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DESIGN CRITERIA

BUILDING CODE

INTERNATIONAL BUILDING CODE 2006 (IBC)

LIVE LOADS - SECTION 1607.0 2006 IBC CODE

MINIMUM LOADS:	
ROOF	30 PSF
ALL INTERIOR WALLS AND PARTITIONS SHALL BE DESIGNED TO RESIST A MINIMUM HORIZONTAL LOAD:	5 PSF

RESIDENTIAL:	
MULTIFAMILY DWELLINGS PRIVATE ROOMS	40 PSF
MULTIFAMILY DWELLINGS PUBLIC ROOMS AND CORRIDORS	100 PSF
PRIVATE TERRACES	60 PSF

SNOW LOAD - SECTION 1608.0 IBC CODE

P_g (GROUND SNOW LOAD)	= 25 PSF
I_s	= 1.0
C_e	= 1.0
C_t	= 1.0
P_f (FLAT-ROOF SNOW LOAD)	= 20 PSF

HANDRAILS / GUARDRAILS - SECTION 4.4, ASCE 7

1. HANDRAILS AND GUARDRAILS SHALL BE DESIGNED TO RESIST A LOAD OF 50 PLF APPLIED IN ANY DIRECTION AT THE TOP AND TO TRANSFER THIS LOAD THROUGH THE SUPPORTS TO THE STRUCTURE.
2. HANDRAIL AND GUARDRAIL ASSEMBLIES SHALL BE ABLE TO RESIST A SINGLE CONCENTRATED LOAD OF 200 LBS APPLIED IN ANY DIRECTION AT ANY POINT ALONG THE TOP, AND HAVE ATTACHMENT DEVICES AND SUPPORTING STRUCTURE TO TRANSFER THIS LOADING TO APPROPRIATE STRUCTURAL ELEMENTS OF THE BUILDING (THIS LOADING NEED NOT ACT CONCURRENTLY WITH THE LOADS SPECIFIED ABOVE).
3. INTERMEDIATE RAILS, BALUSTERS, AND PANEL FILLERS SHALL BE DESIGNED TO WITHSTAND A HORIZONTALLY APPLIED NORMAL LOAD OF 50 LBS.
4. VEHICLE BARRIER SYSTEMS FOR PASSENGER CARS SHALL BE DESIGNED TO RESIST A SINGLE LOAD OF 6,000 LBS. APPLIED HORIZONTALLY IN ANY DIRECTION. THE LOAD SHALL BE ASSUMED TO ACT AT A MINIMUM OF 1 FOOT 6 INCHES ABOVE THE FLOOR OR RAMP SURFACE ON AN AREA NOT TO EXCEED 1 SQ. FOOT AND IS NOT REQUIRED TO BE ASSUMED TO ACT CONCURRENTLY WITH ANY HANDRAIL OR GUARDRAIL LOADINGS.

WIND LOAD - SECTION 1609.0 IBC CODE

V_{3s}	= 90 MPH
I	= 1.0
EXPOSURE	= B
G	= +/--0.18
COMPONENTS & CLADDING	

GENERAL

1. THE STRUCTURE IS DESIGNED TO BE SELF-SUPPORTING AFTER THE BUILDING IS COMPLETE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE ERECTION PROCEDURES AND SEQUENCES TO ENSURE STABILITY AND SAFETY DURING CONSTRUCTION. THIS INCLUDES BUT IS NOT LIMITED TO, THE ADDITION OF SHEETING, SHORING, TEMPORARY BRACING, GUYS, AND TIEDOWNS. THE CONTRACTOR SHALL PROVIDE SHORING AND BRACING NECESSARY TO PROTECT EXISTING AND ADJACENT STRUCTURES.
2. STRUCTURAL DOCUMENTS SHALL BE USED WITH OTHER CONSTRUCTION DOCUMENTS, INCLUDING ARCHITECTURAL, M/E/P, AND SITE DOCUMENTS. COORDINATE WITH THESE DOCUMENTS, ALL FLOOR AND ROOF OPENINGS, DEPRESSIONS, DIMENSIONS, AND SLOPES, ETC. ANY DISCREPANCY SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LIMITING CONSTRUCTION LOADS SUCH THAT THESE LOADS DO NOT EXCEED THE DESIGN LIVE LOADS NOTED ABOVE. THE CONTRACTOR SHALL PROVIDE TEMPORARY SHORING AS REQUIRED DURING CONSTRUCTION TO SUPPORT CONSTRUCTION LOADS UNTIL SUCH TIME THAT THE STRUCTURE IS ABLE TO SUPPORT THE DESIGN LIVE LOADS NOTED.
4. SECTIONS AND DETAILS SHOWN ON THE STRUCTURAL DOCUMENTS SHALL BE CONSIDERED TYPICAL FOR SIMILAR CONDITIONS THAT DO NOT HAVE A SPECIFIC SECTION INDICATED.
5. TYPICAL DETAILS APPLY AT ALL APPROPRIATE LOCATIONS AND ARE NOT GENERALLY CUT ON PLANS. CONTRACTOR IS RESPONSIBLE FOR COORDINATING ALL TYPICAL DETAIL APPLICATIONS.
6. FOR INCONSISTENCIES BETWEEN GENERAL NOTES, SPECIFICATIONS AND CONSTRUCTION DOCUMENTS, THE STRICTER REQUIREMENT SHALL APPLY, AND ALL DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT.
7. PROVIDE ALL LABOR, MATERIAL, EQUIPMENT AND MISCELLANEOUS ITEMS INCLUDING BUT NOT LIMITED TO CLIPS, INSERTS, TIES, ANCHOR STRAPS, HANGERS, BOLTS, AND OTHER FASTENERS REQUIRED TO COMPLETE THE WORK.

EXISTING CONDITIONS

1. THE DRAWINGS MAY REFLECT INFORMATION PROVIDED BY OTHERS AND/OR EXISTING CONDITIONS THAT HAVE BEEN SURVEYED AND/OR DOCUMENTED TO THE GREATEST POSSIBLE EXTENT BUT NOT VERIFIED. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO FULLY COORDINATE THE WORK, INCLUDING, BUT NOT NECESSARILY LIMITED TO, THE VERIFICATION OF ALL EXISTING CONDITIONS SHOWN IN THE DRAWINGS, COORDINATION OF ALL NECESSARY BUILDING TRADES, ETC. ANY AND ALL CONDITIONS THAT ARE MIS-REPRESENTED IN THESE DOCUMENTS, OR ANY CONDITIONS THAT ARE NOT SHOWN BUT WARRANT THE ATTENTION OF THE ARCHITECT AND/OR ENGINEER, SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE ARCHITECT AND/OR ENGINEER.
2. MEANS AND METHODS OF CONSTRUCTION AND TEMPORARY SHORING AND BRACING OF THE EXISTING STRUCTURE(S) ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. THE ENGINEER MAY INCLUDE PHASING, SEQUENCING, SHORING REQUIREMENTS, ETC. IN THE CONSTRUCTION DOCUMENTS TO ALERT, ASSIST, OR OTHERWISE DICTATE PROCEDURAL REQUIREMENTS THAT MAY BE NECESSARY TO PROPERLY IMPLEMENT THE STRUCTURAL PORTION OF THE WORK OR THAT MAY BE REQUIRED TO ENSURE BUILDING STABILITY; HOWEVER, THE CONTRACTOR SHALL PROPERLY COORDINATE THESE REQUIREMENTS AND SHALL REMAIN COMPLETELY AND SOLELY RESPONSIBLE FOR ERECTING THE BUILDING STRUCTURE IN A SAFE AND TIMELY MANNER.
3. UNLESS OTHERWISE INDICATED, IT HAS BEEN ASSUMED THAT THE EXISTING STRUCTURE(S) ARE IN SERVICEABLE CONDITION. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY AND ALL AREAS OF STRUCTURAL DISTRESS (INCLUDING, BUT NOT LIMITED TO, CRACKS, SPALLING, ETC.) NOT INDICATED IN THE STRUCTURAL DRAWINGS. THE CONTRACTOR SHALL NOT PROCEED WITH WORK IN SUCH AREAS WITHOUT DIRECTION FROM THE ENGINEER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING THE EXISTING STRUCTURE WHEREVER REQUIRED.
4. ALL EXISTING CONDITIONS NOTED AS "V.I.F." OR "F.V." SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO STARTING CONSTRUCTION. REVISIONS TO THE DOCUMENTS MAY BE REQUIRED PENDING VERIFICATION OF ALL EXISTING FRAMING CONDITIONS.

FOUNDATIONS

1. FOUNDATION DESIGN IS BASED ON THE PRESCRIPTIVE VALUES OF THE INTERNATIONAL BUILDING CODE (IBC 2003) TABLE 1610.1 AND TABLE 1604.2 WITH ONE OF THE ASSUMED GROUP 1 SOIL TYPES OF EITHER SW, SP, SM, SC, GM OR GC. SOIL CLASSIFICATION SHALL BE VERIFIED BY A GEOTECHNICAL ENGINEER OR QUALIFIED SOILS TECHNICIAN PRIOR TO COMMENCEMENT OF ANY FOUNDATION WORK. THE STRUCTURAL ENGINEER IS NOT RESPONSIBLE FOR SUBSURFACE CONDITIONS ENCOUNTERED IN THE FIELD DIFFERENT TO THOSE ASSUMED FOR THE DESIGN.
2. ASSUMED SOIL BEARING VALUE OF "2,000" PSF TO BE VERIFIED BY GEOTECHNICAL ENGINEER OR QUALIFIED SOILS TECHNICIAN.
3. ON-SITE SOILS TYPES OF EITHER OL, MH, CH, OH ARE NOT PERMITTED TO BE USED AS BACKFILL MATERIAL. BACKFILL FOR FOUNDATION WALLS AND SITE RETAINING WALLS SHALL BE PLACED IN MAXIMUM 8 INCH LOOSE HORIZONTAL LIFTS AND CONSIST OF GRANULAR (SP, SM, SC) SOIL TYPES. BACKFILL DENSITY SHOULD BE HELD WITHIN THE RANGE OF 90 PERCENT OF THE MODIFIED PROCTOR MAXIMUM DRY DENSITY (ASTM D 1557). SOILS USED IN COMPACTED FILLS SHOULD ALSO BE FREE OF DEBRIS AND FIBROUS ORGANIC MATERIAL. THEY SHOULD HAVE A LIQUID LIMIT LESS THAN 45 AND A PLASTIC INDEX LESS THAN 20. PARTICLES LARGER THAN 4 INCHES IN DIAMETER SHOULD NOT BE INCLUDED IN THE COMPACTED FILL.
4. ALL FOOTINGS SHALL PROJECT AT LEAST 1'-0" INTO UNDISTURBED NATURAL SOIL OR COMPACTED CONTROLLED FILL HAVING A BEARING VALUE AT LEAST EQUAL TO THAT SPECIFIED ABOVE.
5. BOTTOMS OF ALL EXTERIOR FOOTINGS SHALL BE AT LEAST 2'-6" BELOW FINISHED GRADE OR AS REQUIRED BY LOCAL CODE REQUIREMENTS. FOOTING ELEVATIONS INDICATED ON DRAWINGS HAVE BEEN ESTABLISHED FROM AVAILABLE INFORMATION PROVIDED BY OTHERS AND MAY NOT VIOLATE CRITERIA ESTABLISHED ABOVE. FOOTING ELEVATIONS SHALL BE LOWERED AS SITE CONDITIONS WARRANT FOR POOR SOIL CONDITIONS OR AS REQUIRED TO FACILITATE SITE UTILITIES OR EXISTING CONDITIONS.
6. ALL DISTURBED EARTH UNDER FOOTINGS SHALL BE REPLACED WITH LEAN CONCRETE.
7. ALL BEARING STRATA SHALL BE ADEQUATELY DRAINED BEFORE FOUNDATION CONCRETE IS PLACED.
8. NO EXCAVATION SHALL BE CLOSER THAN AT A SLOPE OF 2:1 (2 HORIZONTAL TO ONE VERTICAL) TO AN EXISTING FOOTING OR STRUCTURE U.D.N.
9. DO NOT PLACE CONCRETE OVER FROZEN SOIL.
10. CENTERLINE OF FOOTING SHALL MATCH CENTERLINE OF COLUMN, PEDESTAL AND/OR PIER UNLESS SHOWN OTHERWISE.

SLABS ON GRADE

1. EXCEPT WHERE OTHERWISE NOTED, SLAB ON GRADES SHALL HAVE THE FOLLOWING PROPERTIES:
 - THICKNESS 4 IN. (5 IN.) (6 IN.)
 - REINFORCING 6x6 W1.4xw1.4 (6x6 W2.0xw2.0) (TOP THIRD OF THICKNESS)
 - BASE COURSE SUBGRADE 4 IN. (6 IN.) WASHED GRAVEL
 - POLYETHYLENE VAPOR BARRIER 6 MIL. (8 MIL.) (10 MIL.) (JOINTS LAPPED A MINIMUM OF 6 IN.)
2. PROVIDE CONTROL JOINTS AT MAXIMUM 15'-0" OC SPACING EACH WAY IN ALL SLABS ON GRADE. CONTROL JOINTS SHALL BE SAWCUT WITHIN 4 HOURS AFTER FINISHING OR SHALL BE A PRE-FABRICATED MECHANICAL JOINT.
3. PROVIDE ADDITIONAL (2) #5 x6'-0" REINFORCING AT ALL RE-ENTRANT CORNERS.
4. THE CONTRACTOR SHALL COORDINATE THE SIZE AND LOCATIONS OF DEPRESSIONS, OPENINGS, HOUSEKEEPING SLABS AND FINISHES WITH ARCHITECTURAL AND MECHANICAL DRAWINGS.
5. REFER TO GEOTECHNICAL REPORT FOR RECOMMENDATIONS RELATIVE TO SUBGRADE PREPARATION.

CONCRETE MASONRY

1. CONCRETE MASONRY CONSTRUCTION SHALL CONFORM TO "BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES", ACI 530, AND "SPECIFICATIONS FOR MASONRY STRUCTURES", ACI 530.1.
2. MINIMUM NET AREA COMPRESSIVE STRENGTH OF MASONRY UNIT SHALL BE:
 - A. TYPICAL: 1900 PSI (MINIMUM COMPRESSIVE STRENGTH OF CONCRETE MASONRY, F'M SHALL BE 1500 PSI)
3. CONCRETE MASONRY SHALL BE NORMAL WEIGHT CONFORMING TO ASTM C90.
4. METAL REINFORCEMENT AND ACCESSORIES SHALL CONFORM TO THE FOLLOWING STANDARDS:
 - A. DEFORMED BARS ASTM A615, GRADE 60
 - B. JOINT REINFORCEMENT ASTM A951
 - C. DANCHORS, TIES AND ACCESSORIES
5. GROUT SHALL CONFORM TO ASTM C476, AND SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI. TESTING SHALL CONFORM TO ASTM C1019. PROVIDE FINE AND COARSE GROUTS APPROPRIATE FOR SIZE OF VOID BEING FILLED. GROUT SHALL HAVE A MINIMUM SLUMP OF 8 INCHES PROVIDED BY SUFFICIENT WATER CONTENT. WATER-REDUCING ADMIXTURES ARE NOT PERMITTED.
6. MORTAR SHALL CONFORM TO ASTM C270, TYPE M OR S, PCL OR MORTAR CEMENT. MASONRY CEMENT IS NOT PERMITTED FOR CONCRETE MASONRY UNITS (CMU). MORTAR USED BELOW GRADE SHALL BE TYPE "M".
7. CONCRETE MASONRY SHALL BE LAID IN RUNNING BOND WITH 100% SOLID "FULL" MORTAR JOINTS (INCLUDING CROSS WEBS), UND. PILASTERS SHALL BE BONDED, UND. STACK BOND IS NOT PERMITTED.
8. REINFORCED CELLS, AND NON-REINFORCED CELLS SPECIFIED TO BE GROUTED SHALL BE FILLED SOLID WITH GROUT. STOP POURS 1/2 INCHES BELOW THE BED JOINT TO FORM A KEY AT POUR JOINTS. CELLS TO RECEIVE REINFORCING SHALL BE CLEAN OF MORTAR DROPPINGS.
9. REFER TO TYPICAL DETAILS FOR REINFORCING MINIMUM LAP SPlice LENGTHS. LAP DEFORMED BARS 50 DIA., UND.
10. HORIZONTAL LADDER-TYPE REINFORCEMENT SHALL BE FABRICATED FROM GALVANIZED COLD-DRAWN STEEL WIRE CONFORMING TO ASTM A82 WITH 3/8" DIA SIDE RODS AND 9 GA. CROSS RODS. PROVIDE AS FOLLOWS:
 - A. TYPICAL 16 INCHES ON CENTER, UND
 - B. AT PARAPETS 8 INCHES ON CENTER
 - C. AT WALL OPENINGS PROVIDE ADD'L REINF. NOT MORE THAN 8 INCHES ABOVE AND BELOW OPENING. TERMINATE 2 FT. BEYOND OPENING PROVIDE CONTINUITY AT INTERSECTIONS AND CORNERS USING PREFABRICATED T-SHAPED AND L-SHAPED UNITS. LAP JOINT REINFORCING A MINIMUM OF 6 INCHES.
12. TIES, ANCHORS, METAL ACCESSORIES AND JOINT REINFORCEMENT SHALL BE PROTECTED FROM CORROSION AS FOLLOWS:
 - A. JOINT REINFORCEMENT GALVANIZED IN ACCORDANCE WITH ASTM A951
 - B. METAL ACCESSORIES IN EXTERIOR WALLS HOT DIPPED GALVANIZED WITH 1.5 OUNCES PER SQ. FOOT MINIMUM COATING IN ACCORDANCE WITH ASTM A153
13. VERTICAL CONTROL JOINTS IN CMU WALLS SHALL BE PROVIDED AT 30 FEET ON CENTER MAX, UNLESS NOTED OTHERWISE.
14. SIDES, TOPS AND BASES OF ALL LOAD BEARING AND NON-LOAD BEARING CMU WALLS SHALL BE ANCHORED TO STRUCTURE. REFER TO TYPICAL DETAILS AND SECTIONS FOR ADDITIONAL INFORMATION.
15. PROVIDE MINIMUM VERTICAL WALL REINFORCING AS FOLLOWS, UND:
 - A. EXTERIOR WALLS #5 @32 INCHES ON CENTER
 - B. STAIR AND ELEVATOR TOWER WALLS #5 @32 INCHES ON CENTER
 REINFORCE THE FIRST CELL AT CORNERS, ENDS OF WALLS AND INTERSECTIONS WITH A MINIMUM OF (1) #5 VERTICAL.
16. BOND BEAM UNITS SHALL BE OPEN CELL UNITS THAT PERMIT VERTICAL REINFORCING TO PASS THROUGH, WHERE BOND BEAMS COURSE STEP DUE TO SLOPING CONDITIONS, LAP REINFORCING A MINIMUM OF 4 FEET. PROVIDE MINIMUM BOND BEAM REINFORCING AS FOLLOWS, UND:
 - A. EXTERIOR WALLS (2) #4 xCNT BELOW EACH FRAMING LEVEL
17. PROVIDE LINTELS AT ALL MASONRY OPENINGS LARGER THAN 12 IN. PROVIDE SLEEVES AT ALL PIPE PENETRATIONS. MULTIPLE SLEEVE PENETRATIONS SHALL BE SPACED A MINIMUM OF 24 IN. OC AND A MINIMUM OF 4 FT. FROM WALL ENDS. UNLESS OTHERWISE SPECIFIED, PROVIDE A STEEL ANGLE LINTEL AT ALL MASONRY OPENINGS FOR EACH 4 IN. OF WALL THICKNESS AS FOLLOWS:
 - L4x3 1/2x 3/8 (LLV) FOR OPENINGS UP TO 4'-0"
 - L5x3 1/2x 3/8 (LLV) FOR OPENINGS 4'-1" TO 6'-0"
 - L6x3 1/2x 3/8 (LLV) FOR OPENINGS 6'-1" TO 8'-0"
 PROVIDE 6 IN. OF BEARING EACH END. STEEL LINTELS USED IN EXTERIOR WALLS SHALL BE HOT DIPPED GALVANIZED.

CONCRETE

1. ALL CONCRETE CONSTRUCTION INCLUDING DETAILING, FABRICATION, PLACEMENT OF REINFORCING, MIXING, HANDLING, PLACING, FINISHING, AND CURING SHALL CONFORM TO ACI "STRUCTURAL CONCRETE FOR BUILDINGS" (ACI-308), ACI "MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES" (ACI-315), AND "ACI BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE" (ACI-318).
 2. ALL CONCRETE SHALL CONFORM TO ASTM C94. FOR INTERIOR SLABS ON GRADE, MINIMUM COMPRESSIVE STRENGTH $f'_c=3,000$ psi, W/C RATIO 0.59, AIR ENTRAINMENT 4% +/- 1%, SLUMP 3-1/2" +/- 1" FOR EXTERIOR SLABS ON GRADE, MINIMUM COMPRESSIVE STRENGTH $f'_c=4,500$ psi, W/C RATIO 0.45, AIR ENTRAINMENT 6% +/- 1%, SLUMP 3-1/2" +/- 1".
 3. CONTRACTOR SHALL PROVIDE CONCRETE MIX DESIGN DATA CONFORMING TO CHAPTER 5 OF ACI 318 FOR EACH TYPE AND STRENGTH OF CONCRETE SPECIFIED. MIX DESIGN DATA SHALL INCLUDE CONCRETE STRENGTH, SLUMP, AIR ENTRAINMENT, PROPOSED AGGREGATES, ADMIXTURES, POZZOLANS AND LABORATORY TEST DATA.
 4. PORTLAND CEMENT SHALL CONFORM TO ASTM C150. CONCRETE AGGREGATES SHALL CONFORM TO ASTM C33 MAXIMUM AGGREGATE SIZE FOR CONCRETE 1 IN. WELDED WIRE MESH SHALL CONFORM TO ASTM A185.
- STRUCTURAL WOOD FRAMING
1. STRUCTURAL LUMBER SHALL CONFORM TO AFPA'S NDS "NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION", WITH SUPPLEMENT "DESIGN VALUES FOR WOOD CONSTRUCTION". LUMBER GRADING AND IDENTIFICATION SHALL COMPLY WITH PROCEDURES OF DOC PS 20 "AMERICAN SOFWOOD LUMBER STANDARD".
 2. STRUCTURAL LUMBER SHALL HAVE 19% MAXIMUM MOISTURE CONTENT WITH THE FOLLOWING MINIMUM PROPERTIES:
 - A. WALL PLATES: SOUTHERN PINE NO.2 (OR APPROVED ALTERNATE), VISUALLY GRADED, WITH THE FOLLOWING MINIMUM PROPERTIES:
 - $F_b = 1,500$ PSI, $E = 1,600,000$ PSI, F_c (PERP) = 565 PSI, $F_v = 175$ PSI
 - B. ALL OTHER CONDITIONS: SPRUCE PINE FIR NO.1/NO.2 (OR APPROVED ALTERNATE), VISUALLY GRADED, WITH THE FOLLOWING MINIMUM PROPERTIES:
 - $F_b = 875$ PSI, $E = 1,400,000$ PSI, $F_c = 1,150$ PSI, $F_v = 135$ PSI
 3. LAMINATED VENEER LUMBER (LVL) SHALL BE AS MANUFACTURED BY TRUS JOIST, OR EQUIVALENT. LVL'S SHALL NOT BE USED IN EXTERIOR APPLICATIONS AND SHALL HAVE THE FOLLOWING MINIMUM PROPERTIES:
 - $F_b = 2,600$ PSI, $E = 1,900,000$ PSI, $F_v = 285$ PSI.
 4. PLYWOOD SHALL CONFORM TO APA'S "PLYWOOD DESIGN SPECIFICATION", AND DOC PS 1 "CONSTRUCTION AND INDUSTRIAL PLYWOOD". UNLESS NOTED OTHERWISE, PANELS SHALL BE INSTALLED WITH THE LONG DIMENSION ACROSS SUPPORTS (INCLUDING EXTERIOR WALLS).
 - A. PLYWOOD FLOOR SHEATHING SHALL BE 3/4" (1"), STURD-I-FLOOR, EXPOSURE 1, WITH TONGUE AND GROOVE EDGES. GLUE AND ATTACH SHEATHING ALONG PANEL EDGES WITH 10d NAILS AT 6" OC AND ALONG INTERMEDIATE FRAMING MEMBERS AT 12" OC. FIELD-GLUE SHALL CONFORM TO APA SPECIFICATION AFG-01.
 - B. PLYWOOD ROOF SHEATHING SHALL BE 3/4" (1"), STRUCTURAL I, EXPOSURE 1, ATTACH SHEATHING ALONG PANEL EDGES WITH 8d NAILS AT 6" OC AND ALONG INTERMEDIATE FRAMING MEMBERS AT 12" OC. PROVIDE PANEL CLIPS AT UNSUPPORTED EDGES AT 12" OC. DO NOT PROVIDE PANEL CLIPS ON ROOFS TO RECEIVE A METAL FINISH. ROOF SHEATHING SHALL BE INSTALLED ON MAIN ROOF MEMBERS PRIOR TO THE INSTALLATION OF OVERFRAMING MEMBERS.
 - C. PLYWOOD WALL SHEATHING SHALL BE 1/2" STRUCTURAL I, EXPOSURE 1, EXTERIOR WALLS AND INTERIOR SHEAR WALLS SHALL BE BLOCKING AT 4 FEET OC (PANEL EDGES). ATTACH SHEATHING ALONG PANEL EDGES WITH 8d NAILS AT 6" OC AND ALONG INTERMEDIATE FRAMING MEMBERS AT 12" OC.
 - AT EXTERIOR WALLS, EXTEND A SINGLE PLYWOOD PANEL A MINIMUM OF 12" ABOVE AND BELOW DEPTH OF FLOOR ENVELOPE TO SERVE AS A TIE BETWEEN FLOORS.
 - PLYWOOD PANELS AT INTERIOR SHEAR WALLS SHALL HAVE SHEATHING THAT EXTENDS TO THE UNDERSIDE OF THE FLOOR SHEATHING ABOVE. "TIGHT" PLYWOOD AROUND JOISTS/BLOCKING AS NECESSARY.
 - D. WHERE NOTED ON PLANS, BLOCKED DIAPHRAGMS SHALL HAVE 2x BLOCKING AT 4 FEET OC (PANEL EDGES). ATTACH SHEATHING ALONG PANEL EDGES WITH 10d NAILS AT 6" OC, ALONG DIAPHRAGM BOUNDARIES AT 4" OC, AND ALONG INTERMEDIATE MEMBERS AT 12" OC.
 5. FASTENERS SHALL CONFORM TO THE FOLLOWING MINIMUM PROPERTIES:
 - A. THRU BOLTS SHALL CONFORM WITH ANSI/ASME B18.2.1 WITH A MINIMUM BENDING YIELD STRENGTH $F_y = 45$ KSI (OR ASTM A307)
 - B. COMMON WIRE NAILS SHALL CONFORM TO THE REQUIREMENTS OF ASTM F1667

6d	0.113" SHANK DIA. 2" LONG	$F_y = 100$ KSI
8d	0.131" SHANK DIA. 2 1/2" LONG	$F_y = 100$ KSI
10d	0.148" SHANK DIA. 3" LONG	$F_y = 90$ KSI
12d	0.148" SHANK DIA. 3 1/4" LONG	$F_y = 90$ KSI
16d	0.162" SHANK DIA. 3 3/8" LONG	$F_y = 90$ KSI
20d	0.192" SHANK DIA. 4" LONG	$F_y = 80$ KSI
30d	0.207" SHANK DIA. 4 1/2" LONG	$F_y = 80$ KSI
 - C. CUSTOM STEEL PLATE CONNECTIONS SHALL CONFORM TO ASTM A36, 1/4 INCH MINIMUM THICKNESS, UND.
 - D. FASTENERS USED WITH PREFABRICATED CONNECTORS SHALL FOLLOW MANUFACTURER LITERATURE AND RECOMMENDATIONS.
 - E. CUSTOM STEEL SHEET CONNECTIONS SHALL CONFORM TO ASTM A653, GRADE 33.
 - F. WOOD SCREWS

59	0.138" SHANK DIA.	$F_y = 100$ KSI
79	0.151" SHANK DIA.	$F_y = 90$ KSI
89	0.164" SHANK DIA.	$F_y = 90$ KSI
99	0.177" SHANK DIA.	$F_y = 90$ KSI
109	0.190" SHANK DIA.	$F_y = 80$ KSI
129	0.214" SHANK DIA.	$F_y = 80$ KSI
149	0.242" SHANK DIA.	$F_y = 70$ KSI
169	0.268" SHANK DIA.	$F_y = 70$ KSI
189	0.294" SHANK DIA.	$F_y = 60$ KSI
209	0.320" SHANK DIA.	$F_y = 60$ KSI
249	0.372" SHANK DIA.	$F_y = 45$ KSI
 6. ALL FASTENERS AND PREFABRICATED CONNECTORS (HARDWARE) USED WITH PRESERVATIVE TREATED WOOD SHALL HAVE EITHER A HOT-DIP GALVANIZING G185 COATING ACCORDING TO ASTM A153 AND A123 OR SHALL BE STAINLESS STEEL TYPE 304 AND 316.
 7. MINIMUM FASTENING SHALL CONFORM TO IBC TABLE 2304.9.1, "FASTENING SCHEDULE".
 8. WALL TOP AND BOTTOM PLATES ARE DESIGNED AS CONTINUOUS.
 - A. STAGGER SPlice LOCATIONS OF MULTIPLE MEMBER PLATES
 - B. PLATES SHALL BE LAPPED AT ALL BEARING/SHEAR WALL CORNERS
 - C. PROVIDE 16 GA COVER PLATES AT WALL INTERSECTIONS, CORNERS AND SPlice LOCATIONS
 9. CONNECTIONS SHALL BE MADE USING PREFABRICATED CONNECTORS MANUFACTURED BY SIMPSON STRONG TIE OR APPROVED EQUIVALENT. INSTALL CONNECTIONS IN STRICT ACCORDANCE WITH MANUFACTURER'S WRITTEN SPECIFICATIONS AND RECOMMENDATIONS. PROVIDE MINIMUM PREFABRICATED CONNECTORS AS FOLLOWS (UNLESS NOTED OTHERWISE ON DOCUMENTS):
 - A. BEAM TO GIRDER CONNECTORS (FLUSH CONDITIONS): HEAVY DUTY CONNECTOR FOR REACTIONS SPECIFIED ON DOCUMENTS
 - B. ROOF JOIST TO TOP PLATE: SIMPSON H25A CLIP
 - C. FLOOR/ROOF JOISTS TO LEDGERS AND GIRDERS (FLUSH CONDITIONS): SIMPSON HANGERS TO MEMB MATCH SIZE & CAPACITY
 - D. 2x TOP PLATE AND 2x WALL STUDS TO STEEL (MAX. STEEL THICK 3/8"): SIMPSON TB1475S SELF-TAPPING SCREW AT 16" OC. (STAGGERED TO AVOID SPLITTING)
 - E. COLUMN CAPS: SIMPSON CC0 & ECCO CAPS TO MATCH MEMB SIZE.
 - F. EXTERIOR COLUMN BASES: SIMPSON ABU TO MATCH MEMB SIZE.
 - G. SERT WALL TIES BETWEEN FLOORS (EA END) (2) SIMPSON HD5A
 - H. SHEAR WALL HOLD-DOWNS AT FOUNDATIONS (EA END): SIMPSON HD5A-SDS2.5 WITH 3/8" DIA SSTB ANCHOR
 10. MULTIPLE PLY (BUILT-UP) MEMBERS SHALL BE ATTACHED TOGETHER (ENTIRE LENGTH) WITH THE MINIMUM FASTENER GUIDELINES:
 - A. (2 PLY) 2x STUDS: ONE ROW OF STAGGERED 10d NAILS, EACH FACE, AT 6" OC (1' EDGE DISTANCE)
 - B. (3 PLY) 2x STUDS: TWO ROWS OF STAGGERED 30d NAILS, EACH FACE AT 8" OC. (1 1/2' EDGE DISTANCE)
 - C. (3 PLY) 2x BEAMS: TWO ROWS OF 10d NAILS AT 12" OC (2' EDGE DISTANCE)
 - D. (3 PLY) 2x & LVL BEAMS: THREE ROWS OF 12d NAILS, EA FACE, AT 12" OC (2' EDGE DISTANCE)
 - E. (2-3 PLY) 2x & LVL BEAMS LOADED SINGLE FACE: TWO ROWS OF 1/2" DIA THRU-BOLTS (2' EDGE DISTANCE)
 - F. (3-4 PLY) LVL BEAMS: TWO ROWS OF 1/2" DIA THRU-BOLTS AT 12" (24") OC (2' EDGE DISTANCE)
 11. PROVIDE CONTINUOUS SOLID BLOCKING OR CROSS-BRIDGING LINES AT 8'-0" OC MAX, ONE LINE MINIMUM. PROVIDE ADDITIONAL BRIDGING FOR MANUFACTURED WOOD PRODUCTS AS SPECIFIED BY MANUFACTURER.
 12. ATTACH SOLID BLOCKING AT 4'-0" OC MAX (FOR 2 BAYS), AT ALL EXTERIOR/INTERIOR WALLS PARALLEL WITH FLOOR/ROOF FRAMING.
 13. PROVIDE SOLID BLOCKING OR CRIPPLE STUDS BELOW ALL COLUMNS/POSTS, TO TRANSFER LOAD DIRECTLY TO FRAMING.
 14. PROVIDE DOUBLE JOISTS UNDER ALL PARTITIONS PARALLEL TO JOIST SPAN. PROVIDE DOUBLE JOISTS AROUND ALL FLOOR AND ROOF OPENINGS, UND.
 15. PENETRATIONS & NOTCHES IN JOISTS, STUDS, BEAMS AND HEADERS ARE NOT PERMITTED WITHOUT APPROVAL OF ENGINEER.

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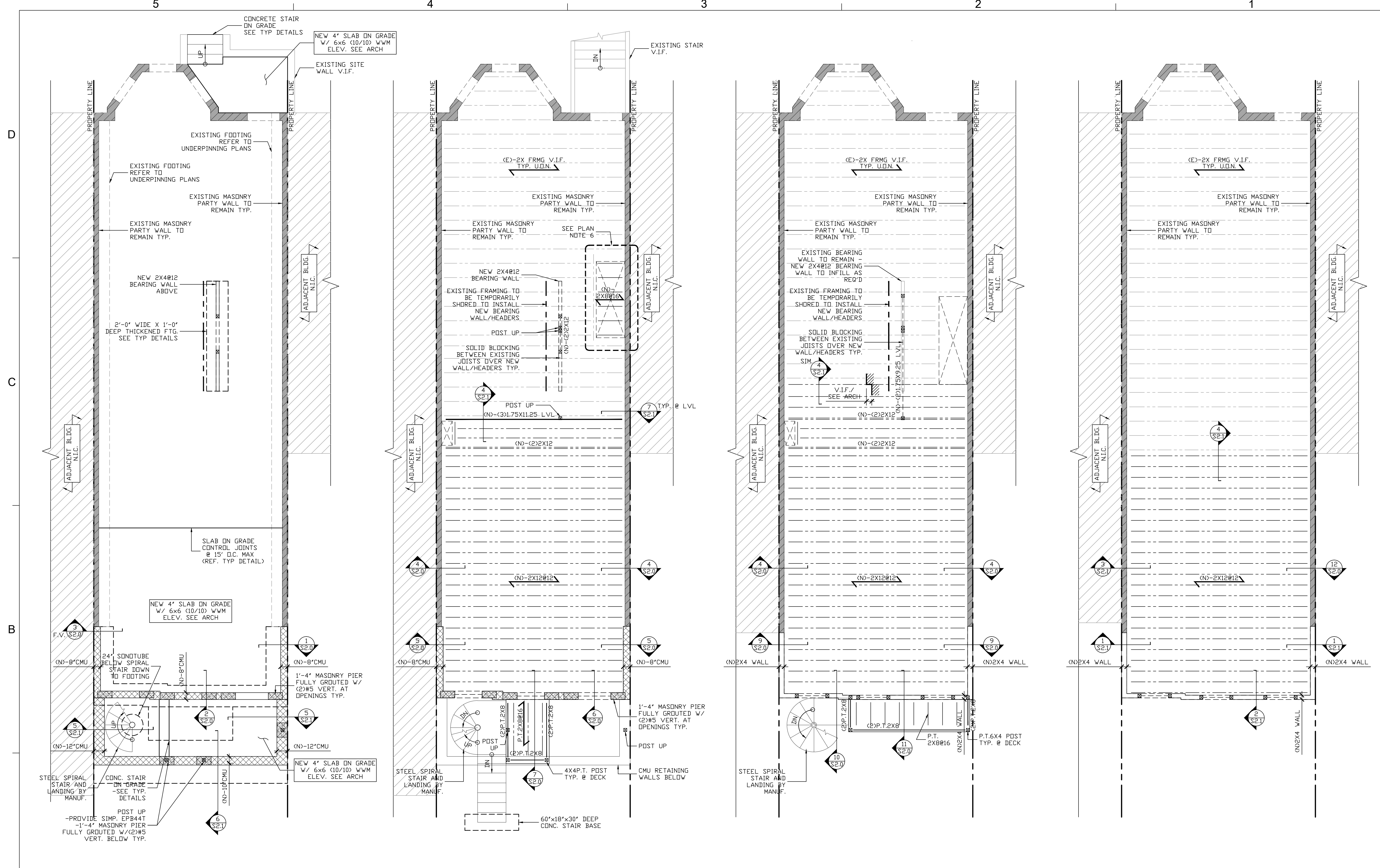
PROJECT
1508 R Street NW
 1508 R Street NW
 Washington, DC 20009

REVISIONS
1 - 03/02/2011 PERMIT SET
2 - 05/17/2011 CONSTRUCTION DOCUMENTS

DRAWING TITLE
STRUCTURAL NOTES

STAMP
 PROJECT NO.
SDG# - D11016.00
 DRAWN BY:
RWS
 SCALE:
AS NOTED
 DATE:
05-11-2011
 DWG. NO.

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1 S1.0 GARDEN FLOOR/FOUNDATION PLAN
Scale: 1/4" = 1'-0"

- NOTES:**
1. TOP OF SLAB ELEVATION SHALL BE AS NOTED ON PLAN. VERIFY ALL TOP OF SLAB ELEVATIONS WITH ARCHITECTURAL DRAWINGS.
 2. SEE ARCHITECTURAL DRAWINGS FOR DIMENSIONS NOT SHOWN.
 3. COORDINATE SIZE AND LOCATION OF DEPRESSIONS, OPENINGS, ETC. WITH ARCHITECTURAL AND MECHANICAL DRAWINGS.
 4. SEE PLUMBING DRAWINGS FOR CONFIRMATION OF ALL INVERT ELEVATIONS.

2 S1.0 FIRST FLOOR FRAMING PLAN
Scale: 1/4" = 1'-0"

- NOTES:**
1. TOP OF FINISHED FLOOR ELEVATION SHALL BE AS NOTED ON PLAN.
 2. REFER TO THE ARCHITECTURAL DRAWINGS FOR FRAMING ELEVATIONS.
 3. REFER TO THE ARCHITECTURAL DRAWINGS FOR ALL STAIR DIMENSIONS AND POST LOCATIONS.
 4. NEW BEARING AND EXTERIOR WOOD WALLS SHALL BE 2x4@12" O.C. W/ DOUBLE STUDS PROVIDED AT EVERY OTHER STUD U.O.N.
 5. NEW HEADERS TO BE (2)x10 AND NEW POSTS TO BE (2)x4 U.O.N.
 6. IT IS ASSUMED EXISTING OPENING IS FRAMED WITH 2x BAND BOARD AND END OF EXISTING JOISTS. G.C. TO VERIFY IN FIELD. NEW INFILL FRAMING TO ATTACH TO EXISTING BAND BOARD ON ONE END AND NEW LEDGER ON OTHER.

3 S1.0 SECOND FLOOR FRAMING PLAN
Scale: 1/4" = 1'-0"

- NOTES:**
1. SEE 2/S1.0.

4 S1.0 ROOF FRAMING PLAN
Scale: 1/4" = 1'-0"

- NOTES:**
1. PROVIDE HURRICANE CLIPS, SIMPSON H2.5, AT ALL NEW ROOF JOISTS ON NEW WOOD WALLS U.O.N.
 2. SEE 2/S1.0.

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FRAMING PLANS

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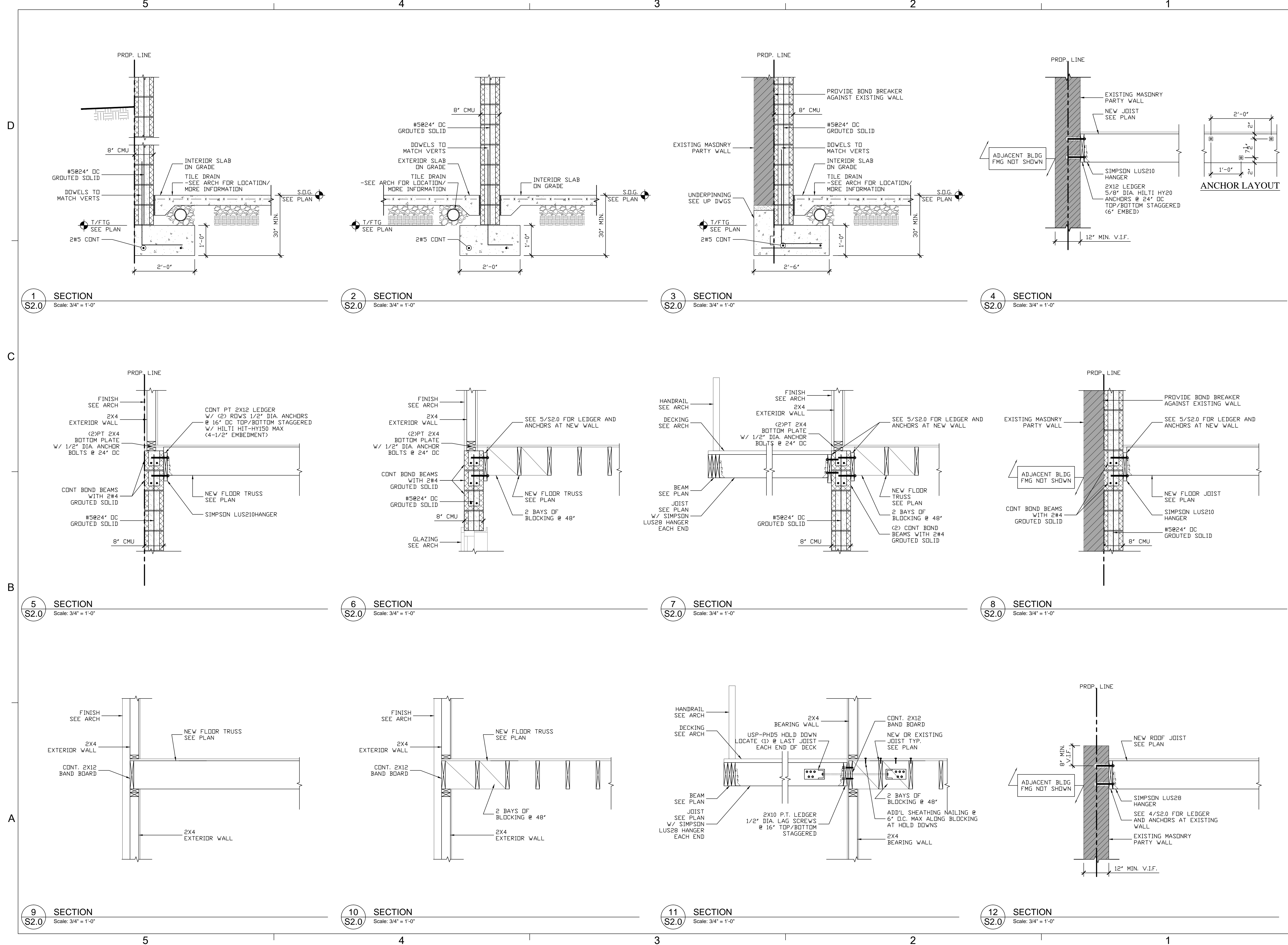
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1 SECTION
S2.0 Scale: 3/4" = 1'-0"

2 SECTION
S2.0 Scale: 3/4" = 1'-0"

3 SECTION
S2.0 Scale: 3/4" = 1'-0"

4 SECTION
S2.0 Scale: 3/4" = 1'-0"

5 SECTION
S2.0 Scale: 3/4" = 1'-0"

6 SECTION
S2.0 Scale: 3/4" = 1'-0"

7 SECTION
S2.0 Scale: 3/4" = 1'-0"

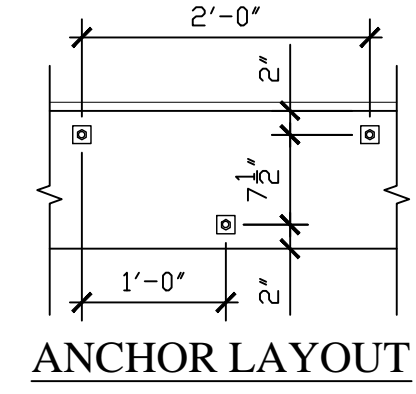
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S2.0 Scale: 3/4" = 1'-0"

9 SECTION
S2.0 Scale: 3/4" = 1'-0"

10 SECTION
S2.0 Scale: 3/4" = 1'-0"

11 SECTION
S2.0 Scale: 3/4" = 1'-0"

12 SECTION
S2.0 Scale: 3/4" = 1'-0"



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SECTIONS AND DETAILS

REVISIONS

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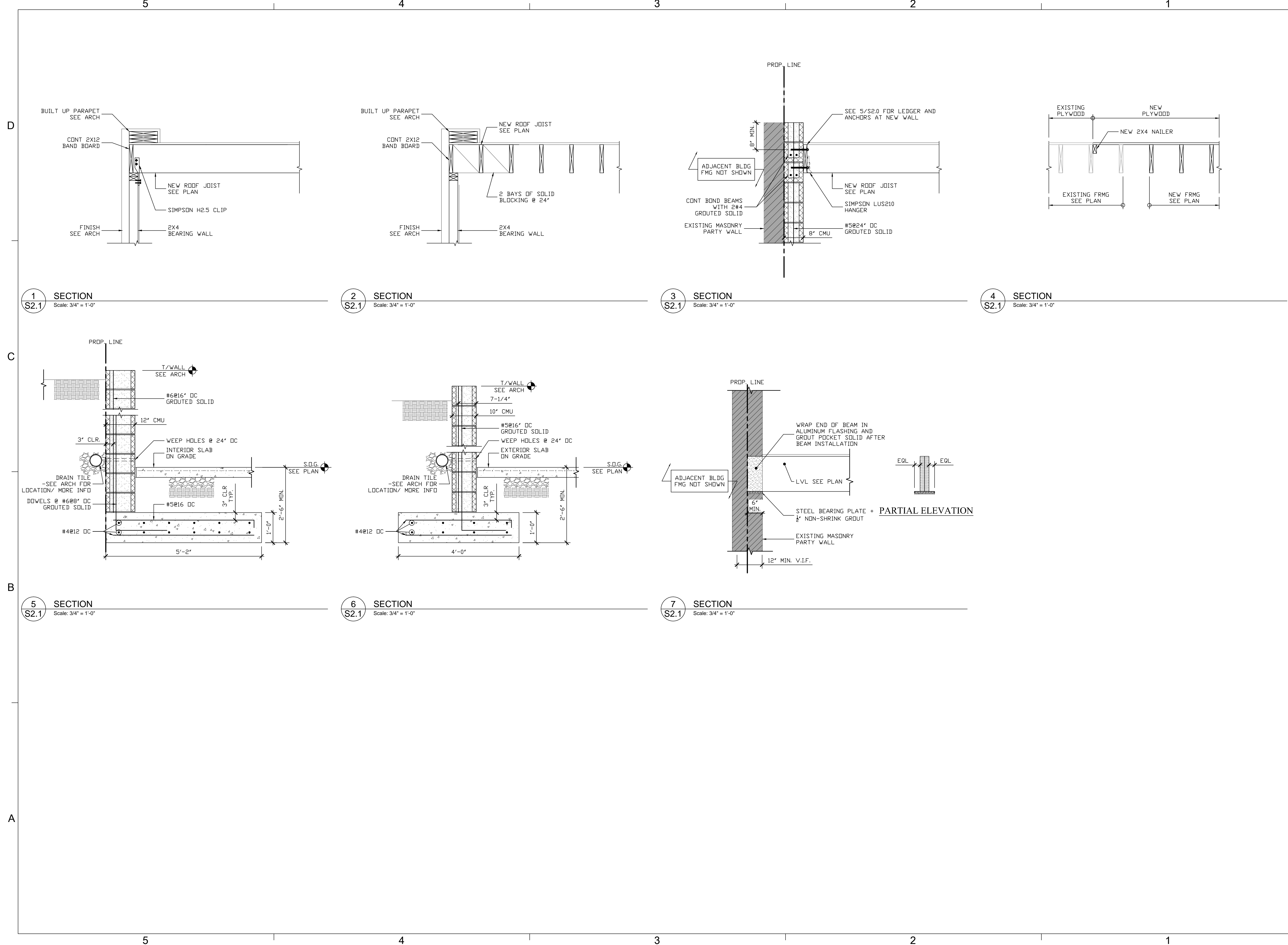
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S2.0



1 SECTION
S2.1 Scale: 3/4" = 1'-0"

2 SECTION
S2.1 Scale: 3/4" = 1'-0"

3 SECTION
S2.1 Scale: 3/4" = 1'-0"

4 SECTION
S2.1 Scale: 3/4" = 1'-0"

5 SECTION
S2.1 Scale: 3/4" = 1'-0"

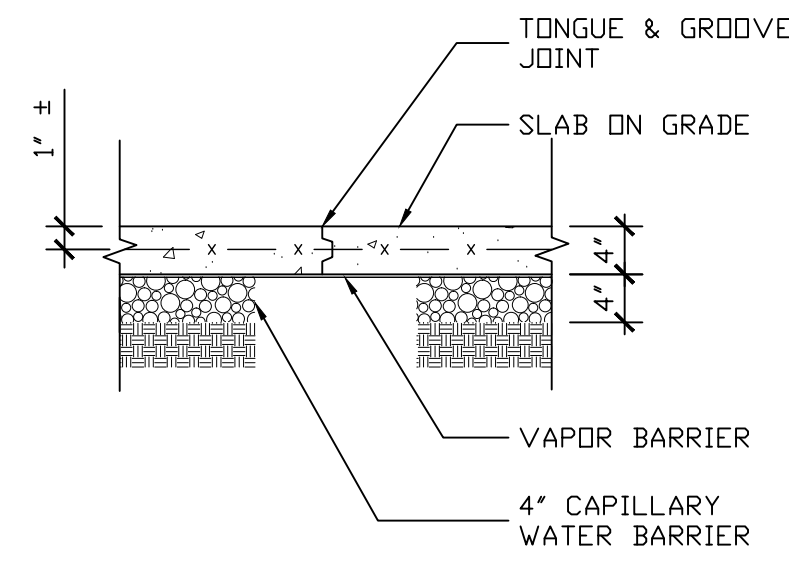
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S2.1 Scale: 3/4" = 1'-0"

7 SECTION
S2.1 Scale: 3/4" = 1'-0"

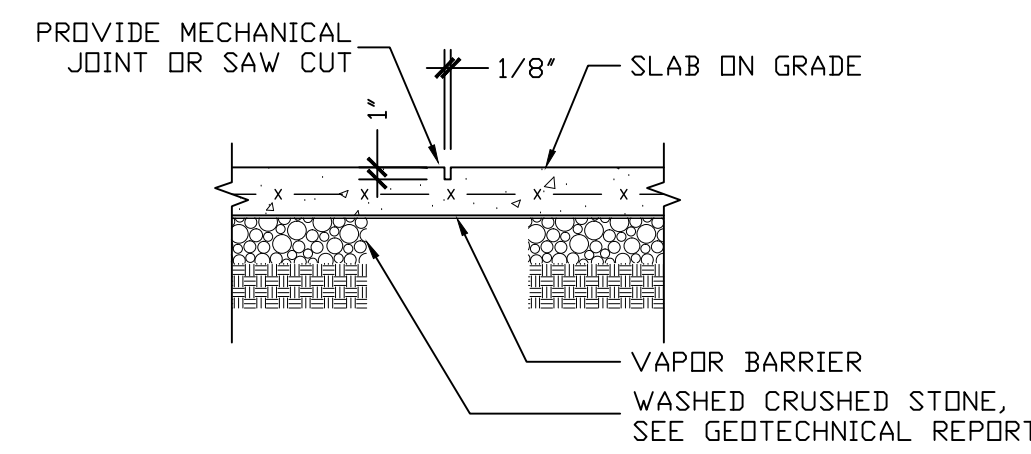
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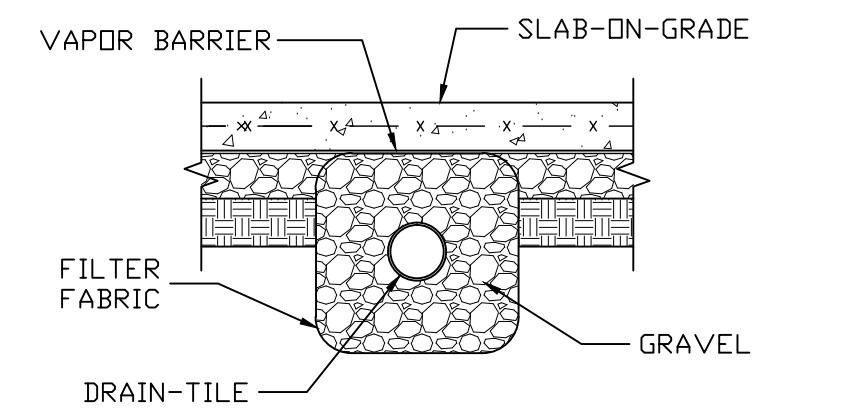
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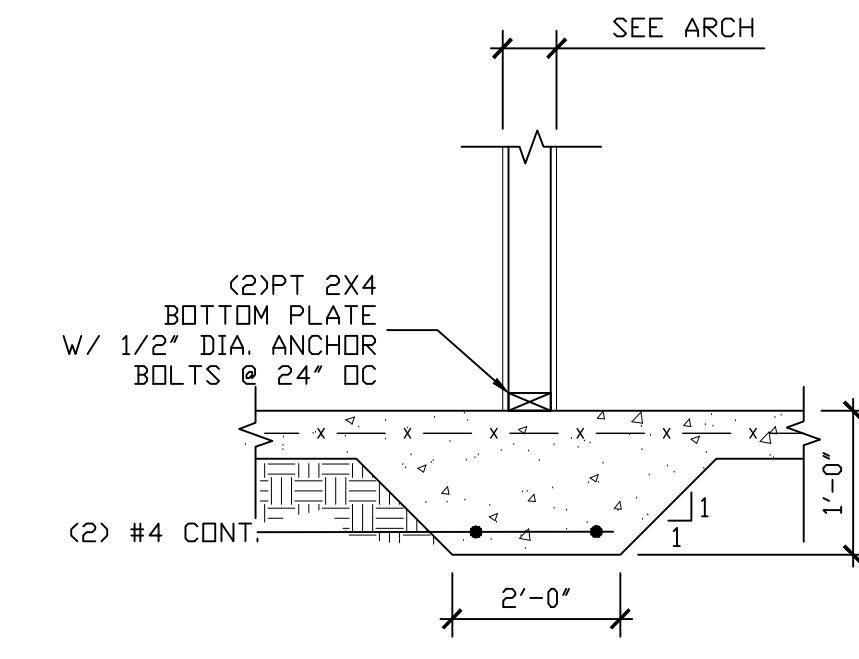
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S2.2 TYPICAL SLAB ON GRADE CONSTRUCTION JOINT DETAIL
Scale: N.T.S.



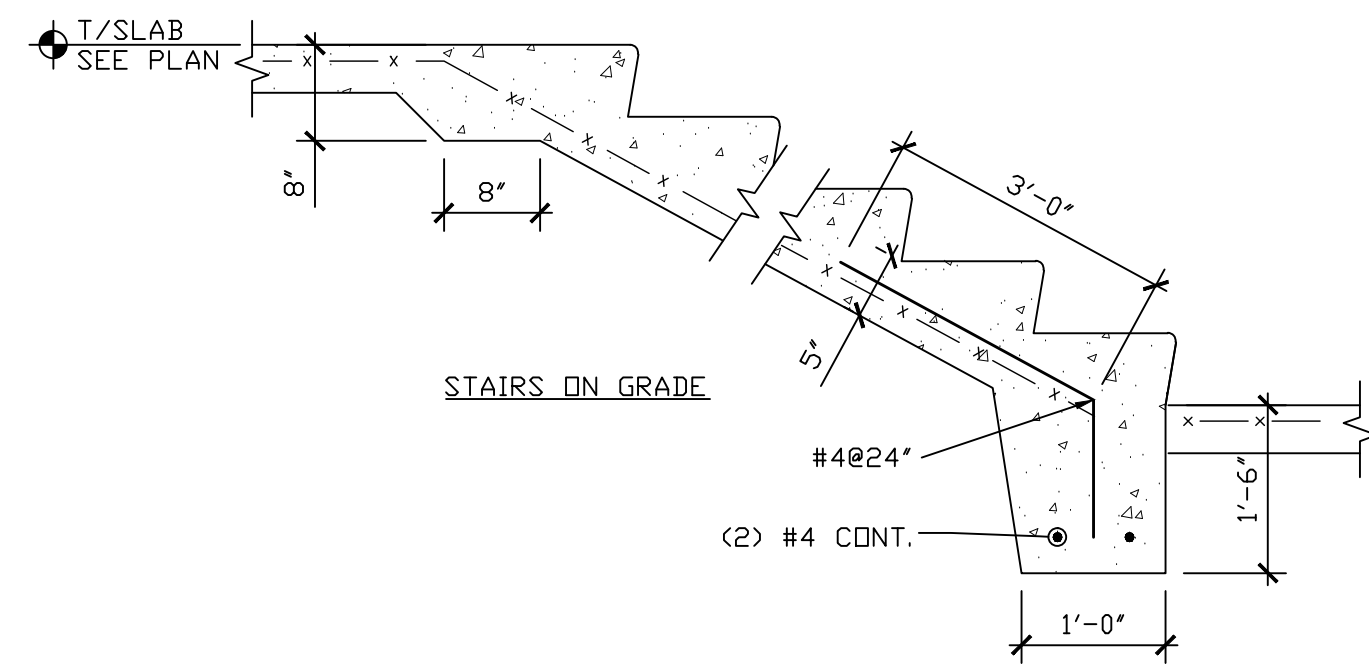
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S2.2 TYPICAL SLAB ON GRADE CONTROL JOINT DETAIL
Scale: N.T.S.



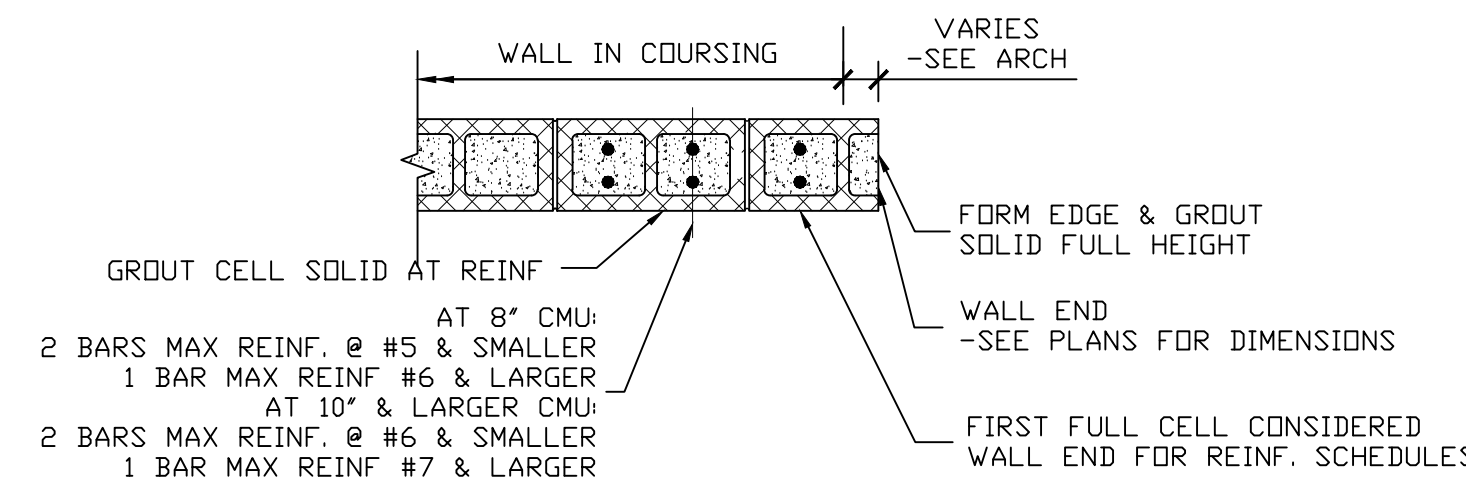
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S2.2 TYPICAL DRAIN DETAIL
Scale: N.T.S.



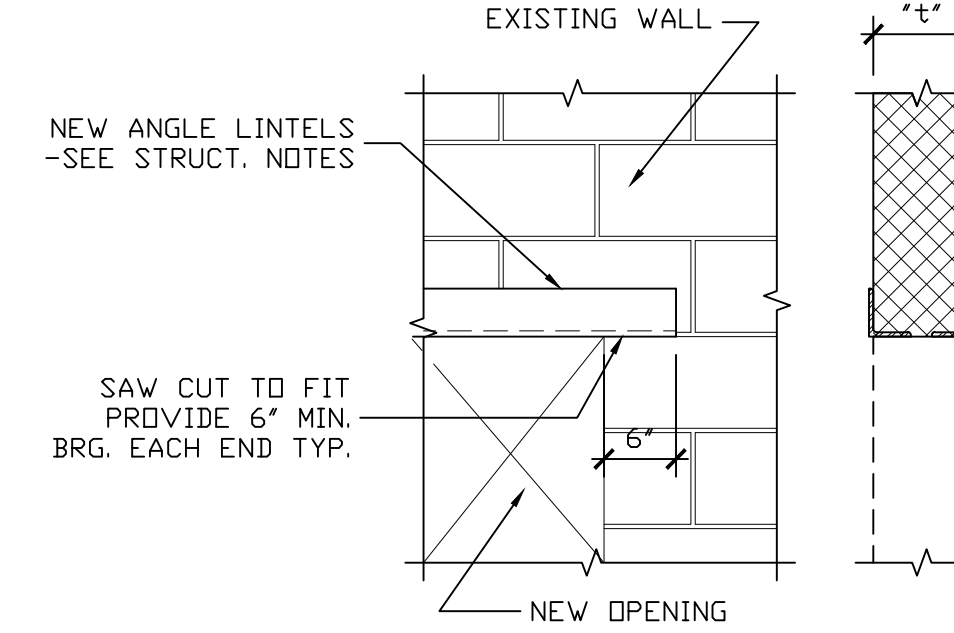
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S2.2 TYPICAL THICKENED SLAB @ WOOD BRG WALL
Scale: N.T.S.



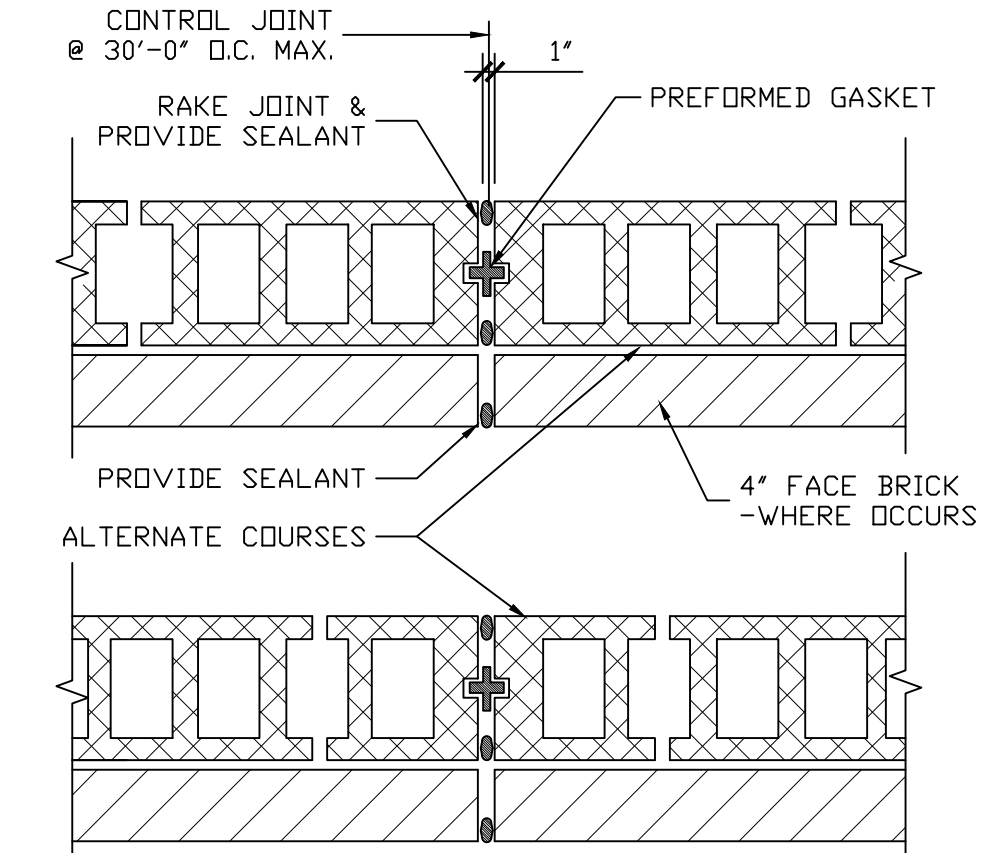
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S2.2 TYPICAL STAIR ON GRADE
Scale: N.T.S.



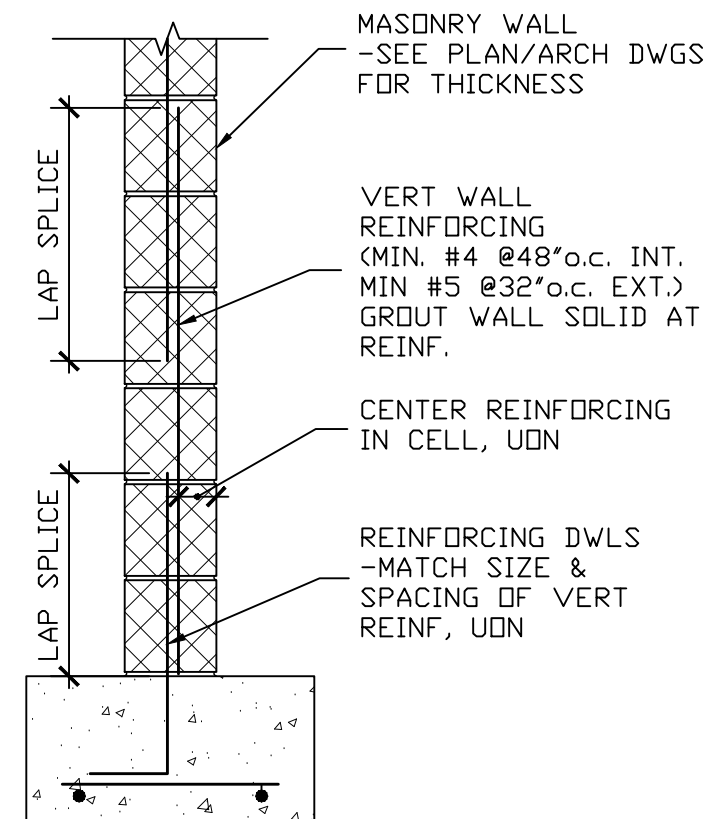
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S2.2 TYPICAL MASONRY WALL REINFORCEMENT DETAIL
Scale: N.T.S.



7
S2.2 TYPICAL NEW OPENING IN AN EXISTING MASONRY WALL
Scale: N.T.S.



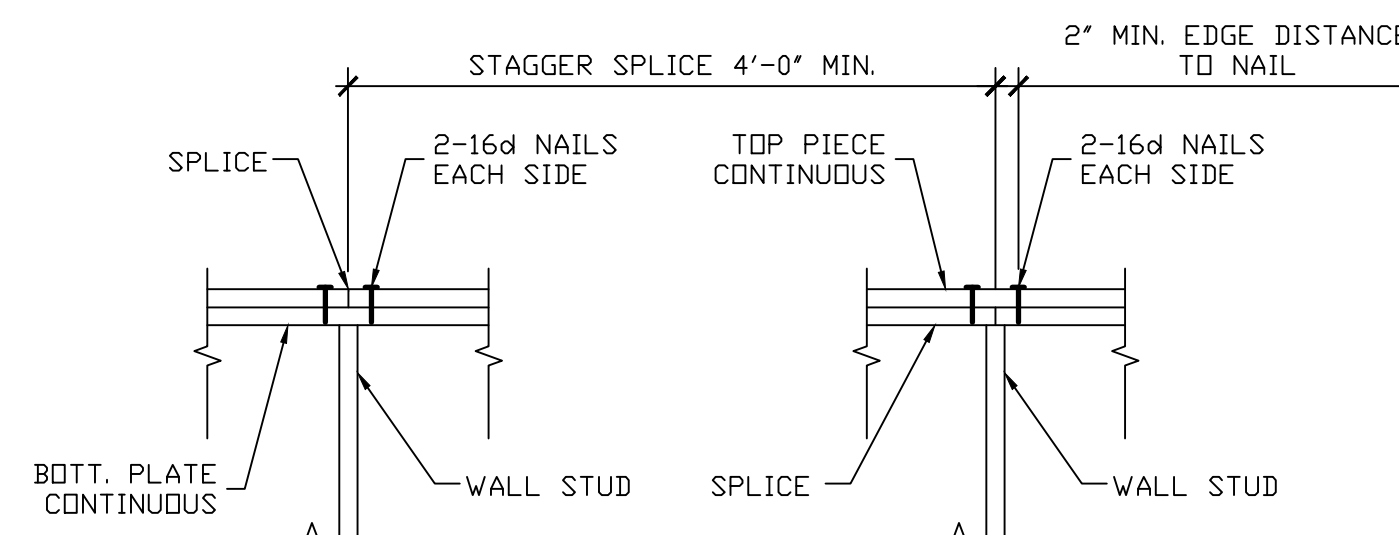
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S2.2 TYPICAL MASONRY WALL CONTROL JOINT DETAIL
Scale: N.T.S.



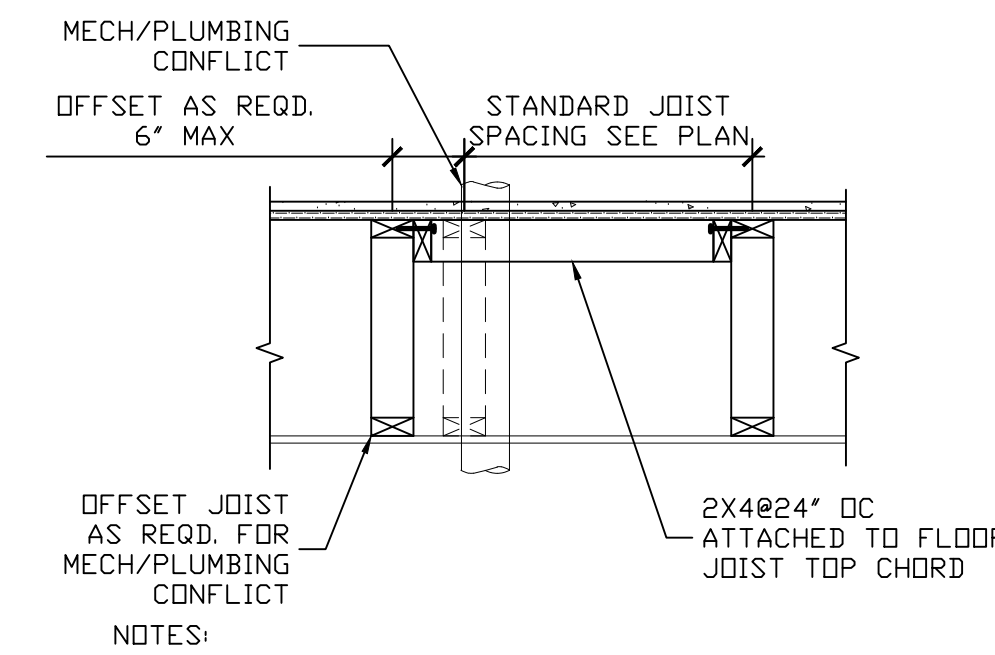
MASONRY WALL LAP SPLICES IBC 2003 SEC. 2107.2.3		
REINF. BAR GRADE 60	LAP LENGTH (INCHES)	
	8" CMU (CENTERED)	10" & 12" CMU (CENTERED)
#3	19"	19"
#4	25"	25"
#5	31"	31"
#6	MECH SPLICE	52"
#7	MECH SPLICE	MECH SPLICE
#8	MECH SPLICE	MECH SPLICE

NOTES:
1. CONTRACTOR OPTION TO PROVIDE MECHANICAL SPLICES IN LIEU OF SPECIFIED LAP SPLICE LENGTHS.

9
S2.2 TYPICAL MASONRY WALL REINF. LAP SPLICES
Scale: N.T.S.



10
S2.2 TYPICAL TOP PLATE SPLICE DETAIL
Scale: N.T.S.



11
S2.2 TYPICAL PLUMBING/TRUSS CONFLICT
Scale: N.T.S.

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4

3

2

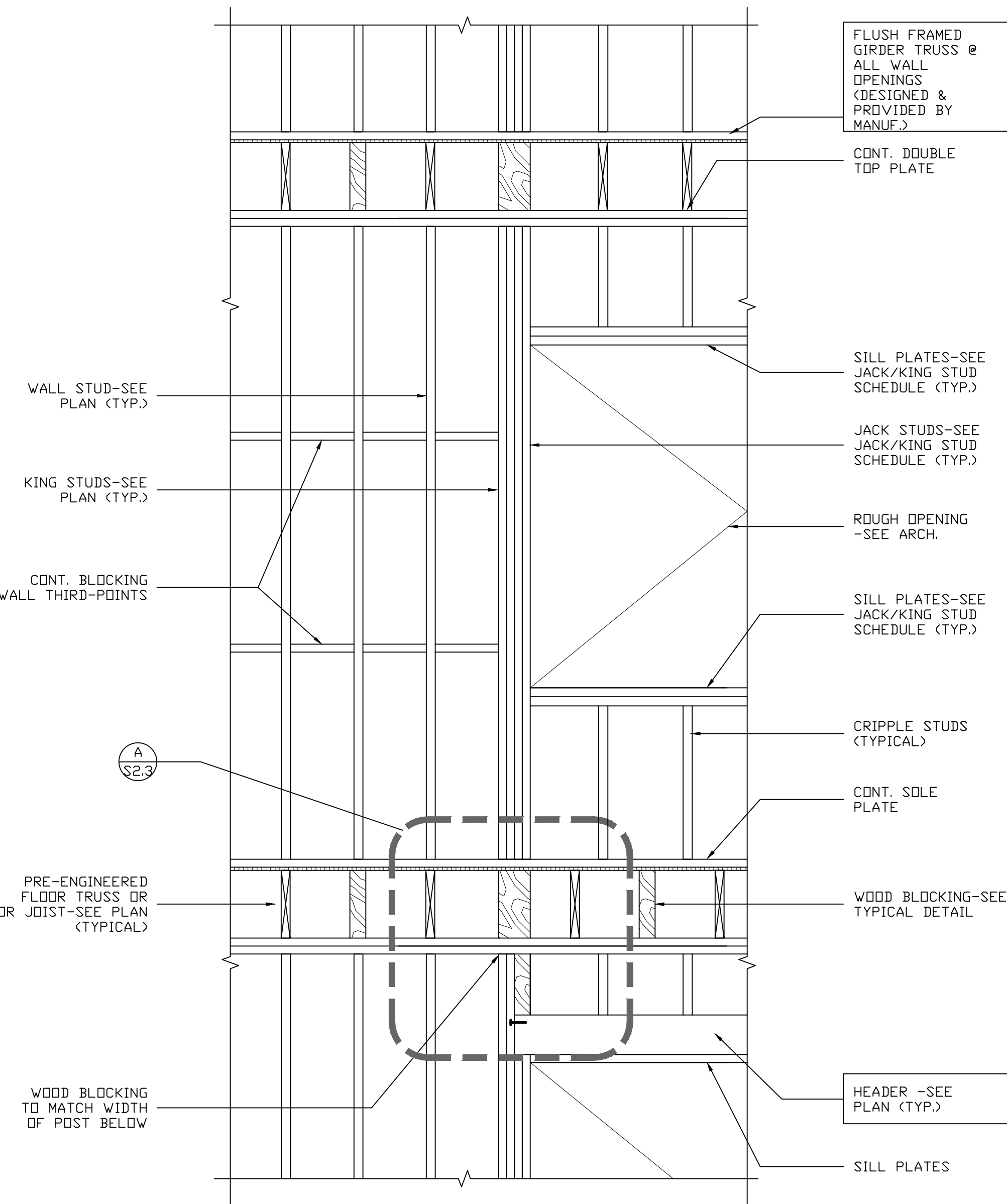
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D

C

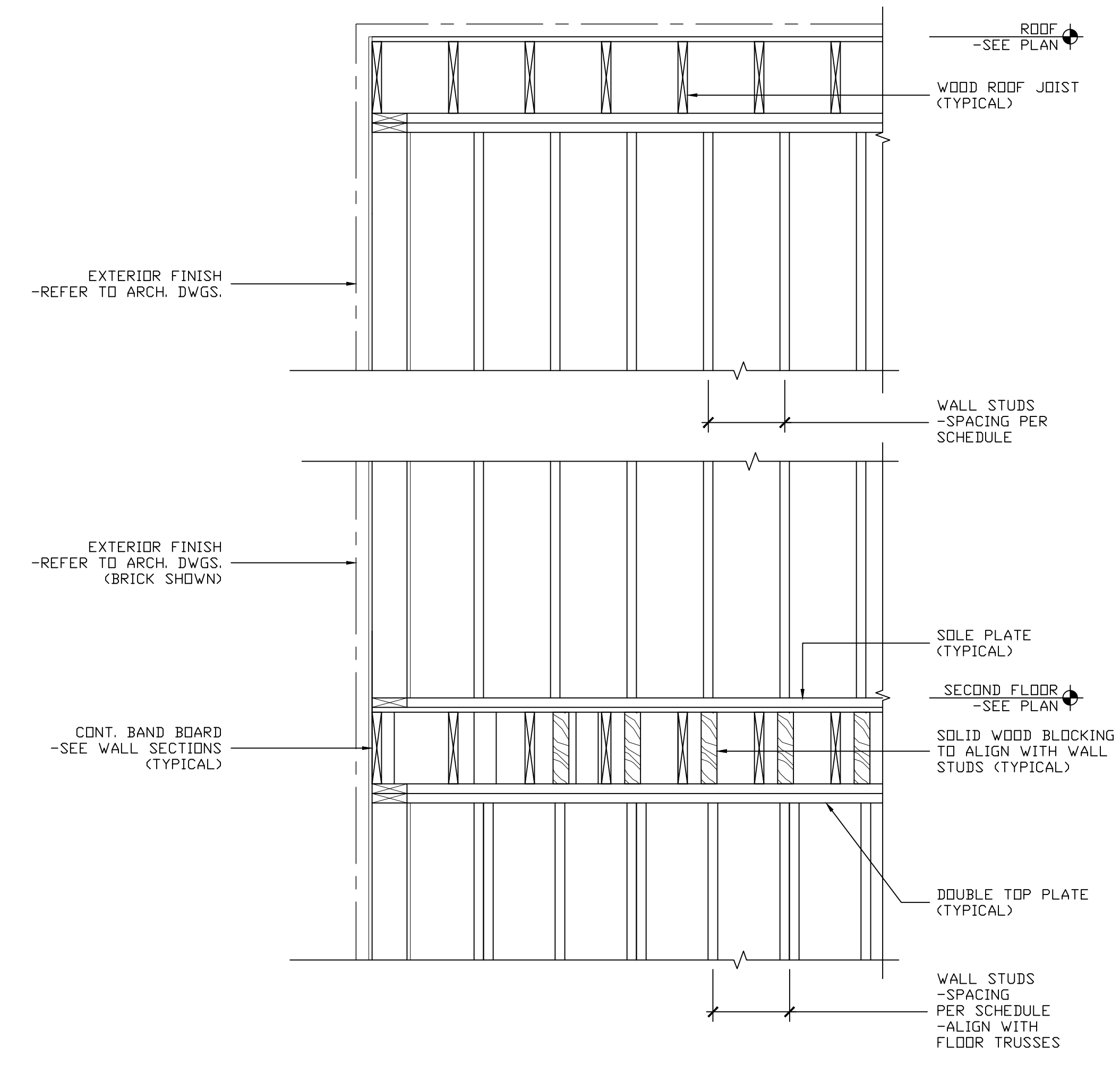
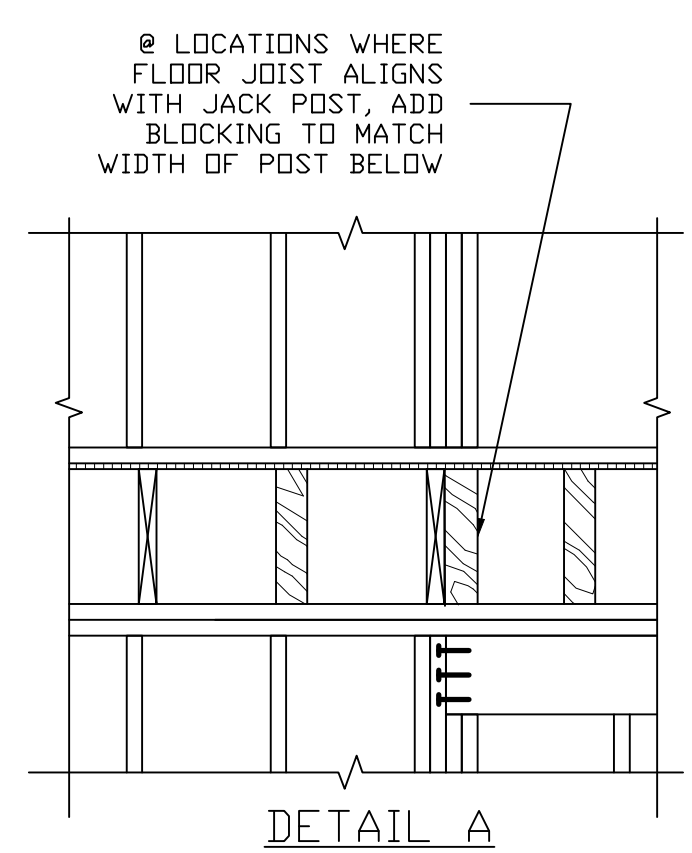
B

A



TYPICAL EXTERIOR WALL PANEL ELEVATION

CONTRACTOR'S OPTION TO PROVIDE WOOD FLUSH FRAMED GIRDER TRUSSES @ ALL EXTERIOR WALL OPENINGS IN ALL OF THE SCHEDULES SHOWN ON PLAN (THIS WOULD ALLOW FOR UNIFORM STUD HEIGHTS ALONG ALL WALL LENGTHS)



NOTES:

- WOOD BLOCKING SHALL ALIGN WITH WALL STUDS. MAXIMUM ALIGNMENT DEVIATION SHALL NOT EXCEED 1-1/2"
- CONTRACTOR TO COORD. LAYOUT OF BOTH JOISTS & WALL STUDS SUCH THAT THESE ELEMENTS ALIGN WHERE REQUIRED - SEE WALL SCHEDULE.
- STUD SPACING AS SHOWN ABOVE IS FOR ILLUSTRATIVE PURPOSES ONLY. SEE PLAN & WALL SCHEDULE FOR SPACING REQUIREMENTS @ EACH LOCATION.
- HORIZONTAL BLOCKING NOT SHOWN FOR CLARITY.

1 TYPICAL EXTERIOR WALL PANEL ELEVATION
Scale: N.T.S.

2 TYPICAL WALL BLOCKING DETAIL @ BEARING WALL
Scale: N.T.S.

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