DESIGN CRITERIA

LOCATION: JOHNSONVILLE, NORTH CAROLINA
BUILDING CODE: 2018 NORTH CAROLINA BUILDING CODE
OCCUPANCY CATEGORY III
BASIC LATERAL FORCE RESISTING SYSTEM:
INTERMEDIATE REINFORCED MASONRY SHEAR WALLS

DESIGN LIVE LOADS

ROOF	20 PSF
CORRIDORS	100 PSF
MECHANICAL PLATFORM	150 PSF

EQUIPMENT LOADS (OPERATING WEIGHT)

IDU-1 THRU IDU-12	157 LBS
DOAS-1 & DOAS-2	702 LBS

SUPERIMPOSED DEAD LOADS

SUSPENDED CEILING + MEP	10 PSF
ROOFING ALLOWANCE	10 PSF

ROOF SNOW LOAD

P_g = 10 PSF
C_e = 0.9
I_s = 1.1
C_t = 1.0
P_f = 7 PSF
P_m = 11 PSF

RAIN ON SNOW 15 PSF

WIND LOAD V = 124 MPH (3 SECOND GUST)
EXPOSURE C
DESIGN (DESIGN/ULTIMATE) WIND BASE SHEAR:
V_s = 120k V_u = 160k
INTERNAL PRESSURE COEFFICIENT = ±0.18
COMPONENTS & CLADDING PER ASCE 7 FIGURES 30.5-1

WIND LOADS ON COMPONENTS & CLADDING FOR GIVEN TRIBUTARY AREAS (psf)

	ZONE	10 SQ FT	20 SQ FT	50 SQ FT	100 SQ FT	500 SQ FT
ROOF	1	+20.7/-32.8	+18.8/-31.9	+16.4/-30.7	+14.6/-29.8	+14.6/-29.8
	2	+20.7/-57.1	+18.8/-52.5	+16.4/-46.5	+14.6/-41.9	+14.6/-41.9
	3	+20.7/84.4	+18.8/-79.0	+16.4/-71.7	+14.6/-66.2	+14.6/-66.2
ROOF O'HANG	2	-67.1	-67.1	-67.1	-67.1	-67.1
	3	-112.8	-101.8	-87.2	-76.2	-76.2
WALL	4	+35.8/-38.9	+34.2/-37.3	+32.1/-35.1	+30.5/-33.5	+26.7/-29.8
	5	+35.8/-48.0	+34.2/-44.8	+32.1/-40.5	+30.5/-37.3	+26.7/-29.8

1. DETERMINE WIND LOADS ON COMPONENTS IN ACCORDANCE WITH THE NCSBC AND ASCE-7 OR WITH THIS TABLE. REFERENCE ASCE 7-10 FIGURE 30.5-1. TRIBUTARY AREA = GREATER OF LxW OR LxL/3.
2. DESIGN FOR ALLOWABLE CAPACITY USING LOADS FROM ASCE-7 OR FROM THIS TABLE.
3. DEFLECTIONS MAY BE CALCULATED BASED ON 70% OF THESE LOADS.
4. POSITIVE PRESSURES ARE DIRECTED TOWARD THE INTERIOR. NEGATIVE LOADS ARE DIRECTED AWAY FROM THE INTERIOR. NEGATIVE ROOF LOADS ARE UPLIFT LOADS.
5. NET UPLIFT IS EQUAL TO THE GROSS UPLIFT LOAD CALCULATED FROM ASCE-7 OR FROM THIS TABLE MINUS 60% OF THE ROOFING ALLOWANCE SUMPERIMPOSED DEAD LOAD SHOWN ON S100

SEISMIC CRITERIA

SEISMIC DESIGN VALUES DETERMINED UTILIZING 2008 USGS HAZARD DATA

SPECTRAL RESPONSE ACCELERATIONS	S_s = 0.203g S_1 = 0.093g
SITE CLASS C	
SPECTRAL RESPONSE COEFFICIENTS	S_{ds} = 0.163g S_{d1} = 0.105g
SEISMIC DESIGN CATEGORY B	
DESIGN ULTIMATE SEISMIC BASE SHEAR:	V_s = 123k V_u = 123k
IMPORTANCE FACTOR	I_e = 1.25
DESIGN SEISMIC RESPONSE COEFFICIENT	C_s = 0.058
RESPONSE MODIFICATION FACTOR	R = 3.5

SPECIAL INSPECTION REQUIREMENTS

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

1. CAST-IN-PLACE CONCRETE
2. MASONRY
3. STRUCTURAL STEEL
4. STEEL JOIST
5. STEEL DECK
6. SOILS
7. SPECAIL INSPECTIONS FOR WIND RESISTANCE

GENERAL NOTES

GENERAL

1. 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.
2. USE STRUCTURAL DRAWINGS IN CONJUNCTION WITH THE ARCHITECTURAL DRAWINGS AND THE DRAWINGS OF OTHER TRADES.
3. COORDINATE WITH OTHER TRADES THE ACTUAL LOCATIONS AND SIZES OF OPENINGS AND PENETRATIONS REQUIRED BY THEIR WORK.
4. 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.
5. 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.
6. MODIFICATIONS TO STRUCTURAL COMPONENTS AND INSTALLATION OF PENETRATIONS THROUGH STRUCTURAL MEMBERS ARE NOT PERMITTED WITHOUT PRIOR APPROVAL OF THE ARCHITECT.
7. VERIFY ACTUAL DIMENSIONS, ELEVATIONS, AND CONDITIONS OF EXISTING CONSTRUCTION PRIOR TO PROCEEDING WITH WORK OR ORDERING MATERIALS WHICH COULD BE AFFECTED BY EXISTING CONDITIONS.

SITE PREPARATION

SITE PREPARATION SHOULD BEGIN WITH THE DEMOLITION OF THE EXISTING PAVEMENT AND STRUCTURES AND DEBRIS REMOVAL WHERE NEW CONSTRUCTION WILL OCCUR, AS PART OF THE DEMOLITION, BURIED CONCRETE FOUNDATIONS ASSOCIATED WITH EXISTING MODULAR STRUCTURES SHOULD ALSO BE REMOVED. EXISTING UTILITIES THAT ARE TO BE ABANDONED SHOULD BE REMOVED OR FILLED WITH GROUT. THE EXCAVATIONS RESULTING FROM UTILITY REMOVAL SHOULD BE PROPERLY BACKFILLED WITH COMPACTED STRUCTURAL FILL AS DESCRIBED IN THE FILL MATERIAL TYPES AND COMPACTION SECTIONS OF THIS REPORT. UTILITIES THAT ARE TO REMAIN IN SERVICE SHOULD BE ACCURATELY LOCATED HORIZONTALLY AND VERTICALLY TO MINIMIZE CONFLICT WITH NEW FOUNDATION CONSTRUCTION.

PRIOR TO PLACING FILL, EXISTING VEGETATION AND ROOT MAT SHOULD BE REMOVED. COMPLETE STRIPPING OF THE TOPSOIL SHOULD BE PERFORMED IN THE PROPOSED BUILDING PAD.

FOLLOWING STRIPPING OF TOPSOIL, THE AREA SHOULD BE UNDERCUT TO 3 FEET BELOW EXISTING GRADE WITHIN THE BUILDING PAD AREA AND 5 FEET BEYOND THE LATERAL LIMITS OF THE BUILDING PAD AREA. ONCE MATERIALS HAVE BEEN REMOVED, THE ENTIRE AREA SHOULD BE VIBRATORY COMPACTED IN PLACE AND PROOFROLLED.

STRUCTURAL AND GENERAL FILL SHOULD MEET THE FOLLOWING REQUIREMENTS

ITEM	STRUCTURAL FILL	GENERAL FILL
MAXIMUM LIFT THICKNESS	8 INCHES OR LESS IN LOOSE THICKNESS WHEN HEAVY, SELF-PROPELLED COMPACTION EQUIPMENT IS USED 4 TO 6 INCHES IN LOOSE THICKNESS WHEN HAND- GUIDED EQUIPMENT (I.E. JUMPING JACK OR PLATE COMPACTOR) IS USED	SAME AS STRUCTURAL FILL
MINIMUM COMPACTION REQUIREMENTS	MINIMUM 95% OF THE MATERIAL'S MAXIMUM STANDARD PROCTOR DRY DENSITY (ASTM D 698). THE UPPER 12 INCHES OF SUBGRADE IN PAVEMENT AREAS SHOULD BE COMPACTED TO AT LEAST 98% OF THE MATERIALS MAXIMUM STANDARD PROCTOR DRY DENSITY (ASTM D 698).	92% OF MAX
WATER CONTENT RANGE	LOW PLASTICITY COHESIVE: -2% TO +3% OF OPTIMUM HIGH PLASTICITY COHESIVE: 0 TO +4% OF OPTIMUM GRANULAR: -3% TO + 3% OF OPTIMUM	AS REQUIRED TO ACHIEVE MIN. COMPACTION REQUIREMENTs

1. MAXIMUM DENSITY AND OPTIMUM WATER CONTENT AS DETERMINED BY THE STANDARD PROCTOR TEST (ASTM D 698).
2. HIGH PLASTICITY COHESIVE FILL SHOULD NOT BE COMPACTED TO MORE THAN 100% OF STANDARD PROCTOR MAXIMUM DRY DENSITY.

FOUNDATIONS

1. THE FOUNDATION DESIGN IS BASED ON THE REPORT OF SUBSURFACE INVESTIGATION PREPARED BY TERRACON "GEOTECHNICAL ENGINEERING REPORT, JOHNSONVILLE ELEMENTARY SCHOOL PHASE II - CLASSROOM ADDITION" DATED JANUARY 7, 2022.
2. ALL FOOTINGS SHALL BE PLACED ON UNDISTURBED SOIL OR COMPACTED STRUCTURAL FILL. NET ALLOWABLE BEARING PRESSURE IS 2500 PSF.
3. 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 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.
4. 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 OF BUILDING FOUNDATIONS AND PAVEMENTS SHALL NOT OCCUR UNTIL IT IS CONFIRMED THAT SETTLEMENT HAS STABILIZED.
5. NO FOUNDATIONS SHALL BE PLACED IN WATER OR ON FROZEN GROUND.
6. ALL FOOTING EXCAVATIONS ARE TO BE FINISHED BY HAND.
7. ALL FINISHED FOUNDATION EXCAVATIONS SHALL BE INSPECTED AND APPROVED BY THE ARCHITECT OR HIS DESIGNATE BEFORE ANY CONCRETE IS PLACED.
8. UNLESS OTHERWISE NOTED, ALL FOOTINGS AND PILASTERS SHALL BE CENTERED UNDER SUPPORTED MEMBERS.
9. 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.
10. CAREFULLY FOLLOW THE REQUIREMENTS OF THE SPECIFICATIONS FOR BACKFILL UNDER OR ADJACENT TO ANY PORTION OF THE BUILDING.
11. WHERE FOUNDATION ELEMENTS ARE TO HAVE FILL ON BOTH SIDES, EACH SIDE SHALL BE FILLED SIMULTANEOUSLY, MAINTAINING A COMMON ELEVATION.
12. COORDINATE UNDERFLOOR DRAIN REQUIREMENTS WITH ARCHITECTURAL AND MECHANICAL DRAWINGS AND THE REQUIREMENTS OF THE GEOTECHNICAL ENGINEER.
13. CONTRACTOR SHALL PROVIDE CONTINUOUS CONTROL OF SURFACE AND UNDERGROUND WATER AS REQUIRED DURING CONSTRUCTION SUCH THAT THE WORK IS DONE IN THE DRY.

COLD-FORMED STEEL STRUCTURAL FRAMING

1. ENGINEER, FABRICATE, AND INSTALL COLD-FORMED STEEL STRUCTURAL FRAMING FOR THE FOLLOWING: EXTERIOR AND INTERIOR LOAD-BEARING WALLS.
2. ENGINEER, FABRICATE, AND INSTALL PERMANENT AND TEMPORARY BRACING, BRIDGING, CONNECTIONS, AND ANCHORAGES TO THE PRIMARY STRUCTURE FOR THE COMPONENTS LISTED ABOVE.
3. REFER TO ARCHITECTURAL DRAWINGS FOR NON-LOAD-BEARING COLD-FORMED STEEL CURTAIN WALL MEMBERS AND OTHER COLD-FORMED AND LIGHT GAGE STEEL MEMBERS NOT LISTED ABOVE.
4. COMPLY WITH THE FOLLOWING:
   A. AISI "SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS".
   B. CCFSS TECHNICAL BULLETIN: "AISI SPECIFICATION FOR SCREW CONNECTIONS".
   C. AISI "DESIGN GUIDE FOR COLD-FORMED STEEL TRUSSES".
   D. AWS D1.3, "STRUCTURAL WELDING CODE, SHEET STEEL".
5. STRUCTURAL PERFORMANCE:
   A. DEAD, LIVE, WIND LOADS AND SEISMIC CRITERIA: SEE GENERAL NOTES ON THIS SHEET.
   B. LATERAL LOAD ON INTERIOR LOAD-BEARING WALLS: 5 PSF.
   C. HORIZONTAL DEFLECTION, EXTERIOR LOAD-BEARING WALL FRAMING: SPAN/600 FOR MASONRY VENEERS, SPAN/360 OTHERWISE.
   D. ALLOW FOR CONSTRUCTION TOLERANCES AND ACCOMMODATE LIVE LOAD DEFLECTIONS OF THE PRIMARY STRUCTURE OF UP TO 3/4 INCH.
   E. ASSUME NON-STRUCTURAL SHEATHING PROVIDES NO LATERAL BRACING TO FRAMING MEMBERS.
6. SUBMIT COMPLETED DESIGN CALCULATIONS AND ERECTION DRAWINGS SEALED BY A PROFESSIONAL ENGINEER LICENSED IN NORTH CAROLINA, TO THE ARCHITECT FOR REVIEW.
7. MATERIALS
   A. COLD-FORMED STEEL: ASTM A653, GRADE 33 UNLESS NOTED OTHERWISE, G60 COATING.
   B. MINIMUM UNCOATED-STEEL THICKNESS: 0.0428" FOR ALL MEMBERS, EXCEPT TRUSS MEMBERS.
   C. MINIMUM UNCOATED-STEEL THICKNESS, TRUSS MEMBERS: THICKNESS REQUIRED TO SATISFY DESIGN AND CONSTRUCTABILITY REQUIREMENTS.
   D. ANCHOR BOLTS: ASTM F1554, GRADE 36, ZINC-COATED IN ACCORDANCE WITH ASTM A153, CLASS C.
   E. EXPANSION AND ADHESIVE ANCHORS: AS INDICATED ELSEWHERE IN THE GENERAL NOTES.
   F. POWER-ACTUATED ANCHORS: CORROSION RESISTANT CARBON STEEL, 0.145" MINIMUM DIAMETER.
   G. MECHANICAL FASTENERS: CORROSION-RESISTANT-COATED CARBON STEEL, SELF-DRILLING, SELF-THREADING DRILL SCREWS, #10 MIN.
   H. WELD FILLER MATERIAL: IN ACCORDANCE WITH AWS D1.3
8. PERFORM WELDING WITH QUALIFIED WELDERS IN ACCORDANCE WITH AWS D1.3.
9. INSTALL PERMANENT BRIDGING, BRACING, AND ANCHORAGES TO THE PRIMARY STRUCTURES AS INDICATED ON APPROVED SHOP DRAWINGS.
10. INSTALL BENT PLATES AS INDICATED AT RIDGES, HIPS, VALLEYS, EAVES, AND OTHER TRANSITIONS TO PROVIDE ADEQUATE SUPPORT FOR DECKING AND SHEATHING.

CAST-IN-PLACE

1. 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. REINFORCING STEEL: ASTM A615 GRADE 60.
   E. REINFORCING STEEL, WELDABLE: ASTM A706.
   F. WELDED WIRE FABRIC: ASTM A185, FLAT SHEETS.
   G. UNDER-SLAB DRAINAGEFILL: 4" WASHED CRUSHED STONE, MAXIMUM AGGREGATE SIZE OF 3/4".
   H. VAPOR BARRIER: ASTM E1745, CLASS B; FIVE-PLY, NYLON OR POLYESTER CHORD, 15 MILS THICKNESS.
   I. WATERSTOP: SELF EXPANDING.
2. CONCRETE MIXES
   A. FOOTINGS & GRADE BEAMS: 3000 PSI NW
   B. SLABS-ON-GRADE: 3000 PSI NW
   C. SLABS-ON-GRADE EXPOSED TO WEATHER: 4500 PSI NW, AIR-ENTRAINED.
   D. SUPPORTED SLABS ON STEEL DECK: 3500 PSI LW
3. PERFORM CONCRETE WORK IN ACCORDANCE WITH ACI 318 AND ACI 301.
4. PROVIDE CONCRETE COVER AS FOLLOWS:
   A. CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH: 3".
   B. CONCRETE EXPOSED TO EARTH OR WEATHER:
      a. #5 OR SMALLER: 1 1/2".
      b. #6 OR LARGER: 2".
   C. CONCRETE NOT EXPOSED TO EARTH OR WEATHER:
      a. SLABS, WALLS, JOIST: 3/4"
      b. BEAMS, COLUMNS: 1 1/2" TO PRIMARY REINFORCEMENT, TIES, STIRRUPS, OR SPIRALS.
5. 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, fc (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.

6. ACCURATELY INSTALL AND PROPERLY SECURE ANCHORS, BEARING PLATES, SLEEVES, AND OTHER EMBEDDED ITEMS.
7. ACCURATELY LOCATE AND BLOCK OUT OPENINGS AND PENETRATIONS.
8. COORDINATE WITH OTHER TRADES FOR ANCHORS, EMBEDDED ITEMS, SLEEVES, AND PENETRATIONS REQUIRED AND/OR FURNISHED BY THE OTHER TRADES.
9. 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.
10. INSTALL AND SEAL VAPOR BARRIER IN ACCORDANCE WITH ASTM E1643 AND MANUFACTURER'S INSTRUCTIONS. LAP JOINTS 6" AND SEAL WITH MANUFACTURER'S RECOMMENDED TAPE.
11. 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
12. FLOOR FINISH TOLERANCE:
   A. SLABS TO RECEIVE TROWEL OR TROWEL AND FINE-BROOM FINISH:
      a. SPECIFIED OVERALL VALUES: FF=25 / FL=20.
      b. MINIMUM LOCAL VALUES: FF=17 / FL=15..
13. FINISH SLABS FLAT AND LEVEL.
14. NO CONDUIT OR PIPE MAY BE RUN WITHIN STRUCTURAL CONCRETE MEMBERS EXCEPT WHERE INDICATED.

STRUCTURAL MASONRY

1. SCOPE: THESE NOTES APPLY TO LOAD BEARING MASONRY OR MASONRY THAT IS PART OF THE LATERAL LOAD RESISTING SYSTEM. SEE ARCHITECTURAL FOR OTHER MASONRY.
2. ALL MASONRY WORK SHALL CONFORM TO THE "BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES" (ACI530-13) AND "SPECIFICATIONS FOR MASONRY STRUCTURES" (ACI530.1-13)
3. MATERIALS
   A. CONCRETE MASONRY UNITS: ASTM C90, 2000 PSI MIN. UNIT STRENGTH.
   B. MORTAR: ASTM C270, PROPORTION SPECIFICATION, TYPE S.
   C. GROUT: ASTM C476; SLUMP = 8" TO 11". COMPRESSIVE STRENGTH f'c = 3000 PSI
   D. MASONRY f'm = 2000 PSI.
   E. REINFORCING STEEL: ASTM A615, GRADE 60. Fs = 32,000 PSI
4. LAP REINFORCING AS FOLLOWS, UNLESS NOTED OTHERWISE.

#3	1'-6"	#7	5'-6"
#4	2'-0"	#8	8'-6"
#5	2'-6"	#9	10'-9"
#6	4'-0"	#10	14'-0"

5. INSTALL REINFORCING IN THE CENTER OF CELLS UNLESS INDICATED OTHERWISE.
6. ADEQUATELY SECURE REINFORCING TO PREVENT MOVEMENT PRIOR TO GROUT FILL.
7. GROUT ALL CELLS OF MASONRY UNITS INSTALLED BELOW FINAL GRADE.
8. ABOVE GRADE, GROUT ONLY REINFORCED CELLS UNLESS INDICATED OTHERWISE.

STRUCTURAL STEEL

1. MATERIALS
   A. STRUCTURAL STEEL WIDE FLANGE SHAPES: ASTM A992
   B. OTHER STRUCTURAL STEEL ROLLED SHAPES: ASTM A36
   C. RECTANGULAR OR ROUND HSS: ASTM A500, GR B
   D. STEEL PLATE: ASTM A36
   E. HIGH STRENGTH BOLTS: ASTM A325
   F. ANCHOR RODS: ASTM F1554, GRADE 36
   G. WELD ELECTRODE: IN ACCORDANCE WITH AWS D1.1
2. FABRICATE AND ERECT STEEL IN ACCORDANCE WITH THE AISC SPECIFICATION. PERFORM SHOP AND FIELD WELDING IN ACCORDANCE WITH AWS D1.1 WITH CURRENTLY CERTIFIED WELDERS.
3. UNLESS NOTED OTHERWISE, ALL BOLTED CONNECTIONS ARE MADE WITH 3/4" HIGH STRENGTH BOLTS INSTALLED SNUG TIGHT.
4. DESIGN OF BEAM CONNECTIONS ARE DELEGATED TO THE STEEL FABRICATOR. SHOP STANDARD SIMPLE SHEAR CONNECTIONS WILL BE PERMITTED. SERVICE LEVEL (UNFACTORED) BEAM REACTIONS ARE SHOWN ON THE FRAMING PLAN. WHERE NOT SHOWN DESIGN FOR MINIMUM END REACTION OF 10 KIPS FOR A SHEAR CONNECTION AND 10 KIP-FT FOR A MOMENT CONNECTION. THE EOR WILL REVIEW AND APPROVE THE PROPOSED CONNECTION.
5. STEEL PREPARATION AND FINISH:
   A. INTERIOR FRAMING: SSPC SP3 POWER TOOL CLEANING; PAINT 23 LATEX PRIMER FOR STEEL SURFACES.
   B. EXPOSED INTERIOR FRAMING: SSPC SP3 POWER TOOL CLEANING; PAINT 23 LATEX PRIMER FOR STEEL SURFACES. APPLY TOPCOAT OF PAINT PER ARCHITECTURAL SPECS.
   C. BRICK RELIEF ANGLES AND LINTELS: SSPC SP6 COMMERCIAL BLAST CLEANING; HOT DIPPED GALVANIZED.
6. FOR BEAMS NOT MEETING THE MINIMUM SIZE REQUIREMENT OF THE UL ASSEMBLY, THE CONTRACTOR SHALL PROVIDE FOR APPROVAL W/D CALCULATIONS AS REQUIRED IN SECTION 721.5.2.2 OF THE NC STATE BUILDING CODE.

STEEL DECK

1. MATERIALS
   A. COMPOSITE STEEL FLOOR DECK: 3" DEEP, 18 GAGE, ASTM A653, SS, GRADE 50, G60 GALVANIZED COATING.
   B. STEEL ROOF DECK: 1 1/2" DEEP, TYPE B (WIDE RIB), 20 GAGE, ASTM A653, SS, GRADE 33, G60 GALVANIZED COATING.
   C. POUR STOPS, GIRDER FILLERS, COLUMN, END, AND Z CLOSURES, COVER PLATES, OTHER STEEL SHEET DECKING ACCESSORIES: THICKNESS AS REQUIRED FOR STRENGTH BUT NOT LESS THAN THE DECKING THICKNESS; OF THE SAME MATERIAL AND FINISH AS THE DECKING MATERIAL.
   D. MECHANICAL FASTENERS: CORROSION RESISTANT SELF-DRILLING CARBON STEEL SCREWS, #10 MINIMUM DIAMETER.
   E. WELD ELECTRODE: IN ACCORDANCE WITH AWS D1.3.
2. FABRICATE AND ERECT DECK IN ACCORDANCE WITH SDI PUBLICATION NO. 29. PERFORM WELDING IN ACCORDANCE WITH AWS D1.3 WITH CURRENTLY CERTIFIED WELDERS.
3. CUT AND NEATLY FIT DECK AROUND OPENINGS AND OTHER WORK PROJECTING THROUGH THE DECK.
4. PROVIDE ADDITIONAL SUPPORT AND CLOSURE PIECES AS REQUIRED FOR STRENGTH, CONTINUITY OF DECK, AND SUPPORT OF OTHER WORK
5. 3" DEEP COMPOSITE FLOOR DECK ATTACHMENT
   A. AT SUPPORTS, WELD EDGE AND INTERIOR RIBS OF DECK UNITS AT EACH SUPPORT AT AN AVERAGE SPACING OF 12" (18" MINIMUM) WITH 5/8" NOMINAL DIAMETER PUDDLE WELDS.
   B. AT PREMIER EDGES BETWEEN SUPPORTS, FASTEN WITH 5/8" DIAMETER PUDDLE WELDS SPACED A MAXIMUM OF 24" APART.
   C. AT SIDE LAPS, INSTALL #10 SELF DRILLING SCREWS A MAXIMUM OF 36 INCHES APART.
   D. END BEARING: 1 1/2" MINIMUM
   E. END JOINTS: BUTTED OR LAPPED.
6. 1 1/2" DEEP ROOF DECK ATTACHMENT TO STRUCTURAL STEEL
   A. FASTEN ROOF DECK PANELS TO STEEL SUPPORTING MEMBERS WITH 5/8" NOMINAL DIAMETER PUDDLE WELDS OR WELDS WITH AN EQUAL PERIMETER, OR SEAM WELDS NOT LESS THAN 1 1/2" LONG.
   B. WELD EDGES AND INTERIOR RIBS OF DECK UNITS TO EACH SUPPORTING MEMBER WITH A MINIMUM OF THREE WELDS PER DECK UNIT.
   C. WELD SPACING: SEE ROOF DECK ATTACHMENT PLAN ON S010
   D. FASTEN SIDE LAPS WITH #10 SELF-DRILLING SCREWS. SEE ROOF DECK ATTACHMENT PLAN ON S010. DECK SPANS 36" OR LESS DO NOT REQUIRE SIDE LAP FASTENERS.
   E. END BEARING: 1 1/2" MINIMUM.
   F. END JOINTS: LAPPED
   G. DO NOT HANG ANYTHING FROM THE ROOF DECK.
   H. MECHANICAL FASTENERS OR POWER-DRIVEN FASTENERS (HILTI X-HSN 24 OR EQUAL) MAY BE USED IN LIEU OF WELDS. SPACING SHALL BE AS SPECIFIED FOR WELDS.
   I. PER AWS D1.3, A WELDING PROCEDURE SPECIFICATION (WPS) AND A PROCEDURE QUALIFICATION RECORD (PQR) FOR WELDING SHEET METAL MUST BE SUBMITTED TO THE EOR FOR REVIEW AND APPROVAL PRIOR TO ANY DECK WELDING.

STEEL JOISTS

1. MATERIALS
   A. STEEL JOISTS: SJI SPECIFICATIONS, K SERIES.
   B. LONG SPAN STEEL JOISTS: IN ACCORDANCE WITH SJI SPECIFICATIONS.
   C. BRIDGING AND ACCESSORIES: IN ACCORDANCE WITH SJI SPECIFICATIONS.
   D. HIGH-STRENGTH BOLTS: ATSM A325
   E. CARBON STEEL BOLTS: ASTM A307, GRADE A
   F. WELD ELECTRODE: IN ACCORDANCE WITH AWS D1.1
2. FABRICATE AND ERECT JOISTS IN ACCORDANCE WITH THE SJI SPECIFICATIONS.
3. PERFORM SHOP AND FIELD WELDING WITH CERTIFIED WELDERS IN ACCORDANCE WITH AWS D1.1
4. INSTALL 3/4 INCH DIAMETER HIGH STRENGTH BOLTS, SNUG TIGHT, IN BOLTED JOIST-TO-STRUCTURAL STEEL, JOIST-TO-JOIST GIRDER, AND JOIST SPLICE CONNECTIONS.
5. INSTALL CARBON STEEL BOLTS IN BOLTED CONNECTIONS FOR BRIDGING AND JOIST ACCESSORIES.
6. INSTALL BRIDGING AND UPLIFT BRIDGING AS REQUIRED BY THE SJI SPECIFICATIONS.

CONCRETE AND MASONRY ANCHORS

1. EXPANSION ANCHORS: WEDGE TYPE, CARBON STEEL, ZINC PLATED OR SIMILARLY TREATED FOR CORROSION RESISTANCE. INSTALL IN STRICT ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.
2. EXPANSION ANCHORS SHALL HAVE BEEN TESTED AND QUALIFIED FOR USE IN ACCORDANCE WITH ACI 355.2 AND ICC-ES ACI 193 FOR USE IN CONCRETE APPLICATIONS, OR ICC-ES ACO1 FOR USE IN MASONRY APPLICATIONS.
3. ADHESIVE ANCHORS: CARBON STEEL, A36 MATERIAL OR EQUIVALENT, WITH A TWO-PART, PREPACKAGED AND PREMEASURED ADHESIVE READY FOR INJECTION INTO THE ANCHOR HOLE. INSTALL ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.
4. ADHESIVE ANCHORS SHALL HAVE BEEN TESTED AND QUALIFIED FOR USE IN ACCORDANCE WITH ACI 355.4 AND ICC-ES AC308 FOR USE IN CONCRETE APPLICATION, OR ICC-ES AC58 FOR USE IN MASONRY APPLICATIONS.

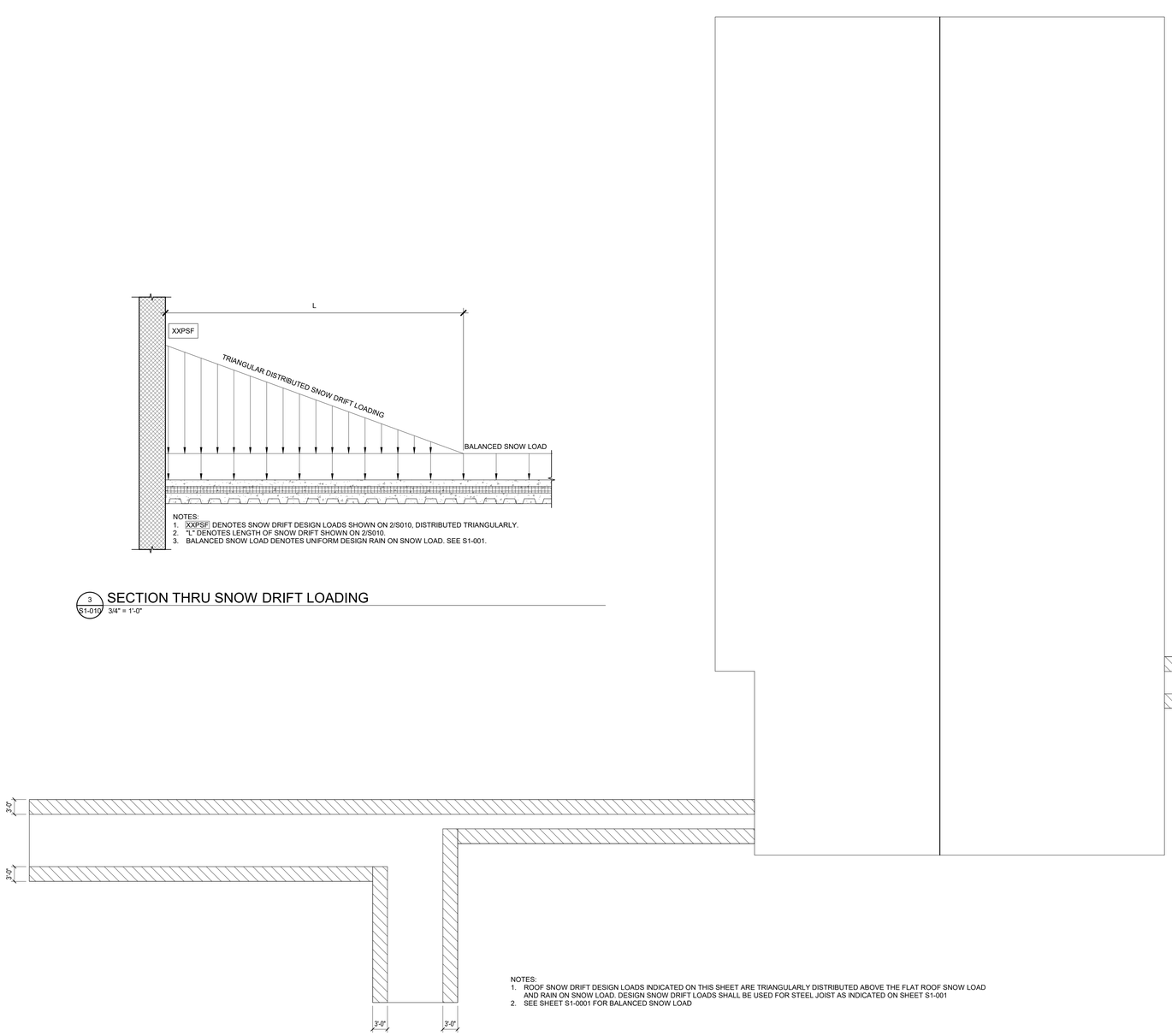
POST-INSTALLED ANCHORS

UNLESS OTHERWISE INDICATED ON PLANS, POST-INSTALLED ANCHORS SHALL CONSIST OF THE FOLLOWING ANCHOR TYPES, OR APPROVED EQUAL:

	ADHESIVE ANCHOR	MECHANICAL ANCHOR
SOLID CONCRETE	HILTI HY 200 SAFE SET HILTI R

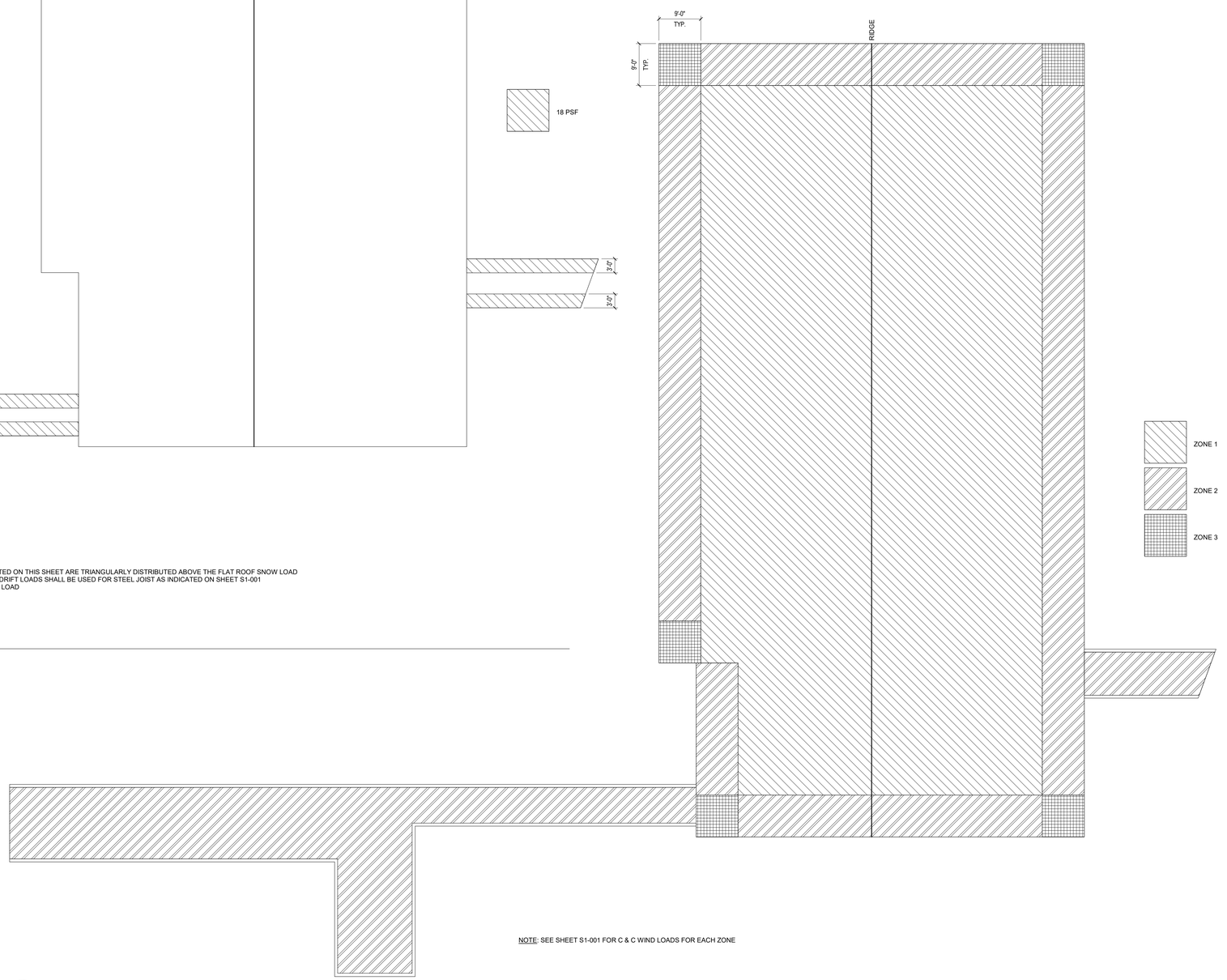
NOTES:
1. XXPSF DENOTES SNOW DRIFT DESIGN LOADS SHOWN ON 2/S010, DISTRIBUTED TRIANGULARLY.
2. "L" DENOTES LENGTH OF SNOW DRIFT SHOWN ON 2/S010.
3. BALANCED SNOW LOAD DENOTES UNIFORM DESIGN RAIN ON SNOW LOAD. SEE S1-001.

3 / S1-010 SECTION THRU SNOW DRIFT LOADING
3/4" = 1'-0"



NOTES:
1. ROOF SNOW DRIFT DESIGN LOADS INDICATED ON THIS SHEET ARE TRIANGULARLY DISTRIBUTED ABOVE THE FLAT ROOF SNOW LOAD AND RAIN ON SNOW LOAD. DESIGN SNOW DRIFT LOADS SHALL BE USED FOR STEEL JOIST AS INDICATED ON SHEET S1-001
2. SEE SHEET S1-0001 FOR BALANCED SNOW LOAD

2 / S1-010 AREA SNOW DRIFT DESIGN LOADS
3/32" = 1'-0"



NOTE: SEE SHEET S1-001 FOR C & C WIND LOADS FOR EACH ZONE

1 / S1-010 ROOF WIND PRESSURE ZONE
3/32" = 1'-0"

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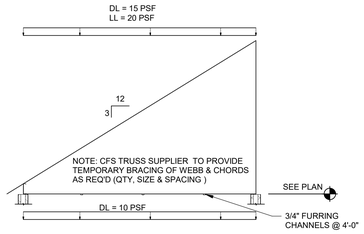
ROOF LOADING DIAGRAMS

S1-010

CFS TRUSS NOTES



1. COMPLETE DESIGN CALCULATIONS, SEALED BY A NORTH CAROLINA PROFESSIONAL ENGINEER, ERECTION PLAN AND BRACING PLAN SHALL BE PROVIDED TO THE CONTRACTOR BY THE TRUSS SUPPLIER. SUBMIT TO THE ARCHITECT FOR REVIEW.

2. ALL TRUSSES SHALL BE DESIGNED FOR THE WIND LOADINGS AS PRESCRIBED IN THE NORTH CAROLINA STATE BUILDING CODE IN ADDITION TO THE FOLLOWING LOADS;

TOP CHORD	DL= 15 PSF
	LL= 20 PSF
BOTTOM CHORD	DL= 10 PSF

DEAD LOADS ARE SUPERIMPOSED LOADS. DESIGN SHALL INCLUDE SELF-WEIGHT OF TRUSSES.

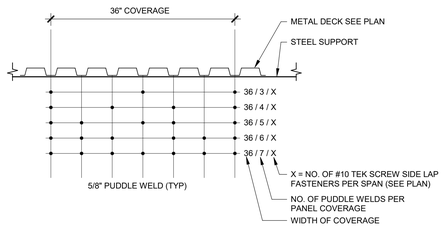
3. ALL PROVISIONS OF THE NORTH CAROLINA STATE BUILDING CODE, AISI " SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMEBERS", CCFSS TECHNICAL BULLETIN: "AISIA SPECIFICATION FOR SCREW CONNECTIONS", AISI "DESIGN GUIDE FOR COLD-FORMED STEEL TRUSSES", AND AWS D1.3, "STRUCTURAL WELDING CODE, SHEET STEEL" SHALL BE ADHERED TO.

4. BRACE TRUSSES DURING CONSTRUCTION FOR ALL LIVE AND WIND LOADS, INCLUDING WEIGHT OF MATERIAL STAGED ON TRUSSES DURING CONSTRUCTION.

5. INSTALL PERMANENT BRIDGING, BRACING, AND ANCHORAGES TO THE PRIMARY STRUCTURE AS INDICATED ON APPROVED SHOP DRAWINGS. INSTALL BENT PLATES AS INDICATED AT RIDGES, HIPS, VALLEYS, EAVES, AND OTHER TRANSITIONS TO PROVIDE ADEQUATE SUPPORT FOR DECKING AND SHEATHING.

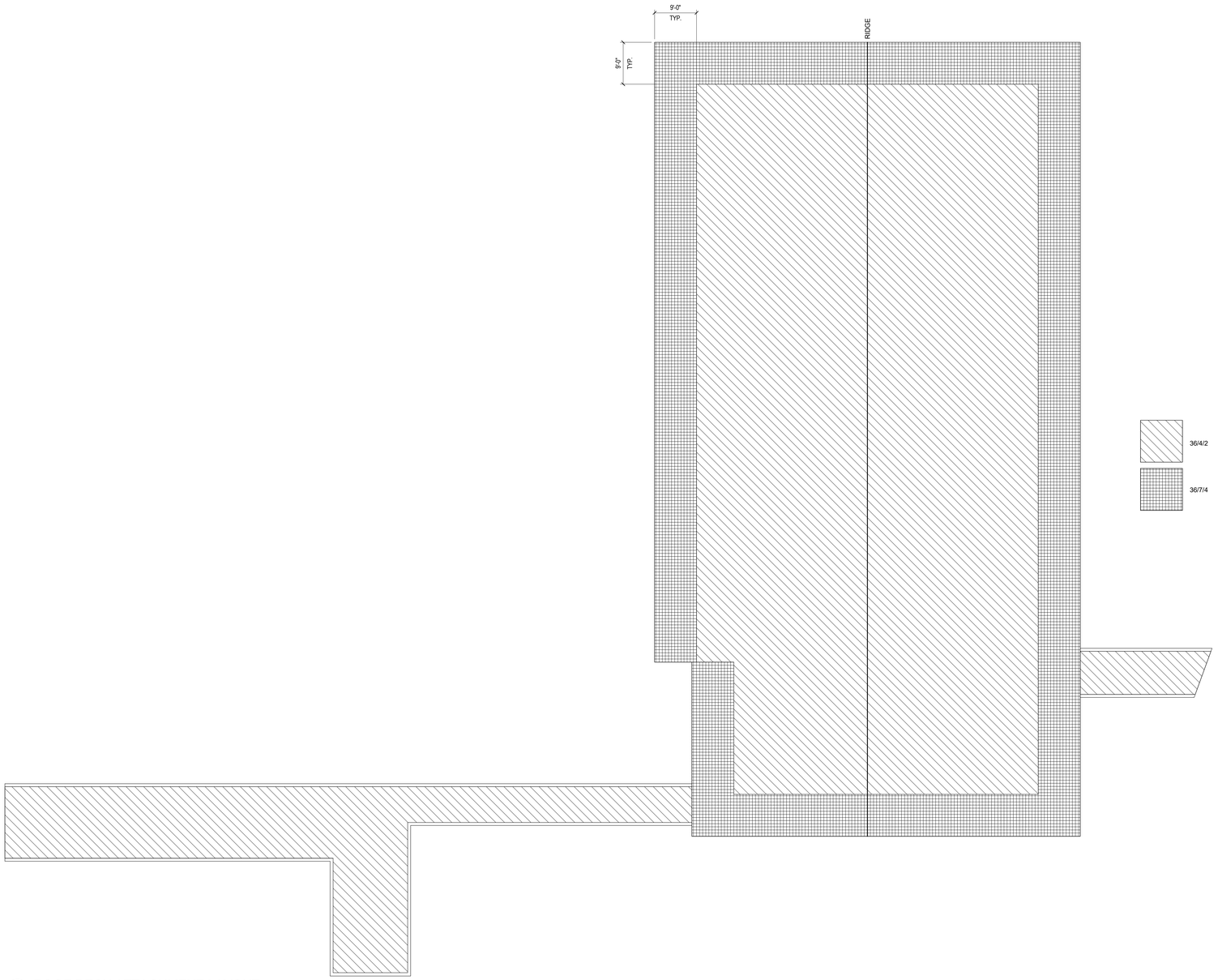
6. TRUSS PROFILES SHOWN ARE REPRESENTATIVE AND DO NOT INCLUDE ALL DIFFERENT INDIVIDUAL CONDITIONS. COORDINATE PROFILES WITH ROOF PLAN AND ARCHITECTURAL DRAWINGS.

3 S1-020 CFS TRUSS NOTES
1/4" = 1'-0"



WELD PATTERNS - FOR LOCATION SEE ROOF DECK ATTACHMENT LAYOUT

2 S1-020 ROOF DECK WELD PATTERN
1" = 1'-0"



1 S1-020 ROOF DECK ATTACHMENT LAYOUT
3/32" = 1'-0"

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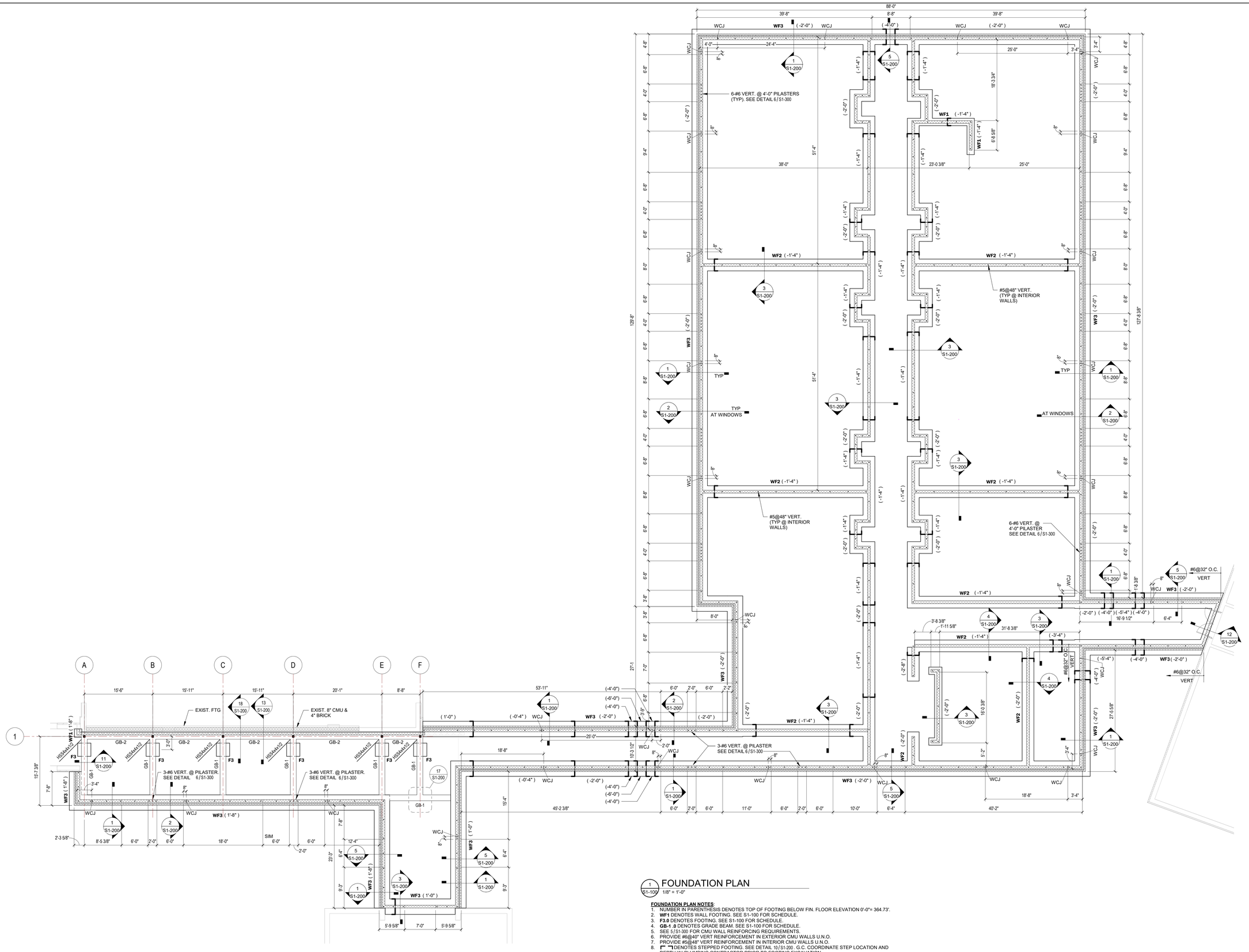
ROOF ATTACHMENT DIAGRAM

S1-020



FOUNDATION PLAN

1 / S1-100 — 1/8" = 1'-0"

FOUNDATION PLAN NOTES:

1. NUMBER IN PARENTHESIS DENOTES TOP OF FOOTING BELOW FIN. FLOOR ELEVATION 0'-0"= 364.73'.
2. **WF1** DENOTES WALL FOOTING. SEE S1-100 FOR SCHEDULE.
3. **F3.0** DENOTES FOOTING. SEE S1-100 FOR SCHEDULE.
4. **GB-1 .0** DENOTES GRADE BEAM. SEE S1-100 FOR SCHEDULE.
5. SEE 5 / S1-300 FOR CMU WALL REINFORCING REQUIREMENTS.
6. PROVIDE #6@40" VERT REINFORCEMENT IN EXTERIOR CMU WALLS U.N.O.
7. PROVIDE #5@48" VERT REINFORCEMENT IN INTERIOR CMU WALLS U.N.O.
8. ⌐¬ DENOTES STEPPED FOOTING. SEE DETAIL 10 / S1-200 . G.C. COORDINATE STEP LOCATION AND DEPTH W/ PLUMBING CONTRACTOR PRIOR TO FOOTING EXCAVATION.
9. IN ADDITION TO REINFORCING SHOWN ON THE DRAWINGS, PROVIDE #6 VERT. BAR IN JAMBS OF ALL DOORS AND WINDOWS. PROVIDE #6 VERT. BAR EA. SIDE OF EXPANSION JOINTS AND CONTROL JOINTS. SEE DETAIL 8 / S1-300 AND 9 / S1-300.
10. **WCJ** DENOTES WALL CONTROL JOINT IN EXTERIOR/LOAD BEARING CMU. SEE S1-100 FOR PLAN LOCATIONS. SEE ARCH'L FOR JOINT LOCATIONS IN EXTERIOR BRICK AND INTERIOR NON-LOAD BEARING CMU.
11. REFER TO ARCH'L DRAWINGS FOR INTERIOR WALL DIMENSIONS NOT SHOWN ON STRUCTURAL.
12. PROVIDE BOND BEAMS IN MASONRY WALLS @ 9'-4" MAX AND TOP COURSE OF ALL WALLS.
13. PROVIDE CORNER BARS IN BOND BEAMS AT WALL CORNERS AND INTERSECTIONS. LAP 2'-0".
14. STEEL COLUMNS SHALL BE SHOP PRIMED AND PAINTED ON ALL SIDES.

FOOTING SCHEDULE

MARK	WIDTH	LENGTH	DEPTH	REINFORCING	COMMENTS
F3	3'-0"	3'-0"	1'-0"	(4) #5	BOTTOM E.W.

GRADE BEAM SCHEDULE

MARK	WIDTH	DEPTH	BOTTOM BARS	TOP BARS	STIRRUPS	REMARKS
GB1	1'-4"	VIF	(3)#5	(3)#5	#3@12"	HOOK @ EACH END
GB2	1'-8"	VIF	(3)#5	(3)#5	#3@12"	HOOK @ EACH END

WALL FOOTING SCHEDULE

MARK	WIDTH	THICKENESS	COMMENTS
WF1	1'-8"	1'-0"	
WF2	2'-8"	1'-0"	
WF3	3'-6"	1'-0"	

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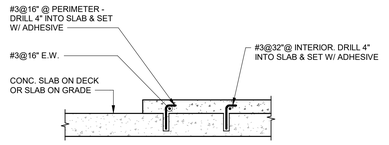
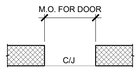
FOUNDATION PLAN

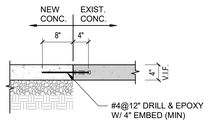
S1-100



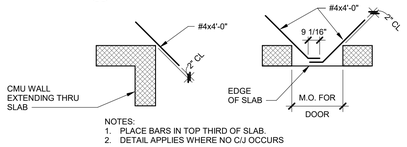
6 S1-101 TYPICAL EQUIP. PAD DETAIL
3/4" = 1'-0"



4 S1-101 CONTROL JOINT DETAILS
1/4" = 1'-0"

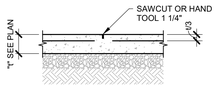


5 S1-101 SOG DETAIL @ EXISTING SLAB
3/4" = 1'-0"



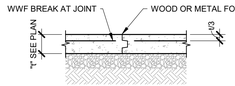
NOTES:
1. PLACE BARS IN TOP THIRD OF SLAB.
2. DETAIL APPLIES WHERE NO C/J OCCURS

3 S1-101 SLAB PLAN @ RE-ENTRANT CORNER
1/4" = 1'-0"



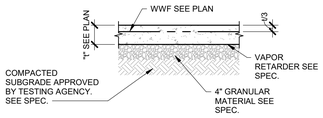
NOTE:
IN LIEU OF SAWCUT OR HAND TOOL CONTRACTOR MAY USE FULL-DEPTH PREFORMED JOINT.

CONTROL JOINT



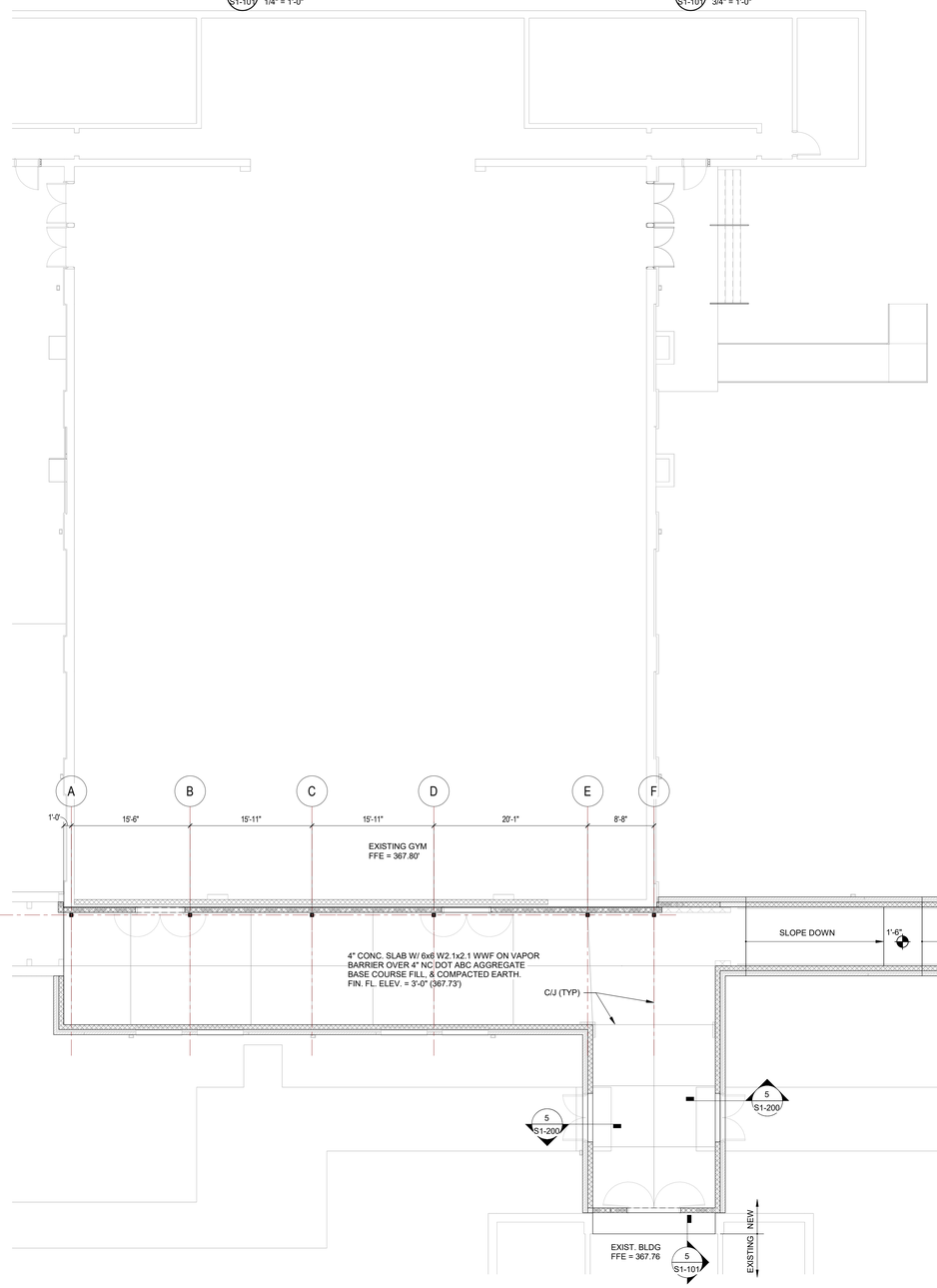
NOTE:
IN LIEU OF FORMING KEY WAY CONTRACTOR MAY USE 1/2"Øx2'-0" LONG SMOOTH DOWELS WITH ONE END GREASED. PLACE AT 24"

CONSTRUCTION JOINT



TYPICAL SLAB ON GRADE

2 S1-101 TYPICAL SLAB ON GRADE DETAILS
3/4" = 1'-0"



1 S1-101 SLAB PLAN
1/8" = 1'-0"

SLAB PLAN NOTES:
1. FIN. FLOOR ELEVATION = 0'-0" (364.73' MSL).
2. C/J DENOTES SLAB CONTROL/CONSTRUCTION JOINT. SEE DETAIL 2/S1-101.
3. SEE DETAIL 3/S1-101 FOR SLAB REINFORCING AT RE-ENTRANT CORNERS.
4. SEE DETAIL 8/S1-200 FOR SLAB DEPRESSION DETAIL.
5. REFER TO ARCHITECTURAL/PLUMBING FLOOR PLAN FOR LOCATION OF FLOOR DRAINS.

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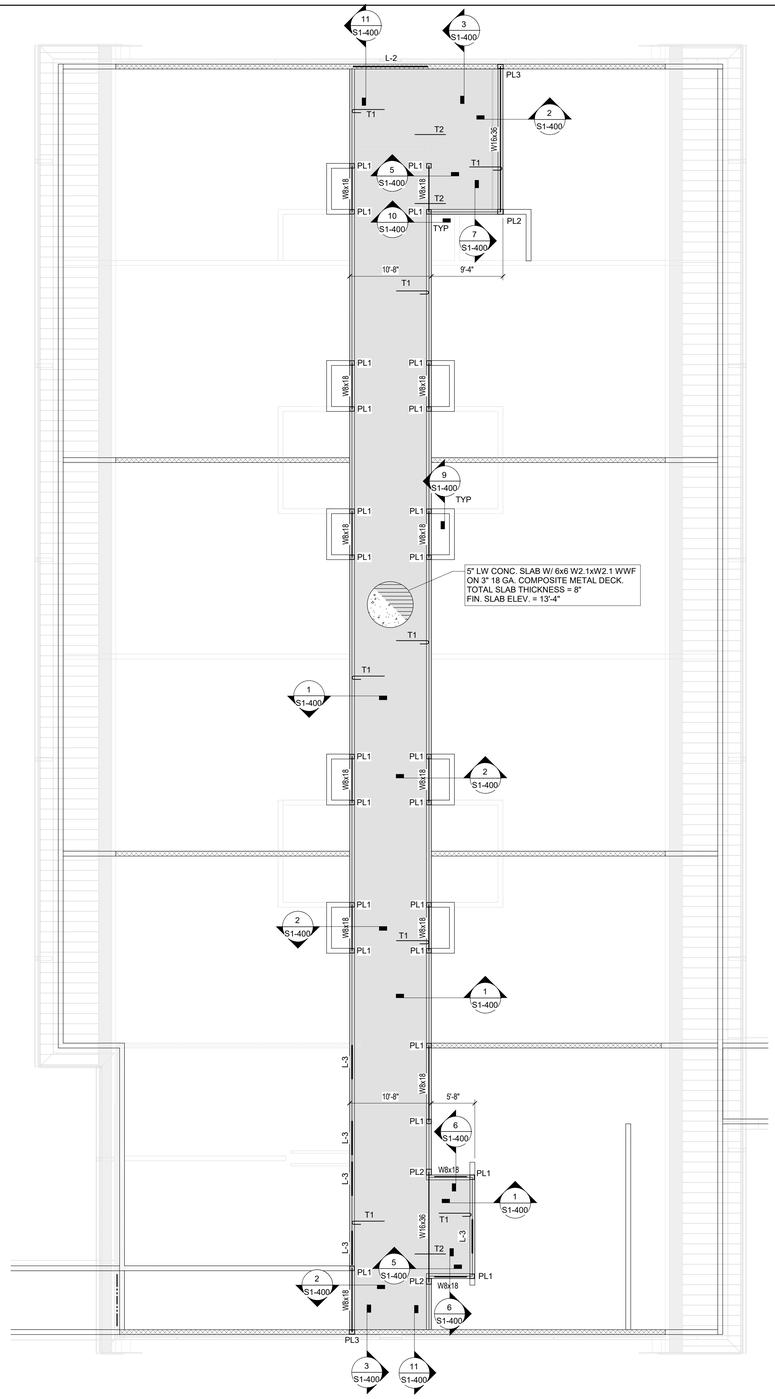
SLAB PLAN

S1-101



1 S1-102 MECHANICAL PLATFORM FRAMING PLAN
1/8" = 1'-0"

MECHANICAL LEVEL PLAN NOTES:
1. TOP OF SLAB ELEVATION = +13'-4" UNO
2. **T1** DENOTES SLAB TOP BARS: SEE S400 FOR SCHEDULE

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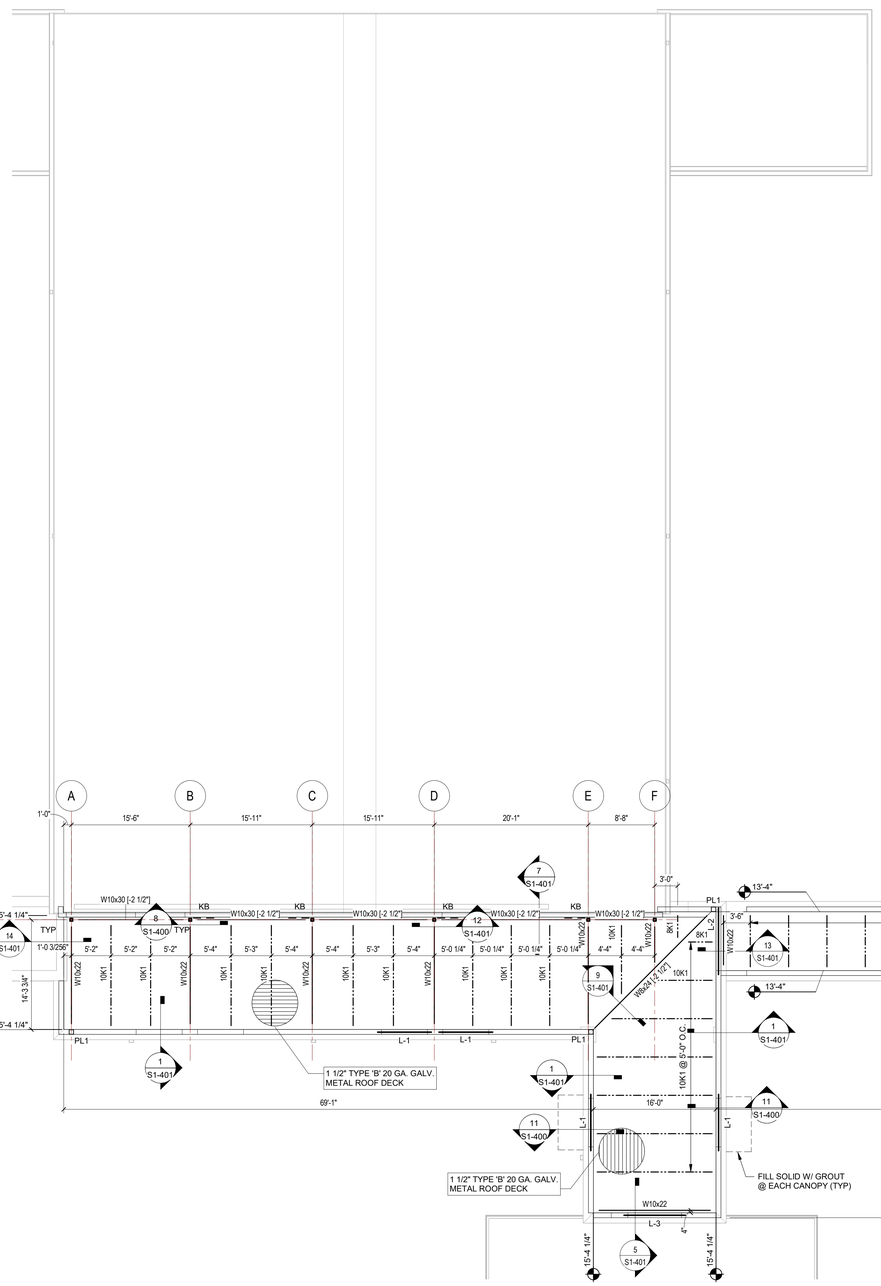
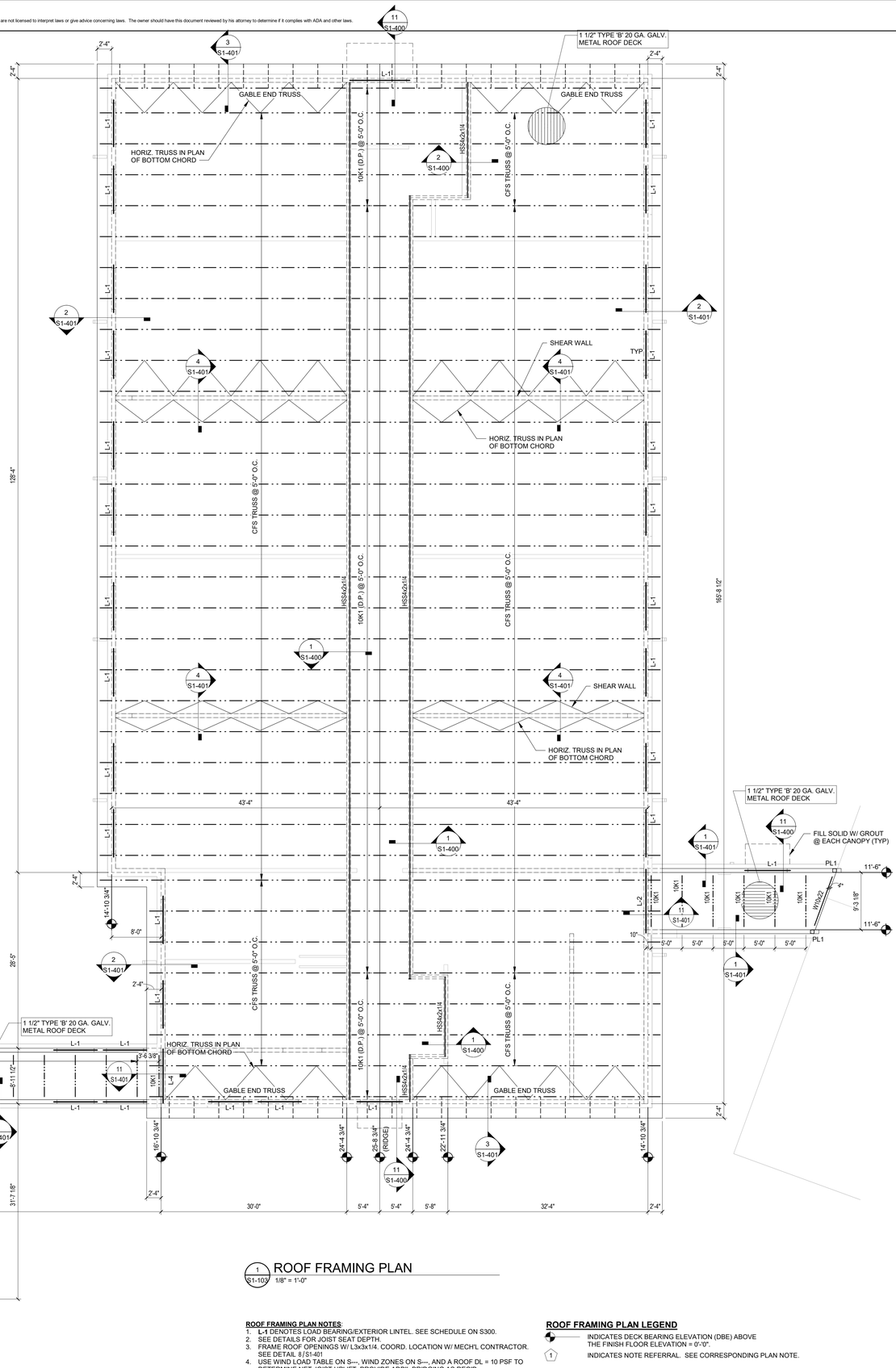
MECHANICAL PLATFORM FRAMING PLAN

S1-102





1 ROOF FRAMING PLAN
1/8" = 1'-0"

ROOF FRAMING PLAN NOTES:

1. **L-1** DENOTES LOAD BEARING/EXTERIOR LINTEL. SEE SCHEDULE ON S300.
2. SEE DETAILS FOR JOIST SEAT DEPTH.
3. FRAME ROOF OPENINGS W/ L3x3x1/4. COORD. LOCATION W/ MECH'L CONTRACTOR. SEE DETAIL 8/S1-401
4. USE WIND LOAD TABLE ON S---, WIND ZONES ON S---, AND A ROOF DL = 10 PSF TO DETERMINE NET JOIST UPLIFT. PROVIDE ADD'L BRIDGING AS REQ'D.
5. SEE 12/S1-300 FOR BRACING DETAILS OF NON-LOAD BEARING AND LOAD BEARING CMU WALLS EXTENDING TO DECK.
6. INTERIOR NON-LOAD BEARING WALLS NOT EXTENDING TO DECK SHALL BE BRACED BY INTERSECTING WALLS OR ANGLE BRACING TO JOIST AT MAX SPACING OF 20'. COORDINATE W/ ARCH'L FOR WALLS EXTENDING TO DECK.
7. KB = KNEE BRACE SEE DETAIL 12/S1-401
8. PL 1 DENOTES BEARING PL. SEE S400 FOR SCHEDULE

ROOF FRAMING PLAN LEGEND

- INDICATES DECK BEARING ELEVATION (DBE) ABOVE THE FINISH FLOOR ELEVATION = 0'-0".
- 1 INDICATES NOTE REFERRAL. SEE CORRESPONDING PLAN NOTE.

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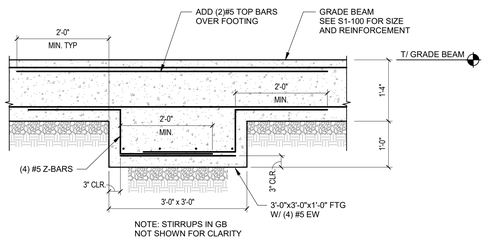
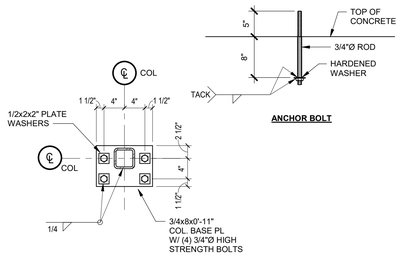
ROOF FRAMING PLAN

S1-103

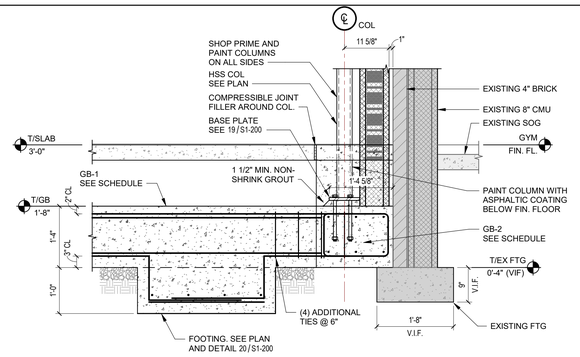


NOTE: STIRRUPS IN GB NOT SHOWN FOR CLARITY

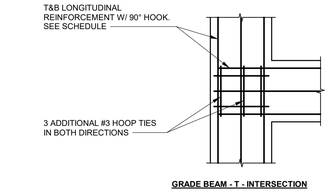
20 S1-200 GRADE BEAM/FOOTING DETAIL
3/4" = 1'-0"



19 S1-200 HSS BASE PLATE DETAIL
1" = 1'-0"



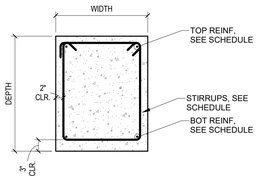
18 S1-200 GRADE BEAM DETAIL
3/4" = 1'-0"



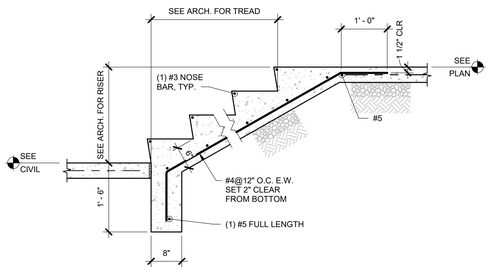
GRADE BEAM - T - INTERSECTION

NOTES:
1. GRADE BEAM STIRRUPS NOT SHOWN FOR CLARITY

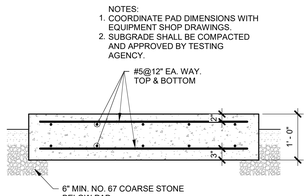
17 S1-200 GRADE BEAM INTERSECTION DETAIL
3/4" = 1'-0"



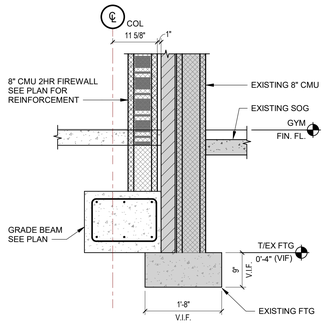
16 S1-200 GRADE BEAM DETAIL
3/4" = 1'-0"



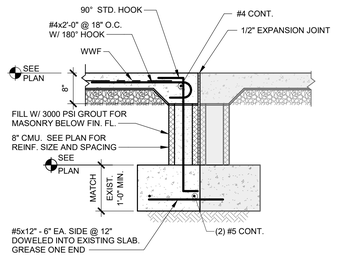
15 S1-200 TYPICAL STAIR
3/4" = 1'-0"



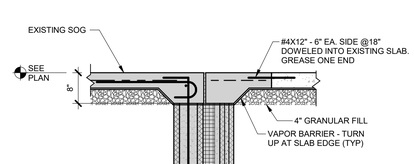
14 S1-200 EXTERIOR EQUIPMENT PAD
3/4" = 1'-0"



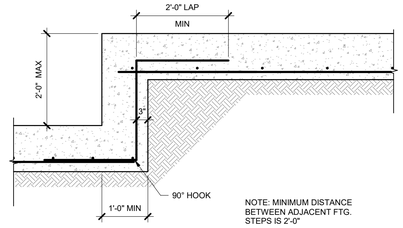
13 S1-200 FOUNDATION DETAIL
3/4" = 1'-0"



12 S1-200 CORRIDOR OPENING
3/4" = 1'-0"

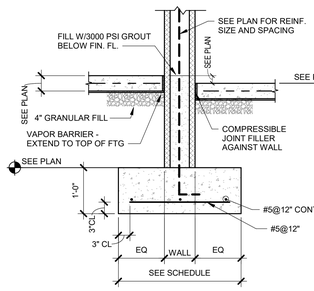


11 S1-200 CORRIDOR OPENING
3/4" = 1'-0"

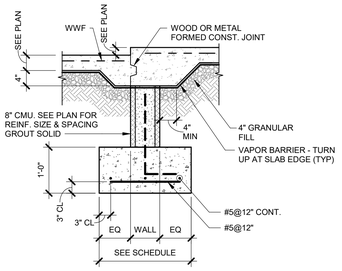


NOTE: MINIMUM DISTANCE BETWEEN ADJACENT FTG. STEPS IS 2'-0"

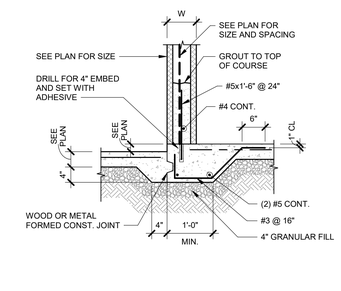
10 S1-200 STEPPED FOOTING DETAIL
3/4" = 1'-0"



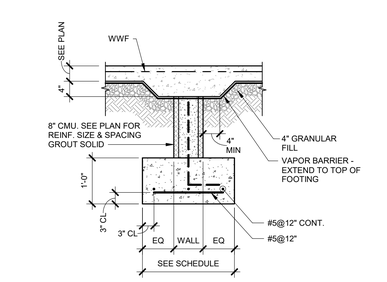
9 S1-200 THICKENED SLAB
3/4" = 1'-0"



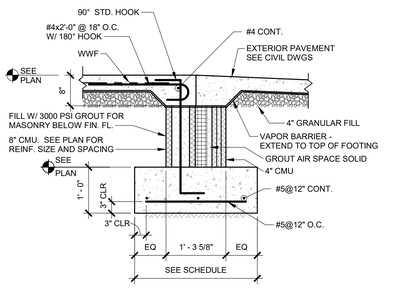
8 S1-200 TYPICAL DOOR OPENING @ DEPRESSED SLAB
3/4" = 1'-0"



7 S1-200 THICKENED SLAB @ DEPRESSED SLAB
3/4" = 1'-0"

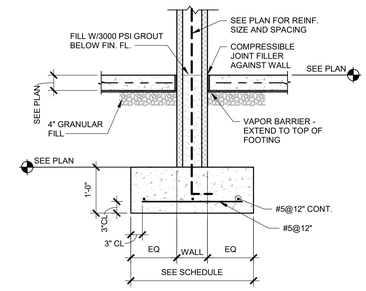


6 S1-200 TYPICAL DOOR OPENING AT INTERIOR SLAB
3/4" = 1'-0"

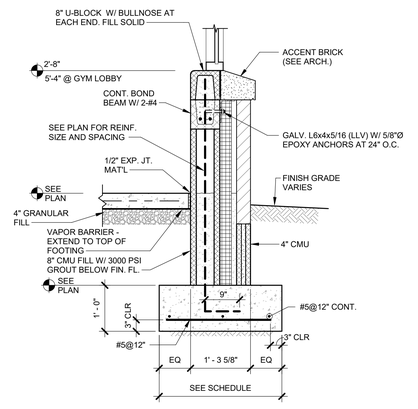


5 S1-200 TYPICAL EXTERIOR DOOR OPENING
3/4" = 1'-0"

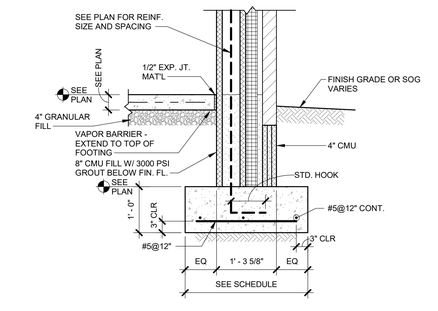
4 S1-200 INTERIOR WALL FTG @ DEPRESSED SLAB
3/4" = 1'-0"



3 S1-200 INTERIOR WALL FOOTING DETAIL
3/4" = 1'-0"



2 S1-200 EXTERIOR WALL FOOTING DETAIL@ WINDOW
3/4" = 1'-0"



1 S1-200 TYP. EXTERIOR WALL FOOTING DETAIL_
3/4" = 1'-0"

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NORTH CAROLINA PROFESSIONAL SEAL 14526 ENGINEER ROBERT E. LASATER JR. 1-28-2022

CONST. DOCUMENTS

Harnett County Schools

Johnsonville Elem. School Addition/Renovation-Phase 2

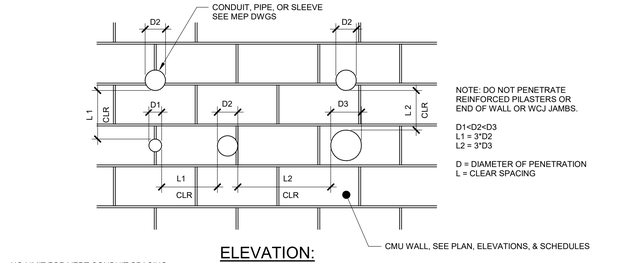
18495 NC-27, Cameron, NC 28326

No.	Date	Description

ISSUE DATE: 01/28/22
PROJECT #: 02103.000
DRAWN BY: DR
CHECKED BY: BM

FOUNDATION DETAILS

S1-200

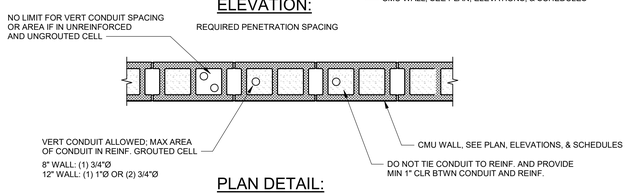


NOTE: DO NOT PENETRATE REINFORCED PILASTERS OR END OF WALL OR WCJ JAMBS.

D1<D2<D3
L1 = 3"D2
L2 = 3"D3

D = DIAMETER OF PENETRATION
L = CLEAR SPACING

ELEVATION:



REQUIRED PENETRATION SPACING

PLAN DETAIL:

EMBEDDED UTILITIES

NOTES:
1. REFER TO MEP DRAWINGS FOR ALL TELECOM, CONDUIT, AND PIPES 8"Ø AND SMALLER. CONTRACTOR TO FOLLOW DETAIL SPACING REQUIREMENTS FOR LAYOUT. IF SPACING CANNOT BE MAINTAINED, PENETRATIONS MUST BE GROUPED BELOW CMU LINTEL. NOTIFY THE EOR FOR LINTEL REQUIREMENTS.
2. CONDUITS SHALL NOT PENETRATE BOND BEAMS NOR LINTELS.
3. PIPES WITH LIQUID, GAS, OR VAPORS HIGHER THAT 150" ARE NOT PERMITTED VERTICALLY WITHIN WALLS.
4. PIPES WITH PRESSURE IN EXCESS OF 55 PSI ARE NOT PERMITTED VERTICALLY WITHIN WALLS.
5. PIPES WITH WATER OR LIQUID SUBJECT TO FREEZING ARE NOT PERMITTED VERTICALLY WITHIN WALLS.

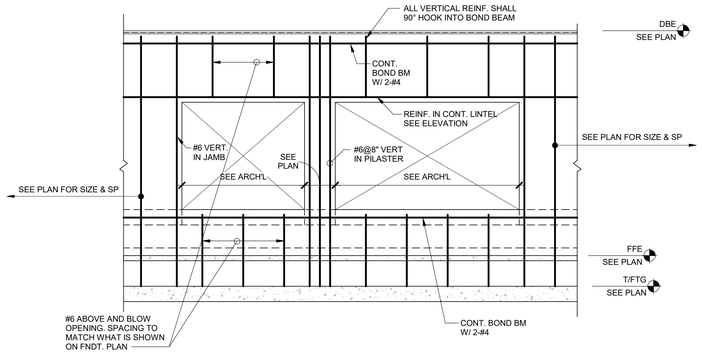
10 / S1-300 CMU WALL UTILITY PENETRATION AND EMBEDMENT TYPICAL DETAIL
1" = 1'-0"

LOAD BEARING / EXTERIOR LINTEL SCHEDULE

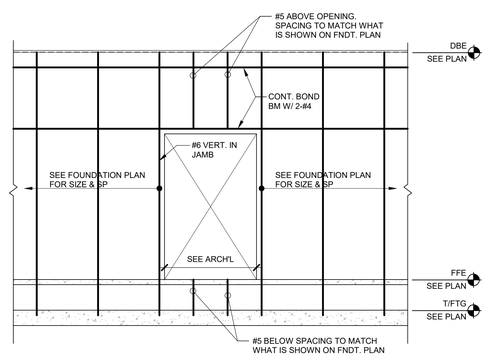
MARK	WALL TYPE	LINTEL	SIZE	REINF.	SECTION	BEARING END	REMARKS
L-1	8" CMU 4" BRICK	U-BLOCK STEEL	8x16 PL 3/8x7 1/4" (HORIZ.) PL 3/8x6" (VERT.)	(2)#4	1'-3 5/8"	8"	HOT DIPPED GALV. SEE 7/S300
L-2	8" CMU 4" BRICK	U-BLOCK STEEL	8x24 PL 3/8x7 1/4" (HORIZ.) PL 3/8x7" (VERT.)	(2)#5	1'-3 5/8"	8"	HOT DIPPED GALV. SEE 7/S300
L-3	8" CMU	U-BLOCK	8x16	(2)#4	8"	8"	
L-4	8" CMU	U-BLOCK	8x24	(2)#5	8"	8"	
OPNG LESS THAN 30" WIDE	8" CMU	U-BLOCK	8x8	(2)#5	8"	8"	
OPNG 30" TO 42" WIDE	8" CMU	U-BLOCK	8x16	(2)#5	8"	16"	

NON-LOAD BEARING/INTERIOR LINTEL SCHEDULE

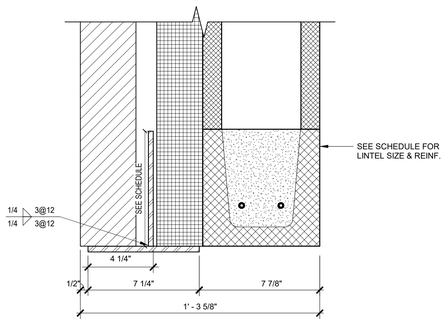
WALL TYPE	OPENING WIDTH	LINTEL TYPE	LINTEL SIZE	REINF.	BEARING EA. END	REMARKS
8" CMU	<4'-0"	U-BLOCK	8x8	(2) #4	8"	
8" CMU	4'-0" THRU 6'-0"	U-BLOCK	8x8	(2) #5	8"	
8" CMU	6'-4" THRU 8'-0"	U-BLOCK	8x16	(2) #5	8"	
8" CMU	8'-4" THRU 12'-0"	U-BLOCK	8x16	(2) #6	8"	



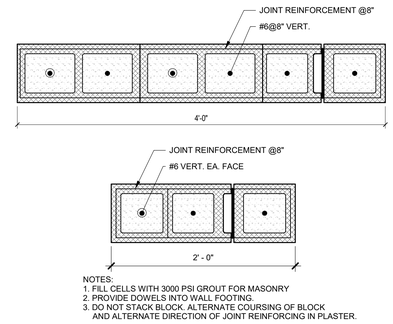
9 / S1-300 TYP. EXTERIOR 8" CMU WALL ELEVATION @ OPENING
1/4" = 1'-0"



8 / S1-300 TYP. WALL ELEVATION - AT INT. OPENING
1/4" = 1'-0"

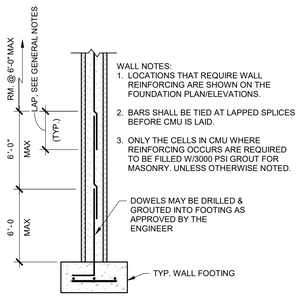


7 / S1-300 LINTEL DETAIL
3" = 1'-0"



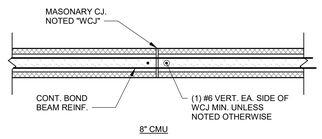
NOTES:
1. FILL CELLS WITH 3000 PSI GROUT FOR MASONRY
2. PROVIDE DOWELS INTO WALL FOOTING.
3. DO NOT STACK BLOCK, ALTERNATE COURSING OF BLOCK AND ALTERNATE DIRECTION OF JOINT REINFORCING IN PLASTER.

6 / S1-300 REINFORCED PILASTERS
1 1/2" = 1'-0"



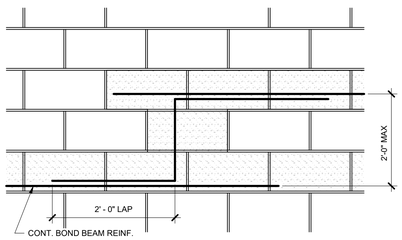
WALL NOTES:
1. LOCATIONS THAT REQUIRE WALL REINFORCING ARE SHOWN ON THE FOUNDATION PLAN/ELEVATIONS.
2. BARS SHALL BE TIED AT LAPPED SPLICES BEFORE CMU IS LAID.
3. ONLY THE CELLS IN CMU WHERE REINFORCING OCCURS ARE REQUIRED TO BE FILLED W/3000 PSI GROUT FOR MASONRY. UNLESS OTHERWISE NOTED.

5 / S1-300 CMU WALL REINF. DETAIL
NTS

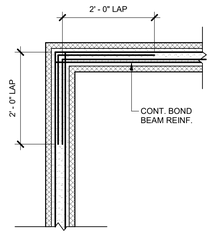


NOTE: SEE ARCH FOR WCJ LOCATIONS AND CJ LOCATIONS IN NON LOAD BEARING WALLS.

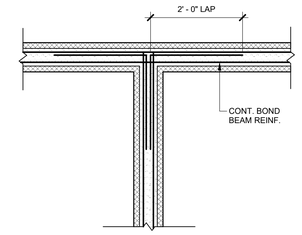
4 / S1-300 TYP. CONTROL JOINT DETAIL
3/4" = 1'-0"



3 / S1-300 TYP. STEP IN BOND BEAM
1" = 1'-0"



2 / S1-300 TYP. BOND BEAM CORNER
3/4" = 1'-0"



1 / S1-300 TYP. BOND BEAM INTERSECTION
3/4" = 1'-0"

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1 - 28 - 2022
CONST. DOCUMENTS

Harnett County Schools

Johnsonville Elem. School Addition/Renovation-Phase 2

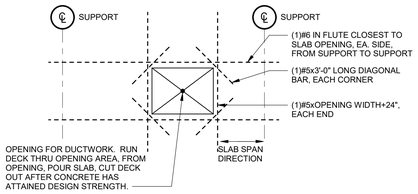
18495 NC-27, Cameron, NC 28326

No.	Date	Description
1	Date 1	Revision 1

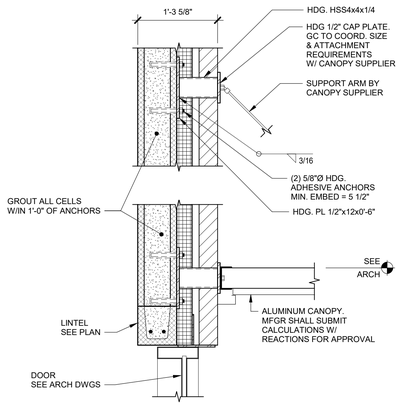
ISSUE DATE: 01/28/22
PROJECT #: 02103.000
DRAWN BY: DR
CHECKED BY: BM

TYP CMU WALL DETAILS

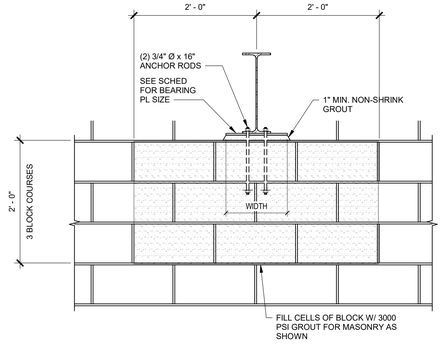
S1-300



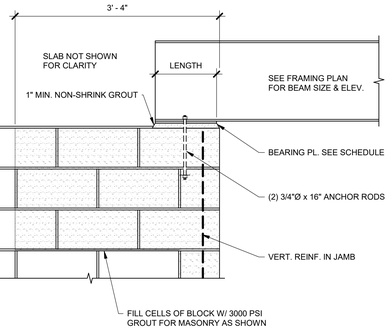
12 S1-400 SLAB PENETRATION DETAIL
1/2" = 1'-0"



11 S1-400 DETAIL AT CANOPY
1" = 1'-0"



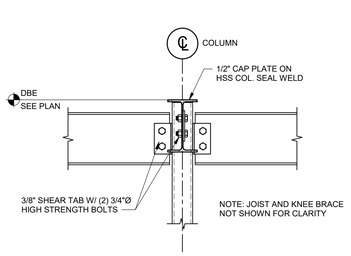
10 S1-400 BEAM BEARING DETAIL
1" = 1'-0"



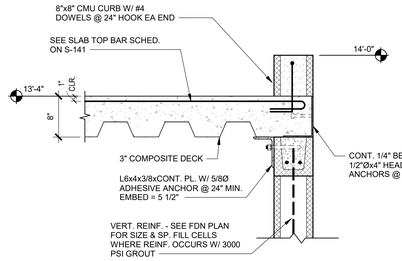
BEARING PLATE SCHEDULE

MARK	LENGTH	WIDTH	THICKNESS	REMARKS
PL1	7"	7"	1/2"	
PL2	9"	7 5/8"	3/4"	
PL3	6 1/2"	8 1/2"	3/4"	

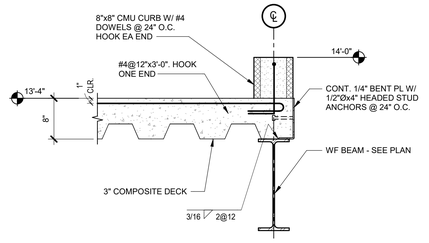
9 S1-400 BEAM BEARING DETAIL
1" = 1'-0"



TYPICAL W-BEAM TO HSS COLUMN SHEAR CONNECTION
8 S1-400 1" = 1'-0"



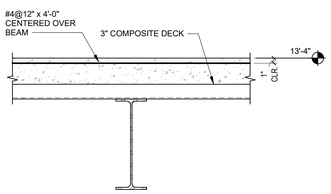
7 S1-400 SECT. THRU WALL
1" = 1'-0"



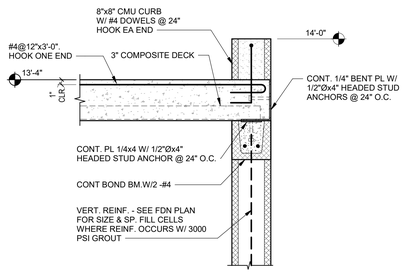
6 S1-400 SECTION THRU MECH'L PLATFORM
1" = 1'-0"

SLAB TOP BAR SCHEDULE

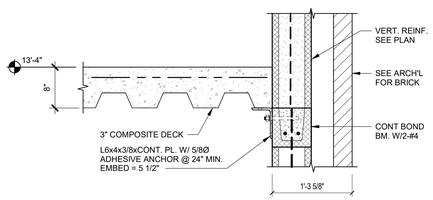
MARK	SIZE	SPACING	LENGTH	REMARKS
T1	#4	12"	3'-0"	180° HOOK ONE END
T2	#4	12"	4'-0"	



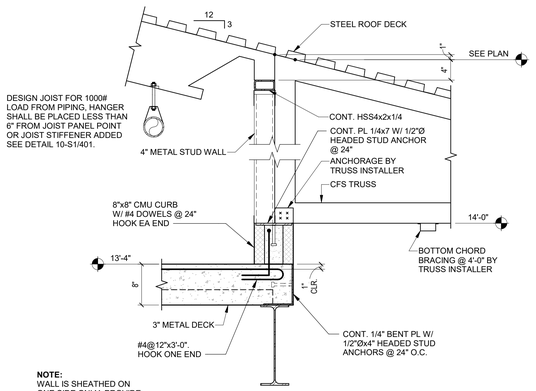
5 S1-400 SLAB BEARING DETAIL
1" = 1'-0"



4 S1-400 SECTION THRU MECH'L PLATFORM
1" = 1'-0"

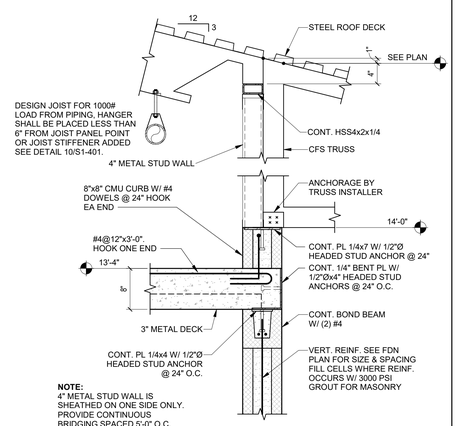


3 S1-400 SECT. THRU WALL
1" = 1'-0"



NOTE:
WALL IS SHEATHED ON ONE SIDE ONLY. PROVIDE CONTINUOUS BRIDGING SPACED 5'-0" O.C. FOR ROTATIONAL SUPPORT. REDUCTIONS IN ALLOWABLE BENDING CAPACITY MUST BE INVESTIGATED SEPARATELY.

2 S1-400 SECTION THRU ROOF
1" = 1'-0"



NOTE:
4" METAL STUD WALL IS SHEATHED ON ONE SIDE ONLY. PROVIDE CONTINUOUS BRIDGING SPACED 5'-0" O.C. FOR ROTATIONAL SUPPORT. REDUCTIONS IN ALLOWABLE BENDING CAPACITY MUST BE INVESTIGATED SEPARATELY.

1 S1-400 SECTION
1" = 1'-0"

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NC License #F-1105 Project # 21.08.083

NORTH CAROLINA PROFESSIONAL SEAL 14526 ENGINEER ROBERT E. LASATER, JR.
1 · 28 · 2022

CONST. DOCUMENTS

Harnett County Schools

Johnsonville Elem. School Addition/Renovation-Phase 2

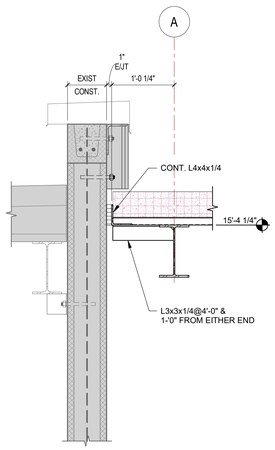
18495 NC-27, Cameron, NC 28326

No.	Date	Description

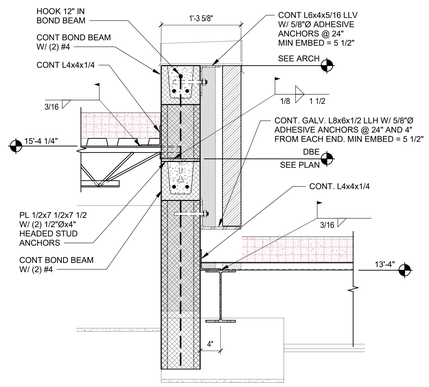
ISSUE DATE: 01/28/22
PROJECT #: 02103.000
DRAWN BY: DR
CHECKED BY: BM

FRAMING DETAILS

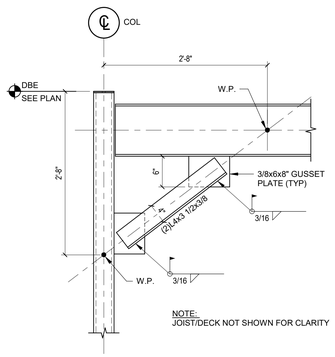
S1-400



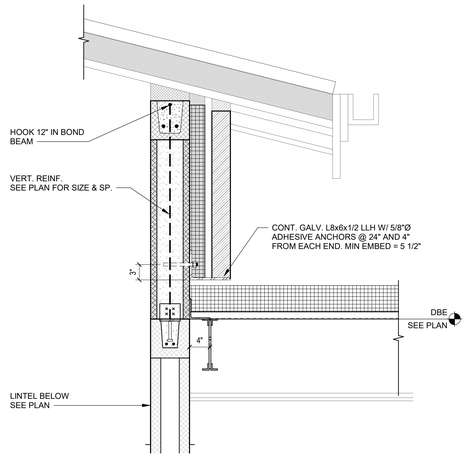
14 S1-401 SECTION THRU FIREWALL
1" = 1'-0"



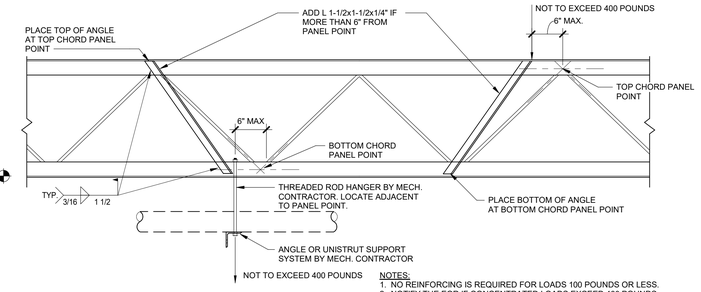
13 S1-401 SECTION THRU ROOF
1" = 1'-0"



12 S1-401 KNEE BRACE DETAIL
1" = 1'-0"

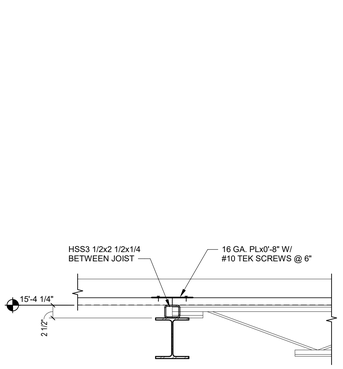


11 S1-401 ROOF DETAIL
1" = 1'-0"

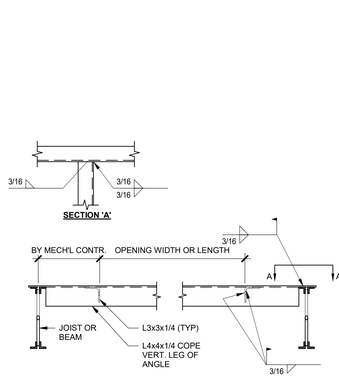


NOTES:
1. NO REINFORCING IS REQUIRED FOR LOADS 100 POUNDS OR LESS.
2. NOTIFY THE EOR IF CONCENTRATED LOADS EXCEED 400 POUNDS.
3. DO NOT HANG LOAD FROM UNSUPPORTED BOTTOM CHORDS PAST THE BOTTOM CHORD PANEL POINT.

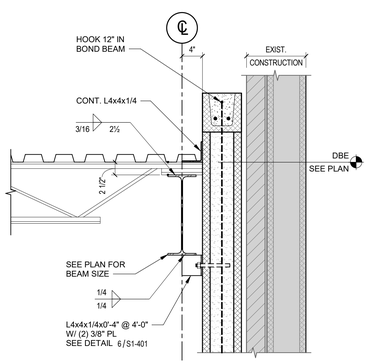
10 S1-401 TYP. JOIST REINFORCING
1" = 1'-0"



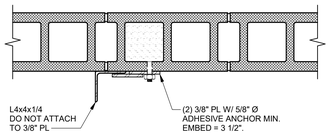
9 S1-401 SECTION THUR ROOF
1" = 1'-0"



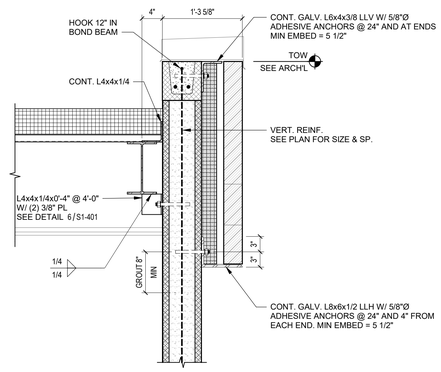
8 S1-401 ROOF OPENING DETAIL
1" = 1'-0"



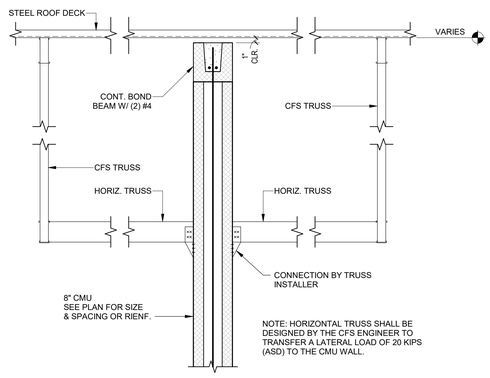
7 S1-401 JOIST BEARING DETAIL
1" = 1'-0"



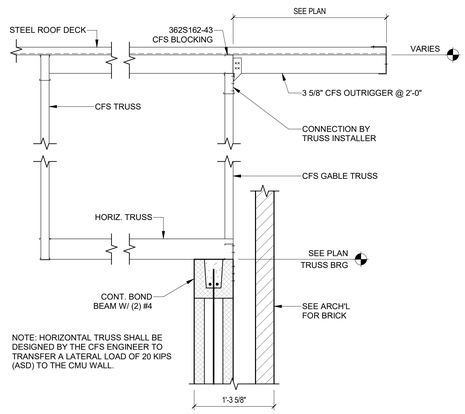
6 S1-401 Z-CLIP DETAIL
1 1/2" = 1'-0"



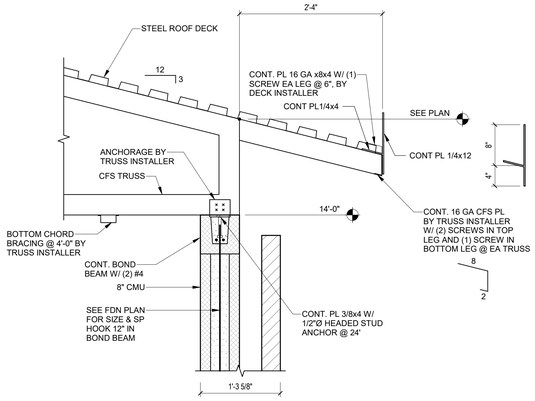
5 S1-401 DETAIL AT FIREWALL
1" = 1'-0"



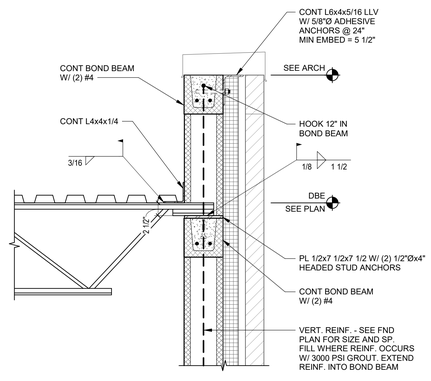
4 S1-401 SECTION
1" = 1'-0"



3 S1-401 SECTION
1" = 1'-0"



2 S1-401 SECTION
1" = 1'-0"



1 S1-401 SECTION THRU ROOF
1" = 1'-0"

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