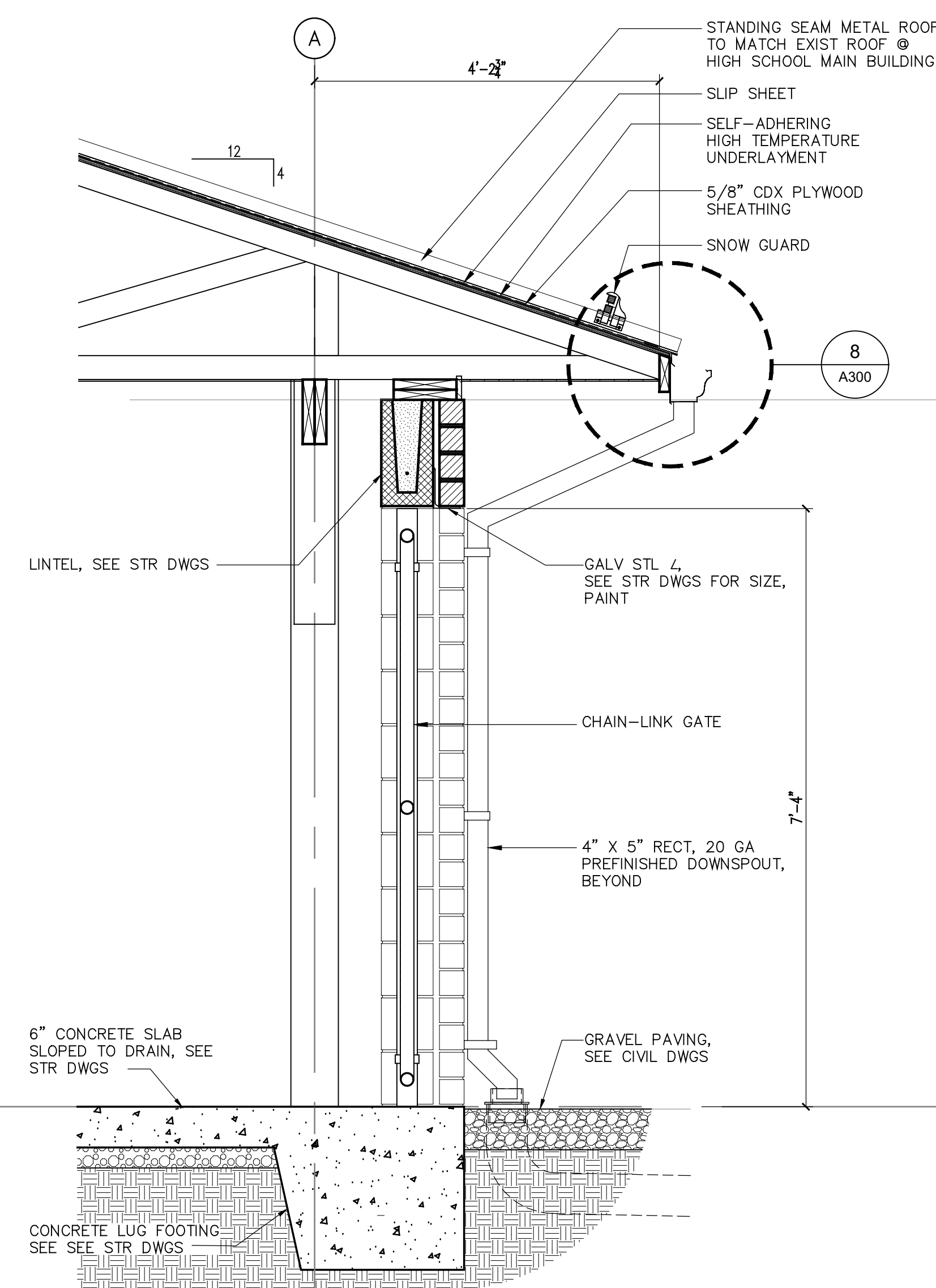
5 Section @ Cupola
A300 Scale: 3/4" = 1'-0"



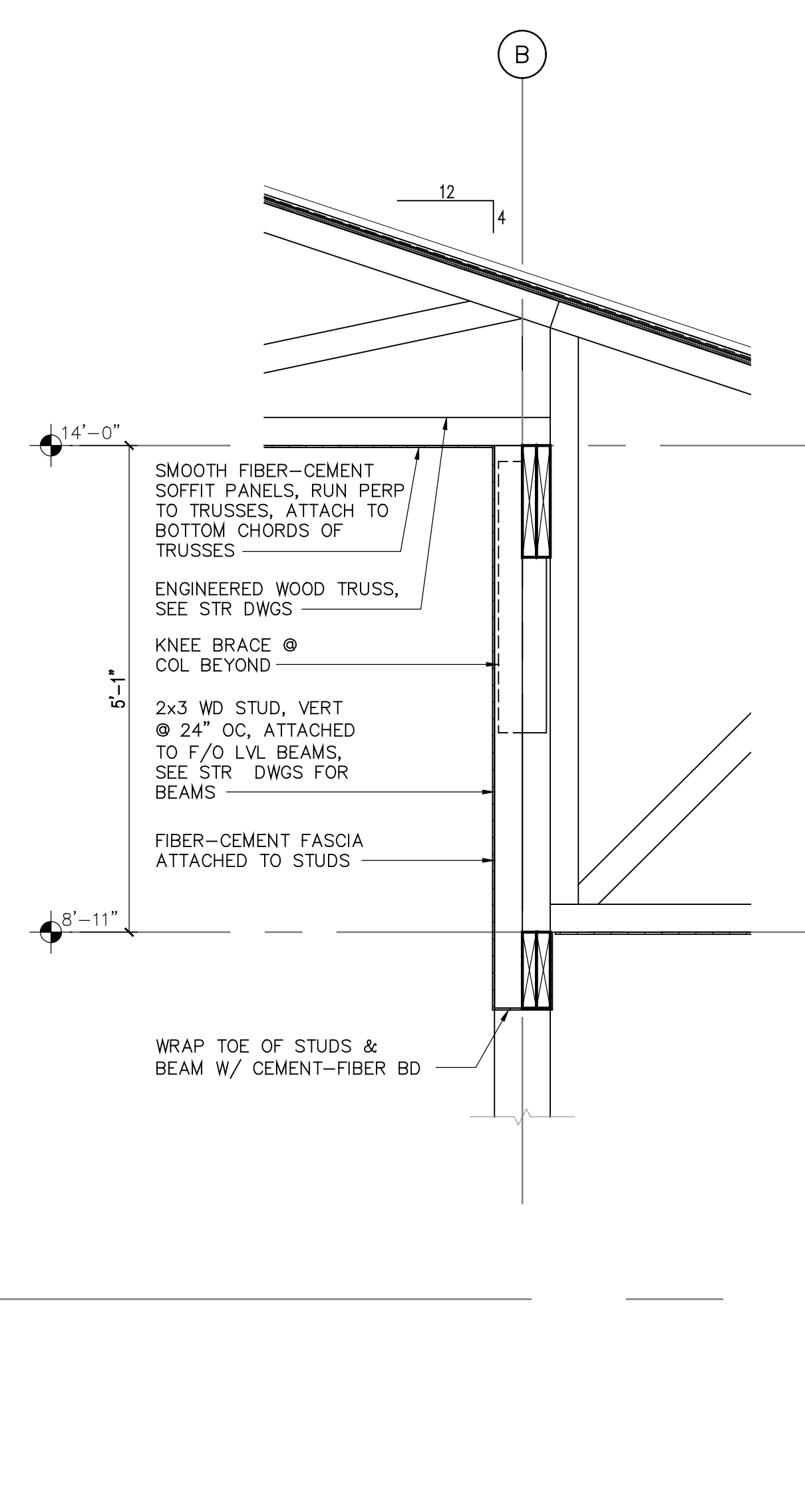
6 Gable Trim Detail
A300 Scale: 3" = 1'-0"



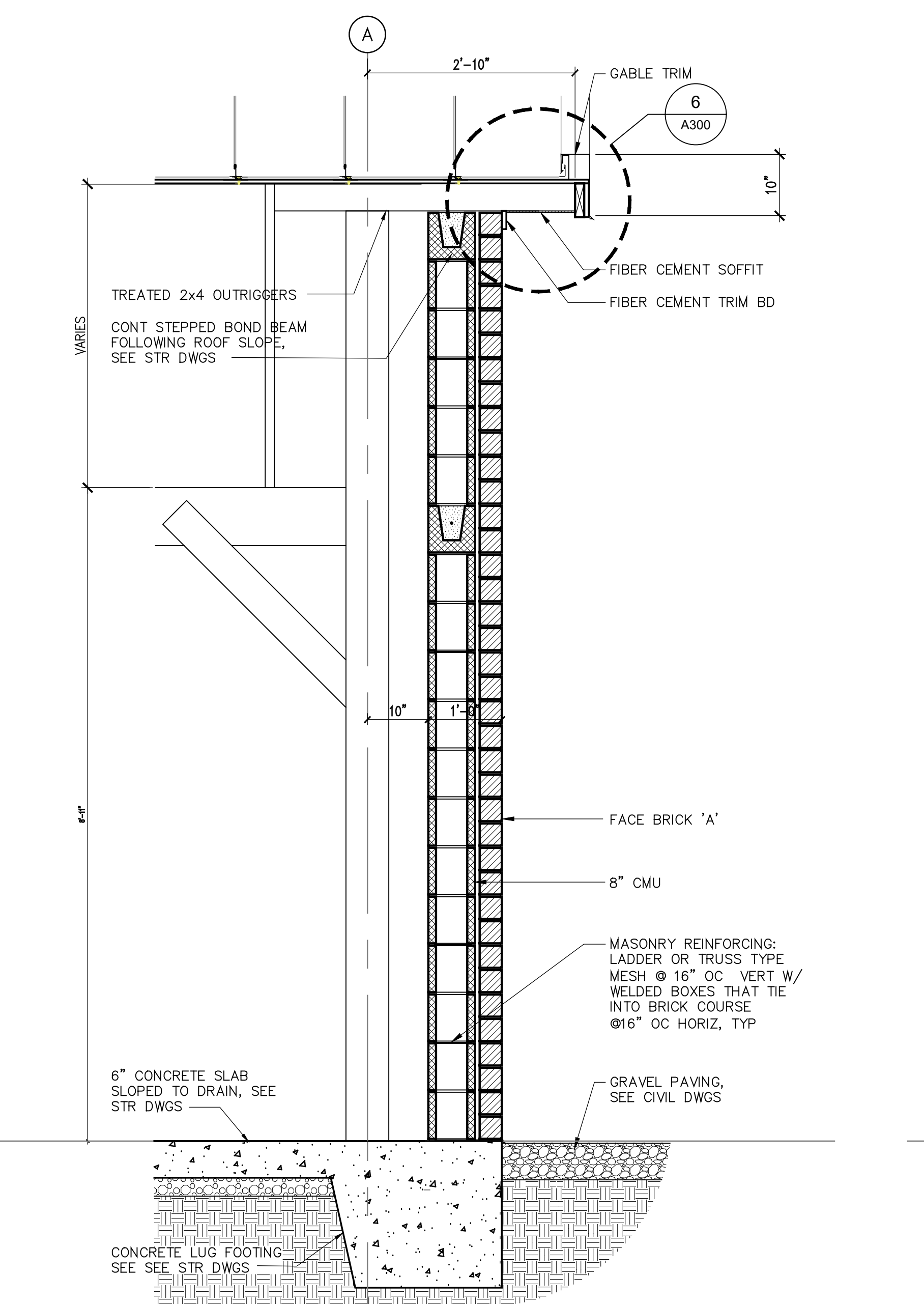
4 Typical Wall section @ South Side
A200 Scale: 3/4" = 1'-0"



3 Wall Section @ Personnel Gate
A300 Scale: 3/4" = 1'-0"



2 Section @ Bulkhead
A300 Scale: 3/4" = 1'-0"



1 Typical Section @ West Wall
A300 Scale: 3/4" = 1'-0"

