

DESIGN CRITERIA

- 1. BUILDING CODE: INTERNATIONAL BUILDING CODE (IBC), 2012 EDITION, INCLUDING LOCAL SUPPLEMENTS. THE STRUCTURE IS CLASSIFIED AS A RISK CATEGORY II FACILITY.
2. DEAD AND LIVE LOADS: UNIFORM LIVE LOAD, CONCENTRATED LIVE LOAD, TOTAL DEAD LOAD\*
3. SNOW LOADS: GROUND SNOW LOAD, SNOW EXPOSURE FACTOR, SNOW IMPORTANCE FACTOR, THERMAL FACTOR
4. WIND: ULTIMATE DESIGN WIND SPEED, NOMINAL DESIGN WIND SPEED, WIND EXPOSURE, INTERNAL PRESSURE COEF.
5. SEISMIC: SITE CLASS, SEISMIC DESIGN CATEGORY, SEISMIC IMPORTANCE FACTOR, LATERAL SYSTEM, METHOD OF ANALYSIS
6. VIBRATION: THIS STRUCTURE HAS NOT BEEN ANALYZED FOR VIBRATION CAUSED BY FOOTFALL, EQUIPMENT, ETC.

CONCRETE

- 1. ALL CONCRETE HAS BEEN DESIGNED IN ACCORDANCE WITH ACI 318 AND THE BUILDING CODE, AND IN CONFORMANCE WITH THE CURRENT "ACI MANUAL OF CONCRETE PRACTICE."
2. THE CONCRETE REQUIREMENTS ARE:
2.A. CEMENT SHALL BE TYPE I OR II CONFORMING TO ASTM C150. FLY ASH CONFORMING TO ASTM C618 TYPE C OR F MAY BE USED TO REPLACE A MAXIMUM OF 20% OF THE CEMENT BY WEIGHT.
2.B. FINE AGGREGATE FOR LIGHTWEIGHT AND NORMAL WEIGHT CONCRETE SHALL MEET ASTM C33.
2.C. COARSE AGGREGATES FOR NORMAL WEIGHT CONCRETE SHALL CONFORM TO ASTM C33, GRADE 67 OR LARGER. COARSE AGGREGATES SHALL BE NO LESS THAN 50% OF THE TOTAL AGGREGATE BY WEIGHT, UNLESS APPROVED BY THE ENGINEER PRIOR TO MIX DESIGN SUBMITTAL.
2.D. MIX REQUIREMENTS ARE:
3. ADMIXTURES, HARDENERS, & CURING COMPOUNDS
3.A. ALL CONCRETE ADMIXTURES SHALL, WHEN MIXED INTO CONCRETE, BE NON-CHLORIDE AND NON-CHLORIDE FORMING.
3.B. ALL ADMIXTURES MUST CONFORM TO ASTM C-494 AND C-260.
3.C. CONCRETE CURING COMPOUND AND SEALERS SHALL MEET ASTM C-309 TYPE 1 OR 1D.
3.D. USE OF "SELF CONSOLIDATING" CONCRETE MUST BE SUBMITTED FOR APPROVAL WITH THE CONCRETE MIX DESIGN.
3.E. CONCRETE PENETRATING HARDENER SEALERS SHALL BE USED ON ALL EXPOSED CONCRETE FLOORS UNLESS OTHER COATINGS ARE REQUIRED BY THE ARCHITECT.
4. MISCELLANEOUS CONCRETE DETAILS:
4.A. ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 3/4" INSIDE THE FORMS OR TOOLED TO 3/4" RADIUS UNLESS NOTED OTHERWISE.
4.B. SLABS ON GRADE SHALL HAVE CONSTRUCTION JOINTS AND/OR CONTROL JOINTS (SAWN JOINTS) TO DIVIDE THE SLAB INTO PANELS, NOT TO EXCEED 256 SQUARE FEET. THE LONG DIMENSION SHALL NOT EXCEED THE SHORT DIMENSION BY MORE THAN 20%. CONTRACTOR TO SUBMIT PROPOSED LOCATIONS FOR APPROVAL.
4.C. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN OF ALL FORMING AND SHORING.
4.D. NO ALUMINUM SHALL BE EMBEDDED IN CONCRETE.
4.E. NO CONDUIT MAY BE EMBEDDED IN SLABS ON METAL DECK OR TOPPING SLABS ON PRECAST CONCRETE UNLESS SPECIFICALLY DETAILED OR NOTED OTHERWISE ON STRUCTURAL PLANS.

CONCRETE REINFORCING

- 1. MATERIALS: PLATE & ANGLE, REINFORCING STEEL, WELDABLE REINFORCING STEEL, WELDED WIRE FABRIC (WWF), DEFORMED BAR ANCHORS, ANCHOR RODS (BOLTS)
2. DETAILS:
2.A. WELDING OF REINFORCING STEEL IS PROHIBITED UNLESS NOTED OTHERWISE. WHEN WELDING IS APPROVED, WELDING SHALL BE IN ACCORDANCE WITH AWS D1.4 "WELDING REINFORCING STEEL, ETC."
2.B. WELDED WIRE FABRIC SHALL BE FURNISHED IN FLAT SHEETS.
2.C. SHOP DRAWINGS SHALL BE SUBMITTED WITH REINFORCING STEEL IN ACCORDANCE WITH ACI 315.
2.D. WHEN MECHANICAL SPLICES ARE INDICATED ON THE PLANS, THE SPLICE SHALL DEVELOP 125% OF THE SPECIFIED YIELD STRENGTH OF THE REINFORCING STEEL. REQUESTS BY THE CONTRACTOR FOR MECHANICAL SPLICES MUST BE SUBMITTED IN WRITING.
3. PLACEMENT:
3.A. ALL REINFORCING AND EMBEDMENTS SHALL BE SUPPORTED ON CHAIRS/BOLSTERS TO THE DESIGN DIMENSIONS. SPACING SHALL BE SUFFICIENTLY CLOSE TO PREVENT DISPLACEMENT OR PERMANENT DEFORMATION DUE TO CONCRETE PLACEMENT, FOOT TRAFFIC, OR VIBRATION.
3.B. MAINTAIN ACI CLEAR COVER ON REINFORCING AS LISTED BELOW UNLESS NOTED OTHERWISE.
3.C. PROVIDE CORNER BARS OF THE SAME SIZE AND SPACING AS ADJACENT REINFORCING.
3.D. OPENINGS IN WALLS OR SLABS SHALL BE REINFORCED PER DETAIL.
3.E. REINFORCING STEEL SHALL BE LAPPED PER LAP TABLE.
3.F. WELDED WIRE FABRIC SHALL BE LAPPED ONE FULL SQUARE PLUS 2".

STRUCTURAL STEEL

- 1. STRUCTURAL STEEL SHALL MEET THE LATEST "CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGE," AND HAS BEEN DESIGNED IN ACCORDANCE WITH THE BUILDING CODE AND THE LATEST EDITION OF AISC "MANUAL OF STEEL CONSTRUCTION".
2. STRUCTURAL STEEL SHALL BE NEW AND MEET THE FOLLOWING REQUIREMENTS UNLESS NOTED OTHERWISE ON THE DRAWINGS:
TYPE ASTM GRADE
PLATES, CHANNELS, & ANGLES A36
RECTANGULAR HSS SECTIONS A500 B (Fy=46 KSI)
STRUCTURAL BOLTS A325
ERECTION BOLTS A307
3. ALL BOLTED CONNECTIONS SHALL BE STANDARD AISC BEARING TYPE FRAMING CONNECTIONS. BOLTS SHALL BE TENSION-INDICATING FOR INSPECTION PURPOSES.
4. ALL CONNECTIONS NOT DETAILED OR OTHERWISE NOTED SHALL BE PROVIDED BY THE FABRICATOR AND HIGHLIGHTED FOR THE ENGINEER OF RECORD'S REVIEW.
5. ALL WELDING SHALL BE IN ACCORDANCE WITH LATEST AWS CODE, SECTION D1.1. ALL WELD MATERIAL SHALL BE 70 KSI TENSILE STRENGTH.
6. STEEL FRAMING MEMBERS SHALL NOT BE SPLICED.
7. OPENINGS SHALL NOT BE FIELD-CUT IN THE FLANGE OR WEBS OF STEEL MEMBERS.
8. GALVANIZED STRUCTURAL STEEL SHALL CONFORM TO ASTM A123 FOR MEMBERS AND ASTM A153 FOR CONNECTION ELEMENTS. REPAIR ANY DAMAGED GALVANIZING COATING IN ACCORDANCE WITH ASTM A780.

STRUCTURAL WOOD

- 1. ALL WOOD STRUCTURES HAVE BEEN DESIGNED IN ACCORDANCE WITH THE BUILDING CODE AND THE LATEST EDITION OF THE NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION (NDS).
2. THIS STRUCTURE IS DESIGNED AS CONVENTIONAL FIELD FRAMED CONSTRUCTION. SHOULD PANELIZED CONSTRUCTION BE USED, THE CONTRACTOR IS SOLELY RESPONSIBLE FOR ALL ENGINEERING, COORDINATION WITH ALL OTHER BUILDING SYSTEMS AND REVIEW OF SHOP DRAWINGS. COORDINATION AND REVIEW OF PANELIZED CONSTRUCTION SHOP DRAWINGS ARE NOT INCLUDED IN THE ENGINEER OF RECORD'S SCOPE OF SERVICES FOR THIS PROJECT. REQUESTS FOR INFORMATION PERTAINING TO, OR DIRECTLY ASSOCIATED WITH, PANELIZED CONSTRUCTION WILL NOT BE REVIEWED.
3. MANUFACTURED WOOD PRODUCTS SHALL BE BY I-LEVEL UNLESS NOTED OTHERWISE.
4. THE DESIGN OF THE STRUCTURE IS BASED UPON THE USE OF THE FOLLOWING WOOD PRODUCTS:
USE WOOD TYPE GRADE Fb (PSI) Fcp (PSI) E (PSI)
JOISTS (2 x 10) SOUTHERN PINE #2 800 1,300 1,400,000
STUDS (2 x 4) SPRUCE-PINE-FIR #1/#2 875 1,150 1,400,000
PSL COL (3 1/2 x 3 1/2) 2,400 2,500 1,800,000
PSL BEAM (3 1/4 x 9 1/4) 2,900 2,900 2,000,000
ALL MEMBERS SHALL BE SURFACED DRY AND HAVE A MAXIMUM MOISTURE CONTENT OF 19%. STRESS INCREASE SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE NDS.
4.A. ROOF SHEATHING SHALL BE 1/2" APA RATED PLYWOOD OR ORIENTED STRAND BOARD, 32/16 SPAN RATING, EXPOSURE 1, LAID IN A CONTROLLED RANDOM STAGGERED PATTERN, WITH EDGE CLIPS BETWEEN SUPPORTS, LONG PANEL DIMENSION PERPENDICULAR TO THE FRAMING MEMBERS, AND CONTINUOUS OVER A MINIMUM OF THREE SUPPORTS. ALLOW FOR 1/8" GAP AT ALL PANEL EDGE AND END JOINTS UNLESS OTHERWISE RECOMMENDED BY MANUFACTURER.

- 4.B. FLOOR SHEATHING SHALL BE 3/8" APA RATED STURD-I-FLOOR, 48/24 SPAN RATING, EXPOSURE 1, TONGUE AND GROOVE. FLOOR SHEATHING SHALL BE INSTALLED IN A STAGGERED PATTERN WITH THE LONG PANEL DIMENSION PERPENDICULAR TO THE FRAMING MEMBERS AND CONTINUOUS OVER A MINIMUM OF THREE SUPPORTS.
4.C. ALL WOOD PRODUCTS IN DIRECT CONTACT WITH CONCRETE SHALL BE PRESSURE TREATED WITH CCA-C, ACO, CBA-A, CA-B OR SBX AND SHALL NOT BE IN CONTACT WITH SOIL.
5. CONNECTIONS SHALL MEET THE FOLLOWING REQUIREMENTS:
5.A. ALL SILL PLATE ANCHOR RODS REQUIRE 2" x 2" SQUARE PLATE WASHERS BE INSTALLED BETWEEN THE HEAD OR NUT AND THE WOOD MEMBER. ANCHORS TO FOUNDATION SHALL BE 3/4" DIA., WITHIN 12" OF EACH END, AND 48" O.C., MAXIMUM. PROVIDE ANCHOR RODS AND HOLD-DOWNS FOR ANCHORAGE OF SHEAR WALL TO FOUNDATION AS INDICATED ON PLANS, DETAILS, AND SCHEDULES.
5.B. ALL BOLTS SHALL BE ASTM A307. WASHERS WITH AN OUTSIDE DIAMETER EQUAL TO AT LEAST TWICE THE BOLT DIAMETER ARE REQUIRED BETWEEN THE BOLT HEAD OR NUT AND THE WOOD SURFACE.
5.C. WOOD MEMBERS SHALL BE CONNECTED TOGETHER USING THE BUILDING CODE NAILING SCHEDULE, UNLESS NOTED OTHERWISE. ALL CONNECTIONS ARE BASED ON USING COMMON NAILS. ANY SUBSTITUTION OF BOX, SINKER, RING SHANK OR COOLER NAILS SHALL BE SUBMITTED WITH SEALED CALCULATIONS TO THE ENGINEER OF RECORD FOR APPROVAL. ALL OTHER FASTENERS, INCLUDING STAPLES, ARE PROHIBITED. ALL NAILS SHALL CONFORM TO THE FOLLOWING MINIMUM STANDARDS:
SIZE LENGTH DIAMETER HEAD
6d 2" 0.113" FULL ROUND HEAD
8d 2 1/2" 0.131" FULL ROUND HEAD
10d 3" 0.148" FULL ROUND HEAD
12d 3 1/4" 0.148" FULL ROUND HEAD
16d 3 3/4" 0.162" FULL ROUND HEAD
20d 4" 0.192" FULL ROUND HEAD
30d 4 1/2" 0.207" FULL ROUND HEAD
5.D. SCREW ROOF SHEATHING WITH #8 COMMON SCREWS AT 6" O.C. ALONG PANEL EDGES AND AT 12" O.C. AT INTERMEDIATE SUPPORTS.
5.E. NAIL FLOOR SHEATHING WITH 10d COMMON NAILS AT 6" O.C. ALONG PANEL EDGES AND AT 6" O.C. AT INTERMEDIATE SUPPORTS. GLUE FLOOR PANELS TO EACH SUPPORT WITH A CONTINUOUS BEAD OF CONSTRUCTION ADHESIVE MEETING THE REQUIREMENTS OF APA AFG-01 OR ASTM D3498. APPLY ADHESIVE PER THE MANUFACTURER'S RECOMMENDATIONS.
5.F. ALL MANUFACTURED CONNECTORS SHALL BE BY SIMPSON STRONG-TIE COMPANY, INC., OR U.S.P., AND CONNECTED WITH THE FASTENERS SPECIFIED BY THE MANUFACTURER.
5.G. FASTEN MULTIPLE LAYER MANUFACTURED WOOD MEMBERS TOGETHER IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

- 6. RIDGING AT 8'-0" O.C. MAXIMUM FOR JOISTS AND RAFTERS USING SOLID BLOCKING UNLESS RIGID CEILING IS FASTENED DIRECTLY TO THE JOIST OR RAFTER.
7. STAGGER SPLICES OF DOUBLE TOP PLATES 4'-0" MINIMUM.
8. WOOD HEADERS AND LINTELS SHALL BEAR ON TOP OF A SINGLE STUD AT EACH END FOR OPENINGS LESS THAN 3'-8", BEAR ON TOP OF DOUBLE STUDS FOR OPENINGS GREATER THAN 3'-8" AND LESS THAN 8'-0", AND TRIPLE STUDS FOR OPENINGS GREATER THAN 8'-0", UNLESS NOTED OTHERWISE. SUPPORT STUDS SHALL BE CONNECTED TO AN ADJACENT FULL LENGTH STUD.
9. MAINTAIN 1/4" GAP BETWEEN TRUSS BOTTOM CHORD AND DOUBLE TOP PLATE OF INTERIOR NON-LOAD BEARING PARTITION WALLS. PROVIDE SIMPSON STC CONNECTORS.
10. HOLES SHALL BE PREDRILLED FOR ALL WOOD SCREW CONNECTIONS. PREDRILLED HOLE DIAMETERS SHALL BE:
SCREW DIAMETER HOLE DIAMETER
NO. 8 3/16"
NO. 10 7/16"
NO. 12 1"
POST INSTALLED ANCHORING SYSTEMS
1. SUBSTITUTION OF POST INSTALLED ANCHORS FOR EMBEDDED ANCHORS SHOWN ON THE DRAWINGS WILL NOT BE PERMITTED UNLESS APPROVED BY THE ENGINEER IN ADVANCE.
2. ANCHORS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S PRINTED INSTALLATION INSTRUCTIONS (MPI) AND THE EVALUATION REPORT (ER/ESR) SPECIFIED INCLUDING HOLE PREPARATION, TEMPERATURE AND MOISTURE CONDITIONS.
3. ADHESIVE ANCHORS:
3.A. THE CONTRACTOR SHALL ARRANGE AN ANCHOR MANUFACTURER'S REPRESENTATIVE TO PROVIDE ONSITE INSTALLATION TRAINING FOR ALL ANCHOR PRODUCTS SPECIFIED. THE CONTRACTOR MUST MAINTAIN TRAINING RECORDS OF ALL CONTRACTOR PERSONNEL INSTALLING ANCHORS AND SUBMIT TO THE ENGINEER OF RECORD PRIOR TO INSTALLING ANCHORS UPON REQUEST.
3.B. ADHESIVE ANCHORS SHALL BE USED IN CONJUNCTION WITH THE APPROPRIATE ADHESIVE SYSTEM. STANDARD REINFORCING STEEL ANCHORED IN CONCRETE SHALL BE IN ACCORDANCE WITH ASTM A615 GRADE 60 UNLESS NOTED OTHERWISE.
3.C. APPROVED ADHESIVE ANCHORS FOR PREVIOUSLY CAST CONCRETE:
MANUFACTURER/PRODUCT REPORT NUMBER
HILTI HIT-HY200 S55\* WITH HOLLOW BIT & HAS-E ROD ICC-ES ESR-3187
\*SAFE SET SYSTEM

COLD-FORMED STEEL FRAMING

- 1. ALL COLD-FORMED STEEL JOISTS SHALL BE GALVANIZED PER AISI STANDARDS. APPLY ZINC-RICH PAINT TO ALL AREAS WHERE FINISH IS DAMAGED DUE TO WELDING.
2. PRODUCTS SHALL BE FORMED FROM STEEL MEETING THE REQUIREMENTS OF AISI, SPECIFICATIONS FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS, UNLESS NOTED OTHERWISE.
3. ALL FRAMING COMPONENTS SHALL BE CUT SQUARELY FOR ATTACHMENT TO PERPENDICULAR MEMBERS.
4. PROVIDE ALL ACCESSORIES INCLUDING, BUT NOT LIMITED TO, TRACKS, CLIPS, WEB STIFFENERS, FASTENERS, ANCHORAGE DEVICES, CONNECTION ANGLES, BRIDGING, AND MISCELLANEOUS HARDWARE REQUIRED TO COMPLETE ALL CONNECTIONS AND INSTALLATION.
5. FASTENING OF FRAMING COMPONENTS SHALL BE WITH SELF-TAPPING SCREWS OR WELDING OF SUFFICIENT SIZE TO ENSURE THE STRENGTH OF THE CONNECTION. WELDS SHALL BE PERFORMED IN ACCORDANCE WITH THE LATEST AWS D1.3 CODE.

- 6. COLD-FORMED STEEL STUD PRODUCTS SHALL BE MANUFACTURED BY A CURRENT MEMBER OF THE STEEL STUD MANUFACTURER ASSOCIATION (SSMA) OR THE STEEL FRAMING INDUSTRY ASSOCIATION (SFA).
6.A. THE PHYSICAL AND STRUCTURAL PROPERTIES SHALL BE EQUIVALENT TO THOSE LISTED BY THE SSMA "PRODUCT TECHNICAL INFORMATION" AND ICC-ES ER-3064P FOR "S" AND "T" SECTIONS.

CONTRACT/CONSTRUCTION DOCUMENTS

- 1. THE CONTRACTOR SHALL BE RESPONSIBLE TO OBTAIN A FULL SET OF THE MOST RECENT REVISIONS OF EACH DOCUMENT INCLUDING ALL PLANS, SPECIFICATIONS, ADDENDA, AND SUPPLEMENTAL INSTRUCTIONS.
2. THE CONTRACTOR SHALL REVIEW THE DOCUMENTS PRIOR TO FABRICATION AND/OR INSTALLATION OF ANY MATERIALS FOR CONFLICTS. IF CONFLICTS OCCUR THE CONTRACTOR SHALL USE THE MOST STRINGENT REQUIREMENT OR REQUEST A CLARIFICATION THROUGH A REQUEST FOR INFORMATION (RFI).
3. THE DOCUMENTS MAY NOT BE REPRODUCED IN WHOLE OR IN PART FOR USE ON PROJECTS OTHER THAN IDENTIFIED IN THE TITLE BLOCK. SHOULD THE CONTRACTOR USE THE DOCUMENTS AS A PORTION OF A SHOP DRAWING SUBMITTAL, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY CONSEQUENCES RESULTING FROM ERRORS IN THE REPRODUCED DOCUMENTS.
4. DETAILS LABELED TYPICAL ARE INTENDED TO REPRESENT A CONDITION THAT OCCURS AT SEVERAL LOCATIONS IN THE PLANS WHETHER OR NOT THE DETAIL IS REFERENCED.
5. DO NOT SCALE THE PLANS AND DETAILS FOR THE PURPOSE OF ESTABLISHING DIMENSIONS.

CONTRACTOR'S RESPONSIBILITY

- 1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REVIEWING ALL SUB-CONTRACTOR SUBMITTALS AND NOTING ALL DEVIATIONS FROM THE CONSTRUCTION DOCUMENTS PRIOR TO SUBMITTING TO THE ENGINEER FOR REVIEW.
2. SUBSTITUTION REQUESTS SHALL BE SUBMITTED IN WRITING WITH THE COST REDUCTION AMOUNT AND THE SCHEDULE IMPACT FOR THE OWNER. A COMPARISON OF THE DATA WITH THE MATERIAL SPECIFIED INCLUDING CODE APPROVALS SHALL BE PROVIDED.
3. REQUESTS FOR INFORMATION (RFI) SHALL BE SUBMITTED IN WRITING WITH COST, SCHEDULE IMPACT, AND SUGGESTED SOLUTION INCLUDED.
4. DEFECTIVE WORK REPORT (DWR) SHALL BE SUBMITTED TO THE ENGINEER. THE DWR SHALL REPORT THE DEFECT AND PROPOSE A REMEDIATION OF THE DEFECT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH THE REMEDIATION OF THE DEFECT INCLUDING ENGINEERING COSTS, IF ANY.
5. WHEN THE CONTRACTOR BECOMES AWARE OF WHAT MAY BE AN UNFORESEEN CONDITION THAT COULD AFFECT COST OR SCHEDULE, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IN WRITING. AFTER REVIEW AND ENGINEER'S DETERMINATION THAT AN UNFORESEEN CONDITION EXISTS, THE CONTRACTOR SHALL SUBMIT A CHANGE ORDER REQUEST FOR APPROVAL WITH BOTH COST AND SCHEDULE IMPACT ATTACHED.
6. THE CONTRACTOR'S SCHEDULE MUST PROVIDE A REASONABLE TIME ALLOWANCE FOR THE ENGINEERING REVIEW AND APPROVAL.
7. THE CONTRACTOR WILL BE SOLELY RESPONSIBLE FOR SITE SAFETY.

CONSTRUCTION MEANS AND METHODS ISSUES

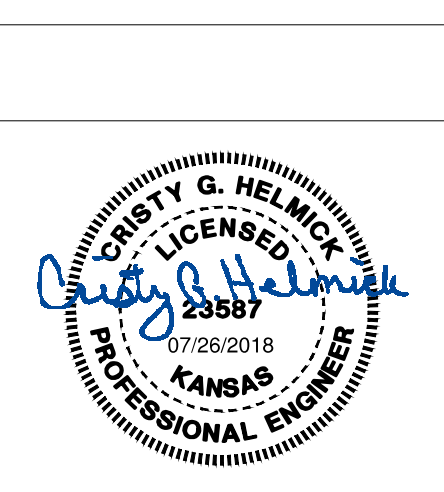
- 1. SLAB ON GRADE AND ELEVATED SLABS ARE NOT DESIGNED TO SUPPORT CRANES, FORKLIFTS, TRUCKS, MANLIFTS, OR OTHER CONSTRUCTION RELATED EQUIPMENT UNLESS NOTED AS SUCH. IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE IF CONSTRUCTION EQUIPMENT CAN BE SAFELY OPERATED ON THESE SLABS AND TO REPAIR ANY DAMAGE THE EQUIPMENT MAY CAUSE.
2. THE CONSTRUCTION DOCUMENTS REPRESENT A STABLE STRUCTURE IN THE COMPLETED FORM. THE CONTRACTOR SHALL PROVIDE ANY TEMPORARY BRACING AND/OR SHORES TO SAFELY CONSTRUCT THE BUILDING AND PREVENT DAMAGE DURING CONSTRUCTION.
3. WHEN A PIECE OF EQUIPMENT IS PROVIDED THAT IS DIFFERENT THAN THE EQUIPMENT THAT THE STRUCTURE WAS DESIGNED FOR EITHER BY SIZE, WEIGHT OR CONFIGURATION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH THE REMEDY OF THE SITUATION. THOSE COSTS SHALL INCLUDE THE ENGINEERING COSTS TO REDESIGN PORTIONS OF THE STRUCTURE TO ACCOMMODATE THE SUBSTITUTED EQUIPMENT.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE STRUCTURAL DESIGN AND MATERIALS FOR ATTACHING NON-STRUCTURAL ELEMENTS TO ANY PORTION OF THE STRUCTURE TO RESIST ALL LOADS, INCLUDING SEISMIC, IN A WAY THAT DOES NOT OVERSTRESS STRUCTURAL MEMBERS.

STRUCTURAL TESTS, INSPECTIONS, AND QUALITY ASSURANCE

ALL STRUCTURAL TESTS AND INSPECTIONS SHALL BE PERFORMED PER CHAPTER 17 OF THE BUILDING CODE WITH LOCAL SUPPLEMENTS, UNLESS MORE STRINGENT REQUIREMENTS ARE SPECIFIED.

Table with 2 columns: Revisions, Date

CONSULTANTS:
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ARCHITECT/ENGINEERS:
m HEG
ARCHITECTURE



Drawing Title: GENERAL NOTES
Approved: Project Director

Table with project information: Project Title, Contract No., Location (Wichita, Kansas), Date (07/26/18), Checked (CGH), Drawn (YFC), Drawing Number (S-001)



**REQUIRED VERIFICATION & INSPECTION OF STRUCTURAL STEEL FOR WELDING PROCESS**

**Inspection Tasks Prior to Welding**

Inspection Tasks Prior to Welding	QUALITY CONTROL	QUALITY ASSURANCE
Welding procedure specifications (WPSs) available	P	P
Manufacturer certifications for welding consumables available	P	P
Material identification (type/grade)	O	O
Welder identification system <sup>1</sup>	O	O
Fit-up of groove welds (including joint geometry)		
<ul style="list-style-type: none"> <li>Joint preparation</li> <li>Dimensions (alignment, root opening, root face, bevel)</li> <li>Cleanliness (condition of steel surfaces)</li> <li>Tacking (tack weld quality and location)</li> <li>Backing type and fit (if applicable)</li> </ul>	O	O
Configuration and finish of access holes	O	O
Fit-up of fillet welds		
<ul style="list-style-type: none"> <li>Dimensions (alignment, gaps at root)</li> <li>Cleanliness (condition of steel surfaces)</li> <li>Tacking (tack weld quality and location)</li> </ul>	O	O
Check welding equipment	O	-

**Inspection Tasks During Welding**

Inspection Tasks During Welding	QUALITY CONTROL	QUALITY ASSURANCE
Use of qualified welders	O	O
Control and handling of welding consumables	O	O
<ul style="list-style-type: none"> <li>Packaging</li> <li>Exposure Control</li> </ul>	O	O
No welding over cracked tack welds	O	O
Environmental conditions	O	O
<ul style="list-style-type: none"> <li>Wind speed within limits</li> <li>Precipitation and temperature</li> </ul>	O	O
WPS followed	O	O
<ul style="list-style-type: none"> <li>Settings on welding equipment</li> <li>Travel speed</li> <li>Selected welding materials</li> <li>Shielding gas type/flow rate</li> <li>Preheat applied</li> <li>Interpass temperature maintained (min./max.)</li> <li>Proper position (F, V, H, OH)</li> </ul>	O	O
Welding Techniques	O	O
<ul style="list-style-type: none"> <li>Interpass and final cleaning</li> <li>Each pass within profile limitations</li> <li>Each pass meets quality requirements</li> </ul>	O	O

**Inspection Tasks After Welding**

Inspection Tasks After Welding	QUALITY CONTROL	QUALITY ASSURANCE
Welds cleaned	O	O
Size, length and location of welds	P	P
Welds meet visual acceptance criteria	P	P
<ul style="list-style-type: none"> <li>Crack prohibition</li> <li>Weld/base-metal fusion</li> <li>Crater cross section</li> <li>Weld profiles</li> <li>Weld size</li> <li>Undercut</li> <li>Porosity</li> </ul>	P	P
Arc strikes	P	P
k-area <sup>2</sup>	P	P
Backing removed and weld tabs removed (if required)	P	P
Repair activities	P	P
Document acceptance or rejection of welded joint or member	P	P

Quality Control - Requirements on the part of the steel fabricator and erector  
 Quality Assurance - Requirements on the part of the project owner's representative  
 P - Perform these tasks for each weld joint or member.  
 O - Observe these items on a random basis. Operations need not be delayed pending these inspections.  
<sup>1</sup> - The fabricator or erector, as applicable, shall maintain a system by which a welder who has welded a joint or member can be identified. Stamps, if used, shall be the low-stress type.  
<sup>2</sup> - When welding of doubler plates, continuity plates or stiffeners has been performed in the k-area, visually inspect the web k-area for cracks within 3 in. (75mm) of the weld.

**REQUIRED VERIFICATION & INSPECTION OF SOILS**

VERIFICATION AND INSPECTION	FREQUENCY
1. Verify materials below shallow foundations are adequate to achieve the design bearing capacity.	Periodic
2. Verify excavations are extended to proper depth and have reached proper material.	Periodic
3. Perform classification and testing of compacted fill materials.	Periodic
4. Verify use of proper materials, densities and lift thicknesses during placement and compaction of compacted fill.	Continuous
5. Prior to placement of compacted fill, observe subgrade and verify that site has been properly prepared.	Periodic

**REQUIRED VERIFICATION & INSPECTION OF CONCRETE CONSTRUCTION**

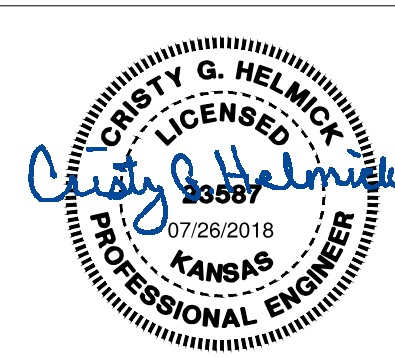
VERIFICATION AND INSPECTION	FREQUENCY	REFERENCED STANDARD	IBC REFERENCE
1. Inspection of reinforcing steel, including prestressing tendons and placement.	Periodic	ACI 318: 3.5, 7.1-7.7	1910.4
2. Inspection of reinforcing steel welding in accordance with Table 1705.2.2, Item 2b.		AWS D1.4 ACI 318: 3.5.2	
3. Inspection of anchors cast in concrete where allowable loads have been increased or where strength design is used.	Periodic	ACI 318: 8.1.3, 21.2.8	1908.5, 1909.1
4. Inspection of anchors post installed in hardened concrete members.	Periodic	ACI 318: 3.8.6, 8.1.3, 21.2.8	1909.1
5. Verifying use of required mix design.	Periodic	ACI 318: Ch. 4, 5.2-5.4	1904.2, 1910.2, 1910.3
6. At the time of fresh concrete is sampled to fabricate specimens for strength tests, perform slump and air content tests, and determine the temperature of the concrete.	Continuous	ASTM C172, ASTM C31, ACI 318: 5.6, 5.8	1910.10
7. Inspection of concrete placement for proper application techniques.	Continuous	ACI 318: 5.9, 5.10	1910.6, 1910.7, 1910.8
8. Inspection for maintenance of specified curing temperature and techniques.	Periodic	ACI 318: 5.11-5.13	1910.9
9. Verification of in-situ concrete strength, prior to stressing of tendons in posttensioned concrete and prior to removal of shores and forms from beams and structural slabs.	Periodic	ACI 318: 6.2	
10. Inspect formwork for shape, location and dimensions of the concrete member being formed.	Periodic	ACI 318: 6.1.1	

**Special Inspection Additional Requirements:**

- Additional items that need special inspection, in the opinion of the building official, shall be inspected.
- Coordination of Special Inspections with construction of the inspected items shall be the responsibility of the contractor.
- If Special Inspection is waived by the Authority having Jurisdiction, the general contractor shall provide the designer of record with a copy of the written exemption for each item that has been waived.
- The building official may perform inspections in addition to and/or concurrently with the Special Inspection's outlined in the tables.
- The general contractor is responsible for implementing a quality control program. The quality control program is in addition to the Special Inspection requirements and must meet or exceed those responsibilities required as part of the contract drawings and specifications.

CONSULTANTS:

--



ARCHITECT/ENGINEERS:



Drawing Title  
**IBC INSPECTION TABLES**

Approved: Project Director

Project Title  
RENOVATE AND MODERNIZE HVAC SYSTEMS,  
BUILDING B6  
Contract No.: VA255-17-D-0080  
Task Order No.: 36C25518M1023  
Obligation No.: 589-C81080

Location  
Wichita, Kansas

Date: 07/26/18  
Checked: CGH  
Drawn: YFC

Project Number  
589A7-17-300

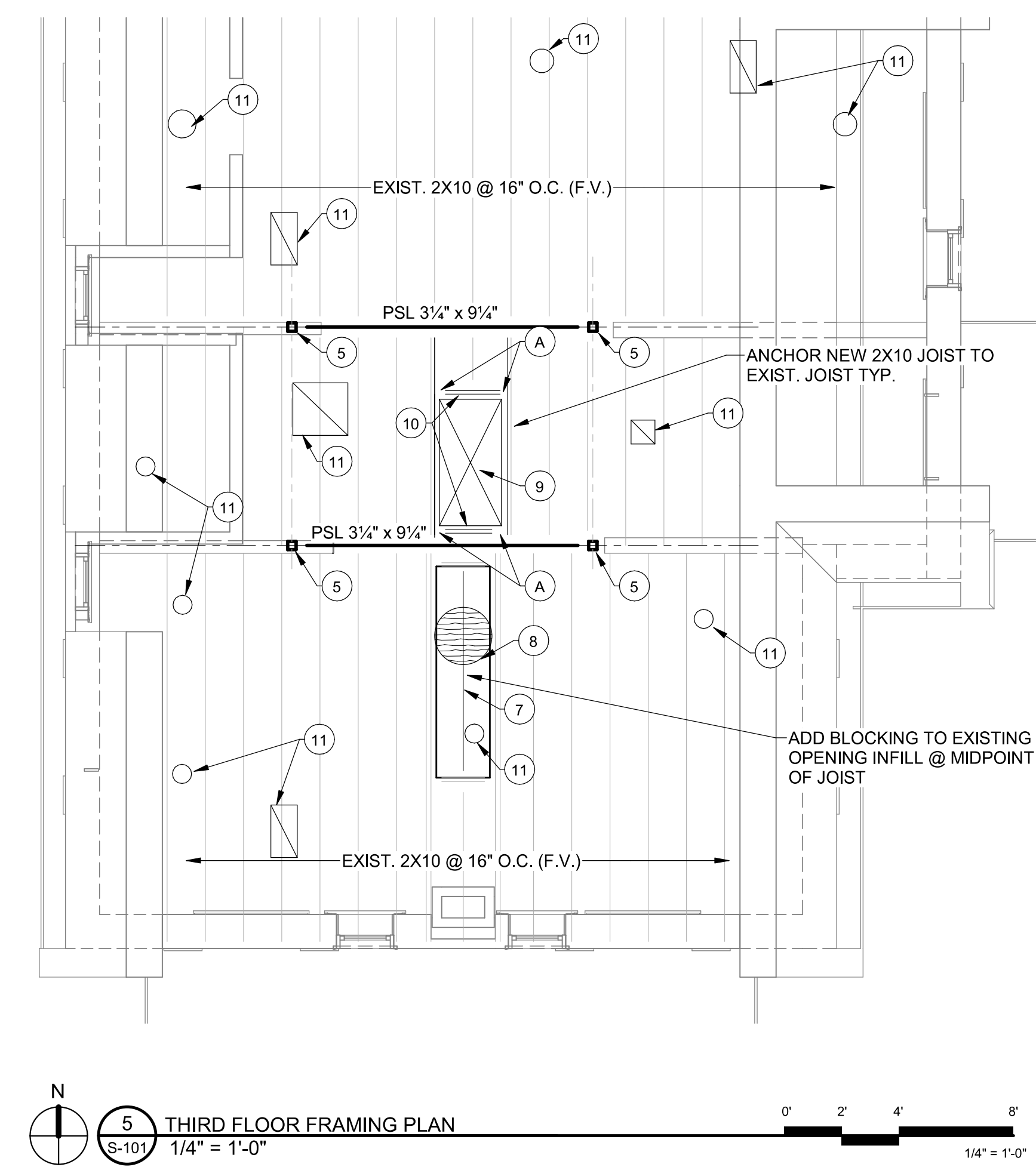
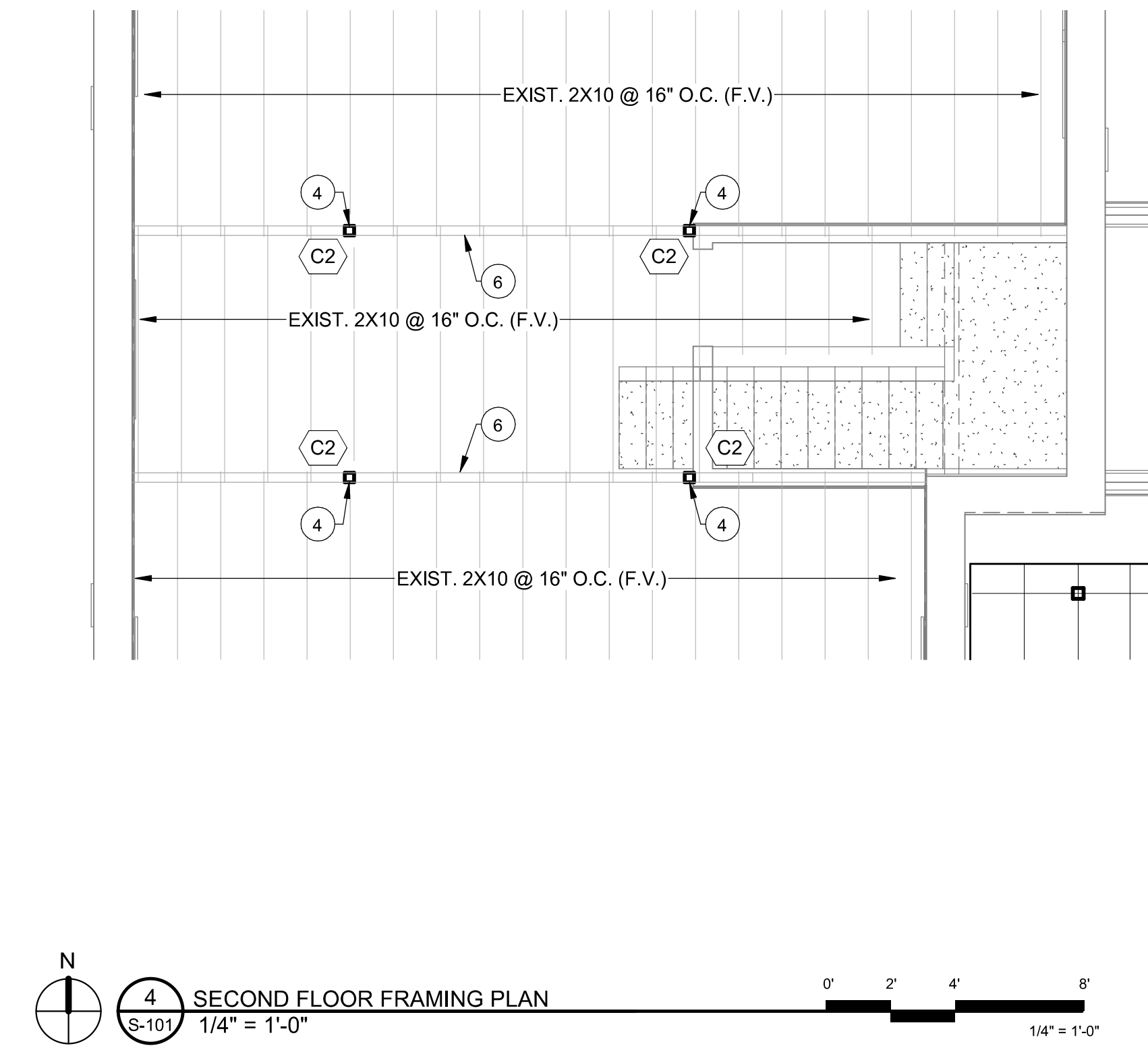
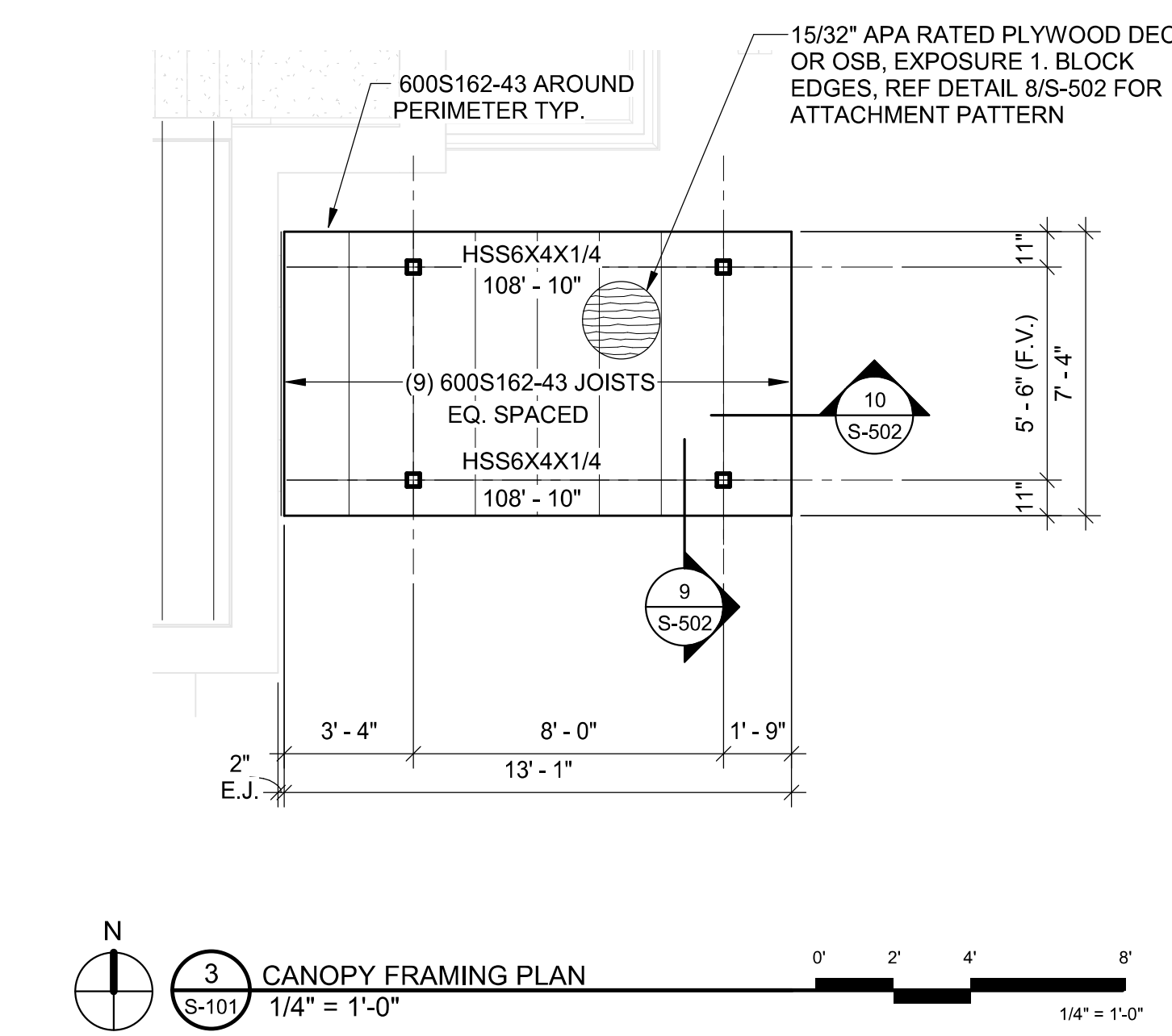
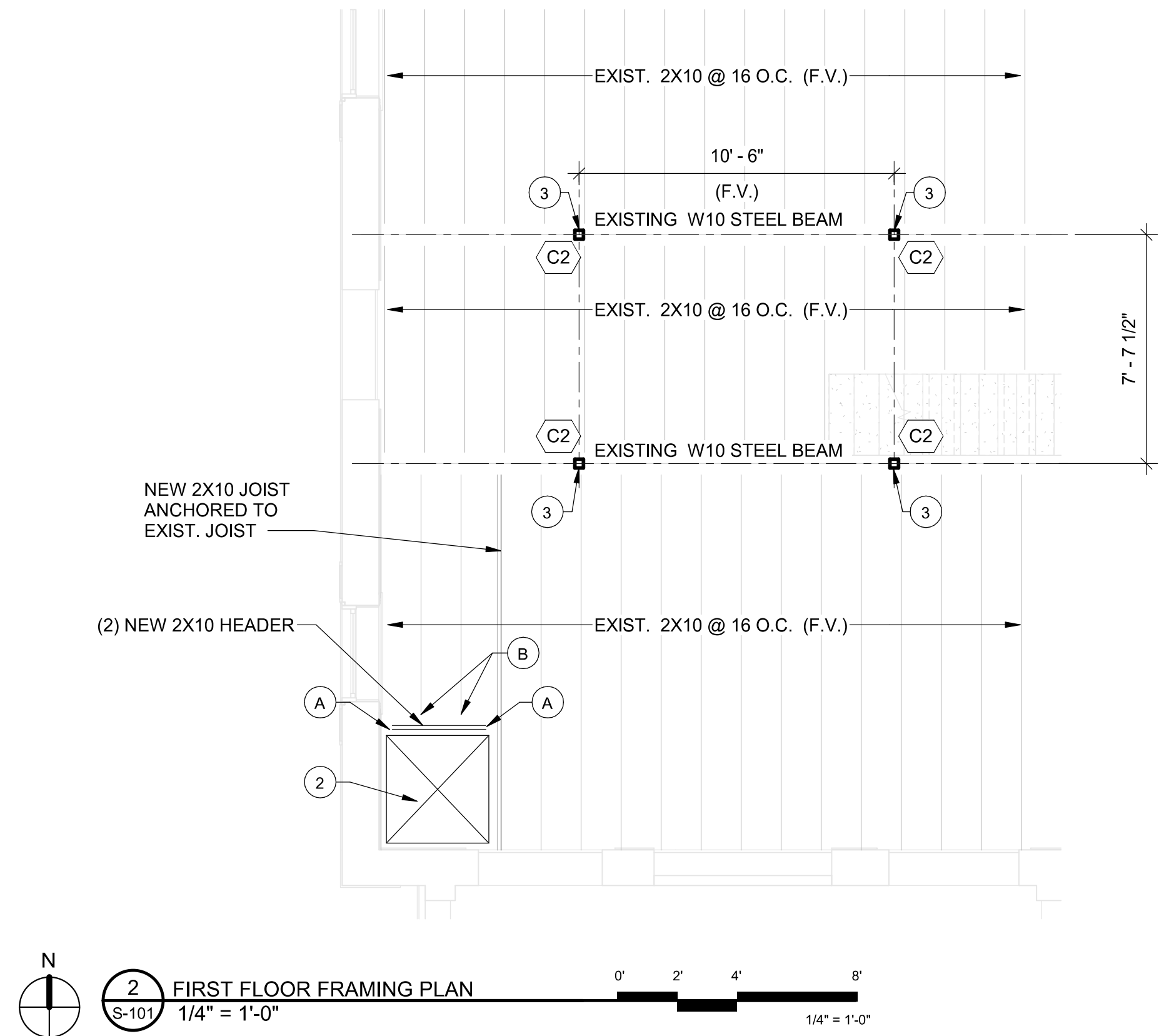
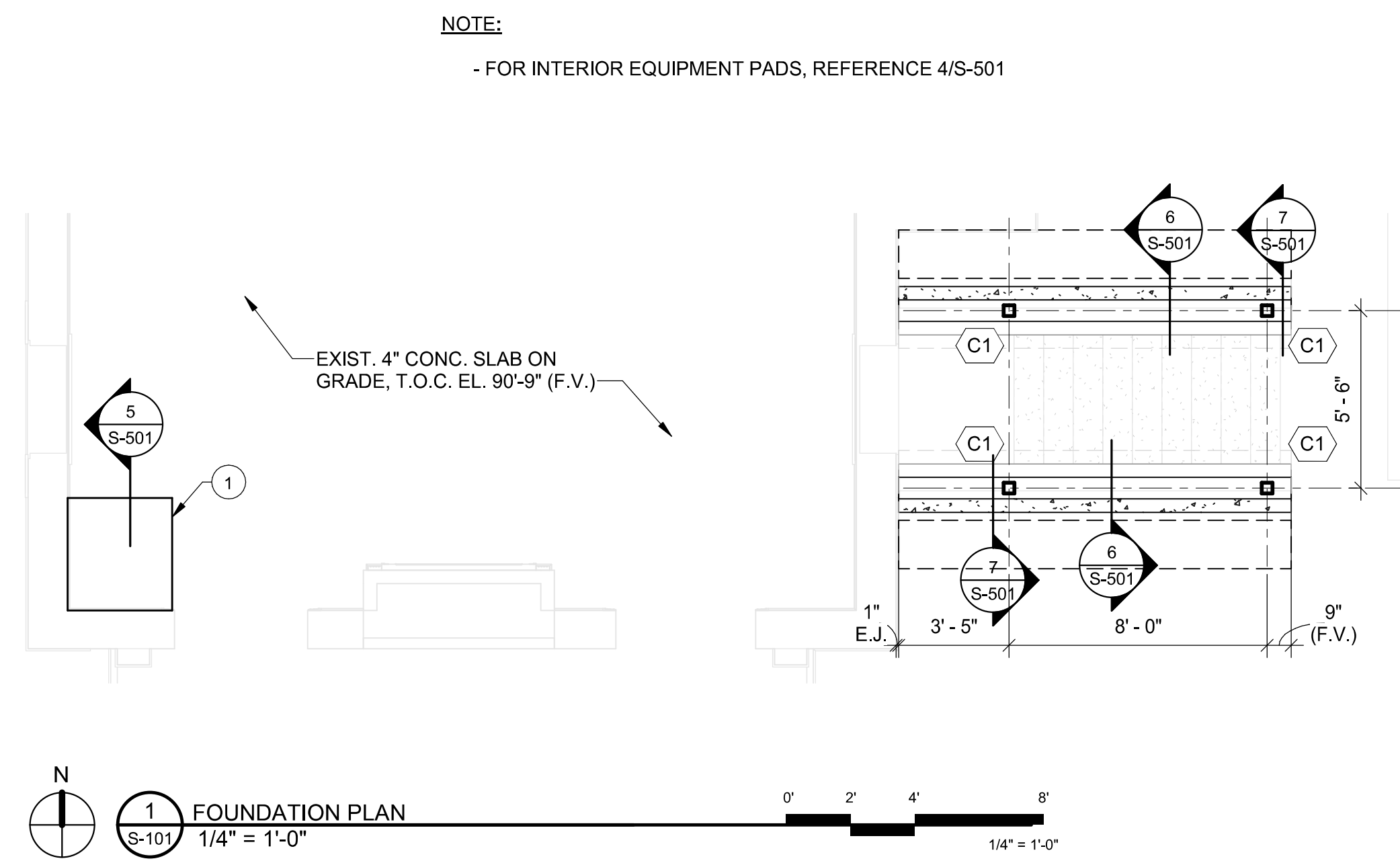
Building Number

Drawing Number  
**S-002**

Dwg.

Office of  
Construction  
and Facilities  
Management





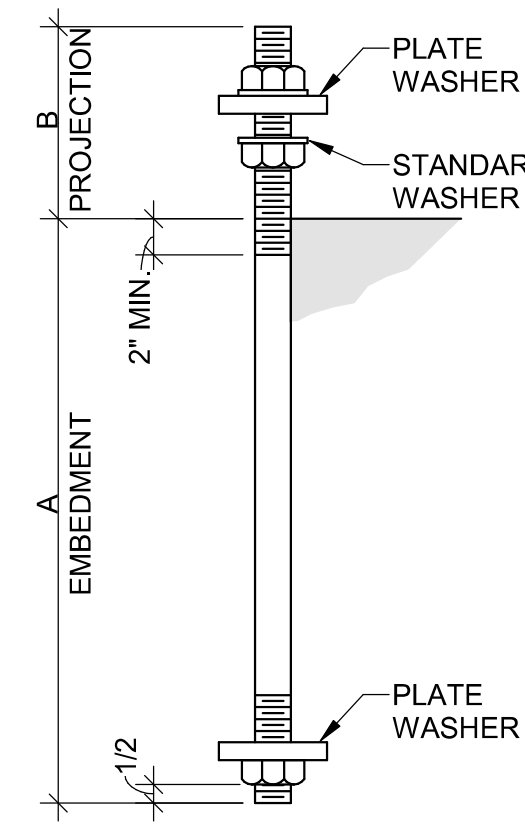
- PLAN NOTES:**
- G.C. TO VERIFY ALL DIMENSIONS AND ELEVATIONS OF EXISTING CONSTRUCTION PRIOR TO FABRICATION OF ANY MATERIAL. REPORT ALL DISCREPANCIES TO E.O.R.
- KEYED PLAN NOTES:**
- REMOVE EXIST. SLAB AS REQUIRED FOR NEW RECESSED SLAB AT DUMBWAITER. VERIFY ALL DIMENSIONS WITH ARCH. AND EQUIPMENT SUPPLIER. REF. DETAIL 5 / S-501 FOR SLAB RECESS DETAIL.
  - NEW OPENING FOR DUMBWAITER. VERIFY ALL DIMENSIONS WITH ARCH. AND EQUIPMENT SUPPLIER
  - REF. DETAIL 1 / S-502 FOR COLUMN BASE CONN. TO EXIST. STEEL BEAM
  - REF. DETAIL 2 / S-502 FOR COLUMN CONNECTION AT SECOND FLOOR
  - REF. DETAIL 3 / S-502 FOR BEAM TO COLUMN CONNECTION
  - EXIST. 2X4 WALL BELOW (F.V.)
  - PROVIDE 2X10 JOIST INFILL AT EXIST. OPENING. REF. 4/S-502 FOR JOIST BLOCKING
  - 23/32" APA RATED PLYWOOD FLOOR SHEATHING
  - NEW ATTIC ACCESS OPENING. REF. ARCH. FOR LOCATION AND DIMENSIONS
  - PROVIDE (2) 2X10 FRAMING AROUND PERIMETER OF NEW OPENING
  - REF DETAIL 6/S-502 FOR ANY OPENINGS IN THE FLOOR OR ROOF FRAMING GREATER THAN 8'Ø
- PLAN MARKS:**
- (C1) HSS 4X4X1/4
  - (C2) PSL 3 1/2 X 3 1/2
- CONNECTION MARKS:**
- (A) SIMPSON U210-2
  - (B) SIMPSON U210

Revisions: _____ Date _____ VA FORM 08-6231	<b>CONSULTANTS:</b> --		<b>ARCHITECT/ENGINEERS:</b>   303 SOUTH TOPEKA WICHITA, KS 67202 316-262-2691 www.pec1.com	Drawing Title <b>FOUNDATION &amp; FRAMING PLANS</b> Approved: Project Director	Project Title RENOVATE AND MODERNIZE HVAC SYSTEMS, BUILDING B6 Contract No.: VA255-17-D-0080 Task Order No.: 36C25518M1023 Obligation No.: 589-C81080	Project Number <b>589A7-17-300</b> Building Number  Drawing Number <b>S-101</b> Dwg.	Location <b>Wichita, Kansas</b> Date: 07/26/18 Checked: CGH Drawn: YFC Dwg.	Office of Construction and Facilities Management 

**CONCRETE REINFORCEMENT LAPS AND EMBEDMENT LENGTHS**  
 $f_y = 60000 \text{ psi}$      $f_c = 4000 \text{ psi}$

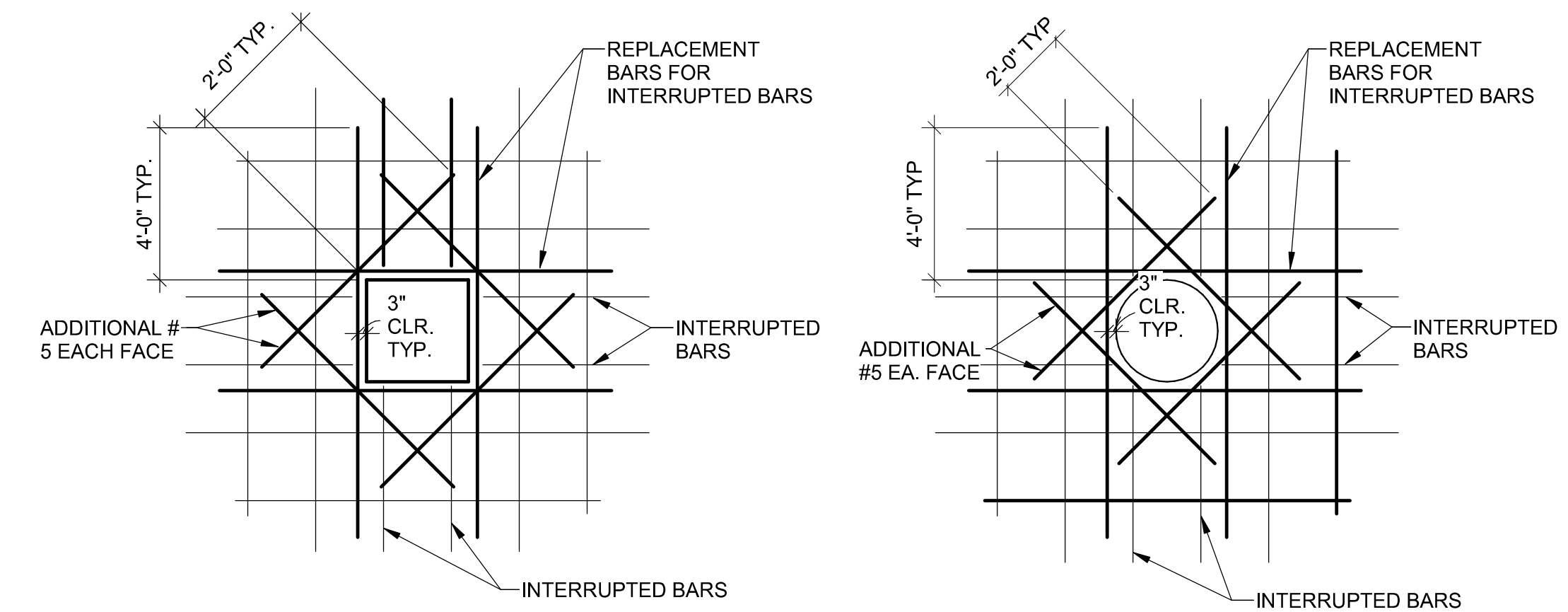
BAR SIZE (d)	CLEAR SPACING (S) (in.)	EMBEDMENT & CLASS A LAP (in.)			CLASS B LAP (in.)		
		TOP BAR	OTHER BAR	STOP BAR	OTHER BAR	STOP BAR	OTHER BAR
3	3/4	1 1/8	1 7/8	28	18	12	21
4	1	1 1/2	2 1/2	37	25	15	28
5	1 1/4	1 7/8	3 1/8	46	31	18	36
6	1 1/2	2 1/4	3 3/4	55	37	22	43
7	1 3/4	2 5/8	4 3/8	64	44	26	50
8	2	3	5	72	50	30	57
9	2 1/4	3 3/8	5 5/8	80	56	34	64
10	2 1/2	3 3/4	6 3/8	88	62	38	70
11	2 7/8	4 1/4	7	96	68	42	76

**NOTES:**  
1. LENGTHS SHOWN CONFORM WITH NON-SEISMIC PROVISIONS OF ACI 318 FOR UNCOATED BARS.  
2. BAR CLEAR SPACING IS THE CENTER TO CENTER BAR SPACING MINUS ONE BAR DIAMETER.  
3. CLASS A LAP LENGTHS APPLY WHEN BAR LAPS ARE STAGGERED TO LAP HALF THE BARS AT THE SAME LOCATION. USE CLASS B LAP FOR ALL OTHER CASES.  
4. TOP BARS ARE HORIZONTAL REINFORCEMENT PLACED SO THAT MORE THAN 12 INCHES OF CONCRETE IS CAST BELOW THE REINFORCEMENT.  
5. MULTIPLY LAP AND EMBEDMENT LENGTHS GIVEN BY 2.0 FOR BARS WITH CLEAR SPACING OF TWO BAR DIAMETERS OR LESS, OR CONCRETE COVER OF ONE BAR DIAMETER OR LESS.

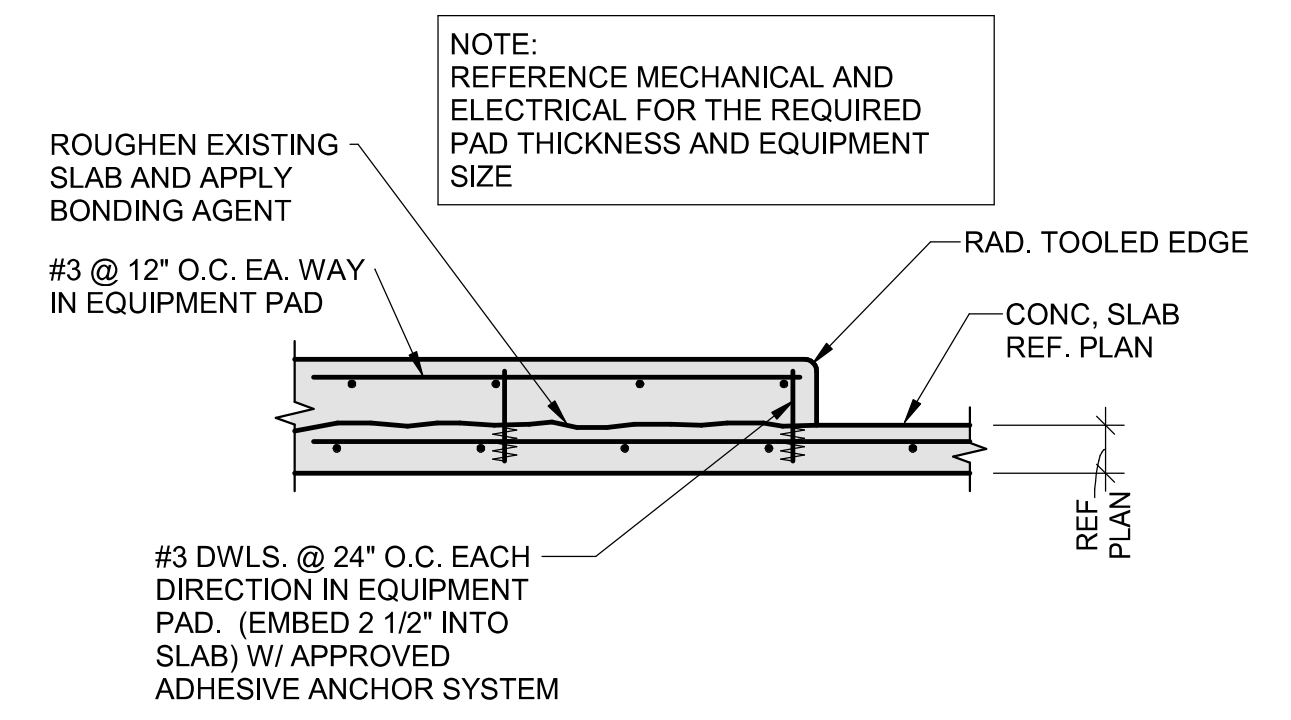


DIAMETER	A	B	PLATE SIZE
3/4"	1'-0"	6"	1/4"X2'0"
1"	1'-6"	6"	3/8"X2 1/2'0"
1 1/4"	2'-2"	8"	1/2"X3'0"
1 1/2"	2'-10"	8"	1/2"X3'0"

- ALL ANCHOR BOLTS ARE TO BE SUPPLIED WITH 3 NUTS.
- MINIMUM EMBEDMENT LENGTH OF ANCHOR MUST BE PLACED INTO A SINGLE POUR OF CONCRETE



- NOTES:**
- USE THIS DETAIL FOR ALL OPENINGS GREATER THAN 8" IN CONCRETE WALLS AND SLABS. PROVIDE (2) #5 ON DIAGONAL AT EACH CORNER AS SHOWN. EXTEND BARS 2'-0" PAST OPENING. REPLACE ALL VERTICAL AND HORIZONTAL BARS INTERRUPTED BY THE OPENING WITH AN EQUAL NUMBER AND SIZE BARS EVENLY DIVIDED ON EACH SIDE OF THE OPENING UNLESS NOTED OTHERWISE.
  - REFER TO PLANS FOR ALL OPENING LOCATIONS.



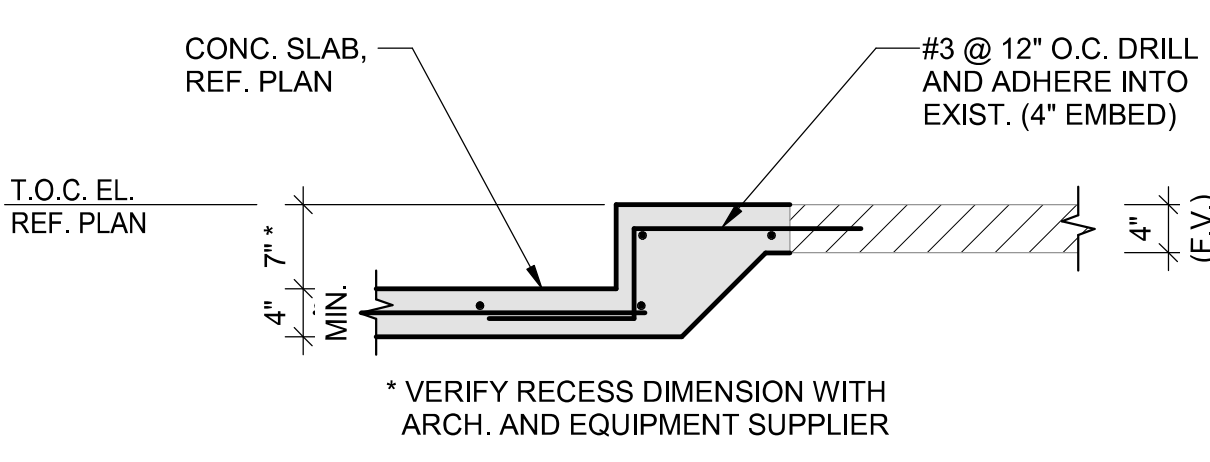
- NOTE:** REFERENCE MECHANICAL AND ELECTRICAL FOR THE REQUIRED PAD THICKNESS AND EQUIPMENT SIZE
- ROUGHEN EXISTING SLAB AND APPLY BONDING AGENT
  - #3 @ 12" O.C. EA. WAY IN EQUIPMENT PAD
  - RAD. TOOLED EDGE
  - CONC. SLAB REF. PLAN
  - #3 DWLS. @ 24" O.C. EACH DIRECTION IN EQUIPMENT PAD. (EMBED 2 1/2" INTO SLAB) W/ APPROVED ADHESIVE ANCHOR SYSTEM

1 LAP TABLE  
S-501 NO SCALE

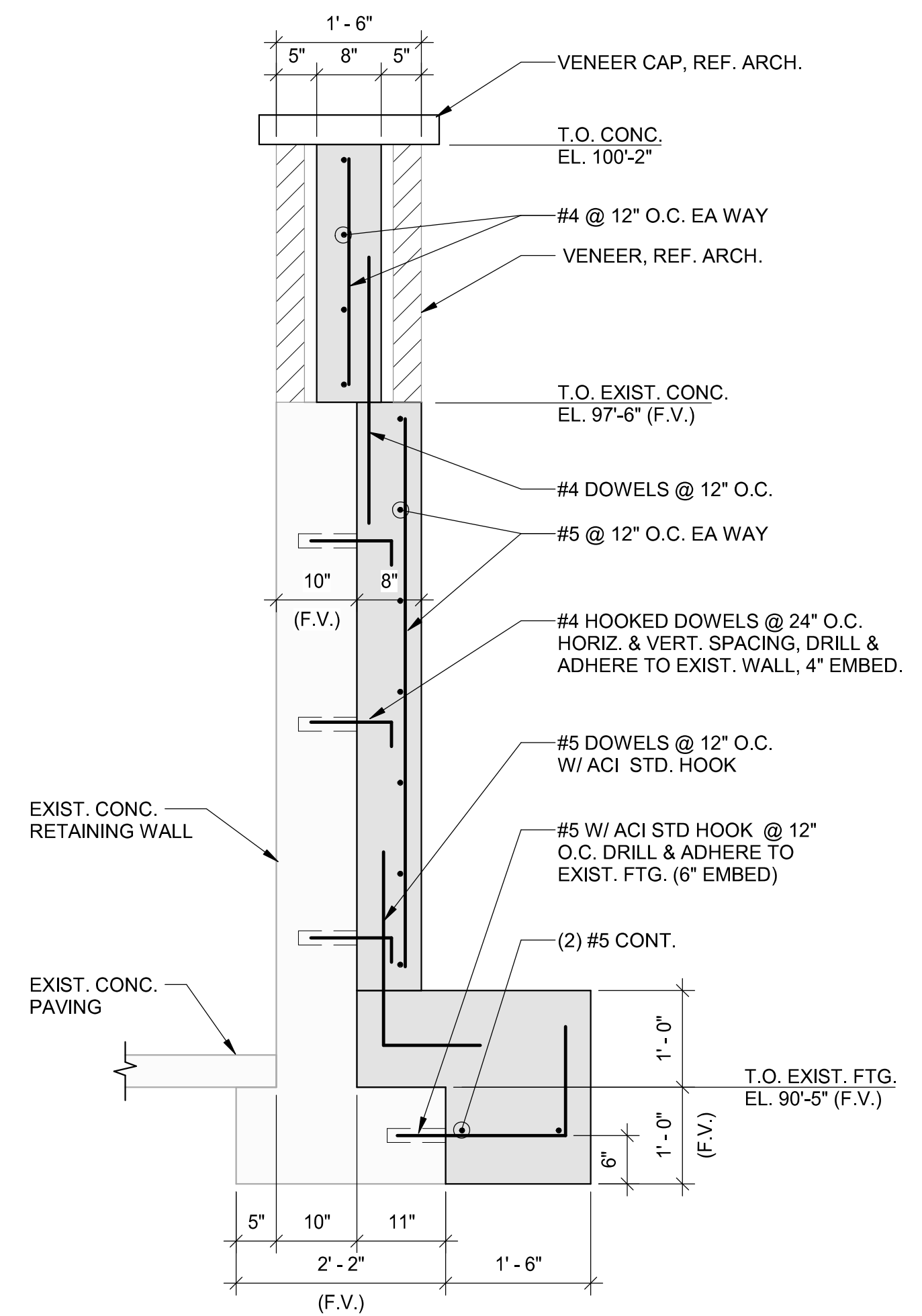
2 TYPICAL ANCHOR ROD DETAIL  
S-501 NO SCALE

3 TYPICAL SLAB/WALL OPENINGS  
S-501 NO SCALE

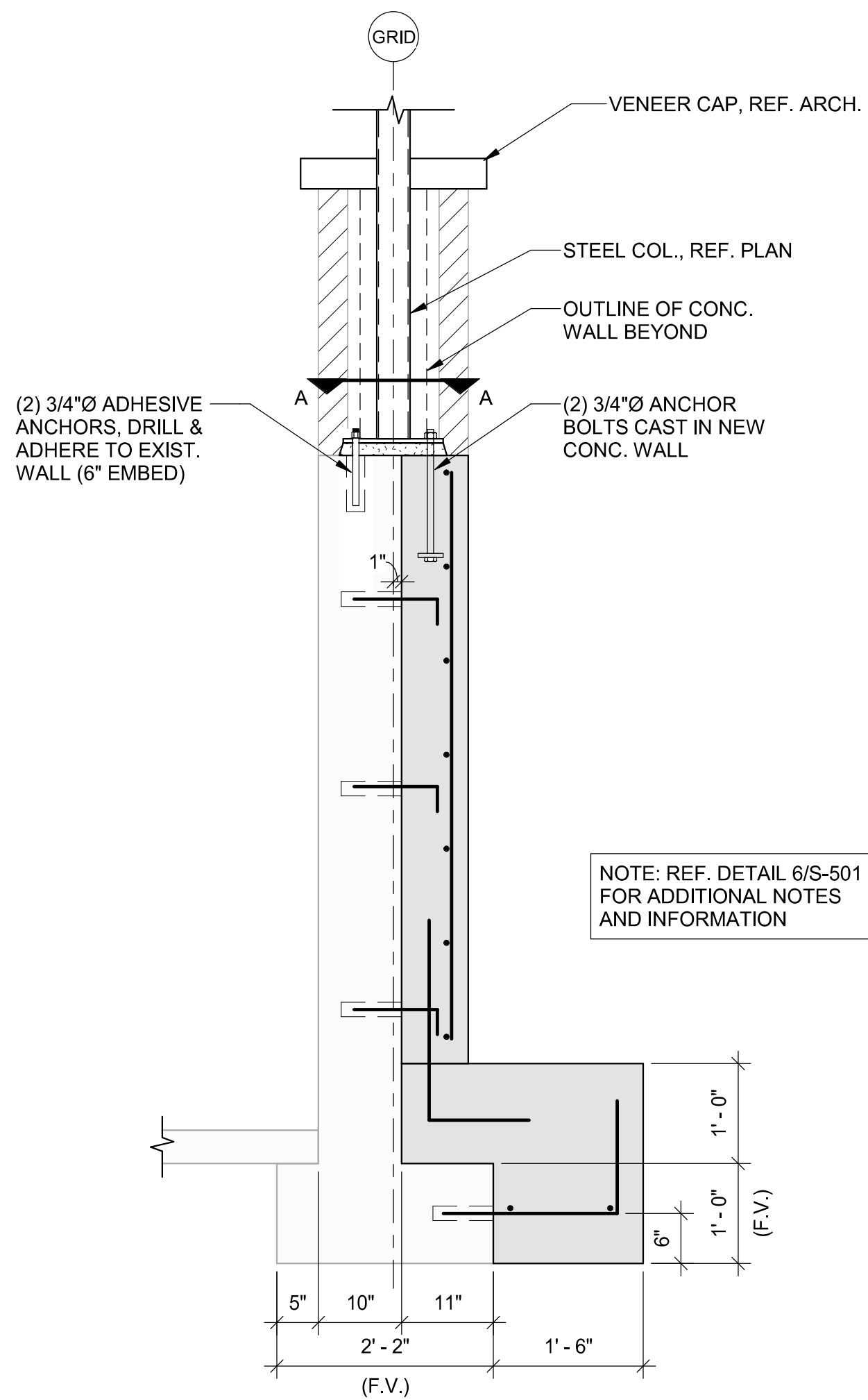
4 TYP INTERIOR EQUIPMENT PAD SECTION  
S-501 NO SCALE



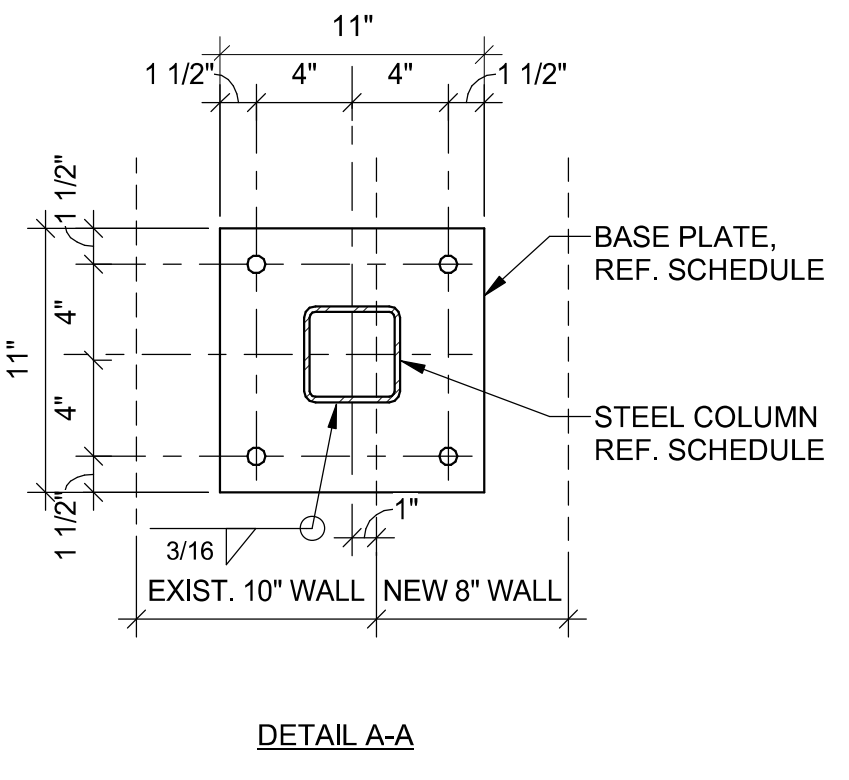
5 TYP. NEW SLAB RECESS AT EXIST.  
S-501 3/4" = 1'-0"



6 FOUNDATION AT EXIST. WALL  
S-501 3/4" = 1'-0"



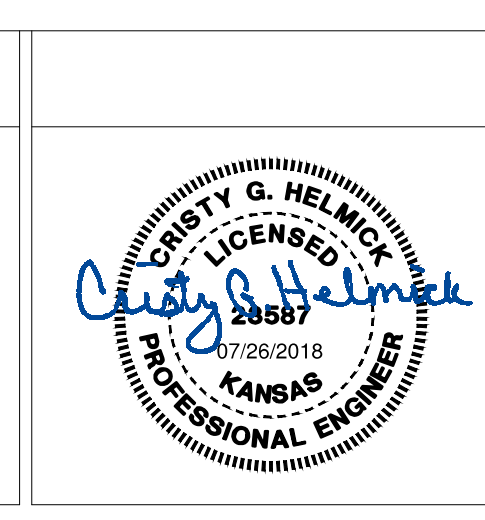
7 FOUNDATION AT STEEL COL.  
S-501 3/4" = 1'-0"



DETAIL A-A

Revisions:	Date

**CONSULTANTS:**  
- -



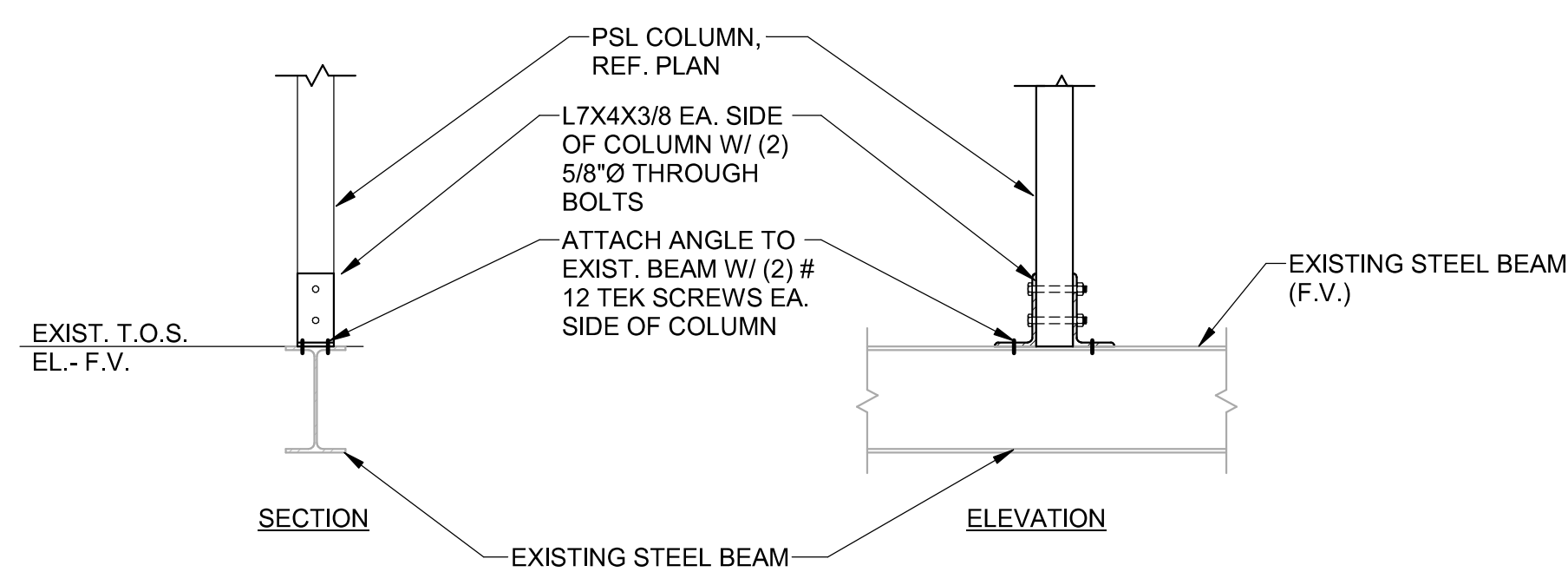
**ARCHITECT/ENGINEERS:**  
M HEG  
ARCHITECTURE



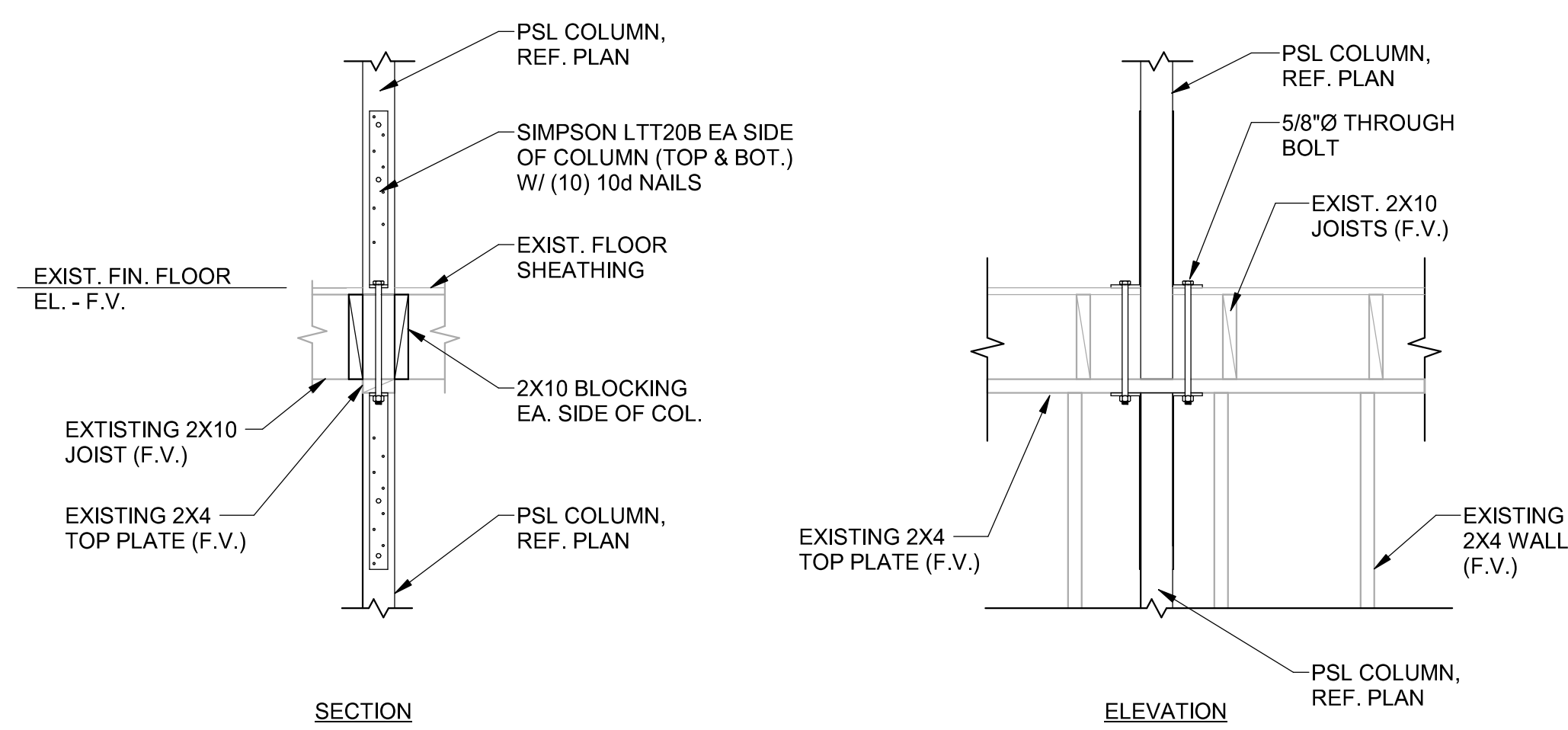
**FOUNDATION DETAILS**  
Approved: Project Director

Project Title RENOVATE AND MODERNIZE HVAC SYSTEMS, BUILDING B6 Contract No.: VA255-17-D-0080 Task Order No.: 36C25518M1023 Obligation No.: 589-C81080	Project Number 589A7-17-300
Location Wichita, Kansas	Drawing Number S-501
Date 07/26/18	Checked CGH
Drawn YFC	Dwg.

Office of Construction and Facilities Management  
Department of Veterans Affairs

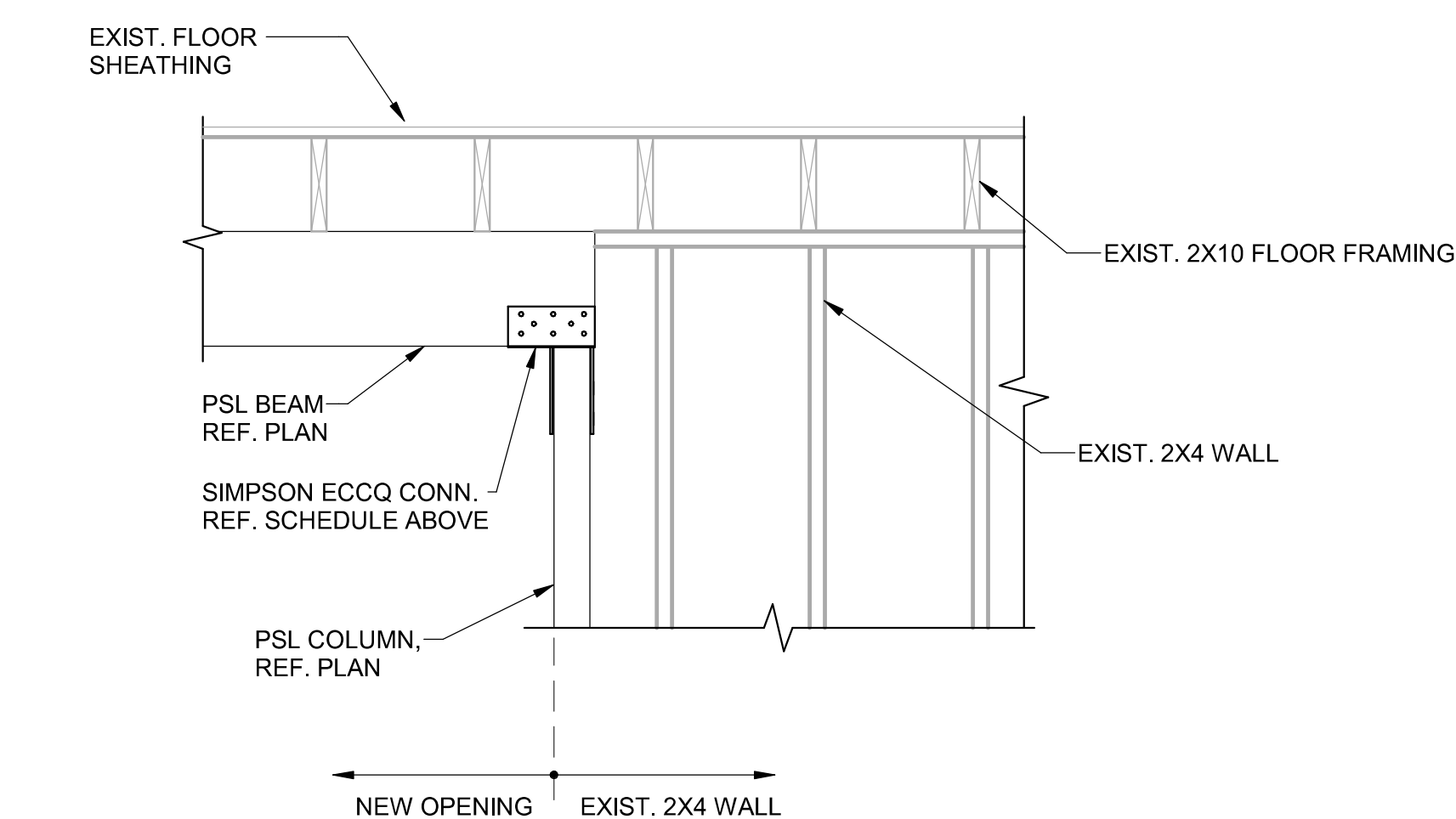


1 WOOD COLUMN TO EXIST. BEAM CONN.  
3/4" = 1'-0"

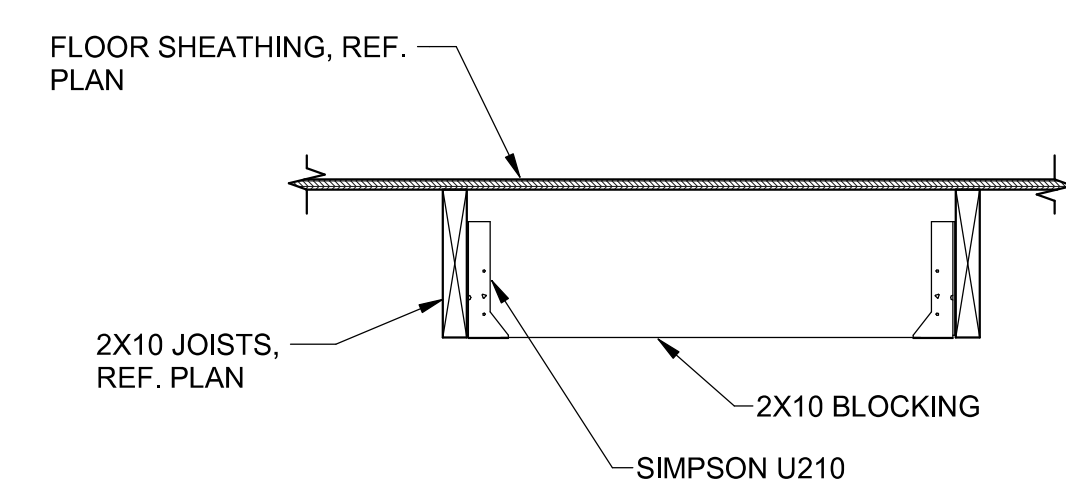


2 WOOD COLUMN CONN. AT 2ND FLOOR  
3/4" = 1'-0"

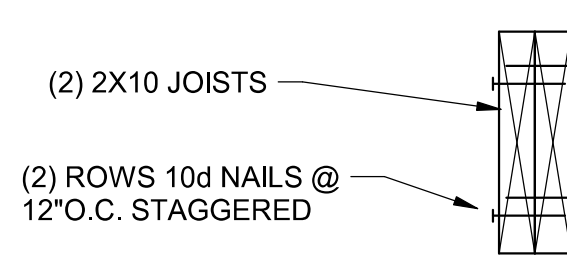
CONNECTOR	BEAM SIZE	COLUMN SIZE	BEAM CONN.	COLUMN CONN.
SIMPSON ECCQ44SDS2.5	3 1/2" X 9 1/4" PSL	3 1/2" X 3 1/2" PSL	(16) 1/2" X 2 1/2" SDS SCREWS	(14) 1/2" X 2 1/2" SDS SCREWS



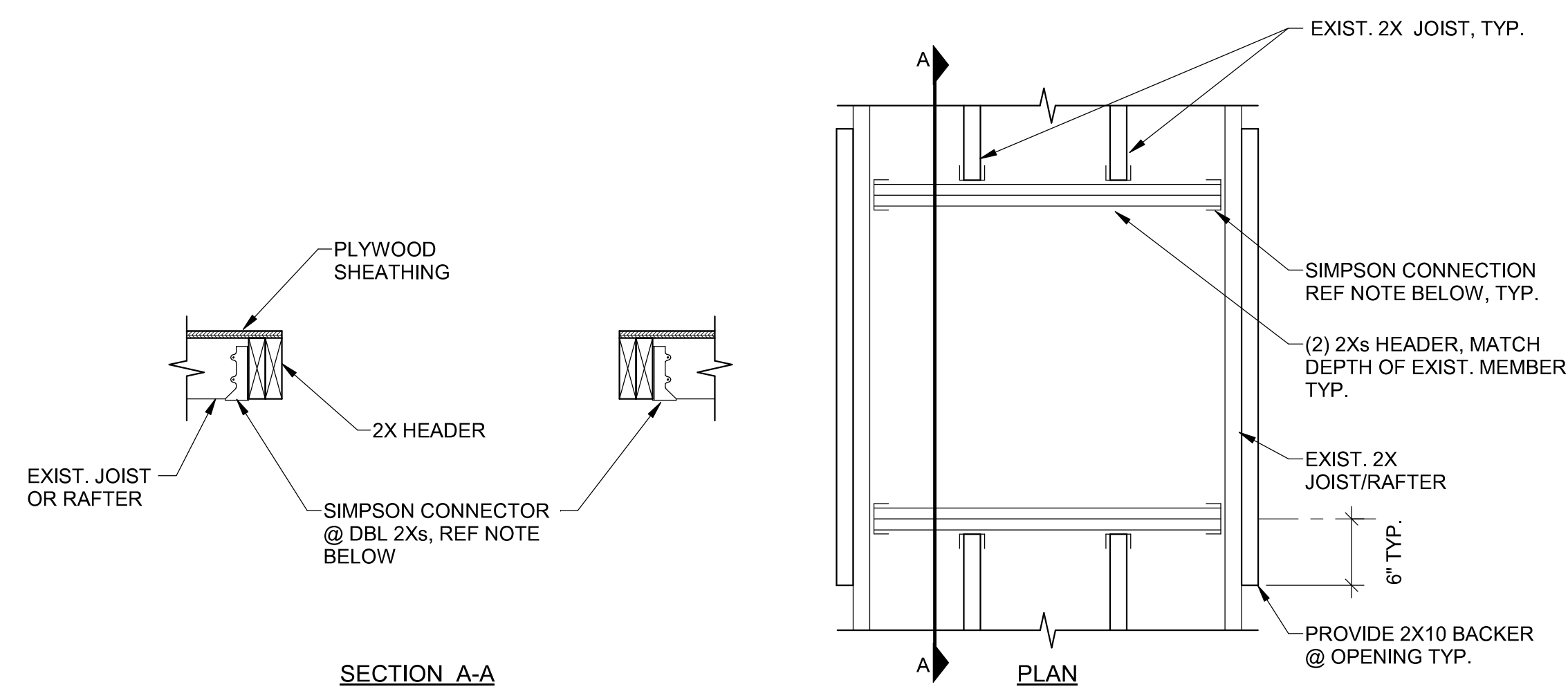
3 BEAM TO COL. CONNECTION  
NO SCALE



4 TYP. JOIST BLOCKING DETAIL  
NO SCALE

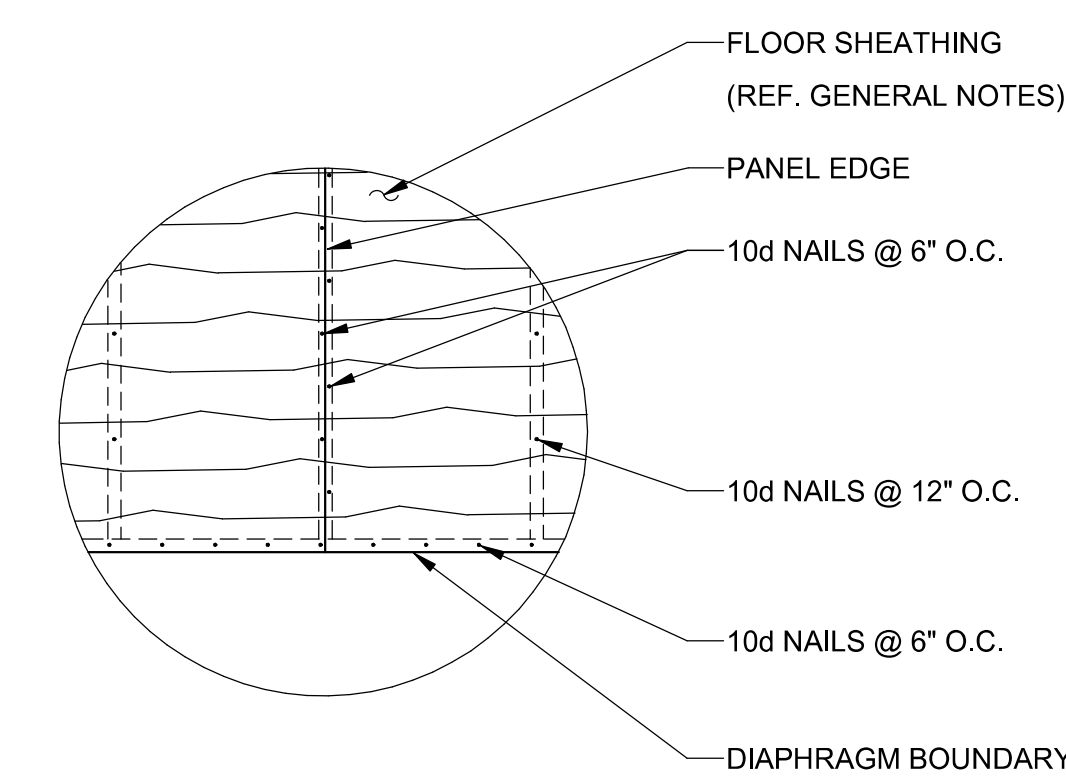


5 TYPICAL BUILT-UP BEAM DETAIL  
NO SCALE

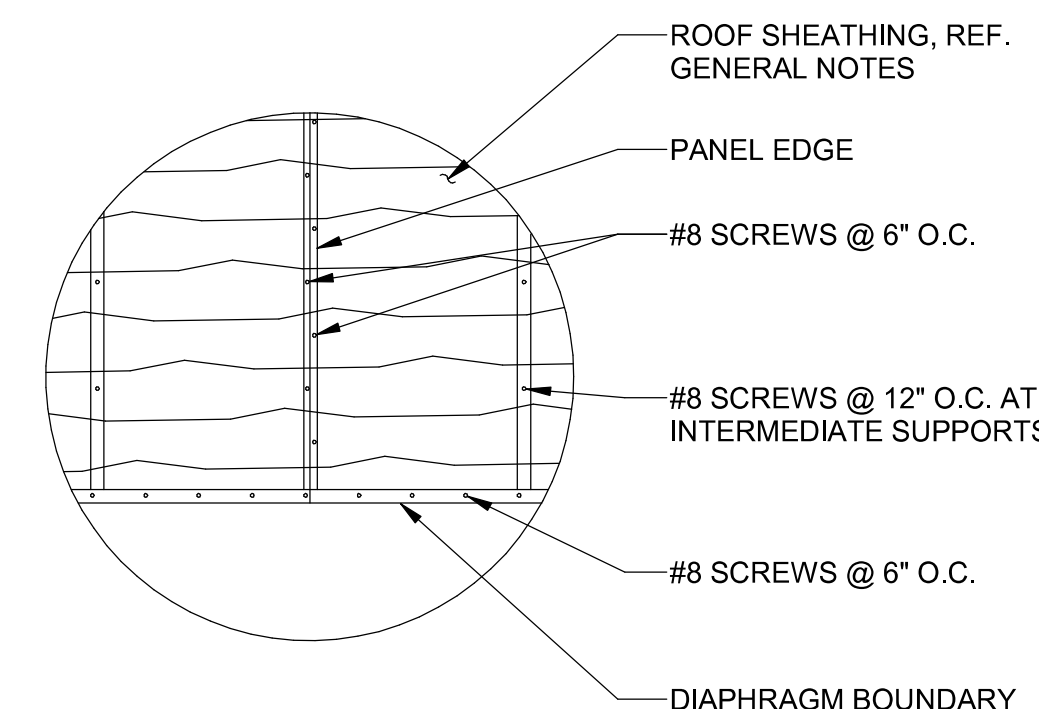


NOTE: FOR FLOOR OPENINGS: (2) 2X10 W/ SIMPSON U210-2 EA. SIDE OF HEADER.  
2X10 W/ SIMPSON U210 EA. SIDE OF BLOCKING MEMBER.  
FOR ROOF OPENINGS: (2) 2X6 W/ SIMPSON U26-2 EA. SIDE OF HEADER  
2X6 W/ SIMPSON U26 EA. SIDE OF BLOCKING MEMBER.  
\*\*\* USE COMMON 16d x 2 1/2" NAILS FOR ALL JOIST HANGERS

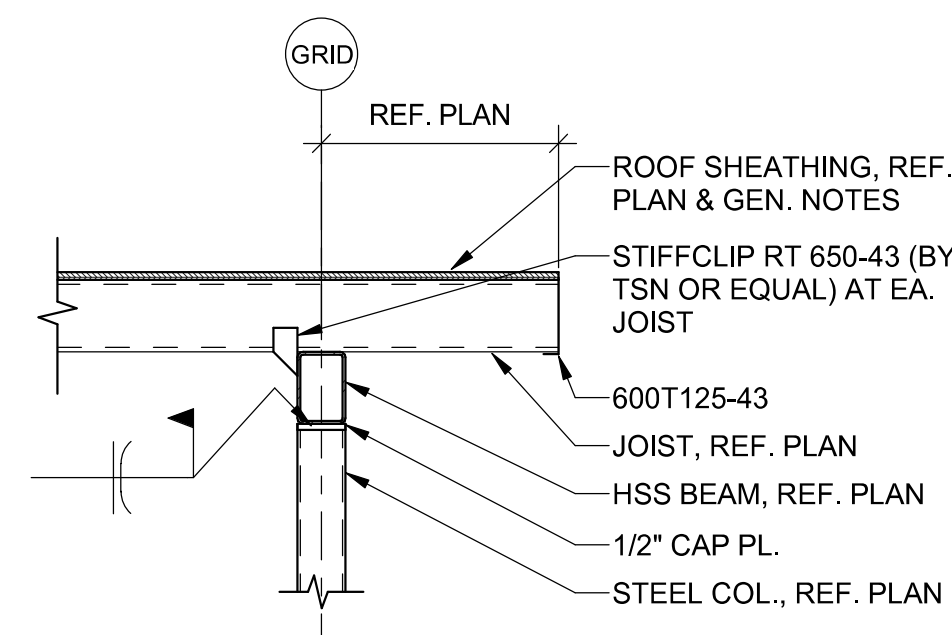
6 TYPICAL FLOOR AND ROOF OPENING DETAIL  
NO SCALE



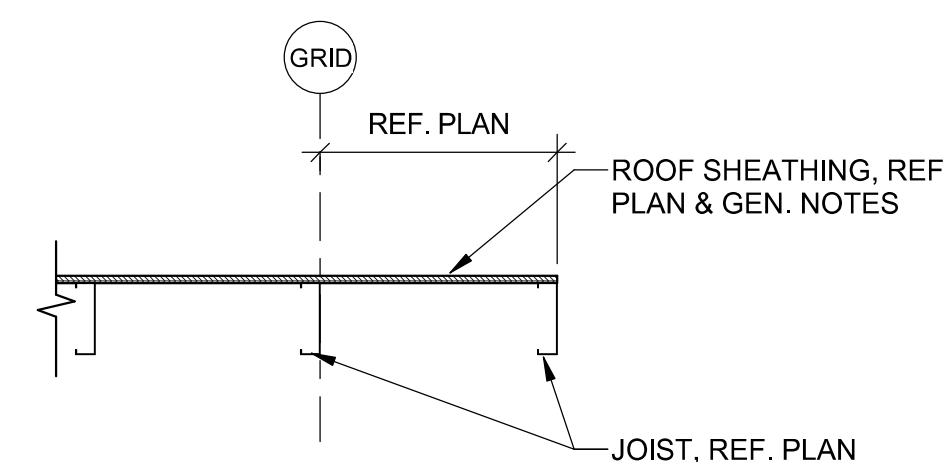
7 FLOOR SHEATHING FASTENING DETAIL  
NO SCALE



8 ROOF SHEATHING FASTENING DETAIL AT CANOPY  
NO SCALE



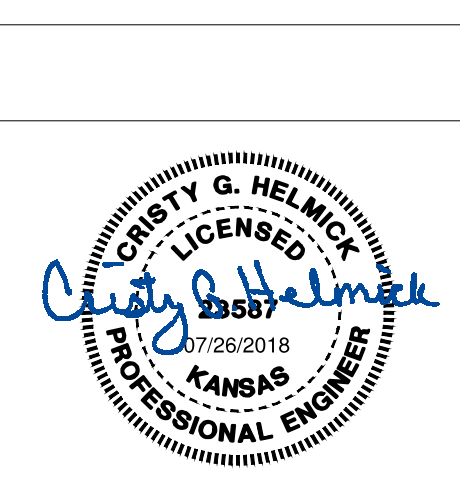
9 CANOPY FRAMING DETAIL  
3/4" = 1'-0"



10 CANOPY FRAMING DETAIL 2  
3/4" = 1'-0"

Revisions:	Date

CONSULTANTS:  
..



ARCHITECT/ENGINEERS:

**m HEG**  
ARCHITECTURE

**PEC**  
PROFESSIONAL ENGINEERING CONSULTANTS, P.A.  
303 SOUTH TOPEKA WICHITA, KS 67202  
316-262-2691 www.pec1.com

Drawing Title  
**FRAMING DETAILS**

Approved: Project Director

Project Title  
RENOVATE AND MODERNIZE HVAC SYSTEMS, BUILDING B6  
Contract No.: VA255-17-D-0080  
Task Order No.: 36C25518M1023  
Obligation No.: 589-C81080

Project Number  
589A7-17-300

Building Number

Drawing Number  
**S-502**

Dwg.

Location  
Wichita, Kansas

Date	Checked	Drawn
07/26/18	CGH	YFC

Office of Construction and Facilities Management

Department of Veterans Affairs