

DESIGN LIVE LOADS:

ROOF LIVE LOAD: (NCSBC 2018 Section 1607)

UNIFORM LOAD (on Horizontal Projection) _____ 20'R1'R2 PSF
 (Where R1 and R2 are Factors per NCSBC 2018, Section 1607)

CONCENTRATED LOAD (All Roof Surfaces) _____ 300 LBS

COLLATERAL HANGING LOAD _____ 5 PSF

SUPPORTED MECHANICAL EQUIPMENT LOADS _____ AS INDICATED IN CONTRACT DOCUMENTS

FLOOR LIVE LOAD: (SLAB ON GRADE) _____ 150 PSF

LOADS ON HANDRAILS, GUARDS, GRAB BARS AND VEHICLE BARRIERS:
 HANDRAILS, GUARDS, GRAB BARS AS DESIGNED IN ICC A117.1 AND VEHICLE BARRIERS SHALL BE DESIGNED AND CONSTRUCTED TO THE STRUCTURAL LOADING CONDITIONS SET FORTH IN THIS SECTION.

HANDRAILS AND GUARDS.
 HANDRAIL ASSEMBLIES AND GUARDS SHALL BE DESIGNED TO RESIST A LOAD OF 50 PLF (0.73 KNM) APPLIED IN ANY DIRECTION AT THE TOP AND TO TRANSFER THIS LOAD THROUGH THE SUPPORTS TO THE STRUCTURE. GLASS HANDRAIL ASSEMBLIES AND GUARDS SHALL ALSO COMPLY WITH SECTION 2407.

CONCENTRATED LOAD.
 HANDRAIL ASSEMBLIES AND GUARDS SHALL BE ABLE TO RESIST A SINGLE CONCENTRATED LOAD OF 200 POUNDS (0.89 KN), APPLIED IN ANY DIRECTION AT ANY POINT ALONG THE TOP, AND HAVE ATTACHMENT DEVICES AND SUPPORTING STRUCTURE TO TRANSFER THIS LOADING TO APPROPRIATE STRUCTURAL ELEMENTS OF THE BUILDING. THIS LOAD NEED NOT BE ASSUMED TO ACT CONCURRENTLY WITH THE LOADS SPECIFIED IN THE PRECEDING PARAGRAPH.

SNOW: (NCSBC 2018 Section 1608 - ASCE 7-10 CHAPTER 7)

SNOW EXPOSURE FACTOR, Ce _____ 1.0

THERMAL FACTOR, Ct _____ 1.0

IMPORTANCE FACTOR, I_s (SNOW LOADS) _____ 1.0

50-YEAR RECURRENCE GROUND SNOW LOAD, Pg _____ 10 PSF

WIND LOADS: (NCSBC 2018 Section 1609 - ASCE 7-10 CHAPTER 6)

BASIC WIND SPEED FOR RISK CATEGORY (Vult) _____ 115 MPH

RISK CATEGORY _____ II

EXPOSURE CATEGORY _____ B

IMPORTANCE FACTOR, I_w (WIND LOADS) _____ 1.0

INTERNAL PRESSURE COEFFICIENTS _____ +/- 0.18

DESIGN WIND PRESSURES FOR EXTERIOR COMPONENT AND CLADDING MATERIALS

ROOF (STRENGTH LEVEL)

ZONE 1 _____ +10 PSF/-27 PSF

ZONE 2 _____ +10 PSF/-32 PSF

ZONE 3 _____ +10 PSF/-32 PSF

WALLS

ZONE 4 _____ +24 PSF/-26 PSF

ZONE 5 _____ +23 PSF/-27 PSF

MAXIMUM STRUCTURAL DEFLECTIONS OF BRICK VENEER BACKUP UNDER WIND LOADS _____ SPAN/600

SEISMIC DESIGN: (NCSBC 2018 SECTION 1613 - ASCE 7-10)

RISK CATEGORY _____ II

SITE CLASS (REPORT) _____ C

MAPPED SPECTRAL ACCELERATION AT 0.2 sec, S_s _____ 0.271 g

MAPPED SPECTRAL ACCELERATION AT 1.0 sec, S₁ _____ 0.111 g

SITE COEFFICIENT, F_a _____ 1.583

SITE COEFFICIENT, F_v _____ 2.355

MODIFIED SHORT PERIOD

SPECTRAL RESPONSE ACCELERATION, S_m _____ 0.429 g

SOIL MODIFIED LONG PERIOD

SPECTRAL RESPONSE ACCELERATION, S_{m1} _____ 0.262 g

PERIOD SPECTRAL RESPONSE ACCELERATION, S_{ds} _____ 0.286 g

LONG PERIOD SPECTRAL RESPONSE ACCELERATION, S_{d1} _____ 0.175 g

SEISMIC DESIGN CATEGORY _____ C

IMPORTANCE FACTOR, I_e _____ 1.0

SEISMIC FORCE-RESISTING SYSTEM:
 STEEL SYSTEMS NOT SPECIFICALLY DETAILED FOR SEISMIC RESISTANCE

RESPONSE MODIFICATION FACTOR, R _____ 3

SYSTEM OVERSTRENGTH FACTOR, Ω₀ _____ 3

DEFLECTION AMPLIFICATION FACTOR, C_d _____ 3

ANALYSIS PROCEDURE: _____ EQUIVALENT LATERAL FORCE

GENERAL NOTES:

- THESE DRAWINGS SHALL BE USED WITH ARCHITECTURAL AND OTHER CONTRACT DOCUMENTS. DESIGN AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE 2018 EDITION OF THE NORTH CAROLINA STATE BUILDING CODE.
- THE CONTRACTOR SHALL PROVIDE TEMPORARY BRACING AND SHORING OF THE STRUCTURE AND COMPONENTS UNTIL ALL COMPONENTS ARE ERRECTED AND ALL CONNECTIONS ARE FULLY MADE. TEMPORARY BRACING SHALL REMAIN IN PLACE UNTIL ALL FRAMING IS COMPLETED AND ALL MASONRY CONSTRUCTION AT PERIMETER IS COMPLETED AND THE ROOF DECK CONNECTIONS ARE COMPLETED. CONTRACTOR SHALL BRACE ALL WALLS DURING CONSTRUCTION AGAINST WIND OR CONSTRUCTION LOADS.
- THE GENERAL CONTRACTOR SHALL VERIFY THE SIZE AND LOCATION OF ALL OPENINGS THROUGH ROOFS, FLOORS AND WALLS. VERIFY WITH THE TENANT, ARCHITECT AND VARIOUS TRADES AS REQUIRED. OPENINGS NOT SO VERIFIED SHALL BE MODIFIED, IF REQUIRED, AT NO ADDITIONAL COST.
- EQUIPMENT PADS SHALL BE PROVIDED BY THE MECHANICAL, ELECTRICAL, OR PLUMBING CONTRACTORS REQUIRING THE PAD.
- CONSTRUCTION METHODS, MEANS, TECHNIQUES, SEQUENCES, PROCEDURES AND SAFETY ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
- THE GENERAL CONTRACTOR SHALL VERIFY ALL NEW AND EXISTING DIMENSIONS PRIOR TO FABRICATION OF ANY STRUCTURAL COMPONENTS. NOTIFY ARCHITECT IMMEDIATELY IF DIMENSIONAL CONFLICTS EXIST.

SPECIAL INSPECTIONS

- SPECIAL INSPECTIONS ARE NOT REQUIRED.

CONCRETE TESTING

- TESTING AGENCY: OWNER WILL EMPLOY AND PAY FOR A QUALIFIED INDEPENDENT TESTING AND INSPECTING AGENCY TO SAMPLE MATERIALS, PERFORM TESTS, AND SUBMIT TEST REPORTS DURING CONCRETE PLACEMENT. SAMPLING AND TESTING FOR QUALITY CONTROL MAY INCLUDE THOSE SPECIFIED IN THIS ARTICLE.
- TESTING SERVICES: TESTING OF COMPOSITE SAMPLES OF FRESH CONCRETE OBTAINED ACCORDING TO ASTM C172 SHALL BE PERFORMED ACCORDING TO THE FOLLOWING REQUIREMENTS:
 - TESTING FREQUENCY: OBTAIN AT LEAST ONE COMPOSITE SAMPLE FOR EACH 100 CU. YD. OR FRACTION THEREOF OF EACH CONCRETE MIX PLACED EACH DAY.
 - WHEN FREQUENCY OF TESTING WILL PROVIDE FEWER THAN FIVE COMPRESSIVE-STRENGTH TESTS FOR EACH CONCRETE MIX, TESTING SHALL BE CONDUCTED FROM AT LEAST FIVE RANDOMLY SELECTED BATCHES OR FROM EACH BATCH IF FEWER THAN FIVE ARE USED.
- SLUMP: ASTM C143; ONE TEST AT POINT OF PLACEMENT FOR EACH COMPOSITE SAMPLE, BUT NOT LESS THAN ONE TEST FOR EACH DAY'S POUR OF EACH CONCRETE MIX. PERFORM ADDITIONAL TESTS WHEN CONCRETE CONSISTENCY APPEARS TO CHANGE.
- AIR CONTENT: ASTM C231, PRESSURE METHOD, FOR NORMAL-WEIGHT CONCRETE; ASTM C 173, VOLUMETRIC METHOD, FOR STRUCTURAL LIGHTWEIGHT CONCRETE; ONE TEST FOR EACH COMPOSITE SAMPLE, BUT NOT LESS THAN ONE TEST FOR EACH DAY'S POUR OF EACH CONCRETE MIX.
- CONCRETE TEMPERATURE: ASTM C1064; ONE TEST HOURLY WHEN AIR TEMPERATURE IS 40 DEGREES

AND BELOW AND WHEN 80 DEGREES AND ABOVE, AND ONE TEST FOR EACH COMPOSITE SAMPLE.

- UNIT WEIGHT: ASTM C567, FRESH UNIT WEIGHT OF STRUCTURAL LIGHTWEIGHT CONCRETE; ONE TEST FOR EACH COMPOSITE SAMPLE, BUT NOT LESS THAN ONE TEST FOR EACH DAY'S POUR OF EACH CONCRETE MIX.
- COMPRESSION TEST SPECIMENS: ASTM C31/C31M, CAST AND LABORATORY CURE ONE SET OF FIVE STANDARD CYLINDER SPECIMENS FOR EACH COMPOSITE SAMPLE.
 - CAST AND FIELD CURE ONE SET OF FIVE STANDARD CYLINDER SPECIMENS FOR EACH COMPOSITE SAMPLE.
 - TWO CYLINDERS SHALL BE BROKEN AT 7 AND TWO AT 28 DAYS. THE FIFTH CYLINDER SHALL BE HELD IN RESERVE AND BROKEN AT THE DIRECTION OF THE STRUCTURAL ENGINEER.

WHEN STRENGTH OF FIELD-CURED CYLINDERS IS LESS THAN 85 PERCENT OF COMPANION LABORATORY-CURED CYLINDERS, CONTRACTOR SHALL EVALUATE OPERATIONS AND PROVIDE CORRECTIVE PROCEDURES FOR PROTECTING AND CURING IN-PLACE CONCRETE.

STRENGTH OF EACH CONCRETE MIX WILL BE SATISFACTORY IF EVERY AVERAGE OF ANY THREE CONSECUTIVE COMPRESSIVE-STRENGTH TESTS EQUALS OR EXCEEDS SPECIFIED COMPRESSIVE STRENGTH AND NONCOMPRESSIVE-STRENGTH TEST VALUE FALLS BELOW SPECIFIED COMPRESSIVE STRENGTH BY MORE THAN 500PSI.

TEST RESULTS SHALL BE REPORTED IN WRITING TO ARCHITECT, CONCRETE MANUFACTURER, AND CONTRACTOR WITHIN 48 HOURS OF TESTING. REPORTS OF COMPRESSIVE-STRENGTH TESTS SHALL CONTAIN PROJECT IDENTIFICATION NAME AND NUMBER, DATE OF CONCRETE PLACEMENT, NAME OF CONCRETE TESTING AND INSPECTING AGENCY, LOCATION OF CONCRETE BATCH IN WORK, DESIGN COMPRESSIVE STRENGTH AT 28 DAYS, CONCRETE MIX PROPORTIONS AND MATERIALS, COMPRESSIVE BREAKING STRENGTH, AND TYPE OF BREAK FOR BOTH 7-AND 28-DAY TESTS.

NONDESTRUCTIVE TESTING: IMPACT HAMMER, SONOSCOPE, OR OTHER NONDESTRUCTIVE DEVICE MAY BE PERMITTED BY ARCHITECT BUT WILL NOT BE USED AS SOLE BASIS FOR APPROVAL OR REJECTION OF CONCRETE.

ADDITIONAL TESTS: TESTING AND INSPECTING AGENCY SHALL MAKE ADDITIONAL TESTS OF CONCRETE WHEN TEST RESULTS INDICATE THAT SLUMP, AIR ENTRAINMENT, COMPRESSIVE STRENGTHS, OR OTHER REQUIREMENTS HAVE NOT BEEN MET, AS DIRECTED BY ARCHITECT. TESTING AND INSPECTING AGENCY MAY CONDUCT TESTS TO DETERMINE ADEQUACY OF CONCRETE BY CORED CYLINDERS COMPLYING WITH ASTM C42 OR BY OTHER METHODS AS DIRECTED BY ARCHITECT.

STEEL TESTING

- TESTING AGENCY: OWNER WILL ENGAGE A QUALIFIED INDEPENDENT TESTING AND INSPECTING AGENCY TO INSPECT FIELD WELDS AND HIGH-STRENGTH BOLTED CONNECTIONS.
- FIELD WELDS (INCLUDING DECK WELDS) WILL BE VISUALLY INSPECTED ACCORDING TO AWS D1.1.
- BOLTED CONNECTIONS WILL BE VISUALLY INSPECTED.

HIGH-STRENGTH, FIELD-BOLTED CONNECTIONS WILL BE TESTED AND VERIFIED ACCORDING TO PROCEDURES IN RCSC'S "ALLOWABLE STRESS DESIGN SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A 325 ORASTM A 490 BOLTS." CORRECT DEFICIENCIES IN WORK THAT INSPECTIONS AND TEST REPORTS HAVE INDICATED ARE NOT IN COMPLIANCE WITH SPECIFIED REQUIREMENTS.

ADDITIONAL TESTING WILL BE PERFORMED TO DETERMINE COMPLIANCE OF CORRECTED WORK WITH SPECIFIED REQUIREMENTS.

OWNER WILL ENGAGE AN INDEPENDENT TESTING AND INSPECTING AGENCY TO PERFORM SHOP INSPECTIONS AND TESTS AND TO PREPARE TEST REPORTS.

TESTING AGENCY WILL CONDUCT AND INTERPRET TESTS AND STATE IN EACH REPORT WHETHER TEST SPECIMENS COMPLY WITH OR DEVIATE FROM REQUIREMENTS.

PROVIDE TESTING AGENCY WITH ACCESS TO PLACES WHERE STRUCTURAL STEEL WORK IS BEING FABRICATED OR PRODUCED SO REQUIRED INSPECTION AND TESTING CAN BE ACCOMPLISHED.

CORRECT DEFICIENCIES IN OR REMOVE AND REPLACE STRUCTURAL STEEL THAT INSPECTIONS AND TEST REPORTS INDICATE DO NOT COMPLY WITH SPECIFIED REQUIREMENTS.

ADDITIONAL TESTING, AT CONTRACTOR'S EXPENSE, WILL BE PERFORMED TO DETERMINE COMPLIANCE OF CORRECTED WORK WITH SPECIFIED REQUIREMENTS.

SHOP-BOLTED CONNECTIONS WILL BE TESTED AND INSPECTED ACCORDING TO RCSC'S "SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A 325 OR A 490 BOLTS."

IN ADDITION TO VISUAL INSPECTION, SHOP-WELDED CONNECTIONS WILL BE INSPECTED AND TESTED ACCORDING TO AWS D1.1 AND THE INSPECTION PROCEDURES LISTED BELOW, AT TESTING AGENCY'S OPTION.

- LIQUID PENETRANT INSPECTION: ASTM E 165.
- MAGNETIC PARTICLE INSPECTION: ASTM E 709; PERFORMED ON ROOT PASS AND ON FINISHED WELD. CRACKS OR ZONES OF INCOMPLETE FUSION OR PENETRATION WILL NOT BE ACCEPTED.
- RADIOGRAPHIC INSPECTION: ASTM E 94 AND ASTM E 142; MINIMUM QUALITY LEVEL "2-2T."
- ULTRASONIC INSPECTION: ASTM E 164.

IN ADDITION TO VISUAL INSPECTION, SHOP-WELDED SHEAR CONNECTORS WILL BE INSPECTED AND TESTED ACCORDING TO REQUIREMENTS OF AWS D1.1 FOR STUD WELDING AND AS FOLLOWS:

- BEND TESTS WILL BE PERFORMED WHEN VISUAL INSPECTIONS REVEAL EITHER LESS THAN A CONTINUOUS 360-DEGREE FLASH OR WELDING REPAIRS TO ANY SHEAR CONNECTOR.
- TESTS WILL BE CONDUCTED ON ADDITIONAL SHEAR CONNECTORS WHEN WELD FRACTURE OCCURS ON SHEAR CONNECTORS ALREADY TESTED, ACCORDING TO REQUIREMENTS OF AWS D1.1.

SHOP DRAWINGS:

- SUBMIT SHOP DRAWINGS ON ALL MATERIALS FOR REVIEW BEFORE FABRICATION. THE CONTRACT DRAWINGS SHALL NOT BE USED AS BASE DRAWINGS FOR SHOP DRAWINGS. SHOP DRAWINGS SUBMITTED FOR REVIEW WHICH WERE PREPARED WITH CONTRACT DRAWINGS USED AS BASE DRAWINGS WILL BE REJECTED.
- ALL SUBMITTALS TO ENGINEER FOR REVIEW SHALL BE PREVIOUSLY REVIEWED BY THE CONTRACTOR, WITH HIS APPROVAL STAMPED ON THE DRAWINGS, DATED AND SIGNED. SUBMITTALS NOT CONFORMING SHALL BE SUFFICIENT REASON FOR REJECTION BY THE ENGINEER.

REINFORCING STEEL:

- REINFORCING STEEL SHALL CONFORM TO ASTM A 615, AND SHALL BE GRADE 60. REINFORCING STEEL THAT IS TO BE WELDED OR OTHERWISE INDICATED, SHALL BE ASTM A 706 GRADE 60.
- WELDED WIRE FABRIC SHALL BE NEW BILLET STEEL, COLD DRAWN CONFORMING TO THE ASTM SPECIFICATIONS A 185 AND A 82 AND SHALL BE DELIVERED TO THE JOB SITE IN FLAT SHEETS (NO ROLLS).
- BAR SUPPORTS, DESIGN, DETAILING, FABRICATION AND PLACING OF REINFORCING STEEL SHALL BE IN ACCORDANCE WITH THE AMERICAN CONCRETE INSTITUTE CODE AND DETAILING MANUAL, LATEST EDITION. SUPPORT ALL REINFORCING ON METAL CHAIRS OR BOLSTERS.
- ALL REINFORCING STEEL LAPS FOR MASONRY SHALL BE AS INDICATED IN THE SCHEDULE INDICATED IN THE CONSTRUCTION DOCUMENTS (18" MINIMUM), UNLESS NOTED OTHERWISE. ALL LAP SPLICES SHALL BE TIED WITH WIRE TIES PRIOR TO LAYING THE MASONRY LIFTS.
- USE CORNER BARS IN BOND BEAMS AND AT CORNERS OF EACH RUN OF LONGITUDINAL REINFORCING. CORNER BARS SHALL BE THE SAME SIZE AND SPACING AS LONGITUDINAL BARS. OVERLAP STEPS IN BOND BEAMS BY 8 FEET.

ALL REINFORCING STEEL LAPS FOR CONCRETE REINFORCING SHALL BE CONSIDERED A CLASS B SPLICE UNLESS NOTED OTHERWISE, 16" MINIMUM.

CONCRETE:

ALL CONCRETE CONSTRUCTION SHALL COMPLY WITH ACI 301, "SPECIFICATIONS FOR STRUCTURAL CONCRETE," UNLESS OTHERWISE NOTED ON THE CONTRACT DRAWINGS OR IN THE SPECIFICATIONS. COORDINATE CONCRETE WORK WITH OTHER TRADES BEFORE BEGINNING WORK. VIBRATE ALL CONCRETE PLACED IN FOOTING EXCAVATIONS. THE GENERAL CONTRACTOR SHALL COORDINATE WITH THE OWNER AND ARCHITECT ANY REQUIREMENTS BY THE OWNER, OR VARIOUS TRADES FOR TRENCHES, PITTS, INSERT ITEMS, OPENINGS, ETC. WHICH MAY BE REQUIRED IN THE FLOOR SLABS BEFORE PLACING CONCRETE.

TOLERANCES FOR ALL CONCRETE CONSTRUCTION SHALL COMPLY WITH ACI 117, SPECIFICATIONS FOR TOLERANCES FOR CONCRETE CONSTRUCTION AND MATERIALS.

NO ANCHOR RODS OR REINFORCING SHALL BE ALLOWED TO BE WET SET. ANCHOR RODS FOR COLUMNS SHALL BE POSITIONED WITH A TEMPLATE PRIOR TO PLACING CONCRETE IN THE PIER OR FOOTING. NUTS SHALL BE TIGHTENED ON EACH SIDE OF THE TEMPLATE TO HOLD THE ANCHOR RODS IN PLACE.

CONCRETE COVER FOR ALL REINFORCING SHALL BE (UNLESS OTHERWISE INDICATED IN THE DRAWINGS):

CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH THROUGH EXPOSED TO EARTH OR WEATHER	3"
No. 6 THROUGH No. 18 BARS	2"
No. 5 AND SMALLER	1 1/2"
CONCRETE NOT EXPOSED TO EARTH OR WEATHER OR IN CONTACT WITH THE GROUND SLABS, WALLS, AND JOISTS	1 1/2"
No. 14 AND No. 18 BARS	1 1/2"
No. 11 AND SMALLER	3/4"
BEAMS AND COLUMNS	1 1/2"
PRIMARY REINFORCEMENT, TIES STIRRUPS AND SPIRALS	1 1/2"
No. 14 AND No. 18 BARS	1 1/2"
No. 11 AND SMALLER	3/4"

ALL COLD WEATHER CONCRETE CONSTRUCTION SHALL CONFORM TO ACI 308R, COLD WEATHER CONCRETING. HOT WEATHER CONCRETE CONSTRUCTION SHALL CONFORM TO ACI 305R, HOT WEATHER CONCRETING.

THE CONTRACTOR SHALL NOTIFY THE ARCHITECT AND ENGINEER FAR ENOUGH IN ADVANCE OF THE TIME EACH CONCRETE POUR IS TO BE MADE TO ALLOW AMPLE TIME TO CHECK THE LAYOUT OF THE STEEL BEFORE BEGINNING THE ACTUAL POUR, BUT NOT IN ADVANCE OF THE TIME THAT 90% OF THE STEEL FOR THAT POUR HAS BEEN PLACED.

CONCRETE MIXES:

ALL CONCRETE SHALL BE NORMAL WEIGHT (N.W.) WITH A MAXIMUM UNIT WEIGHT OF 150 POUNDS PER CUBIC FOOT AND SHALL HAVE A 28 DAY COMPRESSIVE STRENGTH, AS SPECIFIED BELOW, FOR THE RESPECTIVE LOCATIONS.

FOOTINGS	3,000 PSI N.W.
SLABS-ON-GRADE (INTERIOR)	3,500 PSI N.W.
SLABS-ON-GRADE (EXTERIOR)	4,000 PSI N.W.
CONCRETE (NOT OTHERWISE SPECIFIED)	4,000 PSI N.W.

CONCRETE MIX DESIGNS SHALL BE IN ACCORDANCE WITH ACI 301 AND SHALL BE SUBMITTED FOR APPROVAL. SUBMITTALS NOT CONFORMING WITH ACI 301 WILL BE REJECTED. CONCRETE SHALL BE PLACED ONLY WITH AN APPROVED MIX DESIGN FOR THE LOCATION TO BE USED.

CONCRETE MIXES SHALL COMPLY WITH THE MOST RESTRICTIVE REQUIREMENTS OF ACI TABLE 4.3.1, BASED ON THE ASSIGNED CONCRETE EXPOSURE CLASSES INDICATED BELOW.

CONCRETE EXPOSURE CATEGORIES AND CLASSES:

FREEZING AND THAWING, F:	
F0 - NOT APPLICABLE	INTERIOR SLABS AND NON-EXPOSED CONCRETE
F1 - MODERATE	EXTERIOR EXPOSED WALLS, BEAMS, GIRDERS
F2 - SEVERE	EXTERIOR EXPOSED SLAB ON GRADE

SULFATE, S:
 S0 - NOT APPLICABLE

REQUIRING LOW PERMEABILITY, P:
 P0 - NOT APPLICABLE

CORROSION PROTECTION OF REINFORCEMENT, C:	
C0 - NOT APPLICABLE	INTERIOR SLABS AND NON-EXPOSED CONCRETE
C1 - MODERATE	CONCRETE EXPOSED TO MOISTURE BUT NO EXTERNAL CHLORIDE

THE MAXIMUM WATER TO CEMENTITIOUS MATERIALS RATIO SHALL BE, AS SPECIFIED BELOW, FOR THE RESPECTIVE LOCATIONS.

INTERIOR CONDITION	0.50
EXTERIOR CONDITION	0.45

ALL EXPOSED CONCRETE SHALL BE AIR-ENTRAINED (6%, +/- 1%).

ALL AGGREGATES SHALL CONFORM TO ASTM C33 WITH A MAXIMUM COARSE AGGREGATE SIZE OF 1" (NO. 57 STONE) FOR SLABS-ON-GRADE AND FOOTINGS AND A MAXIMUM COARSE AGGREGATE SIZE OF 3/4" (NO. 67) FOR ALL OTHER CONCRETE. ALL MATERIALS SHALL BE PROPORTIONED TO PRODUCE A WELL GRADED MIXTURE OF HIGH DENSITY AND MAXIMUM WORKABILITY.

FLY ASH SHALL CONFORM TO ASTM C 618, CLASS C OR F AND SHALL BE LIMITED, BY WEIGHT, TO A MAXIMUM OF 20% OF THE TOTAL CEMENT PLUS FLY ASH. OTHER POZZOLAN MATERIALS SHALL NOT BE PERMITTED WITHOUT THE APPROVAL OF THE STRUCTURAL ENGINEER.

FLY ASH SHALL NOT BE PERMITTED IN CONCRETE PLACED SUBJECT TO COLD WEATHER PLACEMENT PROCEDURES.

WATER SHALL NOT BE ADDED TO THE CONCRETE MIX AT THE JOB SITE THAT CHANGES THE APPROVED WATER/CEMENT RATIO.

METAL DECK:

STEEL ROOF DECK IS A 1 1/2" DEEP, WIDE RIB METAL ROOF DECK, 22 GA, 36" PANEL WIDTH, GALVANIZED FINISH (G60). DECK SHALL BE SECURELY ATTACHED TO SUPPORTS AS CALLED FOR ON THE DRAWINGS. DECK PANEL LENGTH AN PLACEMENT SHALL PROVIDE A MINIMUM 3 SPAN CONDITION. FASTEN DECK AROUND ROOF PERIMETER AND ALL OPENINGS AT 8" OC. E80XX ELECTRODES MAY BE USED FOR ROOF DECK ATTACHMENT TO SUPPORTS. FRAME ALL ROOF OPENINGS GREATER THAN 9" WITH A 3 1/2x3 1/2x1/4 ANGLE FRAME.

COLD FORMED METAL FRAMING (LIGHT GAUGE):

ENGINEERED CALCULATIONS AND DESIGN SHALL BE PERFORMED BY AND SHALL BE SIGNED BY A LICENSED PROFESSIONAL ENGINEER, LICENSED IN THE STATE OF NORTH CAROLINA AND EXPERIENCED IN THE DESIGN OF COLD FORMED STEEL MEMBERS. THE DESIGN SHALL BE IN CONFORMANCE THE 2018 EDITION OF THE NORTH CAROLINA STATE BUILDING CODE AND THE REQUIREMENTS OF THE CONTRACT DOCUMENTS.

CALCULATIONS AND DESIGN SHALL INCLUDE (1) DESIGN CRITERIA; (2) MEMBER DESIGN ACCORDING TO THE STRUCTURAL ANALYSIS OF THE LIGHT GAUGE FRAMING SYSTEM AND; (3) ALL CONNECTIONS OF COLD FORMED MEMBERS TO OTHER COLD FORMED MEMBERS, TO CONCRETE, TO MASONRY, AND TO STRUCTURAL STEEL.

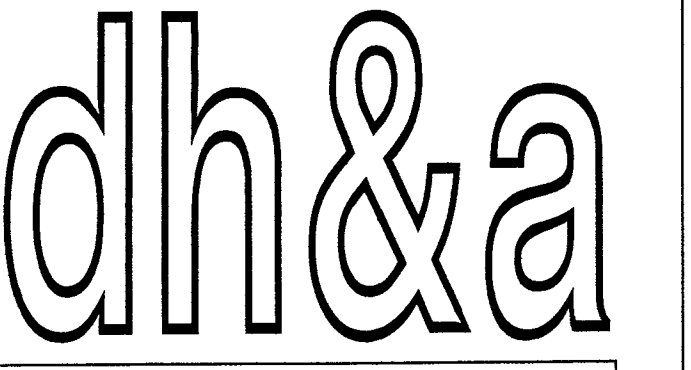
SHOP DRAWINGS SHALL HAVE FRAMING PLANS AND DETAILS WHICH SHOW MEMBER SIZES, SPACINGS AND LOCATIONS, AND CONNECTIONS.

SHOP DRAWINGS AND DESIGN CALCULATIONS SHALL BE SEALED AND SIGNED BY A REGISTERED PROFESSIONAL ENGINEER, LICENSED IN THE STATE OF NORTH CAROLINA.

GIVEN SIZES ARE MINIMUM REQUIREMENTS OF MEMBER SIZE. ENGINEERING FOR GIVEN LOADING CONDITIONS MAY REQUIRE HEAVIER GAUGES AND SIZES

FOUNDATION:

THE REPORTED MAXIMUM NET ALLOWABLE BEARING PRESSURE USED IN DESIGN IS 2000 PSF ON SUITABLE RESIDUAL SOIL OR PROPERLY COMPACTED STRUCTURAL FILL FOR WALL AND COLUMN FOOTINGS. STRUCTURAL FILL SHALL BE PLACED IN LIFTS NOT EXCEEDING 8" AND COMPACTED TO A MINIMUM OF 95% OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY (ASTM D-698), THE UPPER 12" OF THE STRUCTURAL FILL DIRECTLY BENEATH FLOOR SLAB SHALL BE COMPACTED TO 100% OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY. ADDITIONAL FILL PLACEMENT REQUIREMENT ARE PART OF THE SPECIFICATIONS. THE GEOTECHNICAL INVESTIGATION IS REPORTED BY EAGLE ENGINEERING PROJECT NUMBER 7867-NC, DATED AUGUST 23, 2022. ALL FILL MATERIAL SHALL BE PLACED UNDER THE SUPERVISION AND CONTROL OF AN INDEPENDENT TESTING LABORATORY. THE INDEPENDENT SOIL TESTING LABORATORY SHALL VERIFY IN WRITING THAT THE MINIMUM SAFE ALLOWABLE SOIL BEARING PRESSURE IS AVAILABLE BEFORE THE FOUNDATIONS ARE PLACED. IN THE EVENT THAT THE DESIGN ALLOWABLE BEARING PRESSURE IS NOT AVAILABLE, THE ENGINEER SHALL BE NOTIFIED AND THE SOIL CONDITION AND FOUNDATION SHALL BE EVALUATED AND FOOTING SIZES ADJUSTED. REFER TO THE PROPOSAL FOR FURTHER GUIDANCE.



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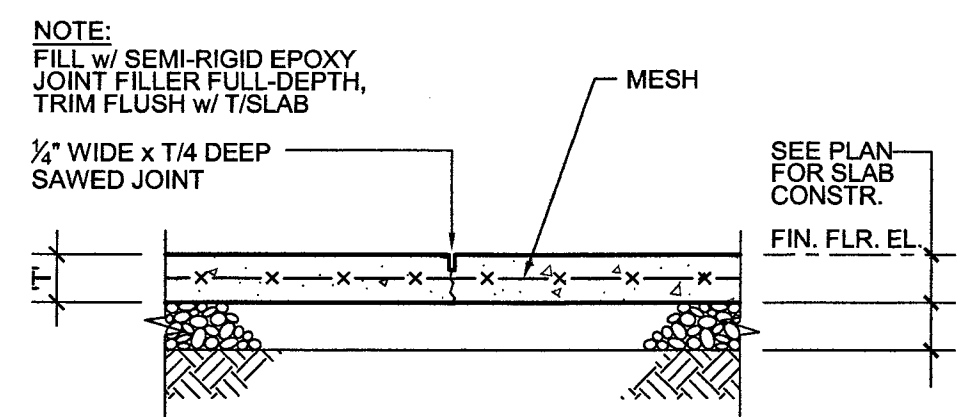
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MARK	DATE	DESCRIPTION

ISSUE: 8/30/2022
 PROJECT NO: 22021
 CAD DWG FILE:
 DRAWN BY:
 CHECKED BY: LDA

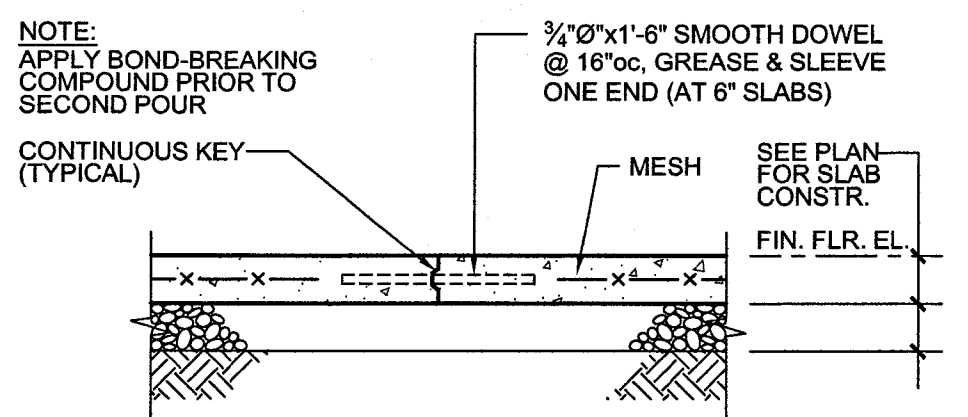
SHEET TITLE
 GENERAL NOTES

STRUCTURAL
 S100



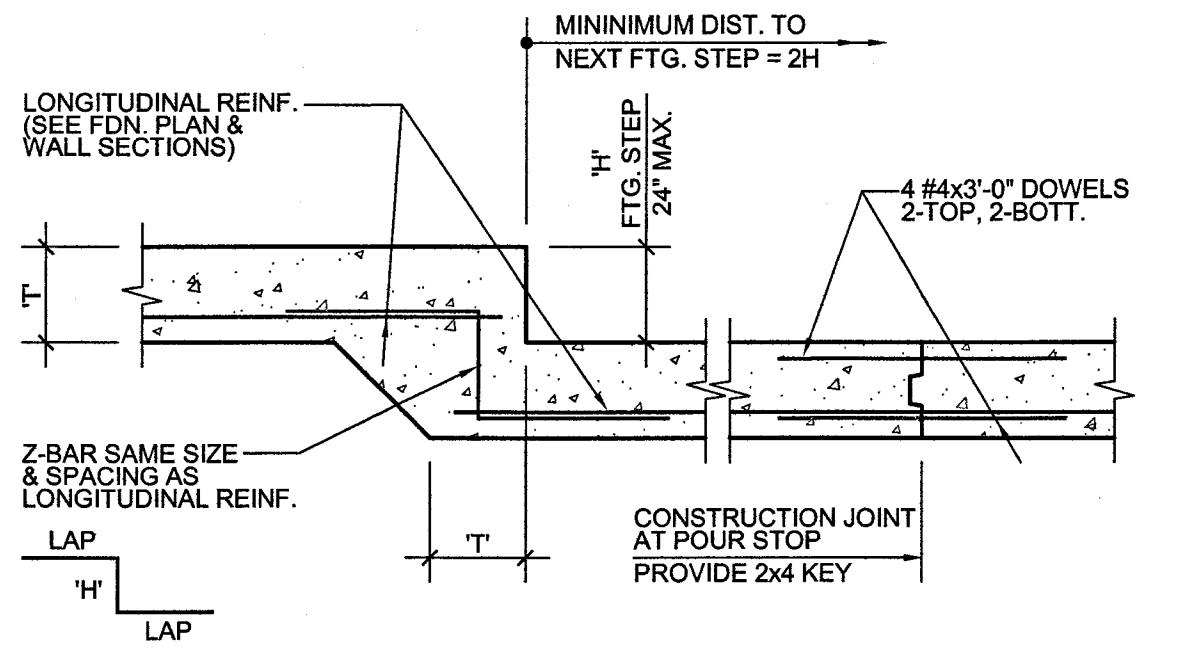
TYPICAL CONTRACTION JOINT IN SLAB-ON-GRADE
 DO NOT USE FOR COLD JOINTS AT CONSTRUCTION POUR STOPS

1 SECTION - SAW-CUT CONTRACTION JOINT
 S101 3/4" = 1'-0"

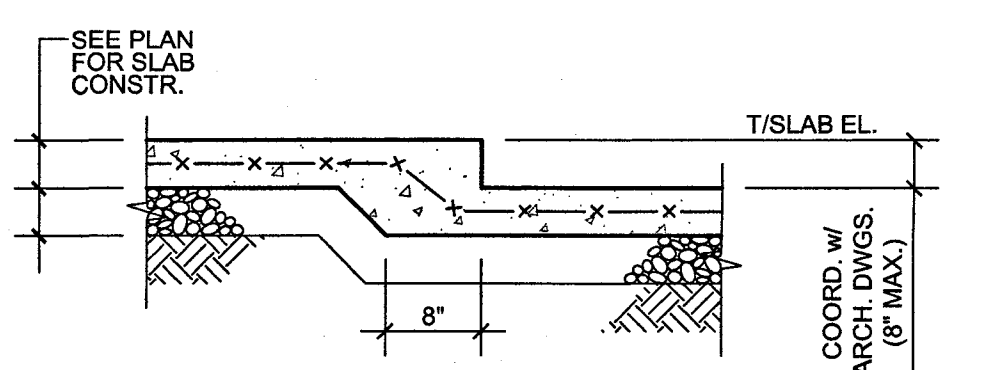


TYPICAL CONSTRUCTION JOINT IN SLAB-ON-GRADE
 FOR USE AT CONSTRUCTION POUR STOPS

2 SECTION - KEYED CONSTRUCTION JOINT
 S101 3/4" = 1'-0"

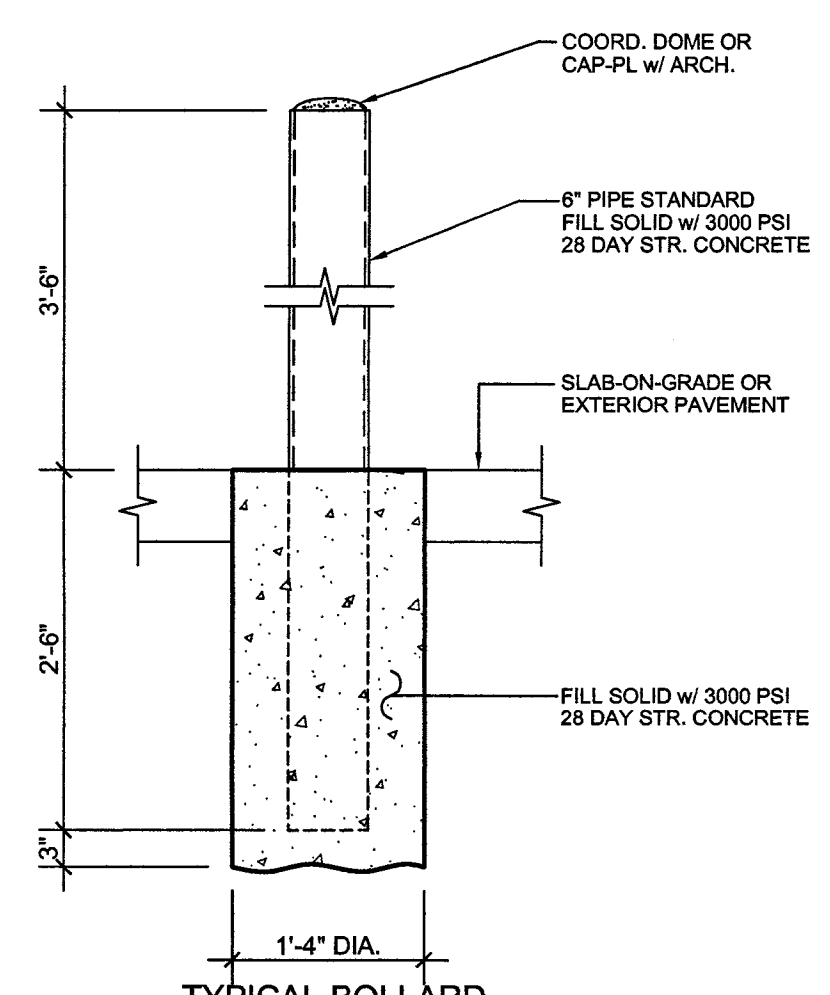


3 SECTION - FOOTING STEP & CONSTRUCTION JOINT
 S101 N.T.S. AS REQUIRED

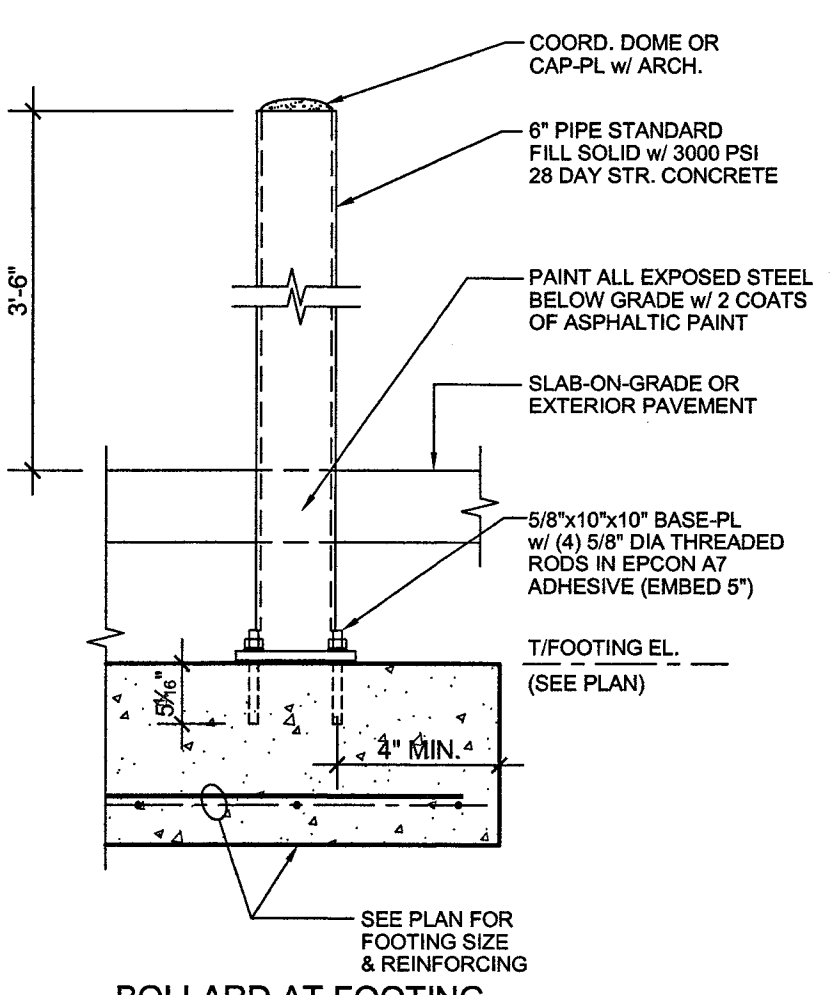


TYPICAL DEPRESSION IN SLAB-ON-GRADE
 USE AS REQUIRED FOR STEPS IN SLABS UP TO 8\"/>

4 SECTION AT DEPRESSED SLAB
 S101 3/4" = 1'-0" AS REQUIRED

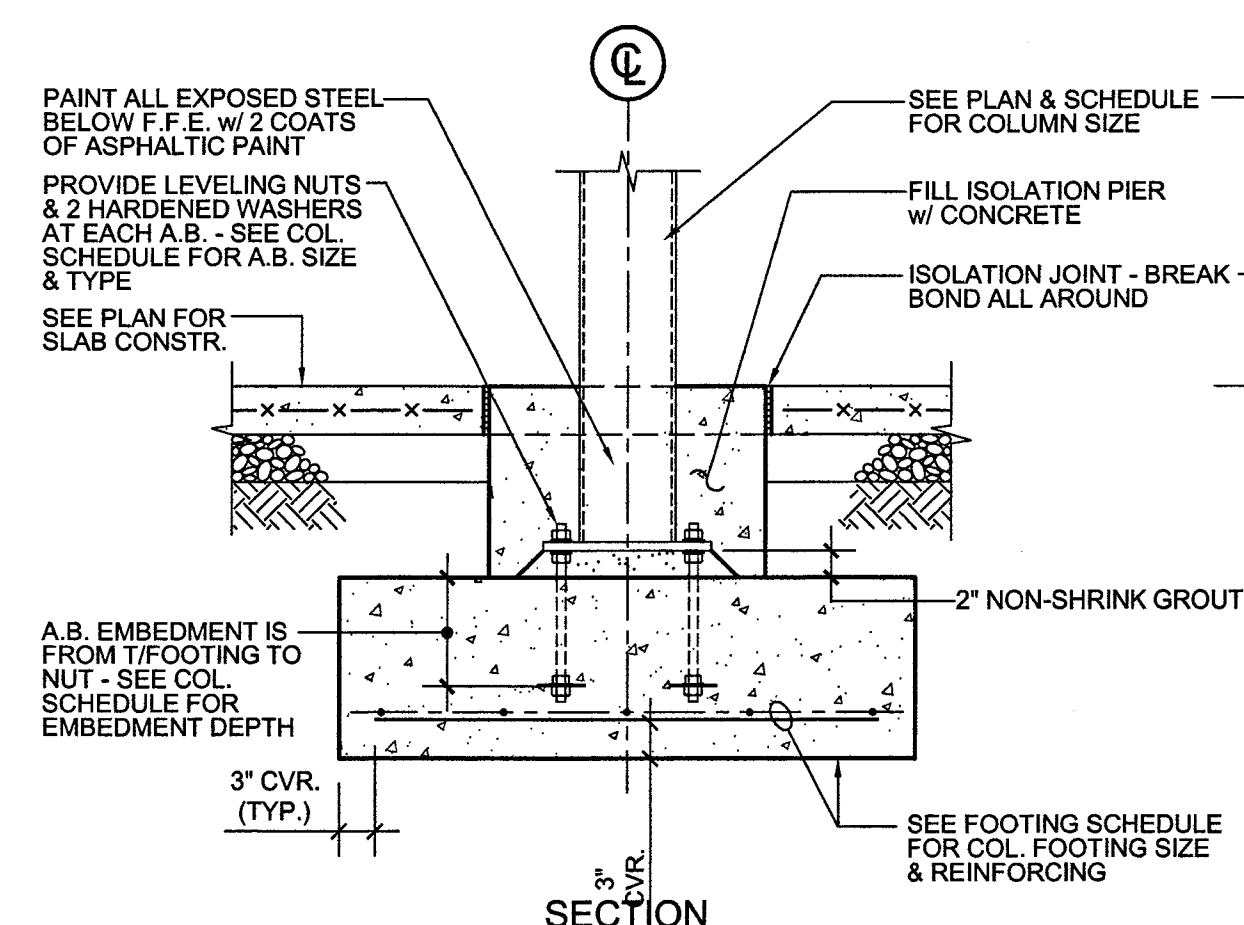


TYPICAL BOLLARD

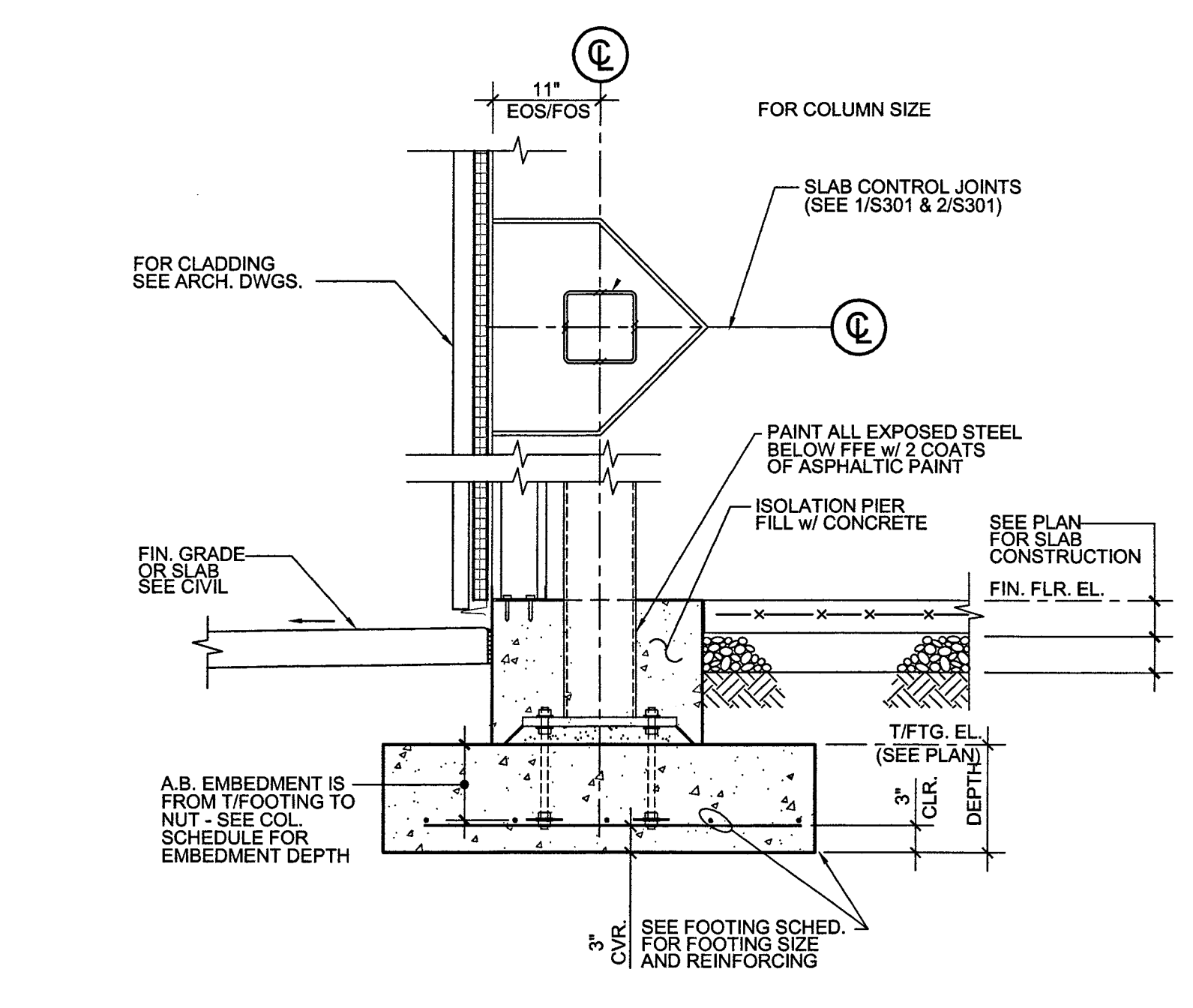


BOLLARD AT FOOTING

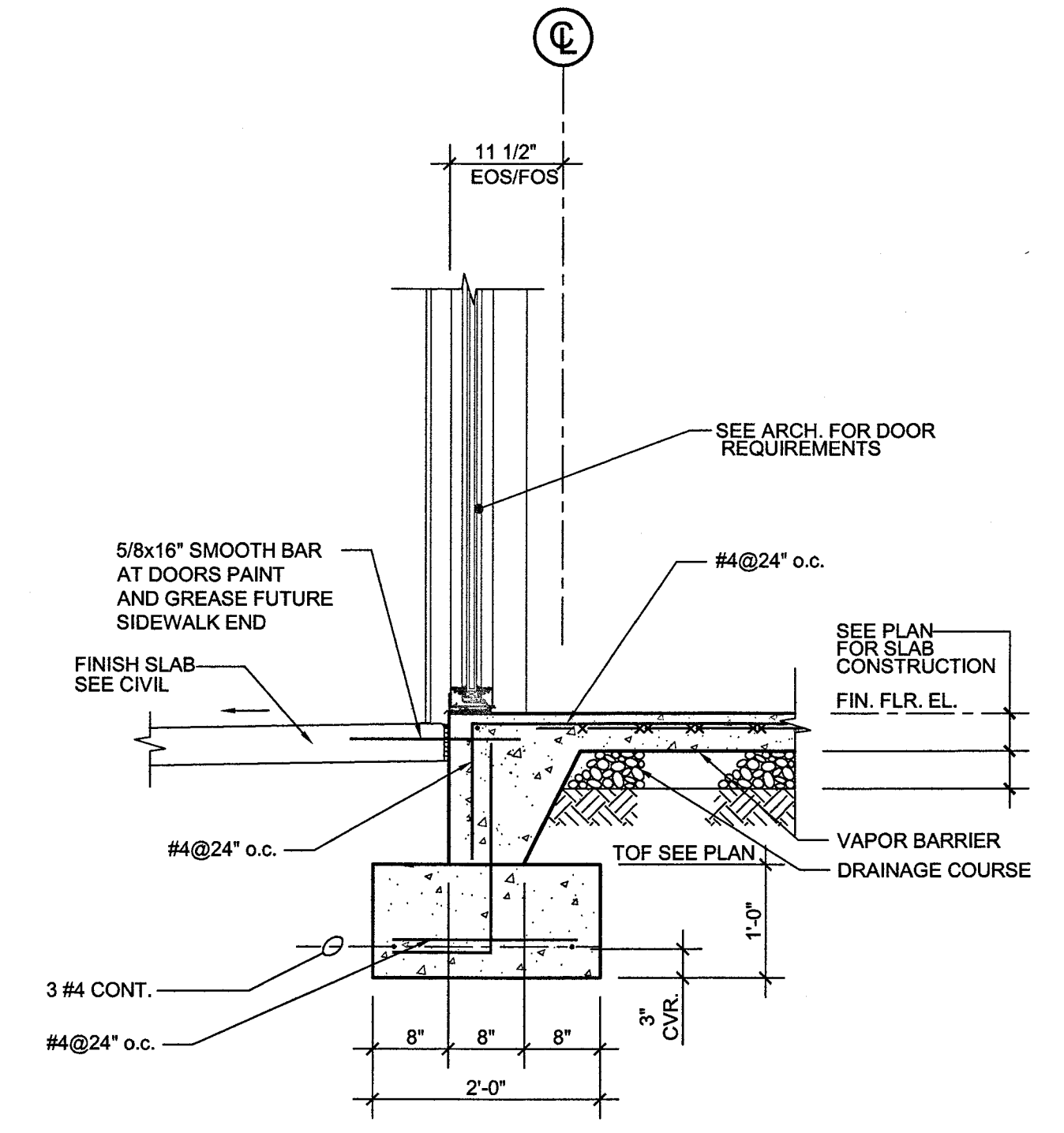
5 PIPE BOLLARD DETAILS
 S101 N.T.S.



6 COLUMN BASE & ISOLATION PIER DETAIL
 S101 N.T.S. TYPICAL



7 SECTION AT EXTERIOR COLUMN FOOTING
 S101 3/4" = 1'-0" TYPICAL



8 SECTION AT EXTERIOR AT ENTRY DOORS
 S101 3/4" = 1'-0" TYPICAL

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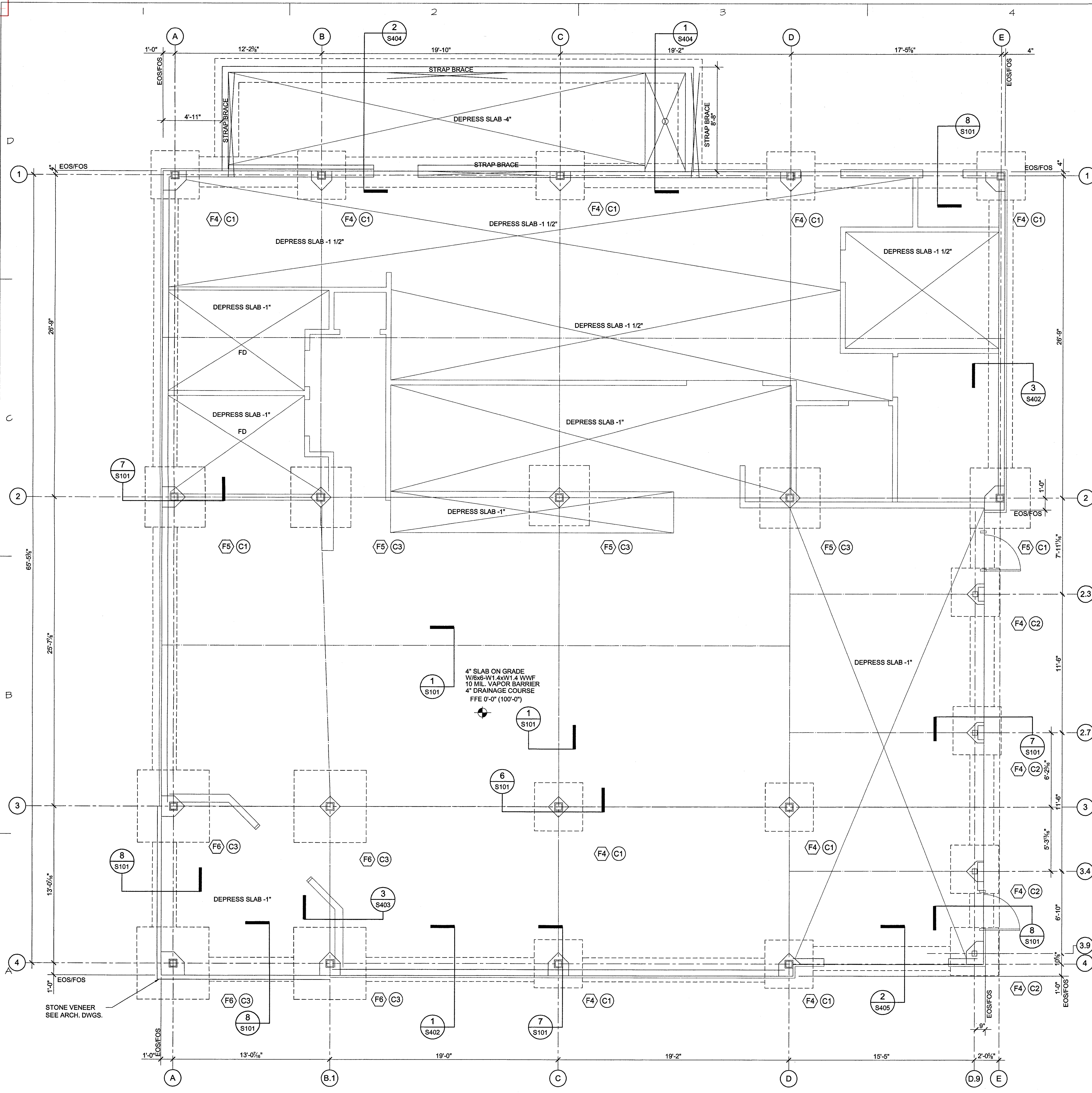
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SHEET TITLE
SECTIONS & DETAILS

STRUCTURAL

S101



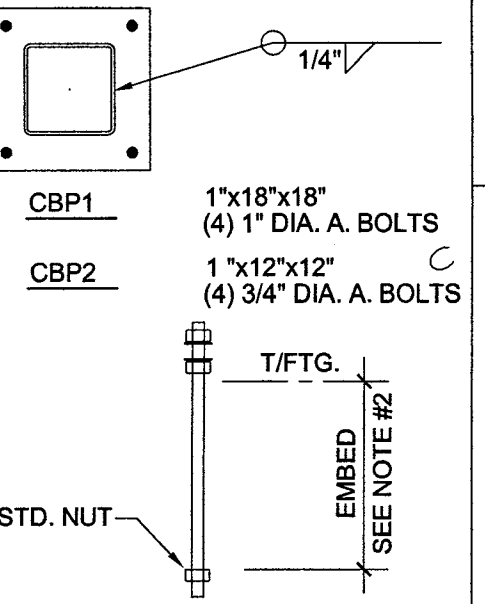
SPREAD FOOTING SCHEDULE

MARK	PLAN SIZE	THICKNESS	REINFORCEMENT
F4	4'-0" x4'-0"	1'-3"	8-#5 EW- BOTTOM
F5	5'-0" x5'-0"	1'-3"	6-#6 EW- BOTTOM

COLUMN SCHEDULE

Roof	Fin. Fl.	BASEPLATE	CBP1	CBP2	CBP1
COLUMN MARK	C1	C2	C3		
	HSS6x6x1/4	HSS6x6x1/4	HSS6x6x3/8		

- BASE PLATE NOTES:**
- USE 1 1/2" EDGE DISTANCE FOR 3/4" Ø ANCHOR BOLTS
 USE 2" EDGE DISTANCE FOR 1" Ø ANCHOR BOLTS
 - EMBED 3/4" ANCHOR BOLTS 8" MIN. INTO FOOTINGS
 FOR 1" ANCHOR BOLTS USE 12" INTO FOOTING
 - ALL ANCHOR BOLTS SHALL BE ASTM F1554 G36 OR G55
 W/ WELDABILITY SUPPLEMENT S1
 - PROVIDE A MINIMUM 3" OF CONCRETE COVER BELOW THE
 BOTTOM OF THE ANCHOR BOLTS. EXCAVATE IF REQUIRED
 TO PROVIDE COVERAGE AT THE A.B. PATTERN.
 - PROVIDE 2" OF CONCRETE COVER FOR COLUMN FOOTINGS
 THAT HAVE TOP REINFORCEMENT MAT.



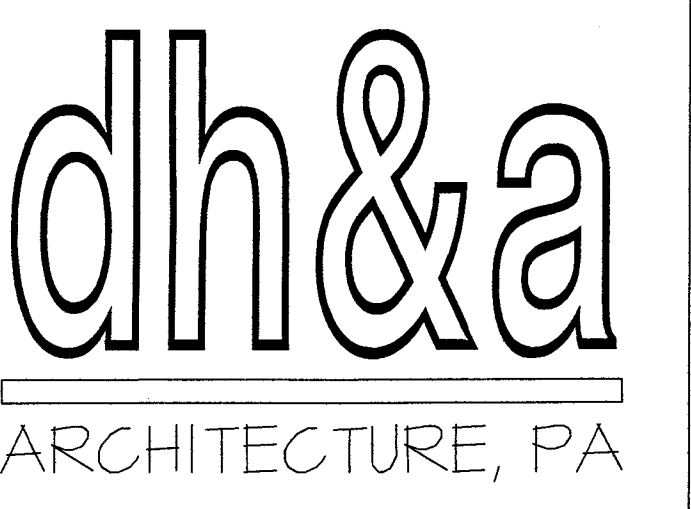
REVISED CFM STUDS FROM 8" TO 6"

1 FOUNDATION & SLAB PLAN

1/4" = 1'-0"

FOUNDATION PLAN NOTES:

- TOP OF FOOTING, T.O.F. (-x'-x") IS NOTED ON PLAN REFERENCED FROM FIN. FL. (0'-0").
- STEP FOOTINGS AS NEEDED AT ALL DOWNSPOUTS AND UTILITIES.
- TOP OF EXTERIOR FOOTING (-1'-4") TYPICAL UNLESS NOTED OTHERWISE.
- CONTRACT DRAWINGS SHALL NOT BE USED FOR SHOP DRAWINGS.
- SEE SHEET S100 FOR GENERAL NOTES.
- COORD. W/ARCH. & MECH. DWGS FOR ALL FLOOR DRAINS & SLOPES, & SLAB DEPRESSIONS.
- SEE DETAIL 4/S101 FOR DEPRESS SLAB DETAIL.
- EOS ——— INDICATES EDGE OF SLAB.
 FOS ——— INDICATES FACE OF METAL STUD.
 FD ——— INDICATES FLOOR DRAIN SEE MECHANICAL DRAWINGS.



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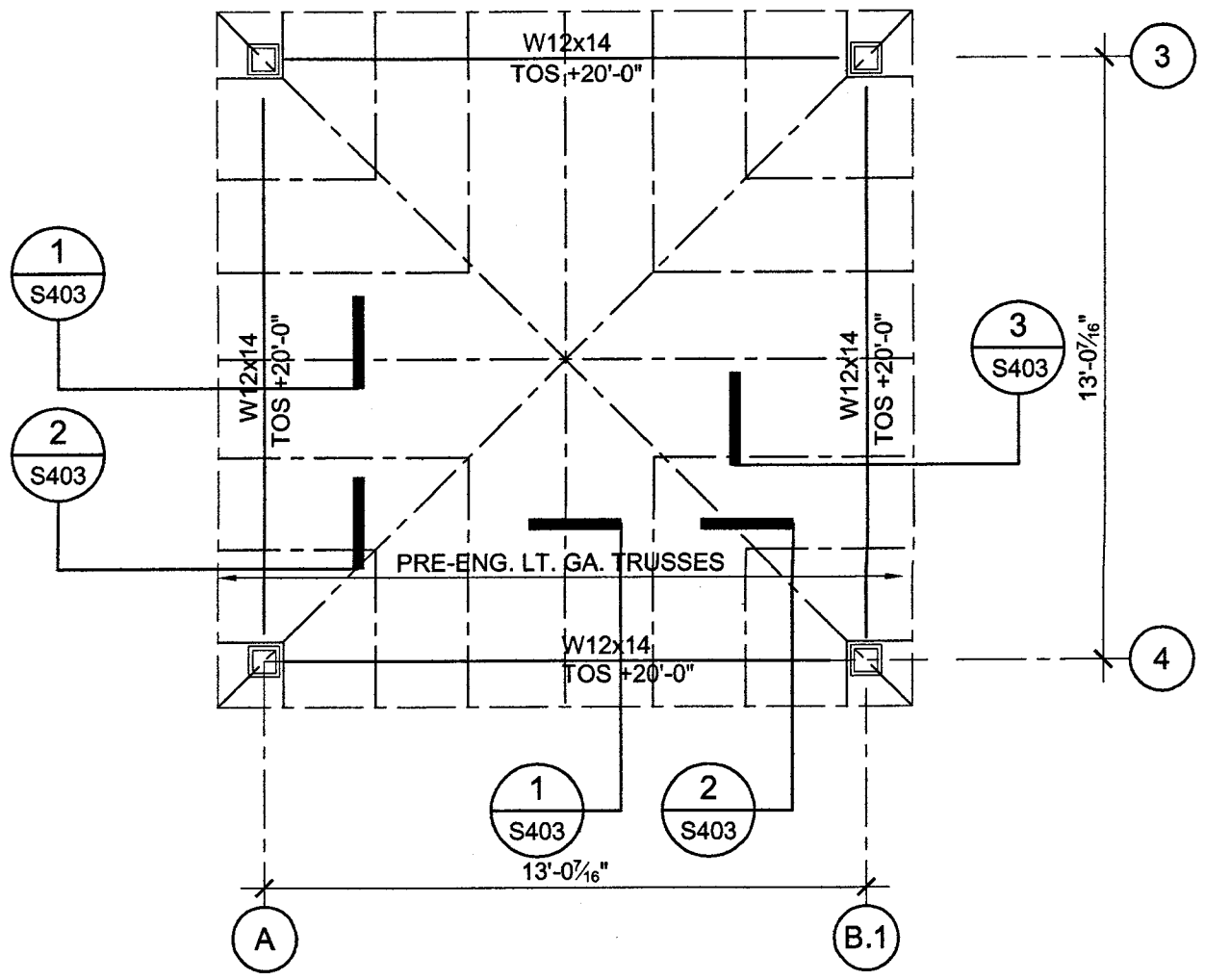
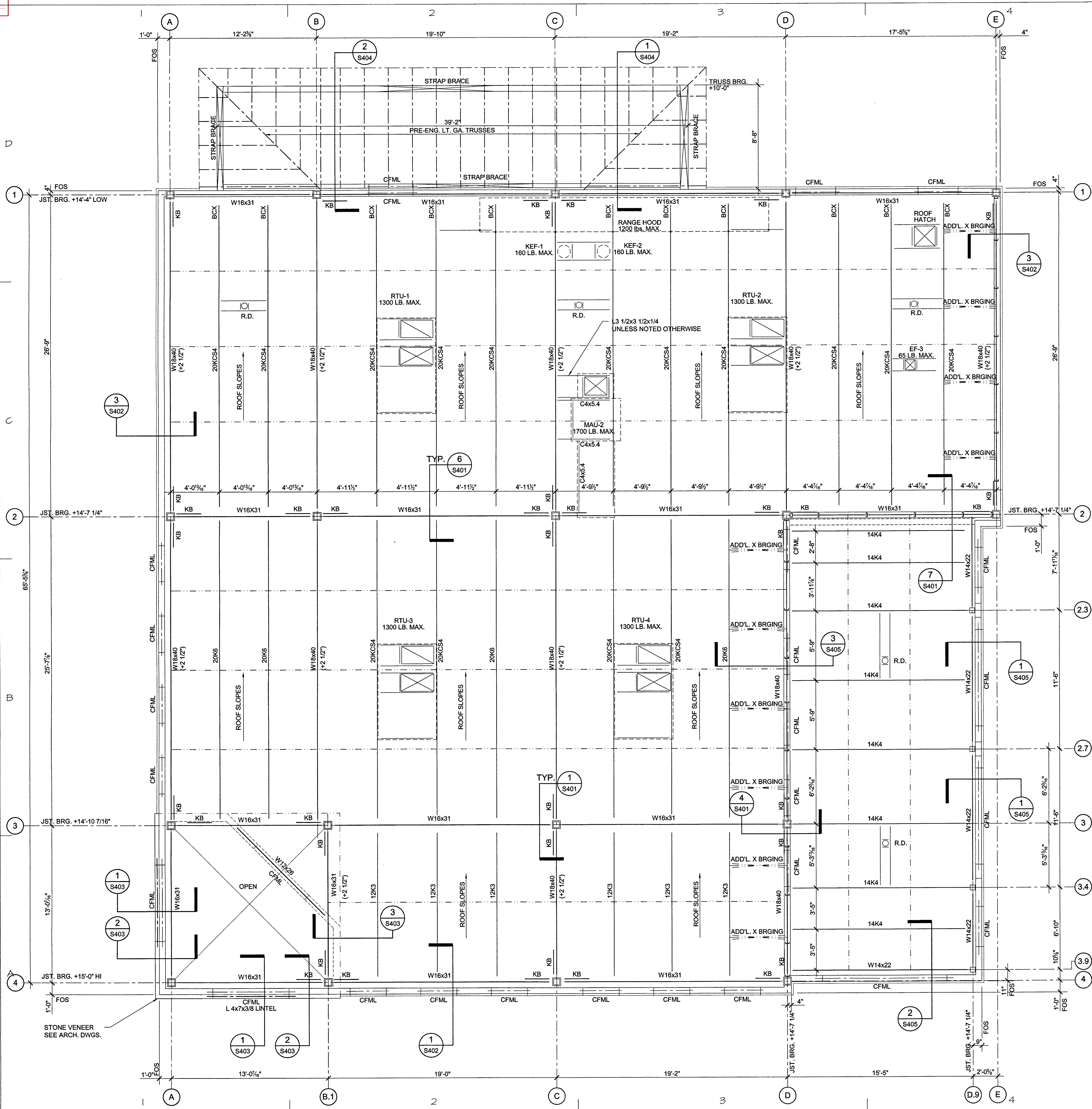
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SHEET TITLE
FOUNDATION & SLAB PLAN

STRUCTURAL
S201

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

REVISED CFM STUDS FROM 8" TO 6"

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

ROOF FRAMING PLAN NOTES:

- JOIST BEARING ELEVATIONS GIVEN THUS ("**") ARE REFERENCED FROM FIRST FLOOR FIN. FLR. EL. 100.00'
- FOR OPENINGS IN ROOF DECK SEE DETAIL 2/S401.
- ROOF DECK:
 1 1/2" METAL ROOF DECK, WIDE RIB PATTERN (TYPE 'B'), 22 GAGE, 36" PANEL WIDTH, MINIMUM 3 SPAN CONDITION, GALV. FINISH. ATTACH TO SUPPORTS w/ #10 PUDDLE WELDS IN 36" PATTERN (AT 8" @ PERIMETER AND AROUND ROOF OPENINGS) U.N.O. PROVIDE (2) #10 TEK SCREWS AT SIDELAPS BETWEEN SUPPORTS. INSTALL DECK IN A MANNER IN CONFORMANCE w/ DECK MANUFACTURER'S RECOMMENDATIONS AND INSTRUCTIONS. TOUCH-UP ALL WELDS WITH SPRAY PAINT.
 36/7 PATTERN 
 36/4 DECK ATTACHMENT w/ (2) #10 TEK SCREWS AT SIDELAPS BETWEEN SUPPORTS
- PROVIDE BRIDGING PER SJI:
 BRIDGING SIZE IS L-1 1/2"x1 1/2"x3/8" UNLESS NOTED OTHERWISE
 PROVIDE NUMBER OF ROWS PER SJI SPECIFICATIONS
 INDICATES HORIZONTAL BRIDGING
 INDICATES DIAGONAL BRIDGING
- SEE ARCHITECTURAL DRAWINGS FOR DIMENSIONS NOT SHOWN.
- CONTRACT DRAWINGS SHALL NOT BE USED FOR SHOP DRAWINGS.
- G.C. COORD. ALL MECH. UNITS & FRAME REQUIREMENTS WITH MECHANICAL.
- JOIST MFR. NOTE:
 DESIGN JOISTS FOR 15 PSF NET UPLIFT
- CFML INDICATES COLD FORMED METAL LINTEL BY CFM SUPPLIER. SEE ARCH. DRAWINGS FOR ALL LOCATIONS/DIMENSIONS OF OPENINGS THAT ARE REQUIRED (SUBMIT SHOP DWGS. FOR APPROVAL.)
- KB INDICATES KNEE BRACE SEE DETAIL 1/S401.
- FOS = INDICATES FACE OF METAL STUD.
 R.D. = INDICATES ROOF DRAIN.
- COORDINATE ALL DIMENSIONS SHOWN WITH LATEST ARCHITECTURAL FLOOR PLANS, AND CONTRACTOR SHALL NOTIFY ARCHITECT IN WRITING OF ANY CONFLICTS. ALL DIMENSIONS ARE TO FACE OF BUILDING (FOS), FACE OF MASONRY (FOM) AND FACE OF BRICK (FOB) UNLESS NOTED OTHERWISE ON PLAN.

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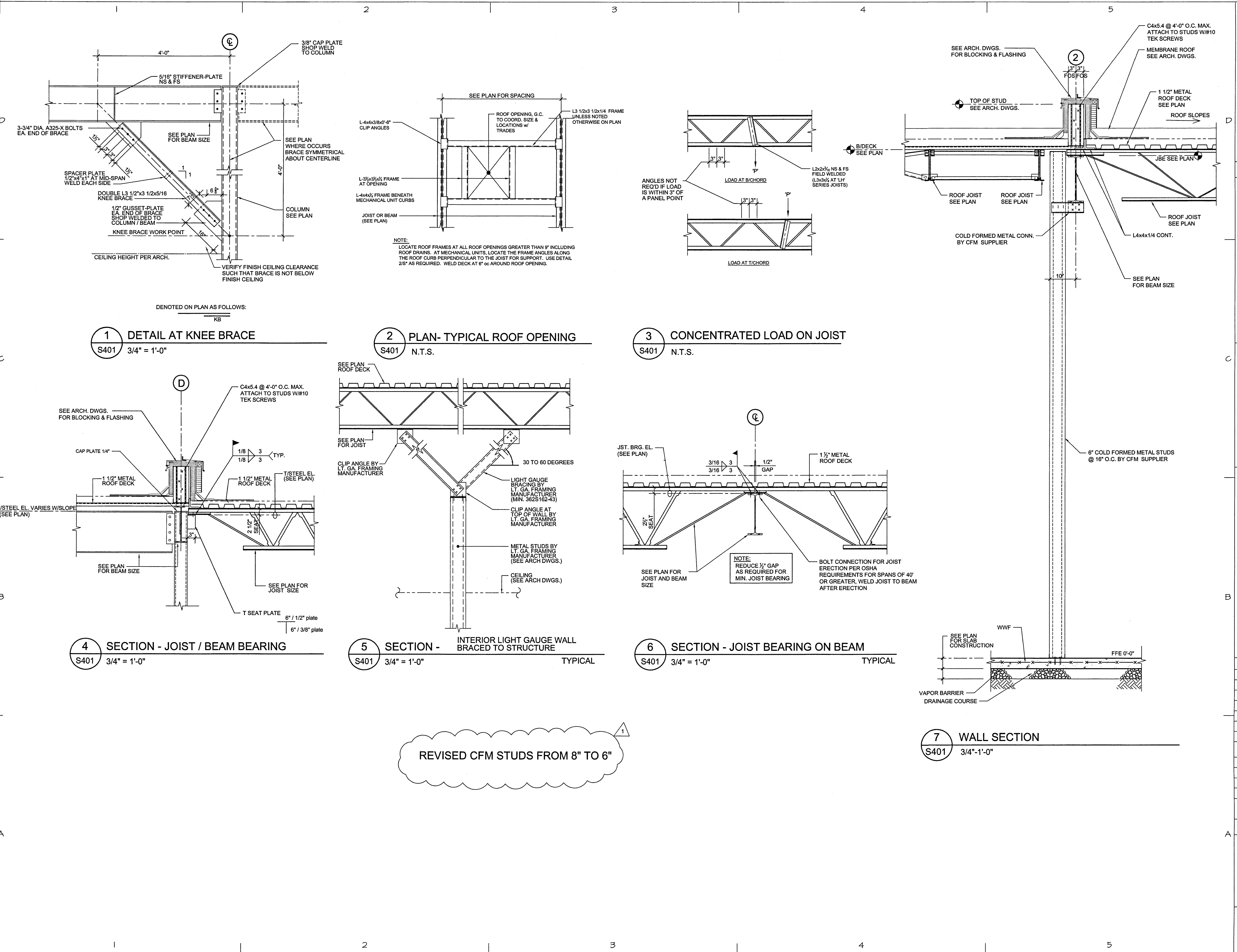
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SHEET TITLE
ROOF FRAMING PLAN

STRUCTURAL

S202

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SHEET TITLE

SECTIONS & DETAILS

STRUCTURAL

S401



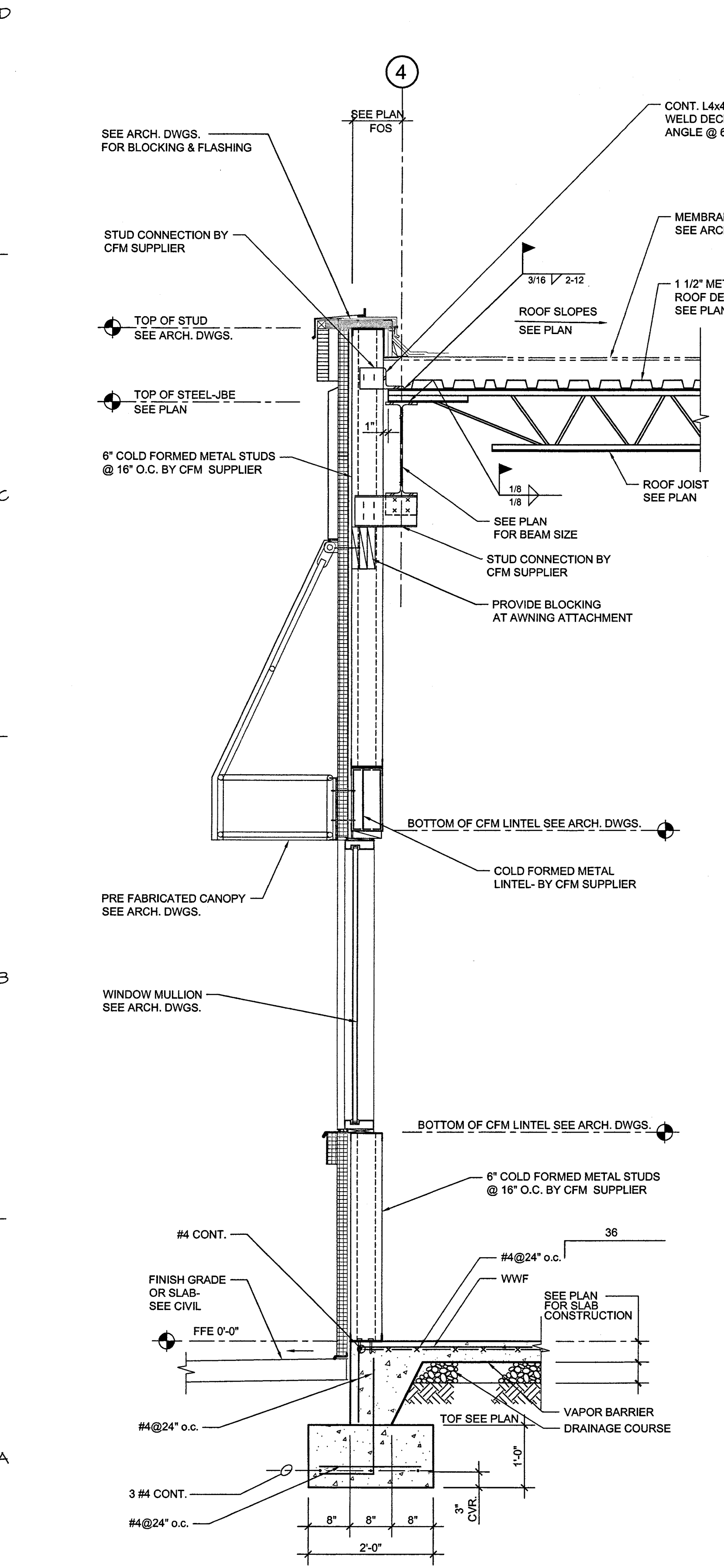
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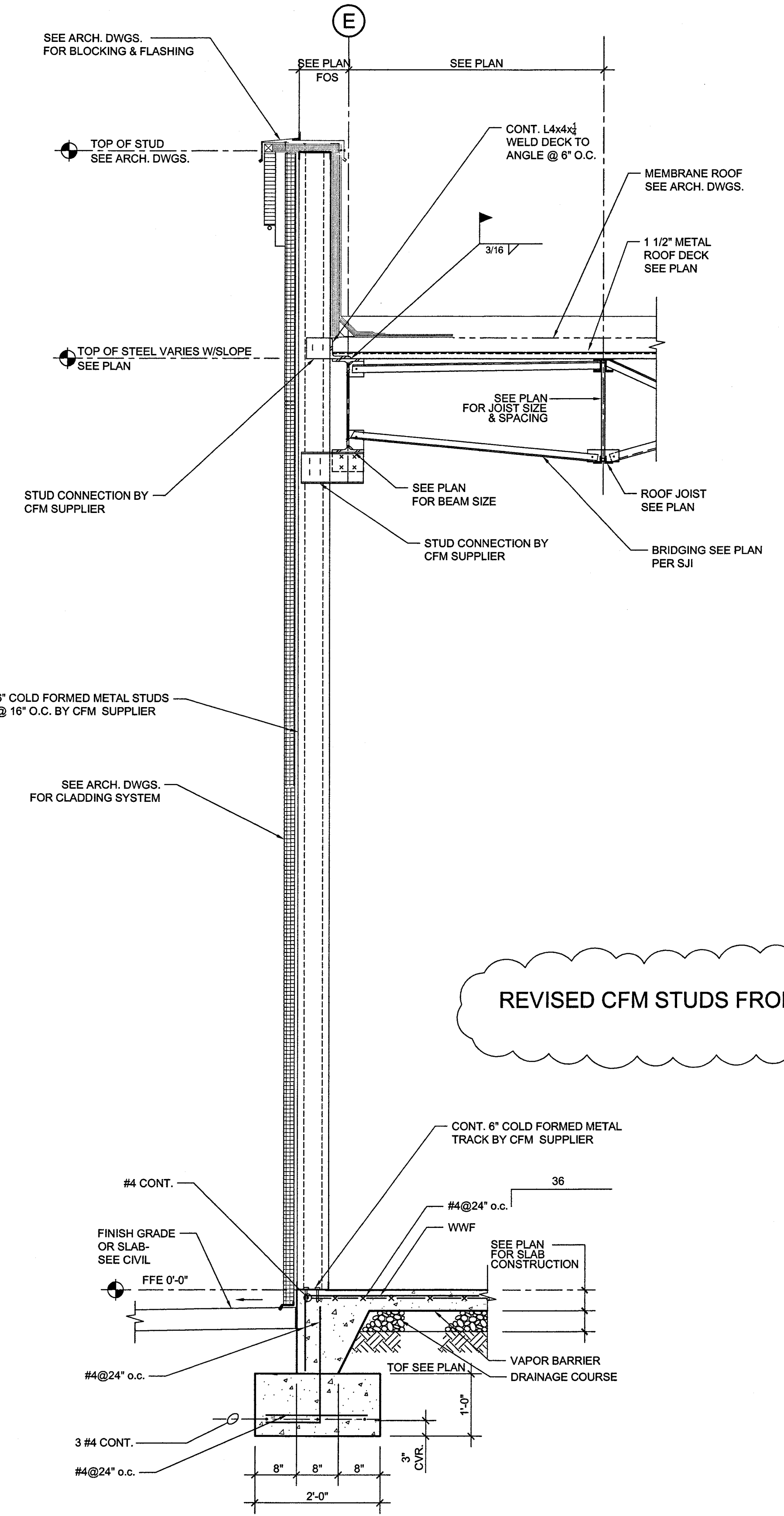
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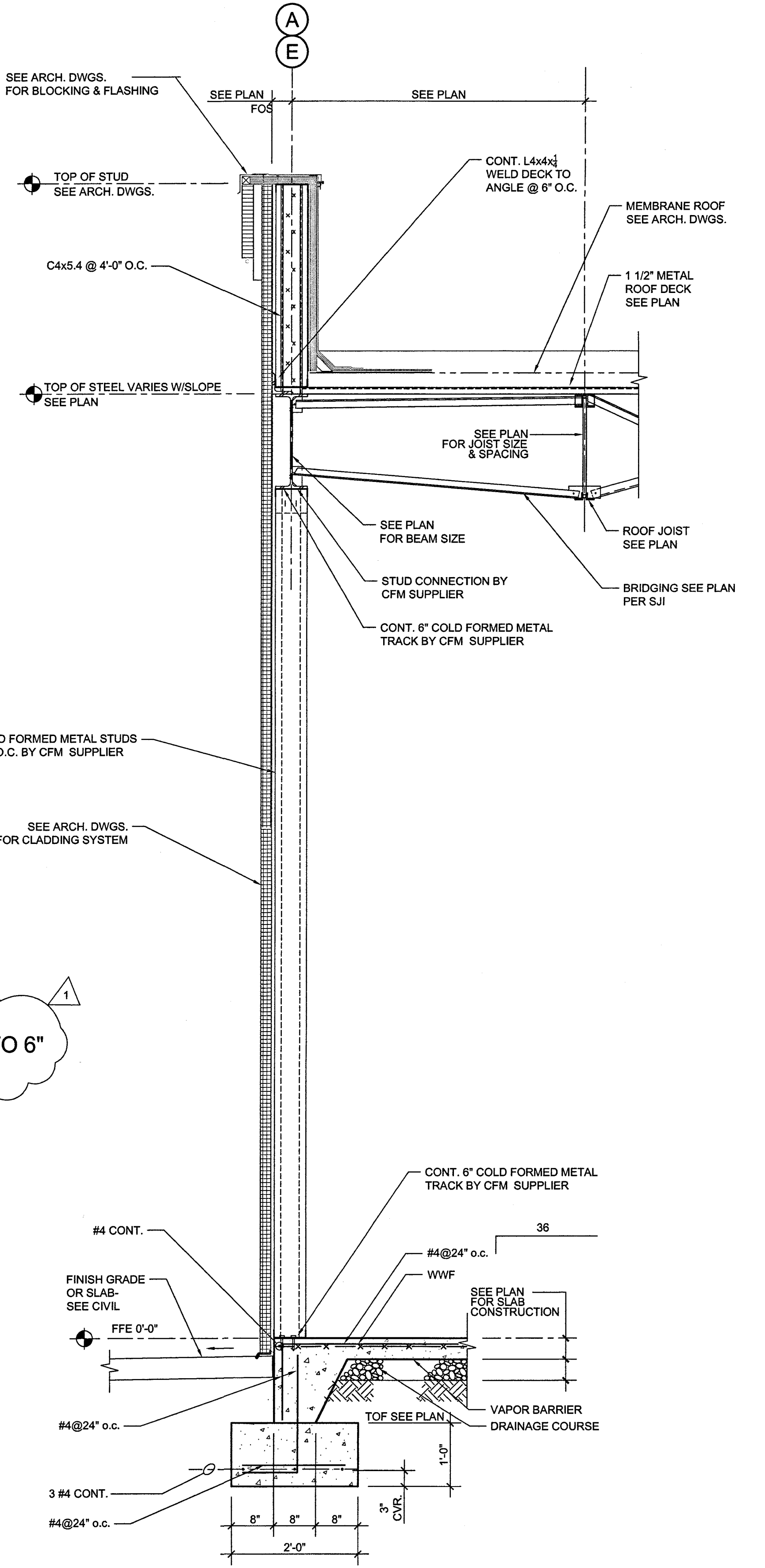
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1 WALL SECTION
 S402 3/4"-1'-0"



2 WALL SECTION
 S402 3/4"-1'-0"



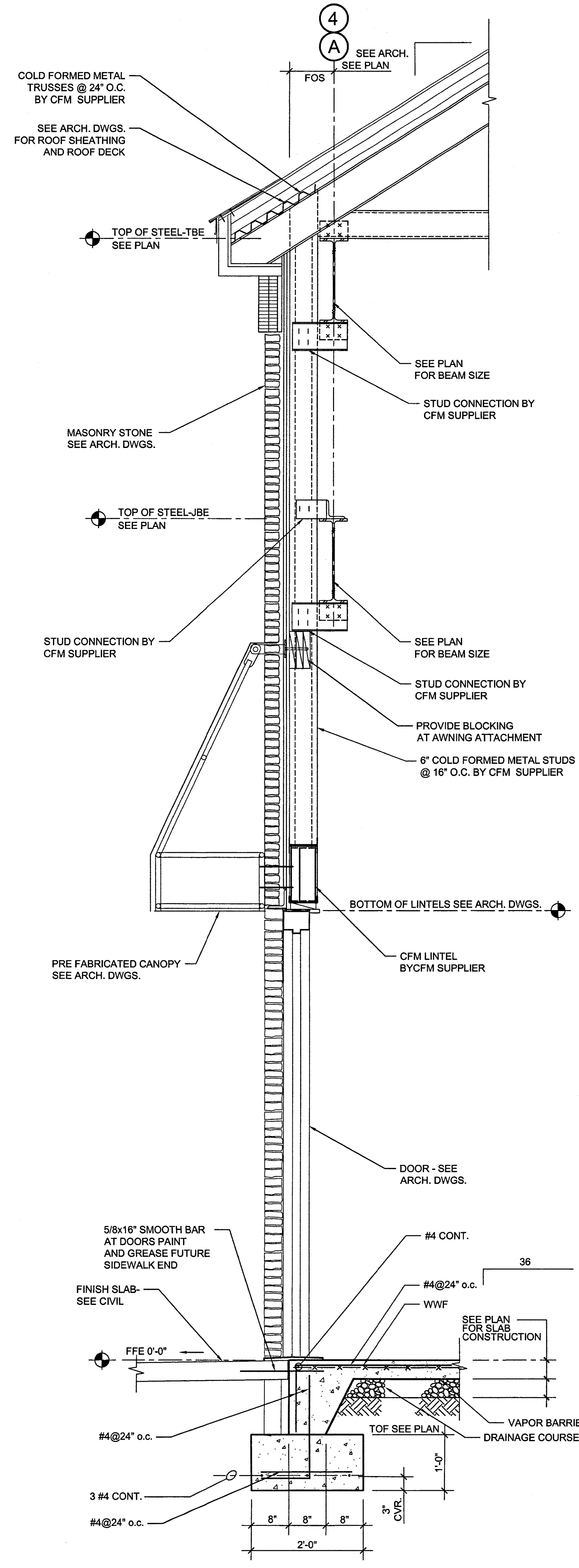
3 WALL SECTION
 S402 3/4"-1'-0"

REVISED CFM STUDS FROM 8" TO 6"

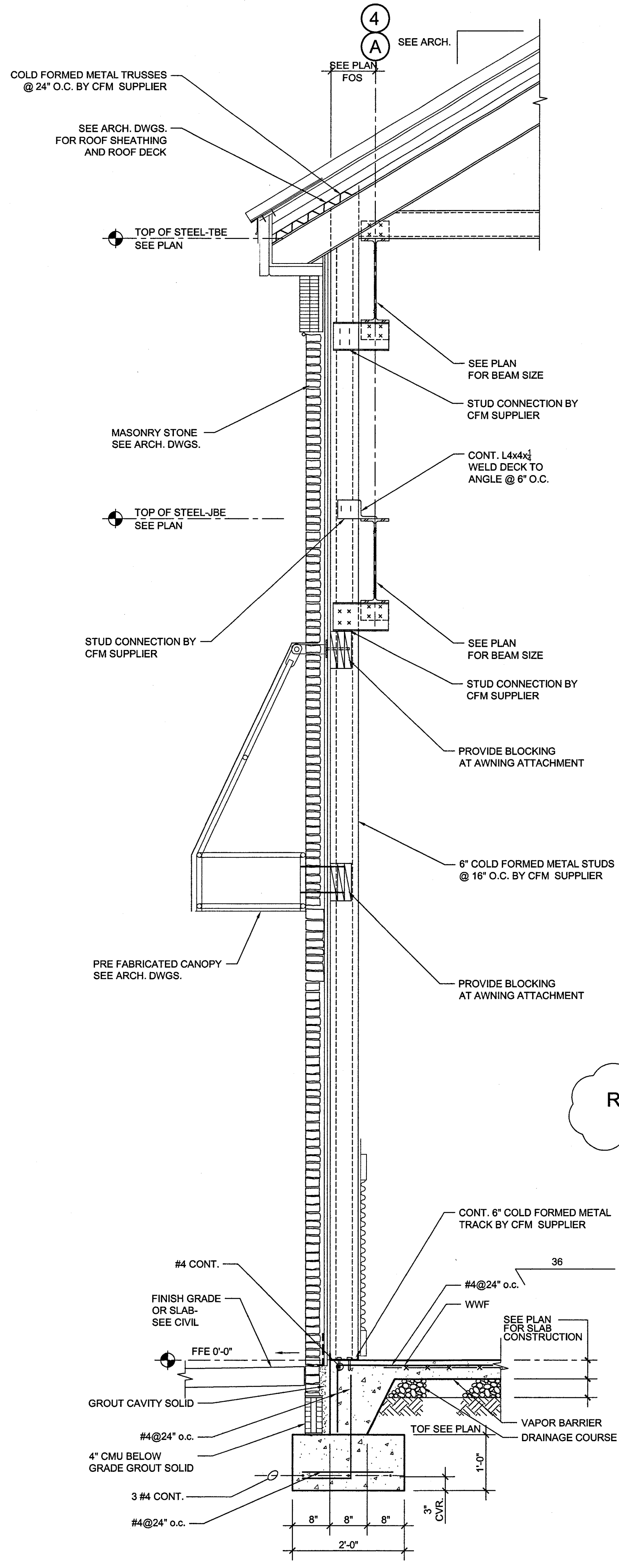
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SHEET TITLE
SECTIONS & DETAILS

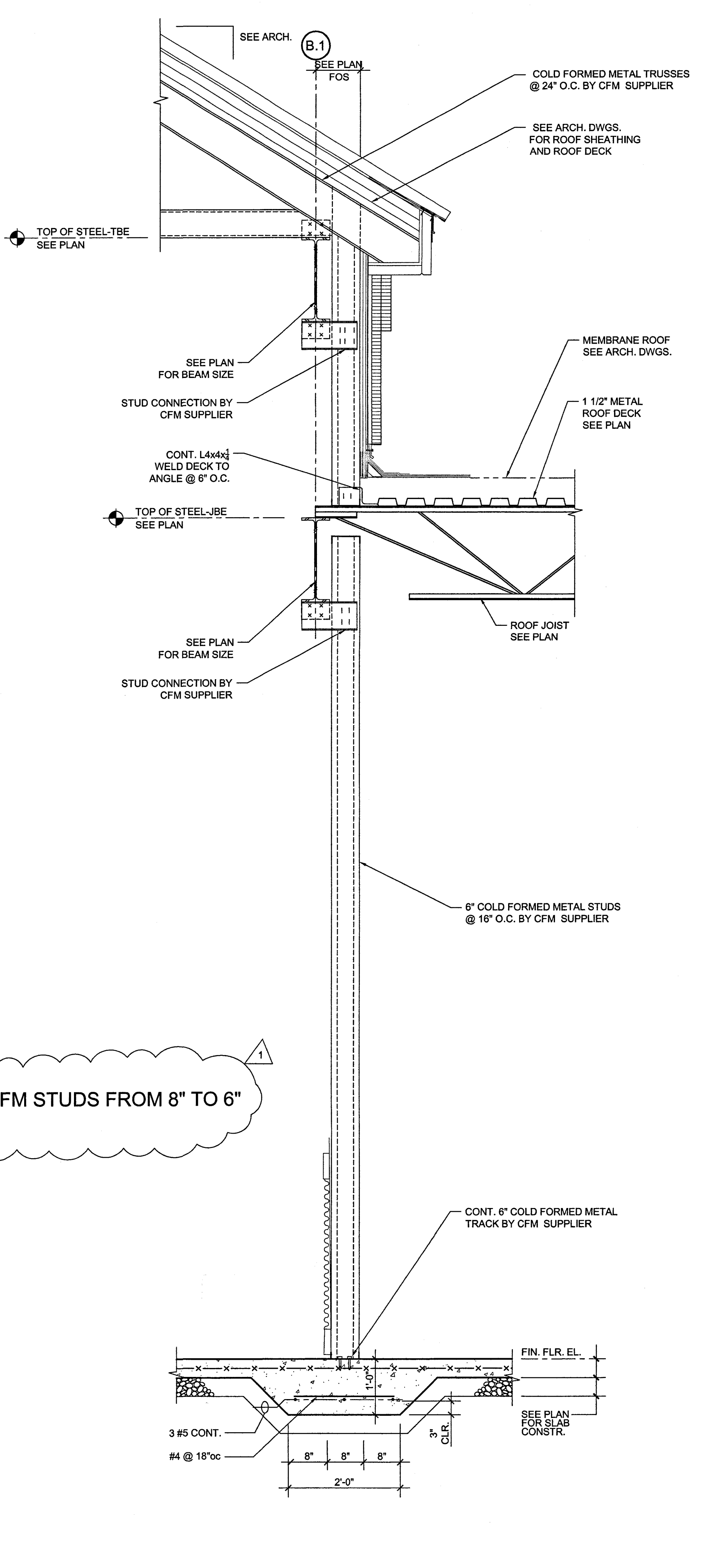
STRUCTURAL
S402



1 WALL SECTION
 S403 3/4"-1'-0"



2 WALL SECTION
 S403 3/4"-1'-0"



3 WALL SECTION
 S403 3/4"-1'-0"

REVISED CFM STUDS FROM 8" TO 6"

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SHEET TITLE
**SECTIONS &
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STRUCTURAL

S403

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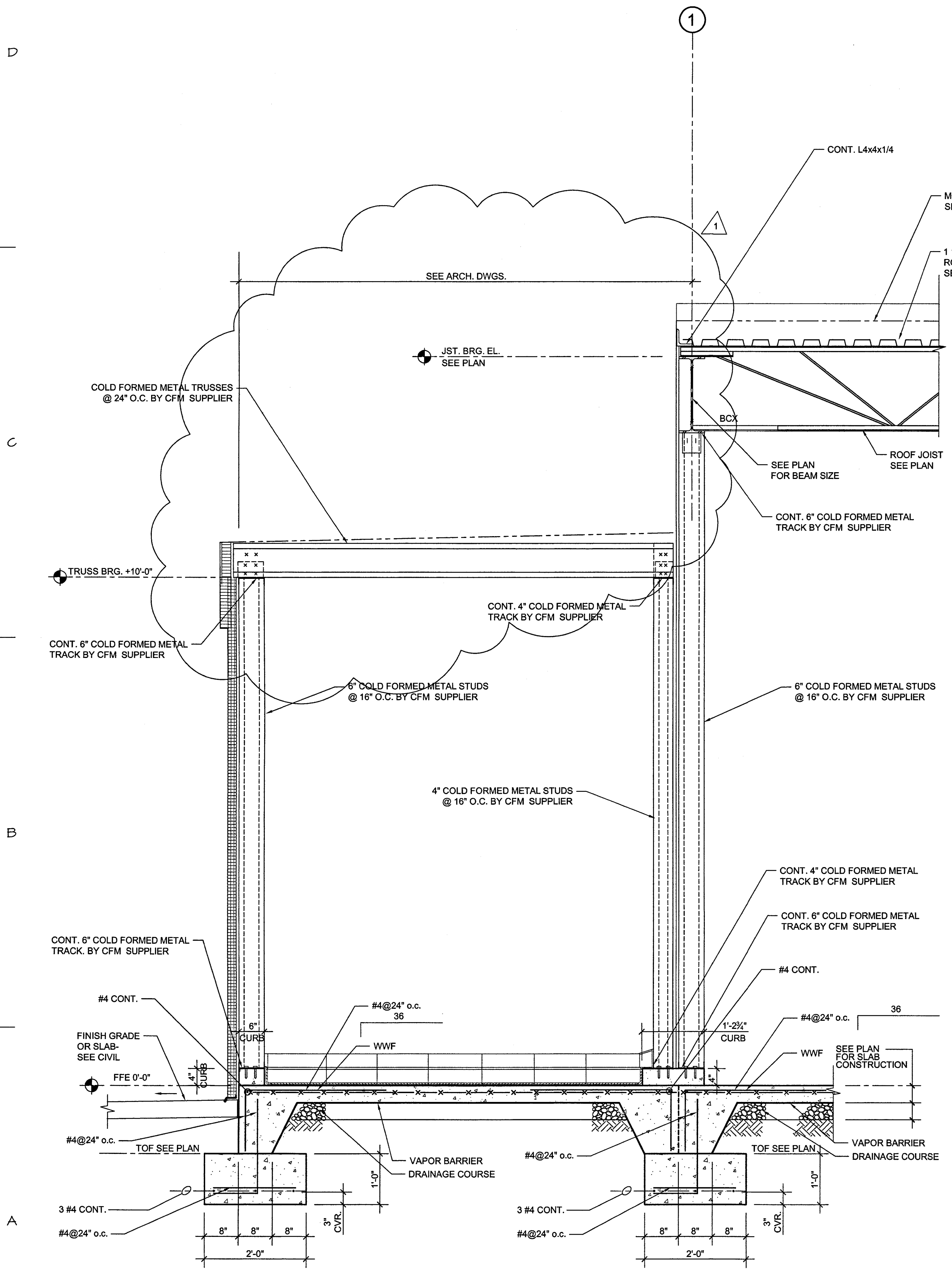
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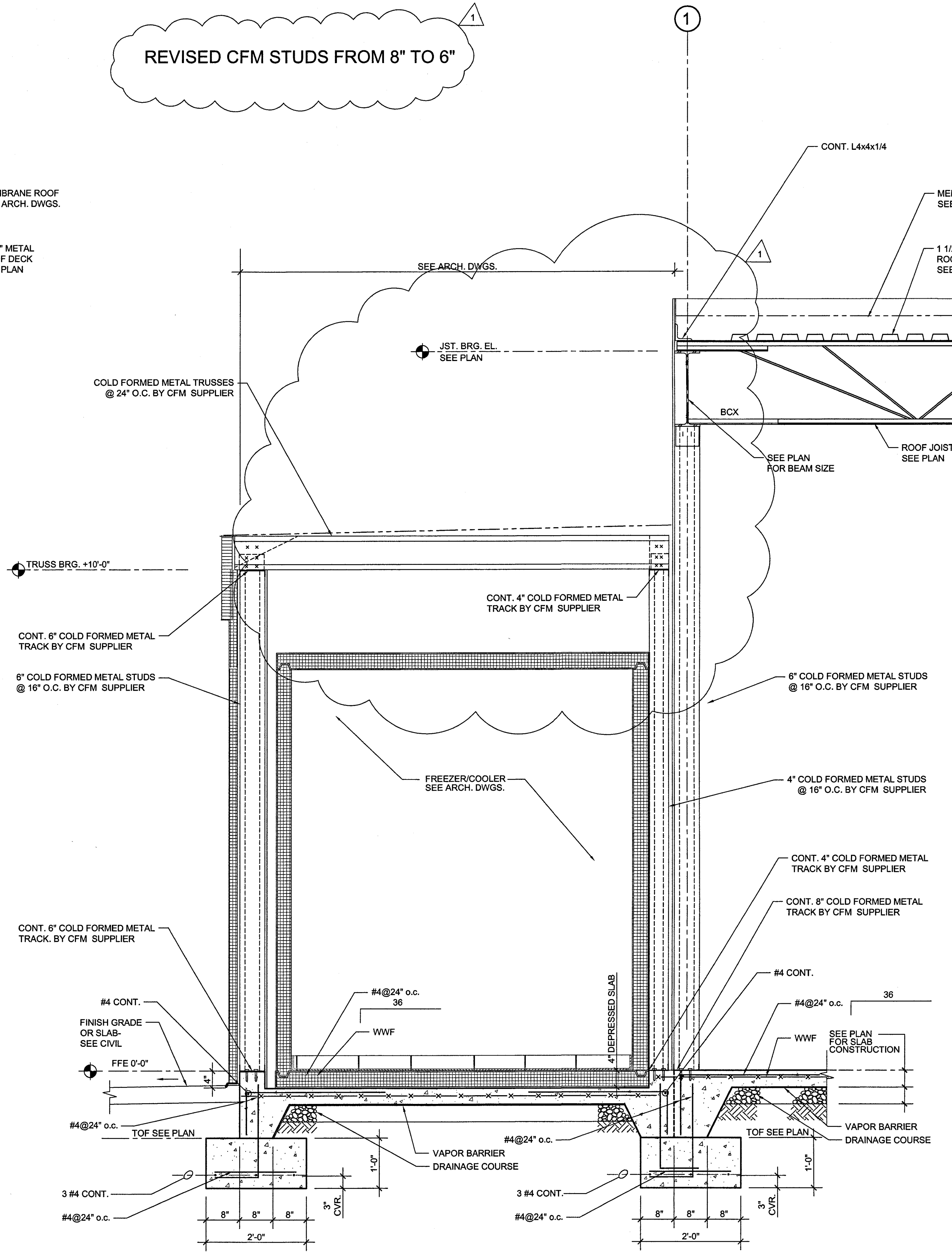
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REVISED CFM STUDS FROM 8" TO 6"



1
 S404 WALL SECTION
 3/4"-1'-0"



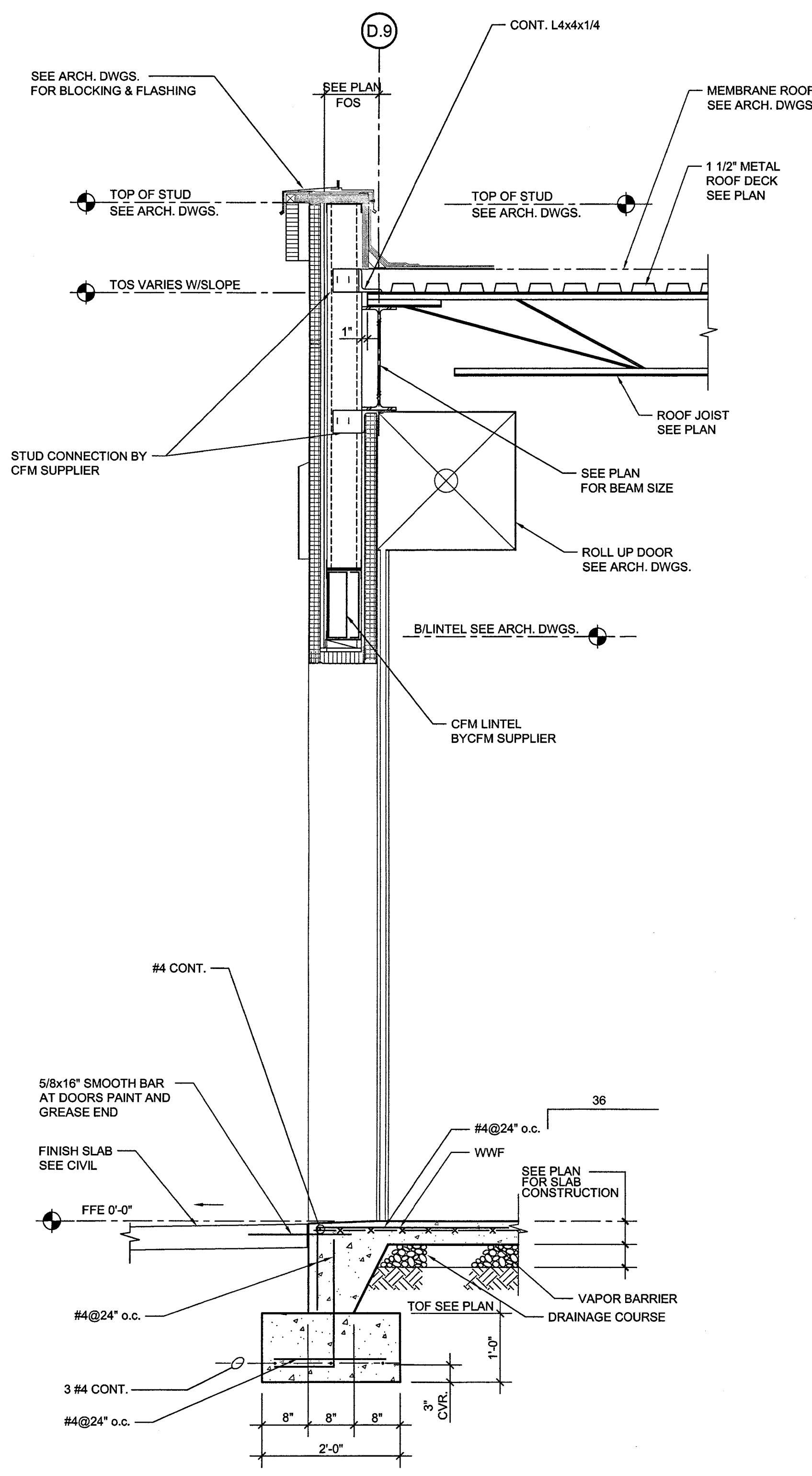
2
 S404 WALL SECTION
 3/4"-1'-0"

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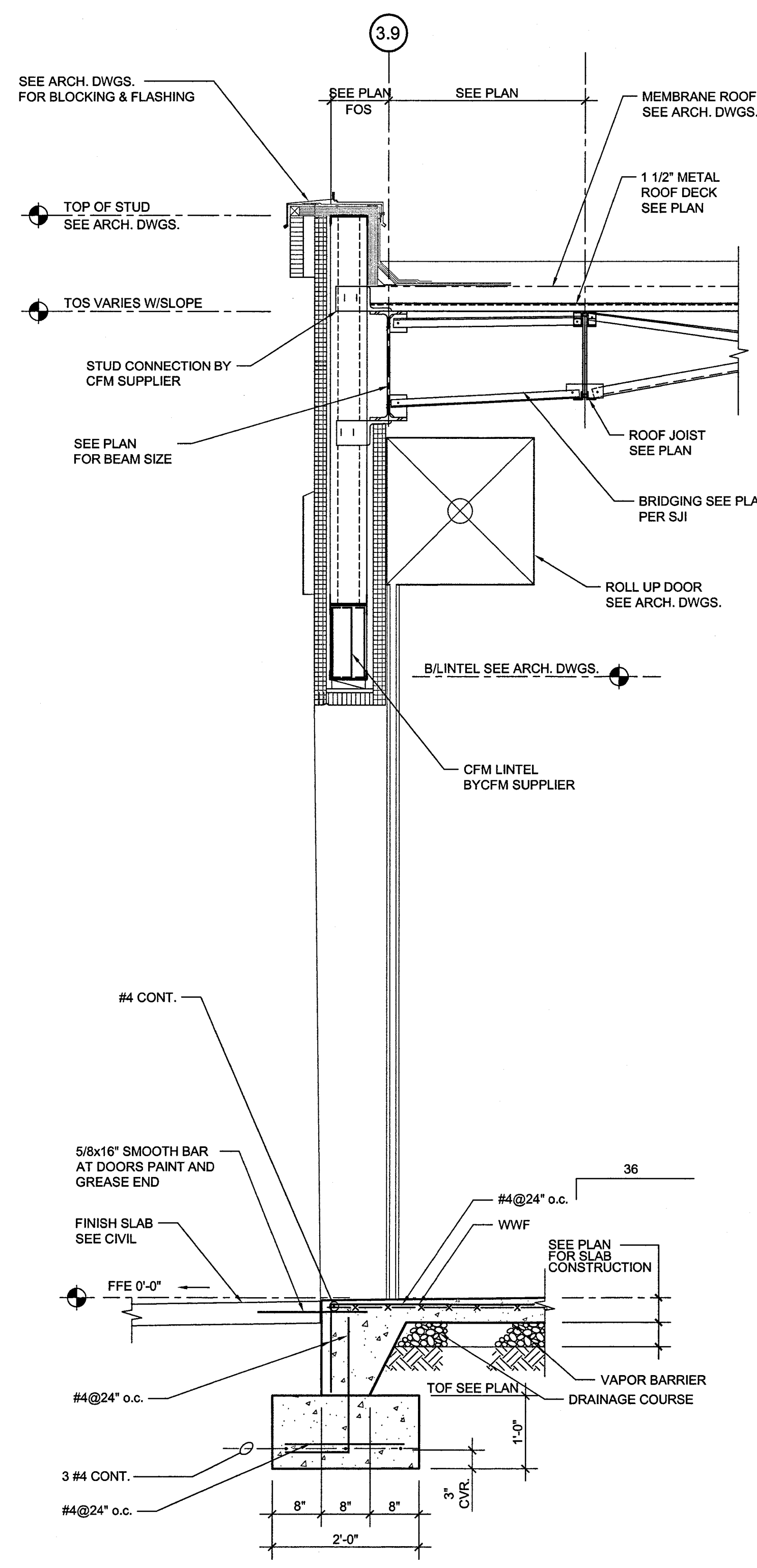
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**SECTIONS &
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 STRUCTURAL
S404

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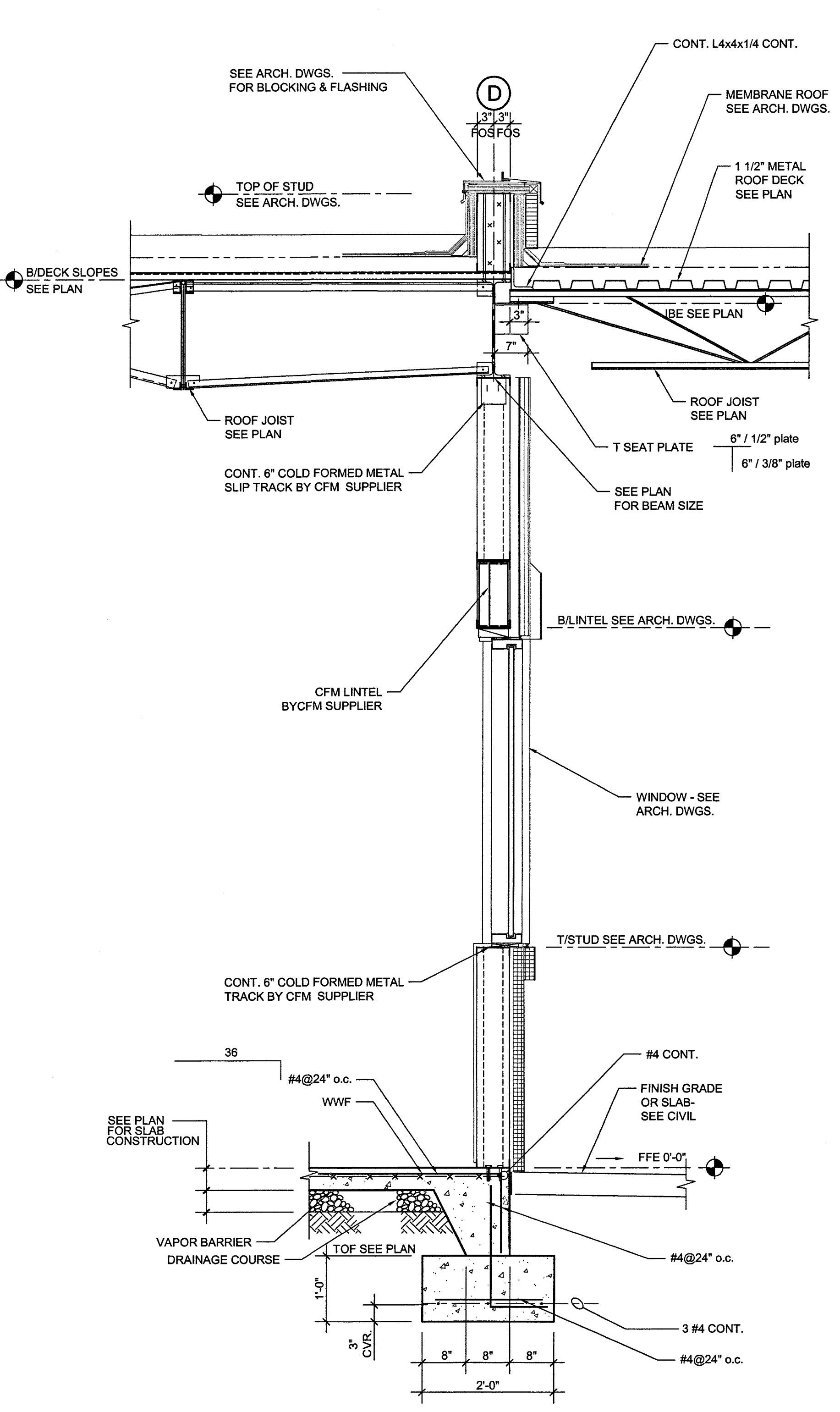
REVISED CFM STUDS FROM 8" TO 6"



1 WALL SECTION
 S405 3/4"-1'-0"



2 WALL SECTION
 S405 3/4"-1'-0"



3 WALL SECTION
 S405 3/4"-1'-0"

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S405