FOR CONSTRUCTION

DESIGN CRITERIA

1. THE CONSTRUCTION DOCUMENTS ARE BASED ON THE REQUIREMENTS OF THE *INTERNATIONAL BUILDING CODE* WITH LOCAL AMENDMENTS FROM THE AUTHORITY HAVING JURISDICTION.
   A. BUILDING CODE VERSION:........ **2021** INTERNATIONAL BUILDING CODE W. LOCAL AHJ AMENDMENTS
   B. AUTHORITY HAVING JURISDICTION:........ CITY OF BRYAN, TX
   C. RISK CATEGORY:........ II
2. DEAD LOADS:
   A. DEAD LOADS ARE BASED UPON THE ACTUAL WEIGHTS OF MATERIALS OF CONSTRUCTION AND FIXED SERVICE EQUIPMENT. ASSUMPTIONS FOR WALL AND ROOF ASSEMBLIES ARE SHOWN BELOW:
      a. METAL PANELS - 3 PSF
      b. CURTAIN WALLS - 10 PSF
      c. STONE / BRICK VENEER - 40 PSF
      d. ADHERED STONE/BRICK - 10 PSF
      e. SINGLE PLY MEMBRANE ROOF WITH INSULATION ASSEMBLY - 10 PSF
   B. EQUIPMENT
      a. ASSUMED LOADS FOR KNOWN EQUIPMENT ARE INDICATED ON THE STRUCTURAL DRAWINGS. ANY CHANGES IN THE TYPE, SIZE, LOCATION OR WEIGHT OF EQUIPMENT SHALL BE REPORTED TO THE EOR FOR VERIFICATION OF THE ADEQUACY OF SUPPORTING MEMBERS PRIOR TO THE SUBMISSION OF SHOP DRAWINGS.
      b. ASSUMED EQUIPMENT WEIGHTS INCLUDE THE WEIGHT OF CONCRETE PADS OR CURBS (IF APPLICABLE)
      c. FOR EQUIPMENT NOT INDICATED ON THE STRUCTURAL DRAWINGS IN WHICH THE WEIGHT OF THE EQUIPMENTS DIVIDED BY ITS SURFACE AREA EXCEEDS THE INDICATED LIVE LOAD FOR THE LOCATION, THE CONTRACTOR SHALL NOTIFY THE EOR PRIOR TO SUBMISSION OF SHOP DRAWINGS.
   C. HANGING CEILING AND MECHANICAL LOADS: AN ALLOWANCE OF 5 PSF HAS BEEN MADE FOR HANGING CEILING AND MECHANICAL EQUIPMENTS SUCH AS DUCT WORK AND SPRINKLER PIPES.
3. LIVE LOADS:
   A. BALCONIES AND DECKS........ 1.5 x SAME AS OCCUPANCY SERVED
   B. PRIVATE ROOMS AND CORRIDORS SERVING THEM........ 40 PSF
   C. PUBLIC ROOMS AND CORRIDORS SERVING THEM........ 100 PSF
   D. STAIRS AND EXITS........ 100 PSF | 300 LB
4. ROOF LIVE LOAD
   a. ORDINARY, FLAT, PITCHED AND CURVED UNOCCUPIED ROOFS: .... 20 PSF, 300 LB
5. SNOW LOAD:
   A. GROUND SNOW LOAD, Pg:........ 5 PSF
6. WIND:
   A. ULTIMATE DESIGN WIND SPEED Vult:........ 115 MPH (3-SEC PEAK GUST)
   B. NOMINAL DESIGN WIND SPEED, Vasd:........ 89 MPH (3-SEC PEAK GUST)
   C. WIND EXPOSURE CATEGORY:........ II
   D. INTERNAL PRESSURE COEFFICIENT:........ ± 0.18
   E. COMPONENTS AND CLADDING PRESSURES:........ SEE SCHEDULE
   F. MAIN WIND FORCE RESISTING SYSTEM:........ WOOD SHEAR WALLS
7. RAIN
   A. 100-YEAR RAINFALL INTENSITY (IN/HR):........ 3.82"
   B. MAXIMUM ROOF RAIN LOAD:........ 20 PSF
   C. MAXIMUM RAINWATER LEVEL - PONDING (STATIC + HYDRAULIC HEAD):........ 4"
   D. THE STRUCTURAL ENGINEER SHALL BE NOTIFIED IF THE TOTAL RAIN WATER LEVEL EXCEEDS THE DESIGNED RAIN ROOF LOAD.
8. SEISMIC:
   MAPPED SPECTRAL RESPONSE VALUES, DESIGN SPECTRAL RESPONSE VALUES, AND AS SITE CLASS, HAVE BEEN PROVIDED BY :
   A. GEOTECHNICAL COMPANY AND REPORT NO.:........ DUDLEY REPORT NO.22-00109
   B. MAPPED SPECTRAL RESPONSE ACCELERATION PARAMETERS, S_S & S_1........ 0.066 & 0.40
   C. DESIGN SPECTRAL RESPONSE ACCELERATION PARAMETERS, S_{DS} & S_{D1}:........ 0.057 & 0.040
   D. SITE CLASS:........ D
   E. SEISMIC DESIGN CATEGORY, SDC:........ A
   F. DESIGN BASE SHEAR:........ 1% SEISMIC WEIGHT

C&C - GROSS ULTIMATE WIND PRESSURES

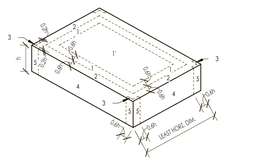
Cladding Type	Location	Effective Area (sf)	Coefficients		Wind pressures	
			+GCp	-GCp	+p (psf)	-p (psf)
Wall	Interior	10	0.90	-0.99	+30.6	-33.2
		40	0.80	-0.89	+27.9	-30.5
		50	0.79	-0.88	+27.5	-30.0
		100	0.74	-0.83	+26.1	-28.7
		500	0.63	-0.72	+23.0	-25.5
Wall	Edge	10	0.90	-1.26	+30.6	-40.8
		40	0.80	-1.07	+27.9	-35.4
		50	0.79	-1.04	+27.5	-34.5
		100	0.74	-0.94	+26.1	-31.8
		500	0.63	-0.72	+23.0	-25.5
Roof	Interior	10	0.30	-1.00	+13.6	-33.5
		40	0.24	-0.94	+11.9	-31.8
		50	0.23	-0.93	+11.6	-31.5
		100	0.20	-0.90	+10.8	-30.6
		341	0.20	-0.90	+10.8	-30.6
Roof	Edge	10	0.90	-1.80	+30.6	-56.2
		40	0.80	-1.38	+27.9	-44.2
		50	0.79	-1.31	+27.5	-42.3
		100	0.74	-1.10	+26.1	-36.3
		500	0.63	-1.10	+23.0	-36.3
Roof	Corner	10	0.90	-1.80	+30.6	-56.2
		40	0.80	-1.38	+27.9	-44.2
		50	0.79	-1.31	+27.5	-42.3
		100	0.74	-1.10	+26.1	-36.3
		500	0.63	-1.10	+23.0	-36.3
Overhang	Interior & Edge	10	0.00	-1.70	+10.0	-48.2
		40	0.00	-1.64	+10.0	-46.5
		50	0.00	-1.63	+10.0	-46.2
		100	0.00	-1.60	+10.0	-45.4
		500	0.00	-1.10	+10.0	-31.2
Overhang	Corner	10	0.00	-1.70	+10.0	-48.2
		40	0.00	-1.64	+10.0	-46.5
		50	0.00	-1.63	+10.0	-46.2
		100	0.00	-1.60	+10.0	-45.4
		500	0.00	-1.10	+10.0	-31.2
Parapet	Interior	10	2.70	-1.89	+76.6	-53.6
		40	2.18	-1.70	+61.9	-48.2
		50	2.10	-1.67	+59.6	-47.3
		100	1.84	-1.57	+52.2	-44.6
		500	1.73	-1.35	+49.1	-38.3
Parapet	Edge	10	2.70	-2.16	+76.6	-61.3
		40	2.18	-1.87	+61.9	-53.1
		50	2.10	-1.83	+59.6	-51.8
		100	1.84	-1.68	+52.2	-47.7
		500	1.73	-1.35	+49.1	-38.3

a = MINIMUM OF (10% OF LEAST HORIZONTAL DIMENSION OR 0.4h) BUT NOT LESS THAN 4% OF LEAST HORIZONTAL DIMENSION OR 3FT

h = MEAN ROOF HEIGHT OF A BUILDING, EXCEPT THAT EAVE HEIGHT SHALL BE USED FOR ROOF ANGLES LESS THAN OR EQUAL TO 10° (~2:12 ROOF PITCH)

MEAN ROOF HEIGHT = THE AVERAGE OF THE ROOF EAVE HEIGHT AND HEIGHT TO THE HIGHEST POINT ON THE ROOF SURFACE.

COMPONENTS AND CLADDING ZONES	
DESCRIPTION	ZONE
ROOF INTERIOR	1
ROOF EDGE	2
ROOF CORNER	3
WALL INTERIOR	4
WALL EDGE	5



FLAT /HIP/ GABLE ROOF - h ≤ 60
0° (0:12) < SLOPE ≤ 7° (1.5:12)

FOUNDATION DESIGN CRITERIA

1. GEOTECHNICAL REPORT: THIS FOUNDATION DESIGN IS BASED ON THE RECOMMENDATIONS PROVIDED IN SITE-SPECIFIC GEOTECHNICAL REPORT. IN DESIGNING THE FOUNDATION FOR THE PROPOSED STRUCTURE, THE FOUNDATION DESIGN ENGINEER DOES NOT ASSUME RESPONSIBILITY FOR THE ACCURACY OF THE GEOTECHNICAL ENGINEER'S REPORT OR ANY INFORMATION CONTAINED THEREIN. INFORMATION CONTAINED IN THE GEOTECHNICAL REPORT(S) REFLECTS CONDITIONS AS FOUND AT THE LOCATION OF THE BORINGS. ACTUAL CONDITIONS AT LOCATIONS BETWEEN AND SURROUNDING THE BORINGS MAY DIFFER FROM THE SOIL STRATIGRAPHY DEPICTED BY THE BORINGS. IF THERE ARE ANY CONDITIONS DIFFERING FROM THOSE DESCRIBED IN THE GEOTECHNICAL REPORT, OR IF ANY CHANGES HAVE BEEN IMPOSED ON THE SOILS IN QUESTION SINCE THE REPORT WAS WRITTEN, THEN THE DESIGN ENGINEER OF RECORD SHOULD BE NOTIFIED IN WRITING PRIOR TO CONSTRUCTION OF THE FOUNDATION IN ORDER TO REVIEW THE EFFECTS ON THE PERFORMANCE OF THE DESIGNED FOUNDATION.
   A. GEOTECHNICAL ENGINEER: ***DUDLEY***
   B. REPORT NUMBER: ***22-00109***
   C. REPORT DATE: ***APRIL 27, 2022***
   D. THE FOUNDATION DESIGN PARAMETERS PROVIDED WILL NOT ELIMINATE POST-CONSTRUCTION FOUNDATION MOVEMENT. AS SUCH, MEASURES SHALL BE TAKEN TO INCREASE THE TOLERANCE OF THE STRUCTURE SUPPORTED BY THE FOUNDATION. MEASURES INCLUDE BUT ARE NOT LIMITED TO FREQUENT CONTROL JOINTS FOR MASONRY/BRICK/STONE/STUCCO EXTERIOR VENEER (15'-0 MAXIMUM), VERTICALLY SLOTTED CLIPS TO ATTACH ROOF TRUSSES TO NON-LOAD BEARING WALLS, ETC.
2. **ABNORMAL CONDITIONS:** IF THE FOUNDATION IS INSTALLED DURING A DRY OR WET PERIOD, WHICH IS CONSIDERED EXTREME OR ABNORMAL, THEN THE BUILDER SHALL NOTIFY THE GEOTECHNICAL ENGINEER AND FOUNDATION ENGINEER PRIOR TO CONSTRUCTION FOR POSSIBLE SOIL CONDITIONING OR FOUNDATION RE-DESIGN .
3. **FOUNDATION MOVEMENT:** THE FOUNDATION HAS BEEN DESIGNED WITH THE ASSUMPTION THAT MOVEMENT CAN BE TOLERATED WITHIN A STANDARD PERFORMANCE LIMIT:
   A. STANDARD PERFORMANCE DEFLECTION LIMIT: ***L/360***
   B. STANDARD PERFORMANCE TILT LIMIT: ***1%***
4. **SOIL MOISTURE LEVEL:** A REASONABLY UNIFORM SOIL MOISTURE LEVEL IS MAINTAINED AROUND THE FOUNDATION FOR THE LIFE OF THE STRUCTURE.
5. **FOUNDATION MAINTENANCE:** POSITIVE DRAINAGE AWAY FROM THE STRUCTURE SHALL BE MAINTAINED FOR THE LIFE OF THE STRUCTURE AND THE CONTRACTOR SHALL CONVEY THIS REQUIREMENT TO THE OWNER. THE INITIAL AND ALL SUBSEQUENT OWNERS MAINTAIN THE FOUNDATION IN ACCORDANCE WITH THE LATEST REVISION OF DOCUMENT NO. FPA-SC-07, "FOUNDATION MAINTENANCE AND INSPECTION GUIDE FOR RESIDENTIAL AND OTHER LOW-RISE BUILDINGS", AVAILABLE ON THE FOUNDATION PERFORMANCE ASSOCIATION'S WEBSITE: WWW.FOUNDATIONPERFORMANCE.ORG. CONTRACTOR SHALL PROVIDE THIS DOCUMENT TO OWNER.
6. **EXPIRATION:** PLANS ARE VALID FOR 6-MONTHS FROM THE DATE THE PLANS ARE ISSUED OR REVISED BY THE ENGINEER. CONTACT ENGINEER FOR REVIEW IF PLANS HAVE EXPIRED OR IF CONSTRUCTION OF THE FOUNDATION HAS NOT COMMENCED WITHIN THIS TIME FRAME.

LATERAL LOAD RESISTING SYSTEM

1. ALL LATERAL LOAD RESISTANCE AND STABILITY OF THE BUILDING IS PROVIDED EXCLUSIVELY BY VERTICAL LATERAL LOAD RESISTING SYSTEM. THE HORIZONTAL DIAPHRAGMS DISTRIBUTE THE LATERAL WIND AND SEISMIC FORCES HORIZONTALLY TO THE VERTICAL LATERAL LOAD RESISTING SYSTEM.
   A. VERTICAL LATERAL LOAD RESISTING SYSTEM: WOOD-FRAMED SHEAR WALLS
   B. HORIZONTAL LATERAL LOAD RESISTING SYSTEM: WOOD STRUCTURAL PANEL ROOF DECK

STAIR, HANDRAILS, RESTROOM ACCESSORIES AND GUARDRAIL SPECIFICATIONS:

1. ALL STAIRS, GUARDRAILS AND HANDRAILS SHALL BE DESIGNED BY A REGISTERED STRUCTURAL ENGINEER BASED ON THE FOLLOWING DESIGN CRITERIA:
   A. STAIRS:
      a. STAIR STRINGERS, TREADS AND RISERS SHALL BE DESIGNED TO SUPPORT 100 PSF LIVE LOAD.
      b. INDIVIDUAL STAIR TREADS SHALL BE DESIGNED TO SUPPORT A 300 LB CONCENTRATED LOAD PLACED IN A POSITION THAT WOULD CAUSE THE MAX STRESS.
   B. HANDRAIL AND GUARDS
      a. GUARD TOP RAIL AND HANDRAILS: THE TOP RAIL OF GUARDRAILS AND HANDRAILS SHALL BE DESIGNED TO WITHSTAND A LOAD OF 50 PLF APPLIED HORIZONTALLY AT RIGHT ANGLES, OR A 200 LB CONCENTRATED LOAD IN ANY DIRECTION.
      b. INTERMEDIATE RAILS, PANEL FILLER AND THEIR CONNECTIONS SHALL BE DESIGNED TO WITHSTAND A LOAD OF 50 PSF APPLIED HORIZONTALLY AT RIGHT ANGLES OVER THE ENTIRE TRIBUTARY AREA, INCLUDING OPENINGS AND SPACES BETWEEN RAILS.
   C. RESTROOM ACCESSORIES:
      a. GRAB BARS, TUB AND SHOWER SEATS, FASTENERS, AND MOUNTING DEVICES SHALL BE DESIGNED TO RESIST A CONCENTRATED LOAD OF 250 POUNDS AT ANY LOCATION AND IN ANY DIRECTION.

STRUCTURAL DEFERRED SUBMITTALS:

1. STRUCTURAL DEFERRED SUBMITTALS ARE THOSE PORTIONS OF THE DESIGN WHICH REQUIRE STRUCTURAL ENGINEERING THAT ARE NOT SUBMITTED AT THE TIME OF THE APPLICATION BUT ARE TO BE SUBMITTED TO THE BUILDING OFFICIAL AT A LATER DATE. DEFERRED SUBMITTALS SHALL BE SUBMITTED TO AND APPROVED BY THE BUILDING OFFICIAL PRIOR TO INSTALLATION OF ANY SAID WORK.
2. COMPLETE STRUCTURAL SHOP DRAWINGS FOR CONSTRUCTION OF EACH BUILDING COMPONENT NOT DESIGNED BY THE STRUCTURAL ENGINEER-OF-RECORD (SER) AND NOT SPECIFIED ON THE PROJECT CONSTRUCTION DOCUMENTS SHALL BE SEALED AND SIGNED BY A SPECIALTY STRUCTURAL ENGINEER (SSE) WHO IS A LICENSED PROFESSIONAL ENGINEER REGISTERED IN THE STATE WHERE THE PROJECT IS BEING CONSTRUCTED WHO IS QUALIFIED TO PERFORM SAID WORK. A SEAL BY A LICENSED PROFESSIONAL ENGINEER IS NOT REQUIRED FOR EITHER PRODUCTS WHICH HAVE BEEN TESTED AND CERTIFIED BY AN APPROVED AGENCY SUCH AS THE ICC NOR FOR COMPONENTS WHICH ARE FABRICATED BY A FABRICATOR THAT IS CERTIFIED BY AN APPROVED AGENCY IN WHICH THE AGENCY SPECIFIED THAT SEALING OF THE SHOP DRAWINGS IS NOT REQUIRED (E.G. STEEL JOIST INSTITUTE IN REGARDS TO OPEN WEB STEEL JOISTS)
3. THE SPECIALTY STRUCTURAL ENGINEER (SSE) SHALL SPECIFICALLY INDICATE IN A COVER PAGE AT THE FRONT OF THE SHOP DRAWING THAT THEY ARE THE STRUCTURAL ENGINEER IN RESPONSIBLE CHARGE FOR THE DEFERRED SUBMITTAL AND THAT THEY HAVE REVIEWED THE SHOP DRAWING TO ENSURE COMPLIANCE WITH THEIR DESIGN AND CALCULATIONS.
4. ALL STRUCTURAL DEFERRED SUBMITTALS SHALL BE REVIEWED BY THE SER AND MARKED AS EITHER NO EXCEPTIONS OR EXCEPTION NOTED, PRIOR TO SUBMITTING TO THE "FOR CONSTRUCTION" VERSION TO THE AUTHORITY HAVING JURISDICTION (AHJ) AND PRIOR TO RELEASE FOR FABRICATION.
5. STRUCTURAL DEFERRED SUBMITTALS ON THIS PROJECT INCLUDE:
   A. STAIRS, GUARDRAIL, HANDRAILS, GRAB BARS, LADDERS, ETC. (NOT REQUIRED IF USING CERTIFIED AND TESTED PRODUCTS/ASSEMBLIES)
   B. CURTAINWALL , STOREFRONT, WINDOWS (NOT REQUIRED IF USING CERTIFIED AND TESTED PRODUCTS/ASSEMBLIES)
   C. METAL PLATE CONNECTED WOOD TRUSSES

GENERAL CONDITIONS

1. THE CONTRACT STRUCTURAL DRAWINGS AND SPECIFICATIONS REPRESENT THE FINISHED STRUCTURE. METHODS, PROCEDURES AND SEQUENCES OF CONSTRUCTION ARE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO MAINTAIN AND ENSURE THE INTEGRITY OF THE STRUCTURE AT ALL STAGES OF CONSTRUCTION.
2. THE CONTRACTOR IS RESPONSIBLE FOR QUALITY CONTROL, INCLUDING WORKMANSHIP AND MATERIALS FURNISHED BY SUBCONTRACTORS AND SUPPLIERS.
3. REFER TO DRAWINGS OTHER THAN STRUCTURAL FOR COMPLETE INFORMATION REGARDING: SLEEVES, CURBS, INSERTS, DEPRESSIONS, OPENINGS, ETC.
4. IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO OBTAIN ALL CONTRACT DOCUMENTS AND LATEST REVISIONS/ADDENDA AND TO SUBMIT SUCH DOCUMENTS TO ALL SUBCONTRACTORS AND MATERIAL SUPPLIERS PRIOR TO THE SUBMITTAL OF SHOP DRAWINGS OR MATERIAL PROCUREMENT.
5. THE USE OR REPRODUCTIONS OF THESE CONTRACT DRAWINGS BY ANY CONTRACTOR OR MATERIAL SUPPLIER IN LIEU OF PREPARATION OF SHOP DRAWINGS SIGNIFIES HIS ACCEPTANCE OF ALL INFORMATION SHOWN HEREON AS CORRECT, AND OBLIGATES HIMSELF TO ANY JOB EXPENSE, REAL OR IMPLIED, DUE TO ANY ERRORS THAT MAY OCCUR HEREON.
6. ALL WORK SHALL CONFORM TO OSHA STANDARDS.
7. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL EXCAVATION PROCEDURES INCLUDING LAGGING, SHORING AND PROTECTION OF ADJACENT PROPERTY, STRUCTURES, STREETS AND UTILITIES IN ACCORDANCE WITH ALL CODES AND REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION.
8. THE GENERAL CONTRACTOR SHALL COMPARE THE ARCHITECTURAL AND STRUCTURAL DRAWINGS AND REPORT ANY DISCREPANCIES BETWEEN EACH SET OF DRAWINGS AND WITHIN EACH SET OF DRAWINGS TO THE ARCHITECT AND ENGINEER PRIOR TO THE FABRICATION AND INSTALLATION OF ANY STRUCTURAL MEMBERS.
9. FRAMING LAYOUTS ARE PROVIDED TO REPRESENT DESIGN CONCEPTS AND SYSTEMS CONSTRUCTION. THE CONTRACTOR AND SUBCONTRACTORS ARE RESPONSIBLE FOR MATERIAL QUANTITIES AND ANY AND ALL UNSPECIFIED COMPONENTS REQUIRED FOR CONSTRUCTION.
10. WHERE MEMBER LOCATIONS ARE NOT SPECIFICALLY DIMENSIONED, MEMBERS ARE EITHER LOCATED ON COLUMN LINES OR ARE EQUALLY SPACED BETWEEN THE LOCATED MEMBERS.
11. IF CERTAIN FEATURES ARE NOT FULLY SHOWN OR SPECIFIED ON THE DRAWINGS OR IN THE SPECIFICATIONS, THEIR CONSTRUCTION SHALL BE OF THE SAME CHARACTER AS SHOWN OR SPECIFIED IN SIMILAR CONDITIONS.
12. WHERE CONFLICT EXISTS AMONG THE VARIOUS PARTS OF THE STRUCTURAL CONTRACT DOCUMENTS, STRUCTURAL DRAWINGS, GENERAL NOTES AND SPECIFICATIONS, THE STRICTEST REQUIREMENTS, AS INDICATED BY THE ENGINEER, SHALL GOVERN.
13. THE FLOOR DESIGN LIVE LOAD FOR EACH ELEVATED FLOOR STRUCTURE OR PORTION THEREOF THAT EXCEEDS 50 POUNDS PER SQUARE FOOT (PSF) SHALL BE STATED ON DURABLE SIGNS AND CONSPICUOUSLY POSTED BY THE OWNER IN THE APPLICABLE AREA(S) OF THE BUILDING.
14. ALL STRUCTURES REQUIRE PERIODIC MAINTENANCE TO EXTEND LIFESPAN AND ENSURE STRUCTURAL INTEGRITY FROM EXPOSURE TO THE ENVIRONMENT. A PLANNED PROGRAM OF MAINTENANCE SHALL BE ESTABLISHED BY THE BUILDING OWNER. THIS PROGRAM SHALL INCLUDE SUCH ITEMS AS, BUT NOT LIMITED TO, PAINTING OF STRUCTURAL STEEL, PROTECTIVE COATING FOR CONCRETE, SEALANTS, CAULKED JOINTS, EXPANSION JOINTS, CONTROL JOINTS, SPALLS AND CRACKS IN CONCRETE, AND PRESSURE WASHING OF EXPOSED STRUCTURAL ELEMENTS EXPOSED TO A SALT ENVIRONMENT OR OTHER HARSH CHEMICALS.
15. THE STRUCTURAL ENGINEER'S ROLE DURING CONSTRUCTION
    A. THE ENGINEER SHALL NOT HAVE CONTROL NOR CHARGE OF, AND SHALL NOT BE RESPONSIBLE FOR, CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, OR PROCEDURES, FOR SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK, FOR THE ACTS OR OMISSION OF THE CONTRACTOR, SUBCONTRACTOR, OR ANY OTHER PERSONS PERFORMING ANY OF THE WORK, OR FOR THE FAILURE OF ANY OF THEM TO CARRY OUT THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
    B. PERIODIC SITE OBSERVATION BY FIELD REPRESENTATIVES OF THE STRUCTURAL ENGINEER IS SOLELY FOR THE PURPOSE OF BECOMING GENERALLY FAMILIAR WITH THE PROGRESS AND QUALITY OF THE WORK COMPLETED AND DETERMINING, IN GENERAL, IF THE WORK OBSERVED IS BEING PERFORMED IN A MANNER INDICATING THAT THE WORK, WHEN FULLY COMPLETED, WILL BE IN ACCORDANCE WITH THE STRUCTURAL CONTRACT DOCUMENTS. THIS LIMITED SITE OBSERVATION SHOULD NOT BE CONSTRUED AS EXHAUSTIVE OR CONTINUOUS TO CHECK THE QUALITY OR QUANTITY OF THE WORK, BUT RATHER PERIODIC IN AN EFFORT TO GUARD THE OWNER AGAINST DEFECTS OR DEFICIENCIES IN THE WORK OF THE CONTRACTOR.
16. WATERPROOFING OF THE BUILDING ENVELOPE IS OF CRITICAL IMPORTANCE TO LONG-TERM STRUCTURAL PERFORMANCE. WATERPROOFING DESIGN SHALL BE THE RESPONSIBILITY OF THE ARCHITECT/CONTRACTOR AND SHALL BE IN ACCORDANCE WITH BEST PRACTICES FOR THE LOCALITY AND THE PARTICULAR ASSEMBLY.

CONTRACTOR QUALIFICATION

1. WORK SHALL BE PERFORMED BY A QUALIFIED CONSTRUCTION CONTRACTOR AND SUBCONTRACTOR EXPERIENCED IN THIS TYPE OF WORK. SUCH KNOWLEDGE SHALL INCLUDE MAKING ALLOWANCES FOR PERFORMING WORK OF THIS NATURE FOLLOWING INDUSTRY STANDARDS OF CARE.
2. THE CONSTRUCTION CONTRACTOR AND SUBCONTRACTORS SHALL UNDERSTAND THE NATURE OF DRAWING PRODUCTION AND COORDINATION BETWEEN CONSULTANTS AND SHALL NOT ENTER INTO A CONTRACT BASED ON DRAWINGS THAT ARE BELIEVED TO CONTAIN DISCREPANCIES OR ARE OTHERWISE INCOMPLETE UNLESS PROPER ALLOWANCES HAVE BEEN MADE FOR COST IMPLICATIONS THAT MAY ARISE DUE TO FUTURE DRAWING CHANGES MADE IN PREPARATION OF FINAL CONSTRUCTION DOCUMENTS.
3. IN THE COURSE OF PRODUCING AND ISSUING DRAWINGS, VARIOUS STAGES OF COMPLETION ARE DEVELOPED. THE CONSTRUCTION CONTRACTOR AND SUBCONTRACTORS SHALL UNDERSTAND THE PURPOSE AND CONTENT CONTAINED IN PERMIT, PRICING, AND CONSTRUCTION DRAWINGS. COST IMPLICATIONS AND CONTRACTIBILITY ARE THE RESPONSIBILITY OF THE CONSTRUCTION CONTRACTOR AND SUBCONTRACTORS UNLESS PRIOR ARRANGEMENTS HAVE BEEN MADE WITH THE OWNER.

FUTURE EXPANSION

1. NO PROVISIONS FOR ANY FUTURE EXPANSION HAVE BEEN MADE IN THE STRUCTURAL DESIGN.

SUBSTITUTIONS:

1. ALL REQUESTS FOR SUBSTITUTIONS OF MATERIALS OR DETAILS SHOWN IN THE CONTRACT DOCUMENTS SHALL BE SUBMITTED FOR APPROVAL DURING THE BIDDING PERIOD. ONCE BIDS ARE ACCEPTED, PROPOSED SUBSTITUTIONS WILL BE CONSIDERED ONLY WHEN THEY ARE OFFICIALLY SUBMITTED WITH AN IDENTIFIED SAVINGS TO BE DEDUCTED FROM THE CONTRACT.

REQUEST FOR INFORMATION (RFI)

1. RFI'S MUST INCLUDE A TRANSMITTAL SHEET THAT INDICATES THE FOLLOWING:
   A. RFI NUMBER
   B. RFI CATEGORY:
      a. REQUEST FOR SUBSTITUTION
      b. CORRECTIVE REPAIR
      c. ADDITIONAL INFORMATION REQUIRED
      d. DISCREPANCY BETWEEN CONSTRUCTION DOCUMENTS
   C. DATE SUBMITTED
   D. DATE RESPONSE NEED BY
   E. SUBMITTED BY (INCLUDE EMAIL AND PHONE NUMBER)
   F. RFI DESCRIPTION INCLUDING:
      a. SHEET NUMBER, DETAIL AND/OR SPECIFICATION NUMBER IF APPLICABLE
      b. SKETCHES IF APPLICABLE
      c. PHOTOS IF APPLICABLE.

SUBMITTALS

1. SUBMITTAL LIST AND SCHEDULE
   A. THE GENERAL CONTRACTOR SHALL PREPARE A DETAILED LIST AND SCHEDULE OF ALL SUBMITTAL ITEMS TO BE SENT TO THE STRUCTURAL ENGINEER PRIOR TO THE START OF CONSTRUCTION. THIS LIST SHALL BE UPDATED AND REVISED AS THE JOB PROGRESSES.
2. SUBMITTAL REQUIREMENTS:
   A. ALL SUBMITTALS MUST BE REVIEWED AND ELECTRONICALLY STAMPED BY THE GENERAL CONTRACTOR PRIOR TO SUBMITTAL TO THE DESIGN TEAM AS NO EXCEPTIONS.
   B. ALL SUBMITTALS MUST INCLUDE A TRANSMITTAL SHEET WHICH INDICATES:
      a. SUBMITTAL NUMBER PER THE FOLLOWING FORMAT: E.G. 03 30 00-01.00 (DIVISION, SUBMITTAL # FOR DIVISION, ISSUE # - THE EXAMPLE INDICATES THE FIRST SUBMITTAL, FIRST ISSUE OF A CONCRETE SUBMITTAL)
      b. BRIEF DESCRIPTION OF SUBMITTAL CONTENTS
      c. DATE ISSUED
      d. REQUESTED RETURN DATE
      e. ISSUING PARTY INCLUDING NAME, PHONE NUMBER AND EMAIL
   C. CONTRACTOR SHALL PROVIDE THE SUBMITTAL IN ELECTRONIC (PDF) FORMAT. SUBMITTALS SHALL NOT BE SCANNED COPIES OF PRINTED DOCUMENTS.
   D. THE OMISSION FROM THE SHOP DRAWINGS OF ANY MATERIALS REQUIRED BY THE CONTRACT DOCUMENTS SHALL NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY OF FURNISHING AND INSTALLING SUCH MATERIALS, REGARDLESS OF WHETHER SHOWN OR COMMENTED IN THE SHOP DRAWING
   E. THE CONTRACTOR MUST ALLOW A MINIMUM OF 14 DAYS FOR STRUCTURAL REVIEW OF ALL SUBMITTALS. THE CONTRACTOR CAN REQUEST AN EXPEDITED REVIEW AT AN AGREED UPON FEE WITH THE STRUCTURAL ENGINEER.
   F. STRUCTURAL STEEL SUBMITTALS MUST BE ACCOMPANIED BY THE SDS/2 OR TEKLA MODEL WHICH WILL BE USED BY THE DESIGN TEAM AS A VISUAL AID TO THE SHOP DRAWINGS.
3. REFER TO THE SPECIFICATIONS FOR A LIST OF ALL THE REQUIRED SUBMITTALS.
4. ENGINEER REVIEW STAMP DESIGNATIONS: ALL DESIGNATIONS ARE INDICATIVE OF A REVIEW FOR GENERAL CONFORMANCE WITH THE CONSTRUCTION DOCUMENTS.
   A. NO EXCEPTIONS
      a. NO ITEMS WERE FOUND TO BE IN CONFLICT WITH THE CONSTRUCTION DOCUMENTS, NO "FOR REVIEW" RESUBMITTAL REQUIRED.
   B. EXCEPTIONS NOTED
      a. ITEMS WERE FOUND IN CONFLICT WITH THE CONSTRUCTION DOCUMENTS AND NEED TO BE REVISED PRIOR TO SUBMITTING "FOR CONSTRUCTION" SUBMITTAL.
   C. REVISE AND RESUBMIT
      a. SIGNIFICANT ITEMS WERE FOUND IN CONFLICT WITH THE CONSTRUCTION DOCUMENTS. THE SUBMITTAL NEEDS TO BE RESUBMITTED "FOR REVIEW".
   D. NOT REVIEWED
      a. THE SUBMITTAL WAS NOT STRUCTURAL.
   E. FOR INFORMATION ONLY
      a. THE SUBMITTAL DID NOT REQUIRE REVIEW BUT HAS BEEN FILED FOR THE RECORD.
   F. IMPACT TO STRUCTURE
      a. THE SUBMITTAL HAS BEEN REVIEWED FOR THE STRUCTURALLY IMPACT TO THE STRUCTURE ONLY.

INSPECTIONS:

1. CONSTRUCTION OR WORK FOR WHICH A PERMIT IS REQUIRED SHALL BE SUBJECT TO INSPECTION BY THE BUILDING OFFICIAL AND SUCH CONSTRUCTION OR WORK SHALL REMAIN ACCESSIBLE AND EXPOSED FOR INSPECTION PURPOSES UNTIL APPROVED. REQUIRED TESTING INCLUDES BUT IS NOT LIMITED TO THE FOLLOWING:
   A. FOUNDATION INSPECTION:
      a. FOOTING AND FOUNDATION INSPECTIONS SHALL BE MADE AFTER EXCAVATIONS FOR FOOTINGS ARE COMPLETE AND ANY REQUIRED REINFORCING STEEL IS IN PLACE. FOR CONCRETE FOUNDATIONS, ANY REQUIRED FORMS SHALL BE IN PLACE PRIOR TO INSPECTION. MATERIALS FOR THE FOUNDATION SHALL BE ON THE JOB, EXCEPT WHERE CONCRETE IS READY MIXED IN ACCORDANCE WITH ASTM C94, THE CONCRETE NEED NOT BE ON THE JOB.
   B. CONCRETE SLAB AND UNDER-FLOOR INSPECTION:
      a. CONCRETE SLAB AND UNDER-FLOOR INSPECTIONS SHALL BE MADE AFTER IN-SLAB OR UNDER-FLOOR REINFORCING STEEL AND BUILDING SERVICE EQUIPMENT, CONDUIT, PIPING ACCESSORIES AND OTHER ANCILLARY EQUIPMENT ITEMS ARE IN PLACE, BUT BEFORE ANY CONCRETE IS PLACED OR FLOOR SHEATHING INSTALLED, INCLUDING THE SUBFLOOR.
   C. FRAME INSPECTION:
      a. FRAMING INSPECTIONS SHALL BE MADE AFTER THE ROOF DECK OR SHEATHING, ALL FRAMING, FIREBLOCKING AND BRACING ARE IN PLACE AND PIPES, CHIMNEYS AND VENTS TO BE CONCEALED ARE COMPLETE AND THE ROUGH ELECTRICAL, PLUMBING, HEATING WIRES, PIPES AND DUCTS ARE APPROVED.
2. SPECIAL INSPECTIONS - REFER TO THE STATEMENT OF SPECIAL INSPECTION FOR REQUIRED STRUCTURAL SPECIAL INSPECTIONS
3. ADDITIONAL INSPECTIONS REQUIRED BY STRUCTURAL ENGINEER: REFERENCE SPECIFICATIONS

DRAWING INTERPRETATION:

1. DRAWING VIEWS LABELED AS TYPICAL
   A. PARTIAL PLANS, ELEVATIONS, SECTIONS, DETAIL OR SCHEDULES LABELED WITH "TYPICAL" AT THE BEGINNING OF THEIR TITLE SHALL APPLY TO ALL SITUATIONS OCCURRING ON THE PROJECT THAT ARE THE SAME OR SIMILAR TO THE THOSE SPECIFICALLY SHOWN. THE APPLICABILITY OF THE CONTENT OF THESE VIEWS TO LOCATIONS ON THE PLAN CAN BE DETERMINED FROM THE TITLE OF THE VIEW. SUCH VIEWS SHALL APPLY WHETHER OR NOT THEY ARE KEYED IN AT EACH LOCATION. DECISIONS REGARDING APPLICABILITY OF THESE "TYPICAL" VIEWS SHALL BE DETERMINED BY THE STRUCTURAL ENGINEER.
2. COLOR: THESE DRAWINGS ARE INTENDED TO BE VIEWED IN COLOR. IF THE FOLLOWING COLORS ARE NOT RED GREEN BLUE THEN THIS DRAWING SET IS NOT BEING VIEWED AS INTENDED.
3. SCALE: IF THE FOLLOWING LINE IS NOT EXACTLY 1" LONG, THEN THIS SET HAS BEEN SCALED.

1"

REINFORCING STEEL - 03 20 00

1. DETAILING OF CONCRETE REINFORCEMENT BARS AND ACCESSORIES SHALL CONFORM TO THE RECOMMENDATIONS OF THE ACI DETAILING MANUAL ACI 315 AND SP-66 (ACI DETAILING MANUAL).
2. CONCRETE REINFORCEMENT BARS SHALL CONFORM TO ASTM A615, GRADE 60, WITH SUPPLEMENTARY REQUIREMENTS.
3. COMPLETE REINFORCING PLACEMENT DRAWINGS PREPARED IN ACCORDANCE WITH ACI315 SHALL BE REVIEWED BY THE ENGINEER AND AVAILABLE ON THE JOB SITE PRIOR TO & DURING THE PLACING OF CONCRETE.
4. ALL REINFORCING STEEL SHALL BE SUPPORTED AT DESIGNED DEPTH USING PLASTIC OR METALLIC CHAIRS SPACED AT 48" OC IN ALL DIRECTIONS TO SUPPORT FULL LENGTH OF REINFORCEMENT. IF ALTERNATE IS TO BE USED, PROPOSED CHAIR IS TO BE SUBMITTED IN WRITING AND APPROVED BY E.O.R.
5. END HOOKS, DEVELOPMENT LENGTHS, AND SPLICES SHALL CONFORM TO THE REQUIREMENTS OF ACI 318.
6. REINFORCEMENT MAY BE PLACED IN BUNDLES OF NOT MORE THAN TWO W/ THE CLEAR DISTANCE BETWEEN BUNDLES OF REINFORCEMENT OR TENDONS OF 3 INCHES MINIMUM. CONCRETE COVER NOT SPECIFICALLY DETAILED ON THE DRAWINGS SHALL BE IN ACCORDANCE WITH ACI 318.
7. COVERAGE: THE FOLLOWING SHALL BE THE MINIMUM REINFORCEMENT CONCRETE COVERAGE (INCLUDING TENDONS):
   A. CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH .... 3"
   B. CONCRETE EXPOSED TO EARTH OR WEATHER:
      a. NO. 6 AND LARGER .... 2"
      b. NO. 5 BAR AND SMALLER .... 1½"
   C. CONCRETE NOT EXPOSED TO WEATHER OR IN CONTACT WITH GROUND .... ¾"
8. UNO, ALL LAP SPLICES OF REINFORCEMENT IN GROUND SUPPORTED ELEMENTS (GRADE BEAMS, FOOTINGS, MAT FOUNDATIONS) SHALL BE A MINIMUM OF 48Ø, WHERE Ø = THE DIAMETER OF THE BAR, REINFORCEMENT IN ELEVATED STRUCTURES SHALL REFER TO THE TYPICAL LAP SPLICE DETAIL.

REINFORCED CONCRETE - 03 30 00

1. GENERAL
   A. CONCRETE WORK SHALL CONFORM TO THE LATEST ED. OF ACI 301 (SPECIFICATIONS FOR STRUCTURAL CONCRETE) UNO IN THESE CONSTRUCTION DOCUMENTS.
2. MIX DESIGN:
   A. ALL CONCRETE MIXES SHALL BE DESIGNED BY A QUALIFIED REGISTERED ENGINEER. MIX DESIGN DATA RESULTS EITHER COMPLYING WITH THE FIELD EXPERIENCE OR TRIAL MIXTURE METHOD PER ACI 301/318 SHALL BE SUBMITTED FOR EACH CONCRETE MIX. PROPORTIONS OF MATERIALS FOR CONCRETE SHALL BE ESTABLISHED TO:
      a. PROVIDE WORKABILITY AND CONSISTENCY TO PERMIT CONCRETE TO BE WORKED READILY INTO FORMS AND AROUND REINFORCEMENT UNDER CONDITIONS OF PLACEMENT TO BE EMPLOYED, WITHOUT SEGREGATION OR EXCESSIVE BLEEDING.
      b. MEET REQUIREMENTS FOR APPLICABLE EXPOSURE REQUIREMENTS.
      c. MEET OR EXCEED THE REQUIRED F'C.
      d. NOT EXCEED THE MAXIMUM W/C RATIO.
   B. THE CONTRACTOR MUST INDICATE THE PLANNED PLACEMENT METHOD FOR EACH CONCRETE MIX.
   C. WATER MAY NOT BE ADDED TO THE CONCRETE MIX IN THE FIELD TO ADJUST THE SLUMP (RETEMPERING) WITHOUT THE SPECIAL INSPECTOR BEING PRESENT TO CONFIRM THAT IT DOES NOT EXCEED THE W/C RATIO OR DESIGN SLUMP. THE READY-MIX COMPANY MUST INDICATE THE MAXIMUM WATER WITHHELD AT THE PLANT. IF THE AMOUNT, THE W/C RATIO OR DESIGN SLUMP IS EXCEEDED THEN THE CONCRETE SHALL BE REJECTED.
   D. SLUMP TESTS SHALL BE PERFORMED AT THE POINT OF PLACEMENT WITH THE EXCEPTIONS NOTED BELOW:
      a. IF THE POINT OF DELIVERY IS THE SAME AS THE POINT OF PLACEMENT (CONCRETE IS PLACED DIRECTLY FROM TRUCK)
      b. IF THE CONTRACTOR HAS DEVELOPED AN ACCEPTABLE (APPROVED BY SPECIAL INSPECTOR AND EOR) CORRELATION BETWEEN FRESH CONCRETE PROPERTIES AT THE POINT OF DELIVERY AND POINT OF PLACEMENT.
   E. AIR-ENTRAINED CONCRETE SHALL NOT BE USED IN ANY NORMALWEIGHT CONCRETE FLOOR SLAB THAT IS TO RECEIVE A HARD-TROWELED FINISH.
3. CONCRETE MATERIALS:
   A. HYDRAULIC CEMENT:
      a. USE ASTM C150 TYPE I OR TYPE III, EXCEPT WHERE SPECFICALLY INDICATED OTHERWISE IN TABLE BELOW.
   B. FLY ASH:
      a. FLY ASH MAY BE USED TO REPLACE A PORTION OF THE PORTLAND CEMENT, SUBJECT TO THE APPROVAL OF THE ARCHITECT AND STRUCTURAL ENGINEER NOT TO EXCEED THE AMOUNTS LISTED IN THE CONCRETE TABLE.
      b. USE ASTM C618 CLASS C OR F.
   C. NORMAL WEIGHT AGGREGATE:
      a. USE ASTM C33.
      b. MATERIAL CERTIFICATES FROM THE AGGREGATE SUPPLIER MUST BE SUBMITTED WITH THE CONCRETE MIX DESIGN.
      c. RIVER ROCK OR PEA STONE AGGREGATES ARE NOT ACCEPTABLE.
   D. WATER
      a. COMPLY WITH THE REQUIREMENTS OF ASTM C1602.
4. CHLORIDE ION
   A. FOR CORROSION PROTECTION OF REINFORCEMENT IN CONCRETE, MAXIMUM WATER SOLUBLE ION CONCENTRATIONS IN HARDENED CONCRETE AT AGES FROM 28 TO 42 DAYS CONTRIBUTED FROM THE THE INGREDIENTS INCLUDING WATER, AGGREGATES, CEMENTITIOUS MATERIALS, AND ADMIXTURES SHALL NOT EXCEED THE LIMITS INDICATED IN THE TABLE BELOW.
5. PLACEMENT:
   A. CONCRETE SHALL BE PLACED CAREFULLY SO AS NOT TO DEVIATE REINFORCEMENT FROM THE DESIGN LOCATION.
   B. CONCRETE SHALL BE PROPERLY VIBRATED, ESPECIALLY AROUND POST-TENSIONED ANCHORAGES AND CONGESTED AREAS SUCH AS COLUMN JOINTS.
   C. PLACEMENT OF CONCRETE SHALL BE COMPLETED WITHIN 90 MINUTES AFTER THE INTRODUCTION OF THE MIXING WATER, IN ACCORDANCE WITH ASTM C94.
   D. TOLERANCES FOR CONCRETE CONSTRUCTION SHALL CONFORM TO THE LATEST ED. OF ACI 117 (SPECIFICATION FOR TOLERANCES FOR CONCRETE CONSTRUCTION AND MATERIALS).

ELEMENT	f'c	EXPOSURE CATEGORY	MAX CL^-	MAX FLY ASH	MAX W/CM RATIO	MAX COARSE AGG. SIZE	MIN. AIR CONTENT
INTERIOR SLABS-ON-GROUND^A	3,500	F0,S0,P(W)0,C1	0.30	20%	0.45	1"	N/A

CONCRETE FINISHING AND CURING

1. FINISHING: FINISHING OPERATIONS AND BULL FLOATING SHALL BE COMPLETED PRIOR TO THE ACCUMULATION OF BLEED WATER ON THE SURFACE. FINAL FINISHING SHOULD NOT BEGIN UNTIL THE BLEED WATER HAS EVAPORATED AND THE WATER SHEEN HAS DISAPPEARED FROM THE SURFACE. TROWELLING THE WET SURFACE WILL WEAKEN IT AND CAN RESULT IN SURFACE CRAZING AND DUSTING. REFER TO ARCHITECTURE FOR FINAL FINISHING REQUIREMENTS (STEEL TROWEL, BROOM FINISH, ETC.).
2. EXCESSIVE BLEED WATER REMOVAL: BLEEDING (FREE SURFACE WATER) OCCURS AS AGGREGATES SETTLE IN THE PLACED CONCRETE, DISPLACING WATER TO THE SURFACE. IF ALLOWED TO REMAIN ON THE SURFACE, IT DILUTES THE CEMENT CONTENT, SIGNIFICANTLY REDUCING THE STRENGTH NEAR THE SURFACE. THE CONTRACTOR SHALL REMOVE BLEED WATER. ONE METHOD OF REMOVING BLEED WATER IS TO DRAG THE SURFACE WITH A GARDEN HOSE.
3. CONTROL JOINTS (SAW CUTS) IF REQUIRED, SHALL BE MADE AS SOON AS THE CONCRETE CAN SUPPORT THE WEIGHT OF WORKER AND THE EQUIPMENT.
4. CURING: IMMEDIATELY AFTER FINISHING THE SLAB, THE SLAB MUST BE CURED FOR A MINIMUM OF 7 DAYS BY EITHER:
   A. APPLYING A WATER-BASED DISSIPATING RESIN TYPE CURING COMPOUND WHICH CHEMICALLY BREAKS DOWN AFTER APPROXIMATELY 4 WEEKS. MEMBRANE FORMING COMPOUND SHALL ADHERE TO ASTM C 309, TYPE O OR 1D, CLASS B. THE COMPOUND SHALL BE APPLIED IN TWO COATS, EACH AT RIGHT ANGLES TO THE OTHER TO ENSURE A TIGHTLY SEALED SURFACE.
   B. WET-CURED BY KEEPING THE SURFACE WET AFTER THE CONCRETE HAS SET AND FINISHING IS COMPLETE.

CONCRETE CRACKS

1. EVEN WITH PROPER DESIGN AND CONSTRUCTION ALL CONCRETE WILL CRACK. PLASTIC SHRINKAGE CRACKS CONTINUE TO OPEN AS THE SLAB AGES UP TO APPROXIMATELY ONE YEAR, AND REACH 50% OF THEIR FINAL SIZE IN APPROXIMATELY 30 DAYS. MANY PLASTIC SHRINKAGE CRACKS ARE VERY SMALL WHICH MAKE THEM BARELY NOTICEABLE AND INCONSEQUENTIAL TO THE STRUCTURAL PERFORMANCE OF THE CONCRETE. CRACKS WIDER THAN APPROXIMATELY 0.06" ARE LIKELY INDICATIVE OF CONCRETE THAT DID NOT ADHERE TO THE CONCRETE MIX REQUIREMENTS, PLACEMENT, FINISHING AND CURING REQUIREMENTS. IN ADDITION TO BEING VISIBLY OBJECTIONABLE, IF THESE CRACKS EXIST IN REGULAR CONSISTENCY, THEY MAY REDUCE THE STRUCTURAL PERFORMANCE OF THE CONCRETE AND REQUIRE STRUCTURAL REPAIR (FILL CRACKS WITH EPOXY PRODUCT) OR REPLACEMENT.
2. PLASTIC SHRINKAGE CRACKS: OCCUR SOON AFTER THE CONCRETE IS PLACED AND WHILE IT IS STILL PLASTIC. IT IS CAUSED BY OVERLY RAPID DRYING OF THE SURFACE, USUALLY DUE TO HOT WEATHER, HIGH WIND, LOW HUMIDITY, OR A DELAY IN APPLYING THE CURING MEMBRANE.

RETEMPERING (ADDING WATER TO CONCRETE ON-SITE)

1. WATER SHALL NOT BE ADDED TO THE MIX TRUCKS ON THE JOB SITE IN EXCESS OF THE VOLUME OF WATER THAT IS SPECIFICALLY INDICATED TO HAVE BEEN WITHHELD FROM THE READY MIX SUPPLIER.
2. PRIOR TO ADDING WATER, THE CONTRACTOR SHALL CONFIRM THAT THE MIX IS NOT ALREADY WITHIN TOLERANCE ON SLUMP. WATER SHALL ONLY BE ADDED IF THE SLUMP IS BELOW TOLERANCE AND THE READY MIX SUPPLIER HAD INDICATED THE VOLUME OF WITHHELD (TRIM) WATER.

FLOOR FLATNESS AND LEVELNESS

1. SPECIFIED OVERALL VALUES FOR FLATNESS (SOF_F) AND LEVELNESS (SOF_L) SHALL CONFORM TO THE VALUES LISTED BELOW FOR THE FLOOR SURFACE CLASSIFICATION NOTED FOR EACH SLAB CATEGORY NOTED.

CLASSIFICATION	SOF_F	SOF_L	TYPICAL APPLICABLIITY OF CLASSIFICATION
A. CONVENTIONAL	20	15	SLABS IN NONPUBLIC AREAS, MECHANICAL ROOMS, SURFACES TO HAVE THICK-SET TILE OR A TOPPING, AND PARKING STRUCTURES
B. MODERATELY FLAT	25	20	CARPETED AREAS
C. FLAT	35	25	INDUSTRIAL SLABS, EXPOSED SLABS IN PUBLIC SPACES, SLABS TO RECEIVE THIN-SET FLOORING
D. VERY FLAT	45	35	ICE OR ROLLER RINKS: GYMNASIUM FLOORS SCHEDULED TO RECEIVE WOOD PLAYING FLOOR
E. SUPER FLAT	60	40	MOVIE OR TELEVISION STUDIOS

2. MINIMUM LOCAL VALUES FOR FLATNESS (MLF_F) AND LEVELNESS (MLF_L) SHALL EQUAL 3/5 OF THE SOF_F AND SOF_L VALUES, RESPECTIVELY, UNLESS NOTED OTHERWISE. <**FOR INDUSTRIAL SLABS, MLF_F SHALL BE 23 AND MLF_L SHALL BE 17.** >THE MLF_F AND MLF_L VALUES SHALL APPLY TO THE MINIMUM AREAS BOUNDED BY THE COLUMN LINES AND HALF-COLUMN LINES, OR THE MINIMUM AREAS BOUNDED BY THE CONSTRUCTION AND CONTRACTION JOINTS, WHICHEVER ARE THE SMALLER AREAS.
3. THE SOF_L AND MFL_L TOLERANCE VALUES SHALL APPLY ONLY TO LEVEL SLABS-ON-GROUND OR TO LEVEL, UNCAMBERED SUSPENDED SLABS THAT ARE SHORED SUCH THAT IT CANNOT DEFLECT FROM THE TIME THE FLOOR IS PLACED TO THE TIME IT IS MEASURED.
4. SLABS SPECIFIED TO SLOPE SHALL HAVE A TOLERANCE FROM THE SPECIFIED SLOPE OF 3/8" IN 10 FEET AT ANY POINT.

STRUCTURAL STEEL - 05 12 00

1. GENERAL
   A. ALL STRUCTURAL STEEL IS TO BE FABRICATED AND ERECTED IN ACCORDANCE WITH THE LATEST EDITION OF AISC 360 (SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS).
   B. PROTECTION
      a. STEEL LOCATED WITHIN PERMANENTLY CONDITIONED, NON-CORROSIVE SPACE AND WITHIN THE BUILDING ENVELOPE DOES NOT REQUIRE SHOP PAINT UNLESS STEEL WILL BE EXPOSED TO THE ELEMENTS FOR A YEAR OR MORE DURING CONSTRUCTION.
      b. ALL STEEL LOCATED IN UNCONDITIONED SPACE AND/OR OUTSIDE THE BUILDING ENVELOPE SHALL EITHER BE HOT-DIP GALVANIZED OR PAINTED WITH A ZINC RICH PAINT. THE CONTRACTOR SHALL PREPARE THE STEEL IN ACCORDANCE WITH THE GALVANIZING OR PAINT REQUIREMENTS.
      c. WHERE GALVANIZATION IS REQUIRED, STRUCTURAL STEEL MEMBERS, FABRICATIONS, AND WELDED ASSEMBLIES SHALL BE GALVANIZED AFTER FABRICATION BY HOT DIP PROCESS IN ACCORDANCE WITH ASTM A123. WEIGHT OF ZINC COATING SHALL CONFORM TO THE REQUIREMENTS SPECIFIED UNDER "WEIGHT OF COATING" IN ASTM A123 OR ASTM A386, AS APPLICABLE. THE AFFECTED PORTIONS OF FIELD WELDED GALVANIZED ASSEMBLIES SHALL BE FIELD PAINTED WITH ZINC RICH CORROSION RESISTANT PAINT.
      d. CLOSED SHAPES SUCH AS TUBES AND PIPES TO BE GALVANIZED THAT REQUIRE A HOLE FOR FABRICATION SHALL HAVE THE HOLE EITHER FILLED WITH WELD MATERIAL AND GALVANIZATION REPAIRED OR SEALED WITH EXTERIOR GRADE SEALANT APPROPRIATE FOR THAT USE.
   C. STRUCTURAL STEEL MEMBERS TO RECEIVE FIREPROOFING SHALL NOT BE PRIMED NOR PAINTED. FIREPROOFING MATERIAL THICKNESS SHALL BE INCREASED AS REQUIRED FOR STEEL MEMBERS NOT CONFORMING TO THE MINIMUM SIZES INDICATED IN THE U.L. FIRE RESISTANCE DIRECTORY-VOLUME 1 AND FOR STEEL MEMBERS DETERMINED UNRESTRAINED.
   D. BEAMS SHALL BE CAMBERED UPWARD WHERE SHOWN ON THE CONTRACT DOCUMENTS. WHERE NO UPWARD CAMBER IS INDICATED, ANY MILL CAMBER SHALL BE DETAILED UPWARD IN THE BEAMS.
   E. THE CONTRACTOR SHALL NOTIFY STRUCTURAL ENGINEER OF ANY MISFABRICATED STRUCTURAL STEEL PRIOR TO ERECTION OF SAME.
   F. PENETRATIONS SHALL NOT BE CUT IN STRUCTURAL STEEL MEMBERS UNLESS SO INDICATED IN THE DRAWINGS OR AS REVIEWED BY THE ENGINEER.
2. MATERIAL
   A. ALL HOT ROLLED STEEL PLATES, SHAPES AND BARS SHALL BE NEW STEEL CONFORMING TO ASTM SPECIFICATION A6, LATEST ED.
      a. W-SHAPES: A992
      b. CHANNELS, ANGLES, PLATES: A36
      c. RECTANGULAR HSS: A500, GR.C (F_Y = 50 KSI)
      d. ROUND HSS: A500, GR.B (F_Y = 42 KSI)
3. SUBMITTALS
   A. STRUCTURAL STEEL SUBMITTALS MUST BE ACCOMPANIED BY THE SDS/2 OR TEKLA MODEL WHICH WILL BE USED BY THE DESIGN TEAM AS A VISUAL AID TO THE SHOP DRAWINGS
   B. SHOP DRAWINGS MUST BE PRODUCED IN ACCORDANCE WITH THE AISC CODE OF STANDARD PRACTICE.
4. CONNECTIONS
   a. CONNECTION DESIGN: ALL STEEL CONNECTIONS NOT FULLY DETAILED WITHIN THESE DRAWINGS SHALL BE DESIGNED BY A CONNECTION ENGINEER TO BE HIRED BY THE CONTRACTOR. THE CONTRACTOR'S CONNECTION ENGINEER SHALL BE A PROFESSIONAL ENGINEER FAMILIAR WITH THE DESIGN OF SUCH ELEMENTS AND SHALL BE LICENSED TO PRACTICE ENGINEERING IN THE STATE IN WHICH THE PROJECT IS BEING CONSTRUCTED. CONNECTION DESIGNS AND DETAILS SHOWN ON THE DRAWINGS ARE CONCEPTUAL. THE FINAL CONFIGURATION, PLATE AND ANGLE THICKNESS, NUMBER OF BOLTS ETC. SHALL BE DESIGNED BY THE CONNECTION ENGINEER.
   b. STRUCTURAL BOLTS: ALL BOLTS IN STRUCTURAL CONNECTION SHALL CONFORM TO ASTM A325 TYPE 1, UNLESS NOTED OTHERWISE ON THE DRAWINGS.
   c. THREADED ROUND STOCK: THREADED RODS SHALL CONFORM TO ASTM F1554 GR55 S1.
   d. WELDING: UNLESS NOTED OTHERWISE, ELECTRODES FOR WELDING SHALL CONFORM TO E70XX (SMAW), F7XX-EXX (SAW), ER70S-X (GMAW) OR E8XT-X (FCAW).
      - FIELD WELDING TO BE DONE BY CERTIFIED WELDERS FOR STRUCTURAL STEEL. CONTINUOUS INSPECTION BY A SPECIAL INSPECTOR IS REQUIRED.
      - SHOP WELDS MUST BE PERFORMED IN FABRICATION SHOP THAT IS CERTIFIED BY THE AUTHORITY HAVING JURISDICTION.
   e. ANCHOR RODS: ALL ANCHOR RODS SHALL CONFORM TO ASTM F1554. THE TYPICAL SIZE SHALL BE 3/4"Ø AND SHALL BE EMBEDDED A MINIMUM OF 1'-0" WITH A HEAVY HEX NUT AT THE EMBEDDED UNLESS NOTED OTHERWISE. ANCHOR RODS SHALL BE GR. 55 S1 UNO.
   f. GROUT: GROUT BELOW STRUCTURAL STEEL BASE PLATES SHALL BE NON-METALLIC, NON-SHRINK GROUT WITH A MINIMUM COMPRESSIVE STRENGTH OF 6,000 PSI WHEN BEARING ON A 3,000 PSI CONCRETE OR LESS.
   g. SPLICING STEEL MEMBERS WHERE NOT DETAILED ON THE DRAWINGS IS PROHIBITED WITHOUT WRITTEN APPROVAL FROM EOR.
   h. HEADED CONCRETE STUD ANCHORS ("HSA") SHALL BE NELSON OR KSM HEADED CONCRETE ANCHORS (OR APPROVED ALTERNATIVE), AND SHALL CONFORM TO ASTM A108, GRADES C-1010 THROUGH C-1020. ANCHORS SHALL BE AUTOMATICALLY END WELDED WITH SUITABLE STUD WELDING EQUIPMENT IN THE SHOP OR IN THE FIELD. WELDING SHALL BE IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE NELSON STUD WELDING COMPANY OR THE KSM WELDING SYSTEMS COMPANY.
   i. DEFORMED BAR ANCHORS ("DBA") SHALL BE NELSON OR KSM DEFORMED BAR ANCHORS (OR APPROVED ALTERNATIVE), AND SHALL BE MADE FROM COLD DRAWN WIRE PER ASTM A496 CONFORMING TO ASTM A108 WITH A MINIMUM YIELD STRENGTH OF 70 KSI. ANCHORS SHALL BE AUTOMATICALLY END WELDED WITH SUITABLE WELDING EQUIPMENT IN THE SHOP OR IN THE FIELD. WELDING SHALL BE IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE NELSON STUD WELDING COMPANY OR THE KSM WELDING SYSTEMS COMPANY.
   j. ALL FILLET WELDS SHALL HAVE A MINIMUM SIZE PER THE FOLLOWING, UNO IN SPECIFIC DETAILS.

MATERIAL THICKNESS OF THINNER PART JOINED "T"	SIZE OF FILLET WELD
T = 3/16	3/16
T= 1/4	3/16
T = 5/16	1/4
T = 3/8	5/16
T = 7/16	3/8
T = 1/2	7/16
T = 3/4	1/2
T > 3/4"	5/8

WOOD FRAMING SPECIFICATIONS (06 10 00):

1. WOOD FRAMING SIZES, FIRESTOPS, ANCHORAGE, FURRING AND CONNECTORS NOT SHOWN ON THE CONSTRUCTION DOCUMENTS SHALL AT A MINIMUM ADHERE TO THE PRESCRIPTIVE DESIGN PER THE BUILDING CODE.
2. STRUCTURAL LUMBER IN *PERMANENTLY CONDITIONED SPACE* SHALL MEET OR EXCEED THE FOLLOWING GRADES, PRODUCT LINE OR CRITERIA:
   A. STUDS:
      a. STUD GRADE SOUTHERN YELLOW PINE
      b. STUD GRADE DOUGLAS FIR-LARCH
      c. VERTICAL STUD USE ONLY CERTIFIED FINGER-JOINTED OF HEM-FIR, SOUTHERN PINE OR DOUGLAS-FIR
         - HRA DESIGNATION (HEAT RESISTANT ADHESIVE) REQUIRED FOR STUDS IN FIRE-RESISTANCE RATED ASSEMBLIES.
   B. JOISTS:
      a. NO.2 GRADE SOUTHERN YELLOW PINE
      b. NO.2 GRADE DOUGLAS FIR-LARCH
   C. LAMINATED VENEER LUMBER (LVL) BEAM / HEADER / GIRDER
      a. WEYERHAEUSER 2.0E MICROLAM LVL
      b. BOISE CASCADE VERSA-LAM 2.0E 3100Fb
   D. GLUED LAMINATED (GLULAM) BEAM / HEADER / GIRDER:
      a. 3½" & 5½" WIDE: ANTHONY POWER BEAM 3000Fb - 2.1E - 300Fv
      b. 7" WIDE: ANTHONY POWER BEAM 2800Fb - 2.1E - 300Fv
   E. RAFTERS:
      a. NO.2 GRADE SOUTHERN YELLOW PINE
      b. NO.2 GRADE DOUGLAS FIR-LARCH
      c. NO.2 STRUCTURAL FINGER-JOINTED OF HEM-FIR, SOUTHERN PINE OR DOUGLAS FIR
         - HRA DESIGNATION (HEAT RESISTANT ADHESIVE) REQUIRED FOR STUDS IN FIRE-RESISTANCE RATED ASSEMBLIES
   F. POSTS:
      a. DIMENSIONAL LUMBER/TIMBERS: NO.2 GRADE SOUTHERN YELLOW PINE OR DOUGLAS FIR-LARCH
      b. PARALLEL STRAND LUMBER (PSL): TRUSJOIST 1.8E PARALLAM PSL POSTS
   G. PLATES:
      a. NO.3 GRADE SOUTHERN YELLOW PINE
      b. NO.3 GRADE DOUGLAS FIR-LARCH
   H. BLOCKING
      a. NO.3 GRADE SOUTHERN YELLOW PINE
      b. NO.3 GRADE DOUGLAS FIR-LARCH
3. STRUCTURAL LUMBER *NOT IN PERMANENTLY CONDITIONED SPACE* SHALL ADHERE TO THE FOLLOWING SPECIFICATIONS:
   A. DIMENSION LUMBER :
      a. SAME SPECIES AND GRADES AS LISTED ABOVE, HOWEVER THEY MUST BE PRESSURE-TREATED.
   B. GLUED LAMINATED BEAM / HEADERS / GIRDER:
      a. POWER PRESERVED GLULAM BEAM (24F-V5M1/SP) TREATED WITH COPPER GUARD AT 0.04 PCF OR CLEAR-GUARD AT 0.055 PCF.
4. WOOD STRUCTURAL PANEL
   A. WOOD STRUCTURAL PANELS, WHEN USED STRUCTURALLY (INCLUDING THOSE USED FOR SIDING, ROOF AND WALL SHEATHING, SUBFLOORING, DIAPHRAGMS AND BUILT-UP MEMBERS), SHALL BE APA PERFORMANCE-RATED CONFORMING TO DOC PS 1, DOC PS 2 OR ANSI/APA PRP 210. EACH PANEL OR MEMBER SHALL BE IDENTIFIED FOR GRADE, BOND CLASSIFICATION, AND PERFORMANCE CATEGORY BY THE TRADEMARKS OF AN APPROVED TESTING AND GRADING AGENCY. THE PERFORMANCE CATEGORY VALUE SHALL BE USED AS THE "NOMINAL PANEL THICKNESS" OR "PANEL THICKNESS".
      a. SUBFLOOR: 23/32 PERFORMANCE CATEGORY APA RATED STURD-I-FLOOR, 24 o.c., EXPOSURE 1
      b. SHEATHING/DECKING: 7/16 (UNLESS NOTED OTHERWISE, REF SHEAR WALL SCHEDULE) PERFORMANCE CATEGORY APA RATED SHEATHING, 32/16, EXPOSURE 1
   B. WOOD STRUCTURAL PANELS WHEN PERMANENTLY EXPOSED IN OUTDOOR APPLICATIONS SHALL BE OF EXTERIOR TYPE, EXCEPT THAT WOOD STRUCTURAL PANEL ROOF SHEATHING EXPOSED TO THE OUTDOORS ON THE UNDERSIDE IS PERMITTED TO BE EXPOSURE 1 TYPE.
5. ALL LUMBER SHALL BE KILN DRIED WITH A MAXIMUM MOISTURE CONTENT OF 19%.
6. ALL GLUED-LAMINATED (GLULAM) MEMBERS SHALL ADHERE TO ANSI A 190.1 & ASTM D 3737 AND BE MANUFACTURED BY ANTHONY POWER BEAM (3000Fb - 2.1E).
7. ALL LUMBER SHALL BE IDENTIFIED BY THE GRADE MARK OF A LUMBER GRADING OR INSPECTION AGENCY THAT HAS BEEN APPROVED BY AN ACCREDITATION AGENCY THAT COMPLIED WITH DOC PS 20.
8. ALL WOOD IN CONTACT WITH CONCRETE OR EXPOSED TO WEATHER SHALL BE PRESERVATIVE TREATED WOOD. ALL FASTENERS INCLUDING ANCHOR BOLTS, POWER-ACTUATED FASTENERS, NAILS, CLIPS, AND HANGERS ATTACHED TO PRESERVATIVE TREATED SHALL BE APPROVED FOR THE ENVIRONMENT.
9. NAILS AND STAPLES
   A. NAILS AND STAPLES SHALL CONFORM TO REQUIREMENTS OF ASTM F 1667. NAILS USED FOR FRAMING AND SHEATHING CONNECTIONS SHALL HAVE MINIMUM AVERAGE BENDING YIELD STRENGTHS AS FOLLOWS: 80 KIPS PER SQUARE INCH (KSI) (551 MPA) FOR SHANK DIAMETERS LARGER THAN 0.177 INCH (4.50 MM) BUT NOT LARGER THAN 0.254 INCH (6.45 MM), 90 KSI (620 MPA) FOR SHANK DIAMETERS LARGER THAN 0.142 INCH (3.61 MM) BUT NOT LARGER THAN 0.177 INCH (4.50 MM) AND 100 KSI (689 MPA) FOR SHANK DIAMETERS OF AT LEAST 0.099 INCH (2.51 MM) BUT NOT LARGER THAN 0.142 INCH (3.61 MM).
10. FASTENERS FOR FIRE-RETARDANT TREATED WOOD SHALL BE HOT-DIPPED GALVANIZED STEEL OR STAINLESS STEEL.

WOOD TRUSS SPECIFICATIONS (06 17 60):

1. TRUSSES SHALL BE DESIGNED BY THE TRUSS MANUFACTURER IN ACCORDANCE WITH THE TRUSS PLATE INSTITUTE "NATIONAL DESIGN STANDARD FOR METAL PLATE CONNECTED WOOD TRUSS CONSTRUCTION" (ANSI/TPI 1-2014) AND SHALL CONFORM TO IBC §2303.4. THE DESIGN SHALL INCLUDE ALL TEMPORARY AND PERMANENT BRACING. TEMPORARY BRACING MAY REMAIN IN-PLACE IF IT DOES NOT INTERFERE WITH ARCHITECTURAL REQUIREMENTS.
2. SUBMITTALS: THE TRUSS MANUFACTURER SHALL PREPARE AND SUBMIT A TRUSS SUBMITTAL PACKAGE (PRODUCT DATA AND SHOP DRAWINGS) FOR THE WOOD TRUSSES TO THE CONTRACTOR. THE CONTRACTOR AFTER REVIEWING AND APPROVING THE TRUSS SUBMITTAL PACKAGE, SHALL FORWARD THE TRUSS SUBMITTAL PACKAGE TO DUDLEY FOR REVIEW. DUDLEY WILL REVIEW THE TRUSS SUBMITTAL PACKAGE FOR GENERAL CONFORMANCE WITH THE STRUCTURAL DRAWINGS. TRUSS SUBMITTAL PACKAGES SHALL BE PREPARED, SIGNED AND SEALED BY AN ENGINEER LICENSED IN THE STATE IN WHICH THE PROJECT IS LOCATED. THE TRUSS SUBMITTAL PACKAGE SHALL INCLUDE AT A MINIMUM:
   A. PRODUCT DATA AND ICC APPROVAL FOR FRAMING MEMBERS AND FASTENERS THAT HAVE BEEN DESIGNED BY OTHERS.
   B. SHOP DRAWINGS SHALL INCLUDE AT A MINIMUM:
      a. PROJECT NAME, LOCATION AND BUILDING CODE
      b. LAYOUTS INCLUDING TEMPORARY AND PERMANENT BRIDGING REQUIREMENTS.
      c. PROFILES INCLUDING ALL JOINTS, BEARING POINTS, DEFLECTION RATIOS, AND REACTIONS.
      d. BLOCKING REQUIREMENTS
      e. REQUIRED BEARING WIDTHS
      f. NUMBER OF PLIES IF GREATER THAN ONE
      g. LUMBER SPECIES AND GRADE
      h. SIZE, GAUGE AND LOCATION OF PLATES
      i. TRUSS TO TRUSS HARDWARE REQUIREMENTS
      j. NAME AND TRADEMARK OF PLATE MFR AND TRUSS FABRICATOR
      k. CAMBER
   C. CALCULATIONS INCLUDING BUT NOT LIMITED TO:
      - BUILDING CODE
      - DESIGN LOADS
      - STRESS REDUCTION FACTORS USED FOR PLATES
3. DRAG TRUSS SHALL BE PROVIDED ABOVE AND BELOW ALL INTERIOR SHEAR WALLS. THE DRAG TRUSSES SHALL BE DESIGNED TO SUPPORT AN ALLOWABLE LINEAR LOAD EQUAL TO THAT OF THE SHEAR WALL (IF SHEAR WALLS ARE ABOVE AND BELOW THE LARGE ALLOWABLE SHEAR LOAD SHALL APPLY).
4. TRUSS RESTRAINT/BRACING METHODS SHALL BE IN ACCORDANCE WITH BCSI-B3 (PERMANENT RESTRAINT/BRACING OF CHORDS AND WEB MEMBERS) UNLESS NOTED OTHERWISE
5. TRUSS DEFLECTION LIMITS: TRUSSES SHALL BE LIMITED TO THE FOLLOWING DEFLECTION LIMITS:

A. FLOOR TRUSSES	LIVE LOAD (L/360)	TOTAL LOAD (L/240)
B. PITCHED ROOF TRUSS :	LIVE LOAD (L/240)	TOTAL LOAD (L/180)
C. SHALLOW (< = 4 : 12) PITCHED ROOF TRUSSES :	LIVE LOAD (L/360)	TOTAL LOAD (L/240)

6. CAMBER SHALL BE BUILT INTO ROOF TRUSSES TO COMPENSATE FOR VERTICAL DEFLECTION. THE CAMBER SHALL BE LARGEST AT THE MID-SPAN OF THE TRUSS.
   A. PITCHED ROOF TRUSS: 1.00 X DEFLECTION FROM ACTUAL DEAD LOAD.
7. TRUSSES SPANNING 60 FEET OR FURTHER
   A. THE TRUSS MFR. SHALL CONTRACT WITH A QUALIFIED REGISTERED DESIGN PROFESSIONAL FOR THE DESIGN OF THE TEMPORARY INSTALLATION RESTRAINT/BRACING AND THE PERMANENT INDIVIDUAL TRUSS MEMBER RESTRAINT/BRACING FOR ALL TRUSSES WITH CLEAR SPANS 60 FEET OR GREATER.

WOOD SHRINKAGE

A. WOOD SHRINKAGE:
   a. REGARDLESS OF THE BUILDING TYPE, BUILDING DESIGNS MUST COMPENSATE FOR THE FACT THAT WOOD SHRINKS AS IT DRIES. SHRINKAGE CONTINUES UNTIL WOOD REACHES IT EQUILIBRIUM MOISTURE CONTENT (EMC), WHICH AVERAGES 8-12% OF MOISTURE CONTENT FOR MOST STRUCTURES IN THE U.S.. THE CONTRACTOR SHALL PREPARE AND ENFORCE A PLAN TO MINIMIZE MOISTURE IN THE WOOD FRAMING. DRYWALL SHALL NOT BE INSTALLED UNTIL THE MOISTURE CONTENT OF ALL WOOD FRAMING IS BELOW 15%.
   b. THE CONSTRUCTION OF A WOOD FRAMED BUILDING REQUIRES AN UNDERSTANDING OF FRAMING TOLERANCES, SHRINKAGE, AND INTERACTION WITH DISSIMILAR MATERIALS.
   c. ROUGH OPENINGS IN EXTERIOR WALLS SHALL BE UPSIZED APPROXIMATELY 1/2" TO ACCOMMODATE SHRINKAGE.
   d. PROVIDE 1/8" WIDE JOINTS IN SHEATHING.
   e. THE CONTRACTOR SHALL INCORPORATE DIFFERENTIAL VERTICAL MOVEMENT INTO THE DESIGN OF THE PLUMBING SYSTEM INCLUDING VERTICAL EXPANSION JOINTS, GAPS AROUND HORIZONTAL PLUMBING RUNS, AVOIDING HORIZONTAL PLUMBING RUNS IN LOAD BEARING STUDS.
   f. CARE SHALL BE TAKEN DURING CONSTRUCTION TO LIMIT THE MOISTURE EXPOSURE OF THE LUMBER. IF THE LUMBER DOES BECOME WET, MEASURES SHALL BE TAKEN TO BRING THE MOISTURE CONTENT BACK TO OR BELOW 15% PRIOR TO INSTALLING ARCHITECTURAL FINISHES.
   g. THE APPROXIMATE WOOD SHRINKAGE ASSUMING ALL LUMBER IS SOUTHERN PINE WITH AN INSTALLED MOISTURE CONTENT OF 19% AND A FINAL MOISTURE CONTENT OF 10% IS AS FOLLOWS:
      - 3rd STORY [0.168"]
         - BOTTOM PLATE: 0.168"
         - FLOOR TRUSS: 0.067"
         - DOUBLE TOP PLATE: 0.067"
      - 2ND STORY [0.168"]
         - BOTTOM PLATE: 0.168"
         - FLOOR TRUSS: 0.067"
         - DOUBLE TOP PLATE: 0.067"
      - 1ST STORY [0.034"]
         - BOTTOM PLATE: 0.034"
      - TOTAL ESTIMATED SHRINKAGE: **[0.370"]**

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Date	Description
06/02/2022	Review Before Permit
08/26/2022	PERMIT REVISIONS

TYPICAL GENERAL NOTES

MARCO POLO - 101 33RD STREET - CITY OF BRYAN TOWNSITE, BLOCK 96, LOT 3-5 & PT OF 6 & PT OF ALLEY - BRYAN, TX 77803

S0.0

FOR CONSTRUCTION

STRUCTURAL STATEMENT OF SPECIAL INSPECTIONS & TESTING

1. SPECIAL INSPECTIONS AND STRUCTURAL TESTING SHALL BE PROVIDED BY AN INDEPENDENT AGENCY EMPLOYED BY THE OWNER FOR THE ITEMS IDENTIFIED IN THIS SECTION AND IN OTHER AREAS OF THE APPROVED CONSTRUCTION PLANS AND SPECIFICATIONS. (SEE IBC CHAPTER 17).
2. THE NAMES AND CREDENTIALS OF THE SPECIAL INSPECTORS TO BE USED SHALL BE SUBMITTED TO THE BUILDING OFFICIAL FOR APPROVAL. DUDLEY ENGINEERING CAN BE SOLICITED TO PROVIDE SPECIAL INSPECTIONS. WE RECOMMEND THAT THE PROJECT GEOTECHNICAL ENGINEER BE SOLICITED TO PROVIDE SPECIAL INSPECTIONS FOR THE SOILS AND TESTING FOR THE SOIL AND CONCRETE.
3. DUTIES OF THE SPECIAL INSPECTOR:
   A. THE SPECIAL INSPECTOR SHALL REVIEW ALL WORK LISTED BELOW FOR CONFORMANCE WITH THE APPROVED CONSTRUCTION PLANS AND SPECIFICATIONS AND THE IBC.
   B. THE SPECIAL INSPECTOR SHALL FURNISH SPECIAL INSPECTION REPORTS TO THE EOR, CONTRACTOR, OWNER AND BUILDING OFFICIAL ON A WEEKLY BASIS, OR MORE FREQUENTLY AS REQUIRED BY THE BUILDING OFFICIAL. ALL ITEMS NOT IN COMPLIANCE SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION, AND IF UNCORRECTED, TO THE EOR AND THE BUILDING OFFICIAL.
   C. ONCE CORRECTIONS HAVE BEEN MADE BY THE CONTRACTOR, THE SPECIAL INSPECTOR SHALL SUBMIT A FINAL SIGNED REPORT TO THE BUILDING OFFICIAL STATING THAT THE WORK REQUIRING SPECIAL INSPECTION WAS, TO THE BEST OF THE SPECIAL INSPECTOR'S KNOWLEDGE, IN CONFORMANCE WITH THE APPROVED CONSTRUCTION PLANS AND SPECIFICATIONS AS WELL AS THE APPLICABLE WORKMANSHIP PROVISIONS OF THE IBC.
4. DUTIES AND RESPONSIBILITIES OF THE CONTRACTOR:
   A. THE CONTRACTOR SHALL SUBMIT A WRITTEN STATEMENT OF RESPONSIBILITY TO THE OWNER AND THE BUILDING OFFICIAL PRIOR TO THE COMMENCEMENT OF WORK. IN ACCORDANCE WITH IBC 1704.4, THE STATEMENT OF RESPONSIBILITY SHALL CONTAIN ACKNOWLEDGEMENT OF THE SPECIAL INSPECTION REQUIREMENTS CONTAINED WITHIN THIS "STATEMENT OF SPECIAL INSPECTIONS".
   B. THE CONTRACTOR SHALL NOTIFY THE RESPONSIBLE SPECIAL INSPECTOR THAT WORK IS READY FOR INSPECTION AT LEAST ONE WORKING DAY (24 HOURS MINIMUM) BEFORE SUCH INSPECTION IS REQUIRED.
   C. ALL WORK REQUIRING SPECIAL INSPECTION SHALL REMAIN ACCESSIBLE AND EXPOSED UNTIL IT HAS BEEN OBSERVED BY THE SPECIAL INSPECTOR.
5. PLEASE SEE THE "SPECIAL INSPECTION SCHEDULE" FOR THE TYPES, EXTENTS AND FREQUENCY OF SPECIFIC ITEMS REQUIRING SPECIAL INSPECTIONS AND STRUCTURAL TESTS AS PART OF THIS PROJECT.
6. REFER TO ARCHITECTURAL AND/OR MEP DRAWINGS FOR ADDITIONAL SPECIAL INSPECTION REQUIRED. DUDLEY ENGINEERING HAS LISTED THE STRUCTURAL SPECIAL INSPECTIONS AND TESTING.

WIND-RESISTING COMPONENTS (1705.11.3)

PERIODIC SPECIAL INSPECTION IS REQUIRED FOR FASTENING OF THE FOLLOWING SYSTEMS AND COMPONENTS:
1. ROOF COVERING, ROOF DECK AND ROOF FRAMING CONNECTIONS.
2. EXTERIOR WALL COVERING AND WALL CONNECTIONS TO ROOF AND FLOOR DIAPHRAGMS AND FRAMING

REQUIRED VERIFICATION AND INSPECTION OF GRADING AND DRAINAGE FOR FOUNDATIONS ON EXPANSIVE SOILS

VERIFICATION AND INSPECTION	CONTINUOUS	PERIODIC	REQUIRED
AFTER BUILDING CONSTRUCTION AND LANDSCAPING HAVE BEEN COMPLETED, FINAL GRADES SHALL BE VERIFIED TO DOCUMENT REQUIRED DRAINAGE	-	X	YES
AFTER BUILDING CONSTRUCTION AND LANDSCAPING HAVE BEEN COMPLETED, DOWNSPOUTS SHALL BE INSPECTED TO CONFIRM CONFORMANCE.	-	X	YES
GRADES AROUND THE STRUCTURE SHALL BE PERIODICALLY INSPECTED AND ADJUSTED AS PART OF THE BUILDING'S MAINTENANCE PROGRAM	-	X	YES
PLUMBING LEAK "HYRDROSTATIC" TEST PERFORMED BY A LICENSED PLUMBER. TEST TO OCCUR AFTER ROUGH PLUMBING INSTALL	-	X	YES
WHERE PAVING/FLATWORK ABUT THE FOUNDATION, A MAINTENANCE PROGRAM SHALL BE ESTABLISHED TO EFFECTIVELY SEAL AND MAINTAIN JOINTS AND PREVENT SURFACE WATER INFILTRATION.	-	X	YES

REQUIRED VERIFICATION AND INSPECTION OF SOILS (TABLE 1705.6)

VERIFICATION AND INSPECTION	CONTINUOUS	PERIODIC	REQUIRED
VERIFY MATERIALS BELOW SHALLOW FOUNDATIONS ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY	-	X	YES
VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIALS	-	X	YES
PERFORM CLASSIFICATION AND TESTING OF COMPACTED MATERIALS	-	X	YES
VERIFY USE OF PROPER MATERIALS, DENSITIES AND LIFT THICKNESS DURING PLACEMENT AND COMPACTION OF COMPACTED FILL	X	-	YES
PRIOR TO PLACEMENT OF COMPACTED FILL, OBSERVE SUBGRADE AND VERIFY THE SITE HAS BEEN PREPARED PROPERLY	-	X	YES

REQUIRED VERIFICATION AND INSPECTION OF WOOD CONSTRUCTION (§1705.5)

VERIFICATION AND INSPECTION	CONTINUOUS	PERIODIC	REQUIRED
PREFABRICATED WOOD STRUCTURAL ELEMENTS (METAL PLATE CONNECTED WOOD TRUSSES) FABRICATION AND IMPLEMENTATION PROCEDURES (NOT REQUIRED WHERE THE WORK IS DONE ON THE PREMISES OF A FABRICATOR REGISTERED AND APPROVED TO PERFORM SUCH WORK WITHOUT SPECIAL INSPECTION	-	X	YES
HIGH-LOAD DIAPHRAGMS A. INSPECT GRADE AND THICKNESS OF WOOD STRUCTURAL PANEL SHEATHING. B. VERIFY NOMINAL SIZE OF FRAMING MEMBERS AT ADJOINING PANEL EDGES, THE NAILS OR STAPLE DIAMETER AND LENGTH, THE NUMBER OF FASTENER LINES AND THAT THE SPACING BETWEEN FASTENERS IN EACH LINE AND AT EDGE MARGINS AGREES WITH THE APPROVED BUILDING PLANS	-	X	NO
METAL-PLATE-CONNECTED WOOD TRUSSES SPANNING 60 FT OR GREATER A. VERIFY THAT TEMPORARY INSTALLATION RESTRAINT/BRACING AND THE PERMANENT INDIVIDUAL TRUSS MEMBER RESTRAIN/BRACING ARE INSTALLED IN ACCORDANCE WITH THE APPROVED TRUSS SUBMITTAL PACKAGE	-	X	NO
INSPECTION OF NAILING, BOLTING, ANCHORING AND OTHER FASTENING COMPONENTS WITHIN THE SEISMIC / MAIN WIND FORCE RESISTING SYSTEM, INCLUDING WOOD SHEAR WALLS, WOOD DIAPHRAGMS, DRAG STRUTS, BRACES, SHEAR WALLS AND HOLD-DOWNS.	-	X	YES
MOISTURE CONTENT OF LOAD BEARING WOOD FRAMING: • MOISTURE CONTENT JUST PRIOR TO INSTALLING SHEET ROCK SHOULD BE AT OR BELOW 15%. SPECIAL ATTENTION SHALL BE PAID TO MEMBERS ORIENTED WITH THEIR VERTICAL AXIS PERPENDICULAR TO THE VERTICAL PLANE (PLATES, JOISTS, TRUSS CHORDS, ETC.)	-	X	YES

REQUIRED VERIFICATION AND INSPECTION OF STRUCTURAL STEEL CONSTRUCTION (§1705.2.1)

STRUCTURAL STEEL - GENERAL

THE SPECIAL INSPECTOR SHALL INSPECT THE FABRICATED OR ERECTED STEEL FRAME, AS APPROPRIATE, TO VERIFY COMPLIANCE WITH THE DETAIL SHOWN ON THE CONSTRUCTION DOCUMENTS, SUCH AS BRACES, STIFFENERS, MEMBER LOCATIONS AND PROPER APPLICATION OF JOINT DETAILS AT EACH CONNECTION.

STRUCTURAL STEEL - ANCHOR RODS / EMBED PLATES

THE SPECIAL INSPECTOR SHALL BE ON THE PREMISES FOR INSPECTION DURING THE PLACEMENT OF ANCHOR RODS AND OTHER EMBEDMENT SUPPORTING STRUCTURAL STEEL FOR COMPLIANCE WITH THE CONSTRUCTION DOCUMENTS. AS A MINIMUM, THE DIAMETER, GRADE, TYPE AND LENGTH OF THE ANCHOR RODS OR EMBEDDED ITEM, AND THE EXTENT OR DEPTH OF EMBEDMENT INTO THE CONCRETE, SHALL BE VERIFIED PRIOR TO PLACEMENT OF CONCRETE.

STRUCTURAL STEEL - WELDS

VERIFICATION AND INSPECTION	CONTINUOUS	PERIODIC	REQUIRED
INSPECTION TASKS PRIOR TO WELDING (AISC 360 TABLE N5.4-1)			
WELDING PROCEDURE SPECIFICATION(WPS'S) AVAILABLE	X	-	YES
MANUFACTURER CERTIFICATIONS FOR WELDING CONSUMABLES AVAILABLE	X	-	YES
MATERIAL IDENTIFICATION (TYPE / GRADE)	-	X	YES
WELDER IDENTIFICATION SYSTEM	-	X	YES
FIT-UP GROOVE WELDS	-	X	NO
CONFIGURATION AND FINISH OF ACCESS HOLES	-	X	NO
FIT-UP FILLET WELDS	-	X	YES
CHECK WELDING EQUIPMENT	-	X	YES
INSPECTION TASKS DURING WELDING (AISC 360 TABLE N5.4-2)			
USE OF QUALIFIED WELDERS	-	X	YES
CONTROL AND HANDLING OF WELDING CONSUMABLES	-	X	YES
NO WELDING OVER CRACKED TACK WELDS	-	X	YES
ENVIRONMENTAL CONDITIONS (WIND SPEED WITHIN LIMITS, PRECIPITATION AND TEMPERATURE	-	X	YES
WPS FOLLOWED • SETTINGS ON WELDING EQUIPMENT • TRAVEL SPEED • SELECTED WELDING MATERIALS • SHIELDING GAS TYPE / FLOW RATE • PREHEAT APPLIED • INTERPASS TEMPERATURE MAINTAINED (MIN/ MAX) • PROPER POSITION (F, V, H, OH)	-	X	YES
WELDING TECHNIQUES • INTERPASS AND FINAL CLEANING • EACH PASS WITHIN PROFILE LIMITATIONS • EACH PASS MEET QUALITY REQUIREMENTS	-	X	YES
WELDS CLEANED	-	X	YES
SIZE, LENGTH AND LOCATION OF WELDS	X	-	YES
WELDS MEET VISUAL ACCEPTANCE CRITERIA • CRACK PROHIBITION • WELD / BASE-METAL FUSION • CRATER CROSS SECTION • WELD PROFILES • WELD SIZE • UNDERCUT • POROSITY	X	-	YES
ARC STRIKES	X	-	YES
k-AREA	X	-	YES
BACKING REMOVED AND WELD TABS REMOVED (IF REQUIRED)	X	-	YES
REPAIR ACTIVITIES	X	-	YES
DOCUMENT ACCEPTANCE OR REJECTION OF WELDED JOINT MEMBER	X	-	YES
	X	-	YES
NON-DESTRUCTIVE TESTING OF WELDED JOINTS			
FILLET WELDS:			
MT TEST A MINIMUM OF 10% OF THE LENGTH OF EACH FILLET WELD EXCEEDING 5/16".	-	X	YES
PERIODIC MT TESTING OF REPRESENTATIVE FILLET WELDS 5/16" AND LESS BUT NEED NOT EXCEED 10% OF ALL SUCH WELDS, EXCEPT AS REQUIRED FOR HIGH REJECTION RATES AS INDICATED IN THE FOLLOWING PARAGRAPH.	-	X	YES
INCREASE MT TESTING RATE FOR WELDERS HAVING A HIGH REJECTION RATE AS REQUIRED TO ENSURE ACCEPTABLE WELDS.	X	-	YES
PARTIAL JOINT PENETRATION (PJP) WELDS INCLUDING FLARE BEVEL WELDS			
MT TEST A MINIMUM OF 25% OF THE LENGTH OF EACH PJP WELD EXCEEDING 5/16" EFFECTIVE THROAT.	-	X	YES
PERIODIC MT TESTING OF REPRESENTATIVE PJP WELDS 5/16" AND LESS BUT NEED NOT EXCEED 10% OF ALL SUCH WELDS, EXCEPT AS REQUIRED FOR HIGH REJECTION RATES AS INDICATED IN THE FOLLOWING PARAGRAPH.	-	X	YES
INCREASE MT TESTING RATE FOR WELDERS HAVING A HIGH REJECTION RATE AS REQUIRED TO ENSURE ACCEPTABLE WELDS	X	-	YES
COMPLETE JOINT PENETRATION (CJP) WELDS			
ALL CJP WELDS EXCEEDING 5/16" THICKNESS SHALL BE 100% UT TESTED PER AWS D1.1 CLAUSE 6 PART F. THE TESTING LABORATORY SHALL REVIEW THE CJP JOINTS TO DETERMINE WHERE GEOMETRY OR ACCESSIBILITY PRECLUDES THE USE OF STANDARD SCANNING PATTERNS PER AWS D1.1 CLAUSE 6 PART F. AT THESE LOCATIONS THE TESTING LABORATORY SHALL DEVELOP AND SUBMIT FOR APPROVAL A WRITTEN TESTING PROCEDURE IN ACCORDANCE WITH AWS D1.1 ANNEX S.	X	-	YES
PERIODIC MT TESTING OF REPRESENTATIVE CJP WELDS 5/16" AND LESS NOT TO EXCEED 10% OF ALL SUCH WELDS.	-	X	YES
INCREASE MT TESTING RATE FOR WELDERS HAVING A HIGH REJECTION RATE AS REQUIRED TO ENSURE ACCEPTABLE WELDS.	X	-	YES

STRUCTURAL STEEL HIGH-STRENGTH BOLTS (TURN-OF-NUT)

TURN-OF-NUT PRETENSIONING: THE INSPECTOR SHALL OBSERVE THE PRE-INSTALLATION VERIFICATION TESTING REQUIRED IN SECTION 8.2. SUBSEQUENTLY, IT SHALL BE ENSURED BY ROUTINE OBSERVATION THAT THE BOLTING CREW PROPERLY ROTATES THE TURNED ELEMENT RELATIVE TO THE UNTURNED ELEMENT BY THE AMOUNT SPECIFIED IN TABLE 8.2. ALTERNATIVELY, WHEN FASTENER ASSEMBLIES ARE MATCH-MARKED AFTER THE INITIAL FIT-UP OF THE JOINT BUT PRIOR TO PRETENSIONING, VISUAL INSPECTION AFTER PRETENSIONING IS PERMITTED IN LIEU OF ROUTINE OBSERVATION. NO FURTHER EVIDENCE OF CONFORMITY IS REQUIRED. A PRETENSION THAT IS GREATER THAN THE VALUE SPECIFIED IN TABLE 8.1 SHALL NOT BE CAUSE FOR REJECTION. A ROTATION THAT EXCEEDS THE REQUIRED VALUES, INCLUDING TOLERANCE, SPECIFIED IN TABLE 8.2 SHALL NOT BE CAUSE FOR REJECTION.

TABLE 8.2: NUT ROTATION FROM SNUG-TIGHT CONDITION FOR TURN-OF-NUT PRETENSIONING

BOLT LENGTH	DISPOSITION OF OUTER FACES OF BOLTED PARTS		
	BOTH FACE NORMAL TO BOLT AXIS	ONE FACE NORMAL TO BOLT AXIS, OTHER SLOPED NOT MORE THAN 1:20	BOTH FACES SLOPED NOT MORE THAN 1:20 FROM NORMAL TO BOLT AXIS
LENGTH $\leq 4d_b$	1/3 TURN	1/2 TURN	2/3 TURN
$4d_b <$ LENGTH $\leq 8d_b$	1/2 TURN	2/3 TURN	5/6 TURN
$8d_b <$ LENGTH $\leq 12d_b$	2/3 TURN	5/6 TURN	1 TURN

a. NUT ROTATION IS RELATIVE TO BOLT REGARDLESS OF THE ELEMENT (NUT OR BOLT) BEING TURNED. FOR ALL REQUIRED ROTATIONS, THE TOLERANCE IS PLUS 60° AND MINUS 30°
b. APPLICABLE TO JOINTS IN WHICH ALL MATERIAL WITHIN THE GRIP IS STEEL.

STRUCTURAL STEEL HIGH-STRENGTH BOLTS (SNUG-TIGHT) - INSPECTION TASKS PRIOR TO BOLTING

VERIFICATION AND INSPECTION	CONTINUOUS	PERIODIC	REQUIRED
DOCUMENTATION AND ACCEPTANCE OR REJECTION OF BOLTED CONNECTIONS	-	X	YES

STRUCTURAL STEEL HIGH-STRENGTH BOLTS (SNUG-TIGHT) - INSPECTION TASKS DURING BOLTING

VERIFICATION AND INSPECTION	CONTINUOUS	PERIODIC	REQUIRED
DOCUMENTATION OF ACCEPTANCE OR REJECTION OF BOLTED CONNECTIONS.	-	X	YES

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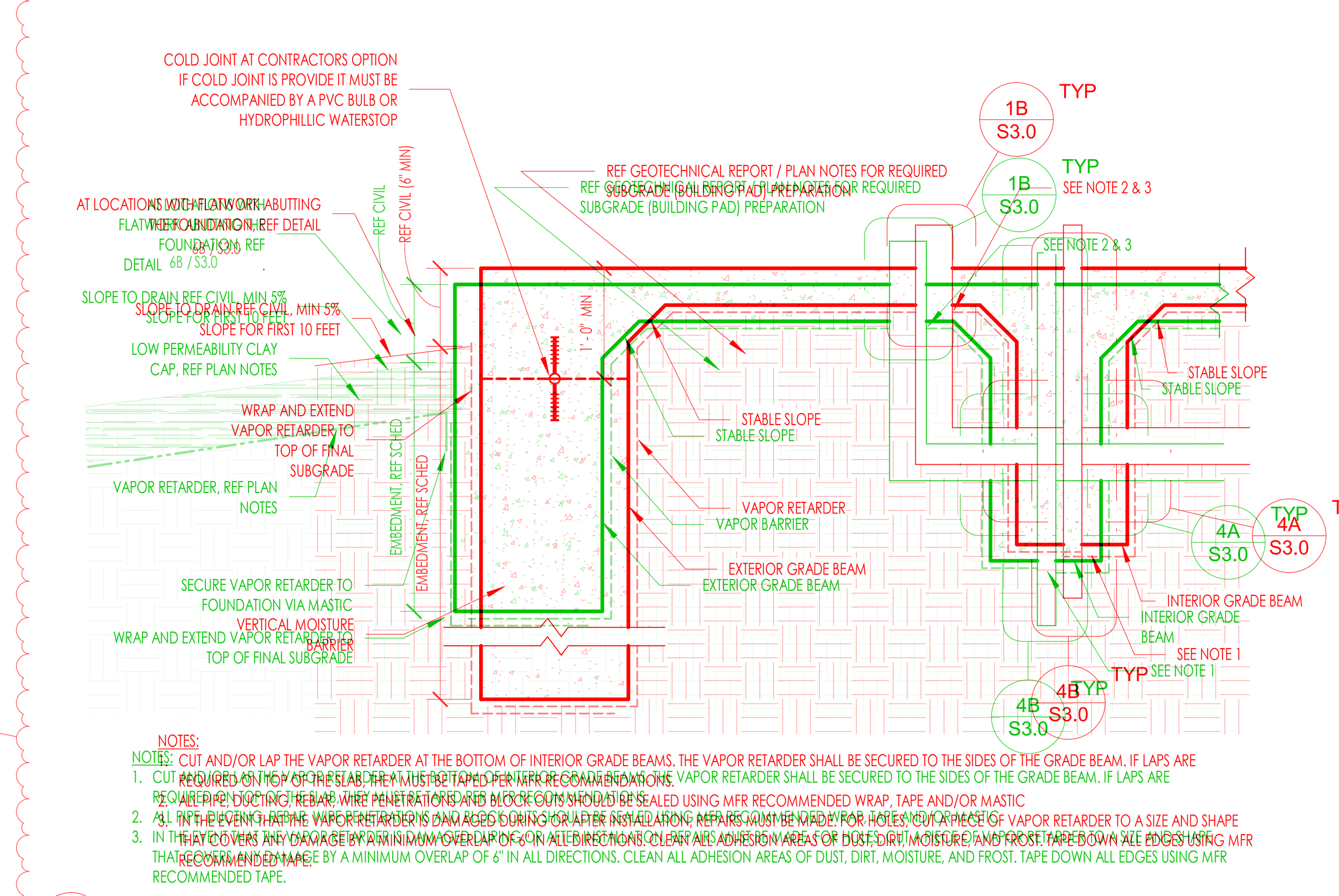
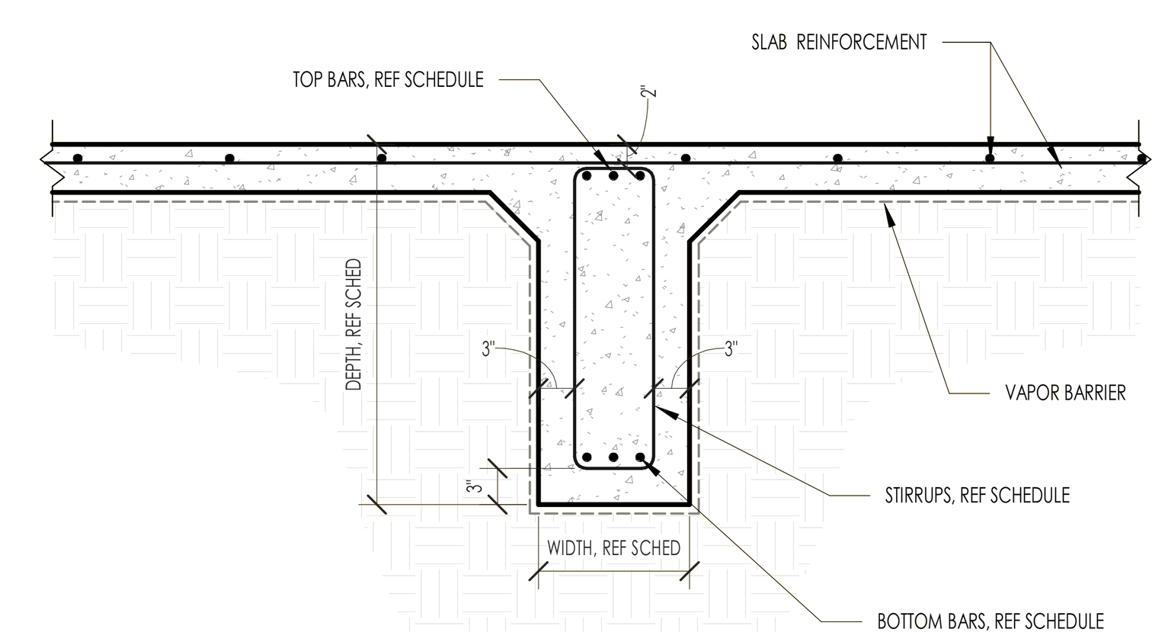
Date	Description
06/02/2022	Reviewed for Permit
08/26/2022	PERMIT REVISIONS

FOR CONSTRUCTION

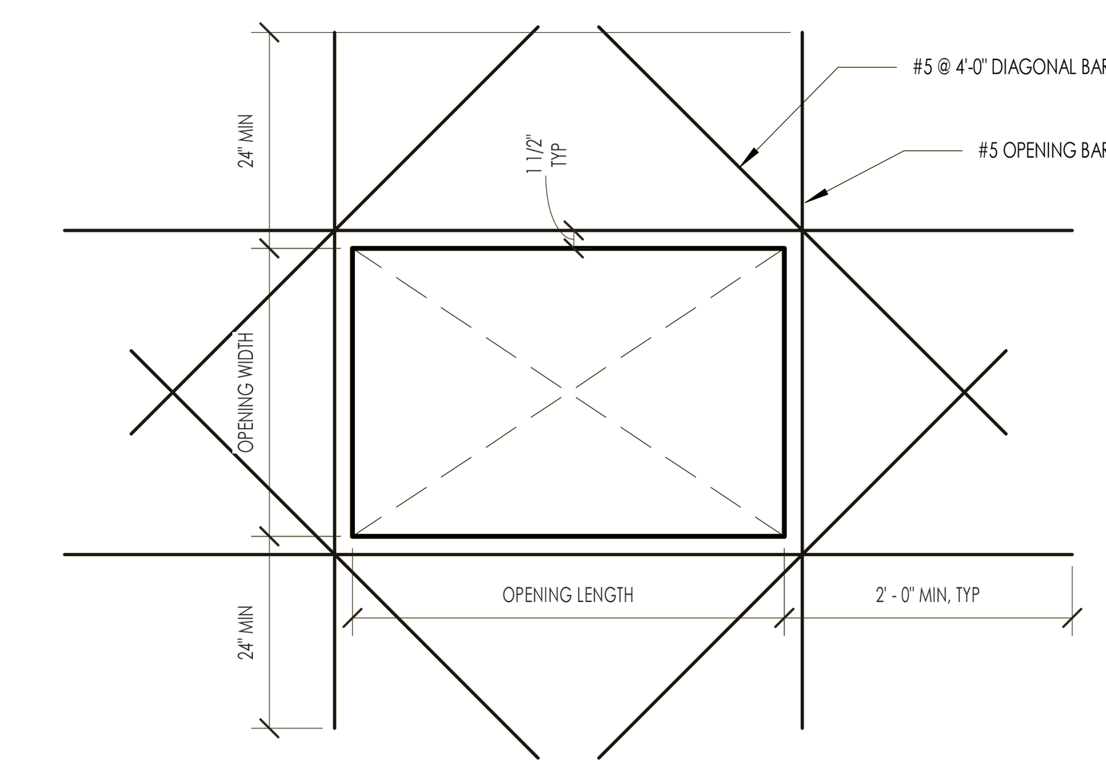


08/26/2022

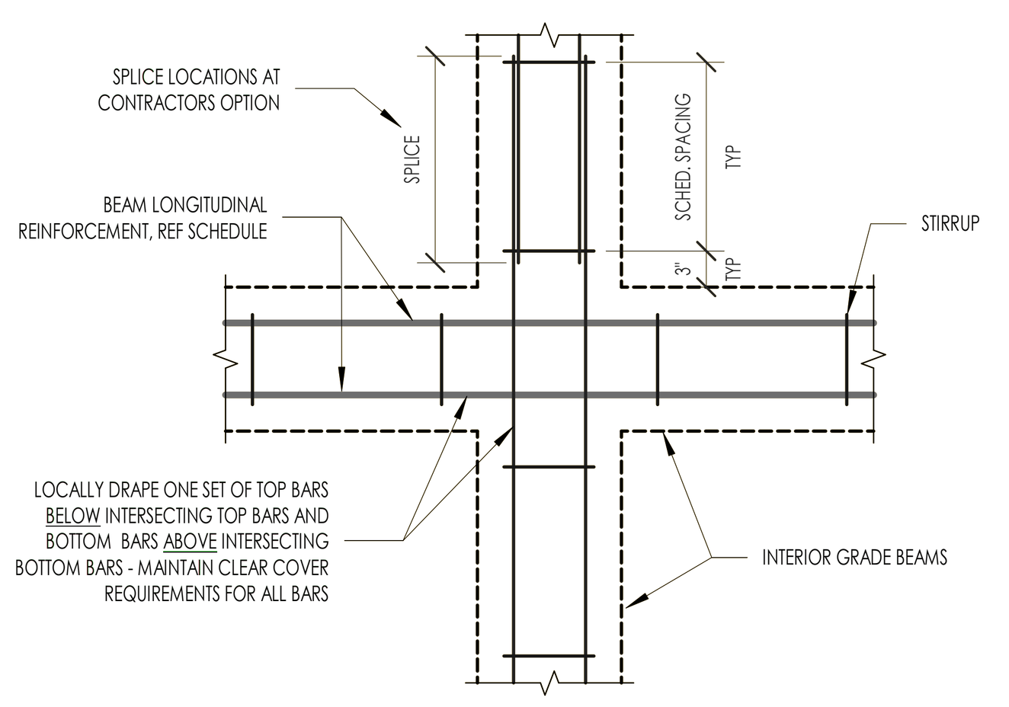
4D S3.0 TYPICAL SUBGRADE AND VAPOR RETARDER PREPARATION - WITH VERTICAL MOISTURE BARRIER



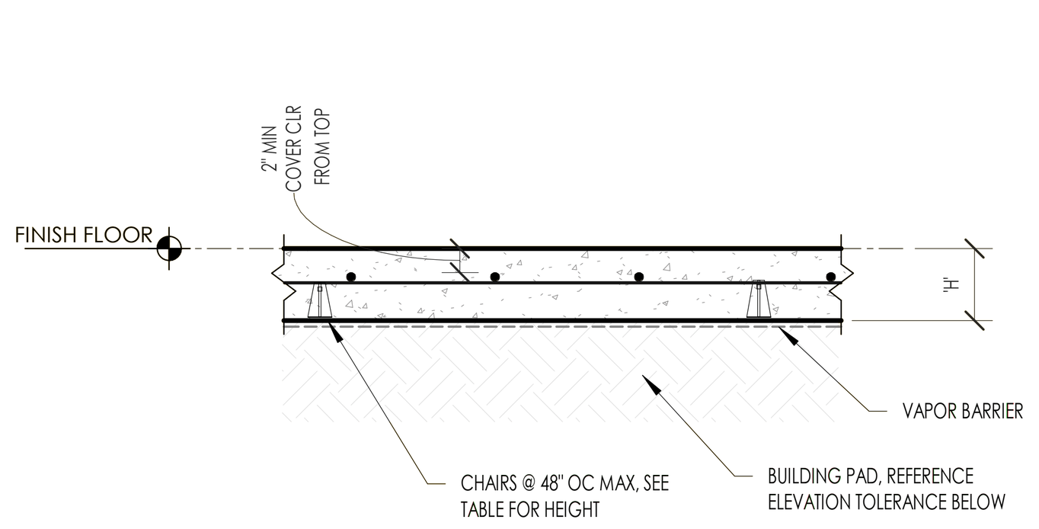
2D S3.0 TYPICAL INTERIOR GRADE BEAM



1D S3.0 TYPICAL REINFORCEMENT AT SLAB BLOCKOUT



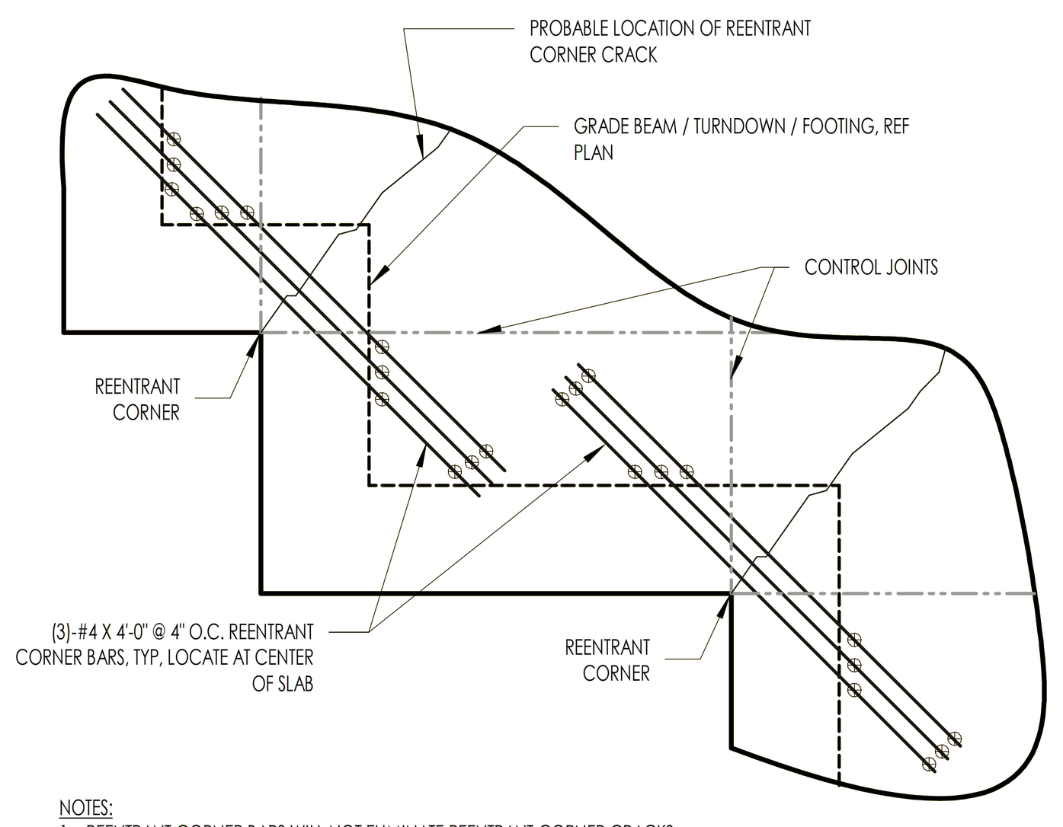
6C S3.0 TYPICAL INTERIOR BEAM INTERSECTION



TOLERANCES FOR SLAB-ON-GRADE CONSTRUCTION (BASED ON ACI 117-10):

1. DEVIATION FROM ELEVATION:
   A. TOP SURFACE OF SLAB: ± 3/4"
   B. FINE GRADE OF SOIL IMMEDIATELY BELOW SLABS-ON-GROUND: ± 3/4"
2. THICKNESS OF SLABS-ON-GROUND:
   A. AVERAGE OF ALL SAMPLE: -3/8"
   B. INDIVIDUAL SAMPLE: -3/4"

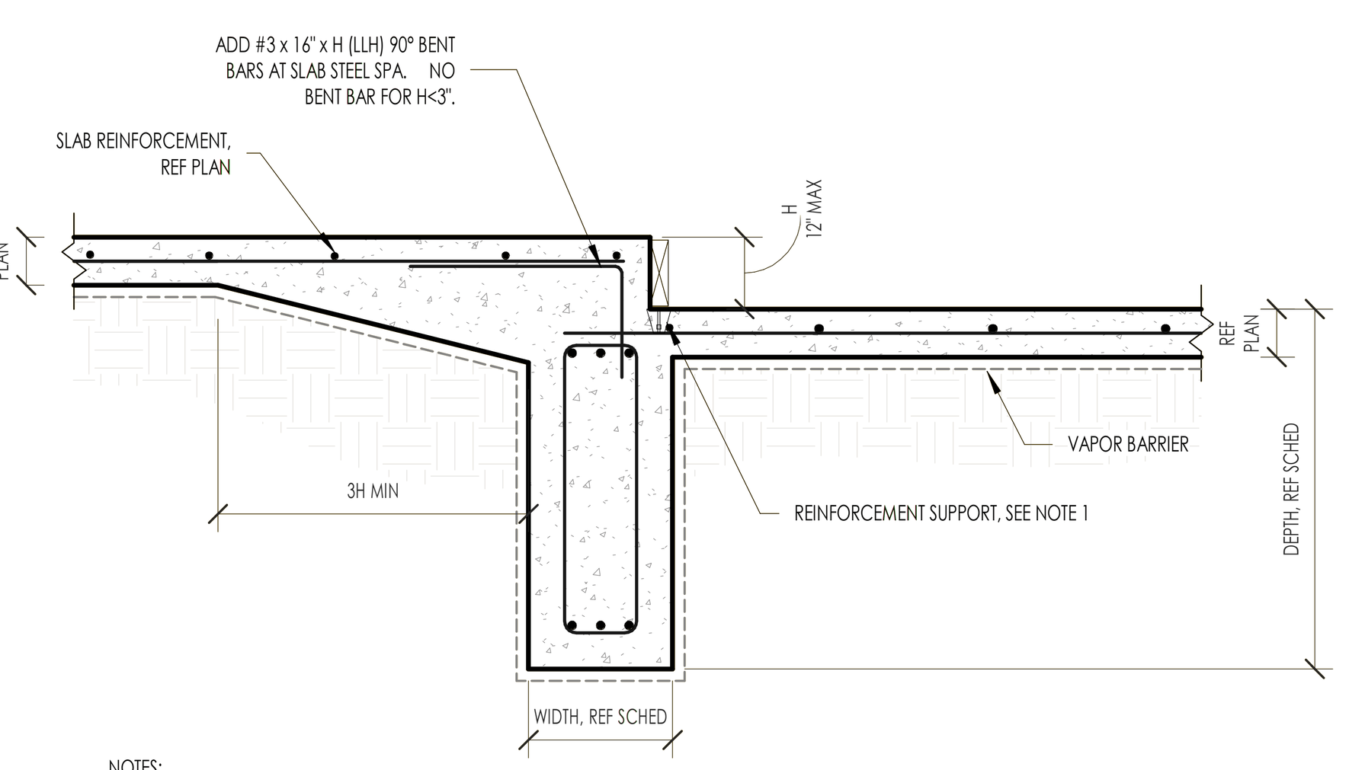
5C S3.0 TYPICAL SLAB-ON-GRADE SECTION



NOTES:

1. REENTRANT CORNER BARS WILL NOT ELIMINATE REENTRANT CORNER CRACKS, THEY WILL MITIGATE THE WIDTH OF THE CRACKS. FOR OPTIMAL MITIGATION OF CRACKS, PLACE CONTROL JOINTS AS SOON AS POSSIBLE.

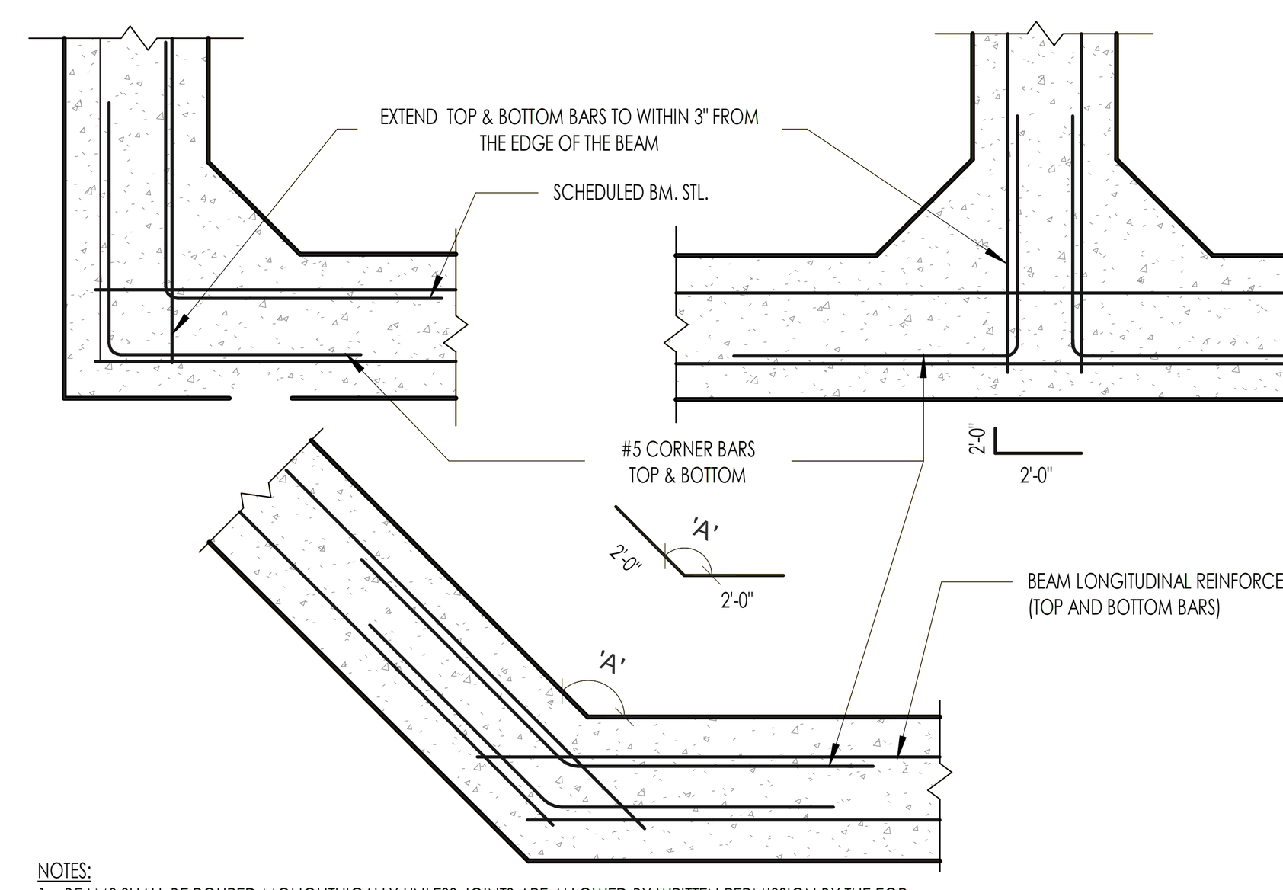
4C S3.0 TYPICAL REENTRANT CORNER BARS



NOTES:

1. INVERT REINFORCEMENT SUPPORT AND SECURELY ATTACH TO FLOAT FORM.

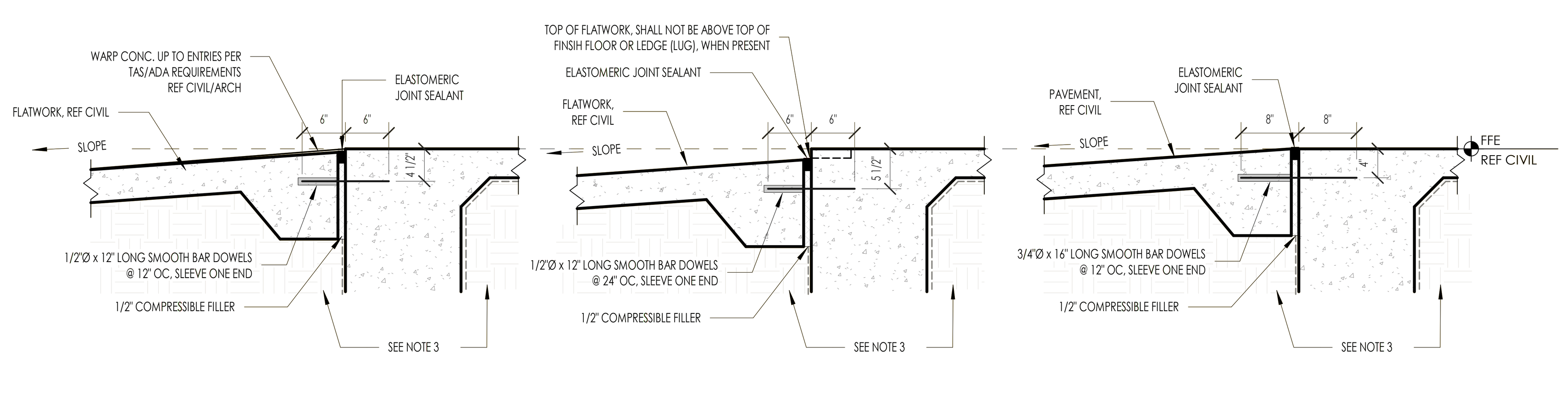
3C S3.0 TYPICAL SLAB DROP AT GRADE BEAM



NOTES:

1. BEAMS SHALL BE POURED MONOLITHICALLY UNLESS JOINTS ARE ALLOWED BY WRITTEN PERMISSION BY THE EOR.
2. UNLESS DETAILED OTHERWISE, ALL BEAM CORNERS AND INTERSECTIONS REQUIRE BENT DOWEL CORNER BARS TOP AND BOTTOM, AS SHOWN IN THIS DETAIL.

1C S3.0 TYPICAL CORNER BARS

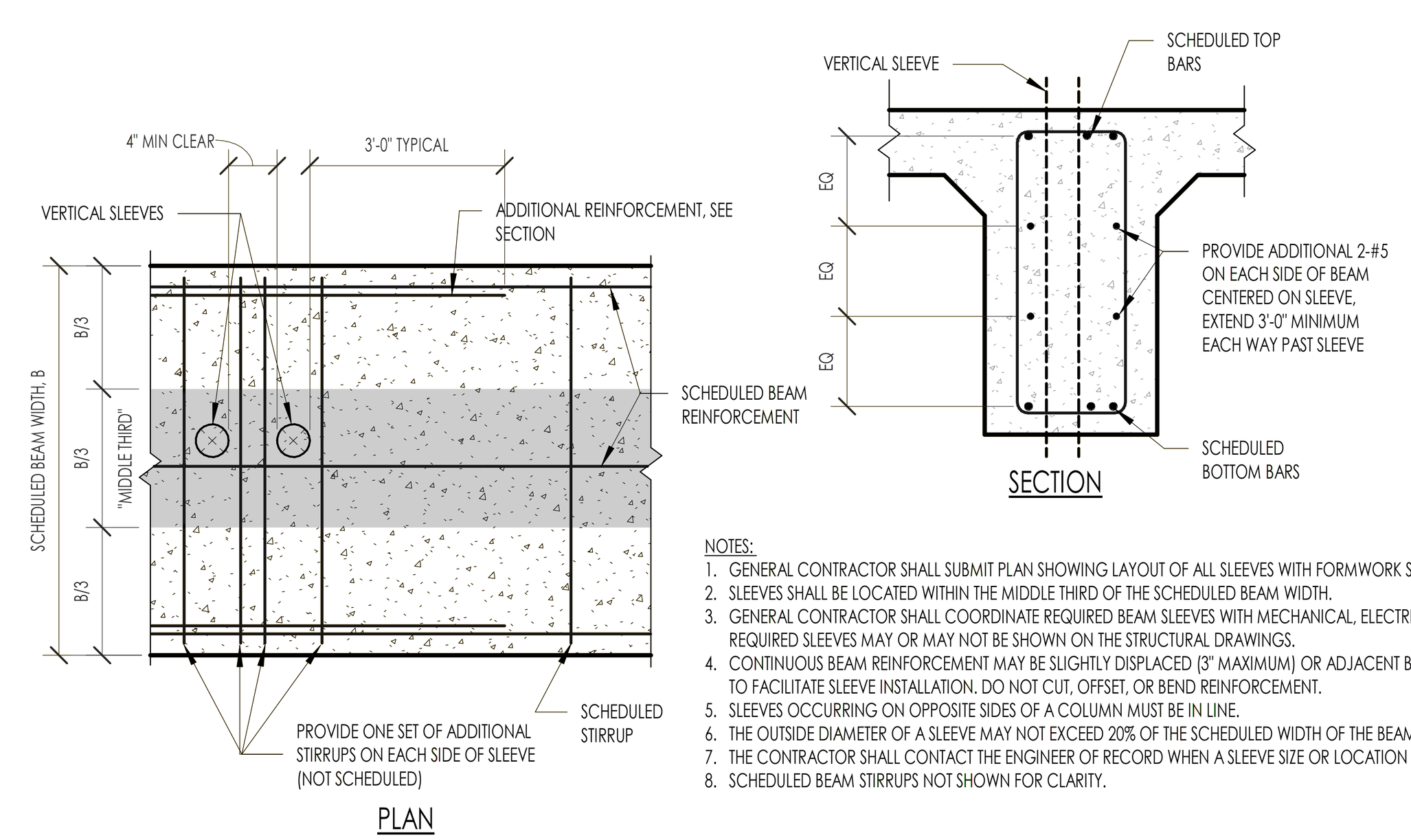


FLATWORK AT ENTRY DOOR — FLATWORK **NOT** AT ENTRY DOOR — AT PAVEMENT (DRIVE-IN)

NOTES:

1. CONTRACTOR TO SUBMIT TO OWNER, ARCHITECT AND ENGINEER THE PRODUCT DATA FOR THE ELASTOMERIC JOINT SEALANT WHICH MUST INCLUDE A RECOMMENDED MAINTENANCE PROGRAM FOR THE SEALANT.
2. REFERENCE ARCHITECTURE / CIVIL FOR ADA REQUIREMENTS, TOP OF FLATWORK / PAVEMENT.
3. BUILDING PAD SUBGRADE IMPROVEMENT TO CONTINUE FOR A MINIMIUM OF 5' OUTSIDE THE FOUNDATION UNDER FLATWORK / PAVEMENT

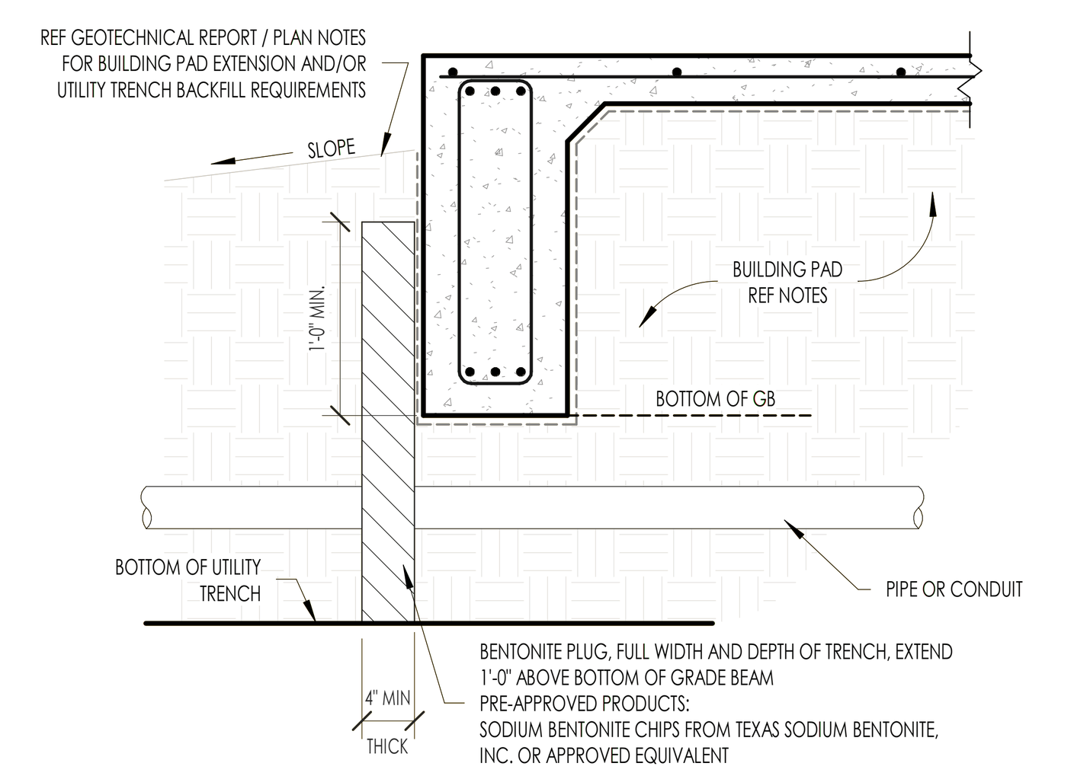
6B S3.0 TYPICAL FLATWORK/PAVEMENT DOWELS AT BUILDING



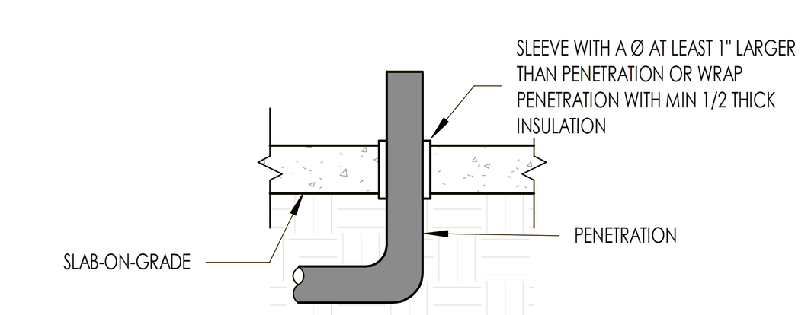
NOTES:

1. GENERAL CONTRACTOR SHALL SUBMIT PLAN SHOWING LAYOUT OF ALL SLEEVES WITH FORMWORK SHOP DRAWING SUBMITTAL.
2. SLEEVES SHALL BE LOCATED WITHIN THE MIDDLE THIRD OF THE SCHEDULED BEAM WIDTH.
3. GENERAL CONTRACTOR SHALL COORDINATE REQUIRED BEAM SLEEVES WITH MECHANICAL, ELECTRICAL, AND PLUMBING CONTRACTORS. REQUIRED SLEEVES MAY OR MAY NOT BE SHOWN ON THE STRUCTURAL DRAWINGS.
4. CONTINUOUS BEAM REINFORCEMENT MAY BE SLIGHTLY DISPLACED (3" MAXIMUM) OR ADJACENT BARS BUNDLED (2 BAR BUNDLES MAXIMUM) TO FACILITATE SLEEVE INSTALLATION. DO NOT CUT, OFFSET, OR BEND REINFORCEMENT.
5. SLEEVES OCCURRING ON OPPOSITE SIDES OF A COLUMN MUST BE IN LINE.
6. THE OUTSIDE DIAMETER OF A SLEEVE MAY NOT EXCEED 20% OF THE SCHEDULED WIDTH OF THE BEAM THROUGH WHICH IT MUST PASS.
7. THE CONTRACTOR SHALL CONTACT THE ENGINEER OF RECORD WHEN A SLEEVE SIZE OR LOCATION DOES NOT MEET THE ABOVE CONDITIONS.
8. SCHEDULED BEAM STIRRUPS NOT SHOWN FOR CLARITY.

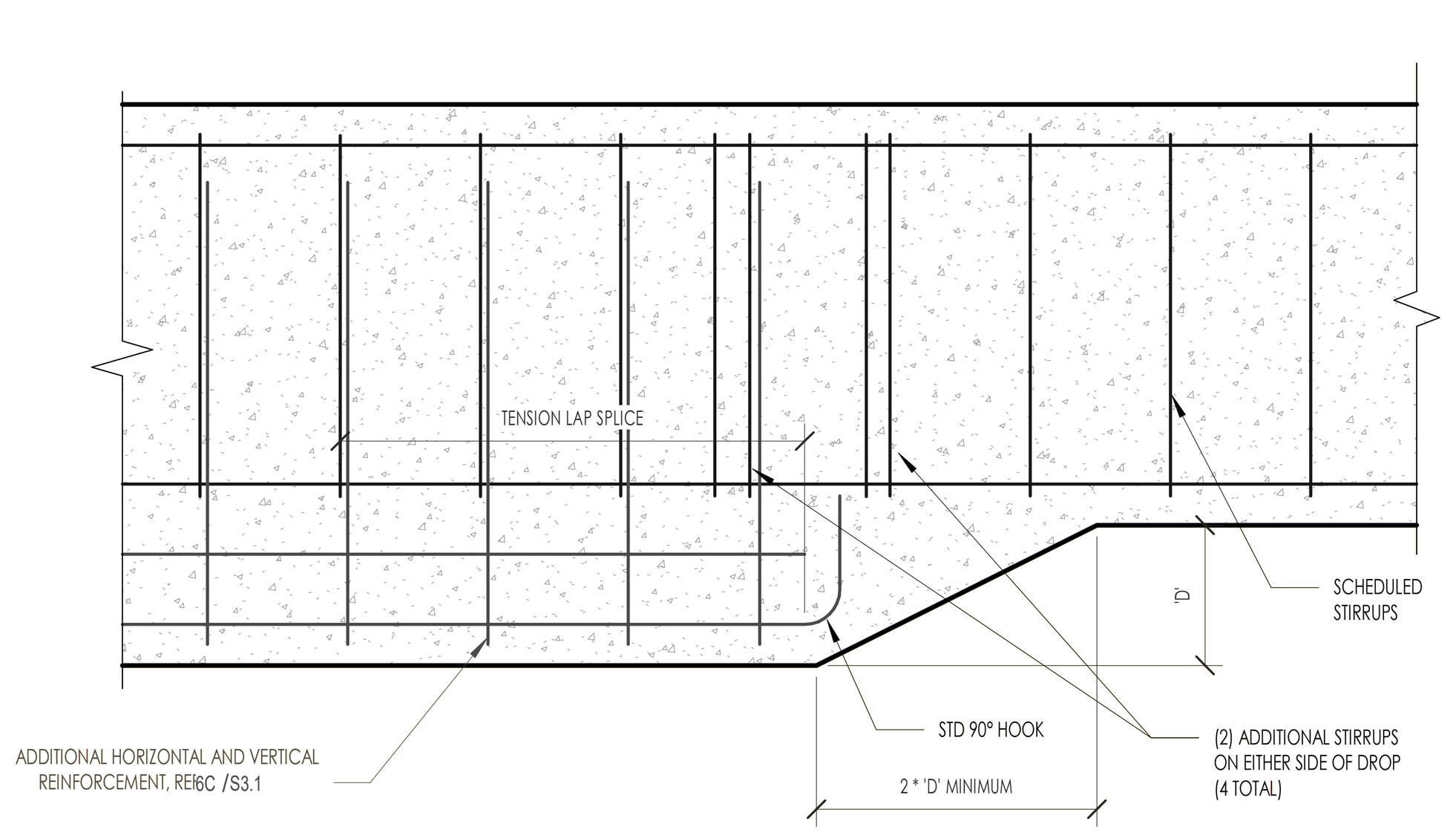
4B S3.0 TYPICAL VERTICAL PENETRATION IN GRADE BEAM



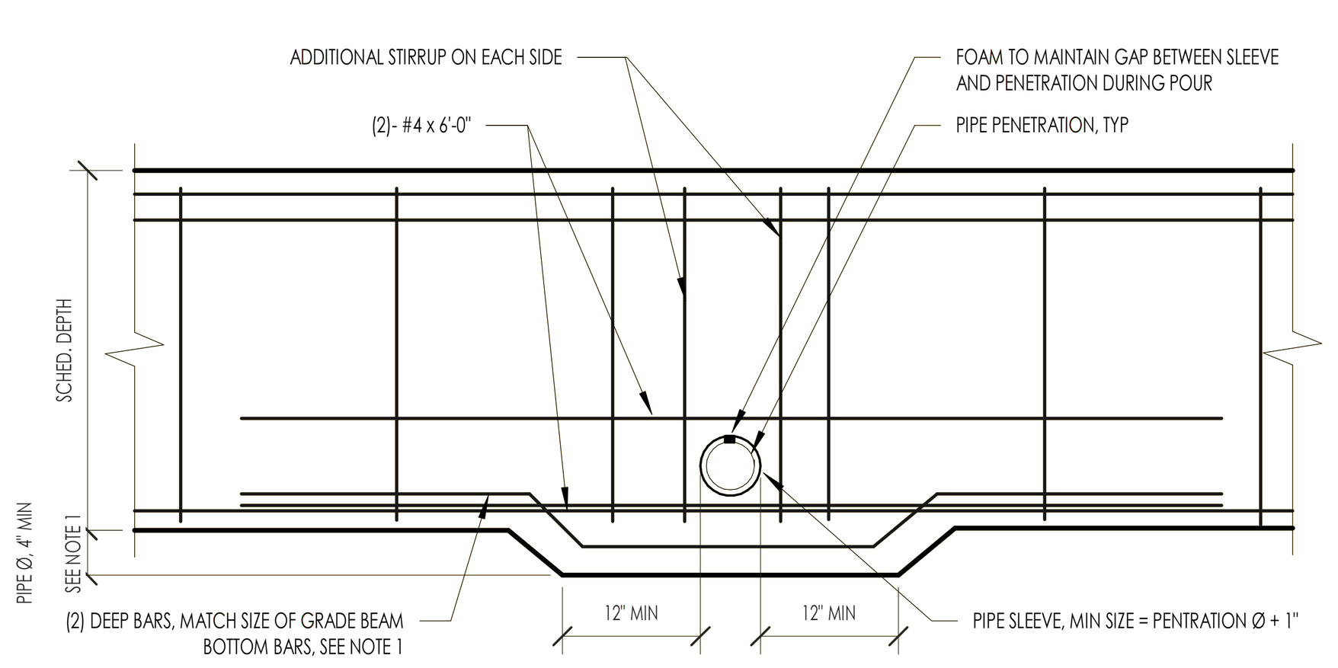
2B S3.0 TYPICAL UTILITY TRENCH UNDER BUILDING PAD BENTONITE PLUG AT EXTERIOR BEAM



1B S3.0 VERTICAL PENETRATION THOUGH SLAB-ON-GRADE



6A S3.0 TYPICAL DROP TRANSITION IN GRADE BEAM - VERTICAL MOISTURE BARRIER

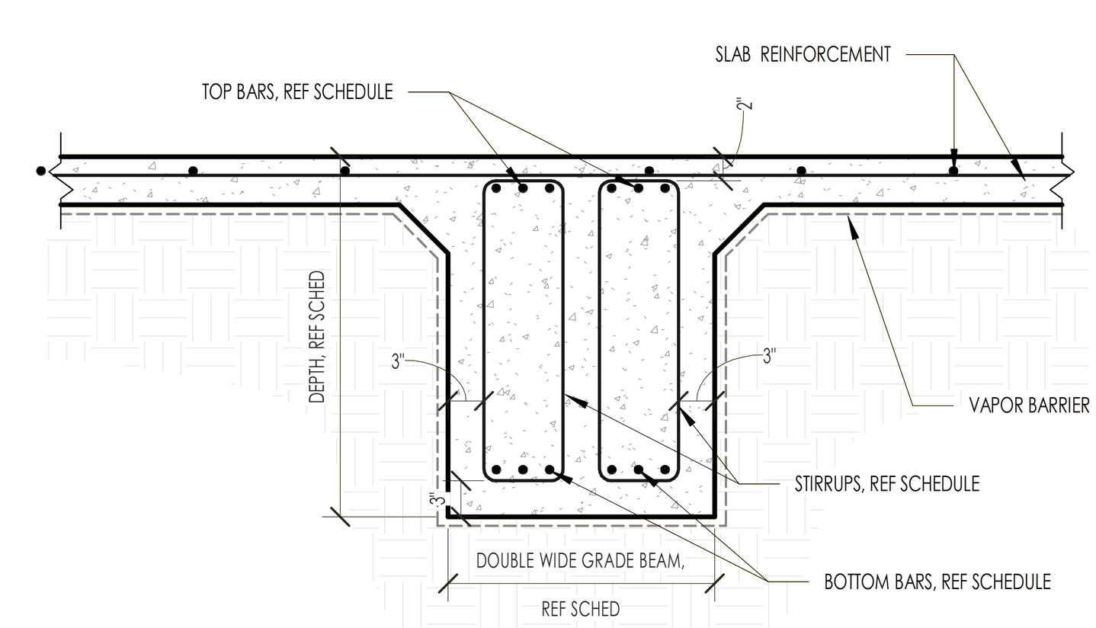


NOTES:

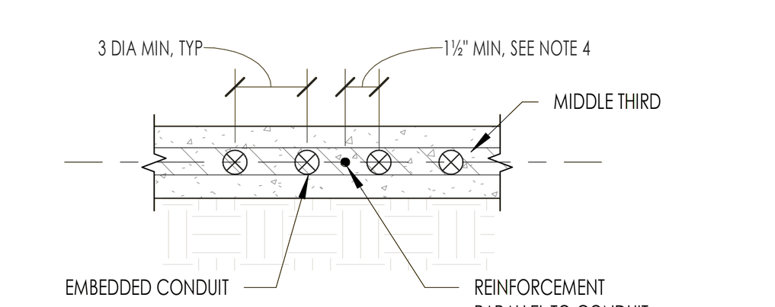
1. DEPTH INCREASE AND DEEP BARS NOT REQUIRED IF PENETRATION OCCURS IN MIDDLE THIRD OF GRADE BEAM DEPTH

ELEVATION

4A S3.0 TYPICAL HORIZONTAL PENETRATION IN BEAM



2A S3.0 TYPICAL DOUBLE WIDE INTERIOR GRADE BEAM



NOTES:

1. EMBEDDED CONDUIT MUST BE PVC OR OTHER PRE-APPROVED PRODUCT THAT WILL NOT CHEMICALLY REACT WITH THE CONCRETE.
2. EMBEDDED CONDUIT MUST BE CHAIRED AND RESTRAINED @ 48" OC MAX IN ORDER TO PREVENT FLOATING OF THE CONDUIT DURING POURING.
3. PLACE ALL CONDUIT WITHIN THE MIDDLE THIRD OF THE OVERALL SLAB DEPTH.
4. DO NOT PLACE CONDUIT ADJACENT TO NOR TIE CONDUIT TO PARALLEL REINFORCEMENT.

1A S3.0 TYPICAL CONDUITS EMBEDDED IN SLAB-ON-GRADE

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Structural: Dudley
oorieka@dudleyeng.com | (979) 777-0720

MEP: AMC Engineers
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Architect: OpeningDesign
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Date	Description
06/02/2022	Review Draft/Permit
08/26/2022	PERMIT REVISIONS

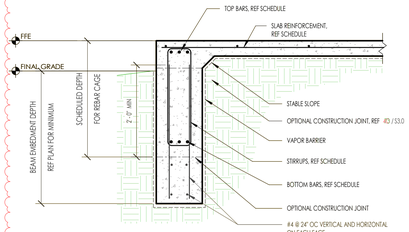
FOUNDATION DETAILS

MARCO POLO - 101 33RD STREET - CITY OF BRYAN TOWNSITE, BLOCK 96, LOT 3-5 & PT OF 6 & PT OF ALLEY - BRYAN, TX 77803

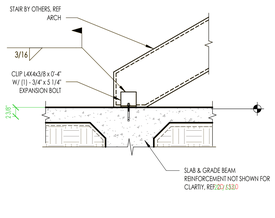
S3.0

FOR CONSTRUCTION

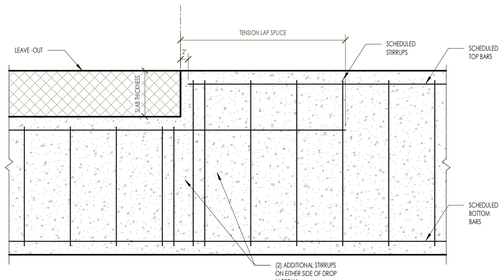
08/26/2022



6C S3.1 TYPICAL EXTERIOR GRADE BEAM - VERTICAL MOISTURE BARRIER

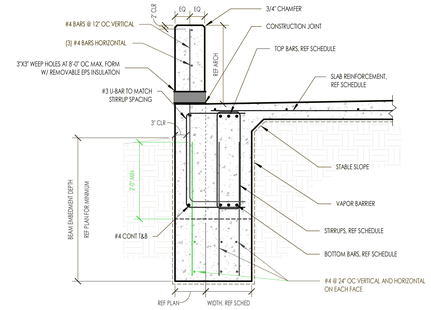


5C S3.1 TYPICAL GRADE BEAM AT STEEL STAIRS

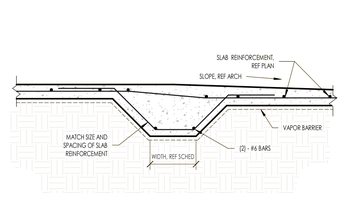


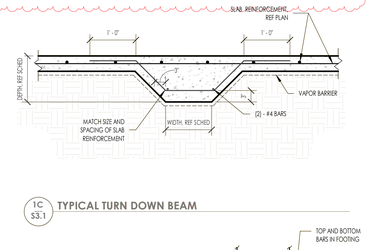
4C S3.1 TYPICAL DROP TRANSITION IN GRADE BEAM TOP REINFORCEMENT AT SLAB LEAVE-OUT

08/26/2022

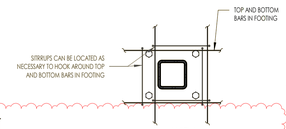


1D S3.1 TYPICAL EXTERIOR WIDENED GRADE BEAM AT CURB - VERTICAL MOISTURE BARRIER

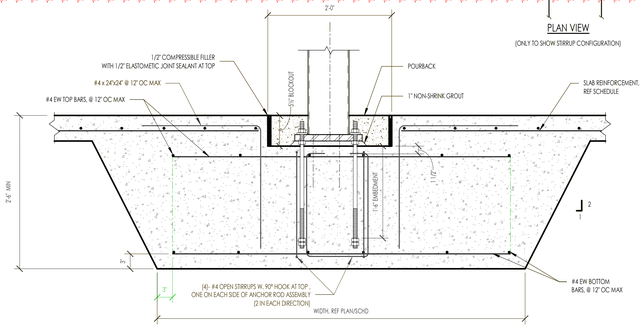




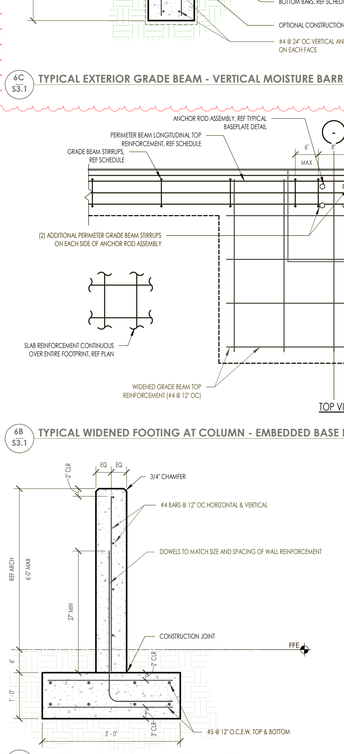
1C S3.1 TYPICAL TURN DOWN BEAM

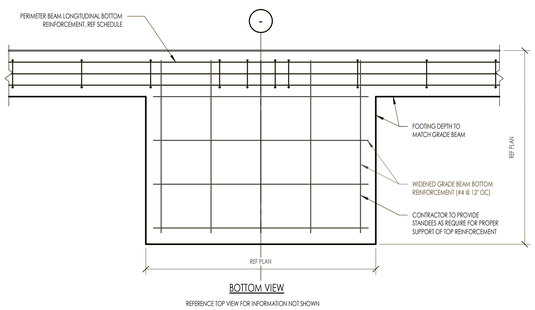


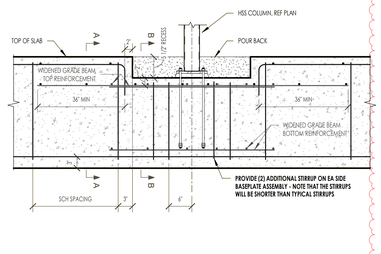
2C S3.1 CSOG - TURN DOWN AT SLAB DROP



2B S3.1 TYPICAL SPREAD FOOTING AT INTERIOR COLUMN





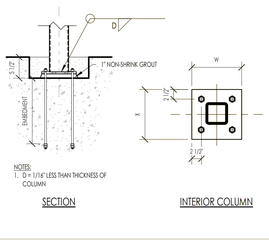


6B S3.1 TYPICAL WIDENED FOOTING AT COLUMN - EMBEDDED BASE PLATE

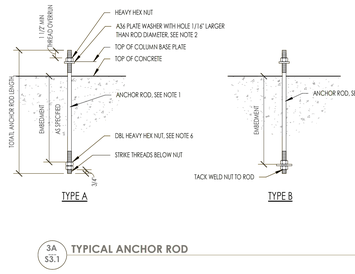
6A S3.1 TYPICAL MOMUMENT SIGN FOUNDATION

BASE PLATE & ANCHOR BOLT SCHEDULE

COLUMN	BASE PLATE DIMENSIONS			CONDITION	ANCHOR BOLTS		
	X	W	T		NO./TYPE	DIA.	EMBEDMENT
HSS5.5X5.5	13"	13"	1"	INTERIOR	4/A	1"	1'-0"
HSS8X8	16"	16"	1"	INTERIOR	4/A	1"	1'-0"



5A S3.1 TYPICAL BASEPLATE DETAIL



3A S3.1 TYPICAL ANCHOR ROD

ANCHOR ROD DIAMETER	HOLE DIAMETER	SQUARE PLATE WASHER SIZE	PLATE WASHER THICKNESS	TYPE B ANCHOR PLATE
5/8"	1 3/16"	1½"	1/4"	PLT"X4"X0-4"
3/4"	1 5/16"	2"	1/4"	PLT"X4"X0-4"
7/8"	1 9/16"	2½"	5/16"	PLT"X4"X0-4"
1"	1 13/16"	3"	3/8"	PLT½"X5"X0-5"
1 1/2"	2 5/16"	3½"	1/2"	PLT½"X5"X0-5"

NOTES:
1. ALL TYPE A ANCHOR RODS SHALL BE F1554 GRADE 36.
2. ALL TYPE B ANCHOR RODS SHALL BE F1554 GRADE 55 S1
3. PLATE WASHERS MUST BE WELDED TO THE BASE PLATE WITH MINIMUM 3/16" FILLET WELD ALL-AROUND
4. EMBEDMENT DEPTHS ARE PRELIMINARY. FINAL EMBEDMENT TO BE PROVIDED AFTER REVIEW OF METAL BUILDING REACTIONS.
5. ALL ANCHOR ROD HOLES SHALL ADHERE TO AISC DESIGN GUIDE 01- TABLE 2.3
6. THE DOUBLE NUT MAY BE OMITTED IF THE NUT IS TACK WELDED TO THE ROD.

08/26/2022

FOUNDATION DETAILS

MARCO POLO - 101 33RD STREET - CITY OF BRYAN TOWNSITE, BLOCK 96, LOT 3-5 & PT OF 6 & PT OF ALLEY - BRYAN, TX 77803

S3.1

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Date	Description
06/02/2022	Release Electrical Permit
08/26/2022	PERMIT REVISIONS

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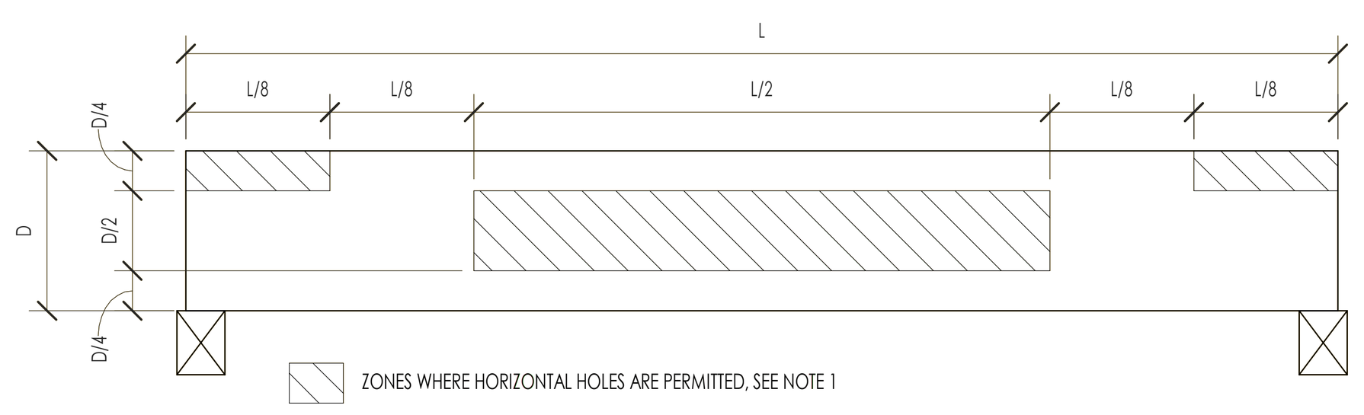
FOR CONSTRUCTION

TYPICAL FASTENING SCHEDULE

CONNECTION ID	CONNECTION TYPE	FASTENING	FASTENING ORIENTATION
1	JOIST TO SILL OR GIRDER	(3) - 0.131"Ø X 3"	TOENAIL
2	SOLE PLATE TO JOIST OR BLOCKING	0.148"Ø X 3¼" NAILS @ 12" OC NAILS	FACE NAIL
3	TOP PLATE TO STUD	(3) - 0.131"Ø X 3" NAILS	END NAIL
4	STUD TO SOLE PLATE - OPTION 1	(2) - 16d COMMON | (3) - 0.131"Ø X 3" NAILS	END NAIL
5	STUD TO SOLE PLATE - OPTION 2	(4) 0.131"Ø X 3" NAILS	TOENAIL
6	DOUBLE/MULTIPLE STUDS	REFERENCE DETAIL 6A / S4.1	FACE NAIL
7	DOUBLE TOP PLATES	0.131"Ø X 3" NAILS @ 12" OC	FACE NAIL
8	DOUBLE TOP PLATE SPLICE	REFERENCE DETAIL 3A / S4.1	FACE NAIL
9	BLOCKING BETWEEN JOISTS/RAFTERS TO TOP PLATE	(3) - 0.131"Ø X 3" NAILS	TOENAIL
10	RIM JOIST TO TOP PLATE	0.131"Ø X 3" NAILS @ 6" OC	TOENAIL
11	CEILING JOIST TO TOP PLATE	(5) - 0.131"Ø X 3" NAILS	TOENAIL
12	CEILING JOIST LAP OVER PARTITIONS	(4) - 0.131"Ø X 3" NAILS	FACE NAIL
13	CEILING JOIST TO PARALLEL RAFTERS	(4) - 0.131"Ø X 3" NAILS	FACE NAIL
14	RAFTER TO TOP PLATE	(3) - 0.131"Ø X 3" NAILS	TOENAIL
15	BUILT-UP CORNER STUDS	0.131"Ø X 3" NAILS @ 16" OC	FACE NAIL
16	BUILT-UP BEAMS	REFERENCE DETAIL 2A / S4.0	FACE NAIL
17	COLLAR TIE TO RAFTER	(4) - 0.131"Ø X 3" NAILS	FACE NAIL
18	JACK RAFTER TO HIP	(4) - 0.131"Ø X 3" NAILS	TOENAIL
19	RAFTER TO RIDGE BOARD/BEAM	(3) - 0.131"Ø X 3" NAILS	TOENAIL
20	BLOCKING B/T STUDS	(3) - 0.131"Ø X 3" NAILS EACH SIDE	TOENAIL

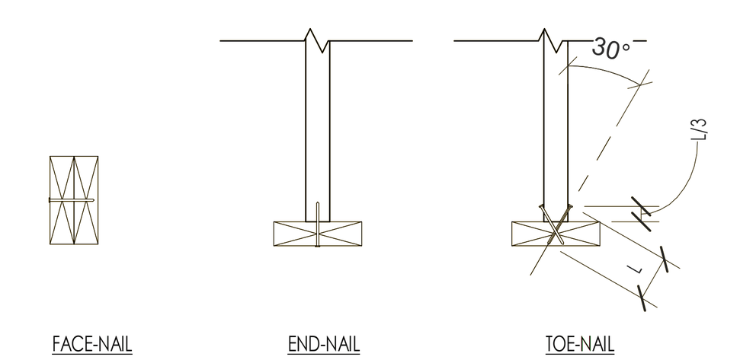
NOTES:
1. THESE CONNECTIONS ARE TO BE APPLIED UNLESS NOTED OTHERWISE IN PLAN, SECTION, ELEVATION OR DETAIL VIEWS.

6D / S4.0 **TYPICAL WOOD FASTENING SCHEDULE**

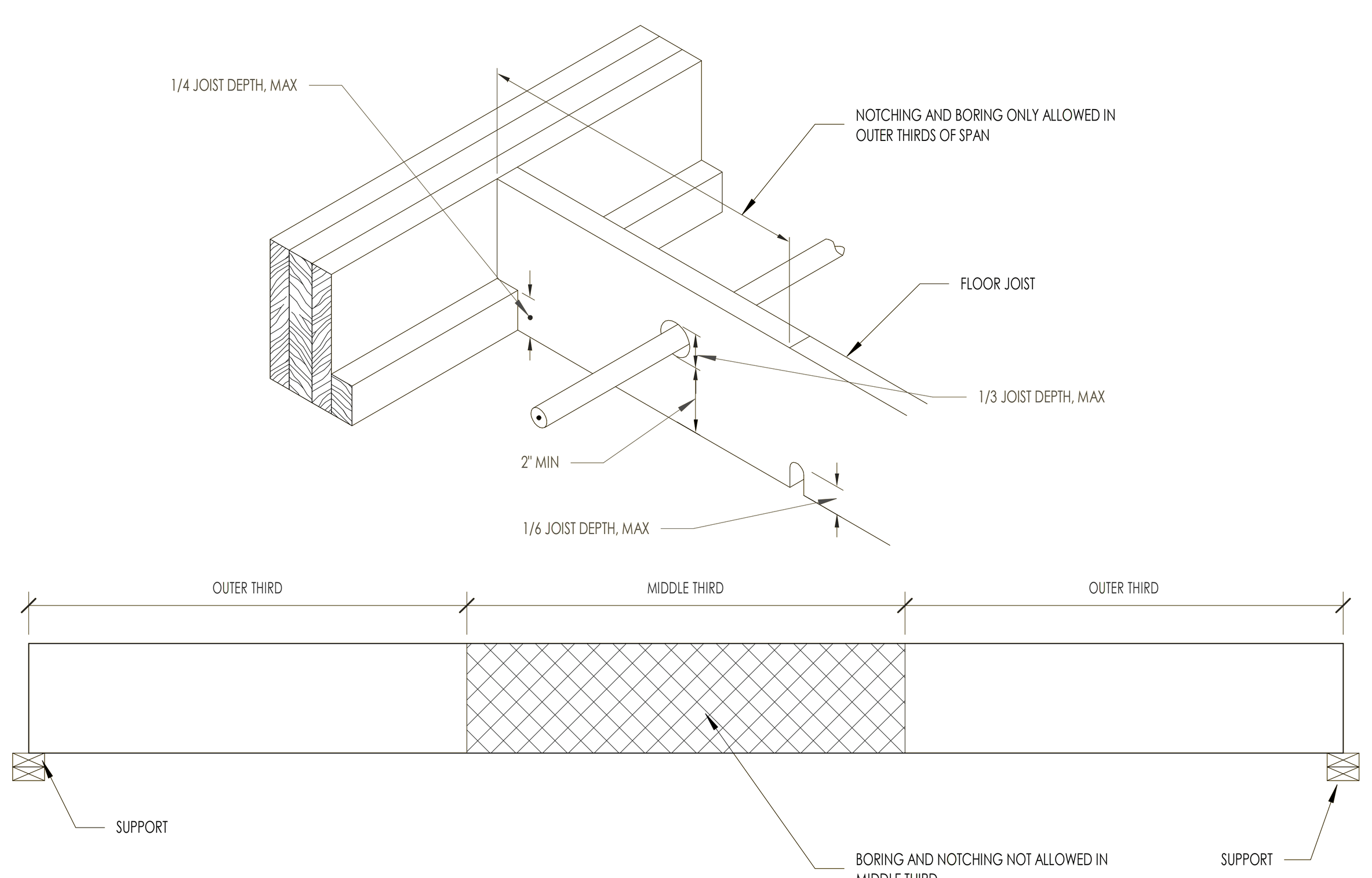


NOTES:
1. HOLE SIZE: THE HOLE DIAMETER SHALL NOT EXCEED 1½" OR D/10, WHICHEVER IS SMALLEST.
2. VARIANCE: FOR LARGER HOLE DIAMETERS' OR FOR HOLES OUTSIDE OF THE PERMITTED ZONES, WRITTEN PERMISSION MUST BE OBTAINED FROM THE EOR.
3. LIMITATIONS: THE ABOVE CRITERIA ONLY APPLY TO SIMPLY-SUPPORTED, UNIFORMLY LOADED GLUE LAMINATED BEAMS. FOR BEAMS THAT ARE EITHER CONTINUOUS ACROSS MULTIPLE SPANS OR THAT ARE SUPPORTING NON-UNIFORM LOADS, WRITTEN PERMISSION MUST BE OBTAINED FROM THE EOR.

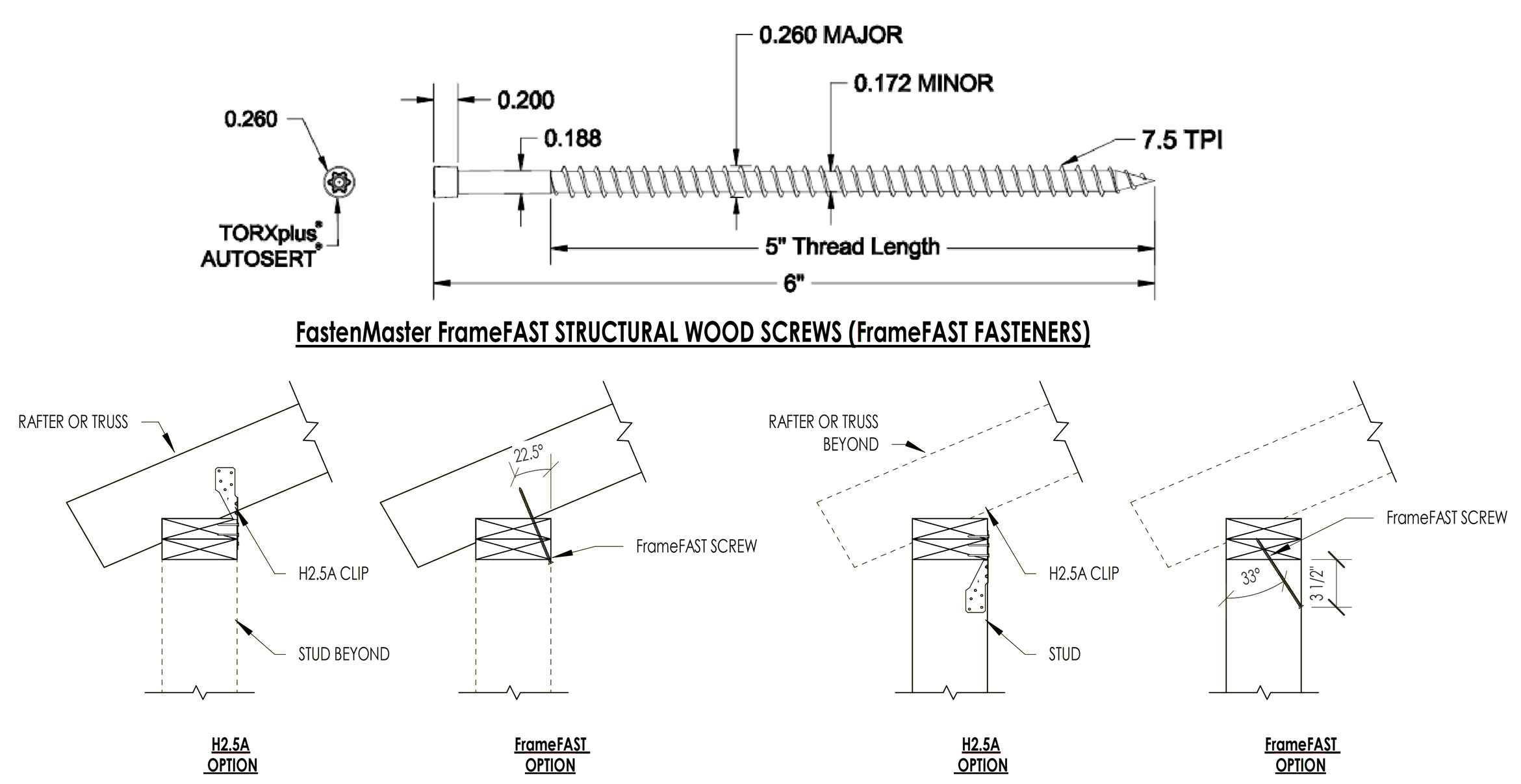
4E / S4.0 **ALLOWABLE HORIZONTAL HOLE LOCATIONS IN GLUE LAMINATED TIMBER BEAMS**



4D / S4.0 **TYPICAL NAILING CONFIGURATIONS**

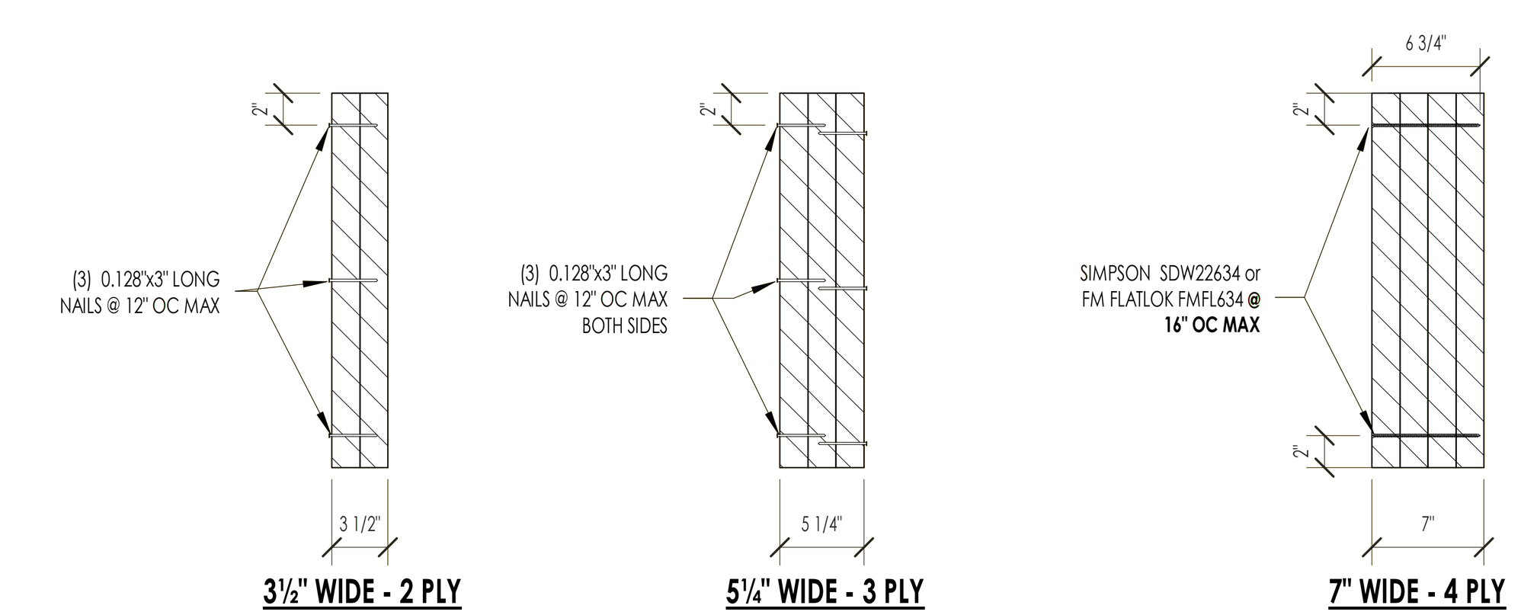


6C / S4.0 **ALLOWABLE NOTCHING AND BORING OF FLOOR JOISTS**



NOTES:
1. FastenMaster FrameFAST STRUCTURAL WOOD SCREWS (FrameFAST FASTENERS) MAY BE SUBSTITUED 1 FOR 1 WITH H2.5A CLIPS.

4C / S4.0 **ALLOWABLE SUBSTITION OF H2.5A CLIPS WITH FrameFAST SCREWS - UPLIFT LOAD PATH**



2C / S4.0 **TYPICAL LVL MULTIPLE PLY FASTENING REQUIREMENTS**

FASTENER SCHEDULE - TO BEAM TOP FLANGE

t_f (in)	PAF FASTENER[2]	BOLT / ROD[4]
≤ 0.35	X-U 47 @ 12" OC	1/2"Ø @ 24" OC
0.35 < t_f ≤ 0.44	DS 47 @ 12" OC	1/2"Ø @ 24" OC
t_f > 0.44	N/A	1/2"Ø @ 12" OC

FASTENER SCHEDULE - TO BEAM WEB / BOTTOM FLANGE

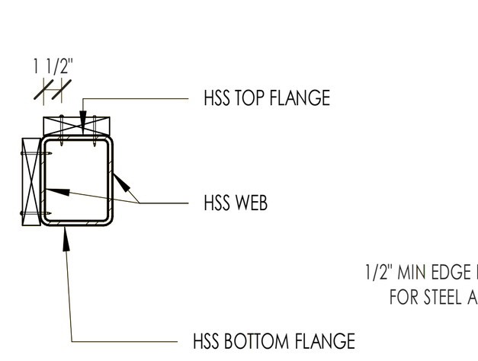
t_w (in)	PAF FASTENER[2]	BOLT / ROD[4]
≤ 0.35	(3) - X-U 47 @ 12" OC	(2) - 1/2"Ø @ 24" OC
0.35 < t_w ≤ 0.44	(3) - DS 47 @ 12" OC	(2) - 1/2"Ø @ 24" OC
t_w > 0.44	N/A	(2) - 1/2"Ø @ 12" OC

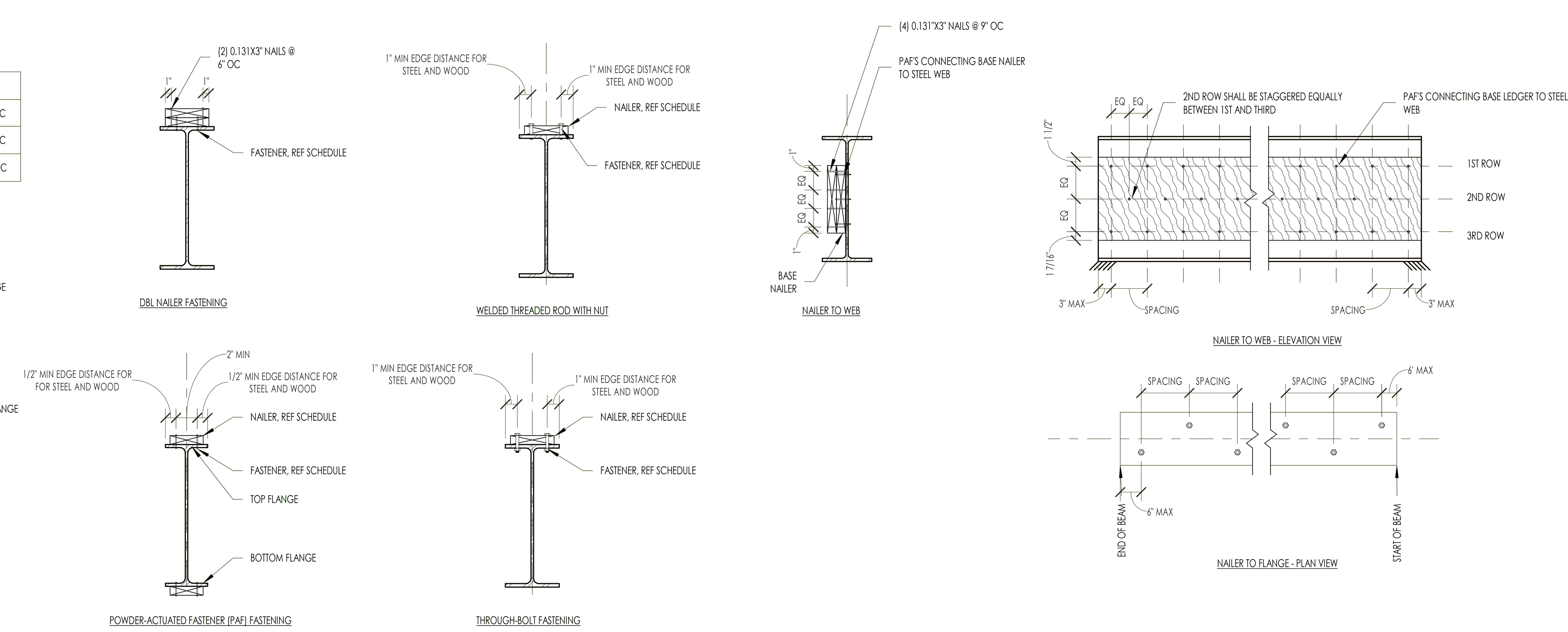
NAILER SCHEDULE - TO BEAM FLANGE

b (in)	NAILER SIZE
≤ 5.5	2x4
5.5 < b ≤ 7.25	2x6
t_f > 7.25	2x8

NAILER SCHEDULE - TO BEAM WEB

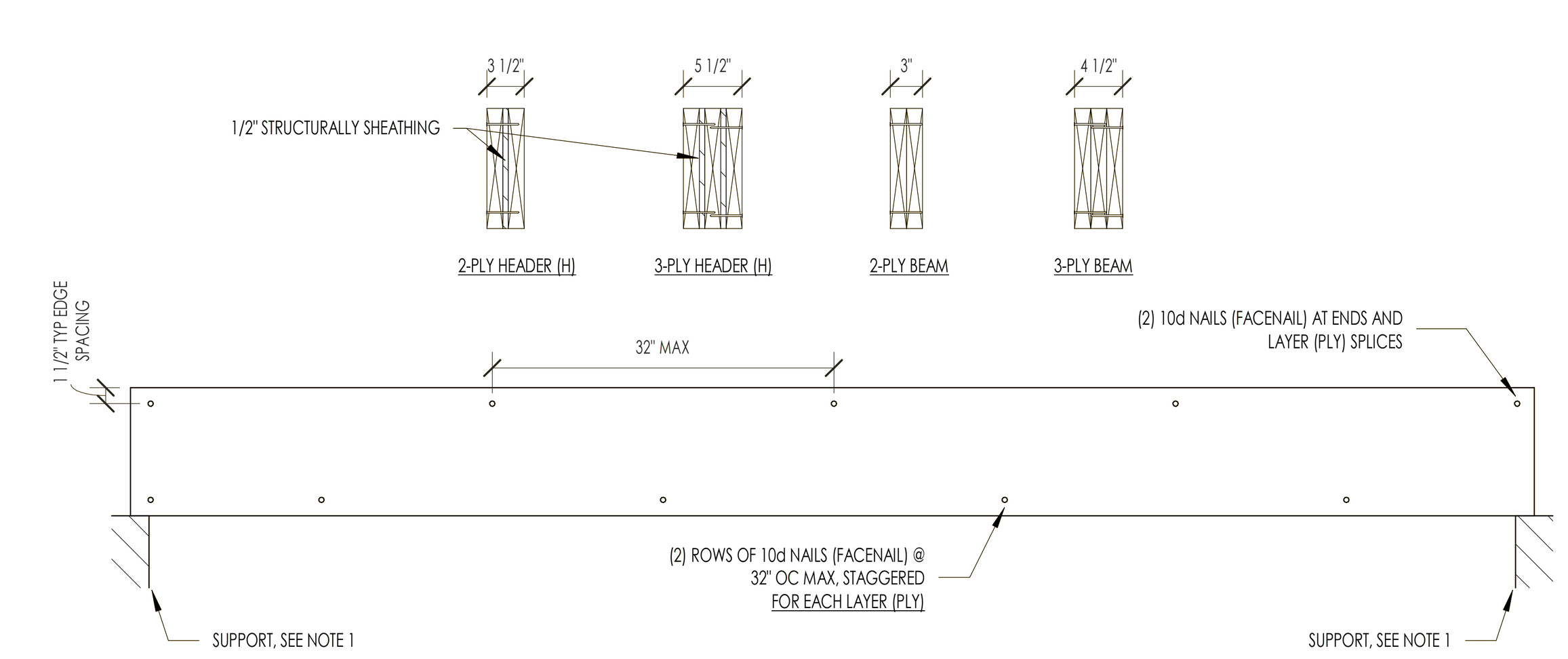
d (in)	NAILER SIZE
≤ 5	2x4
5 < d ≤ 6.75	2x6
6.75 < d ≤ 8.75	2x8
8.75 < d ≤ 10.75	2x10
10.75 < d ≤ 15	(2) - 2X8
15 < d ≤ 19	(2) - 2x10
19 < d ≤ 23	(2) - 2x12
d > 23	(3) - 2x8





NOTES:
1. ALL FASTENERS SHALL BE STAGGERED.
2. FASTENER DESCRIPTIONS, ALL FASTENERS ARE POWDER-ACTUATED FASTENERS MFR'D BY HILTI, INC.:
   A. X-U 47
      a. UNIVERSAL KNURLED SHANK FASTENER WITH A SHANK DIAMETER OF 0.157" AND A SHANK LENGTH OF 47 mm (1.85").
   B. DS 47
      a. HEAVY DUTY SMOOTH SHANK FASTENER WITH A SHANK DIAMETER OF 0.177" AND A SHANK LENGTH OF 47 mm (1.85")
3. FASTENER INSTALLATION SHALL FOLLOW ALL SPECIFICATIONS PER THE MFR.
4. THROUGH BOLTS SHALL BE GALVANIZED ASTM A307 BOLTS. THREADED ROD SHALL BE GALVANIZED ASTM F1554 GR.36.

6A / S4.0 **WOOD NAILER TO TOP OF STRUCTURAL STEEL**



NOTES:
1. UNLESS NOTED OTHERWISE ON PLAN, REFER TO THE FOLLOWING DETAILS FOR THE SUPPORT FRAMING:
   A. SUPPORT FOR HEADERS IN EXTERIOR WALLS: 4C / S4.1
   B. SUPPORT FOR HEADERS IN INTERIOR WALLS: 5B / S4.1
   C. SUPPORT FOR BEAMS & GIRDERS SUPPORTED BY WALL - REFERENCE BEAM SCHEDULE

2A / S4.0 **TYPICAL NAILING BUILT UP BEAMS, GIRDERS & HEADERS**

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lisa@lkbarchitecture.com | 713.425.3076

Structural: Dudley
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oorieka@dudleyeng.com | (979) 777-0720

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Architect: OpeningDesign
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ryan@openingdesign.com | 773.425.6456

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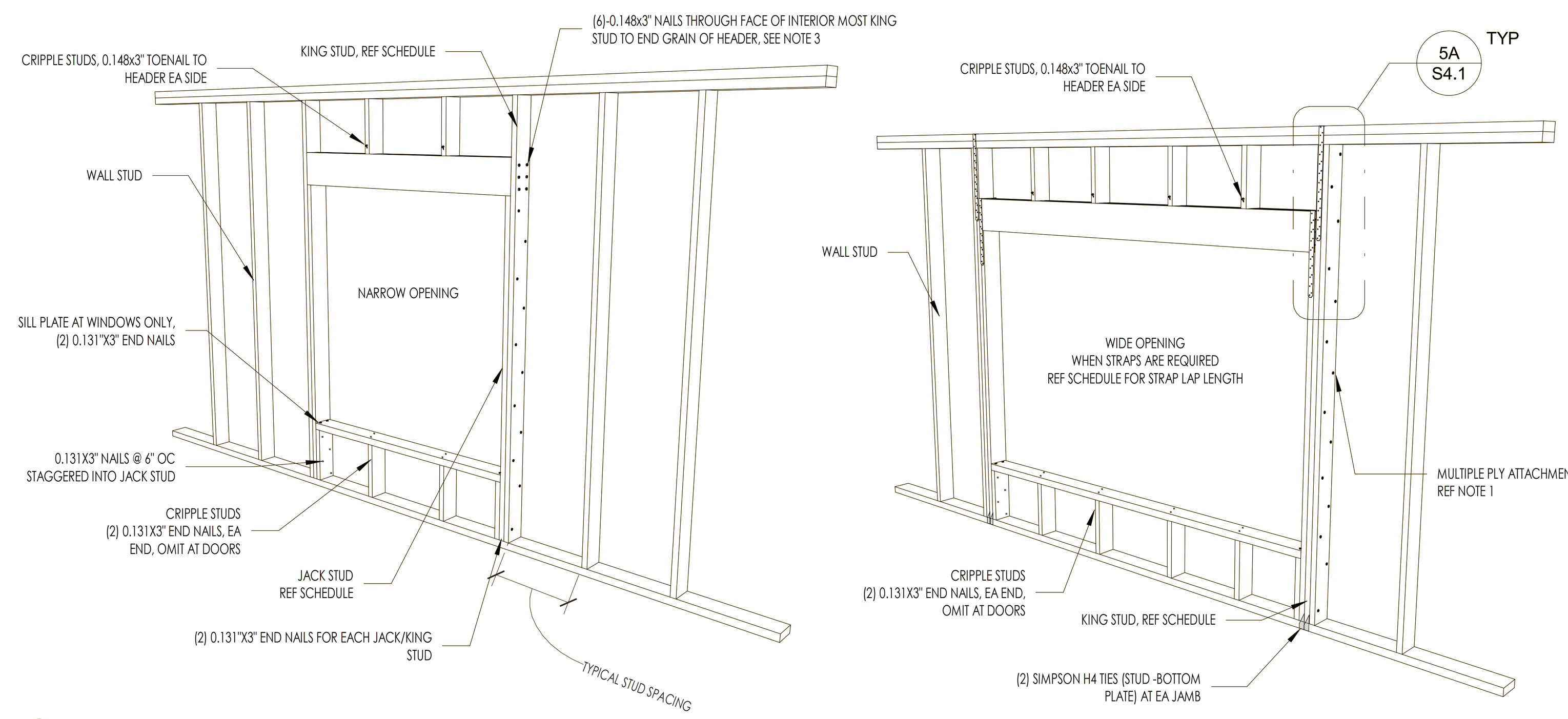
Date	Description
06/02/2022	Reviewed for Permit
08/26/2022	PERMIT REVISIONS

TYPICAL WOOD FRAMING DETAILS

MARCO POLO - 101 33RD STREET - CITY OF BRYAN TOWNSITE, BLOCK 96, LOT 3-5 & PT OF 6 & PT OF ALLEY - BRYAN, TX 77803

S4.0

FOR CONSTRUCTION

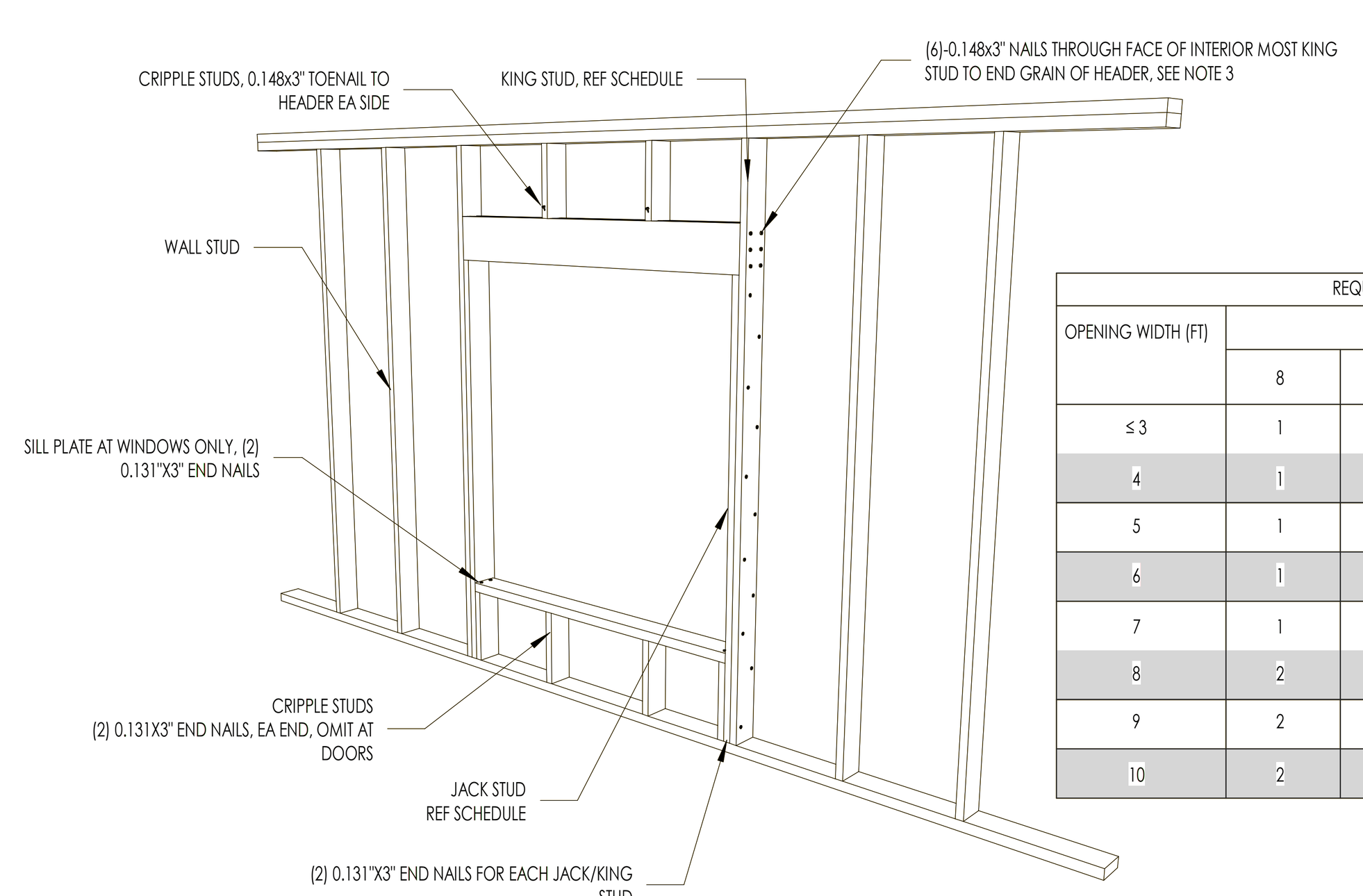


2X4 STUD WALL							
REQUIRED NO. OF KING STUDS						NO. JACK STUDS	STRAP LAP LENGTH[4] (IN)
OPENING WIDTH (FT)	PLATE HEIGHT (FT)						
	8	9	10	11	12		
≤ 3	1	1	1	2	2	1	N/R
4	1	1	2	2	2	1	N/R
5	2	2	2	3	3	1	N/R
6	2	2	3	3	3	1	N/R
7	2	2	3	3	4X6	1	N/R
8	3	3	3	4X6	4X6	2	8
9	3	3	4X6	4X6	4X6	2	8
10	3	3	4X6	4X6	4X6	2	8

2X6 STUD WALL							
REQUIRED NO. OF KING STUDS						NO. JACK STUDS	STRAP LAP[4] (IN)
OPENING WIDTH (FT)	PLATE HEIGHT (FT)						
	8	9	10	11	12		
≤ 3	1	1	1	1	1	1	N/R
4	1	1	1	1	1	1	N/R
5	1	1	1	1	2	1	N/R
6	1	1	1	2	2	1	N/R
7	1	1	2	2	2	1	N/R
8	1	1	2	2	2	2	8
9	1	2	2	2	2	2	8
10	1	2	2	2	3	2	8

NOTES:
1. MULTIPLE PLIES MUST BE ATTACHED PER THE MECHANICALLY LAMINATED BUILT-UP COLUMN_NAILED DETAIL.
2. TABLE IS BASED OFF A HORIZONTAL WIND PRESSURE OF 20 PSF AND GRAVITY LOADING OF 200 PLF .
3. NAILS MUST BE CENTERED ON THE INDIVIDUAL PLIES OF THE HEADER.
4. N/R = NOT REQUIRED. IF N/R, THEN REFERENCE NARROW OPENING DIAGRAM FOR CONNECTION REQUIREMENTS, OTHERWISE REFERENCE THE WIDE OPENING DIAGRAM.

4C / S4.1 TYPICAL EXTERIOR OPENING FRAMING



LOAD BEARING WALL

REQUIRED NO. OF KING STUDS						NO. JACK STUDS
OPENING WIDTH (FT)	PLATE HEIGHT (FT)					
	8	9	10	11	12	
≤ 3	1	1	1	1	1	1
4	1	1	1	1	1	1
5	1	1	1	2	2	1
6	1	1	2	2	2	1
7	1	1	2	2	3	1
8	2	2	2	3	3	2
9	2	2	3	3	3	2
10	2	2	3	3	3	2

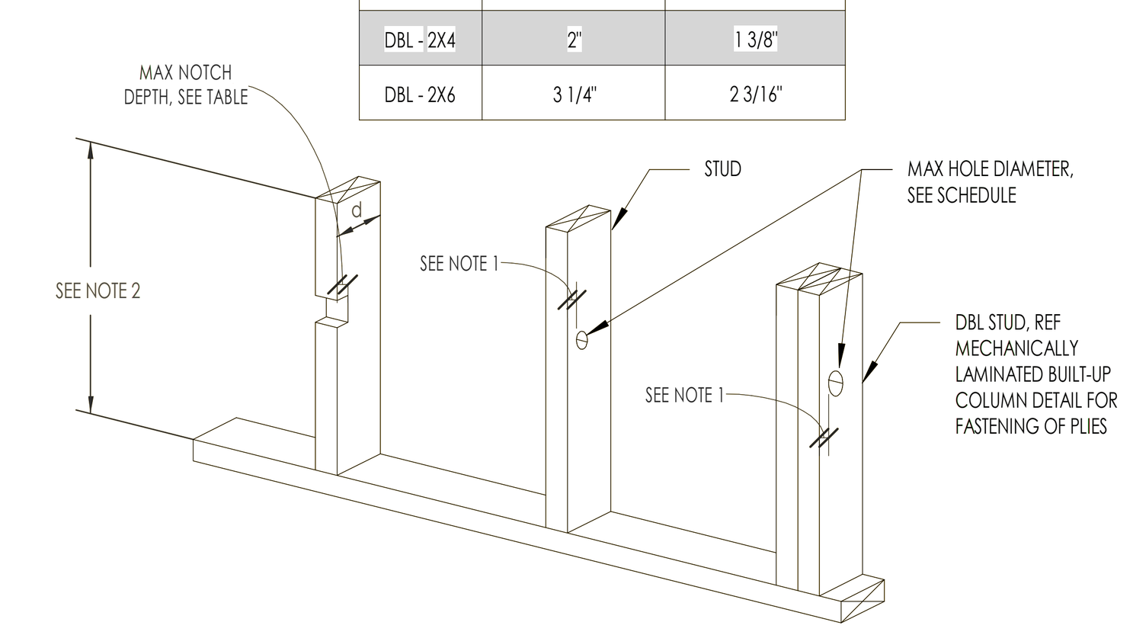
NON-LOAD BEARING WALL

REQUIRED NO. OF KING STUDS						NO. JACK STUDS	HEADER SIZE	
OPENING WIDTH (FT)	PLATE HEIGHT (FT)							
	8	9	10	11	12		2X4 STUD WALL	2X6 STUD WALL
≤ 3	1	1	1	1	1	1	226H	326H
4	1	1	1	1	1	1	226H	326H
5	1	1	1	2	2	1	226H	326H
6	1	1	2	2	2	1	226H	326H
7	1	1	2	2	3	1	226H	326H
8	2	2	2	3	3	1	2210H	3210H
9	2	2	3	3	3	1	2210H	3210H
10	2	2	3	3	3	1	2210H	3210H

NOTES:
1. LOAD BEARING WALLS AND ASSOCIATED HEADERS ARE INDICATED ON PLAN.

5B / S4.1 TYPICAL INTERIOR OPENING FRAMING

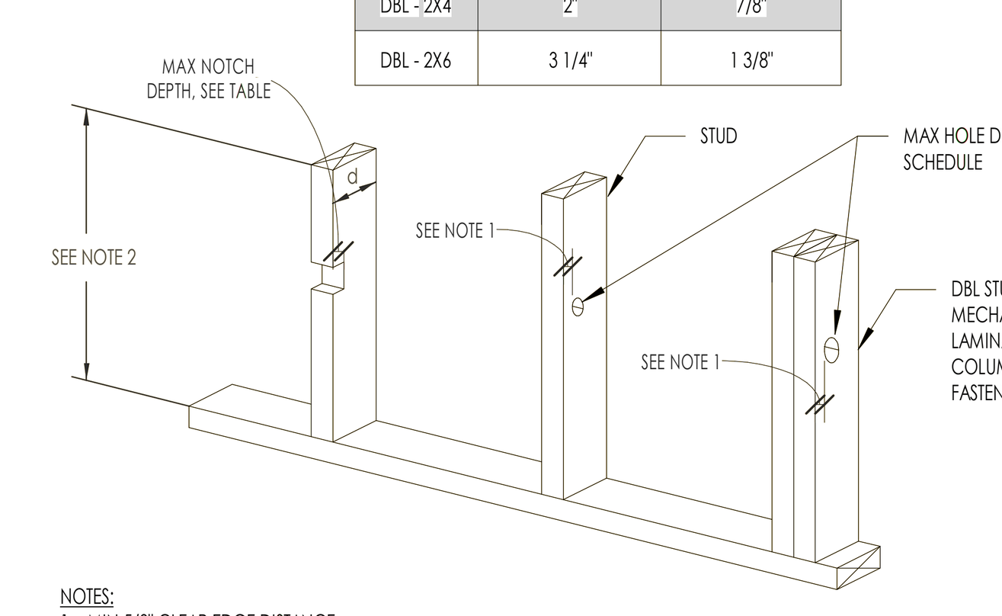
ALLOWABLE NOTCHING AND BORING SCHEDULE		
STUD SIZE	MAX HOLE Ø	MAX NOTCH
2X4	2"	1 3/8"
2X6	3 1/4"	2 3/16"
DBL - 2X4	2"	1 3/8"
DBL - 2X6	3 1/4"	2 3/16"



NOTES:
1. MIN 5/8" CLEAR EDGE DISTANCE
2. NOTCHES IN EITHER SIDE OF A STUD SHALL NOT BE LOCATED WITHIN THE MIDDLE THIRD OF THE STUD LENGTH.
3. NOTCHES AND BORINGS SHALL NOT OCCUR IN THE SAME CROSS SECTION.

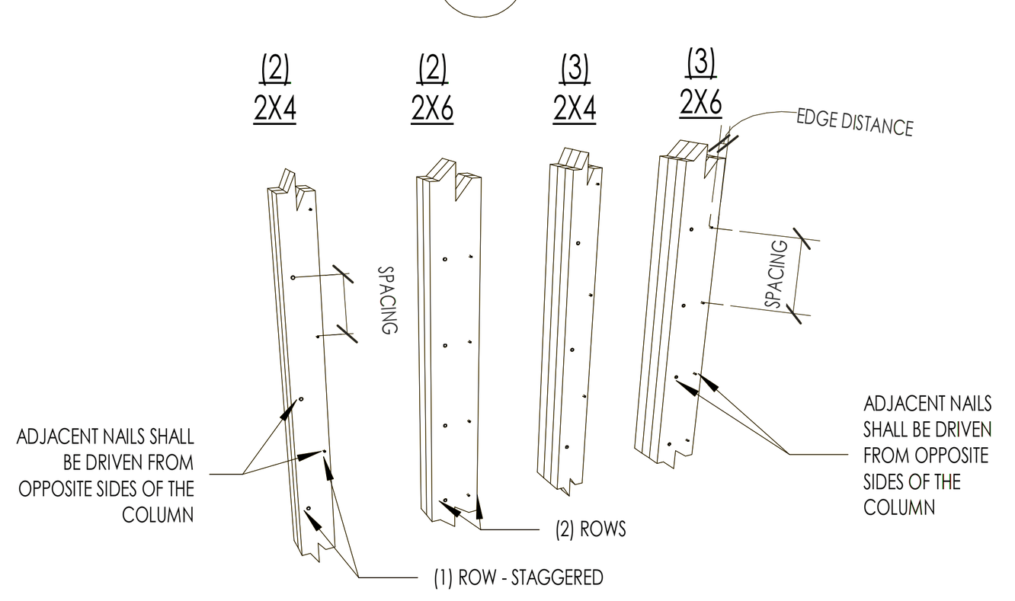
2B / S4.1 ALLOWABLE STUD NOTCHING AND BORING IN INTERIOR NON-LOAD BEARING WALLS

ALLOWABLE NOTCHING AND BORING SCHEDULE		
STUD SIZE	MAX HOLE Ø	MAX NOTCH
2X4	1 3/8"	7/8"
2X6	2 3/16"	1 3/8"
DBL - 2X4	2"	7/8"
DBL - 2X6	3 1/4"	1 3/8"



NOTES:
1. MIN 5/8" CLEAR EDGE DISTANCE
2. NOTCHES IN EITHER SIDE OF A STUD SHALL NOT BE LOCATED WITHIN THE MIDDLE THIRD OF THE STUD LENGTH.
3. NOTCHES AND BORINGS SHALL NOT OCCUR IN THE SAME CROSS SECTION.

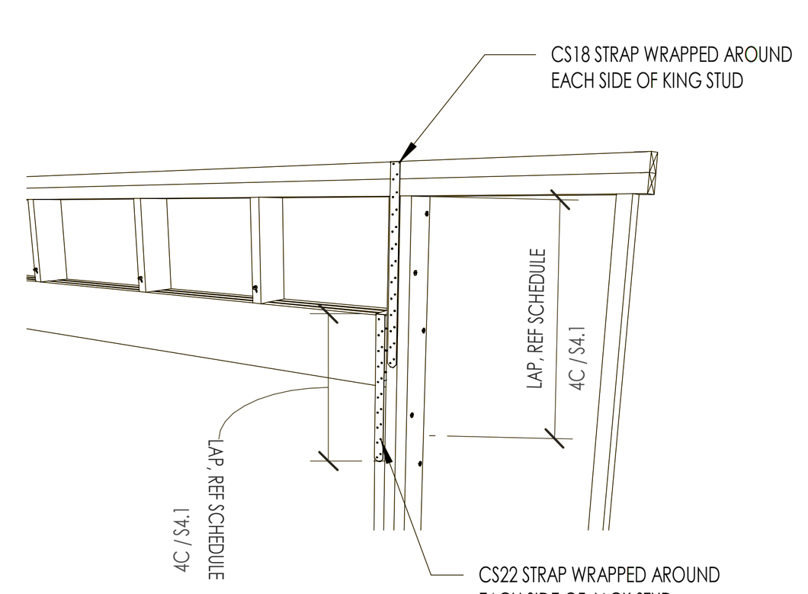
1B / S4.1 ALLOWABLE STUD NOTCHING AND BORING IN EXTERIOR & LOAD BEARING WALLS



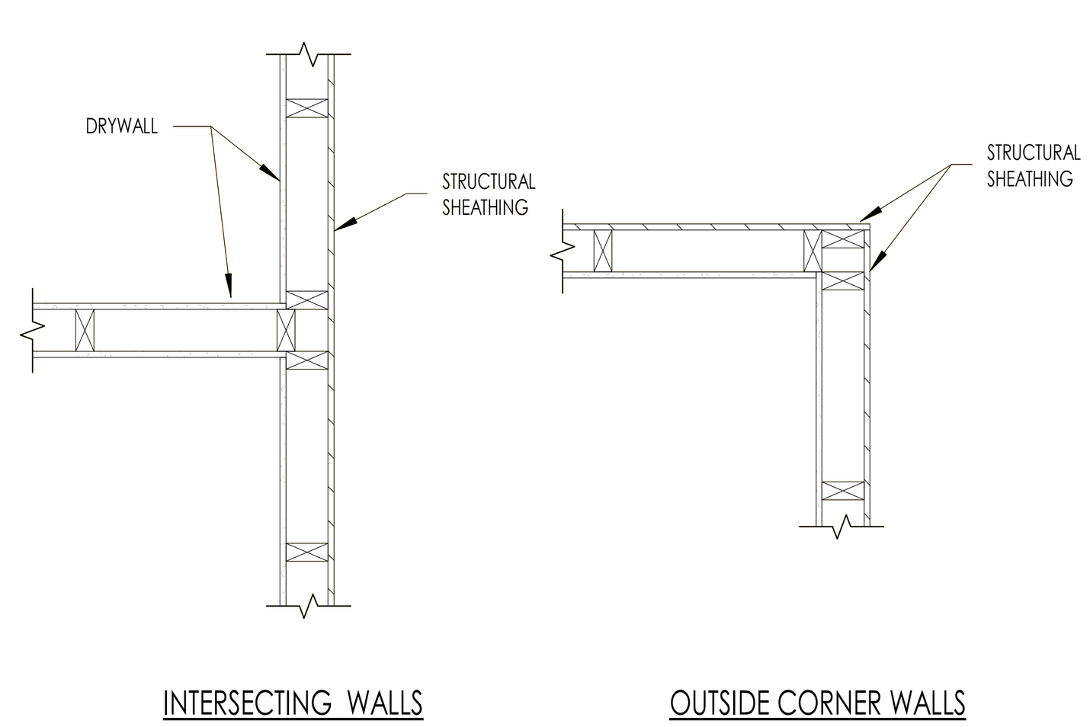
BUILT-UP SECTION	NAIL SIZE	SPACING	NO. ROWS	NOTES
(2) - 2X4	0.131 x 3"	6"	1	STAGGERED
(2) - 2X6	0.131 x 3"	8"	2	
(3) - 2X4	0.131 x 4"	6"	1	STAGGERED
(3) - 2X6	0.131 x 4"	8"	2	

NOTES:
1. END DISTANCE: THE FIRST FASTENERS SHALL BE LOCATED 2" FROM THE END OF THE COLUMN ON EACH END.
2. EDGE DISTANCE: 3/4"≤ EDGE DISTANCE ≤ 1½"

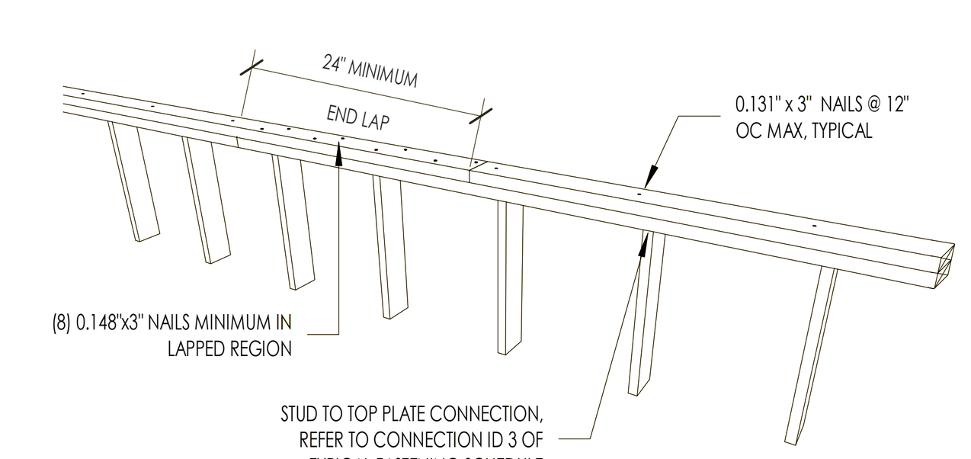
6A / S4.1 MECHANICALL LAMINATED BUILT-UP COLUMN (STUD PACK) -NAILED



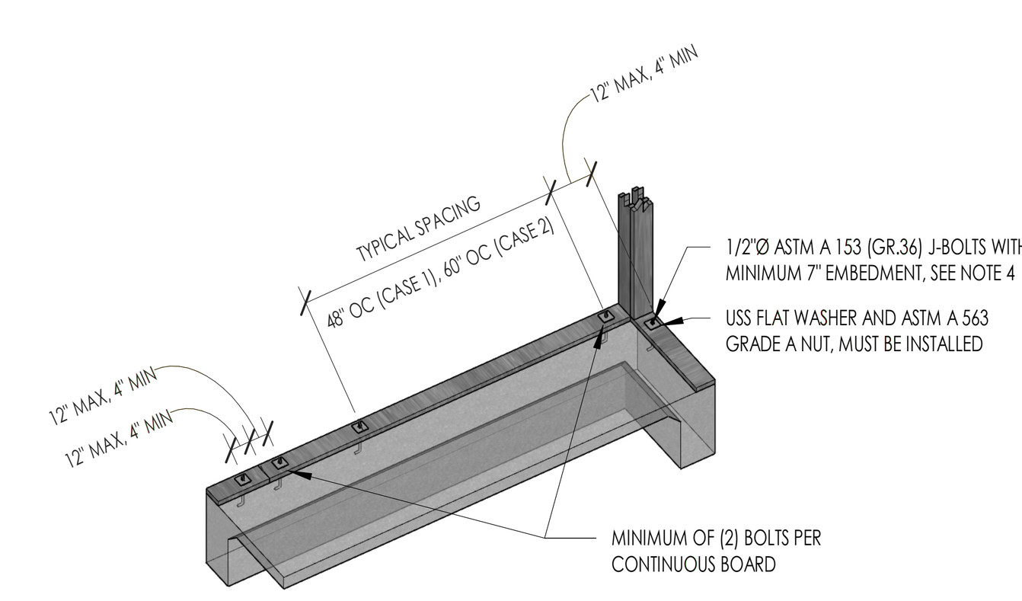
5A / S4.1 TYPICAL STRAP AT WIDE EXTERIOR OPENINGS



4A / S4.1 TYPICAL CORNER AND INTERSECTION WALL STUDS (NOT AT SHEAR WALL)



3A / S4.1 TYPICAL LOAD BEARING / SHEAR WALL DOUBLE TOP PLATE SPLICE



NOTES:
1. CASE 1 = EXTERIOR WALLS THAT ARE NOT SHEAR WALLS.
2. CASE 2 = INTERIOR LOAD BEARING WALLS THAT ARE NOT SHEAR WALLS.
3. FOR WALLS THAT ARE INDICATED TO BE SHEAR WALLS, REFER TO THE SHEAR WALL SCHEDULE FOR ANCHORAGE REQUIREMENTS.
4. SIMPSON 1/2"Øx6" TITEN-HD SCREW ANCHORS ARE AN ACCEPTABLE ALTERNATIVE TO THE J-BOLTS.

2A / S4.1 TYPICAL BOTTOM PLATE ANCHORAGE

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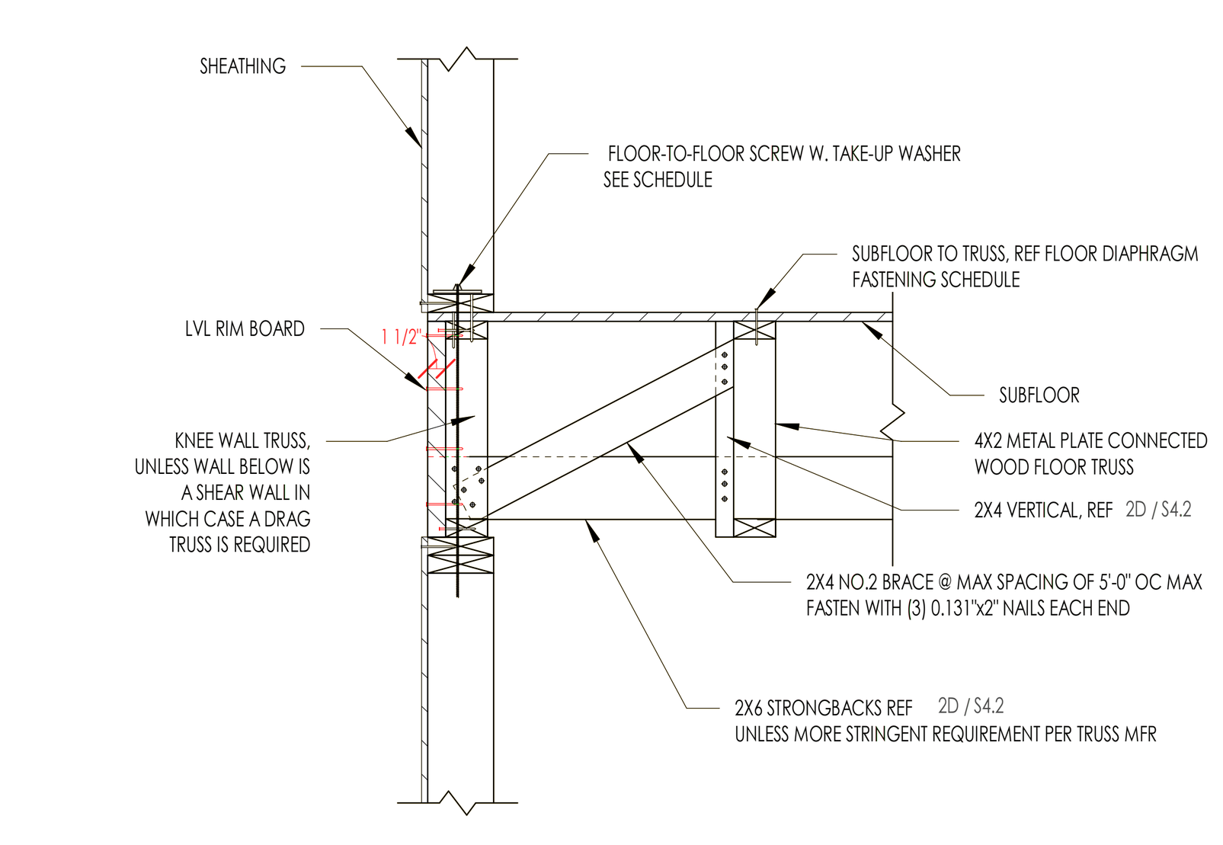
Date	Description
06/02/2022	Reviewed for Permit
08/26/2022	PERMIT REVISIONS

TYPICAL WOOD FRAMING WALL DETAILS

MARCO POLO - 101 33RD STREET - CITY OF BRYAN TOWNSITE, BLOCK 96, LOT 3-5 & PT OF 6 & PT OF ALLEY - BRYAN, TX 77803

S4.1

FOR CONSTRUCTION



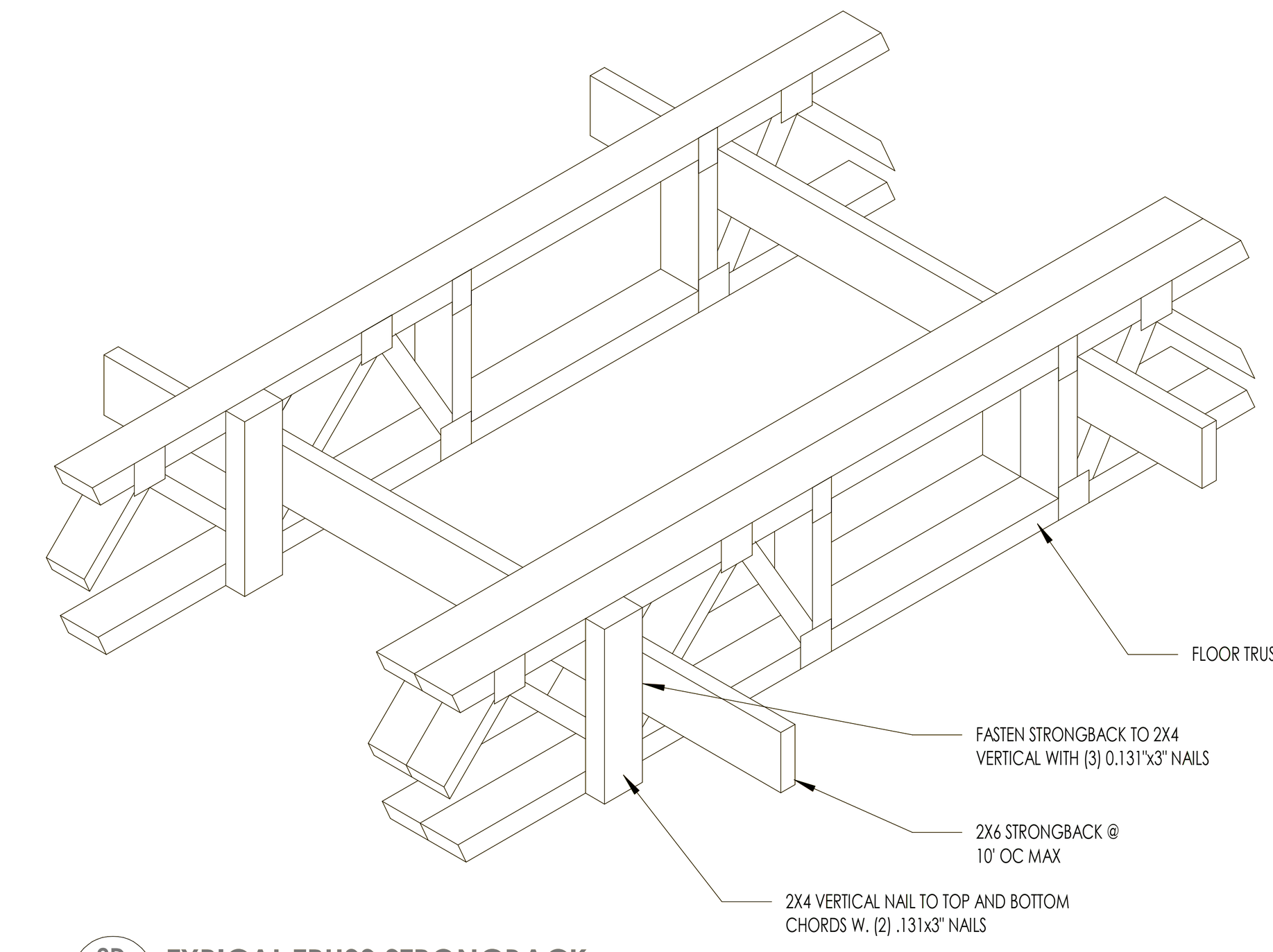
FLOOR-TO-FLOOR SCREW SCHEDULE

12" < TRUSS DEPTH ≤ 14"	SIMPSON SDWF2720-TUW
14" < TRUSS DEPTH ≤ 18"	SIMPSON SDWF2726-TUW
18" < TRUSS DEPTH ≤ 24"	SIMPSON SDWF2730-TUW

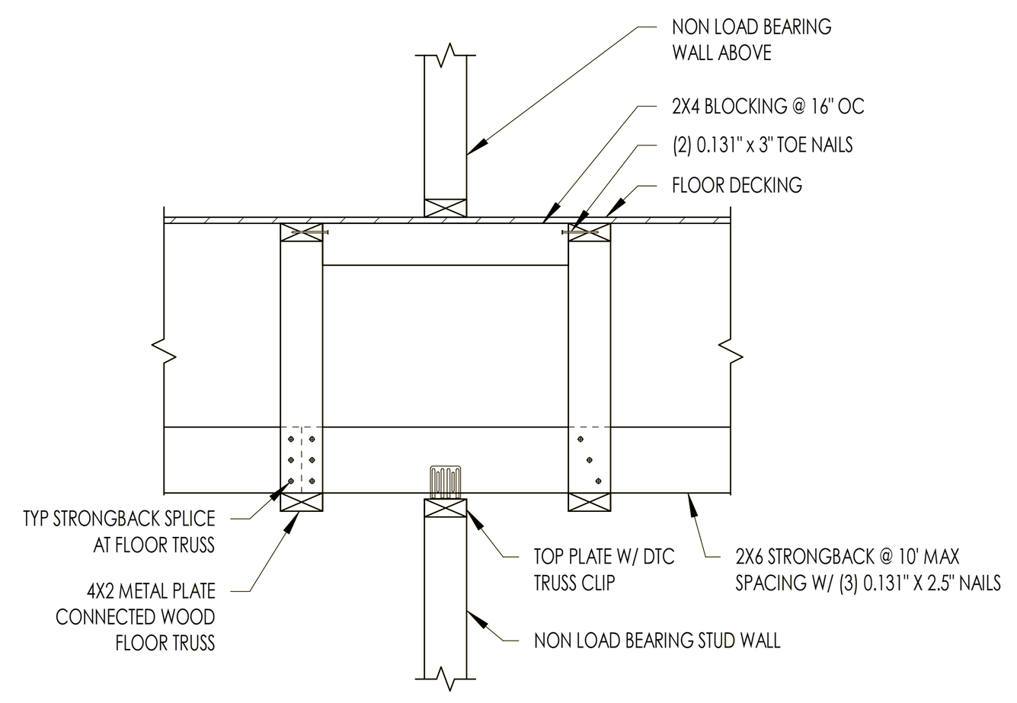
NOTES:
1. REFERENCE GENERAL NOTES FOR WOOD SHRINKAGE NOTES AND SPECIFICATIONS. IF THE FRAMING HAS A MC HIGHER THAN 15% WHEN THE SHEATHING IS APPLIED, IT MAY LEAD TO BUCKLING OF THE SHEATHING AND/OR THE CLADDING. CONTRACTOR TO QC FRAMING MC PRIOR TO INSTALLING WALL SHEATHING.

4D / S4.2 **TYPICAL FLOOR TRUSS PARALLEL TO EXTERIOR WALL - MULTI-STORY**

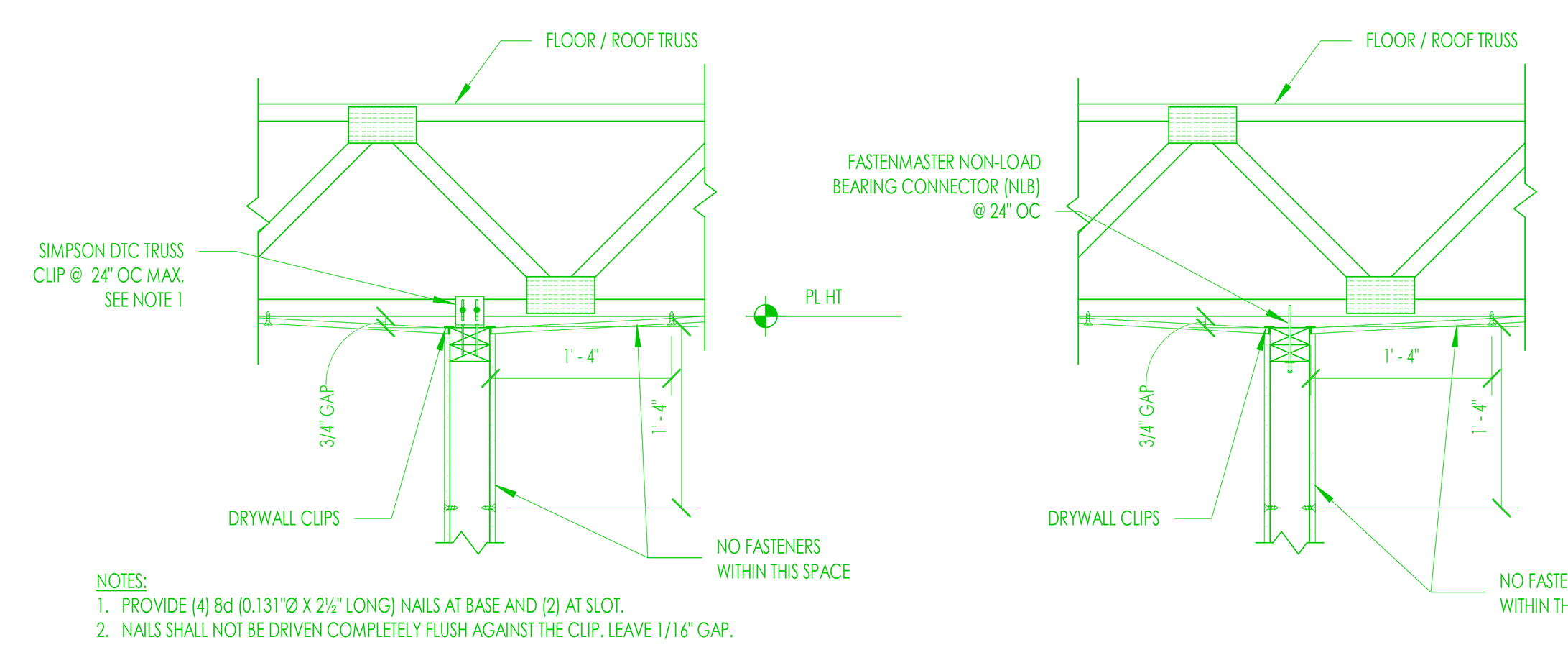
08/26/2022



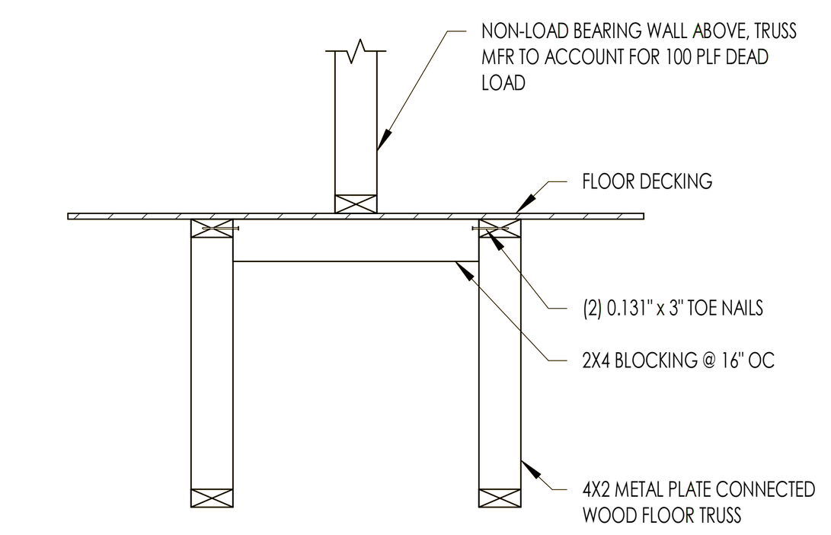
2D / S4.2 **TYPICAL TRUSS STRONGBACK**



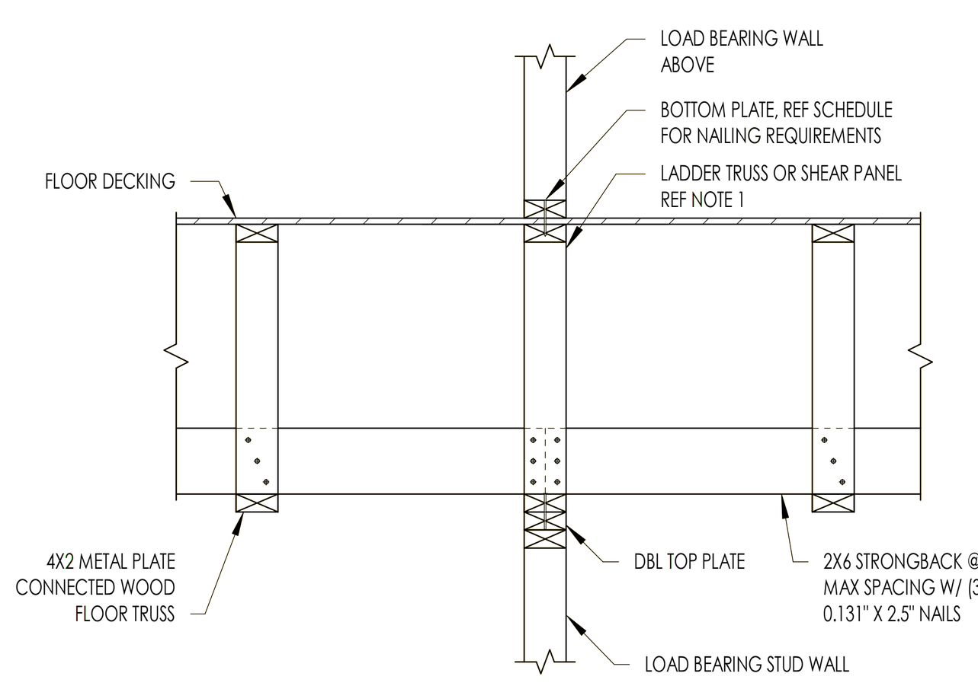
5C / S4.2 **TYPICAL NON-LOAD BEARING WALL PARALLEL TO FLOOR TRUSSES**



4C / S4.2 **TYPICAL NON-LOAD BEARING WALL ATTACHMENT TO PERPENDICULAR FLOOR TRUSS**

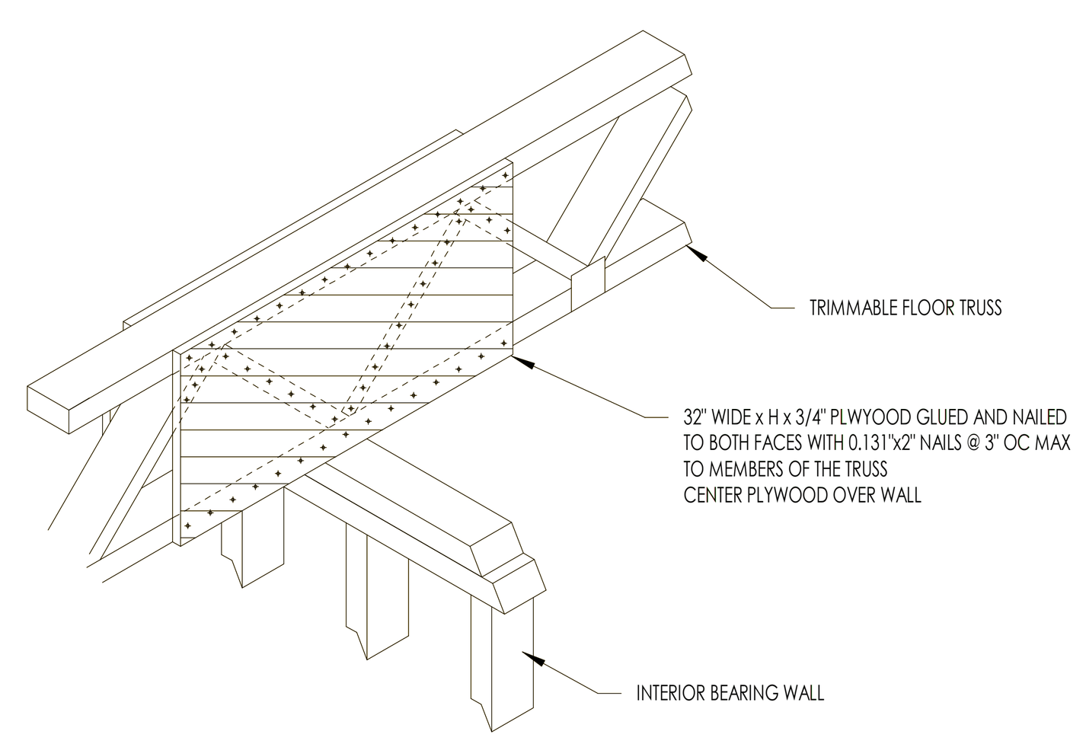


2C / S4.2 **TYPICAL NON-LOAD BEARING WALL PARALLEL TO FLOOR TRUSS**

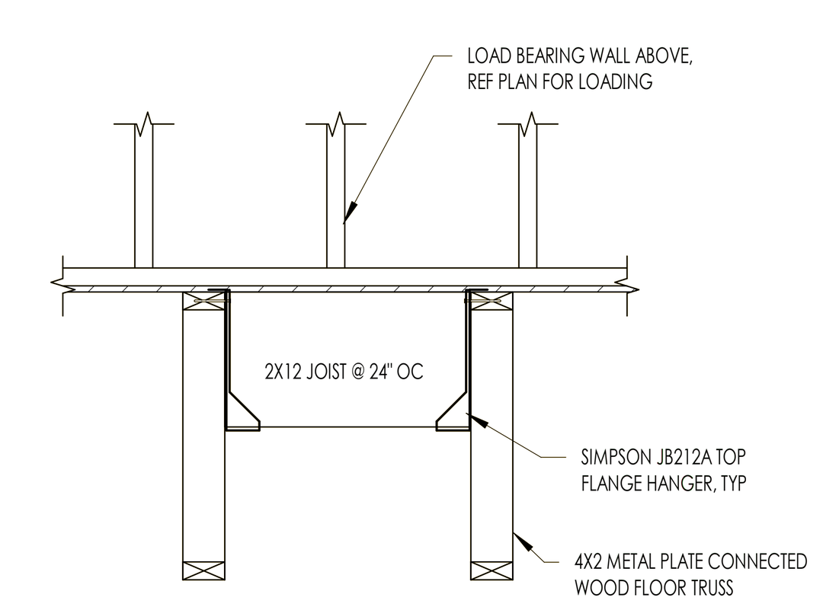


NOTES:
1. IF WALL ABOVE OR BELOW IS A SHEARWALL, THEN A SHEAR PANEL IS REQUIRED.

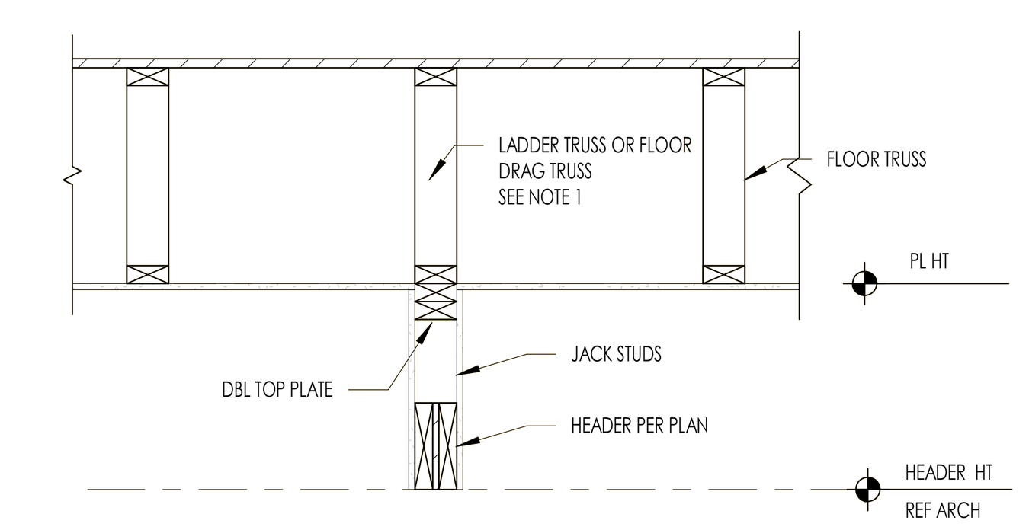
1C / S4.2 **TYPICAL LOAD BEARING WALL PARALLEL TO FLOOR TRUSSES**



1B / S4.2 **TYPICAL TRIMMABLE TRUSS STIFFENING AT INTERIOR SUPPORT**

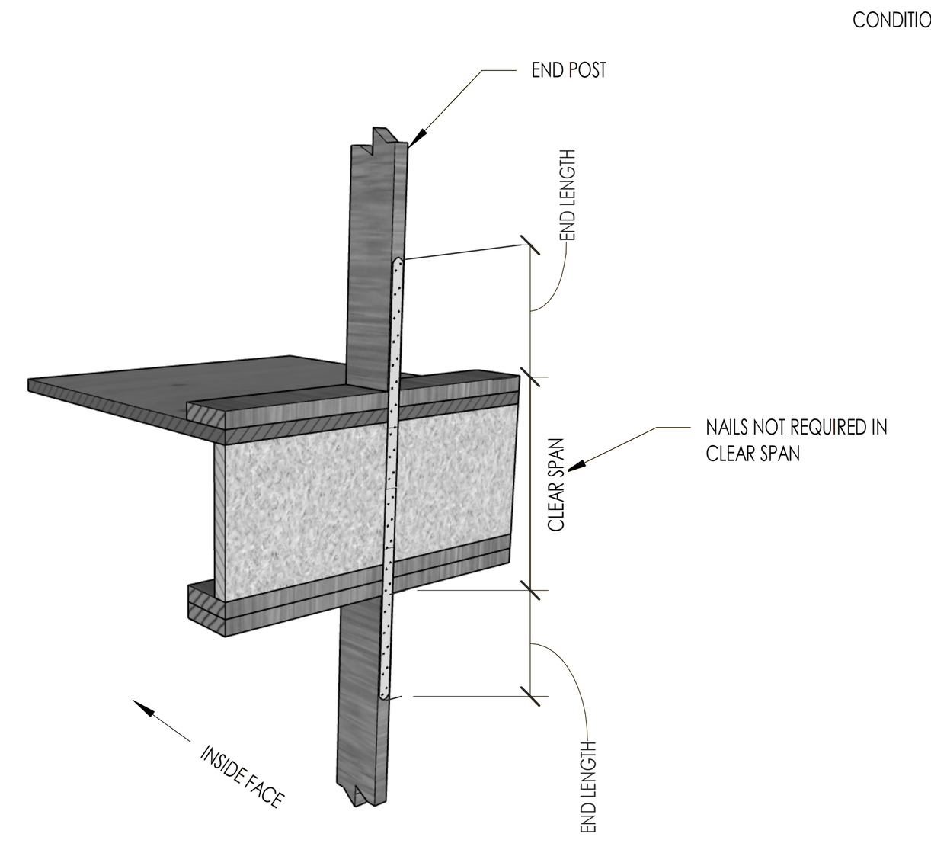


3B / S4.2 **TYPICAL LOAD BEARING WALL PERP. TO FLOOR TRUSS**

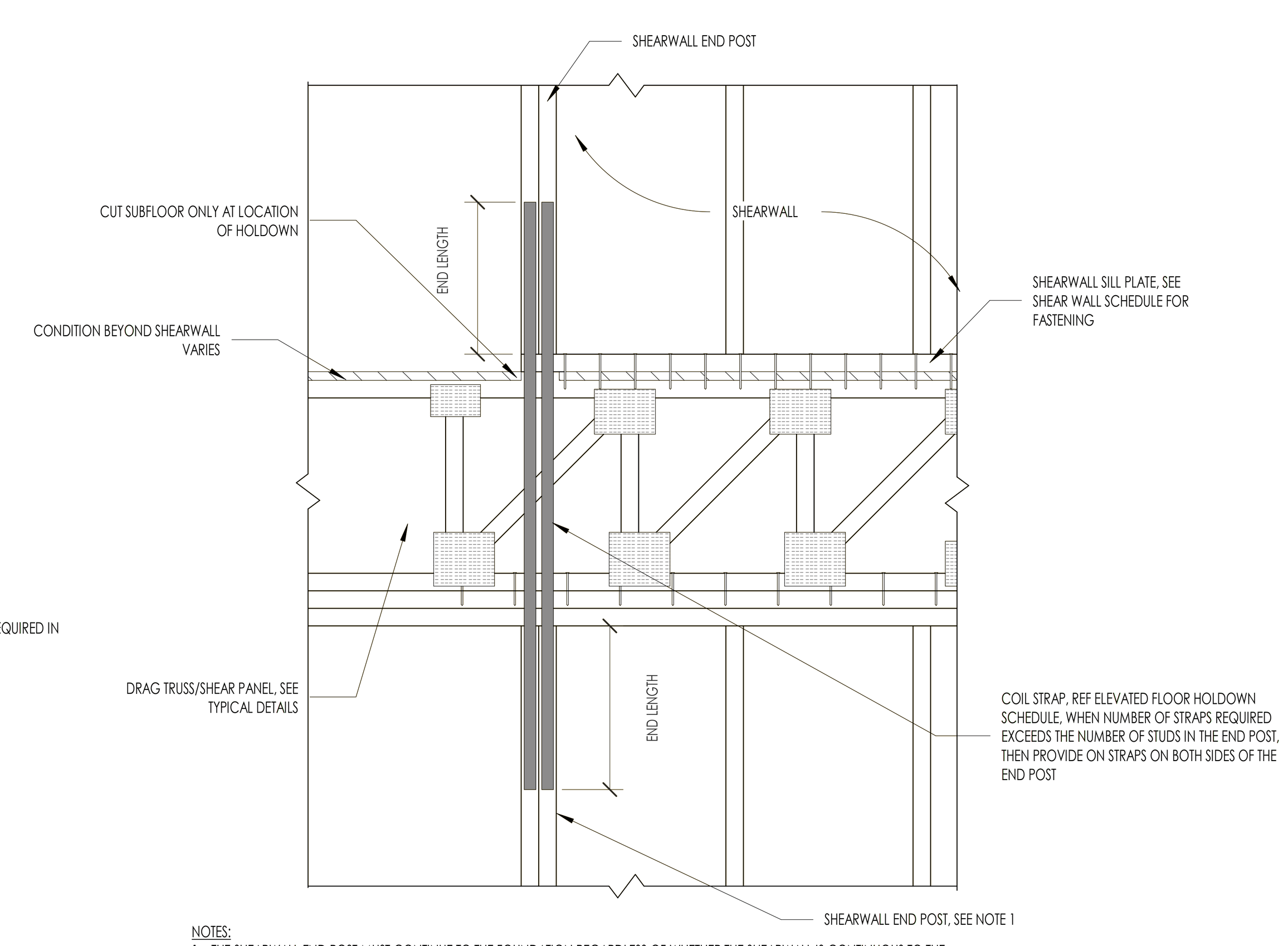


NOTES:
1. IF WALL ABOVE IS A SHEARWALL, THEN A FLOOR DRAG TRUSS IS REQUIRED.

2B / S4.2 **TYPICAL LOAD BEARING HEADER PARALLEL TO FLOOR TRUSSES**



HOLDOWN AT EXTERIOR SHEAR WALL

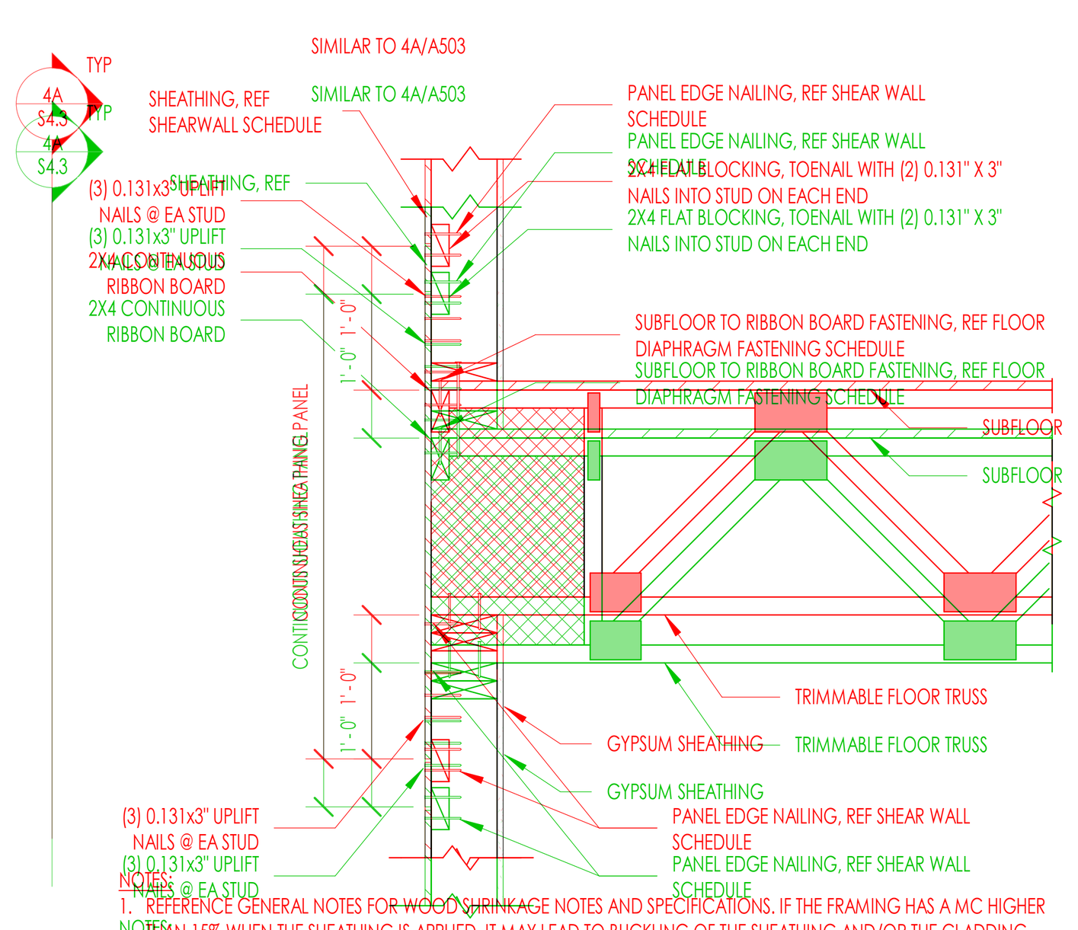


NOTES:
1. THE SHEARWALL END POST MUST CONTINUE TO THE FOUNDATION REGARDLESS OF WHETHER THE SHEARWALL IS CONTINUOUS TO THE FOUNDATION.

HOLDOWN AT INTERIOR SHEAR WALL

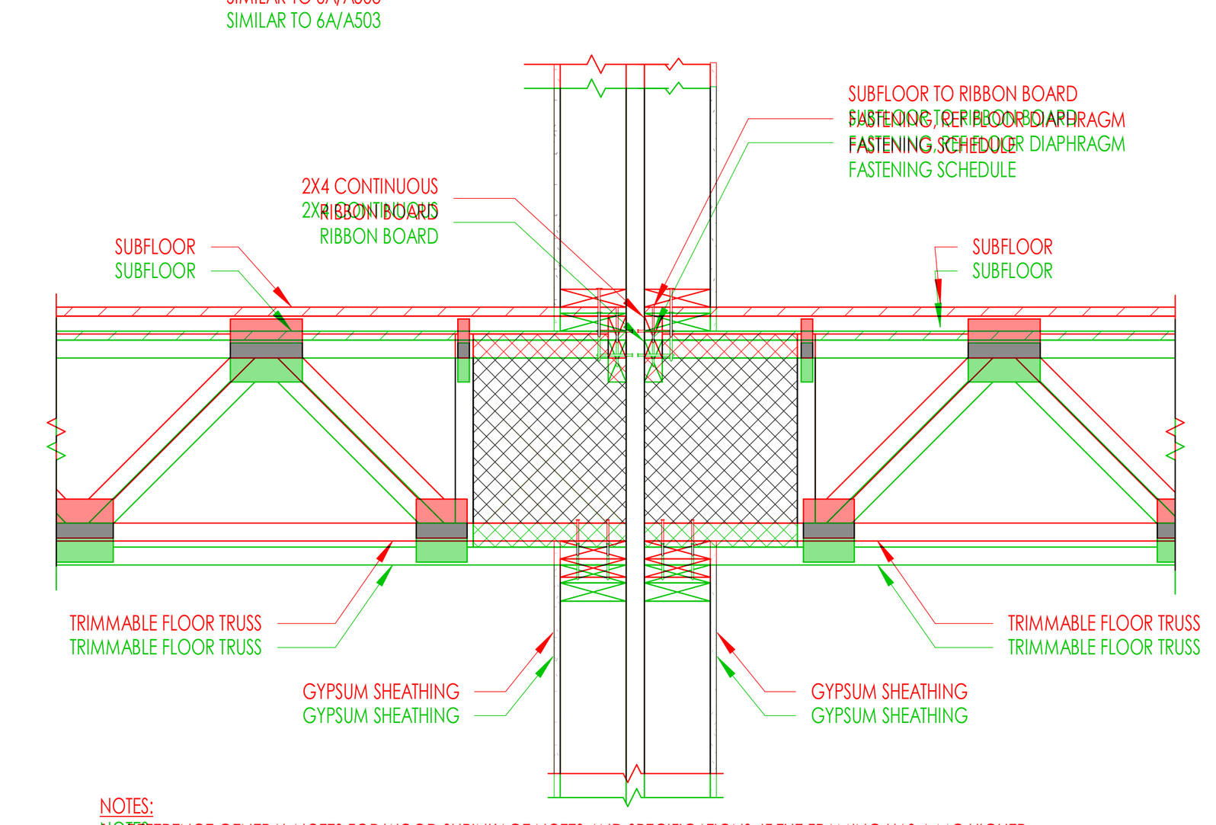
6A / S4.2 **TYPICAL SHEARWALL HOLDOWN AT ELEVATED FLOOR**

08/26/2022



NOTES:
1. REFERENCE GENERAL NOTES FOR WOOD SHRINKAGE NOTES AND SPECIFICATIONS. IF THE FRAMING HAS A MC HIGHER THAN 15% WHEN THE SHEATHING IS APPLIED, IT MAY LEAD TO BUCKLING OF THE SHEATHING AND/OR THE CLADDING. CONTRACTOR TO QC FRAMING MC PRIOR TO INSTALLING WALL SHEATHING.

3A / S4.2 **061760 FLOOR - TRIMMABLE TRUSS BOTTOM CHORD BEARING ON EXTERIOR WALL**



NOTES:
1. REFERENCE GENERAL NOTES FOR WOOD SHRINKAGE NOTES AND SPECIFICATIONS. IF THE FRAMING HAS A MC HIGHER THAN 15% WHEN THE SHEATHING IS APPLIED, IT MAY LEAD TO BUCKLING OF THE SHEATHING AND/OR THE CLADDING. CONTRACTOR TO QC FRAMING MC PRIOR TO INSTALLING WALL SHEATHING.

2A / S4.2 **TYPICAL INTERIOR BOTTOM CHORD BEARING AT PARTY WALL**

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Date	Description
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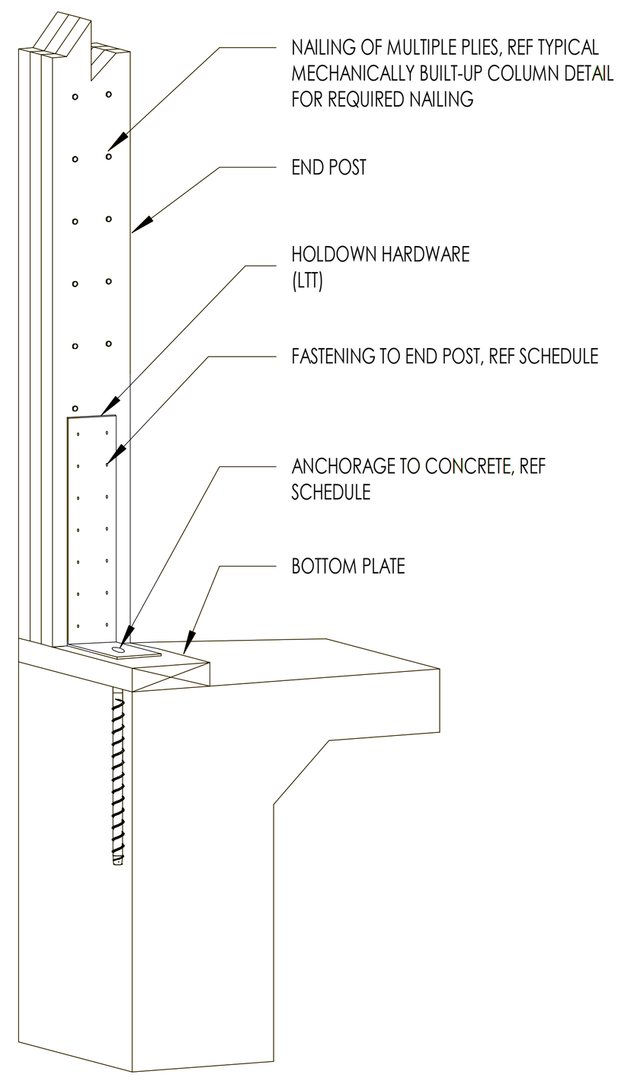
TYPICAL WOOD FLOOR TRUSS DETAILS

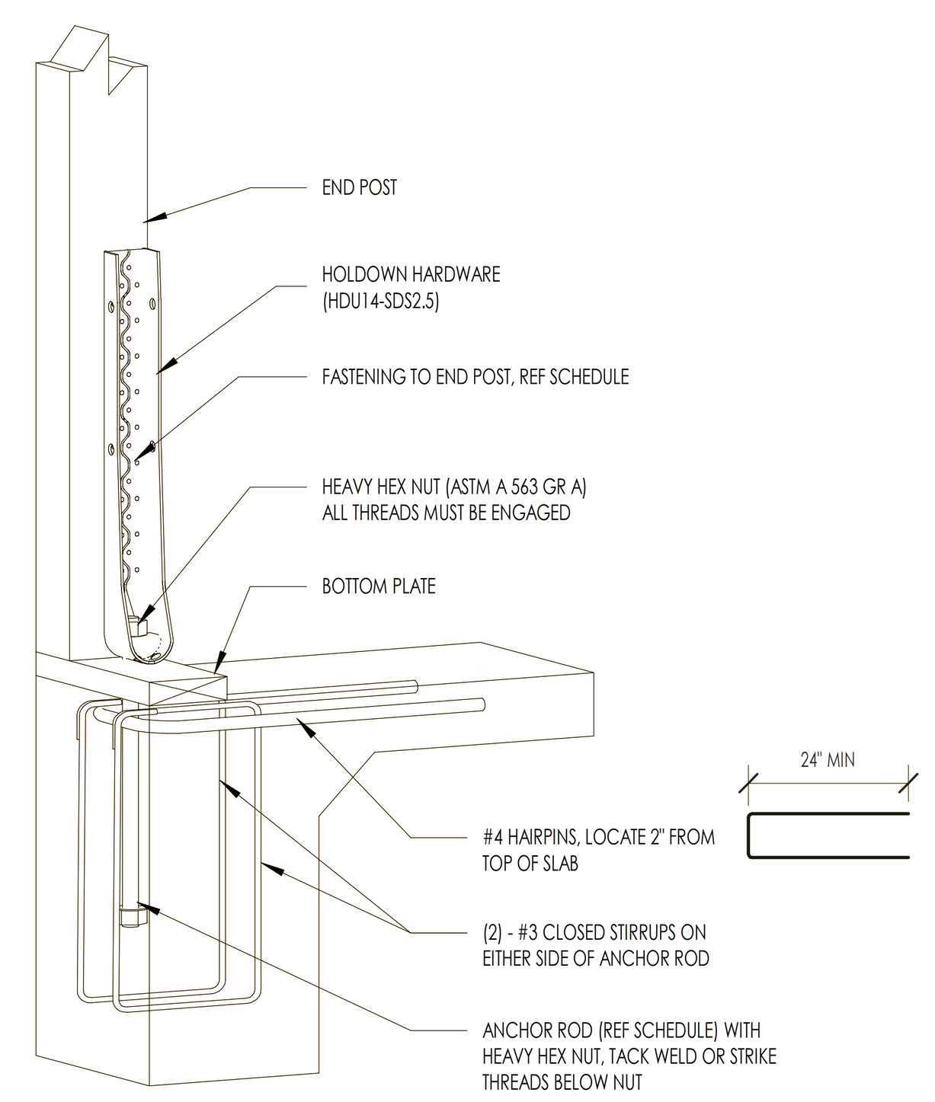
MARCO POLO - 101 33RD STREET - CITY OF BRYAN TOWNSITE, BLOCK 96, LOT 3-5 & PT OF 6 & PT OF ALLEY - BRYAN, TX 77803

S4.2

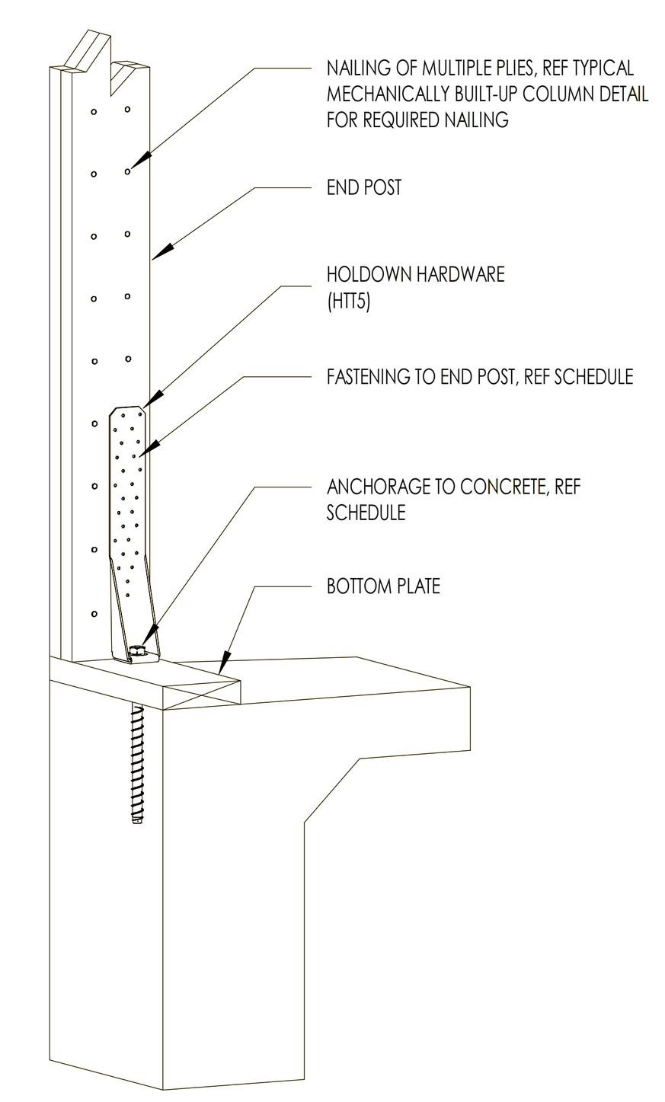
FOR CONSTRUCTION



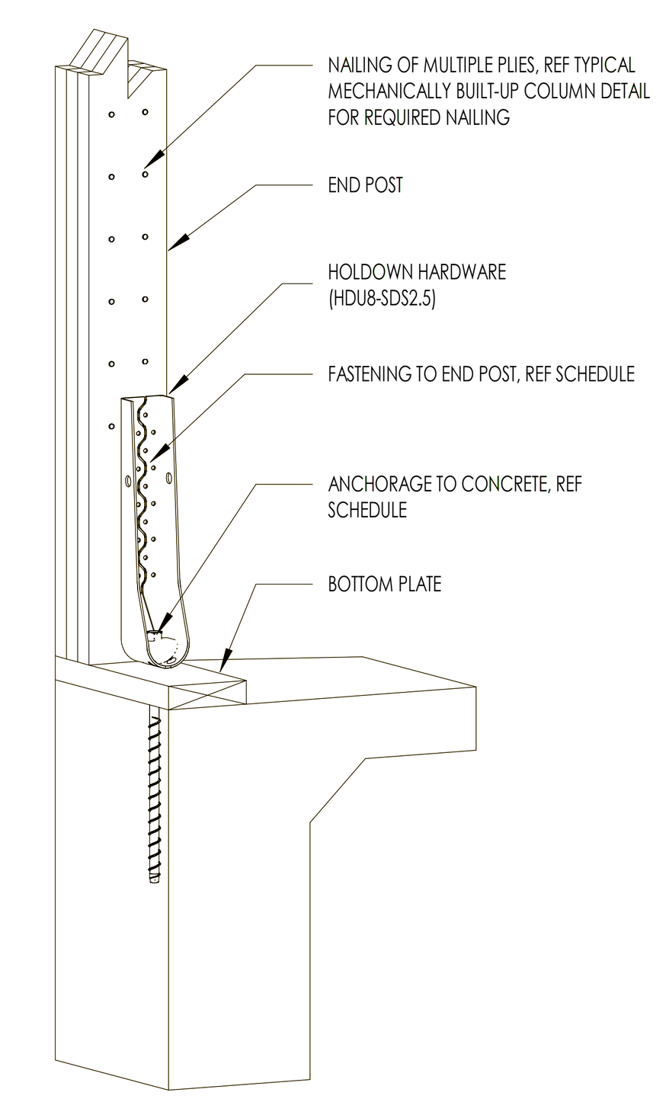
5D S4.3 **LTT HOLDOWN**



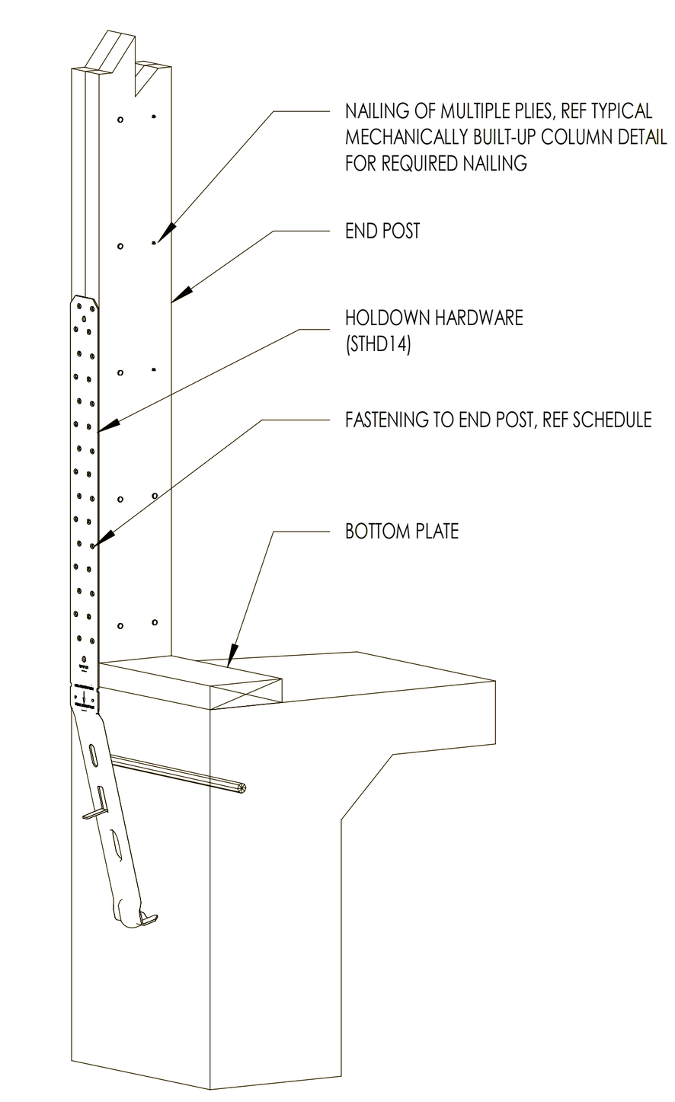
4D S4.3 **HDU14-SDS2.5 HOLDOWN**



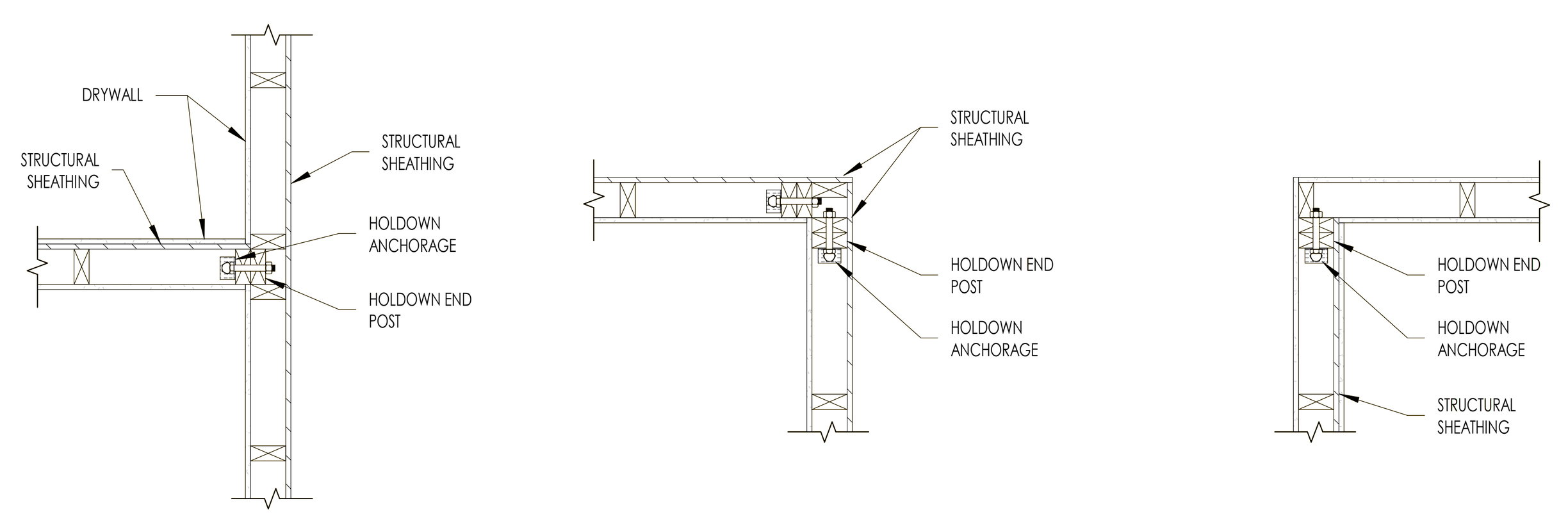
3D S4.3 **HTT5 HOLDOWN**



2D S4.3 **HDU8-SDS2.5 HOLDOWN**



1D S4.3 **STHD14 HOLDOWN**

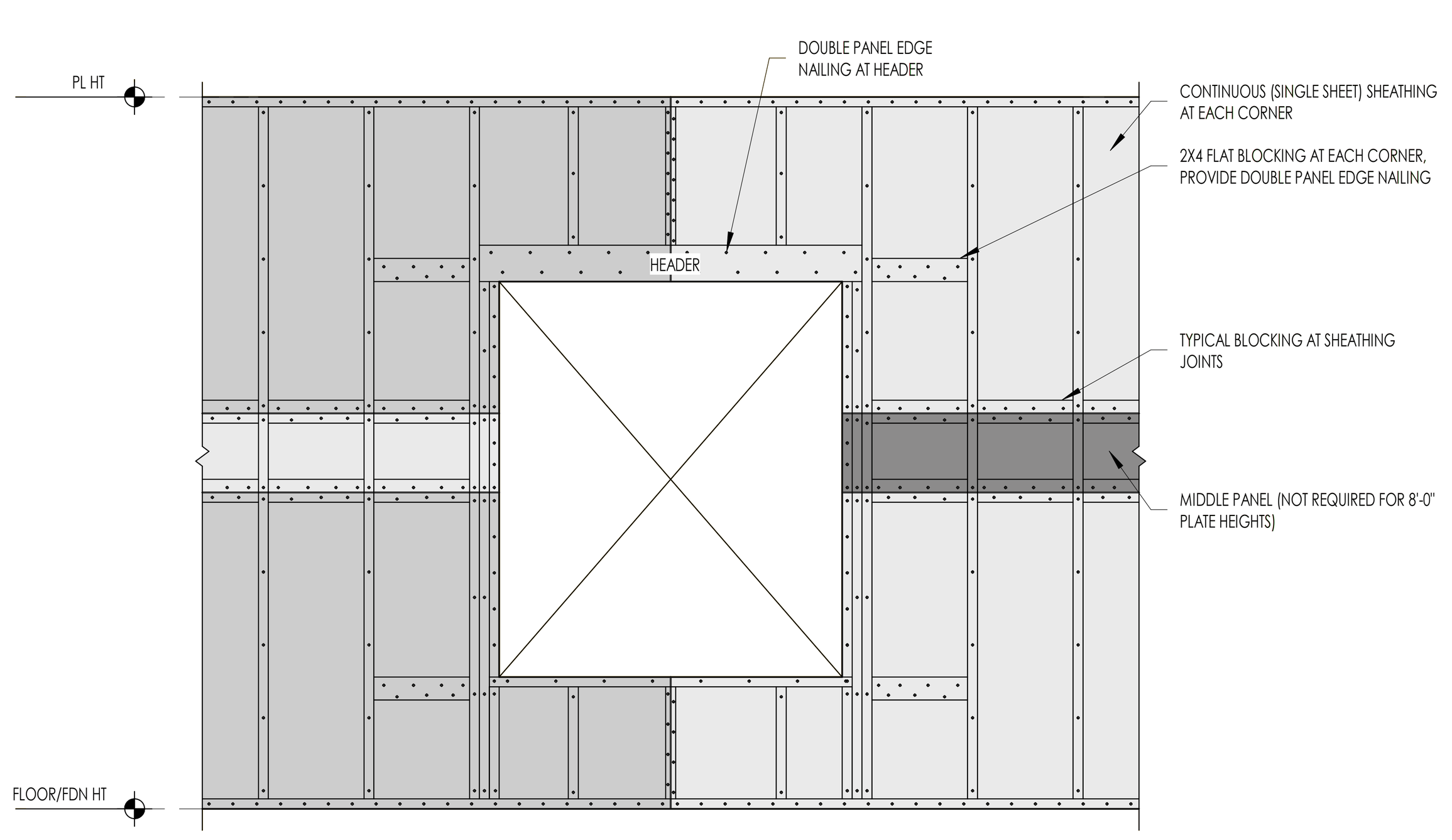


INTERSECTING SHEAR WALLS

OUTSIDE CORNER SHEAR WALLS

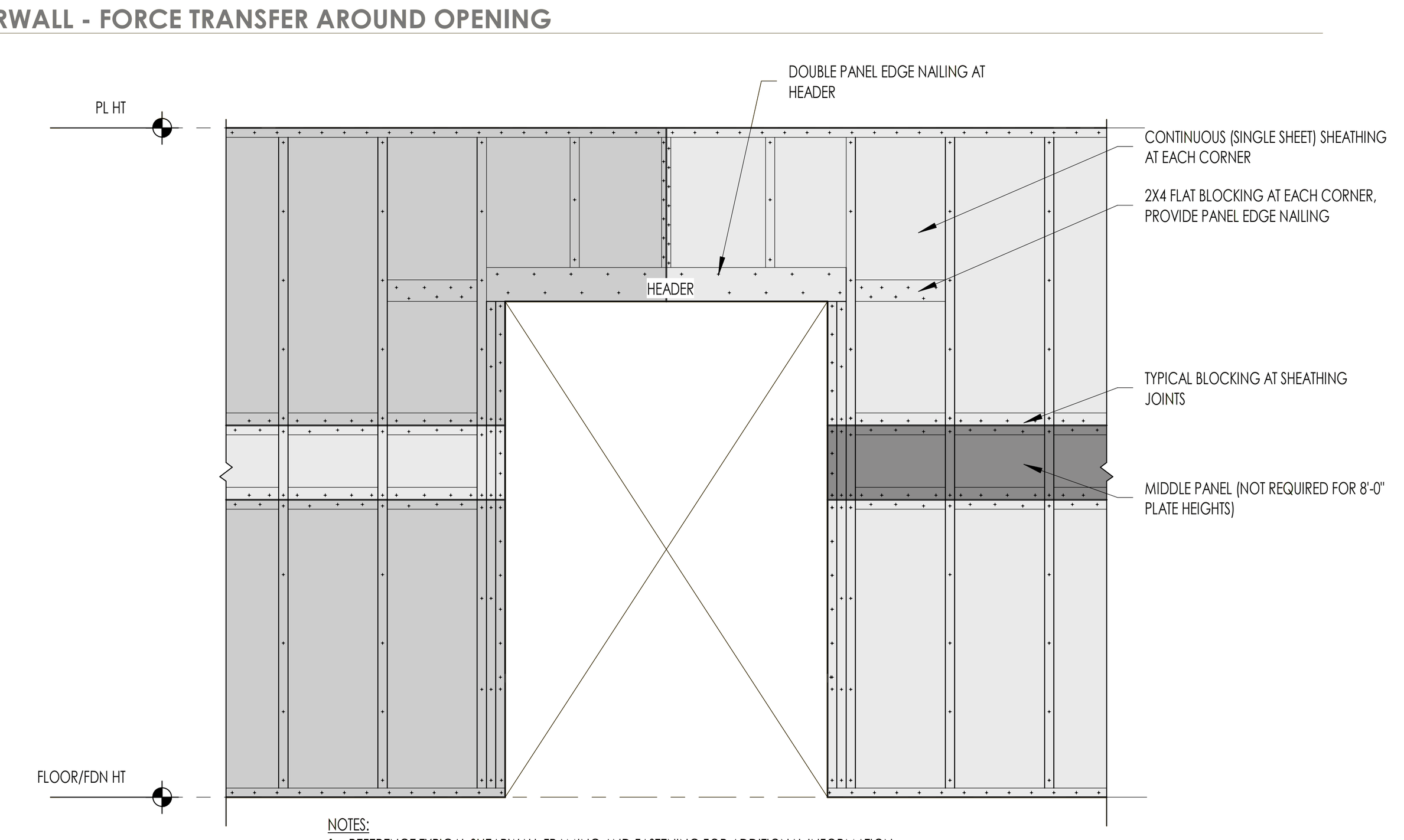
INTERIOR SHEAR WALL INTERSECTION WITH NON-SHEAR WALL

6C S4.3 **SHEAR WALL - END POST CONFIGURATIONS**



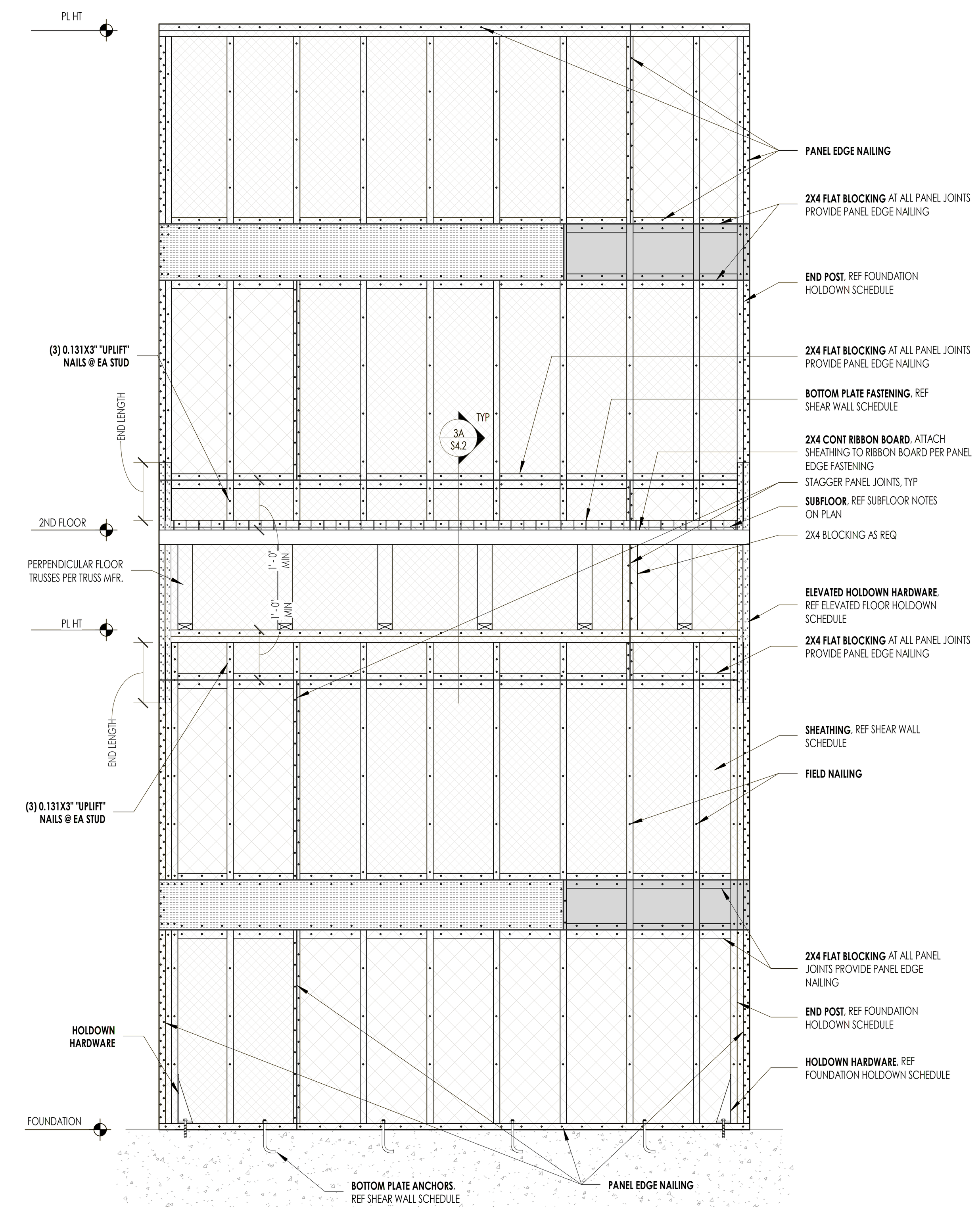
NOTES:
1. REFERENCE TYPICAL SHEARWALL FRAMING AND FASTENING FOR ADDITIONAL INFORMATION.

6B S4.3 **SHEARWALL - FORCE TRANSFER AROUND OPENING**



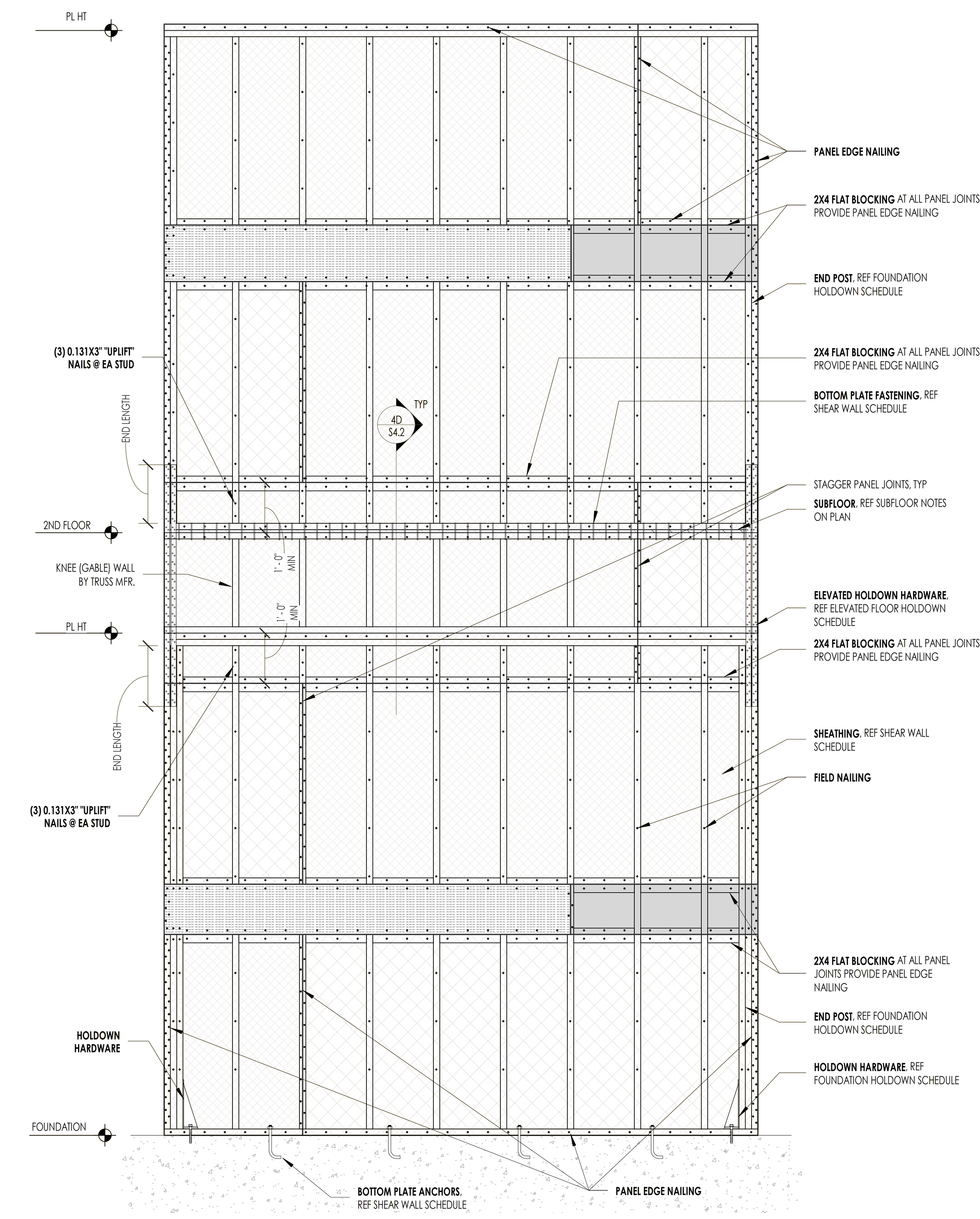
NOTES:
1. REFERENCE TYPICAL SHEARWALL FRAMING AND FASTENING FOR ADDITIONAL INFORMATION.

6A S4.3 **SHEARWALL - FORCE TRANSFER AROUND OPENING (DOOR)**



NOTES:
1. ALL FASTENERS SHALL HAVE A MINIMUM 3/8" EDGE DISTANCE.

4A S4.3 **TYPICAL MULTIPLE STORY SHEARWALL FRAMING AND FASTENING_TRUSSES PERPENDICULAR**



NOTES:
1. ALL FASTENERS SHALL HAVE A MINIMUM 3/8" EDGE DISTANCE.

2A S4.3 **TYPICAL MULTIPLE STORY SHEARWALL FRAMING AND FASTENING_TRUSSES PARALLEL**

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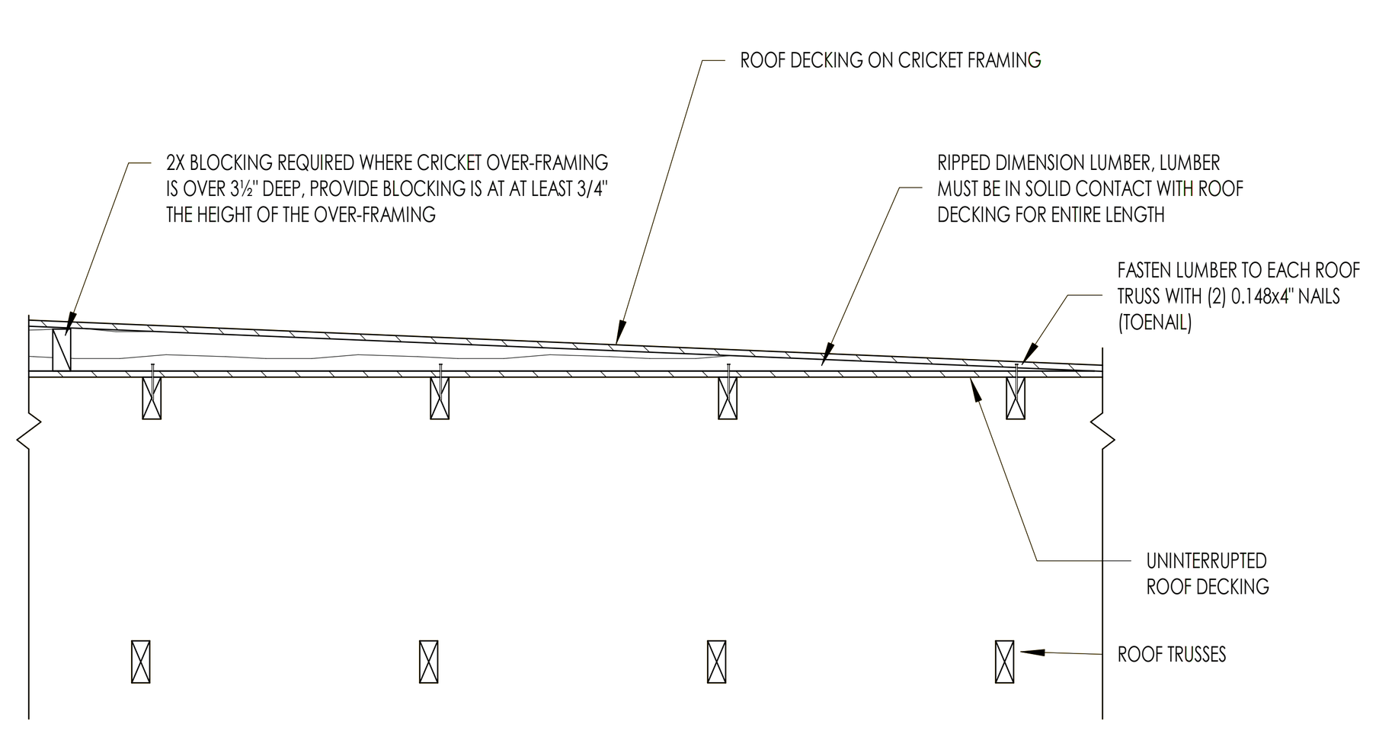
Date	Description
06/02/2022	Reviewed for Permit
08/26/2022	PERMIT REVISIONS

TYPICAL WOOD FRAMING LATERAL DETAILS

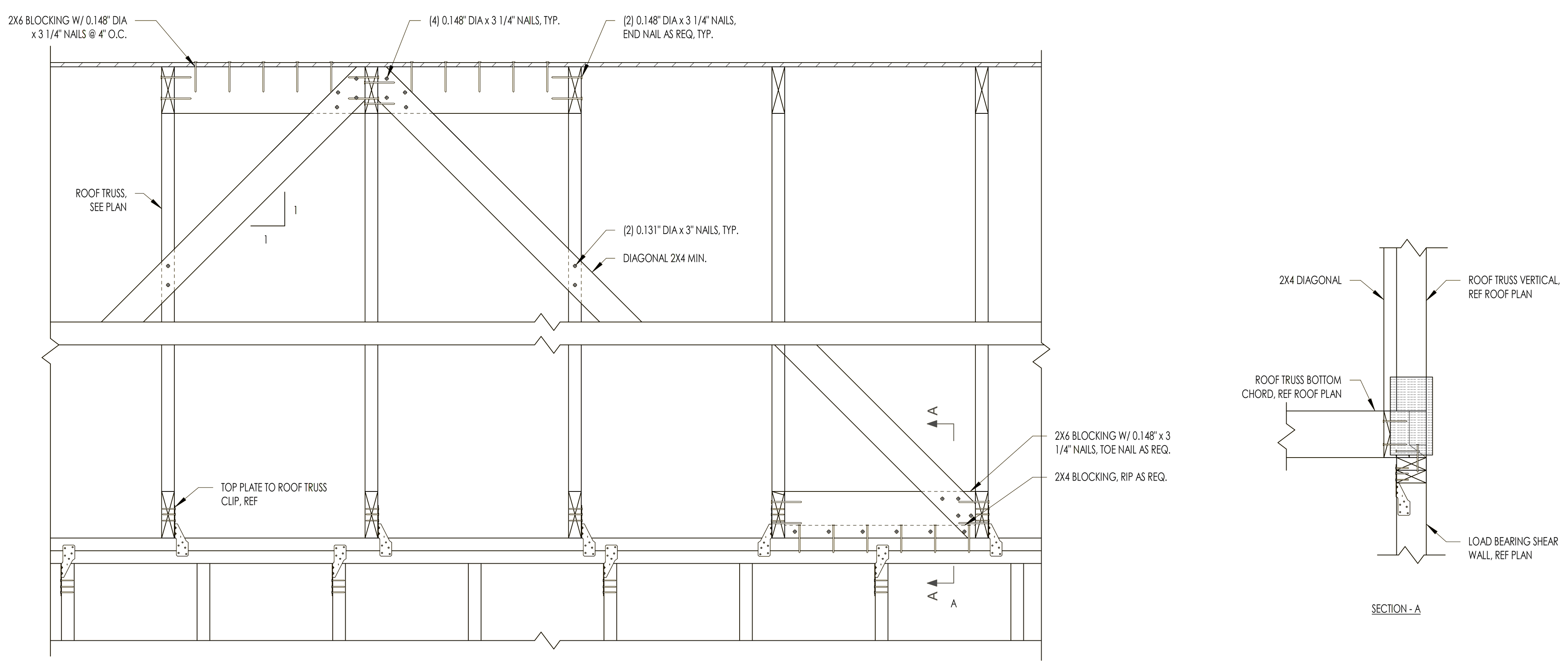
MARCO POLO - 101 33RD STREET - CITY OF BRYAN TOWNSITE, BLOCK 96, LOT 3-5 & PT OF 6 & PT OF ALLEY - BRYAN, TX 77803

S4.3

FOR CONSTRUCTION

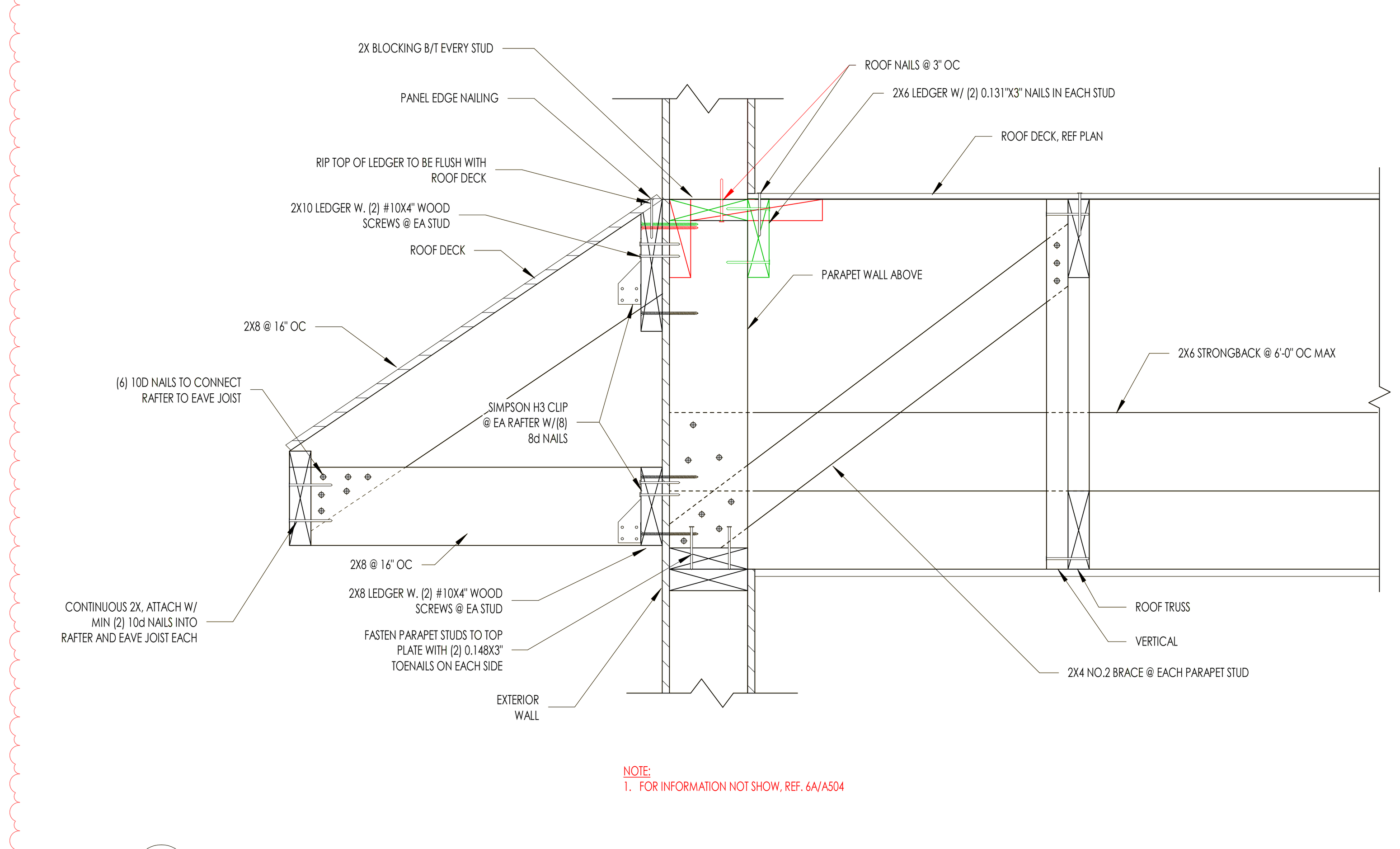


6A S4.4 TYPICAL CRICKET FRAMING AT ROOF



5A S4.4 061760 ROOF - BRACING AT INTERIOR SHEAR WALL

08/26/2022



2A S4.4 ROOF -RAFTER ATTACHMENT INTO WALL

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Date	Description
06/10/2022	Reviewed before Permit
08/26/2022	PERMIT REVISIONS

TYPICAL WOOD ROOF TRUSS DETAILS

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S4.4

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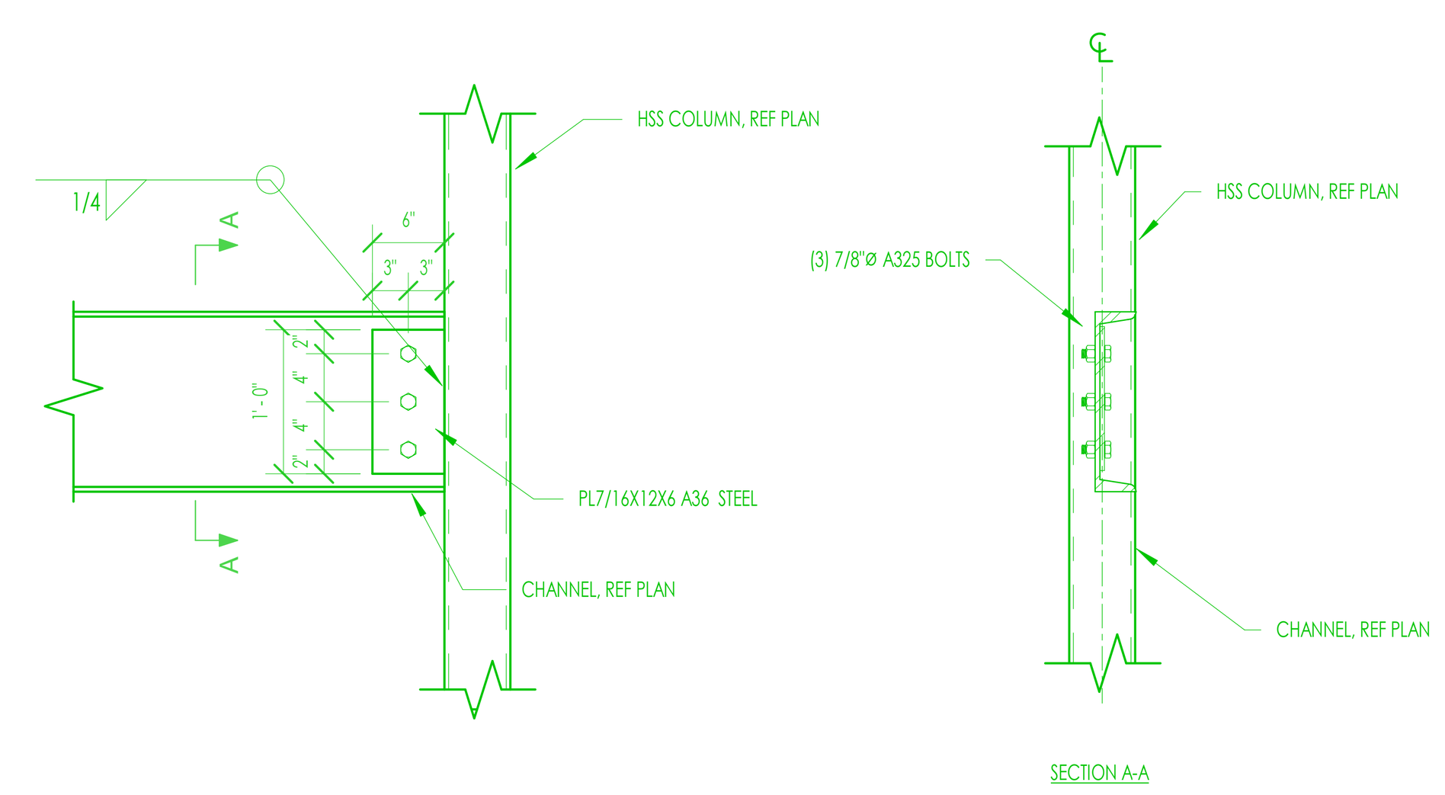
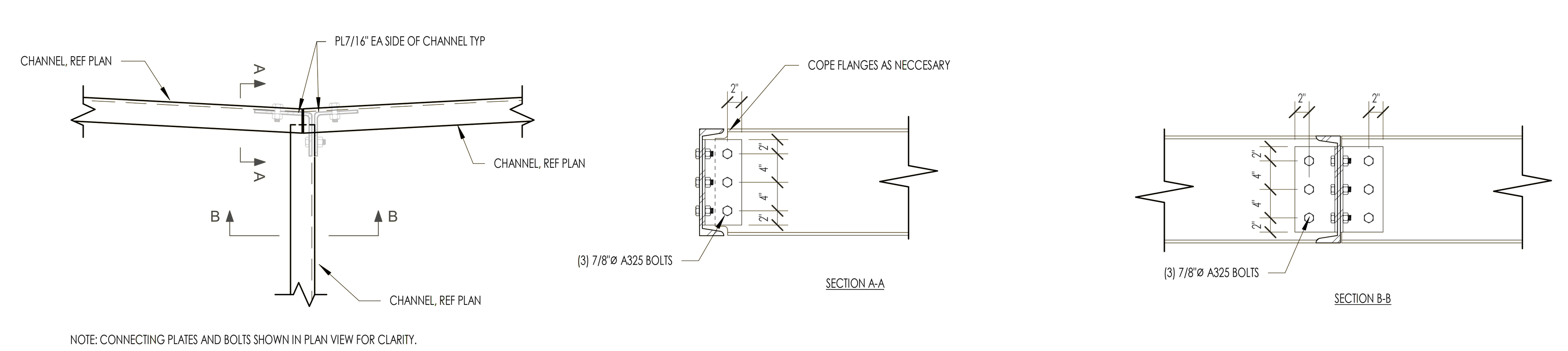
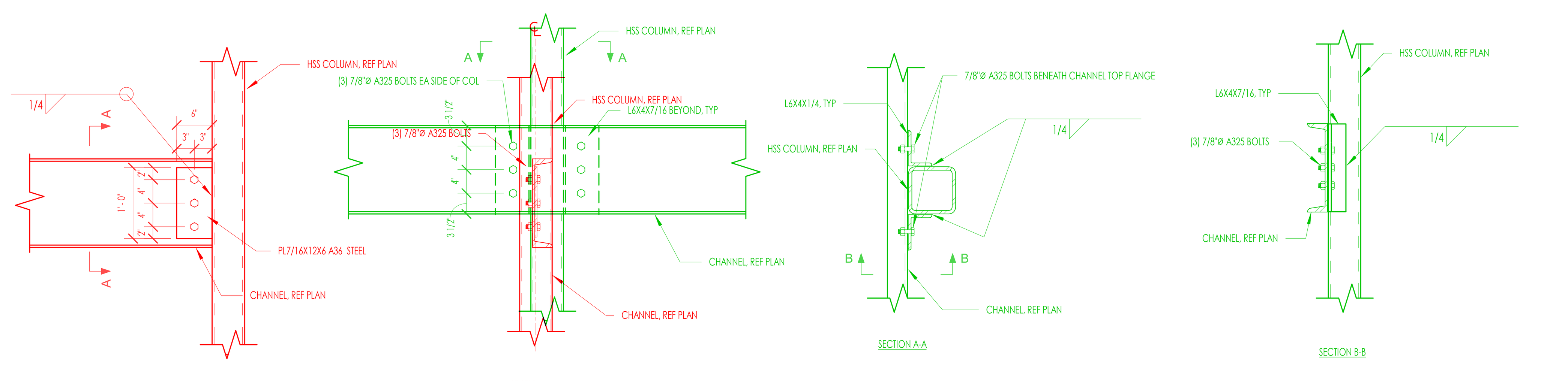


1C S4.5 **CHANNEL TO HSS COLUMN CONNECTION - ALIGNED**



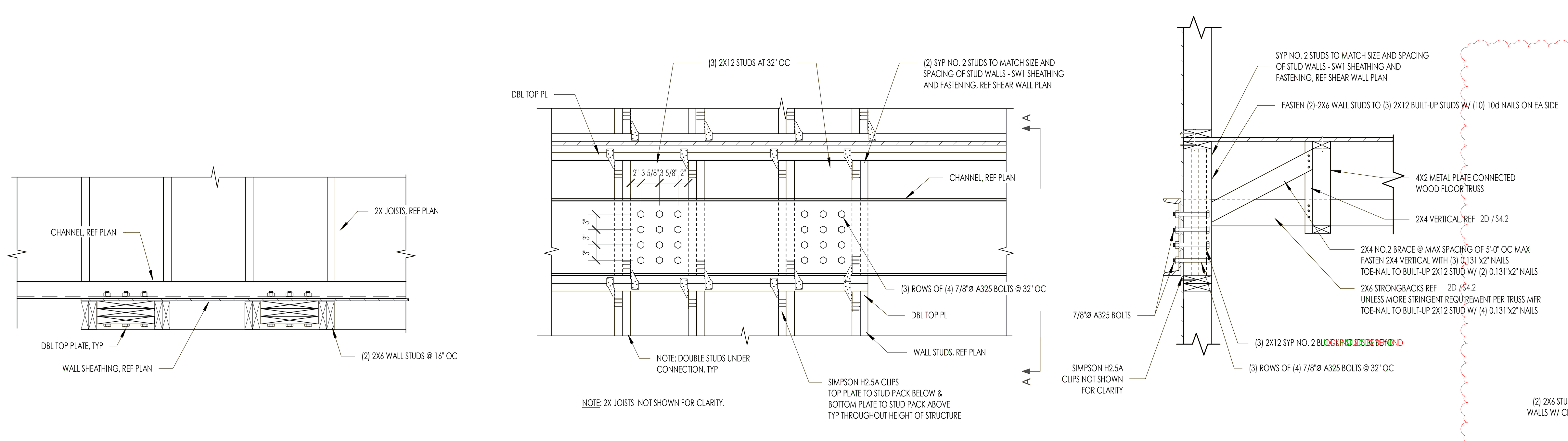
6B S4.5 **TYPICAL CHANNEL CONNECTION AT BALCONY1**



3B S4.5 **CHANNEL TO HSS COLUMN CONNECTION - ECCENTRIC**

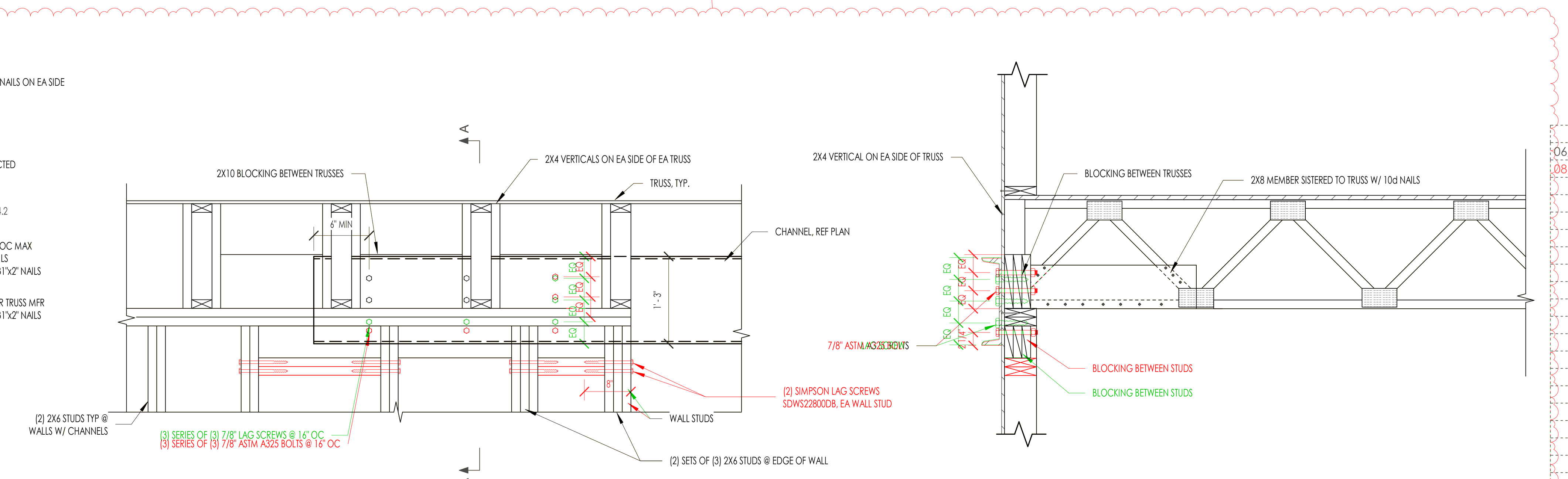
1C S4.5 **CHANNEL TO HSS COLUMN CONNECTION - ALIGNED**

08/26/2022



PLAN VIEW ELEVATION VIEW SECTION A-A

6A S4.5 **TYPICAL CHANNEL TO WALL STUD BOLTED CONNECTIONX**



ELEVATION VIEW SECTION A-A

3A S4.5 **TYPICAL CHANNEL TO WALL STUD CONNECTION**

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Date	Description
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TYPICAL STEEL DETAILS

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S4.5