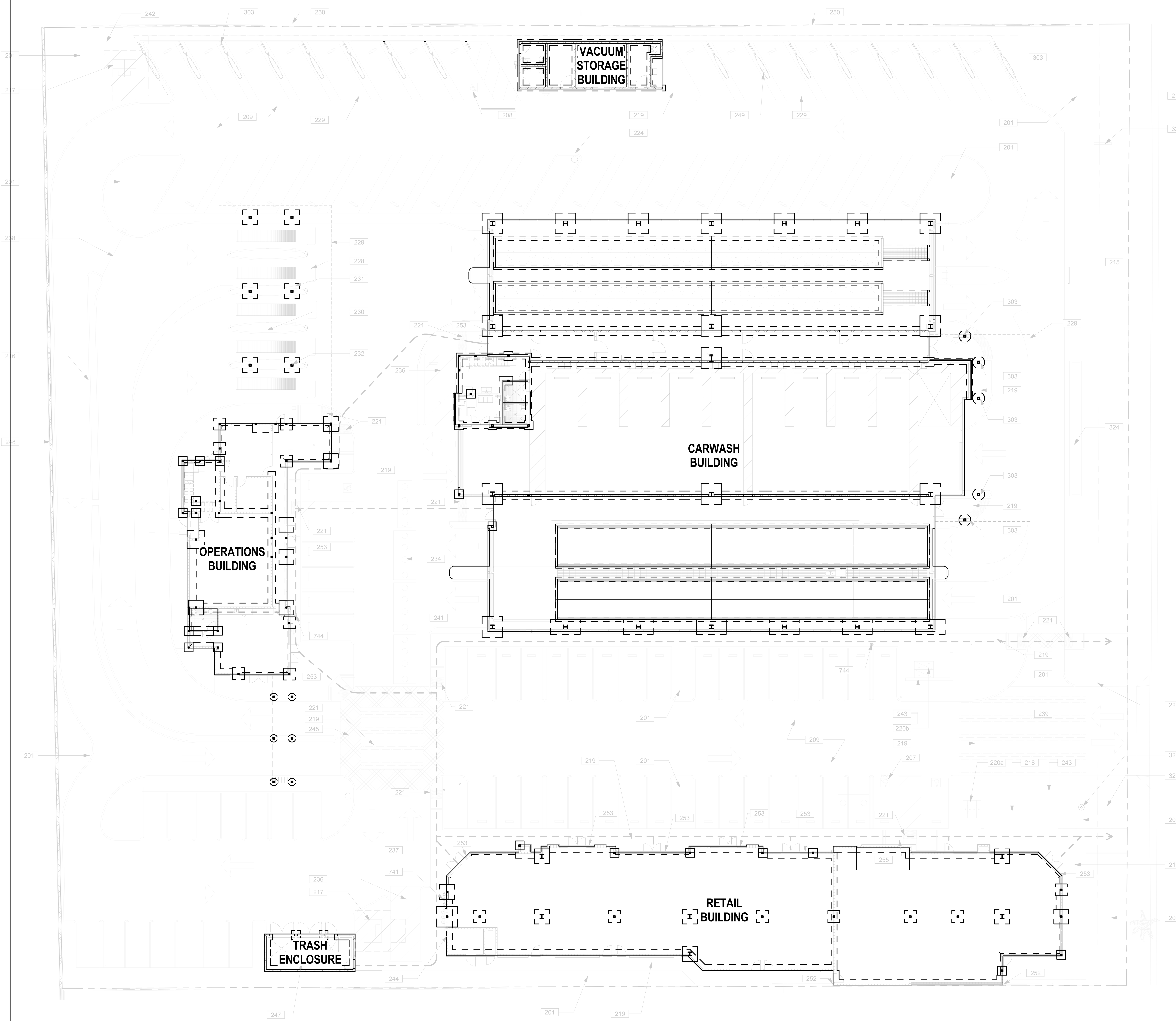

SITE PLAN (A)
1/16" = 1'-0"

NORTH

STRUCTURAL SHEET LIST

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REVISIONS

NO :	DATE	DESCRIPTION
1	05/18/17	2ND PLAN CHECK SUBMITTAL
	07/14/17	3RD PLAN CHECK SUBMITTAL

SITE PLAN AND STRUCTURAL SHEET INDEX

SHEET SCALE :	1/16" = 1'-0"
PROJECT MANAGER :	MH
DESIGNER :	JN
DRAWN BY :	FS
REVIEWED BY :	
1st DEPT. SUBMITTAL :	X/X/2016
ISSUED FOR CONST. :	
JOB NUMBER	16-S003
CAD FILE NAME	

S0.0

2ND BUILDING PLAN CHECK COORDINATION 05.18.2017

STRUCTURAL STEEL

1. STRUCTURAL STEEL: Material, Fabrication, and Erection

A. Materials
1) Provide structural steel complying with the following ASTM Standard Specifications, unless noted otherwise:
Wide Flanges
ASTM A992
Plates, channels, angles
ASTM A36
ASTM A572 Grade 42 or Grade 50
Pipes
ASTM A53, Grade B (35 ksi)
Hollow structural section
ASTM A500, Grade C (50 ksi - Rectangular Section, 46 ksi - Round Section).
Anchor rods
ASTM F1554, Grade 55
ASTM F1554, Grade 105 at SFRS
ASTM F1554, Grade 36 (Wood Framing)
Threaded round stock
ASTM A36
Reinforcing steel
See Reinforcing Steel Section.
Furnish readily identifiable structural steel in compliance with CBC 2203.

B. High Strength Bolts
1) Provide high strength bolts, nuts and washers complying with ASTM A325 with threads not excluded from the shear plane unless noted otherwise. Provide pretensioned high strength bolts (with Class A faying surface) for all bolted connections part of the seismic force resisting system (SFRS) unless noted otherwise.
2) Assemble high strength bolts in compliance with Specification for structural joints using ASTM A325 or ASTM A490 Bolts.
3) Tighten all bolts to a snug tight condition, unless noted otherwise. Install pretensioned bolts to at least the minimum tension specified in the referenced standard using one of the approved methods.

C. Fabricate and erect structural steel in compliance with "Specification for Structural Steel Buildings," AISC 360-10 and CBC Chapter 22.

D. Provide stainless steel only where specifically indicated complying with ASTM A666, specification for the design of cold-formed stainless steel structural members based on AISI. Submit prequalification of welds to Governing Code Authority for approval.

E. Apply sprayed fireproofing over structural steel with Monokote MK6/CBF or MK6/ED as manufactured by W.R. Grace and Company as approved by ICC-ES ESR-1186 or equal. Hourly fire resistive requirements shall be determined using CBC Table 601 and building type of construction as indicated on architectural drawings.

F. Building structural steel is designed for unshored construction unless noted otherwise.

G. Submit shop drawings to Architect (Structural Engineer) for review and, upon request, to Building Official.

2. Welding

A. Basic Requirements
1. Weld structural steel in compliance with ANSI/AWS D1.1, and AISC Specification, Chapter J. Welders shall be certified as required in the plans and by Governing Code Authority. Welding shall be done by electric arc process using low-hydrogen electrodes with specified tensile strength not less than 70 ksi unless noted otherwise and 80 ksi for all ASTM 913 steel. Welding may be performed using submerged arc process with automatic welding (SAW-1).
2. All shop and field welds shall be performed by an AISC Quality Certified fabricator, approved by the City of Los Angeles.
3. Unless a larger size fillet weld is indicated, provide minimum size of weld per AISC Specification, Section J2 and Table J2.4.
4. No attempt has been made to differentiate between shop and field welded connections.
5. Submit an erection and welding sequence to minimize locked-in stresses or distortion at Seismic Moment Frames.

B. Project Seismic Force Resisting System (SFRS) Welding Requirements
1. Refer to Project Specifications and AISC 341-10, Chapters I and J.

C. Inspections
1. All inspection requirements shall follow the Quality Assurance section including inspection tables, AISC 360-10 Chapter N, AISC 341-10 Chapter J, and the project specifications.

OPEN-WEB STEEL JOISTS

1. Provide open web joists and joist girders (including bridging) complying CBC Section 2207. Furnish readily identifiable joists in compliance with CBC Section 2203.
2. Provide chord and web sections complying with structural steel section. Top chords of joists shall be angles or tees.
3. Sizes indicated for joists are assumed and do not necessarily indicate member sizes to be supplied. Where design of members requires sizes and depths which differ from those indicated, notify Architect (Structural Engineer) immediately and, if acceptable, provide at no additional cost to Owner.
4. Design loads:
Dead Load = 16 psf at exposed joists
Dead Load = 30psf at hard lid ceiling
Live Load = 20psf (Roof)
Wind load= See "General" section of S0.01
Seismic Load : See Plans
5. Submit shop drawings and calculations signed by and bearing the seal of a registered civil engineer to Architect (Structural Engineer) for review and to Governing Code Authority for approval.
6. Install joists, joist girders and erection bracing complying with the manufacturer's recommendations.
7. Provide bottom chord extensions where contact ceiling occurs - see architectural drawings for extent of contact ceiling.
8. Camber joists and joist girders for dead loads.
9. Run bridging continuous through structural steel purlins and anchor to walls and spandrel structural steel members.
10. Joists shall be welded to supporting steel members.
11. Provide flat bearing for all joists.
12. Where bar joists are utilized, and columns are not framed in at least two directions with structural steel members, field bolt each end of bar joists to columns to provide lateral stability during construction.
13. Suspend ceilings, piping, ducts, etc., only from joist panel points.

MASONRY (CONTINUED)

10. Provide reinforcing steel as indicated in Reinforcing Steel Section, unless noted otherwise.
11. Splice reinforcing steel where indicated. Lap reinforcing steel at splices a minimum of 64 bar diameters, unless noted otherwise. Where clear distance between bars at adjacent splices is 3 inches or less, increase lap length 50 percent.
12. Provide wire reinforcing in mortar joints only where specifically indicated complying with ASTM A951. Provide hot-dipped galvanized coating for wire reinforcing in exterior or walls with a minimum of 1.50 ounces of zinc per square foot of surface area in compliance with ASTM A153, Class B-2; provide galvanized coating for wire reinforcing in interior walls with a minimum of 0.10 ounce of zinc per square foot of surface area in compliance with ASTM A641. Install in accordance with manufacturer's recommendations.
13. Dowels for walls and columns shall match size and spacing of wall and column reinforcing steel, unless noted otherwise. Set dowels to align with cells containing reinforcing steel.
14. Minimum reinforcing cover: maintain the following minimum clear distances between reinforcing and face of masonry unless noted otherwise:

Reinforcing steel:

Walls or columns below grade	
for bars larger than #5	2"
for bars #5 & smaller	1-1/2"
Walls or columns above grade:	
exposed to weather	
for bars larger than #5	2"
for bars #5 & smaller	1-1/2"
not exposed to weather	1-1/2"
Seismic combs or other mortar jt. reinforcing	
exposed to weather	5/8"
not exposed to weather	1/2"

15. Provide 1" minimum grout cover around reinforcing steel, anchor bolts, inserts, etc., penetrating masonry shell.
16. Set cells in vertical alignment.
17. Grout thickness between masonry units and reinforcing steel shall not be less than 1/2" and between parallel reinforcing steel not less than 1" nor nominal bar diameter.
18. Grout solid all cells.
19. Mechanically vibrate grout in cells.
20. If work is stopped one hour or longer, provide horizontal construction joints by stopping grout 1 1/2" below top of masonry unit or a mortar joint.
21. Conduits, pipes, and sleeves shall be installed following the requirements of Section 1.20.2 of TMS402-11/ACI530-11/ASCE5-11.

ROUGH CARPENTRY

1. Provide plywood complying with DOC PS 1 and classified as Exposure 1. Each sheet of plywood shall be identified with appropriate trademark of the American Plywood Association.
2. Do not suspend ceilings, soffits, sprinklers, piping, mechanical ducts, nor any other element from 2x4 roof framing unless specifically detailed.

STEEL DECKING

1. Provide steel decking by manufacturer(s) indicated on drawings.
2. Floor decking:
A. Provide steel floor decking and closure angles complying with ASTM A653 SS Grade 33, with a minimum yield of 38,000 psi and galvanized with G60 commercial coating complying with ASTM A525.
B. Form floor decking with integral locking lugs or embossments to provide a mechanical lock between concrete and decking.

E. Floor decking is designed for unshored construction to maximum spans indicated. If conditions occur where spans exceed maximum, provide adequate shoring or heavier gauge decking; the latter subject to review by Architect (Structural Engineer).

F. Provide perforations or slots in floor decking, 1.5% maximum open area, for ventilation of structural concrete at areas exposed to weather or areas where waterproofing is used.

3. Roof decking (no concrete fill):
A. Provide steel roof decking and closure angles complying with ASTM A653 SS Grade 33, with a minimum yield of 38,000 psi and galvanized with G60 commercial coating complying with ASTM A525.

D. Roof decking is designed for unshored construction.

E. Do not suspend piping, ducts, work utilities or other loads with exception of suspended acoustical ceilings with integrally supported light fixtures from roof decking. Submit methods of support from roof framing for loads other than acoustical ceilings to Architect (Structural Engineer).

4. Provide closure angles at openings for mechanical equipment, ducts, piping, vents, conduits, etc., including those not shown on structural drawings. Closure angles shall be 18 gauge and be welded to decking, unless detailed otherwise.
5. Bear decking at least 2 inches at supports. Lap decking at ends at least 2 inches and center laps over supports.
6. Weld steel decking in compliance with ANSI/AWS D1.3 using a minimum of E60XX electrodes. Welders shall be certified as required by the Governing Code Authority.
7. Screed concrete parallel to steel decking to thickness indicated on drawings.
8. Submit complete steel decking shop drawings to Architect (Structural Engineer) for review.
9. Pipes, sleeves, electrical conduit, etc. shall not be embedded in steel deck concrete unless approved by the Architect (Structural Engineer). Embedded items shall not reduce the assembly fire rating unless supplemental fireproofing is provided as required.

REINFORCING STEEL

10. Bend reinforcing steel cold unless otherwise accepted by Architect (Structural Engineer). Provide special inspection of all cold bent reinforcing.
11. Securely tie anchor bolts, reinforcing steel, inserts, etc., in place prior to pouring concrete or grout.
12. Submit reinforcing steel shop drawings indicating reinforcing placement, including splice locations and lengths, to Architect (Structural Engineer) for review and acceptance. Promptly notify Architect (Structural Engineer) prior to developing reinforcing steel shop drawings if insufficient clear distances between reinforcing steel or other congestion is encountered. Prepare shop drawings in compliance with ACI 315, Part B.

ADHESIVE ANCHORS AND DOWELS

1. All adhesive anchors and dowels to use epoxy by Hilti Hit-RE500-SD, ICC#ESR-2322 or approved equal.
2. Install per manufacturer's recommendations.
3. Only non-rebar-cutting drill bits shall be used to drill holes in existing concrete. Care is to be taken when drilling holes so as not to cut any existing reinforcing. Locate existing reinforcing by chipping, pachometer, or x-ray methods prior to drilling.
4. Drill holes shall be cleaned of concrete dust and debris using either a nylon brush and a vacuum, or a nylon brush and oil-free compressed air. A blow-out bulb may be used if a vacuum or compressed air is not available.
5. Special inspection is required for installation of all adhesive anchors. Inspector to verify and document embedment length and hole preparation and cleanliness. Inspector to verify correct implementation of the manufacturer's instructions for installation.

CAST-IN-PLACE CONCRETE

1. All concrete work to conform to CBC Chapter 19.
2. Provide normal weight aggregates of natural sand and rock complying with ASTM C33 (aggregate size).
3. Provide Portland Cement conforming to ASTM C150, Type II.
4. Provide normal weight concrete (145 pcf) attaining a minimum compressive strength of 4000 psi at 28 days unless noted otherwise.
5. Submit concrete design mix data for each type and compressive strength of concrete required signed by and bearing the seal of a registered civil engineer in state to Architect (Structural Engineer). Base design mix on field experience or trial mixtures, or both, as stipulated in ACI 318 Section 5.3.
6. Submit shop drawings to Architect (Structural Engineer) indicating locations of concrete construction joints for review prior to placing concrete. Locate joints at locations to minimize effects of shrinkage as well as being placed at points of low stress and shall conform to ACI 318, Section 6.4.
7. Slump not to exceed 4 (+/- 1) inches. For slab on grade, walls, slab on metal deck and suspended slabs, slump not to exceed 4" (+0", -1") inches.
8. Do not use concrete or grout containing chlorides.
9. Do not embed conduits, pipes, or sleeves in structural concrete, including slabs on metal deck, except where specifically detailed or accepted by Architect (Structural Engineer). Locate electrical conduit 3" apart minimum and within middle third of member.
10. Form exposed corners of columns, beams, walls, etc., with 3/4 inch chamfers unless detailed otherwise.
11. Provide keys in construction joints unless detailed otherwise. Thoroughly clean, remove laitance and thoroughly wet and remove standing water in construction joints before placing new concrete.
12. Roughen concrete surface to a full amplitude of 1/16 inch where masonry walls intersect concrete.
13. Roughen existing concrete surface to a full amplitude of 1/16 inch where existing concrete abuts new concrete.
14. Perform concrete work in compliance with ACI 301.
15. Maintain concrete above 50 degrees Fahrenheit and in a moist condition for a minimum of 7 days after placement unless otherwise accepted by Architect (Structural Engineer).
16. All topping slabs to receive 6 x 6 - W2.9 x W2.9 welded wire fabric unless noted otherwise. Place fabric in center of slab or a maximum of 2" clear from the top of concrete, whichever is less.
17. Slab on grade is not designed as a structural diaphragm.
18. The design of the formwork, shores and re-shores shall be the responsibility of the contractor. Construction load allowance is not included in the slab design. Timing for the removal of the formwork for the slab shall be the responsibility of the contractor. However, in no case shall the formwork be stripped before the concrete reaches 75% of its specified 28-day compressive strength and 75% of its corresponding 28-day modulus of elasticity (E) of the concrete of that slab (where E = 57 x square root of the specified f'c for normal weight concrete). Re-shores cannot be completely removed before concrete reaches its specified strength at 28 days.

MASONRY

1. Specified compressive strength of masonry, f'm, shall be as follows: f'm = 1500 psi typical unless noted otherwise.
2. Verify specified compressive strength of masonry in accordance with one of the following methods as defined in CBC 2105.2: Masonry Prism Test Method, or Unit Strength Method.
3. Level B special inspection as specified in Table 4 of ACI 530 "Specifications" shall be provided.
4. Provide concrete masonry of medium weight classification complying with ASTM C90 attaining a minimum compressive strength as required to meet specified compressive strength of masonry (f'm).
5. Provide face brick complying with ASTM C216.
6. Provide mortar complying with ASTM C270, Type S and attaining either a minimum compressive strength per Table SC-2 of TMS602/ACI 530 or property requirements per Table SC-1 of TMS602/ACI 530.1/ASCE6. Do not use masonry cement or plastic cement.
7. Provide grout complying with ASTM C476 and Article 2.2 of TMS 602/ACI 530.1/ASCE6. Grout compressive strength shall equal or exceed f'm, but not be less than 2000 psi at 28 days. Determine compressive strength of grout in accordance with ASTM C1019.
8. Provide Portland cement as indicated in Cast-In-Place Concrete Section.
9. Provide aggregates for mortar and grout of natural sand and rock complying with ASTM C144 and C404.

GENERAL (CONTINUED)

G. Maintain a copy of all shop drawings accepted by Architect (Structural Engineer) at site during construction period.
H. Structural Engineer requires 10 working days after receipt of shop drawings and calculations for processing.
I. Only three copies of each structural shop drawing submittal will be accepted for review and marked with comments, if any. Additional copies submitted will not be returned.

12. Submit drawings showing all slab penetrations per level on a single plan prior to erecting form work.
13. Submit drawings showing all hangers and seismic braces per level on a single plan prior to erecting form work. Indicate magnitude of applied gravity and seismic loads at each location.
14. Install and anchor mechanical and electrical and plumbing equipment to structure complying with ASCE/SEI 7-10, Chapter 13, as modified by CBC 1616.1.17 through 1616.1.28. Isolators, fasteners and any other element providing stability for equipment shall be approved by ICC-ES or equivalent testing procedure and be capable of transmitting code required lateral loads. Provide suspended equipment with approved lateral or sway bracing.
15. Brace piping and ducts complying with latest edition of "Guidelines for Seismic Restraints of Mechanical Systems" by the Sheet Metal and Air Conditioning Contractors National Association. The lateral bracing of the system shall not cause twisting or warping to the structural member. Any member to be added in order to eliminate twisting or warping to the structural member shall be the responsibility of the design-build contractor.
16. The CAD drawing files are the property of the Structural Engineer and will not be released to the Contractor or subcontractor for their use.
17. Submit deferred submittal items to the Architect (Structural Engineer) for review. After review, submit deferred submittal items to the Governing Code Authority for approval prior to installation. The following is a list of deferred approval items:
1. Cold formed metal stud system, exterior and interior
2. Design-build steel stairs
3. Exterior storefront systems
4. Pre-manufactured steel joists
18. All abbreviations of referenced standards are per CBC Chapter 35.
19. Contractors responsible for the construction of wind or seismic force resisting system/component listed in the "Statement of Special Inspection" shall submit a written statement of responsibility to the governing code authority and the Owner prior to the commencement of work on such system or component per Section 1704.4.

FOUNDATIONS

1. Foundation design is based on recommendations in Geotechnical Report no. 15-1159 prepared by Geo-Advantec Inc., dated February 15, 2016, and subsequent addenda letters. Perform foundation work complying with report and addenda. Geotechnical Report and addenda hereby become part of these contract documents and shall be kept on the job site at all times.
2. Foundation design is based on a bearing capacity of 1600 psf with a 33% increase for seismic or wind loading.
3. Design lateral bearing pressure is 250 psf/ft with a 33% increase for seismic or wind loading and a 200% increase for isolated pole type footings.
4. Design coefficient of friction is 0.35 with a 33% increase for seismic or wind loading.
5. Found footings a minimum of 2 feet below adjacent grade or finish floor, whichever is lower.
6. Found footings and building slab-on-grade on compacted fill or undisturbed natural grade as indicated in Geotechnical Report.
7. Foundation excavations are to be observed by and acceptable to a Geotechnical Engineer or his representative prior to placement of fill, reinforcing steel, or concrete.
8. Perform filling, backfilling, compaction, etc., as indicated in Geotechnical Report and only under supervision of a Geotechnical Engineer or his representative.
9. Do not place backfill behind retaining walls prior to completion and inspection of waterproofing. Adequately shore retaining walls during backfill operation. Unless adequately shored, do not place backfill behind building structure retaining walls (excluding site retaining walls) until concrete at elevated floor levels adjacent to walls has been completely poured (in area) and has cured for at least 7 days.

REINFORCING STEEL

1. Provide reinforcing steel and reinforcing steel to be welded complying with ASTM A706, Grade 60 steel. Reinforcing at foundation, suspended slab, slab on grade, and all ties may be ASTM A615, Grade 60 unless noted otherwise per plans. ASTM A615, Grade 60 reinforcing may be used in lieu of ASTM A706 reinforcing as permitted by ACI 318, unless noted otherwise.
2. Provide smooth welded wire fabric complying with ASTM A185. Lap fabric 1-1/2 spaces (12" minimum). Provide deformed wire stirrups, size D4 and larger only, complying with ASTM A1064.
3. Splice reinforcing steel where indicated. If splice locations are not specifically shown or indicated, verify splice locations with Architect (Structural Engineer) prior to developing reinforcing steel shop drawings.
4. Lap reinforcing steel at splices to lengths indicated.
5. Minimum clear distances between reinforcing steel, including spliced reinforcing steel, shall be 1" or 1 bar diameter, whichever is greater. Minimum clear distance at columns shall be 1-1/2" or 1-1/2 bar diameters, whichever is greater. For bundled bars, minimum clear distances between units of bundled bars shall be same as single bars except bar diameter is derived from equivalent total area of bundle.
6. Minimum concrete coverage: maintain the following minimum clear distances between reinforcing steel and face of concrete unless noted otherwise:

slabs on grade (center of slab)	
concrete below grade, formed	2"
concrete below grade, unformed	3"

7. Chairs or spacers for reinforcing shall be plastic or plastic coated when resting on exposed surfaces.
8. Provide dowels matching vertical reinforcing size and spacing, unless noted otherwise.
9. Weld reinforcing steel complying with AWS D1.4. If welding of reinforcing steel other than A706 is desired, submit proposed procedure, indicating conformance to code and requirements of Governing Code Authority, to Architect (Structural Engineer) for acceptance and to Governing Code Authority for approval prior to execution. Welders shall be certified as required by Governing Code Authority.

GENERAL

1. Perform construction and workmanship in compliance with contract documents and 2013 California Building Code (CBC). Building Risk Category per Table 1604.5 of CBC is II.
2. Governing Code Authority: City of Santa Ana Department of Building and Safety.
3. Design Criteria:
Floor Live Loads:
Typical Public Space = 100 psf (Non reducible)
Typical Occupied Space = 80 psf (Reducible)

Roof Live Loads = 20 psf (Reducible)

Wind Design Data:
Basic Wind Speed = 110 mph
Risk Category: II
Wind Exposure = B

Design Velocity Pressure qh = 18.4 psf
per ASCE 7-10 Eq 30.3-1 assuming mean roof height h =30 ft

Note: Adjustment factors to qh for project specific conditions shall be made using the appropriate adjustment factors in the governing building code

Earthquake Design Data
Risk Category: II
Seismic Importance Factor = 1
Mapped Spectral Acceleration
Ss = 1.510g
S1 = 0.559g
Site Class = D
Spectral Response Coefficients
S_DS = 1.007g
S_D1 = 0.559g
Seismic Design Category = D
Superstructure
Carwash Building
Basic Seismic-Force Resisting System = Steel SMF
Design Base Shear = 104 kips (service)
Seismic Response Coefficient, Cs = 0.0.090 (service)
Response Modification Factor, R = 8
Analysis Procedure used = ELF

Retail Building
Basic Seismic-Force Resisting System = Wood shear wall, Steel SMF
Design Base Shear = 31.4 kips (service)
Seismic Response Coefficient, Cs = 0.111 (service)
Response Modification Factor, R = 6.5, 8
Analysis Procedure used = ELF

Operations Building
Basic Seismic-Force Resisting System = Wood shear wall, Steel SMF
Design Base Shear = 27.4 kips (service)
Seismic Response Coefficient, Cs = 0.111 (service)
Response Modification Factor, R = 6.5
Analysis Procedure used = ELF

Vacuum Storage Building
Basic Seismic-Force Resisting System = CMU shear wall
Design Base Shear = 8.21 kips (service)
Seismic Response Coefficient, Cs = 0.144 (service)
Response Modification Factor, R = 5
Analysis Procedure used = ELF

Trash Enclosure Building
Basic Seismic-Force Resisting System = CMU shear wall
Design Base Shear = 3.91 kips (service)
Seismic Response Coefficient, Cs = 0.144 (service)
Response Modification Factor, R = 5
Analysis Procedure used = ELF

4. Structural drawings, as part of contract documents, indicate information sufficient to convey design intent. If errors, inconsistencies or omissions are discovered, promptly notify Architect (Structural Engineer) before proceeding with work.
5. When performing work, including shop drawing development, consider requirements of contract documents in their entirety (e.g., size and location of openings, penetrations and embedment for ducts, piping, vents, conduits, etc.).
6. Details and schedules indicated as "typical" may not be specifically referenced on drawings. Determine where each typical detail or schedule applies before proceeding with work. If conditions are found which are not specifically detailed, and no typical detail or schedule applies, promptly notify Architect (Structural Engineer).
7. Verify field measurement and conditions with contract documents. If errors, inconsistencies or omissions are discovered, promptly notify Architect (Structural Engineer) before proceeding with work.
8. Contract documents represent the finished structure. Unless otherwise shown, they do not indicate method of construction. Provide construction means, methods, techniques, sequences and procedures as required. Provide adequate excavation procedures, shoring, bracing and erection procedures complying with national, state and local safety ordinances.
9. Observation visits to site by field representatives of Architect (Structural Engineer) do not include review of construction means and methods or special and continuous inspections. Observations are solely for the purpose of determining if Contractor understands design intent conveyed in contract documents. Observations do not guarantee Contractor's performance and are not to be construed as supervision or inspection of construction.
10. Modifications or substitutions may be considered provided a written request, subject to review, is submitted to Architect (Structural Engineer) prior to its use, installation in the field, or inclusion on any shop drawing. Costs associated with review, approval and installation shall be borne by Contractor.
11. Shop drawing submittals:
A. Contractor shall review for completeness and compliance with contract documents and stamp shop drawings documenting this review prior to submission.
B. Submit shop drawings to Architect (Structural Engineer) for review. Do not commence fabrication until review process is completed.
C. When an engineer is required to sign and stamp shop drawings and calculations, the seal shall indicate that the engineer is registered where project occurs.
D. Shop drawings are not a part of contract documents, and review is for general conformance with design intent only. Architect's (Structural Engineer's) review does not constitute an authorization to deviate from the contract or the building code.
E. Shop drawings will be rejected for incompleteness, lack of coordination with other portions of contract documents, lack of calculations (if required), or where modifications or substitutions are indicated without prior review.
F. Submit shop drawings and calculations to Governing Code Authority when specifically indicated or required.

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REVISIONS

NO :	DATE	DESCRIPTION
1	05/18/17	2ND PLAN CHECK SUBMITTAL
	07/14/17	3RD PLAN CHECK SUBMITTAL

GENERAL NOTES

SHEET SCALE :	12" = 1'-0"
PROJECT MANAGER :	MH
DESIGNER :	JN
DRAWN BY :	FS
REVIEWED BY :	
1st DEPT. SUBMITTAL :	X/X/2016
ISSUED FOR CONST. :	
JOB NUMBER	16-S003
CAD FILE NAME	

S0.01

2ND BUILDING PLAN CHECK COORDINATION 05.18.2017

QUALITY ASSURANCE (CONTINUED)

ITEM	TESTING, INSPECTION & VERIFICATION TASKS	FREQUENCY CONTINUOUS	FREQUENCY PERIODIC
	STRUCTURAL STEEL INSPECTIONS & VERIFICATION (TABLE 1705.2.1)		
1.	Material verification of high-strength bolts, nuts and washers:		
	a. Identification markings to conform to ASTM standards specified in the approved construction documents. **(See drawings, ASTM Standards, ANSI/AISC 360 Section A3.3)**		X
	b. Manufacturer's certificate of compliance required.		X
2.	Inspection of high-strength bolting:		
	a. Bearing-type connections. **(ANSI/AISC 360 Section M2.5)**		X
	b. Slip-critical connections. **(ANSI/AISC 360 Section M2.5)**	X	
3.	Material verification of structural steel:		
	a. Identification markings to conform to ASTM standards specified in the approved construction documents.		X
	b. Manufacturers' certified mill test reports.		X
4.	Material verification of weld filler materials:		
	a. Identification markings to conform to AWS specification in the approved construction documents. **(ANSI/AISC 360 Section A3.5)**		X
	b. Manufacturer's certificate of compliance required.		X
5.	Inspection of welding:		
	a. Structural steel: **(AWS D1.1)**		
	1) Complete and partial penetration groove welds.	X	
	2) Multi-pass fillet welds.	X	
	3) Single-pass fillet welds > 5/16"	X	
	4) Single-pass fillet welds ≤ 5/16"		X
	5) Floor and roof deck welds. **(AWS D1.3)**		X
	6) Shear connectors. **(ANSI/AISC 360 Section A3.6)**		X
	b. Reinforcing steel: **(AWS D1.4, ACI 318: 3.5.2)**		
	1) Verification of weldability of reinforcing steel other than ASTM A 706.		X
	2) Reinforcing steel-resisting flexural and axial forces in intermediate and special moment frames, and boundary elements of special reinforced concrete shear walls and shear reinforcement.	X	
	3) Shear reinforcement.	X	
	4) Other reinforcing steel.		X
6.	Inspection of steel frame joint details for compliance with approved construction documents:		
	a. Details such as bracing and stiffening.		X
	b. Member locations.		X
	c. Application of joint details at each connection.		X
	SPECIAL PROVISIONS FOR SEISMIC RESISTANCE		
7.	The testing shall be as required by AISC 341.	---	---
8.	Base metal thicker than 1.5 inches (38 mm), where subject to through-thickness weld shrinkage strains, shall be ultrasonically tested for discontinuities behind and adjacent to such welds after joint completion.	---	---
9.	The acceptance criteria for nondestructive testing shall be as required in AWS D1.1. Any material discontinuities shall be accepted or rejected on the basis of ASTM A 435 or ASTM A 898 (Level 1 criteria).		
10.	Continuous special inspection is required for structural welding in accordance with AISC 341		
	CONCRETE INSPECTIONS & VERIFICATION (TABLE 1705.3)		
1.	Inspection of reinforcing steel, including prestressing tendons, and placement. **(ACI 318: 3.5, 7.1 -7.7)**		X
2.	Inspection of reinforcing steel welding in accordance with Table 1705.2.2, Item 2b. **(AWS D1.4, ACI 318: 3.5.2)**	---	---
3.	Inspect anchors cast in place where allowable loads have been increased and post-installed in hardened concrete members.	---	X
4.	Verify use of required design mix. **(ACI 318: Ch. 4, 5.2 – 5.4)**		X
5.	At the time fresh concrete is sampled to fabricate specimens for strength tests, perform slump and air content tests, and determine the temperature of the concrete. **(ASTM C 172, ASTM C 31, ACI 318: 5.6, 5.8)**	X	
6.	Inspection of concrete and shotcrete placement for proper application techniques. **(ACI 318: 5.9, 5.10)**	X	
7.	Inspection for maintenance of specified curing temperature and techniques. **(ACI 318: 5.11 – 5.13)**		X
10.	Verification of in-situ concrete strength, prior to stressing of tendons in post tensioned concrete and prior to removal of shores and forms from beams and structural slabs. **(ACI 318: 6.2)**		X
11.	Inspect formwork for shape, location and dimensions of the concrete member being formed. **(ACI 318: 6.1.1)**		X
	SPECIAL PROVISIONS FOR SEISMIC RESISTANCE		
12.	Verify submittal of certified mill test reports for each shipment of reinforcing steel used to resist flexural, shear and axial forces in reinforced concrete intermediate frames, special moment frames and boundary elements of special reinforced concrete or reinforced masonry shear walls. **(ACI 318: 3.5.2, AWS D1.4)**		X
13.	Test ASTM A 615 reinforcing steel is used to resist earthquake-induced flexural and axial forces in special moment frames and in wall boundary elements of shear walls in structures assigned to Seismic Design Category D, E or F, per ACI 318.		X
14.	Test ASTM A 615 reinforcing steel that is to be welded, chemical tests shall be performed to determine weldability in accordance with Section 3.5.2 of ACI 318.		X
15.	Installation of (chemical / epoxy) adhesive anchors, rods and dowels.	X	
16.	Installation and torque testing expansion anchors.	X	
	MASONRY INSPECTIONS & VERIFICATION - LEVEL B DURING CONSTRUCTION (TABLE 1.19.2) OR 1705.4		
1.	Verify compliance with the approved submittals		X
2.	As masonry construction begins, the following shall be verified to ensure compliance:		
	a. Proportions of site-prepared mortar.		X
	b. Construction of mortar joints.		X
	c. Grade and size of prestressing tendons and anchorages		X
	d. Location of reinforcement, connectors, prestressing tendons and anchorages.		X
3.	The inspection program shall verify:		
	a. Size and location of structural elements.		X
	b. Type, size and location of anchors, including other details of anchorage of masonry to structural members, frames or other construction.		X
	c. Specified size, grade and type of reinforcement.		X
	d. Welding of reinforcing bars.	X	
	e. Protection of masonry during cold weather (temperature below 40°F) or hot weather (temperature above 90°F).		X
4.	Prior to grouting, the following shall be verified to ensure compliance:		
	a. Grout space is clean.		X
	b. Grade, type, and size of reinforcement and anchor bolts and prestressings tendons and anchorages		X
	c. Placement of reinforcement, connectors, prestressing tendons and anchorages.		X
	d. Proportions of site-prepared grout and prestressing grout for bonded tendons.		X
	e. Construction of mortar joints.		X
5.	Application and measurement of prestressing force	X	
6.	Placement of grout and prestressing grout for bonded tendon is in compliance	X	
7.	Observe preparation of grout specimens, mortar specimens and/or prisms		X
	MINIMUM TESTS		
8.	Verification of f'_m prior to construction, in accordance with Article 1.4B prior to construction.	---	---
9.	Installation of (chemical / epoxy) adhesive anchors, rods and dowels	X	
10.	Installation and torque testing expansion anchors in concrete or masonry	X	
	LIGHT FRAMED CONSTRUCTION		
	WOOD CONSTRUCTION (1705.5)		
1.	Inspect grade stamp on framing lumber, plywood and OSB panels to verify lumber species, grading, size, moisture content, surface treatment.		X
2.	Verify nail, staple, screw, and bolt / fastener type, grade and location.		X
3.	Inspect wood connections including nailing, bolting, anchor bolts, tie downs, beam hangers and framing anchors. (see note)		X
4.	Inspect diaphragms and shear walls for proper panel thickness and fastener pattern.		X
	REQUIRED SPECIAL INSPECTIONS for WIND RESISTANCE (1705.10)	See Note #3	
1.	Roof cladding and roof framing connections.		X
2.	Wall connections to roof and floor diaphragms and framing.		X
3.	Vertical windforce-resisting systems, including braced frames, moment frames and shear walls.		X
4.	Windforce-resisting system connections to the foundation.		X
5.	Fabrication and installation of systems or components required to meet the impact-resistance Requirements of section 1609.1.2.		X
	FOUNDATION INSPECTIONS & VERIFICATION SOILS - TABLE 1705.6	See Note #4	
1.	Verify subgrade materials below the footing for design bearing capacity.		X
2.	Verify depth of excavation and type of subgrade materials reached.		X
3.	Perform classification and compaction testing of controlled backfill materials.		X
4.	Verify materials used, layered thicknesses and compaction of back fills.	X	
5.	Verify the subgrade and site preparations for controlled fill.		X

Notation:
X Denotes either continuous or periodic inspections.
--- Denotes an activity that is either a one-time activity or one where the frequency is defined in some other manner

Notes:
1. Additional detail regarding inspections and tests are provided in the project specifications and/or notes on the drawings.
2. Refer to design build drawings for design and project specific inspection requirements.
3. Special inspection is not required where design wind speed is less than 110 mph.
4. See Geotechnical Consultant for more information.

HIGH LIFT GROUT
FILLED CELL CONCRETE MASONRY
HIGH LIFT GROUTING METHOD IR 21-2.10 (CONTINUED)

If, because of unavoidable job conditions, the placing of the succeeding lift is going to be delayed beyond the period of workability of the preceding lift, reconsolidate the lift by reworking with the mechanical vibrator as soon as the grout has taken its settlement shrinkage.

Repeat the waiting, pouring and reconsolidation steps until the top of the pour is reached. Reconsolidate the top lift after the required waiting period to fill any space left by settlement shrinkage.

10. Blow outs: if a "blow-out" occurs and the contractor immediately patches or shores the wall while the grout is still in a fluid state, the contractor shall reconsolidate the group by mechanical vibration. if the grout achieves its initial set prior to this reconsolidation, the zone of damage shall be delineated for removal. the special inspector shall immediately report the extent of the blow-out damage to the project inspector, architect, structural engineer, and dsa and shall keep records of the blow-out and any repair procedures for review by the dsa field engineer.

11. Cleaning Wall. Immediately after the wall has been fully grouted, hose off with water under pressure through a jet nozzle, to remove all the scum and stains which have percolated through the blocks and joints.

12. Curing. Attention should be given to proper curing of the mortar joints as well as the grout pour. The concrete block work and top of the grout pour should be kept damp to prevent too rapid drying during hot or dry weather, and drying winds.

5. Inspection and Core Tests

5.1 Inspection. All masonry work is required to be continuously inspected during laying, placing of reinforcing, and grouting by an inspector specially approved for that purpose by the DSA. A qualified individual acceptable to the testing laboratory shall make test samples and perform such field tests as are required.

The special masonry inspector checks the materials, details of construction and construction procedure. The inspector shall furnish a verified report on DSA Form DSA-292 that of his own personal knowledge the work covered by the report has been performed and materials used and installed in every particular accordance with and in conformity to the duty approved plans and specifications.

5.2 Core Tests. Take core tests of the completed masonry construction in accordance with CBC, Section 2105A.5.

The owner's inspector or testing agency is to inspect the coring of the masonry walls and prepare a report of coring operations. State in this report the number, the location and the condition of all cores cut in the project. Pay particular attention to the description of the bond between the grout fill and the cell walls of the masonry unit. The report should also include a description of any difficulties encountered in the coring operation which might impair the strength of the sample. Report results on DSA Form DSA-207.

Submit all cores to the testing laboratory for examination.

All cores shall be tested for the bond strength of the joint between the masonry units and the grout. This test determines the unit force required to shear the masonry unit face shells from the grout core for each face.

QUALITY ASSURANCE

1. Testing laboratory shall submit reports indicating results and observations of tests and inspections and stating compliance or noncompliance with contract documents to Architect (Structural Engineer) and to Governing Code Authority. Contractor shall reimburse Owner for costs related to tests and inspections of unidentifiable materials or materials furnished without certified laboratory test reports, materials found deficient after initial tests and inspections, or materials replacing deficient materials. See Specifications for additional test and inspection requirements.

2. Provide cement, aggregates, reinforcing steel, structural steel, high-strength bolts, etc., from identifiable tested stock. Submit certified laboratory test reports to Architect (Structural Engineer) and to Governing Code Authority. If materials cannot be identified or if certified laboratory test reports cannot be made available, testing laboratory will perform tests to determine conformance with contract documents as directed by Architect (Structural Engineer).

3. Testing laboratory shall provide special inspection, complying with CBC Section 1701 (unless otherwise noted), for the following:

A. Concrete and reinforcing steel where specified concrete compressive strength is greater than 2500 psi.
B. Bolts installed in concrete.
C. Masonry including testing required to verify specified compressive strength (f'm) as stipulated in CBC Section 2105.
D. Field welding including shear studs.
E. High-strength bolts.
F. Insulating concrete.
G. Spray-applied fireproofing.

4. Testing laboratory shall review concrete mix design data and shall perform the following concrete tests at frequency indicated in as indicated in Required Inspections of Reinforced Concrete in Quality Assurance Section.

5. Testing laboratory shall perform the following tests in structural steel as indicated in Required Inspections of Structural Steel in Quality Assurance Section.

6. Testing laboratory shall visually inspect open-web steel joists and provide a stamp of approval prior to installation.

HIGH LIFT GROUT
FILLED CELL CONCRETE MASONRY
HIGH LIFT GROUTING METHOD IR 21-2.10 (CONTINUED)

2. Cleanouts. Provide cleanout openings for all walls at the bottom of each pour in accordance with CBC, Section 2104A.5.1.2.1.2. The openings are to be made prior to start of laying and be of sufficient size and location to allow thorough flushing away of all mortar droppings and debris. If the bottom of the pour is constructed entirely of inverted open-end bond beam units, cleanout openings need only be provided in the reinforced cells.

After the laying of the masonry units is completed, the cells cleaned, the reinforcing positioned and inspection completed, close the cleanouts by inserting face shells of masonry units or covering the openings with forms. Face shell plugs are to have a two-day minimum curing time and be adequately braced to resist the pressure of the fluid grout.

3. Reinforcement. Place all reinforcing steel accurately in strict accordance with the approved DSA plans and specifications. For high lift grouting in an 8" block wall, all horizontal steel shall be placed in a single vertical plane in order to provide for continuous and unobstructed vertical cells. Both horizontal and vertical reinforcing are to be held in position by wire ties or spacing devices near ends and at intervals not exceeding 192 diameters of the reinforcement. Place the horizontal reinforcing as the work progresses. The vertical reinforcing may be dropped into position after the completion of the laying if adequate positioning devices are provided to hold the reinforcement in its proper location near the bottom of the wall and at intervals not exceeding 192 bar diameters.

4. Masonry Units. Use of open-end concrete masonry units is preferred, wherever possible, and is required for stacked bond. Open-end bond-beam units are to be used wherever possible to facilitate the horizontal flow of grout. Bond-beam units are required at all horizontal bars to provide a minimum vertical opening at all cross webs three inches high by three inches wide.

The concrete masonry units need not be wetted before laying except in dry areas where the contact surfaces of the units should be moistened immediately before laying to prevent excessive drying of mortar.

5. Laying. Fill all head and bed joints solidly with mortar for a distance in from the face of the unit not less than the thickness of the face shell. Care shall be taken in placing the mortar to keep a minimum of droppings from falling into the block cells. Arrange open-end concrete masonry units used in stacked bond so the closed ends are not abutting.

6. Wall Ties and Bracing. When stacked bond is used, or when adequate positive bond between face shells are not provided, ties of heavy gage wire embedded in the horizontal mortar joints should be provided across continuous vertical joints or between face shells to prevent "blow-outs" due to the hydrostatic pressure of the fluid grout. External ties or braces may also be used for this purpose.

7. Mortar Droppings and Overhangs. Mortar that projects into the grout space more than 1/4" shall be removed. Thoroughly remove all mortar droppings and overhangs from the foundation or bearing surface, cell walls and reinforcing. An acceptable method is by providing a two or three inch blanket of dry sand over the exposed surface of the foundation, dislodging any hardened mortar from the cell walls and reinforcing with a pole or rod and removing the mortar debris with the sand cover prior to clean up and grouting.

8. Construction Joints. In the high lift grouting method, intermediate horizontal construction joints are not permitted. Plan the work for one continuous pour of grout to the top of the wall in maximum four foot layers or lifts in the same working day. Should a blow-out, a breakdown in equipment, or any other emergency occur, cease the grouting operation. An alternate procedure may be used with the approval of the architect or structural engineer and DSA.

The section of wall to be grouted in any one pour is limited to a length in which successive lifts can be placed within one hour of the preceding lifts. Vertical control barriers shall be placed between pour sections in locations approved by the architect or structural engineer and DSA.

9. Grouting. All cells shall be clear and unobstructed. To be considered "unobstructed" all of the following requirements must be met:

a. For grout pours up to and including twelve feet in height the minimum grout space dimensions of all cells shall be three inches by three inches.
b. For grout pours over twelve feet in height (only permitted for walls with a nominal thickness of twelve inches or more) the minimum grout space dimensions of all cells shall be three inches by four inches.
c. The minimum grout space dimensions of cells containing horizontal reinforcing steel, electrical conduits or any other obstruction shall be increased by the diameter or width of the obstruction, and
d. No cell shall contain vertical reinforcing steel exceeding six percent of the cell area.

To prevent "blow-outs," pour no grout until the mortar has been set and cured. However, grout the walls as soon as possible after mortar has cured to reduce shrinkage and cracking of the vertical joints. All cleanout closures, reinforcing, bolts and embedded connection items are to be secured in position before grouting is started.

Handle grout from the mixer to the point of deposit in the grout space as rapidly as practical by pumping and placing methods which will prevent segregation of the mix and cause a minimum of grout
splatter on reinforcing and masonry unit surfaces not being immediately encased in the grout lift. Depending upon weather conditions and absorption rates of the masonry units, the lift heights and waiting period may be varied. Under normal weather conditions, with typical masonry units, the individual lifts of grout are limited to four feet in height with a waiting period between lifts of 30 to 60 minutes.

Place the first lift of grout to a uniform height within the pour section and mechanically vibrate thoroughly to fill all voids. The grouting team should be organized to enable the vibration to follow closely behind and at the same pace as the pouring operation.

After a waiting period sufficient to permit the grout to become plastic, but before it has taken any set, the succeeding lift should be poured and alternate cells vibrated twelve inches to eighteen inches into the preceding lift. Do this in such a manner as to reconsolidate the preceding lift and close any plastic shrinkage cracks or separations from the cell walls.

HIGH LIFT GROUT
FILLED CELL CONCRETE MASONRY
HIGH LIFT GROUTING METHOD IR 21-2.10

Purpose: The purpose of this IR is to provide the requirements and procedure for high lift reinforced hollow-unit concrete masonry grouting when the use of this method is approved by the Division of the State Architect (DSA).

1. Description. The high lift grouting method as developed for use in reinforced concrete block masonry is intended for use on wall construction where openings, block pattern arrangements, special reinforcing steel, or embedded structural steel details do not prevent the free flow of grout or inhibit the use of mechanical vibration to properly consolidate and reconsolidate the grout fill in all cells or horizontal grout spaces. Horizontal reinforcing should be positioned in a single vertical plane at each curtain of steel to allow maximum accessibility to the cell spaces.

The high lift method requires that all masonry units, reinforcing steel and embedded items will be in place before grouting of the wall commences. The work should be so arranged that once grouting of a section of wall is started the grouting shall proceed in lifts without stopping, except as noted below until the full height of the prepared section is poured. The waiting period between lifts shall be limited to the time required to obtain an initial consolidation of grout due to settlement, shrinkage and absorption of excess water by the masonry units. This also allows for a reduction in hydrostatic pressure of the grout on the masonry unit and reduces the possibility of "blow-outs."

The grout shall be a high-slump workable mix, preferably placed by pumping to permit continuous pouring. The grout shall be worked into all voids. Mechanical vibrators shall be used for consolidation and reconsolidation. Where job conditions preclude such use, other methods may be employed if approved in advance, by DSA. Because of the high water/cement ratio used in this type of grout, it is essential that the grout be reconsolidated after it has taken on a plastic consistency, but prior to taking an initial set. The reconsolidation is intended to overcome settlement shrinkage, separation from the reinforcing steel and to promote bond to the masonry unit walls.

For the purpose of this IR, a "pour" is considered as the entire height of grout fill placed in one day and is composed of a number of successively placed grout lifts. A "lift" is the layer of grout placed in a single continuous operation.

The maximum height of pour is limited by the practical considerations of segregation of grout due to the height of free fall, effect of dry grout deposits left on block projections, congestion due to reinforcing steel and embedded items, and the ability to effectively reconsolidate the grout. Unless specifically approved otherwise, the maximum height of pour will be 12 feet. walls with a nominal thickness of 12 inches. For height of lift see Item 4 (9.) of this IR.

2. Quality of Materials. All materials are to conform to the "Masonry" section of the general notes, with the following additional requirements:

1. Aggregate. Aggregate is to conform to ASTM C404.

2. Admixture. The grout should contain an admixture of the type that reduces early water loss to the masonry units and produces an expansive action in the plastic grout sufficient to offset initial shrinkage and promote bonding of the grout to all interior surfaces of the masonry units. Admixtures shall meet the requirements of CBC Section 2103A.15 or 2114.3 and have an evaluation report meeting the requirements of DSA form IRA-5. Obtain the approval of the architect or structural engineer and DSA for use of the admixture.

3. Mortar and Grout

3.1 Mortar. Mortar is to comply with the requirements of CBC Section 2103A.8, with the following additional requirements:

1. Place approximately half of the required water and sand into the mixer while running.
2. Add cement and the remainder of the sand and water into the mixer in that order and mix for a period of at least two minutes.
3. Add lime and continue mixing as long as needed to secure a uniform mass.
4. The total mixing time shall be 3 to 5 minutes per ASTM C270 Section 7.3.
5. When pre-blended mortar is specified, mixing shall conform to manufacturer's instructions.

3.2 Grout. The grout mix is to comply with the requirements of CBC Section 2103A.13 and ASTM C476. All cells shall be solidly filled with grou in reinforced hollow unit masonry per CBC Section 2104A5.1.2.1. Coarse grout is required per CBC Section 2103A.13.3.

Sufficient water may be added to make a workable mix that will flow into all voids of the masonry without separation or segregation. When grout is to be placed in masonry units with typical rates of absorption, the slump of the grout should be approximately eight to eleven inches (8"-11") depending on temperature and humidity conditions per TMS 602-11 Article 2.6.B.2 and ASTM C476 Section 4.2.2.

Grout mixes are to contain an approved admixture conforming to the requirements of Item 2 (3.) above. Use such admixture strictly in accordance with the manufacturer's instructions and appropriate listing from ICC-ES or other acceptable elevation agency per DSA form IRA-5.

3.3 Mixing of Grout. The mixing of grout is to conform to the requirements of ASTM C476 for mixing of concrete, CBC, Section 1905A.8. Whenever possible mix and deliver grout in accordance with the requirements for transit-mixed concrete.

Time the admixture addition in strict accordance with the manufacturer's instructions. The procedure used for adding the admixture to the grout mix should provide for good dispersion.

3.4 Tests. Testing of mortar and grout is to conform to the requirements of CBC, Section 2105A.2.2.1.4.

4. Construction. The construction of high lift concrete block masonry work is to conform to the requirements of CBC, Chapter 21A, with the following additional requirements:

1. Foundations. The contact surface of all foundations and floors that are to receive masonry work are to be thoroughly cleaned and roughened before start of laying. Protect the roughened surface during construction to assure a good bond between the grout fill and the concrete surface.

STEEL STAIRS, DESIGN-BUILD

1. All steel stairs are design-build unless specifically designed and detailed on drawings. Notes below apply to design-build steel stairs only.

2. Design stairs including framing members, connections (including those to building structure), checkered plates, steps, handrails, etc., and provide for lateral restraint complying with contract documents and governing code. Building lateral resisting system may be utilized for stair lateral restraint provided load paths to building lateral resisting system are indicated in calculations and connections shown on shop drawings.

3. At connections to structure, provide stabilizing elements such as braces, stiffener plates, etc., so as not to impose eccentric loading, twisting, or warping to structural members. Provide material and install stabilizing elements at no additional cost to Owner.

4. Submit shop drawings and structural calculations signed by and bearing the seal of a civil engineer registered in the State of California to Architect (Structural Engineer) for review and to Governing Code Authority for approval.

DESIGN-BUILD FIRE SPRINKLER SYSTEM

The design-build fire sprinkler system shall be designed and detailed in conformance with the following requirements:

1. The sprinkler pipes shall not penetrate or notch the floor or roof framing members.

2. The sprinkler piping system shall be suspended from the structural framing and be braced against lateral forces in accordance with the requirements of 2013 CBC.

3. Prior to fabrication/installaion of the system, shop drawings shall include, but not be limited to, the following:

A. Sprinkler piping layout with pipe sizes shown.
B. Pipe hanger and lateral brace locations.
C. Details of pipe hangers and lateral braces.
D. Design calculations of the hangers and braces stamped and signed by a California registered Civil Engineer.
E. Sprinkler hanger shall be located as such the weight of the sprinkler system will be distributed uniformly to the supporting structure.
F. The lateral bracing of the system shall not cause twisting or warping to the structural member. Any member to be added in order to eliminate twisting or warping to the structural member shall be the responsibility of the design-build fire sprinkler contractor.

DESIGN BUILD EXTERIOR CLADDING, SHADING SYSTEMS AND SKYLIGHTS

1. Contract documents indicate design intent only and do not reflect the complete engineered design to be provided by the Contractor for systems such as metal studs, curtain walls, storefronts, windows, architectural panels, veneer, shading devices, skylights, etc. Provide a complete system including components such as supplemental structural members, internal reinforcement and connections, as required, at no additional cost to the Owner whether or not shown on the contract documents.

2. At connections, do not impose eccentric loads on the structure. Where required, provide stabilizing elements such as braces, stiffener plates, etc., acceptable to the Architect (Structural Engineer) at no additional cost to Owner.

3. Provide members, connections and lateral restraint complying with applicable governing code and contract documents.

4. Any additional steel members and connections required by the manufacturer for permanent conditions, erection, or transportation that are not already shown as part of the design intent, shall be provided at no additional cost to the Owner.

5. Provide adequate expansion, contraction, seismic separation and drift joints between elements complying with the building code and contract documents. Submit all drift joint locations to Architect (Structural Engineer) for review and approval.

6. Submit shop drawings and structural calculations prepared by a registered professional (civil) engineer to Architect (Structural Engineer) for review and Governing Code Authority for approval.

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REVISIONS

NO :	DATE	DESCRIPTION
	07/14/17	3RD PLAN CHECK SUBMITTAL

GENERAL NOTES

SHEET SCALE :	12" = 1'-0"
PROJECT MANAGER :	MH
DESIGNER :	JN
DRAWN BY :	FS
REVIEWED BY :	
1st DEPT. SUBMITTAL :	X/X/2016
ISSUED FOR CONST. :	
JOB NUMBER	16-S003
CAD FILE NAME	
	S0.02

2ND BUILDING PLAN CHECK COORDINATION 05.18.2017

STRUCTURAL OBSERVATION

1. Structural observation is required for the structural system in accordance with CBC Section 1704.5. Structural observation is the visual observation of the elements and connections of the structural system at significant construction stages and the completed structure for general conformance to the approved plans and specifications. Structural observation does not waive the responsibility for the inspections required of the Building Inspector or the Special Inspector.

2. The Owner shall employ a registered design professional to perform the structural observation. The Engineer or Architect shall be registered or licensed in the State of California. The Department of Building and Safety recommends the use of the Engineer or Architect responsible for the structural design when they are independent of the Contractor.

3. The Owner or Owner's Representative shall coordinate and call for a meeting between the Engineer or Architect responsible for the structural design, Structural Observer, Contractor, affected Subcontractors and Deputy Inspectors. The purpose of the meeting shall be to identify the major structural elements and connections that affect the vertical and lateral load systems of the structure and to review scheduling of the required observations. A record of the meeting shall be included in the first Observation Report submitted to the Building Inspector.

4. The Structural Observer shall perform site visits at those steps in the progress of the work that allow for correction of deficiencies without substantial effort or uncovering of the work involved. At a minimum, the following significant construction stages require a site visit and an Observation Report from the Structural Observer:

CONSTRUCTION STAGES	ELEMENTS/CONNECTIONS TO BE OBSERVED
A. Foundations	First grade beam reinforcing steel placement. First anchor bolt placements at SMF/EBF base plate.
B. Structural Steel	First SMF/EBF connections, bracing and seismic joint connection at floor and roof.
C. Floor and Roof Steel Deck	Chord reinforcing and deck welding for first concrete pour. Initial installation of ShearTranz.

5. The Structural Observer shall prepare a report for each significant stage of construction observed. The original of the Observation Report shall be sent to the Building Inspector's office and shall be signed and sealed (wet stamp) by the responsible Structural Observer. One copy of the Observation Report shall be attached to the approved plans. Copies of the report shall also be given to the Owner, Contractor, and Deputy Inspector.

6. A final Observation Report must be submitted to the building official, owner and Architect (Structural Engineer) which states that the site visits have been made and that all report deficiencies to the best of the structural observer's knowledge has been corrected and that the structural system generally conforms with the approved plans and specifications.

7. The Structural Observer shall send the original report to the following inspection office:

   City of Santa Ana Department of Building and Safety

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SOUTH COAST SPEEDWASH AT THE AUTOBAHN
2402 BRISTOL ST. SANTA ANA, CA 92704

BRISTOL SPEEDWASH, INC.
10801 NATIONAL BLVD., STE 510 LOS ANGELES, CA. 90064

REVISIONS

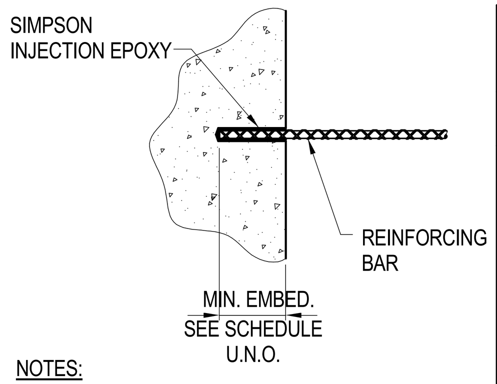
NO :	DATE	DESCRIPTION
	07/14/17	3RD PLAN CHECK SUBMITTAL

GENERAL NOTES

SHEET SCALE :	12" = 1'-0"
PROJECT MANAGER :	MH
DESIGNER :	JN
DRAWN BY :	FS
REVIEWED BY :	
1st DEPT. SUBMITTAL :	X/X/2016
ISSUED FOR CONST. :	
JOB NUMBER	16-S003
CAD FILE NAME	

S0.03

2ND BUILDING PLAN CHECK COORDINATION 05.18.2017



EPOXY ANCHOR EMBEDMENT SCHEDULE	
BAR SIZE	MINIMUM EMBEDMENT LENGTH (INCHES) U.N.O.
#4	4 1/4
#5	5
#6	6 3/4
#7	7 3/4
#8	9
#9	10 1/8
#10	11 1/4
#11	12 3/8

NOTES:
1. ALL DEFORMED REINFORCING BARS NOTED AS IN EPOXY SHALL BE INSTALLED PER MANUFACTURERS RECOMMENDATIONS, SEE SCHEDULE FOR MINIMUM EMBEDMENT LENGTHS.
2. TO BE USED ONLY WHERE INDICATED ON DRAWINGS.

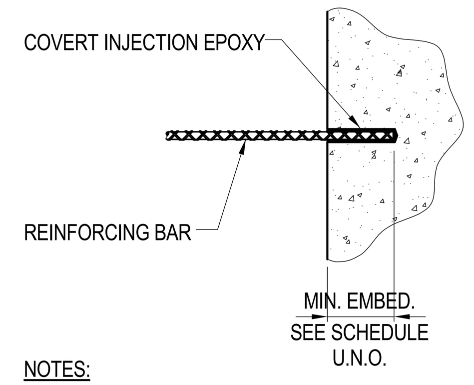
SIMPSON "SET" ADHESIVE ANCHORS DESIGNATION

(I.C.B.O. REPORT ESR-1772)

SIZE — EPOXY ANCHOR — SPACING

QUANTITY → (4) #4 EXA @ 12 x 24 ← LENGTH

TYPICAL
SIMPSON EPOXY ANCHOR SCHEDULE 6
TC107



EPOXY ANCHOR EMBEDMENT SCHEDULE	
BAR SIZE	MINIMUM EMBEDMENT LENGTH (INCHES) U.N.O.
#3	4
#4	4 1/2
#5	5 5/8
#6	6 3/4
#7	7 7/8
#8	9
#10	11

NOTES:
1. ALL DEFORMED REINFORCING BARS NOTED AS IN EPOXY SHALL BE INSTALLED PER MANUFACTURERS RECOMMENDATIONS, SEE SCHEDULE FOR MINIMUM EMBEDMENT LENGTHS.
2. TO BE USED ONLY WHERE INDICATED ON DRAWINGS.

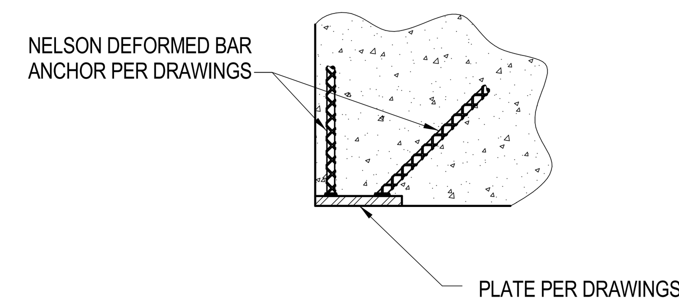
COVERT CIA-GEL 7000 EPOXY ANCHORS DESIGNATION

(I.C.B.O. REPORT #4846)

SIZE — EPOXY ANCHOR — SPACING

QUANTITY → (4) #4 EXA @ 12 x 24 ← LENGTH

TYPICAL
COVERT EPOXY ANCHOR SCHEDULE 5
TC105



NOTE:
ANCHORS CALLED OUT WITH THIS DESIGNATION ON DRAWINGS SHALL BE NELSON, FLUX FILLED DEFORMED BAR ANCHORS, TYPE D2L, SEE DRAWINGS FOR SIZE, LENGTH AND SPACING.

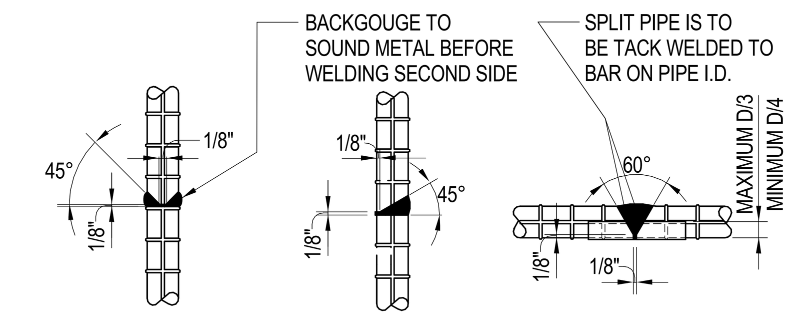
NELSON DEFORMED BAR ANCHOR DESIGNATION

(I.C.B.O. REPORT #5217)

SIZE — LENGTH — TYPE

QUANTITY → (4) #3 x 24 D2L @ 24 ← SPACING

TYPICAL
NELSON DEFORMED BAR ANCHOR DETAIL 3
TC104



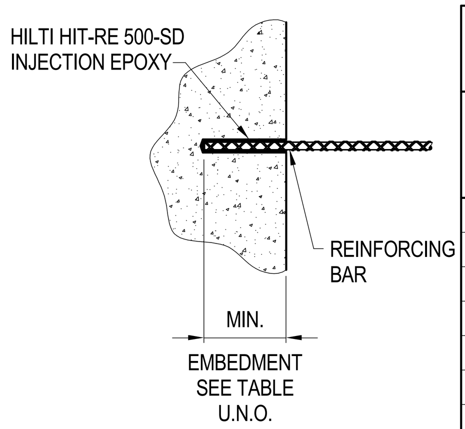
VERTICAL BARS
#9 AND LARGER

VERTICAL BARS
#8 AND SMALLER

HORIZONTAL BARS

NOTES:
1. BUTT WELD STAGGERED @ 24"o.c. MINIMUM MAY BE USED AS AN ALTERNATE TO INDICATED LAP SPLICES.
2. STAGGER BUTT WELDS 2'-0" AT ADJACENT BARS.
3. A PREQUALIFICATION TENSION TEST SHALL BE MADE BY AN APPROVED TESTING LAB ON SAMPLES OF EVERY SIZE BAR BEING WELDED UTILIZING MATERIALS, CONDITIONS & WELDING PROCEDURES TO CONFORM TO U.B.C. & GOVERNING INSPECTION AGENCIES. ALL COSTS INCURRED FOR WELDING APPROVALS SHALL BE ASSUMED BY THE GENERAL CONTRACTOR.

TYPICAL
WELDED BUTT SPLICE DETAIL 2
TC102



HILTI HIT-RE 500-SD ANCHOR EMBEDMENT TABLE		
BAR SIZE	MINIMUM EMBEDMENT DEPTH CRACKED CONCRETE ($h_{ef,cr}$)	MINIMUM EMBEDMENT DEPTH UNCRACKED CONCRETE ($h_{ef,uncr}$)
#3	6 1/2"	4 3/4"
#4	9"	6 3/4"
#5	11 1/2"	8 1/2"
#6	14"	10 1/2"
#7	18"	15"
#8	22"	17 3/4"
#9	26 1/2"	20 1/2"
#10	33 1/4"	23 3/4"
#11	40 1/4"	29 1/2"

HILTI HIT-RE 500-SD ANCHORS DESIGNATION

(ICC REPORT ESR-2322)

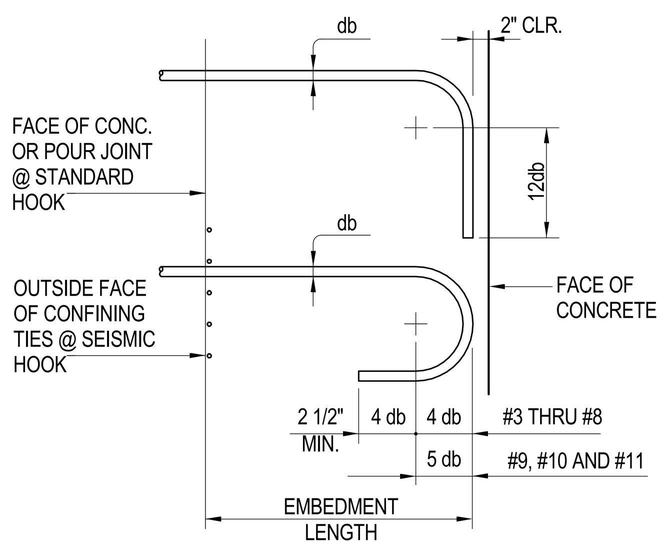
HILTI HIT-RE 500-SD ANCHOR

SIZE — LENGTH

QUANTITY → (4) #4 HIT x 24 @ 12 ← SPACING

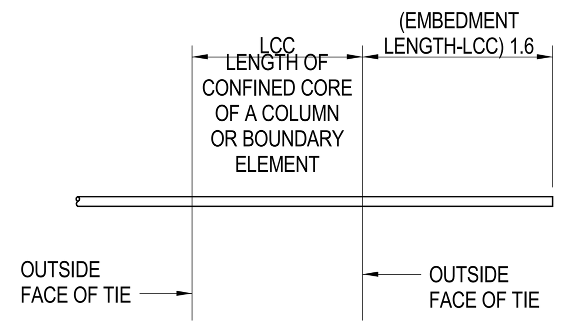
NOTES:
1. ALL VALUES INDICATED IN THE TABLE ABOVE ARE "HILTI HIT-RE 500-SD" EPOXY ANCHORS. ICC REPORT NUMBER ESR-2322, DATED NOVEMBER 1, 2007.
2. SPECIAL INSPECTION SHALL COMPLY WITH SECTION 1704.13 OF THE 2007 CALIFORNIA BUILDING CODE (CBC) FOR ANCHORAGES IN CONCRETE.
3. ALL DEFORMED REINFORCING BARS NOTED AS IN EPOXY SHALL BE INSTALLED PER MANUFACTURERS RECOMMENDATIONS. SEE TABLE ABOVE FOR MINIMUM EMBEDMENT LENGTHS (ANCHORS TO BE INSTALLED IN NORMAL WEIGHT CONCRETE ONLY).
4. USE EMBEDMENT DEPTH IN TABLE ABOVE FOR CRACKED CONCRETE ($h_{ef,cr}$) TYPICAL U.N.O. BY ENGINEER.
5. TABULATED VALUES IN TABLE ABOVE DO NOT CONSIDER EDGE DISTANCE AND SPACING REQUIREMENTS.
6. THIS DETAIL TO BE USED ONLY WHERE INDICATED ON DRAWINGS.
7. MINIMUM REBAR YIELD STRENGTH SHALL BE AT LEAST 60,000 PSI.

TYPICAL
HILTI HIT-RE 500-SD ANCHOR SCHEDULE 8
TC106



NOTES:
1. ALL HOOKED BARS SHALL EXTEND AS FAR AS POSSIBLE TO THE OPPOSITE FACE WITH A MINIMUM 2" END COVER AND EMBEDMENT NOT LESS THAN THE SCHEDULE.
2. MINIMUM SIDE COVER = 2 1/2"
3. FOR WALL FOOTING DOWEL EMBEDMENT LENGTHS SEE "TYPICAL CONCRETE WALL DOWEL EMBEDMENT AND LAP SCHEDULE"

STANDARD HOOK DETAILS



NOTES:
1. STRAIGHT BARS TERMINATED AT A JOINT SHALL PASS THROUGH THE CONFINED CORE OF A SEISMIC COLUMN OR BOUNDARY ELEMENT. ANY PORTION OF THE STRAIGHT EMBEDMENT NOT WITHIN THE CONFINED CORE SHALL BE INCREASED BY A FACTOR OF 1.6.

STRAIGHT BARS AT A JOINT

(FOR MOMENT FRAME ONLY)

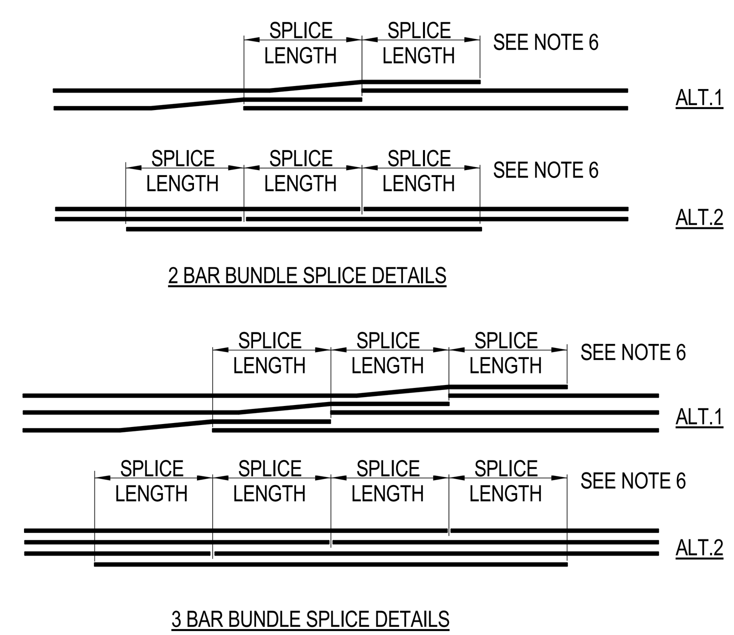
REINFORCING EMBEDMENT NOTES

1. TOP BARS ARE HORIZONTAL BARS WITH MORE THAN 12" OF CONCRETE CAST BELOW THE BARS.
2. BOTTOM BARS ARE ALL VERTICAL BARS AND HORIZONTAL BARS WITH LESS THAN 12" OF CONCRETE CAST BELOW HORIZONTAL BARS.
3. FOR LIGHTWEIGHT CONCRETE MULTIPLY THE LENGTHS IN THE SCHEDULE BY 1.3.
4. FOR GRADE 75 REINFORCING MULTIPLY THE LENGTHS IN THE SCHEDULE BY 1.25.
5. FOR 3 BAR BUNDLE MULTIPLY THE LENGTHS IN THE SCHEDULE BY 1.20. FOR 4 BAR BUNDLE MULTIPLY THE LENGTHS IN THE SCHEDULE BY 1.33.
6. FOR BUNDLED BARS, AN EFFECTIVE BAR DIAMETER SHALL BE USED FOR DETERMINING COVER AND SPACING LIMITATIONS.
   A. FOR 2 BAR BUNDLE dbe= 1.60 ($\sqrt{\text{(BAR AREA)}}$)
   B. FOR 3 BAR BUNDLE dbe= 1.95 ($\sqrt{\text{(BAR AREA)}}$)
   C. FOR 4 BAR BUNDLE dbe= 2.26 ($\sqrt{\text{(BAR AREA)}}$)

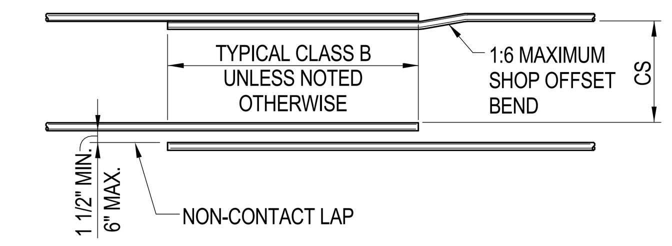
REINFORCING SPLICE NOTES

1. TOP BARS ARE HORIZONTAL BARS WITH MORE THAN 12" OF CONCRETE CAST BELOW THE BARS.
2. BOTTOM BARS ARE ALL VERTICAL BARS AND HORIZONTAL BARS WITH LESS THAN 12" OF CONCRETE CAST BELOW HORIZONTAL BARS.
3. FOR LIGHTWEIGHT CONCRETE MULTIPLY THE LENGTHS IN THESCHEDULE BY 1.3.
4. FOR GRADE 75 REINFORCING MULTIPLY THE LENGTHS IN THE SCHEDULE BY 1.25.
5. FOR 2 BAR BUNDLE MULTIPLY THE LENGTHS IN THE SCHEDULE BY 1.20. FOR 3 BAR BUNDLE MULTIPLY THE LENGTHS IN THE SCHEDULE BY 1.33.
6. FOR BUNDLED BARS, AN EFFECTIVE BAR DIAMETER SHALL BE USED FOR DETERMINING COVER AND SPACING LIMITATIONS.

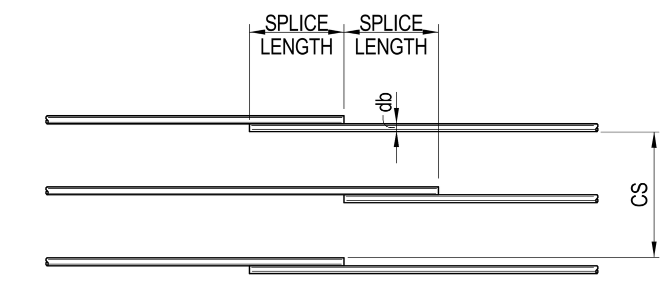
   A. FOR 2 BAR BUNDLE dbe= 1.60 $\sqrt{\text{(BAR AREA)}}$
   B. FOR 3 BAR BUNDLE dbe= 1.95 $\sqrt{\text{(BAR AREA)}}$



BUNDLE LAP SPLICES



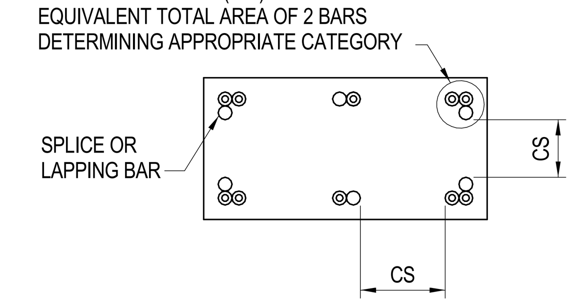
TYPICAL LAP SPLICES



CS=CLEAR SPACING

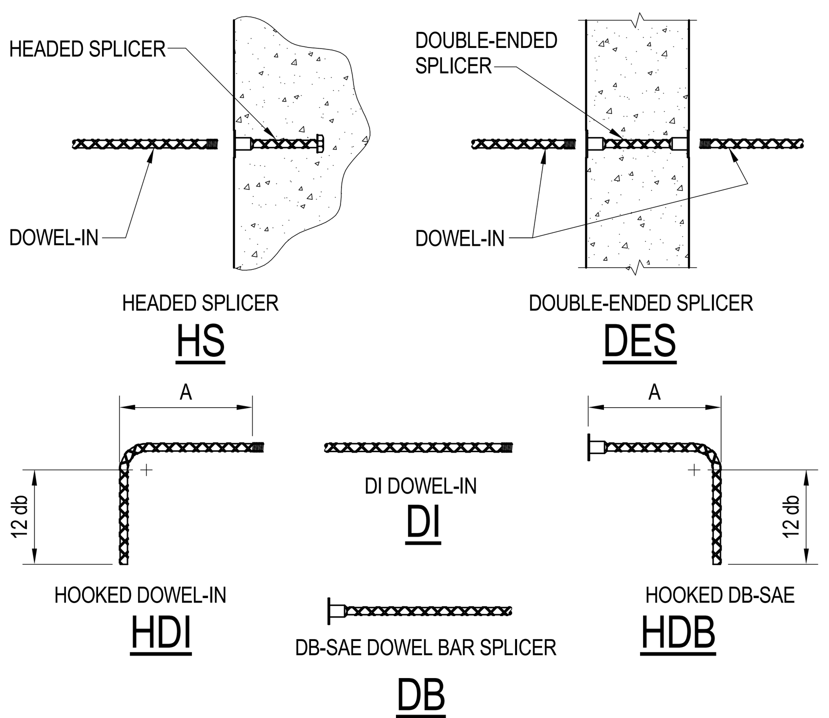
STAGGERED SPLICING

3 BAR BUNDLE WITH (dbe) DERIVED FROM THE EQUIVALENT TOTAL AREA OF 2 BARS DETERMINING APPROPRIATE CATEGORY



BAR SPACING

NOTE: BARS SHALL BE BUNDLED WITH NO MORE THAN TWO BARS IN THE SAME PLANE ( ).



TYPE

HOOKED REBAR BEND DIMENSIONS								
BAR SIZE	#4	#5	#6	#7	#8	#9	#10	#11
MIN. "A" DIMENSION U.N.O.	SEE TYPICAL STRAIGHT AND HOOKED EMBEDMENT LENGTH SCHEDULE							

RICHMOND ANCHOR DESIGNATION

(ICC-ES REPORT ESR-2649)

SIZE — TYPE — SPACING

QUANTITY → (4) #6 DB @ 12 x 24 ← LENGTH

TYPICAL
RICHMOND ANCHORING SYSTEM DETAIL 7
TC103

DEVELOPMENT TYPE	CATEGORY	DESCRIPTION	BAR / NORMAL WEIGHT CONCRETE f'c PSI	#3 TOP	#3 BOT.	#4 TOP	#4 BOT.	#5 TOP	#5 BOT.	#6 TOP	#6 BOT.	#7 TOP	#7 BOT.	#8 TOP	#8 BOT.	#9 TOP	#9 BOT.	#10 TOP	#10 BOT.	#11 TOP	#11 BOT.
			AREA (sq.in.)	0.11		0.20		0.31		0.44		0.60		0.79		1.00		1.27		1.56	
			DIAMETER db	0.375		0.500		0.625		0.750		0.875		1.000		1.128		1.270		1.410	
STRAIGHT TENSION EMBEDMENT (CLASS A)	1	COVER ≥2db AND CLEAR SPACING ≥4db	3000	16	12	18	14	22	17	26	20	38	29	43	33	49	37	55	42	61	47
			4000	16	12	16	12	19	15	23	18	33	25	37	29	42	33	47	37	53	41
			5000	16	12	16	12	17	13	20	16	29	23	34	26	38	29	43	33	47	36
			6000	16	12	16	12	16	12	19	14	27	21	31	24	34	27	39	30	43	33
	2	ALL OTHERS	3000	22	17	29	22	36	28	43	33	63	48	72	55	81	62	91	70	101	78
			4000	19	15	25	19	31	24	37	29	54	42	62	48	70	54	79	61	87	67
			5000	17	13	23	17	28	22	34	26	49	38	56	43	63	48	71	54	78	60
			6000	16	12	21	16	26	20	31	24	45	34	51	39	57	44	64	50	71	55
	3	COVER <db OR CLEAR SPACING <2db	3000					54	42	65	50	94	72	107	83	121	93	136	105	151	116
			4000					47	36	56	43	81	63	93	72	105	81	118	91	131	101
			5000					42	32	50	39	73	56	83	64	94	72	106	81	117	90
			6000					38	30	46	35	67	51	76	59	85	66	96	74	107	82
	SEISMIC	STRAIGHT BAR ANCHORED IN SEISMIC FRAME COLUMN	3000	23	16	30	22	37	27	45	32	52	37	59	43	67	48	75	54	84	60
			4000	21	15	26	19	32	23	39	28	45	32	52	37	58	42	65	47	73	52
			5000	21	15	23	17	29	21	35	25	40	29	46	33	52	37	59	42	65	47
			6000	21	15	21	15	27	19	32	23	37	27	42	30	47	34	53	38	59	43
HOOK EMBEDMENT	STANDARD	ALL OTHERS	3000	6		8		10		12		14		16		18		20		22	
			4000	6		7		9		10		12		14		16		17		19	
			5000	6		6		8		9		11		12		14		16		17	
			6000	6		6		7		9		10		11		13		14		16	
	SEISMIC	HOOK ANCHORED IN SEISMIC FRAME COLUMN	3000	7		9		11		13		15		17		19		22		24	
			4000	6		8		10		11		13		15		17		19		21	
			5000	6		7		9		10		12		14		15		17		19	
			6000	6		6		8		9		11		12		14		16		17	

TYPICAL STRAIGHT AND HOOKED EMBEDMENT LENGTH SCHEDULE 4
TC201

LAP CLASS	CATEGORY	DESCRIPTION	BAR / NORMAL WEIGHT CONCRETE f'c PSI	#3 TOP	#3 BOT	#4 TOP	#4 BOT	#5 TOP	#5 BOT	#6 TOP	#6 BOT	#7 TOP	#7 BOT	#8 TOP	#8 BOT	#9 TOP	#9 BOT	#10 TOP	#10 BOT	#11 TOP	#11 BOT
			AREA (sq.in.)	0.11		0.20		0.31		0.44		0.60		0.79		1.00		1.27		1.56	
			DIAMETER db	0.375		0.500		0.625		0.750		0.875		1.000		1.128		1.270		1.410	
CLASS B	1	COVER ≥2db AND CLEAR SPACING ≥4db	3000	21	16	23	18	28	22	34	26	49	38	56	43	63	49	71	55	79	61
			4000	21	16	21	16	25	19	29	23	43	33	49	37	55	42	62	47	68	53
			5000	21	16	21	16	22	17	26	20	38	29	44	34	49	38	55	43	61	47
			6000	21	16	21	16	21	16	24	19	35	27	40	31	45	34	50	39	56	43
	2	ALL OTHERS	3000	28	22	38	29	47	36	56	43	81	63	93	72	105	81	118	91	131	101
			4000	25	19	33	25	41	31	49	37	71	54	81	62	91	70	102	79	114	87
			5000	22	17	29	23	36	28	44	34	63	49	72	56	81	63	92	71	102	78
			6000	21	16	27	21	33	26	40	31	58	45	66	51	74	57	84	64	93	71
	3	COVER <db OR CLEAR SPACING <2db	3000					70	54	84	64	122	94	139	107	157	121	177	136	196	151
			4000					61	47	73	56	106	81	121	93	136	105	153	118	170	131
			5000					54	42	65	50	95	73	108	83	121	94	137	105	152	117
			6000					50	38	59	46	86	67	99	76	111	85	125	96	139	107

TYPICAL REINFORCING GRADE 60 SPLICE SCHEDULE 1
TC101

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REVISIONS

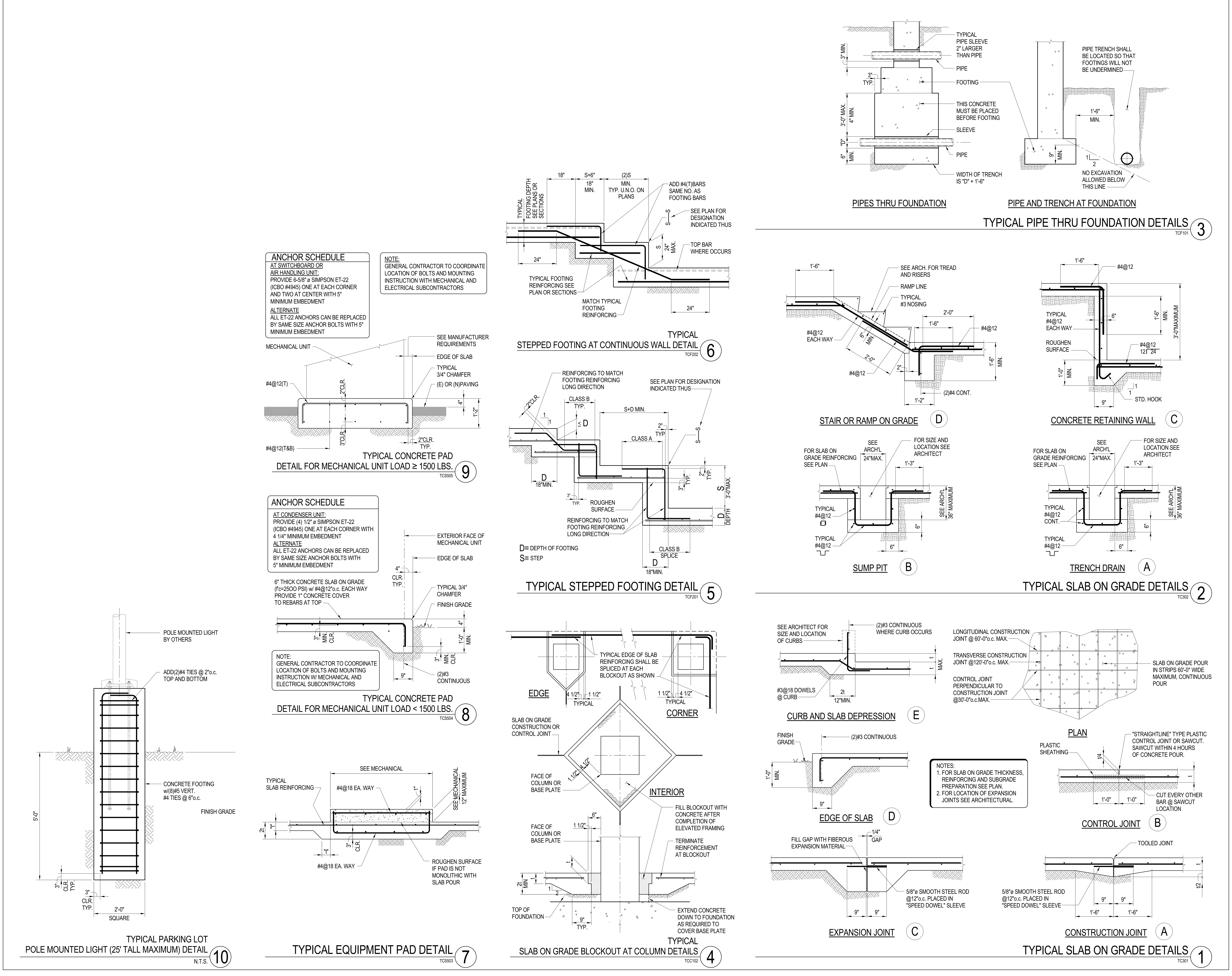
NO :	DATE	DESCRIPTION
	07/14/17	3RD PLAN CHECK SUBMITTAL

TYPICAL REBAR AND FOUNDATION DETAILS

SHEET SCALE :	As indicated
PROJECT MANAGER :	MH
DESIGNER :	JN
DRAWN BY :	FS
REVIEWED BY :	
1st DEPT. SUBMITTAL :	X/X/2016
ISSUED FOR CONST. :	
JOB NUMBER	16-S003
CAD FILE NAME	

S0.11

2ND BUILDING PLAN CHECK COORDINATION 05.18.2017



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REVISIONS

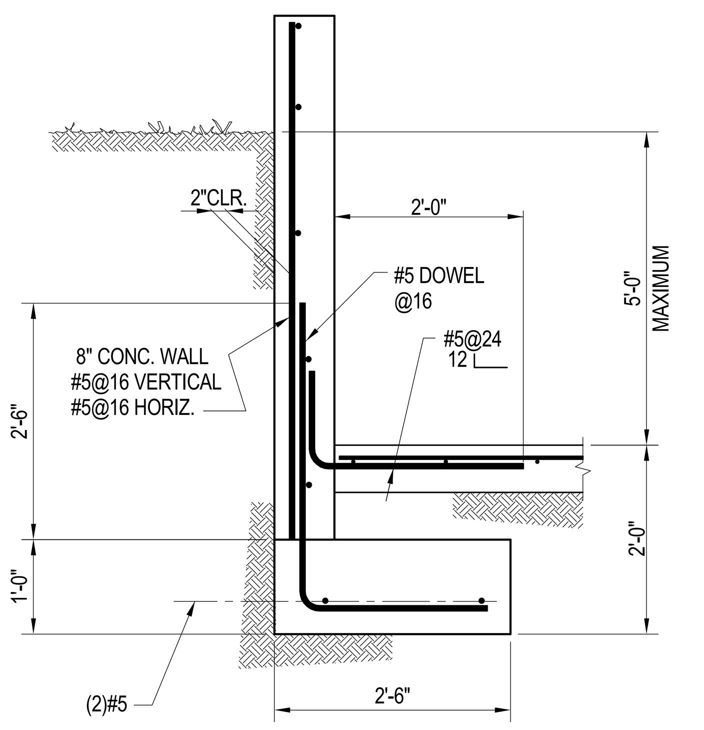
NO:	DATE	DESCRIPTION
	07/14/17	3RD PLAN CHECK SUBMITTAL

TYPICAL FOUNDATION DETAILS

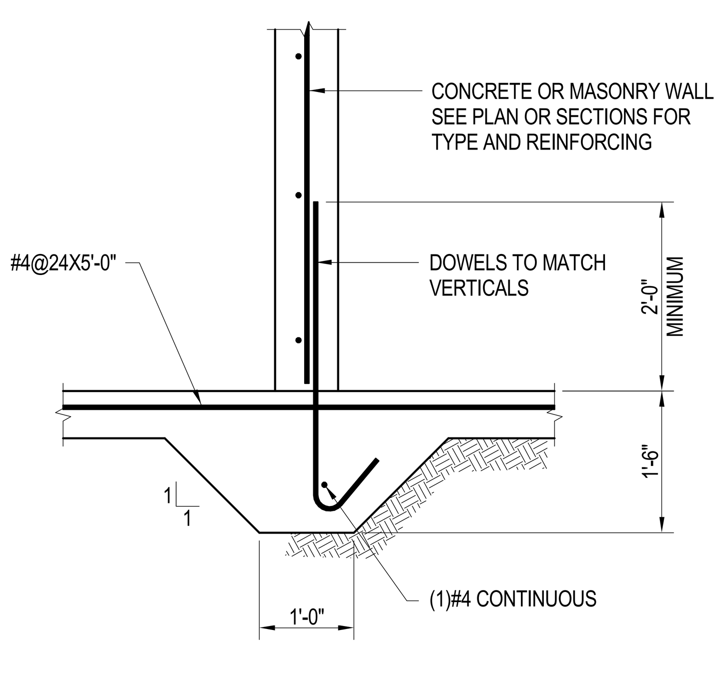
SHEET SCALE :	As indicated
PROJECT MANAGER :	MH
DESIGNER :	JN
DRAWN BY :	FS
REVIEWED BY :	
1st DEPT. SUBMITTAL :	X/X/2016
ISSUED FOR CONST. :	
JOB NUMBER	16-S003
CAD FILE NAME	

S0.12

2ND BUILDING PLAN CHECK COORDINATION 05.18.2017



TYPICAL
CONCRETE RETAINING WALL 5'-0" MAXIMUM 2
TCW401



TYPICAL
CONCRETE WALL AND FOOTING DETAIL 1
TCW201

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REVISIONS

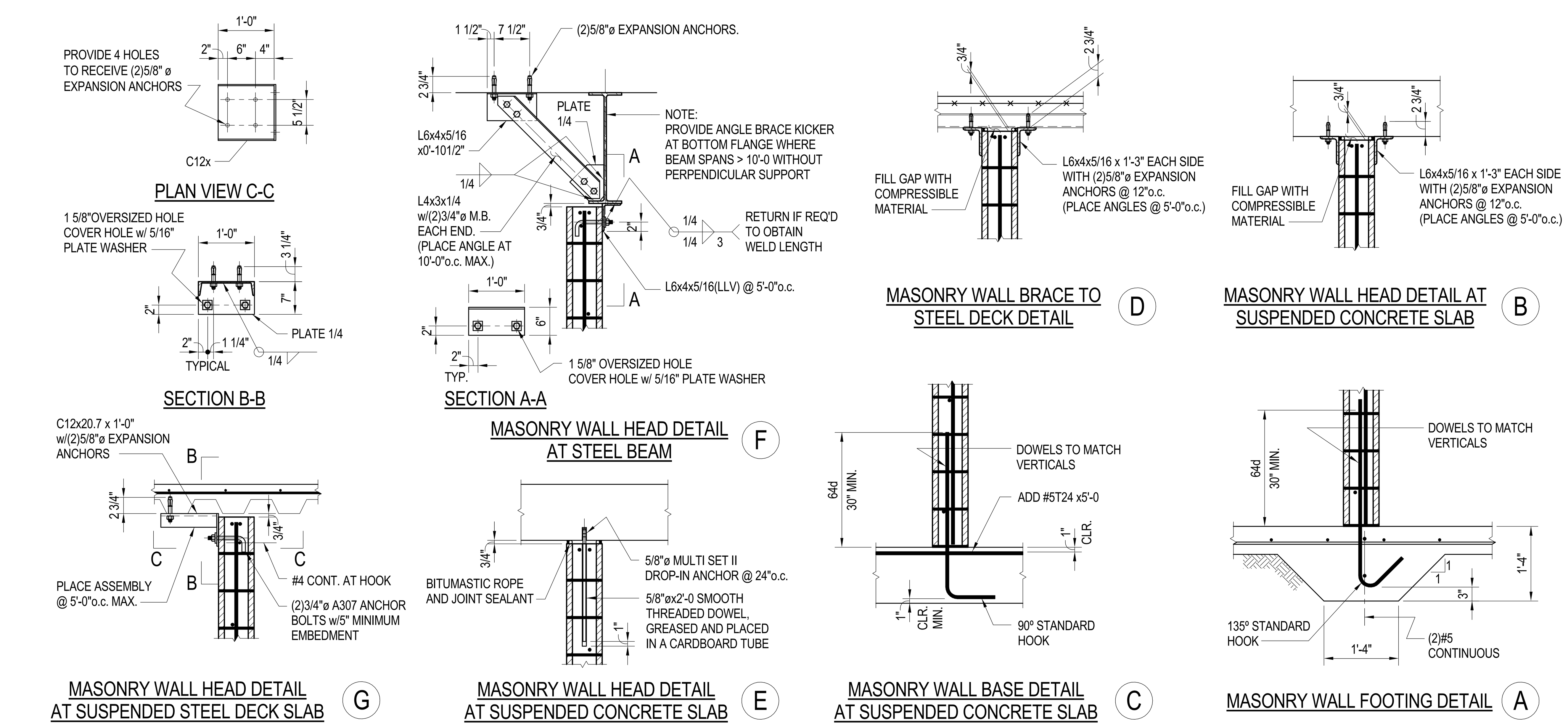
NO :	DATE	DESCRIPTION
	07/14/17	3RD PLAN CHECK SUBMITTAL

TYPICAL CONCRETE
WALL DETAILS

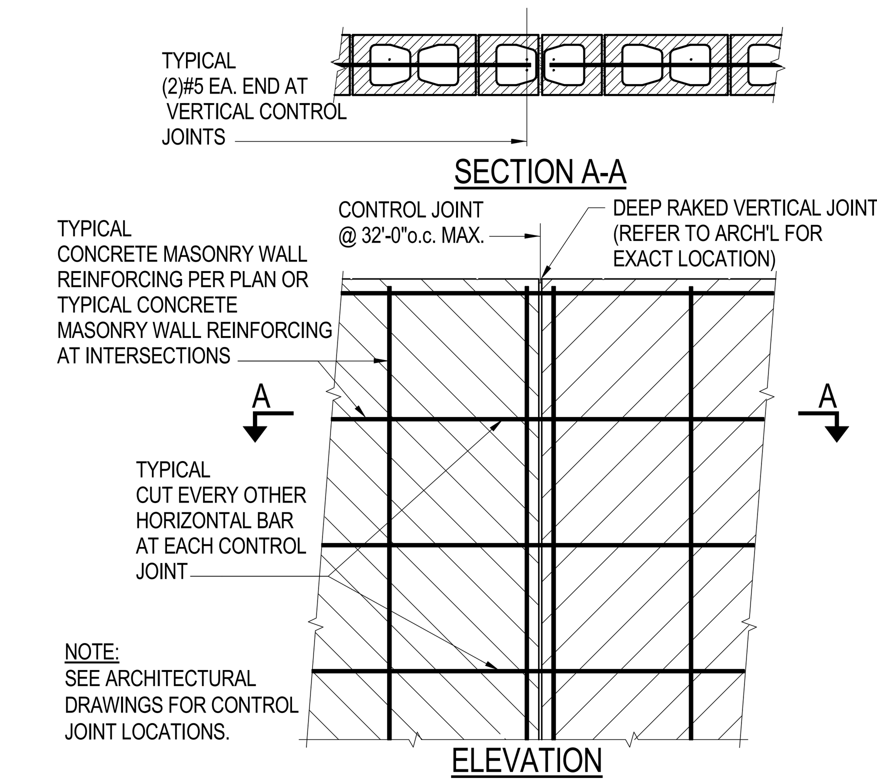
SHEET SCALE :	3/4" = 1'-0"
PROJECT MANAGER :	MH
DESIGNER :	JN
DRAWN BY :	FS
REVIEWED BY :	
1st DEPT. SUBMITTAL :	X/X/2016
ISSUED FOR CONST. :	
JOB NUMBER	16-S003
CAD FILE NAME	

S0.21

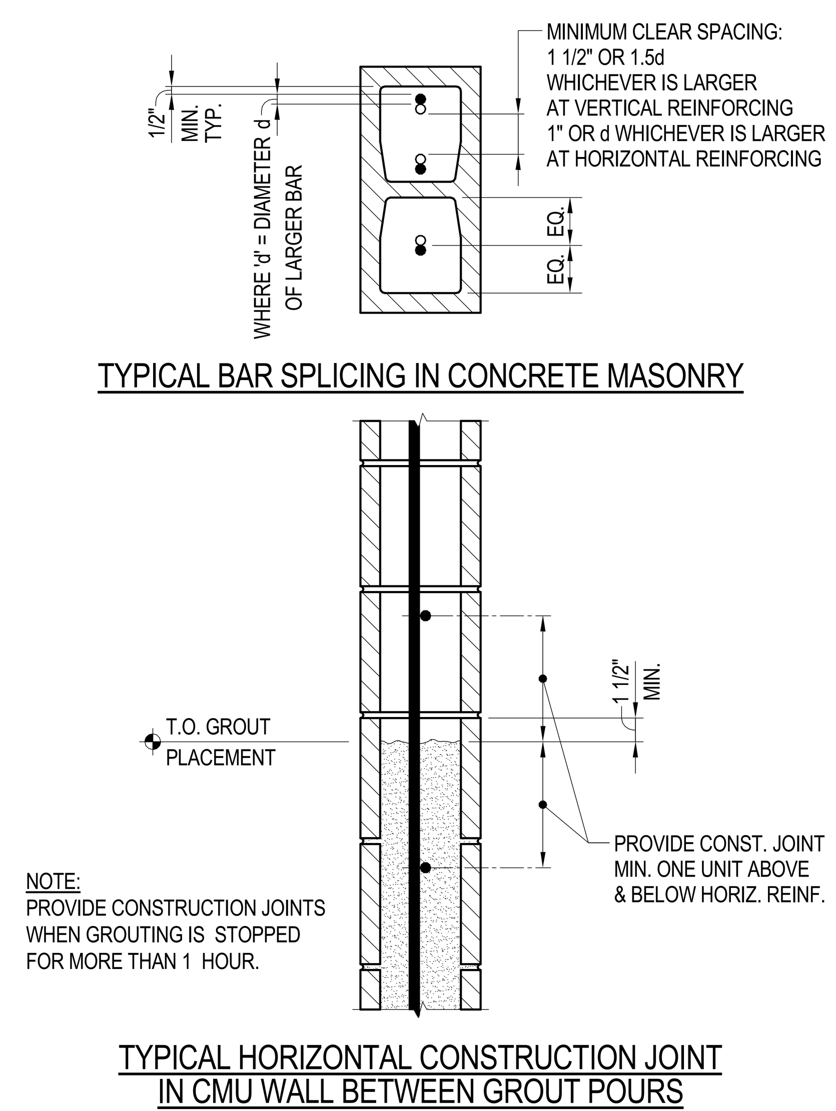
2ND BUILDING PLAN CHECK COORDINATION 05.18.2017



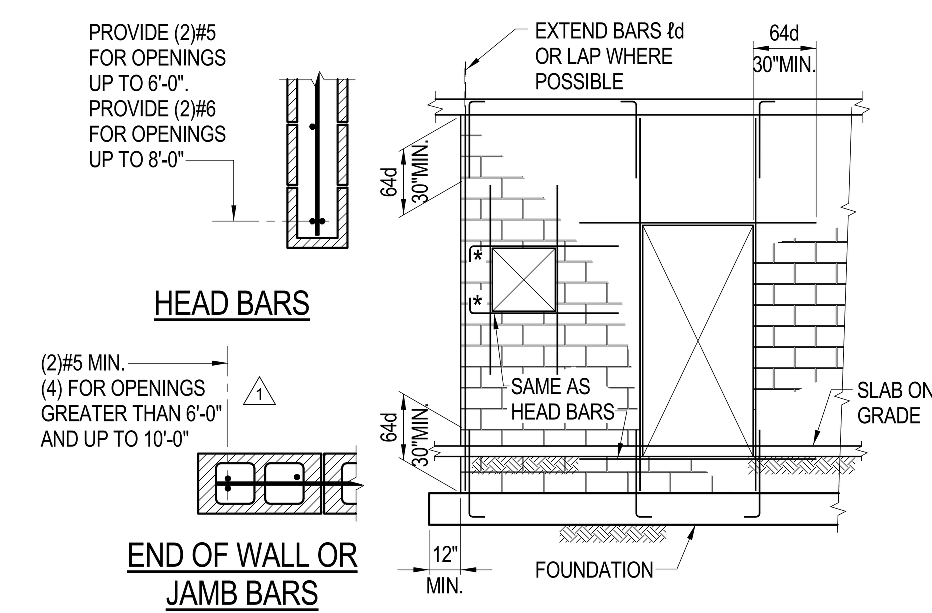
TYPICAL MASONRY NON-BEARING WALL DETAILS 6
TCM301



TYPICAL CONCRETE MASONRY WALL CONTROL JOINT DETAIL 3
TCM103

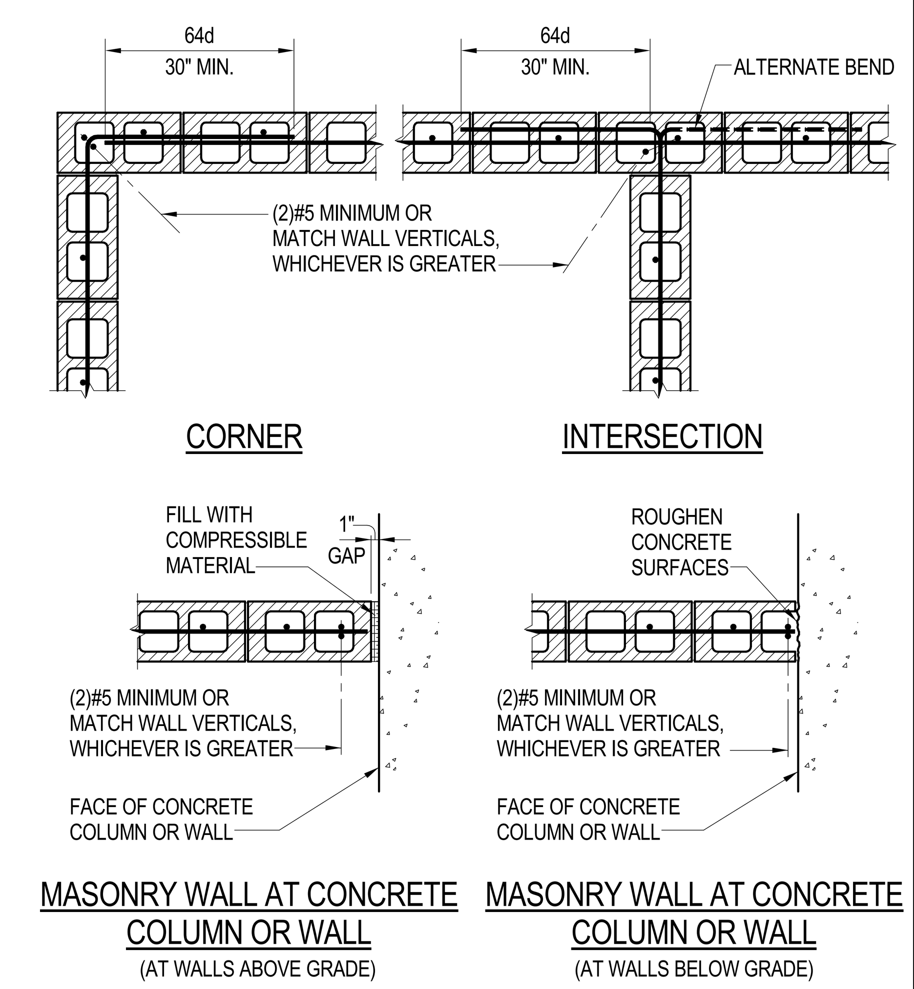


TYPICAL CONCRETE MASONRY WALL BAR SPLICING AND GROUT POUR JOINT DETAIL 5
TCM105



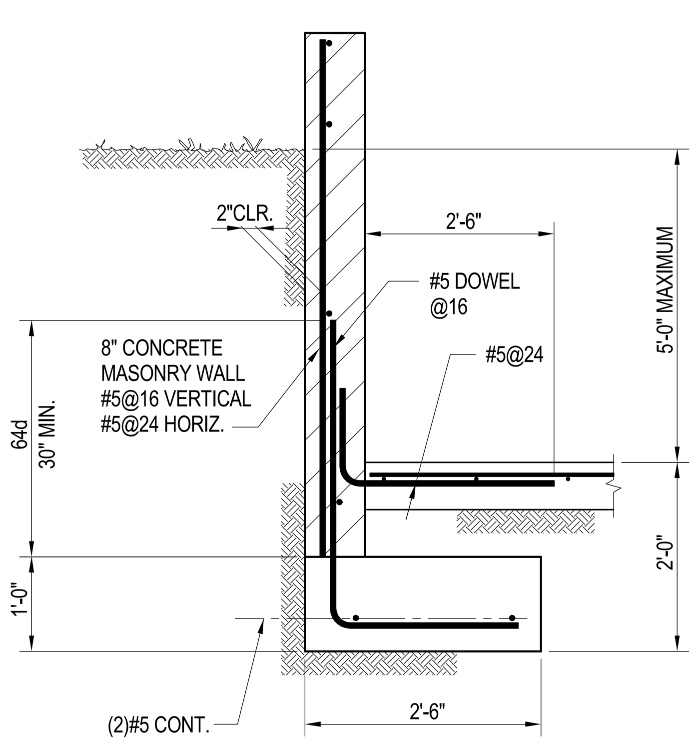
NOTES:
1. ★ PROVIDE STANDARD HOOKS ON TRIM BARS WHERE STRAIGHT ℓd CANNOT BE MAINTAINED.
2. SEE TYPICAL "CONCRETE MASONRY WALL REINFORCING AT INTERSECTIONS" FOR MINIMUM CONCRETE MASONRY WALL REINFORCING.

TYPICAL CONCRETE MASONRY WALL REINFORCING AT OPENING 2
TCM102 MOD.

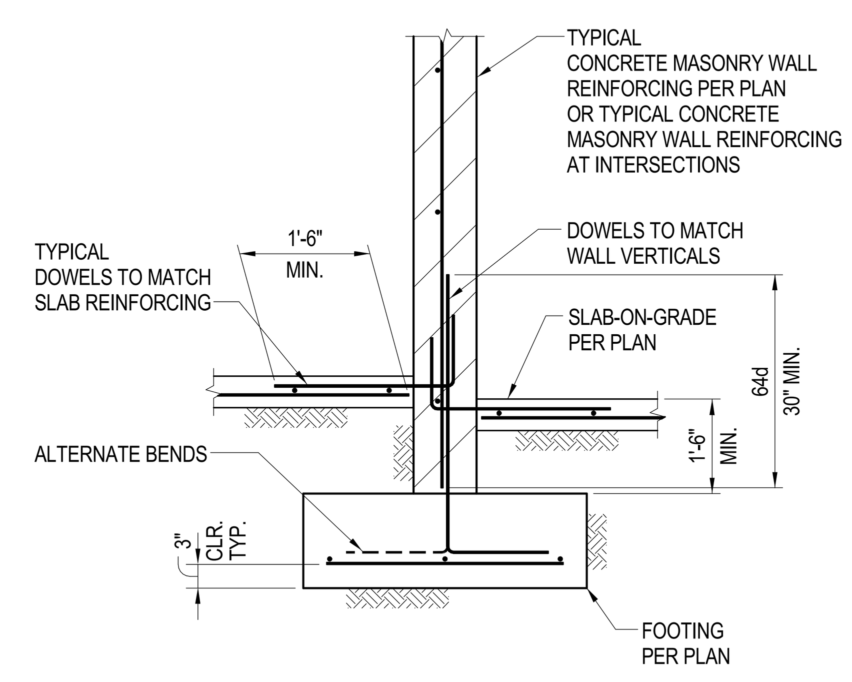


NOTES:
1. PROVIDE THE FOLLOWING MINIMUM REINFORCING IN CONCRETE MASONRY WALLS UNLESS NOTED OTHERWISE.
A. 8" CONCRETE MASONRY #5@16 EACH WAY
2. GROUT ALL CELLS SOLID UNLESS NOTED OTHERWISE.

TYPICAL CONCRETE MASONRY WALL REINFORCING DETAIL 1
TCM101 MOD.



TYPICAL CONCRETE MASONRY RETAINING WALL 5'-0" MAXIMUM 7
TCM401



TYPICAL CONCRETE MASONRY WALL AT FOUNDATION 4
TCM104

WILLIAM HEZMALHALCH ARCHITECTS INC.
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REGISTERED PROFESSIONAL ENGINEER MOHAMED HASSAN No 5285 STRUCTURAL STATE OF CALIFORNIA

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REVISIONS

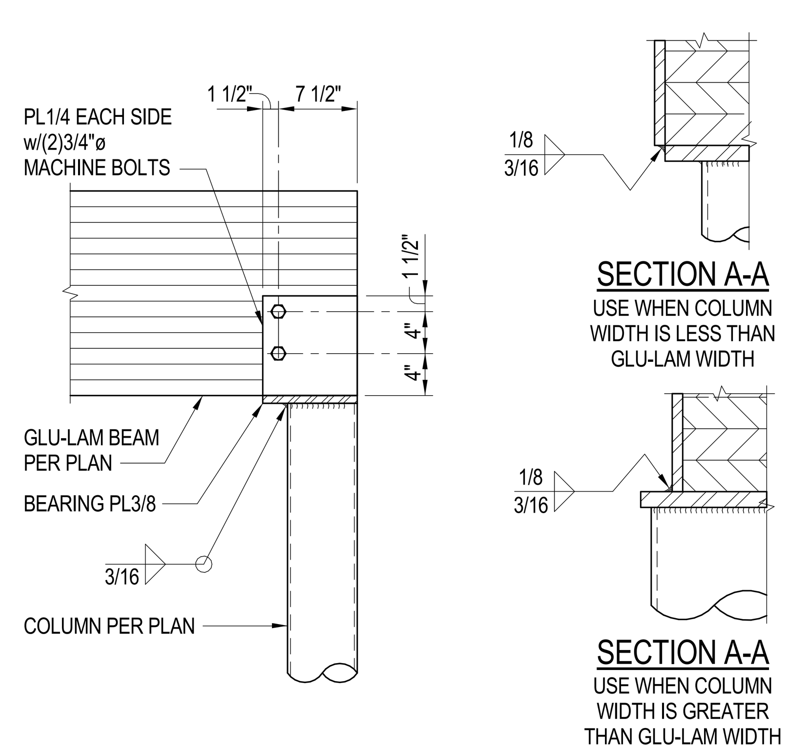
NO :	DATE	DESCRIPTION
1	05/18/17	2ND PLAN CHECK SUBMITTAL
	07/14/17	3RD PLAN CHECK SUBMITTAL

TYPICAL CONCRETE MASONRY WALL DETAILS

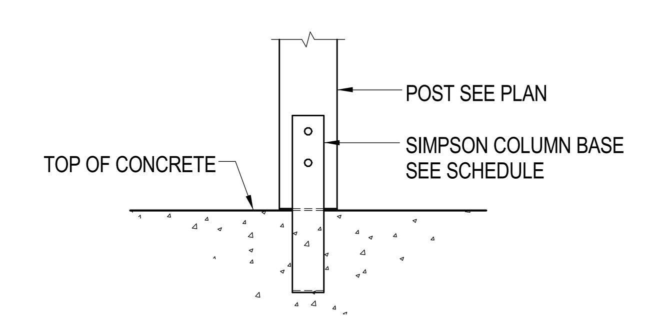
SHEET SCALE :	As indicated
PROJECT MANAGER :	MH
DESIGNER :	JN
DRAWN BY :	FS
REVIEWED BY :	
1st DEPT. SUBMITTAL :	X/X/2016
ISSUED FOR CONST. :	
JOB NUMBER	16-S003
CAD FILE NAME	

S0.31

2ND BUILDING PLAN CHECK COORDINATION 05.18.2017

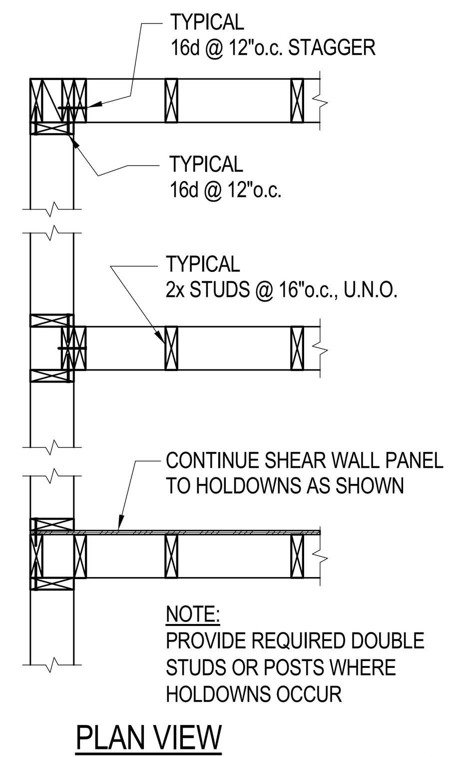


TYPICAL COLUMN
CONNECTION AT GLU-LAM BEAM END DETAIL 18
TWC203

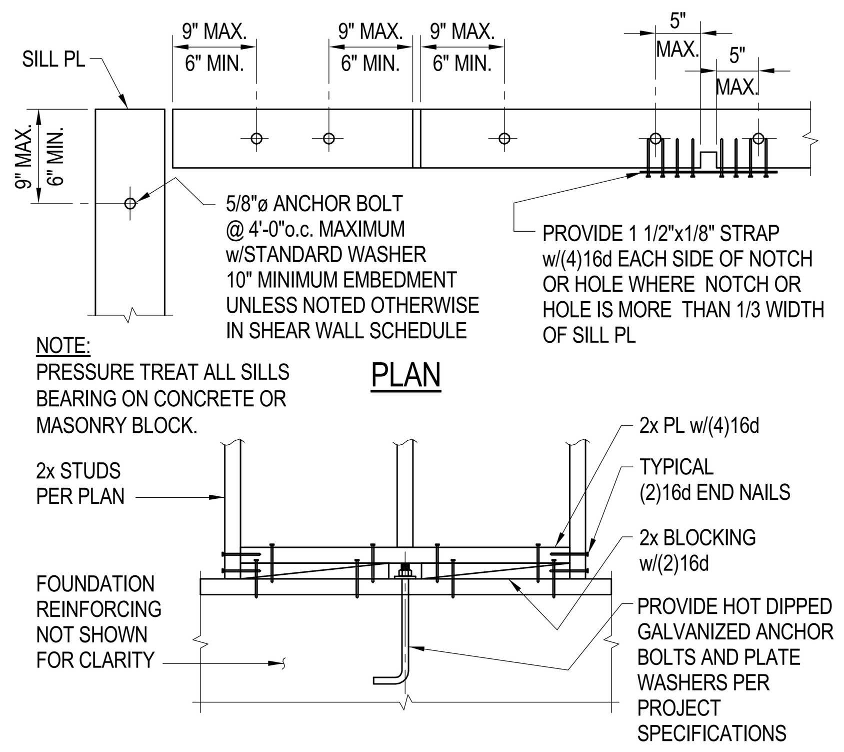


POST SIZE	SIMPSON COLUMN BASE	REMARKS
4x4	CB44	

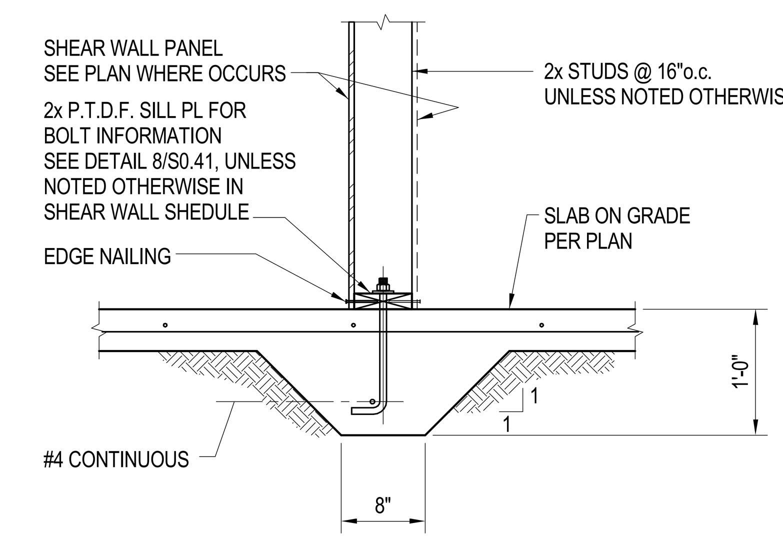
TYPICAL
ISOLATED WOOD POST BASE SCHEDULE 14
TWC101



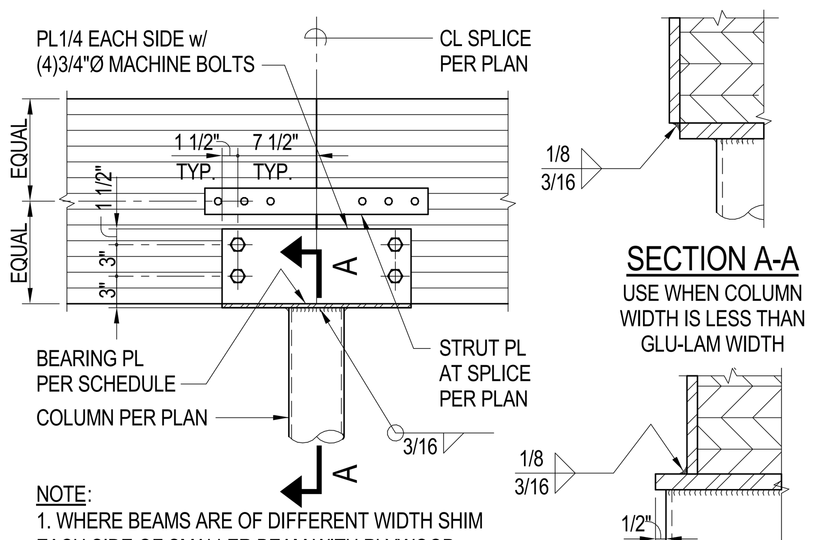
TYPICAL
STUD WALL AT INTERSECTIONS DETAIL 11
TWW302



TYPICAL
SILL PLATE AT FOUNDATION DETAIL 8
TWF403

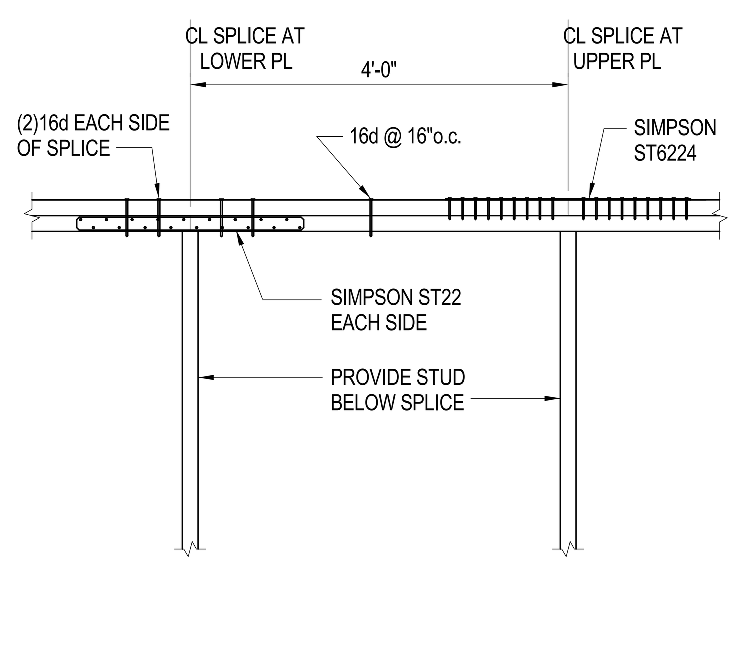


TYPICAL
INTERIOR NON-BEARING WALL FOOTING DETAIL 4
TWF301

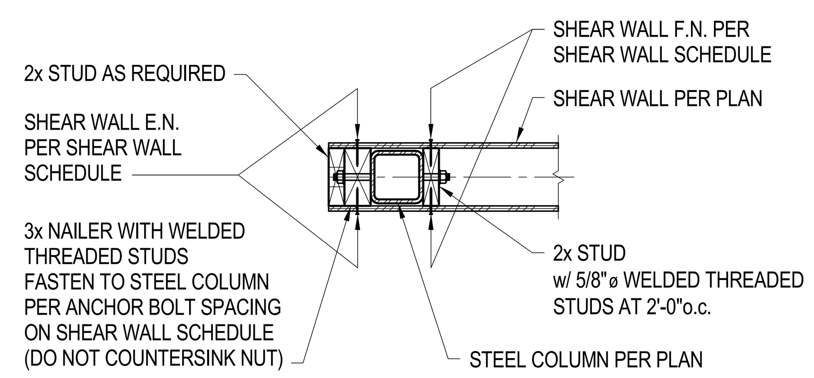


CONNECTION SCHEDULE	
DETAIL	BEARING PLATE
TYP.	3/8" THICK x 1'-6"

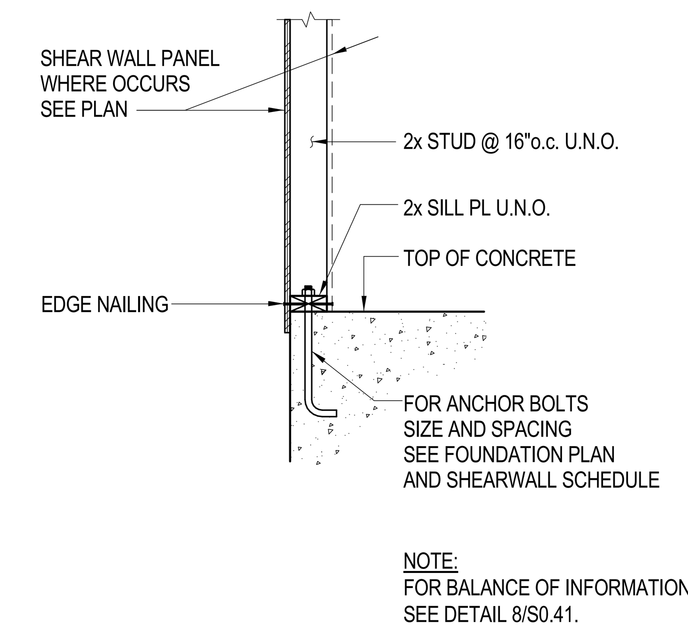
TYPICAL COLUMN
CONNECTION AT GLU-LAM BEAM SPLICE DETAIL 17
TWC202



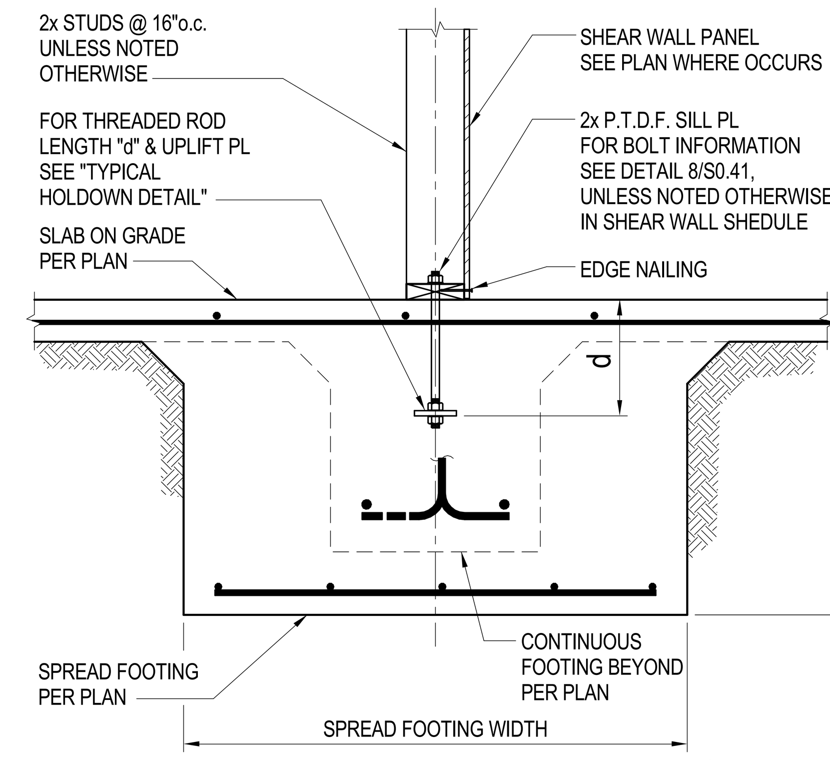
TYPICAL
MINIMUM TOP PLATE SPLICE DETAIL 13
TWW305



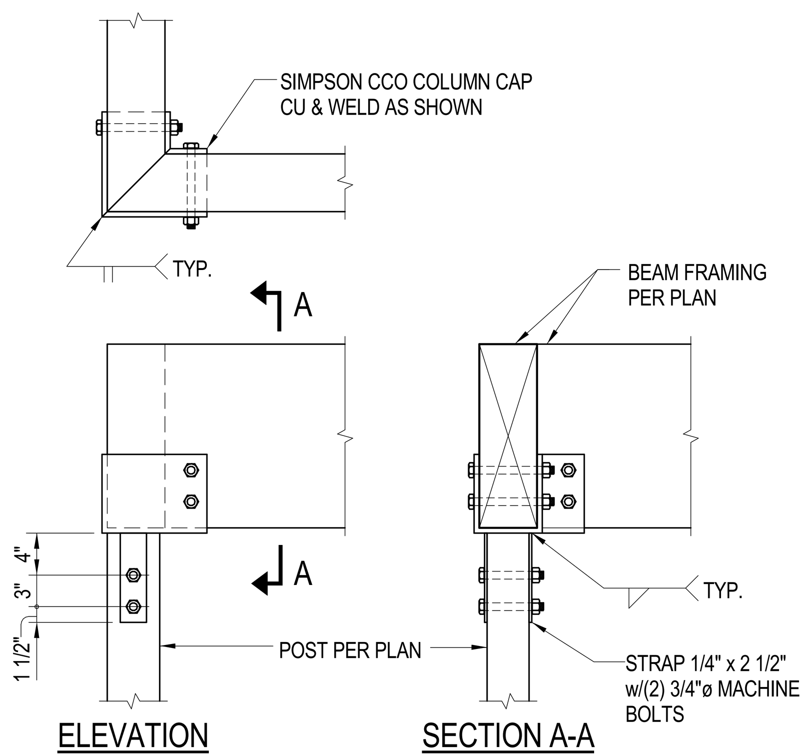
PLAN AT COLUMN AT SHEAR WALL END



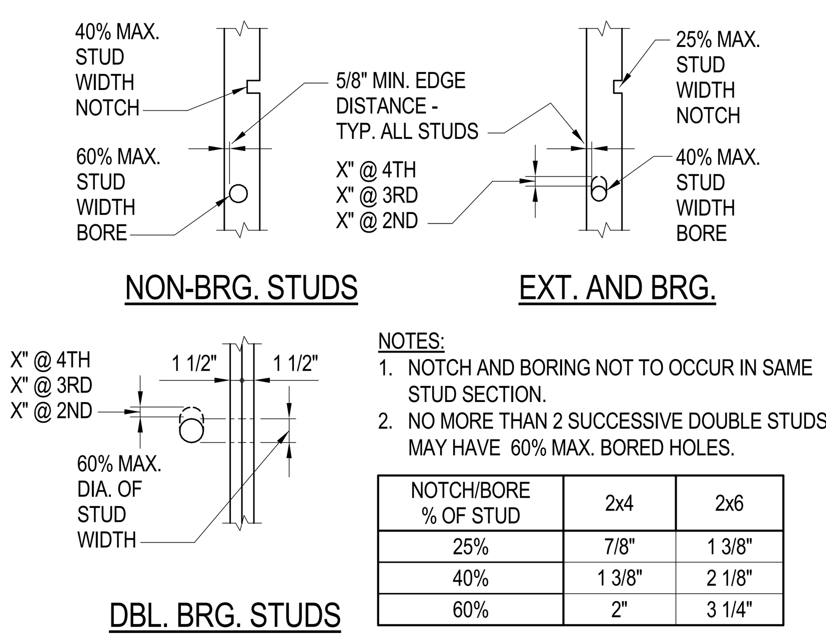
TYPICAL
EXTERIOR BEARING WALL BASE DETAIL 7
TWF103



TYPICAL
INTERIOR BEARING WALL FOOTING DETAIL 3
TWF204



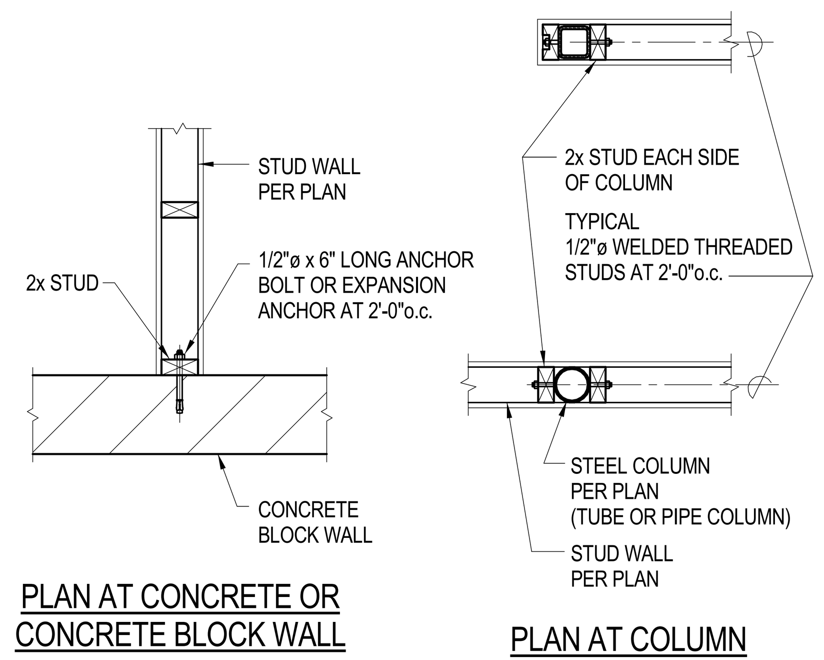
TYPICAL
POST TO BEAM CONNECTION AT CORNER DETAIL 16
TWC105



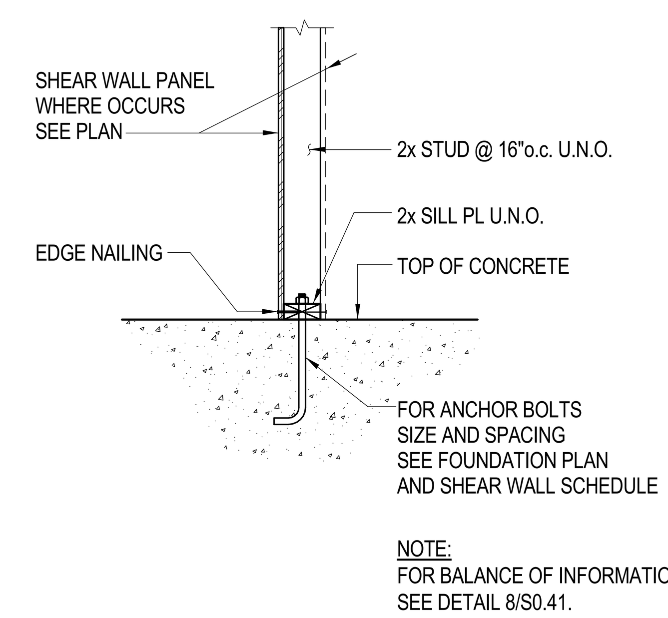
NOTES:
1. NOTCH AND BORING NOT TO OCCUR IN SAME STUD SECTION.
2. NO MORE THAN 2 SUCCESSIVE DOUBLE STUDS MAY HAVE 60% MAX. BORED HOLES.

NOTCH/BORE % OF STUD	2x4	2x6
25%	7/8"	1 3/8"
40%	1 3/8"	2 1/8"
60%	2"	3 1/4"

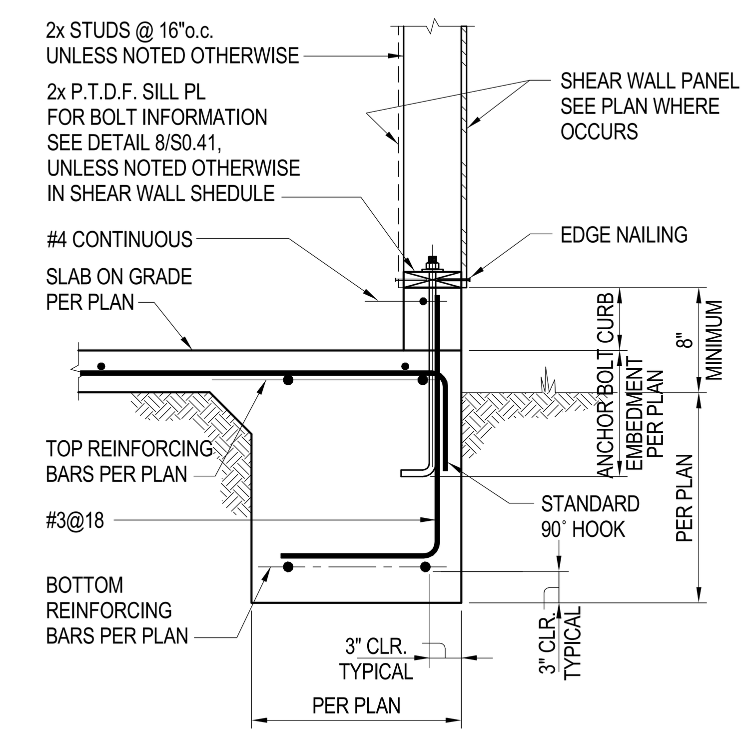
TYPICAL NOTCHING
AND BORING OF STUD DETAIL 12
TWW301



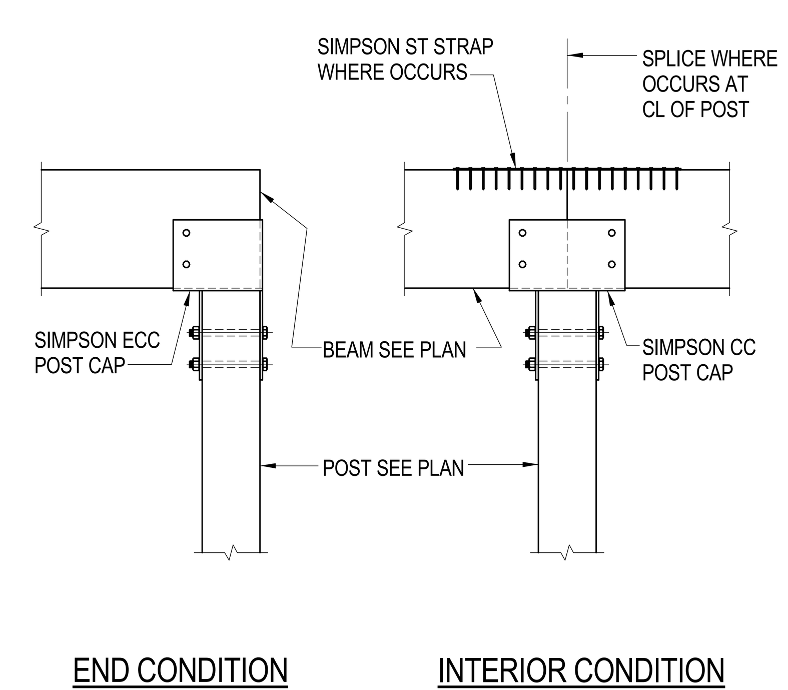
TYPICAL
STUD WALL CONNECTION DETAIL 10
TWW304



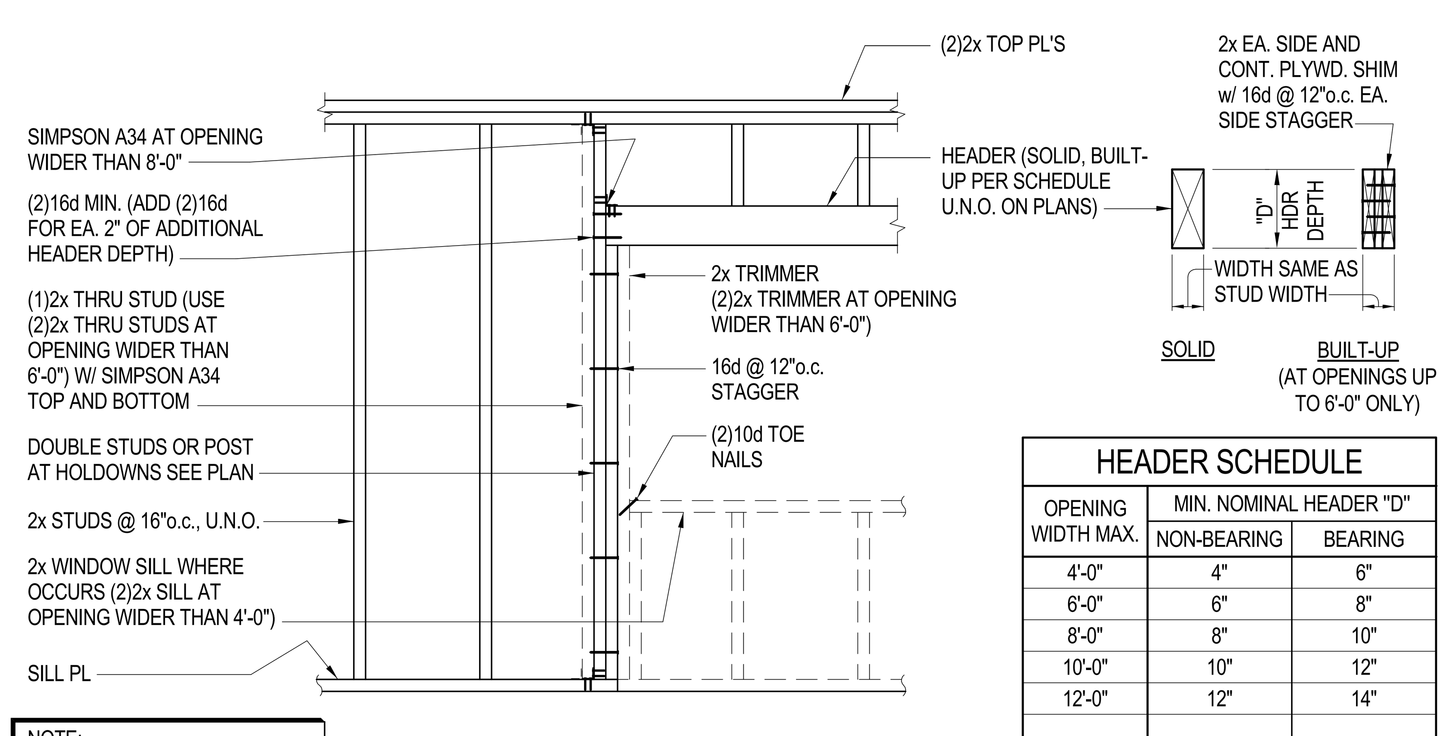
TYPICAL
INTERIOR BEARING WALL BASE DETAIL 6
TWF102



TYPICAL CONTINUOUS
EXTERIOR WALL ON CURB FOOTING DETAIL 2
TWF202



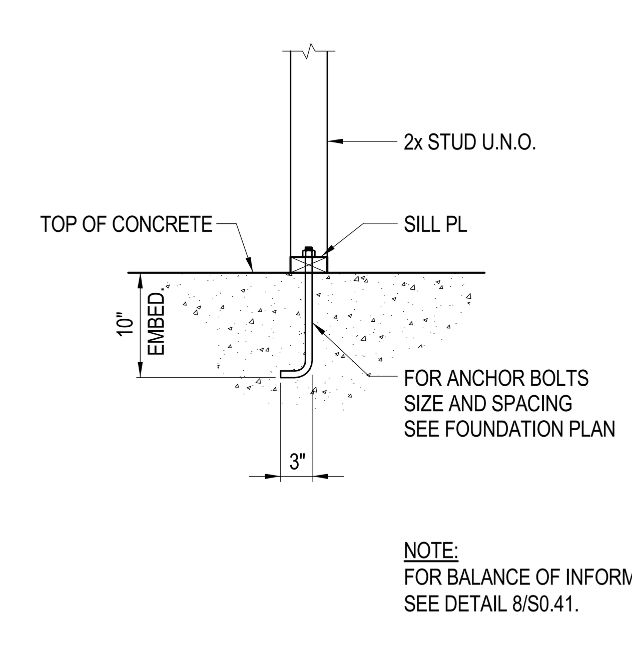
TYPICAL
BEAM TO POST CONNECTION DETAIL 15
TWC103



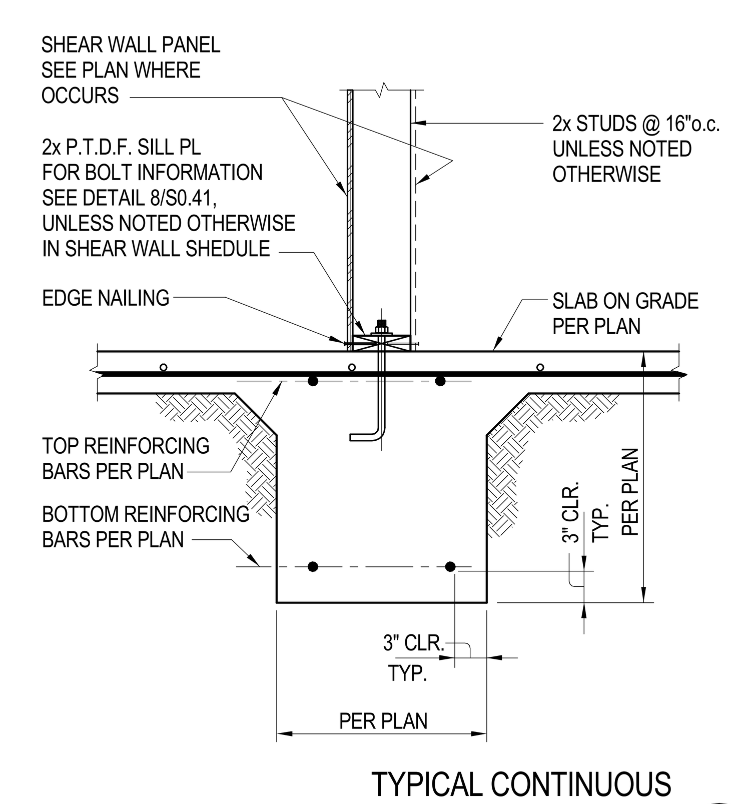
NOTE:
FOR BALANCE OF NAILING, SEE CBC, TABLE 2304.9.1, U.N.O.

HEADER SCHEDULE		
OPENING WIDTH MAX.	MIN. NOMINAL HEADER "D"	
	NON-BEARING	BEARING
4'-0"	4"	6"
6'-0"	6"	8"
8'-0"	8"	10"
10'-0"	10"	12"
12'-0"	12"	14"

TYPICAL STUD WALL FRAMING AT OPENING DETAIL 9
TWW303



TYPICAL ANCHOR BOLT DETAIL 5
TWF101



TYPICAL CONTINUOUS
INTERIOR BEARING WALL FOOTING DETAIL 1
TWF201

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REVISIONS

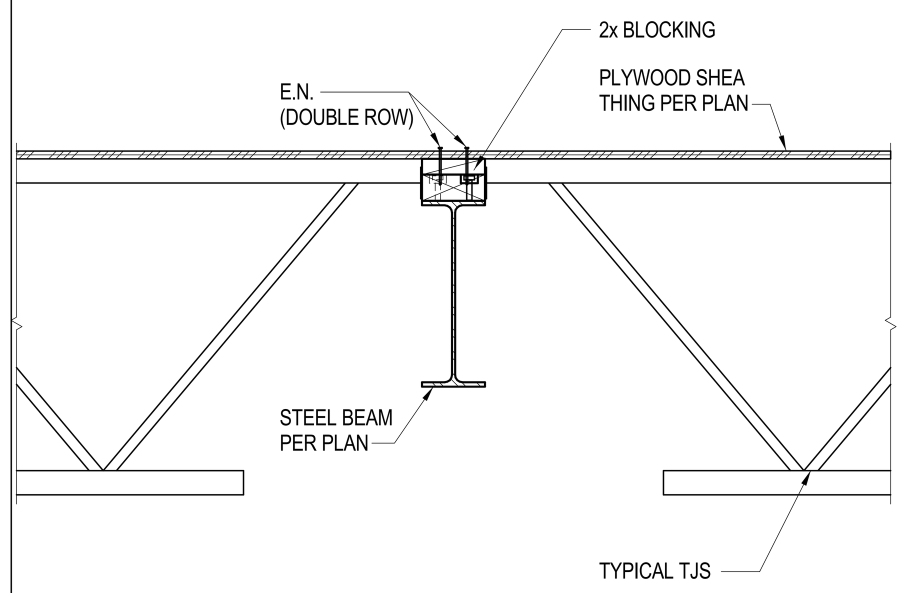
NO:	DATE	DESCRIPTION
	07/14/17	3RD PLAN CHECK SUBMITTAL

TYPICAL WOOD DETAILS

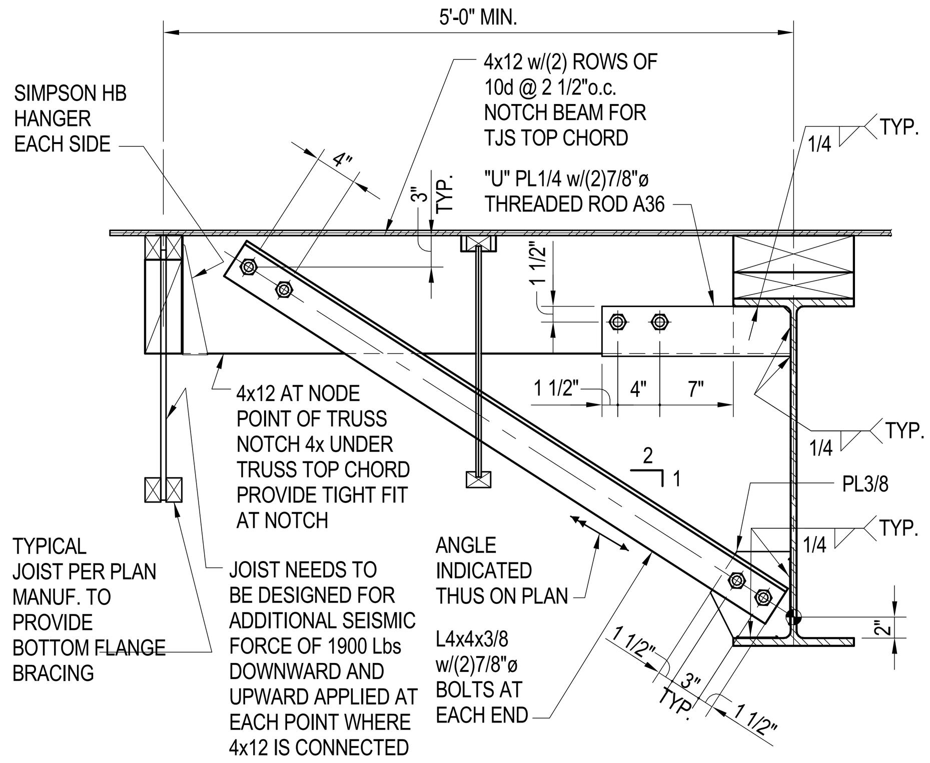
SHEET SCALE :	As indicated
PROJECT MANAGER :	MH
DESIGNER :	JN
DRAWN BY :	FS
REVIEWED BY :	
1st DEPT. SUBMITTAL :	X/X/2016
ISSUED FOR CONST. :	
JOB NUMBER	16-S003
CAD FILE NAME	

S0.41

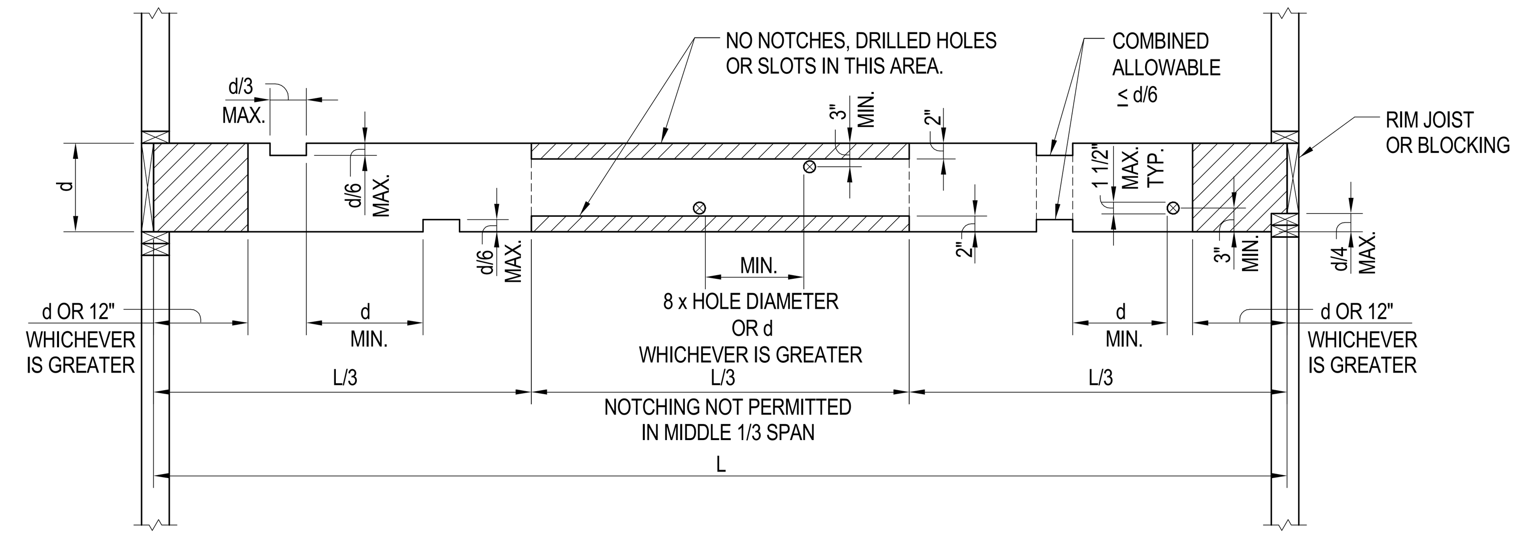
2ND BUILDING PLAN CHECK COORDINATION 05.18.2017



DETAIL 15
1"=1'-0"

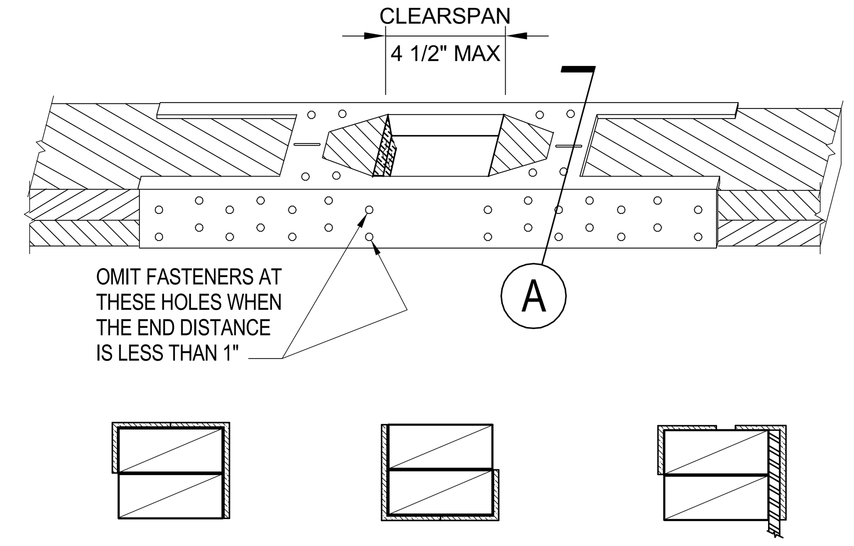


DETAIL 12
1"=1'-0"



NOTES:
1. ALLOWABLE HOLE AND NOTCH ZONES ARE FOR JOISTS UNDER UNIFORM LOADING ONLY.
2. LARGER HOLES OR HOLES OUTSIDE THE PERMITTED REGIONS MUST BE REVIEWED AND APPROVED BY THE STRUCTURAL ENGINEER.
3. NO HOLES OR NOTCHES ARE PERMITTED IN CANTILEVERS.
4. HATCHED AREA INDICATES NO HOLES OR NOTCHES ALLOWED IN THIS AREA.
5. DO NOT NOTCH OR BORE INTO 2x4 JOIST.

TYPICAL NOTCHING AND BORING AT SAWN LUMBER JOIST DETAIL 6
TWG107



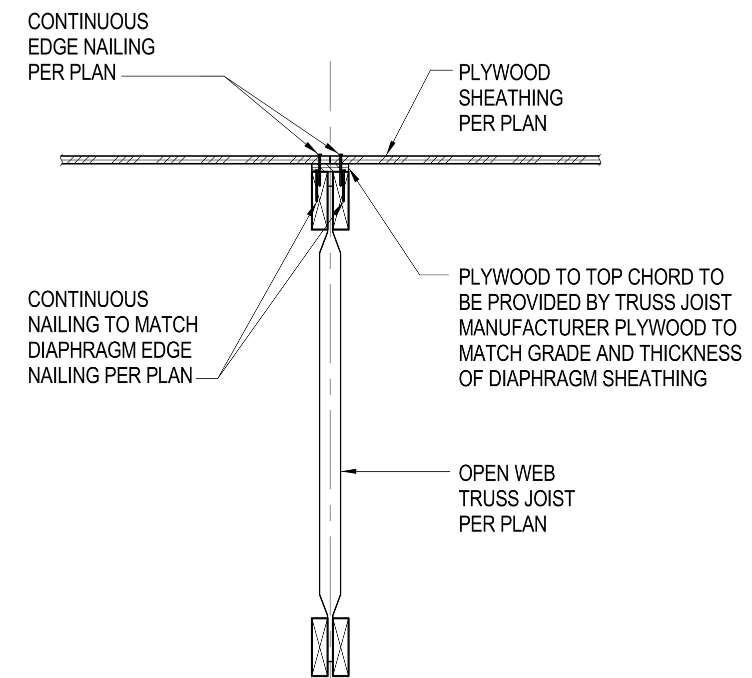
SECTION A : HFS INSTALLED OVER DOUBLE TOP PLATES
A - ALTERNATE 1 : HFS INSTALLED TO UNDERSIDE OF DOUBLE TOP PLATES
A - ALTERNATE 2 : HFS SEPARATED INTO TWO "L" SHAPES TO ALLOW FOR INSTALLATION OVER WOOD STRUCTURAL PANEL SHEETING OR FOR INSTALLATION AT 2X6 AND GREATER WALL DEPTHS.

Table 8.1 : Hardy Frame ® Saddle

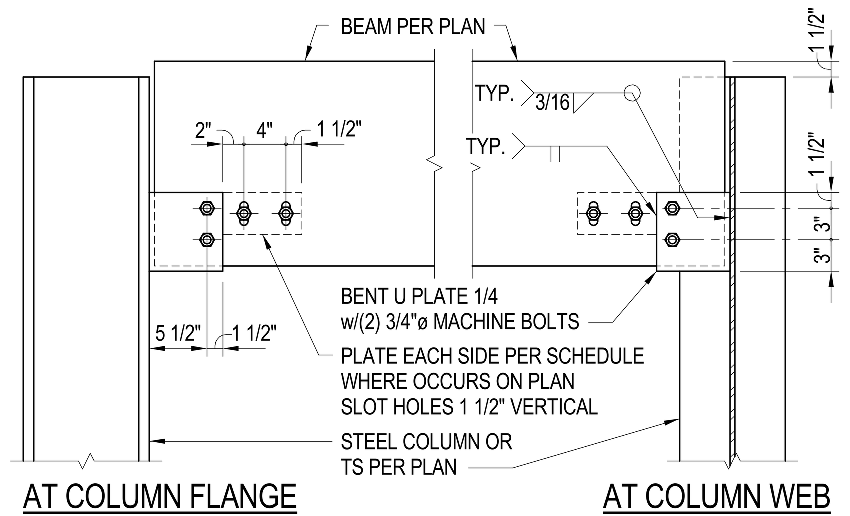
Model Number	Fasteners	Allowable Tension (lbs)			Allowable Compression (lbs)		
	(Total)	(100)	(133)	(160)	(100)	(133)	(160)
HFS24	(24)16d common	2948	3921	4717	1969	2618	2733
HFS36	(32)16d common	4288	5703	5785	1969	2618	2733

NOTES:
1. MAXIMUM CLEARSPAN SPLICE IS 4 1/2"
2. FASTENER QUANTITY IS THE NUMBER OF 16D COMMON NAILS TO BE INSTALLED AT EACH END OF THE SPLICE.
3. WHEN THE DISTANCE FROM THE SPLICE TO THE FIRST NAIL HOLE IS LESS THAN 1 INCH, OMIT THE (2) NAILS IN THE 3 INCH SIDEPLATE AND THE (1) NAIL IN THE 1 1/2 INCH SIDEPLATE CLOSEST TO THE SPLICE.
4. FOR THE HFS24 THAT IS INSTALLED WITH (22) 16D COMMON NAILS ON EACH END OF THE SPLICE (44 TOTAL) THERE IS NO REDUCTION IN THE VALUES.
5. FOR THE HFS36 THAT IS INSTALLED WITH (31) 16D COMMON NAILS ON EACH END OF THE SPLICE (62 TOTAL) THERE IS NO REDUCTION IN THE VALUES.
6. THE 133 COLUMN MAY BE USED FOR WIND AND EARTHQUAKE LOADING.
7. THE 160 COLUMN MAY BE USED FOR WIND ONLY.
8. THE PRODUCT AND INSTALLATION SHALL COMPLY WITH LA RR #25759
9. PROVIDE HARDY SADDLE WHERE PLUMBING RISERS PENETRATE BEARING OR SHEAR WALL PLATES

TYPICAL HARDY SADDLE DETAIL 3
TWW310

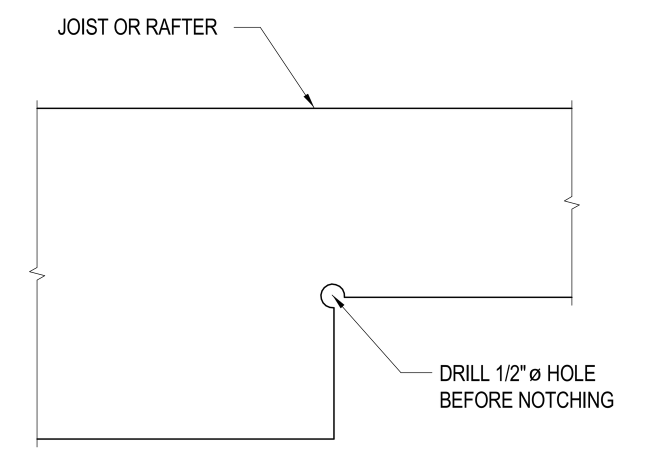


TYPICAL
NAILING AT OPEN WEB TRUSS JOIST DETAIL 11
1"=1'-0"

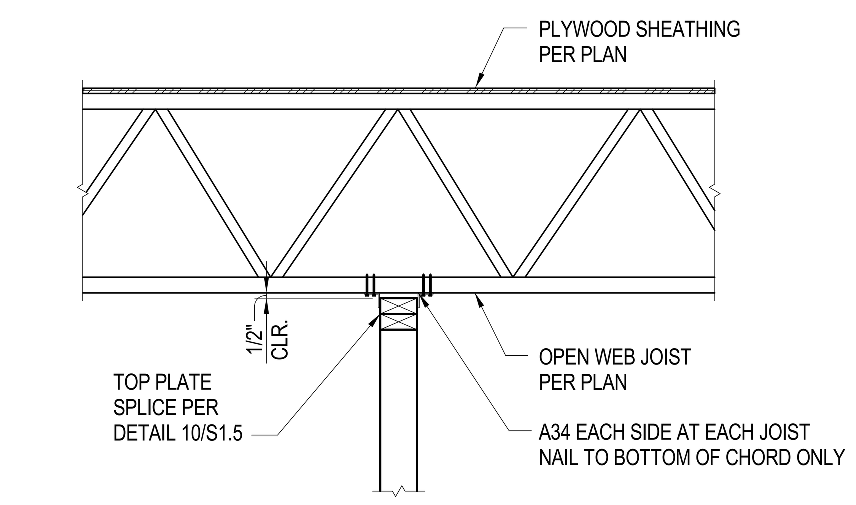


SCHEDULE		
MARK	PLATE	BOLTS
A	1/4" THICK x 4" WIDE	(2) 3/4"ø MACHINE BOLT
B		
C		

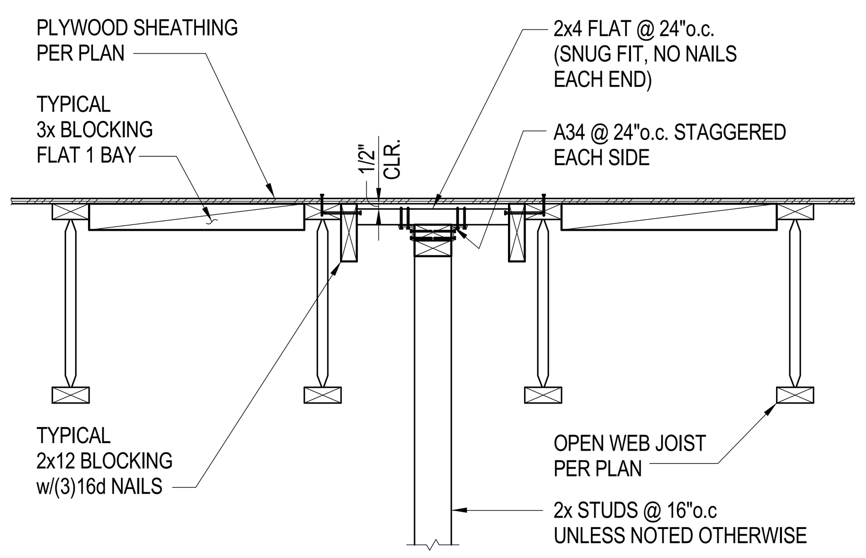
TYPICAL
BEAM TO STEEL COLUMN CONNECTION DETAIL 9
TWG302



TYPICAL NOTCH
AT JOIST, RAFTERS,STRINGERS, ETC. DETAIL 5
TWG106

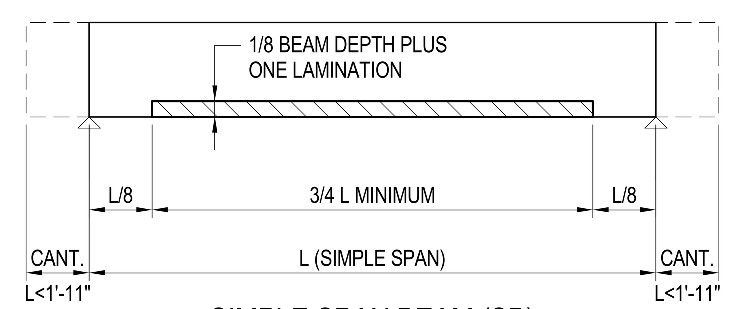


PERPENDICULAR TO JOISTS

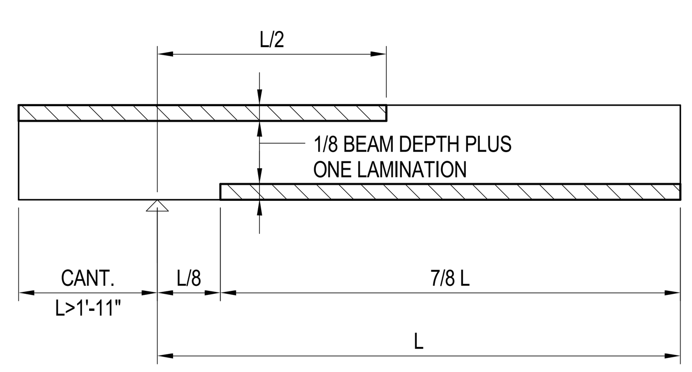


PARALLEL TO JOISTS

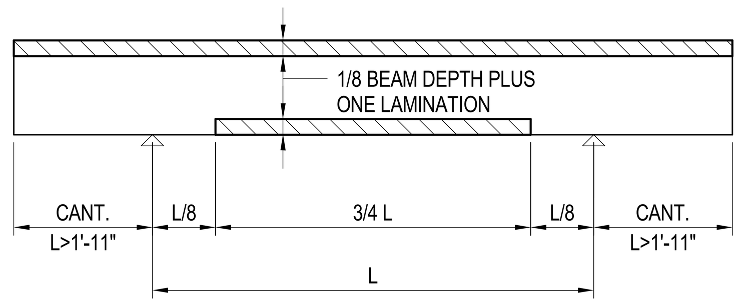
TYPICAL
NON-BEARING STUD WALL DETAILS 14
1"=1'-0"



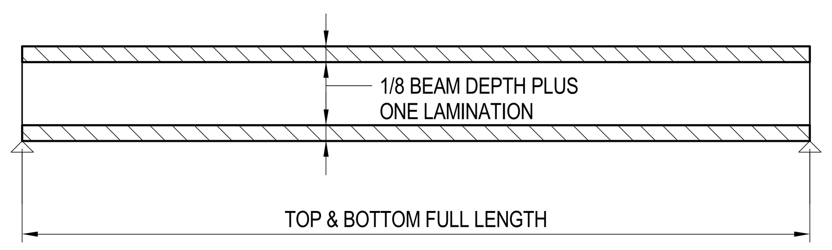
SIMPLE SPAN BEAM (SB)



BEAM WITH ONE END CANTILEVERED (CB)



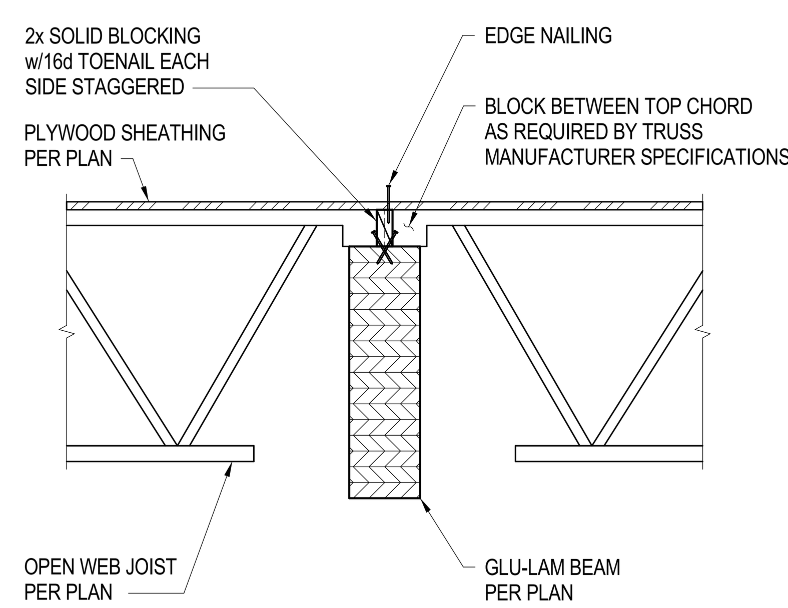
BEAM WITH BOTH END CANTILEVERED (CB)



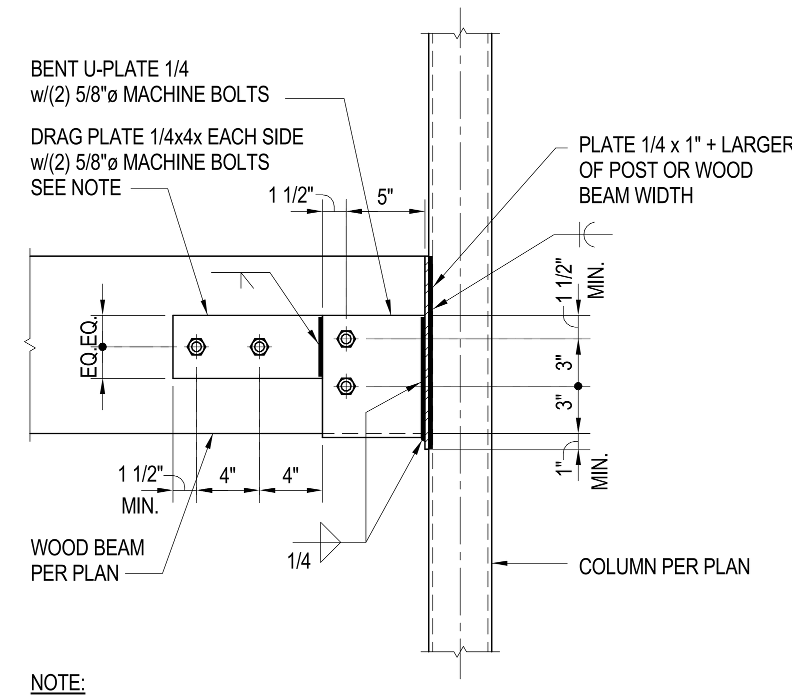
CONTINUOUS BEAMS (CB)

NOTE:
CROSS HATCHED AREA = 6" MINIMUM END JOINT SPACING IN ADJACENT LAMINATIONS 1998 CBC STATE CHAPTER 23A, DIVISION III, PART 1, 2316A.2, SECTION 5.4.6 AND ANSI/AITC A190.1

TYPICAL GLU-LAMINATED
BEAM END JOINT SPACING DESIGNATION 10
TWG207

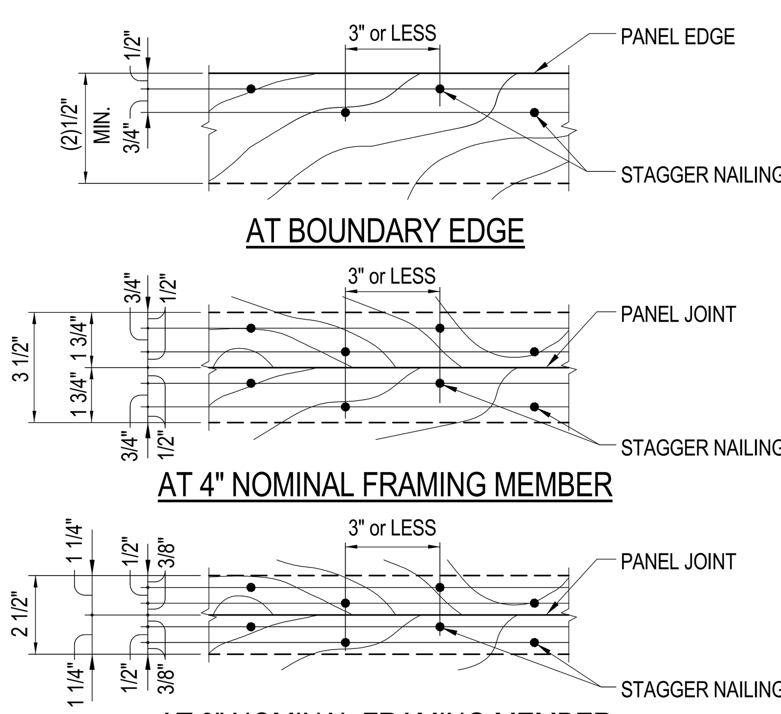


TYPICAL
OPEN WEB JOIST TO GLU-LAM BEAM DETAIL 8
TWG202

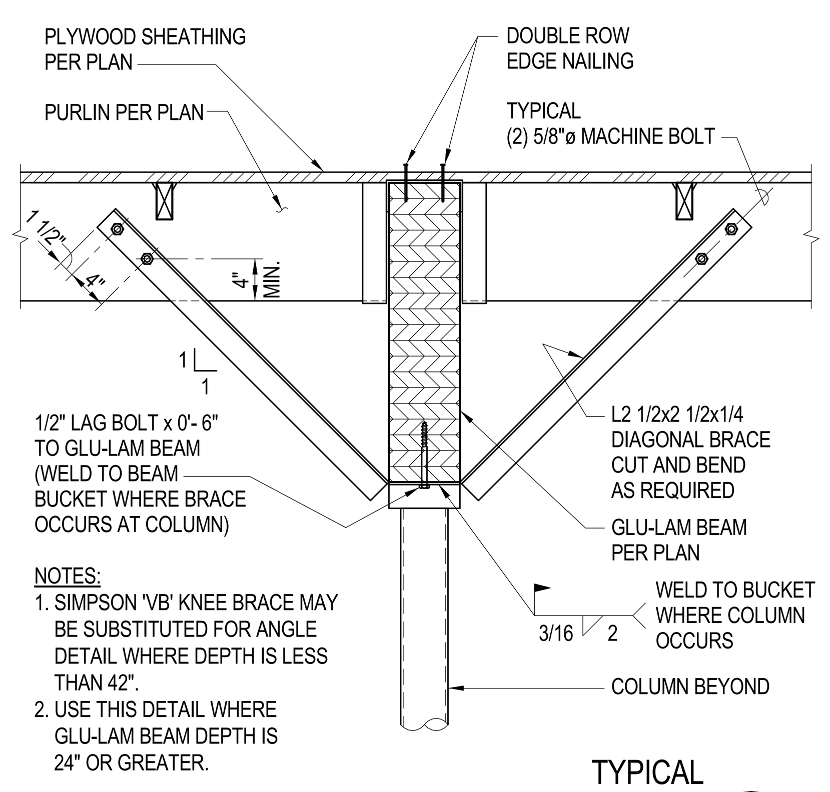


NOTE:
DRAG PLATE TO BE PROVIDED AT DRAG MEMBERS AS INDICATED ON PLAN

TYPICAL
WOOD BEAM TO STEEL TUBE POST DETAIL 4
TWG303

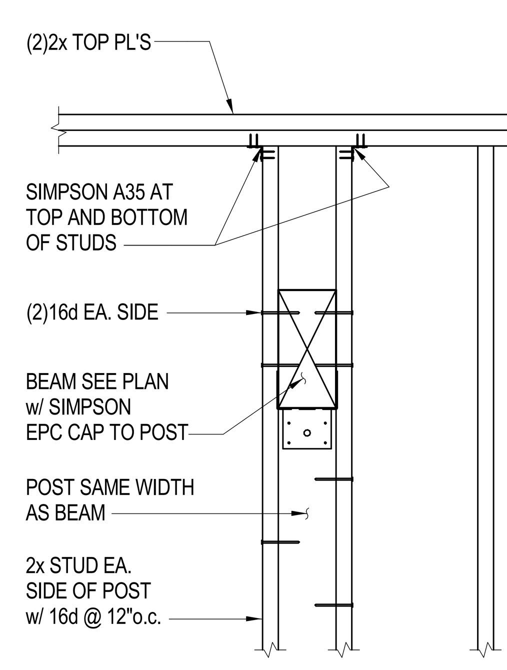


TYPICAL
PLYWOOD NAILING DIAGRAM AT NAILS < 3"o.c. 2
TWS103

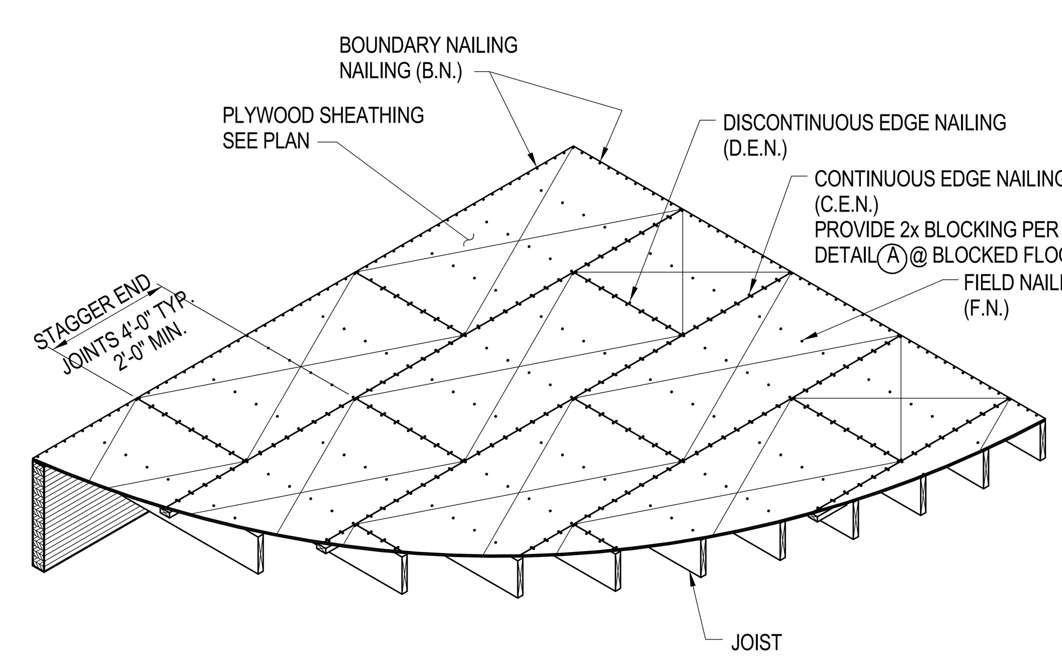


NOTES:
1. SIMPSON "VB" KNEE BRACE MAY BE SUBSTITUTED FOR ANGLE DETAIL WHERE DEPTH IS LESS THAN 42".
2. USE THIS DETAIL WHERE GLU-LAM BEAM DEPTH IS 24" OR GREATER.

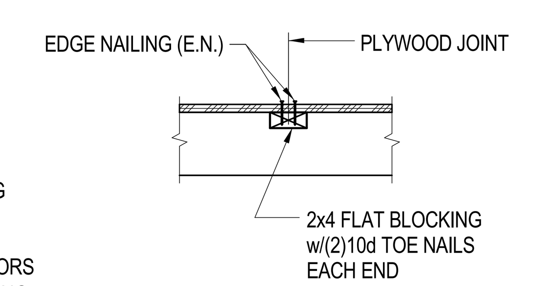
TYPICAL
GLU-LAM BEAM BRACE DETAIL 13
TWG203



TYPICAL
BEAM PERPENDICULAR TO WALL DETAIL 7
TWG105



PLAN



DETAIL A

NOTE:
1. RUN LONG DIMENSION OF PLYWOOD PERPENDICULAR TO JOIST.
2. NAILING SIZE AND SPACING AS NOTED ON PLAN.
3. NAILS SHALL HAVE A MIN. 3/8" EDGE DISTANCE.
4. ALL PURLINS SHALL BE LAID OUT IN A 4'-0" MODULE TO COINCIDE WITH PLYWOOD PATTERN.
5. USE TONGUE & GROOVE PLYOOWD AT UNBLOCKED FLOORS.
6. WHERE NAILS ARE SPACED @ 3"o.c. OR LESS @ ADJOINING PANEL EDGES, SEE DETAIL 2/S0.42
7. USE BOUNDARY NAILING CONTINUOUS @ ALL NAILING ZONE BOUNDARIES. SEE PLAN FOR ZONE EXTENTS.

TYPICAL FLOOR PLYWOOD SHEATHING DETAIL 1
TWS101

WILLIAM HEZMALHALCH ARCHITECTS INC.
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10801 NATIONAL BLVD., STE 510 LOS ANGELES, CA. 90064

REVISIONS

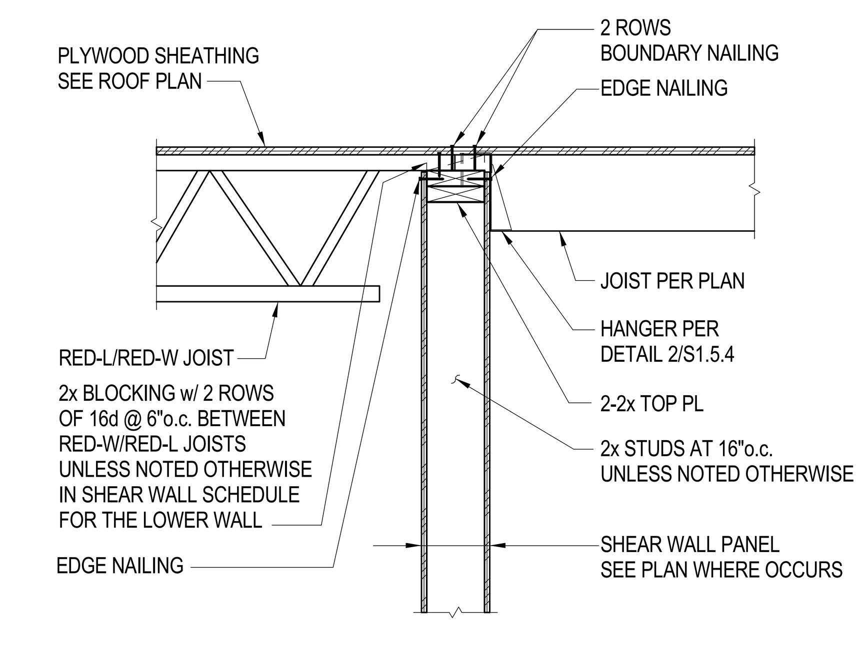
NO :	DATE	DESCRIPTION
	07/14/17	3RD PLAN CHECK SUBMITTAL

TYPICAL WOOD DETAILS

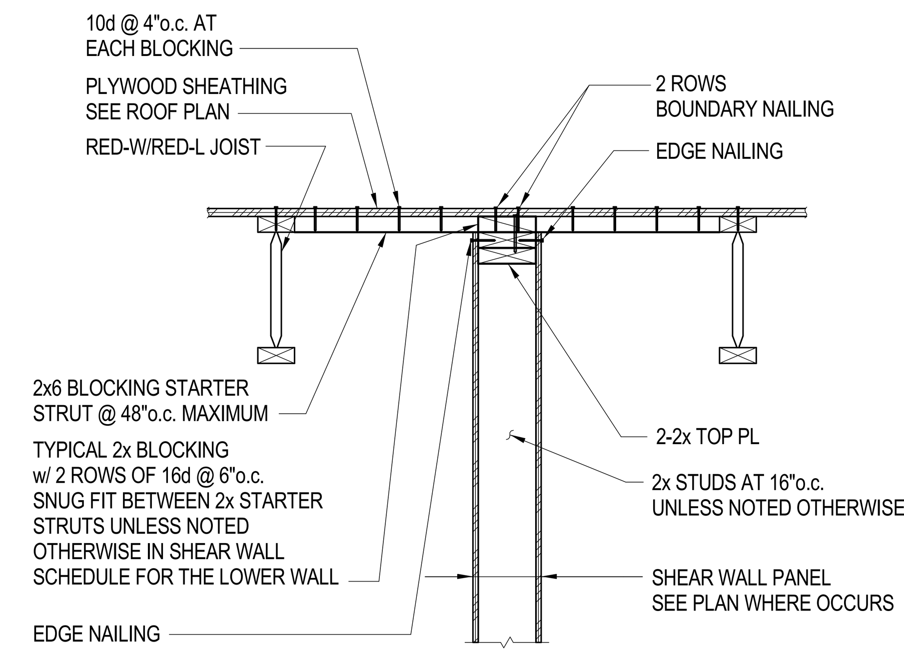
SHEET SCALE :	As indicated
PROJECT MANAGER :	MH
DESIGNER :	JN
DRAWN BY :	FS
REVIEWED BY :	
1st DEPT. SUBMITTAL :	X/X/2016
ISSUED FOR CONST. :	
JOB NUMBER	16-S003
CAD FILE NAME	

S0.42

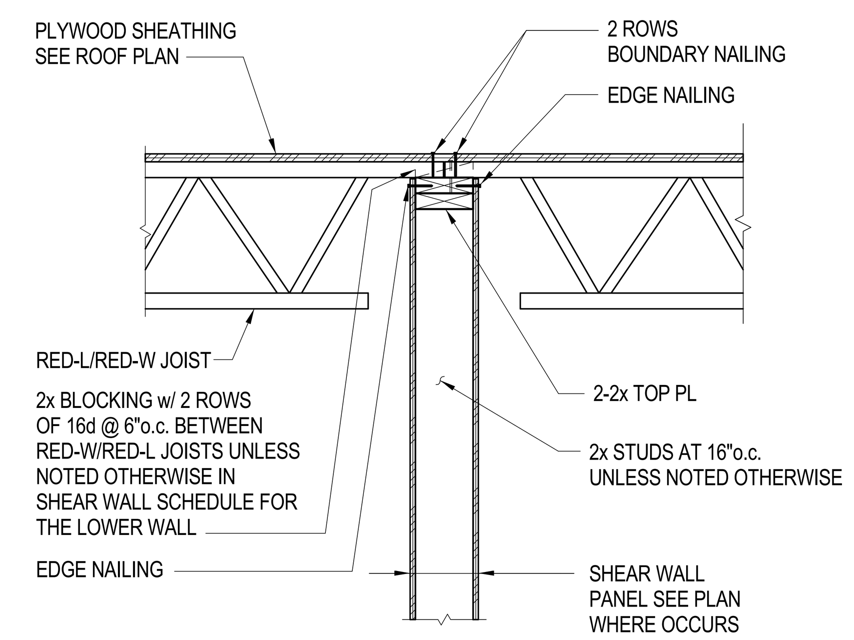
2ND BUILDING PLAN CHECK COORDINATION 05.18.2017



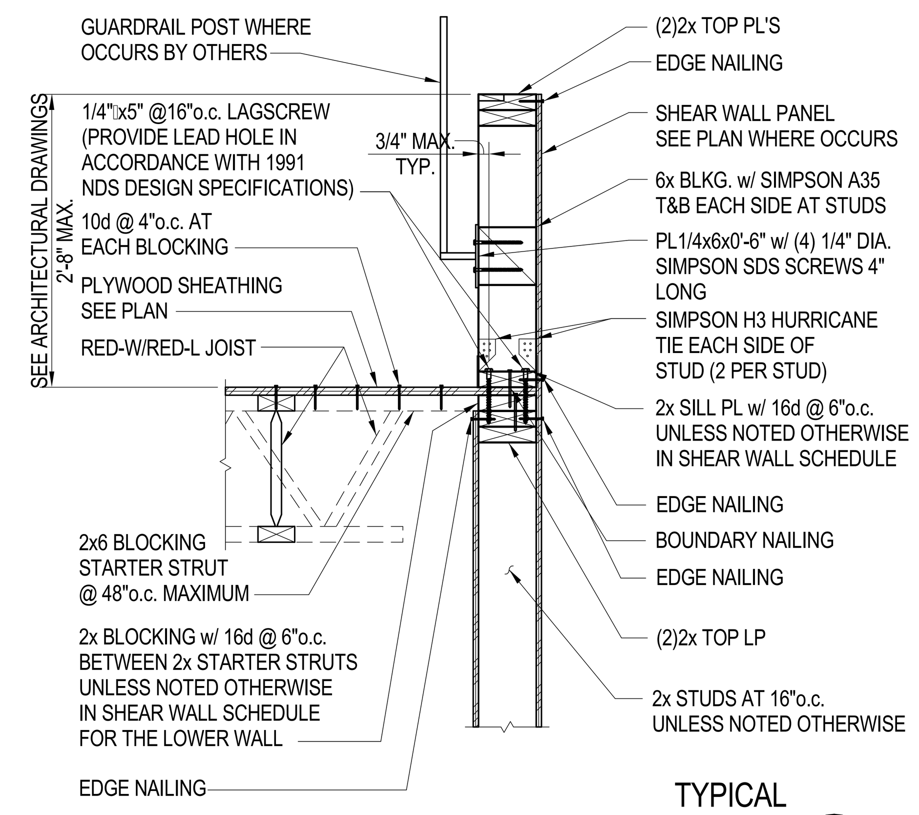
TYPICAL INTERIOR STUD WALL PERPENDICULAR
TO RED-L/RED-W AND JOIST FRAMING 8
1"=1'-0"



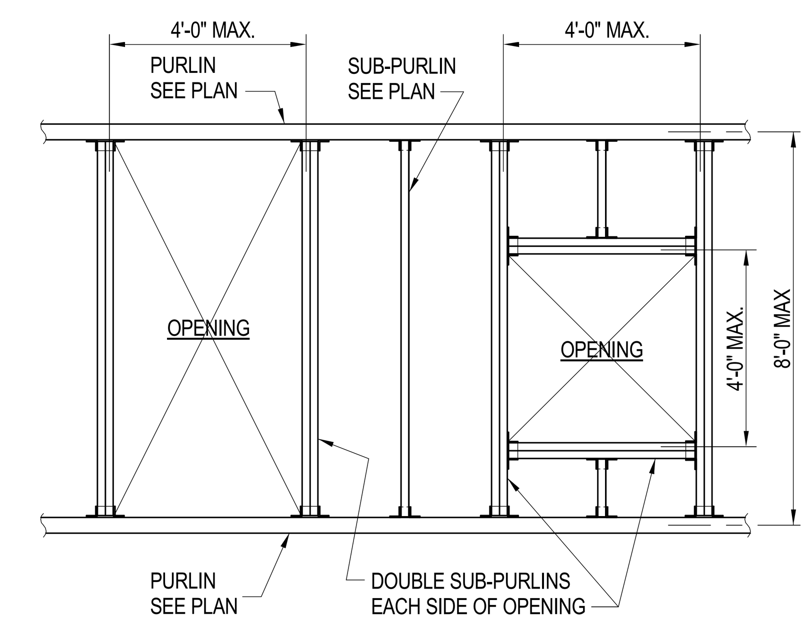
TYPICAL INTERIOR
STUD WALL PARALLEL TO RED-L/RED-W AT ROOF 4
1"=1'-0"



TYPICAL INTERIOR STUD WALL
PERPENDICULAR TO RED-L/RED-W AT ROOF 7
1"=1'-0"

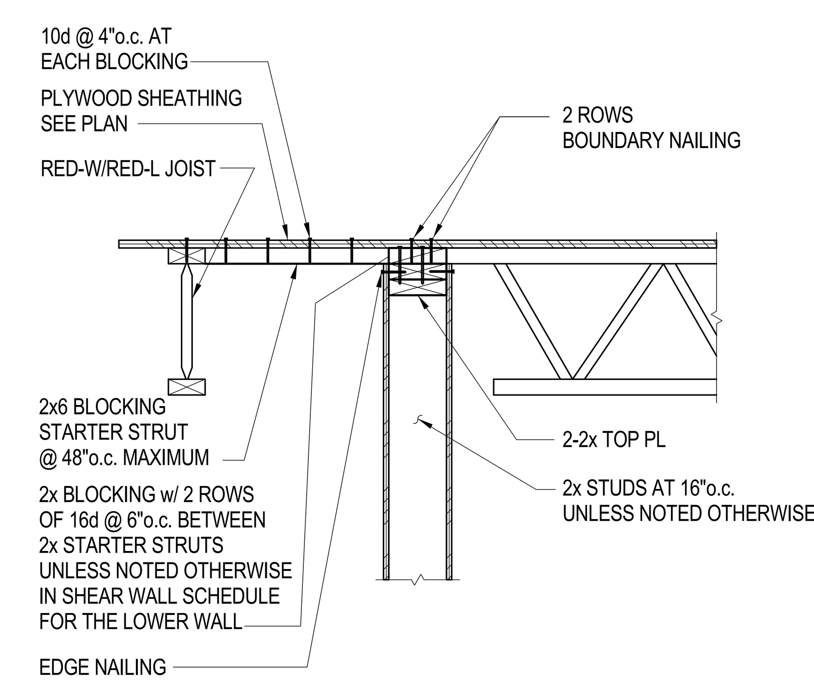


TYPICAL
PARAPET STUD WALL AT RED-L/RED-W 3
1"=1'-0"

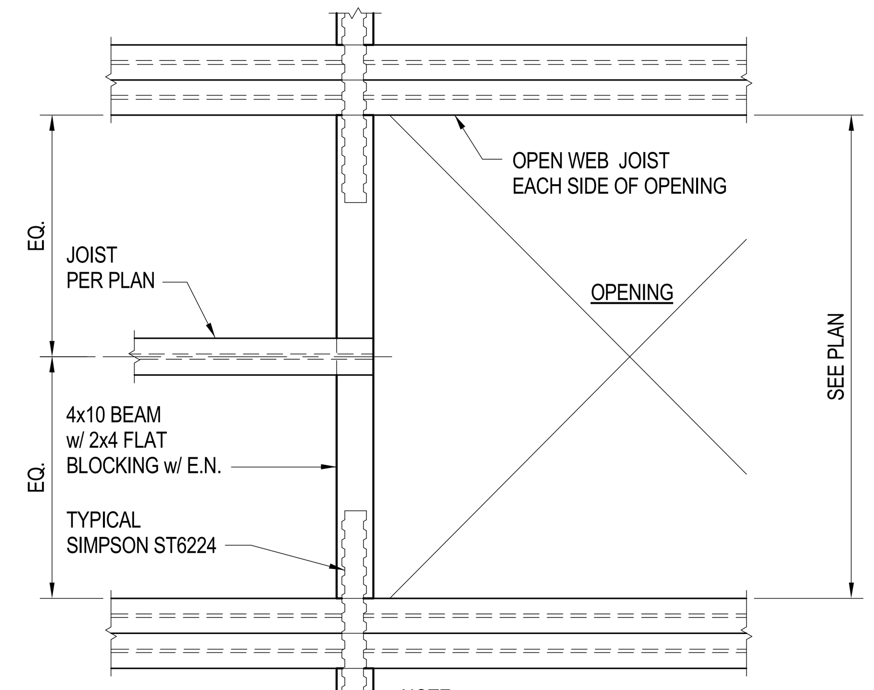


NOTE:
PROVIDE EDGE NAILING TO ALL EDGES OF OPENINGS

TYPICAL ROOF OPENING DETAIL 10
TWR104



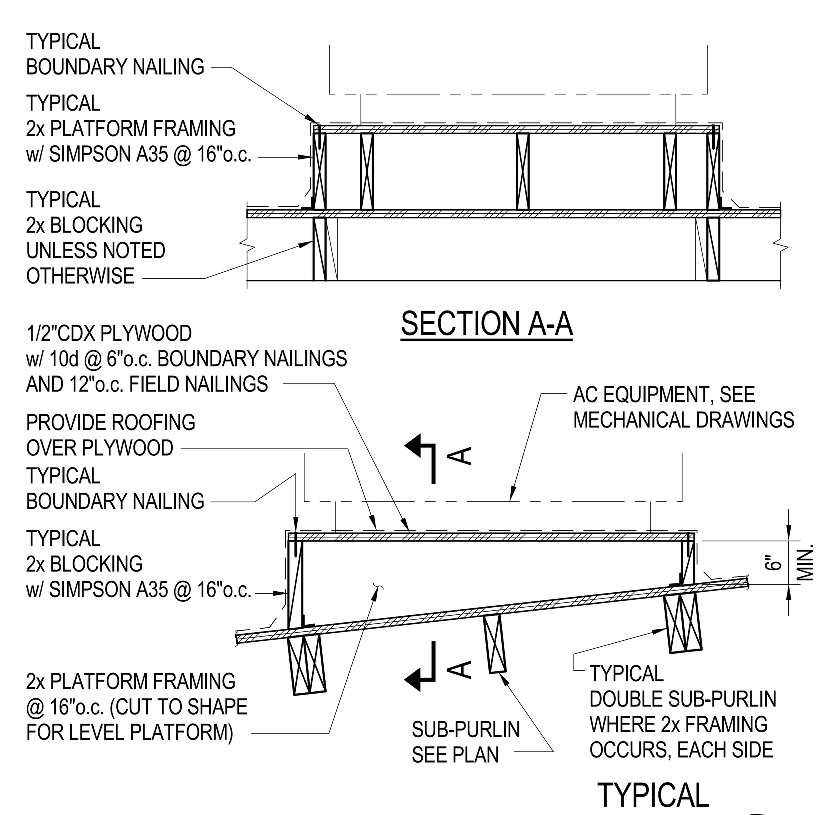
TYPICAL
CHANGE IN DIRECTION RED-L/RED-W JOIST FRAMING 6
1"=1'-0"



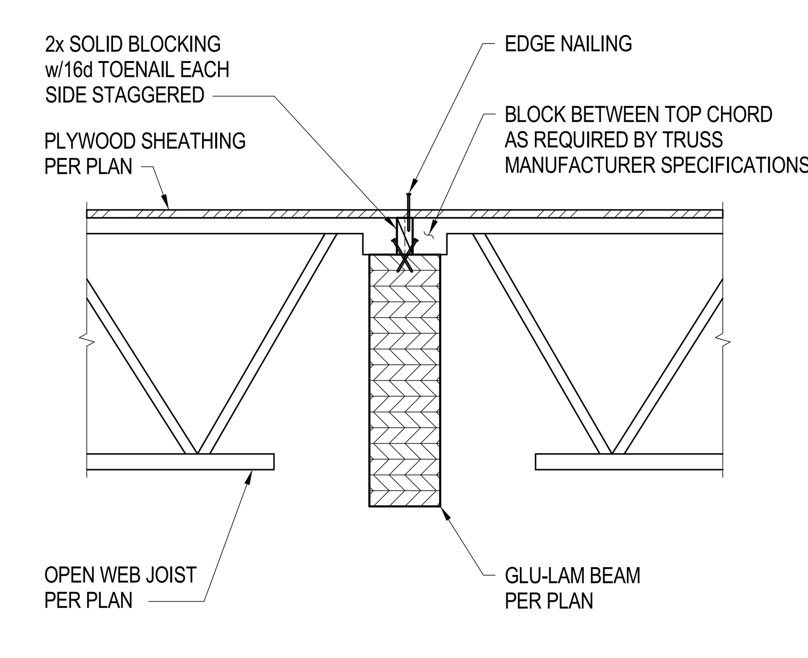
NOTE:
1. PROVIDE C.E.N. TO ALL EDGES OF OPENING.

PLAN

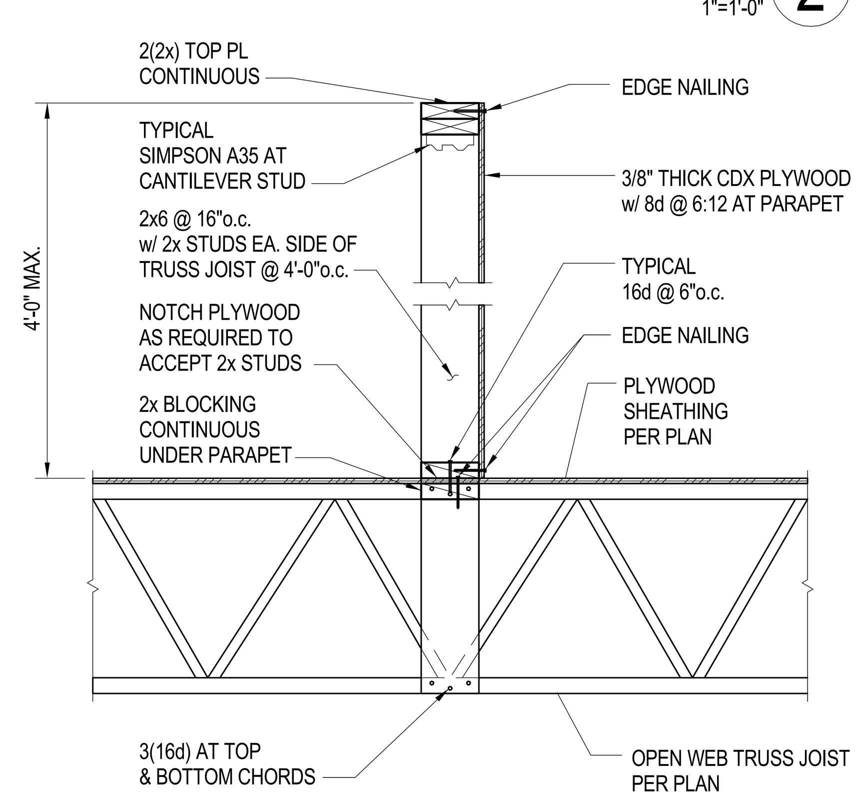
TYPICAL
FLOOR AND ROOF OPENING AT OPEN WEB JOIST 2
1"=1'-0"



TYPICAL
MECHANICAL PLATFORM AT ROOF DETAILS 9
TWR105



TYPICAL
OPEN WEB JOIST TO GLU-LAM BEAM DETAIL 5
TWG202



TYPICAL
PARAPET DETAIL PERPENDICULAR TO JOIST 1
1"=1'-0"

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REVISIONS

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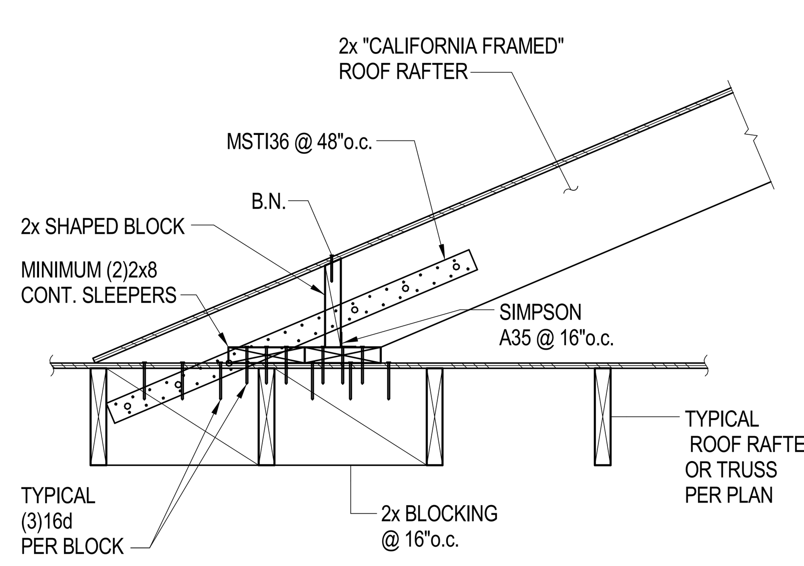
2ND BUILDING PLAN CHECK COORDINATION 05.18.2017

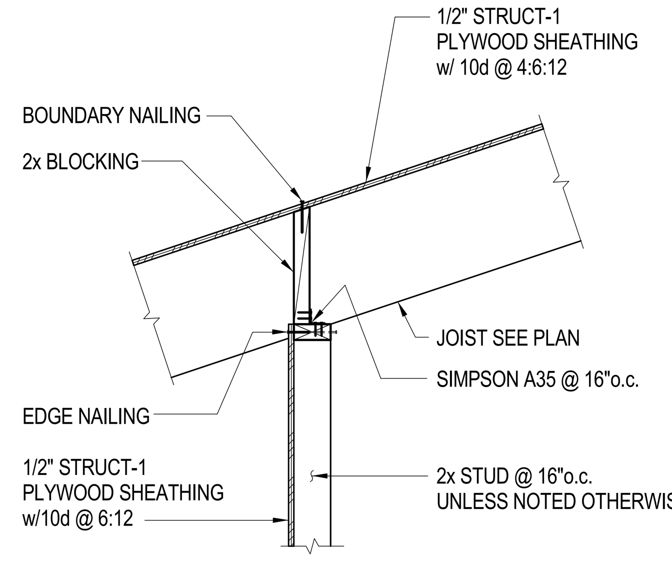
TYPICAL WOOD DETAILS

SHEET SCALE :	As indicated
PROJECT MANAGER :	MH
DESIGNER :	JN
DRAWN BY :	FS
REVIEWED BY :	
1st DEPT. SUBMITTAL :	X/X/2016
ISSUED FOR CONST. :	
JOB NUMBER	16-S003
CAD FILE NAME	

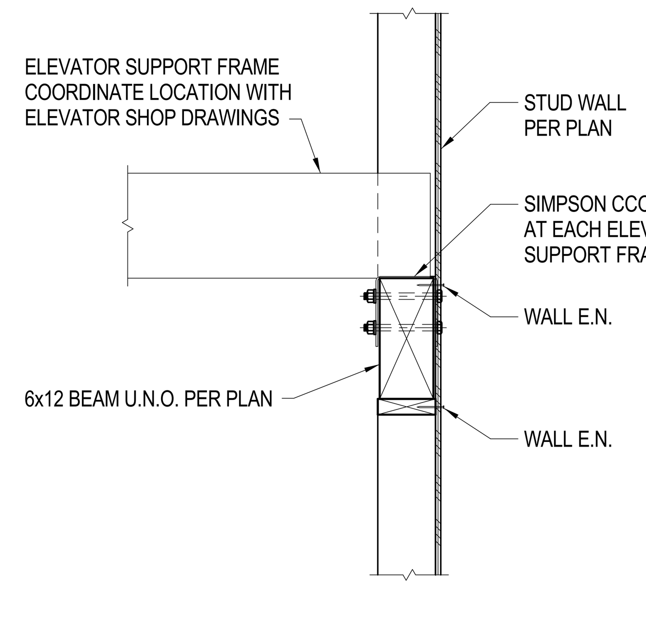
S0.43



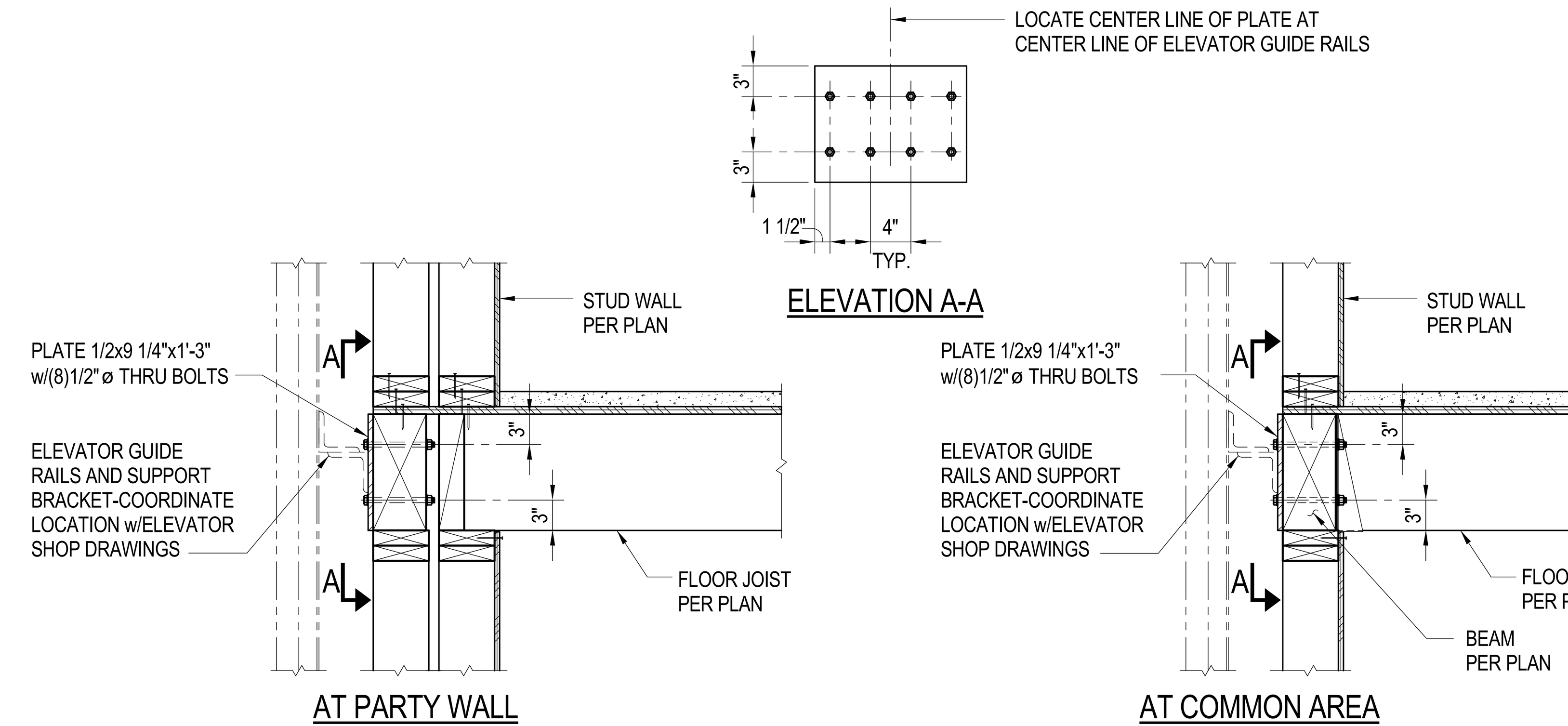
TYPICAL "CALIFORNIA FRAMING" DETAIL 13
1"=1'-0"



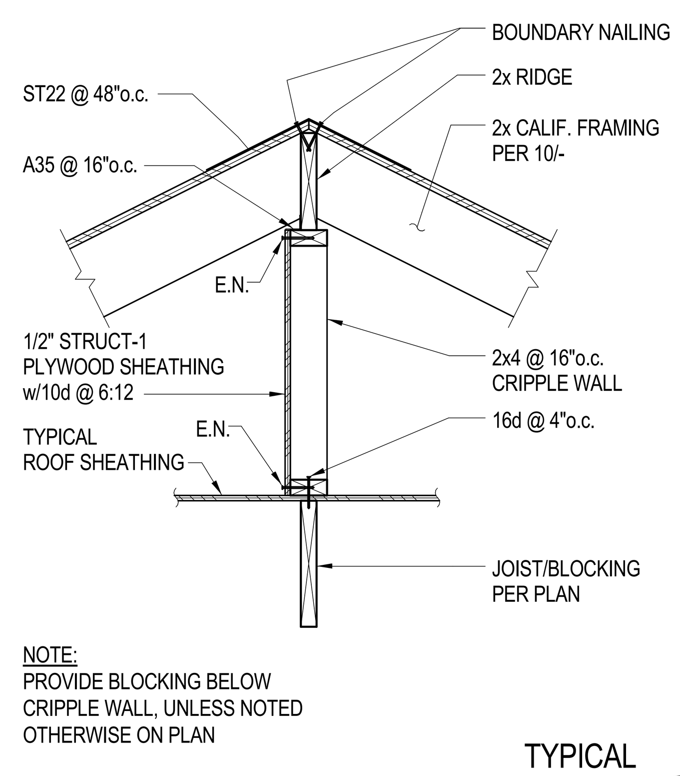
TYPICAL "CALIFORNIA FRAMING" EVE DETAIL 9
1"=1'- 0"



TYPICAL ELEVATOR SUPPORT FRAME DETAIL 6
TWG507

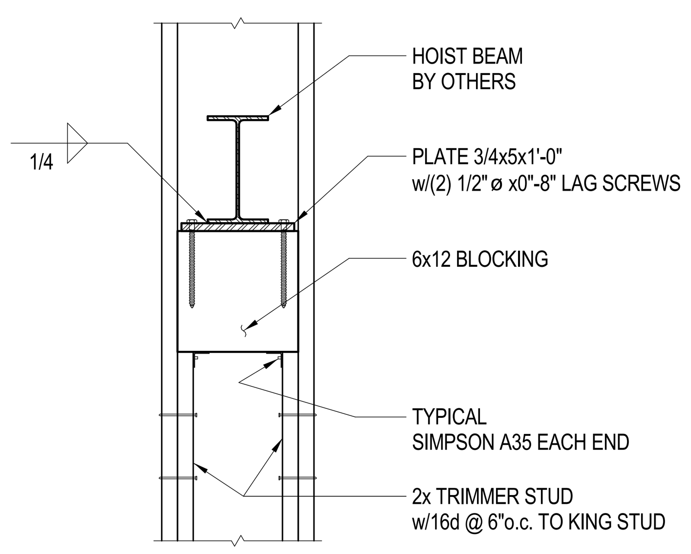


TYPICAL ELEVATOR SHAFT FRAMING AT GUIDE RAIL DETAIL 3
TWG504

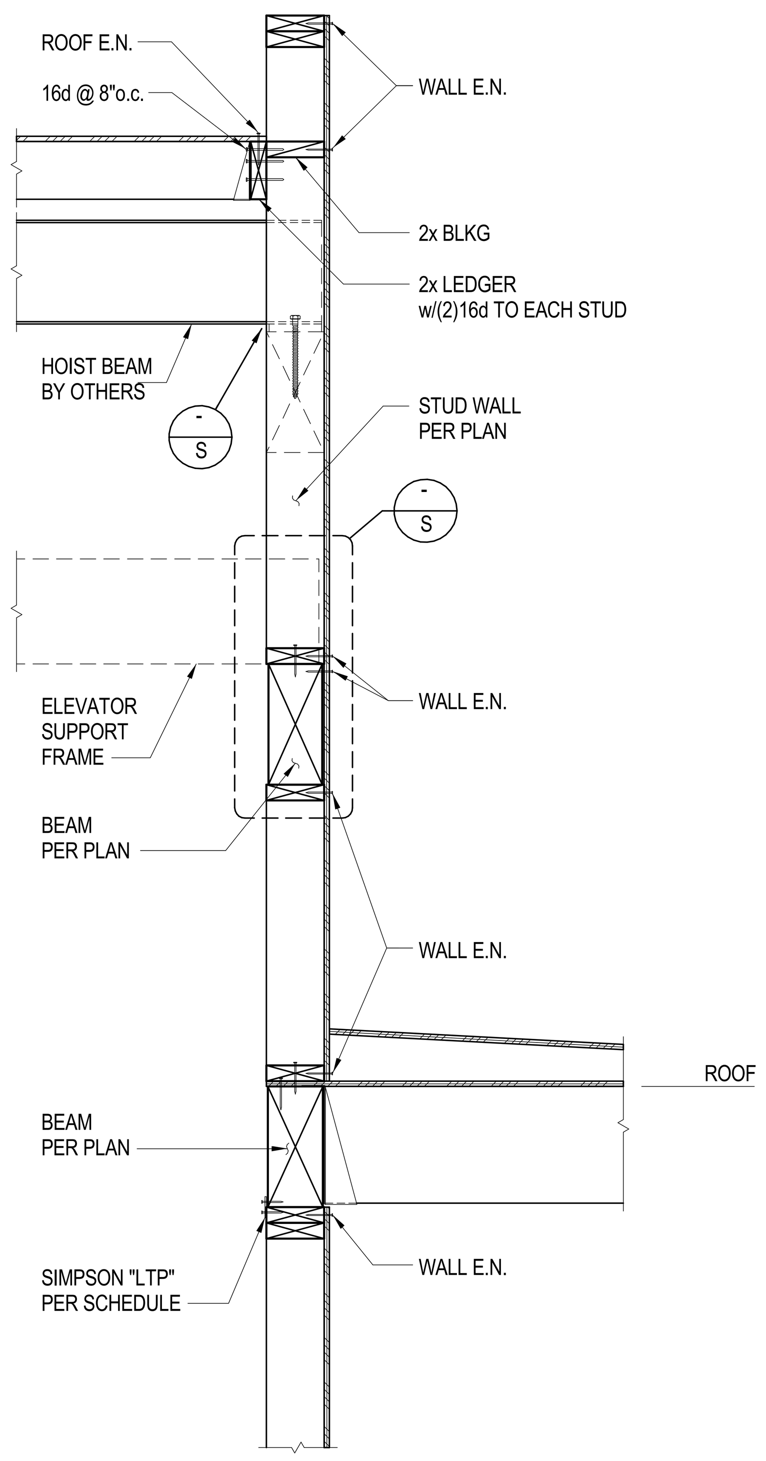


NOTE:
PROVIDE BLOCKING BELOW CRIPPLE WALL, UNLESS NOTED OTHERWISE ON PLAN

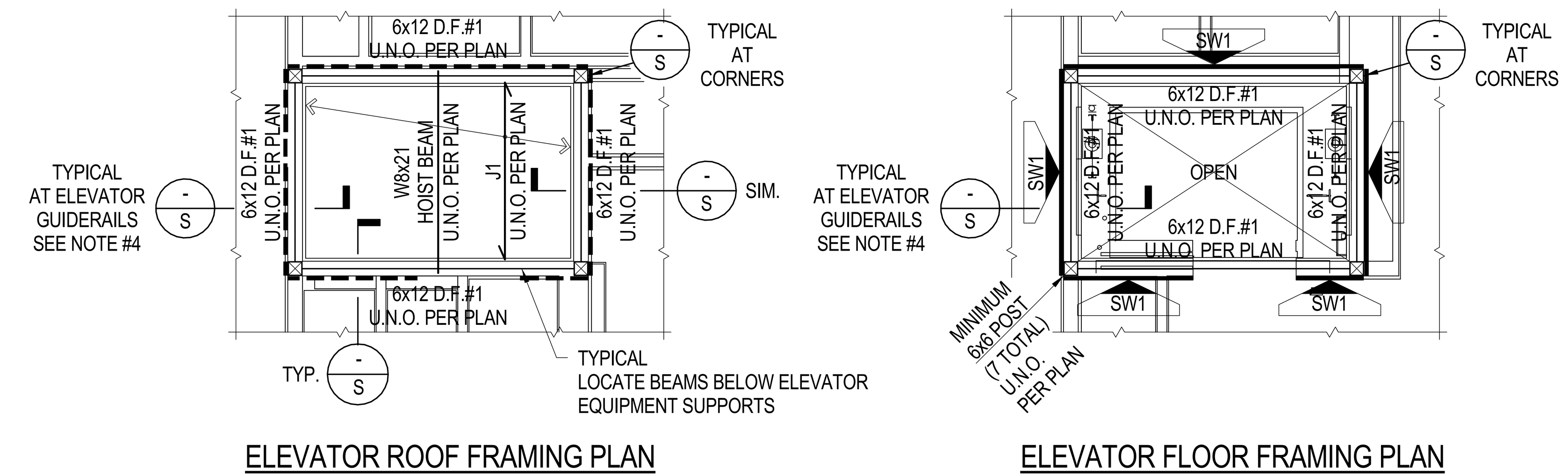
TYPICAL "CALIFORNIA FRAMING" RIDGE DETAIL 12
1"=1'-0"



TYPICAL HOIST BEAM SUPPORT DETAIL 8
TWG508



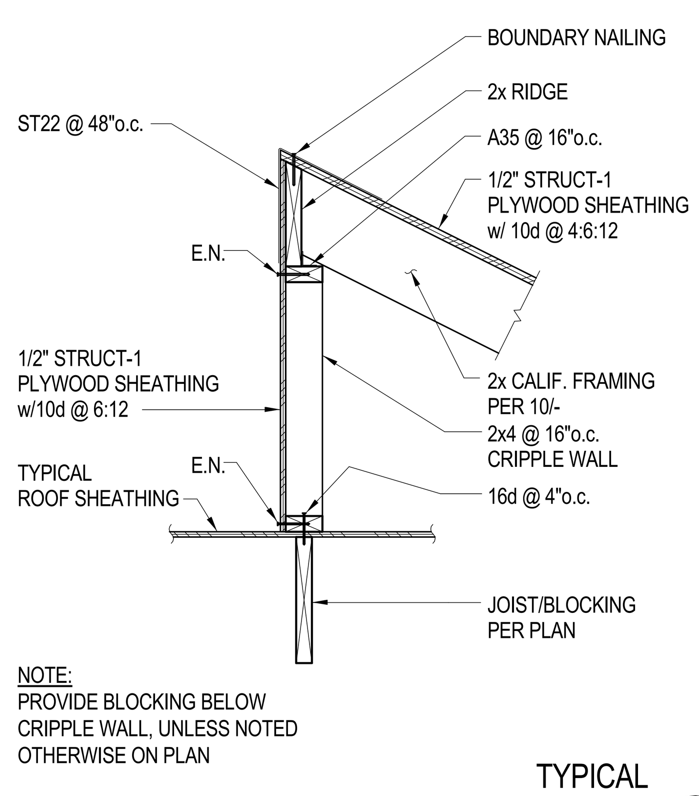
TYPICAL ELEVATOR SHAFT AT ROOF 5
TWG506



NOTES:

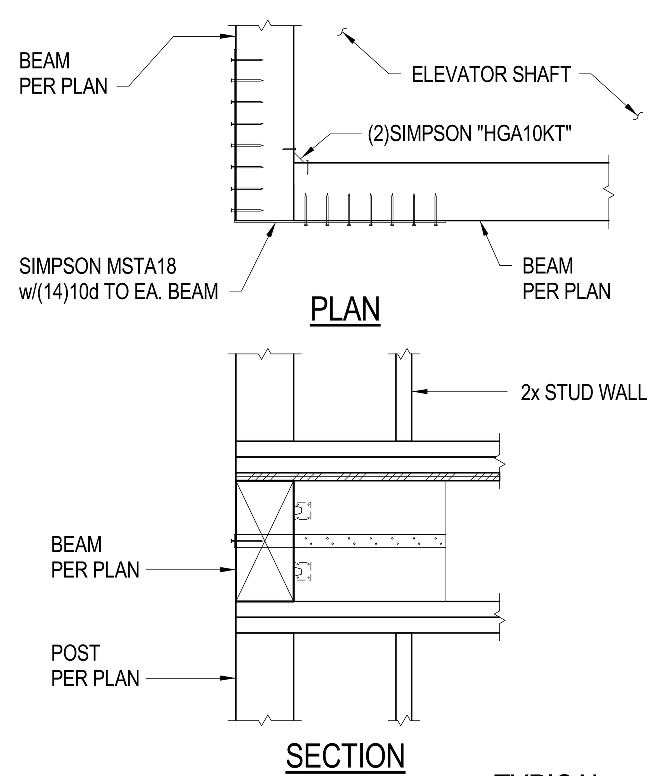
1. TYPE SW1 TO BE USED UNLESS NOTED OTHERWISE ON PLAN, SEE TYPICAL SHEAR WALL SCHEDULE _ /S___.
2. FOR STUDS AT ELEVATOR WALLS USE 2x6 @ 16"o.c. U.N.O.
3. J1 INDICATES JOIST MARK, SEE JOIST SCHEDULE ON SHEET S___.
4. AT LOCATIONS WHERE ELEVATOR SHAFT WALLS ARE ADJACENT TO COMMON AREAS SUCH AS CORRIDOR OR STORAGE ROOMS, DETAIL _ /S___ MAY BE USED AT CONTRACTORS OPTION FOR ELEVATOR GUIDE RAIL SUPPORT IN LIEU OF DETAILS _ /S___ AND _ /S___.

TYPICAL ELEVATOR FRAMING PLAN DETAIL 2
TWG502

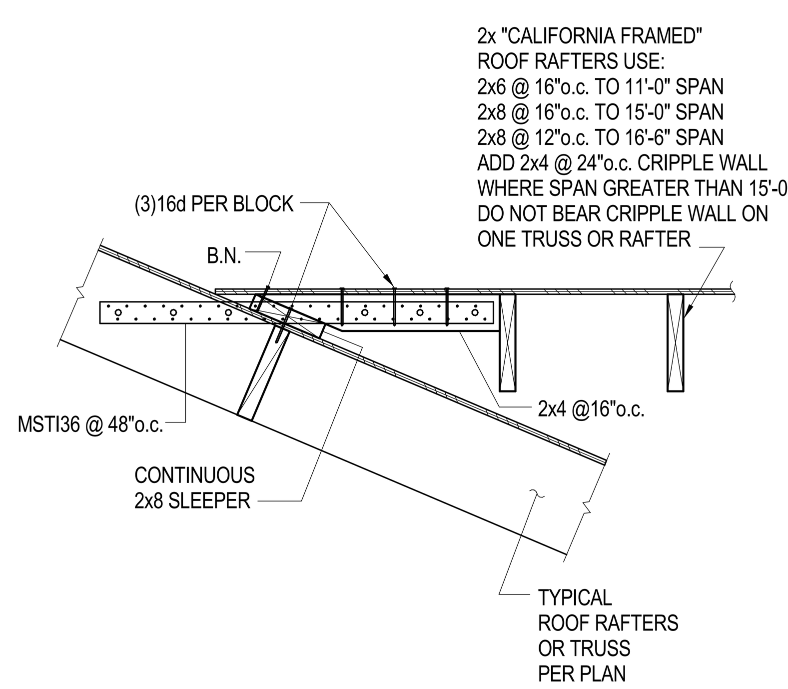


NOTE:
PROVIDE BLOCKING BELOW CRIPPLE WALL, UNLESS NOTED OTHERWISE ON PLAN

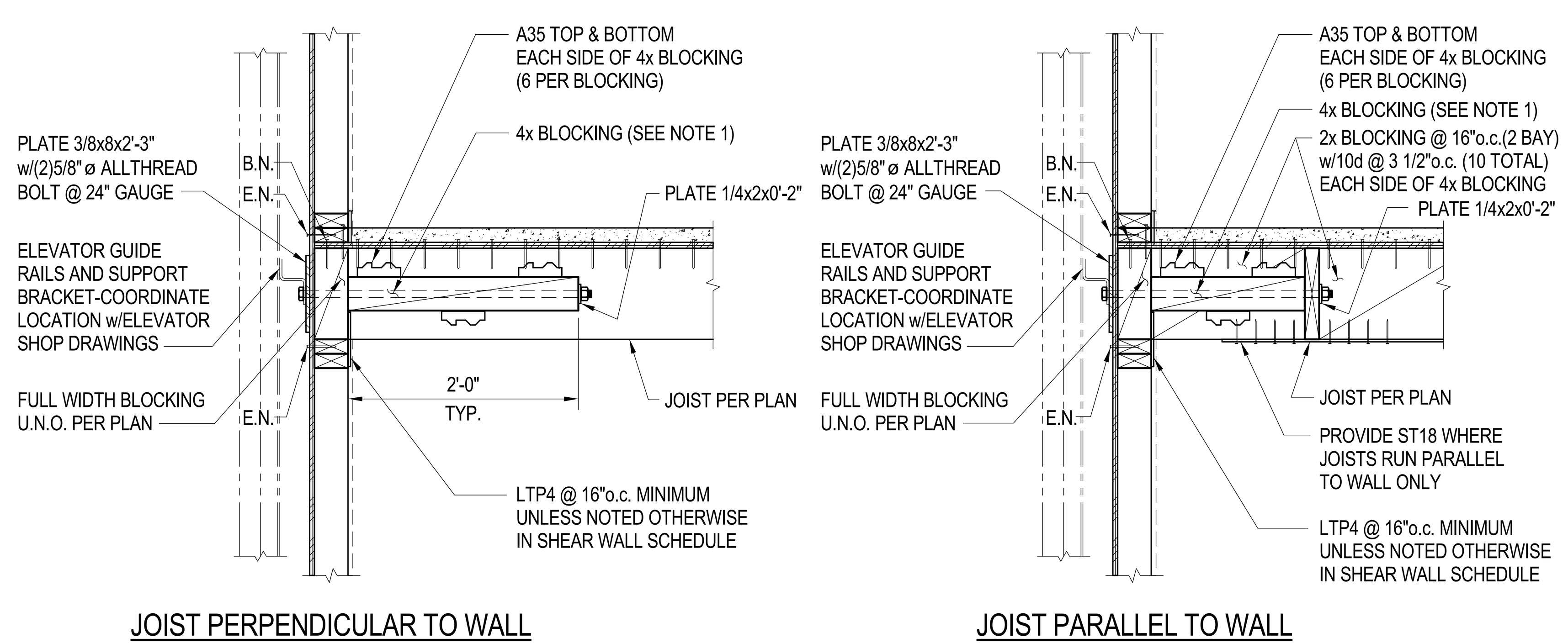
TYPICAL "CALIFORNIA FRAMING" RIDGE DETAIL 11
1"=1'-0"



TYPICAL ELEVATOR SHAFT CORNER FRAMING DETAIL 7
TWG509

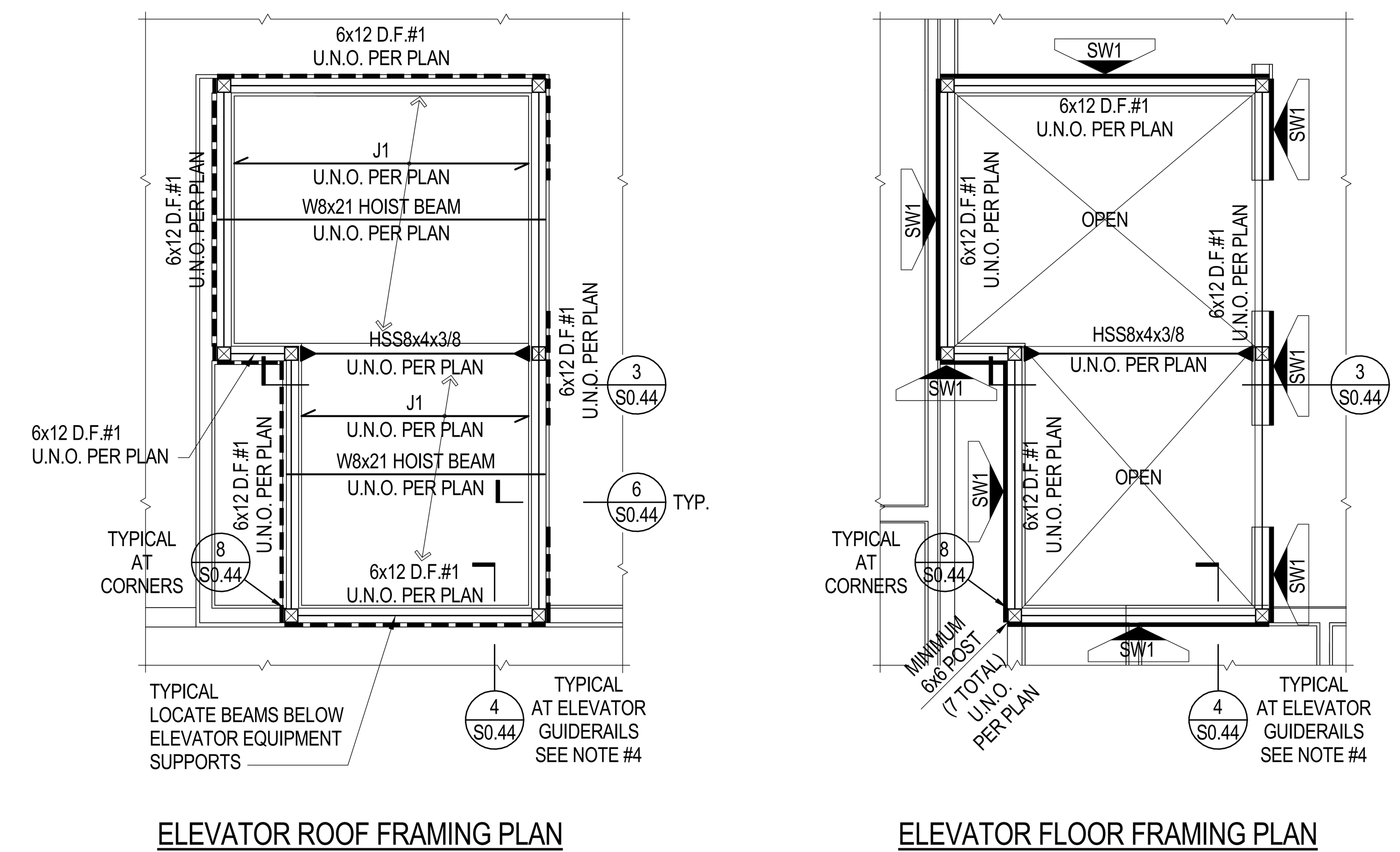


TYPICAL "CALIFORNIA FRAMING" DETAIL 10
1"=1'-0"



NOTE:
1. MINIMUM (2) BLOCKINGS REQUIRED. WHERE GUIDE RAIL OCCURS BETWEEN 2x BLOCKING OR JOIST, PROVIDE ADDITIONAL 4x BLOCKING BEHIND GUIDE RAIL.

TYPICAL ELEVATOR RAIL BRACKET SUPPORT DETAIL 4
TWG505



NOTES:

1. TYPE SW1 TO BE USED UNLESS NOTED OTHERWISE ON PLAN, SEE TYPICAL SHEAR WALL SCHEDULE 1/S5.11.
2. FOR STUDS AT ELEVATOR WALLS USE 2x6 @ 16"o.c. U.N.O.
3. J1 INDICATES JOIST MARK, SEE JOIST SCHEDULE ON SHEET S___.
4. AT LOCATIONS WHERE ELEVATOR SHAFT WALLS ARE ADJACENT TO COMMON AREAS SUCH AS CORRIDOR OR STORAGE ROOMS, DETAIL 5/S0.44 MAY BE USED AT CONTRACTORS OPTION FOR ELEVATOR GUIDE RAIL SUPPORT IN LIEU OF DETAILS 3/S0.44 AND 8/S0.44.

TYPICAL ELEVATOR FRAMING PLAN DETAIL 1
TWG501

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REVISIONS

NO :	DATE	DESCRIPTION
1	05/18/17	2ND PLAN CHECK SUBMITTAL
	07/14/17	3RD PLAN CHECK SUBMITTAL

TYPICAL WOOD DETAILS

SHEET SCALE :	As indicated
PROJECT MANAGER :	MH
DESIGNER :	JN
DRAWN BY :	FS
REVIEWED BY :	
1st DEPT. SUBMITTAL :	X/X/2016
ISSUED FOR CONST. :	
JOB NUMBER	16-S003
CAD FILE NAME	

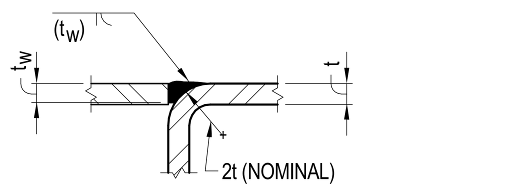
S0.44

2ND BUILDING PLAN CHECK COORDINATION 05.18.2017

MARK	SIZE & NUMBER OF BOLTS ALL BOLTS SHALL BE A325-SC UNLESS NOTED OTHERWISE	SHEAR PLATE SIZE	SHEAR PLATE WELD (EACH SIDE)	REMARKS
1	-	-	-	
2				
3				
4				
5				
6				
7				
8				
9				
10				

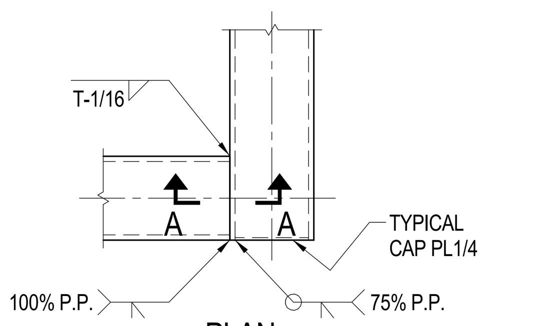
NOTE:
ALL BOLTS SHALL BE PLACED IN A SINGLE ROW UNLESS NOTED OTHERWISE. IN MULTIPLE ROWS, (SEE REMARKS) MAXIMUM NUMBER OF BOLTS SHALL BE PLACED IN THE FIRST ROW NEAREST SUPPORT WITH THE REMAINDER EQUALLY SPACED IF POSSIBLE IN THE 2ND ROW.

TYPICAL
SPECIAL HIGH STRENGTH BOLT SCHEDULE 8
TSF101



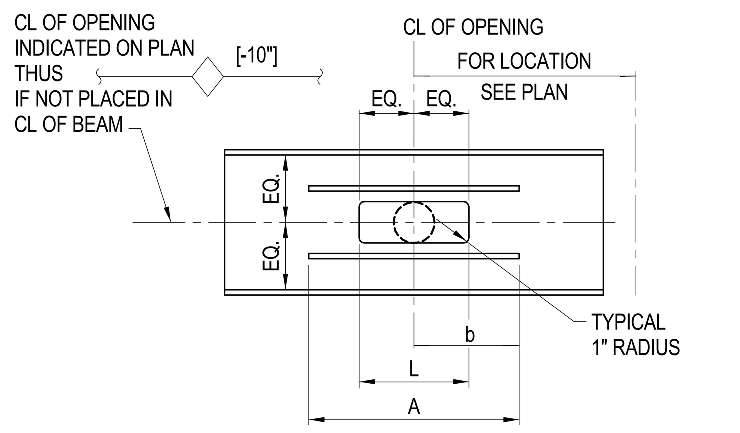
NOTE:
ALL WELDS SHALL BE FLARE-BEVEL AND (t_W) SHALL BE 1/16" LESS THAN THE THINNEST PART JOINED.

SECTION A-A

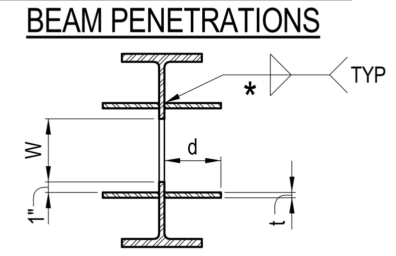


PLAN

TYPICAL
HSS TO HSS CONNECTION DETAIL 6
TSG602



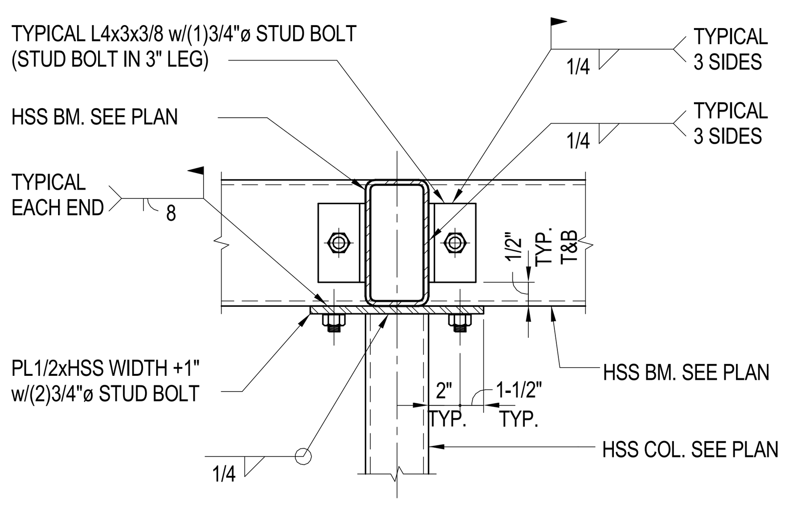
RECTANGULAR OR ROUND
BEAM PENETRATIONS



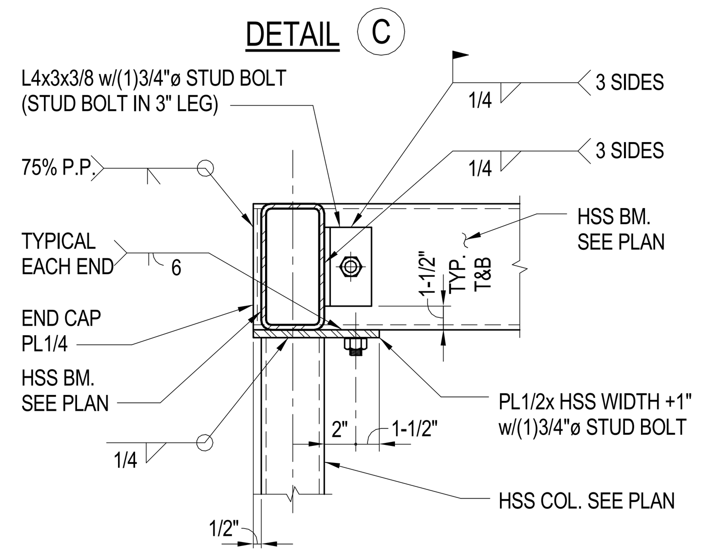
NOTE:
1. ALL PLATES SHALL BE SAME GRADE OF STEEL AS BEAM.

MARK	PENETRATION SIZE OR DIAMETER L X W	PLATE SIZE t	PLATE SIZE d	PLATE SIZE A	PLATE SIZE b	WELD *
A						
B						
C						
D						
E						
F						
G						
H						
J						
K						
L						
M						
N						

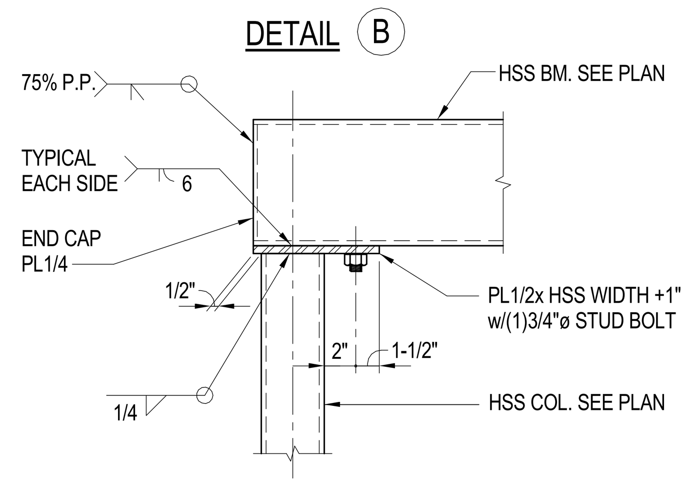
TYPICAL STEEL BEAM PENETRATION SCHEDULE 5
TSG108



DETAIL C

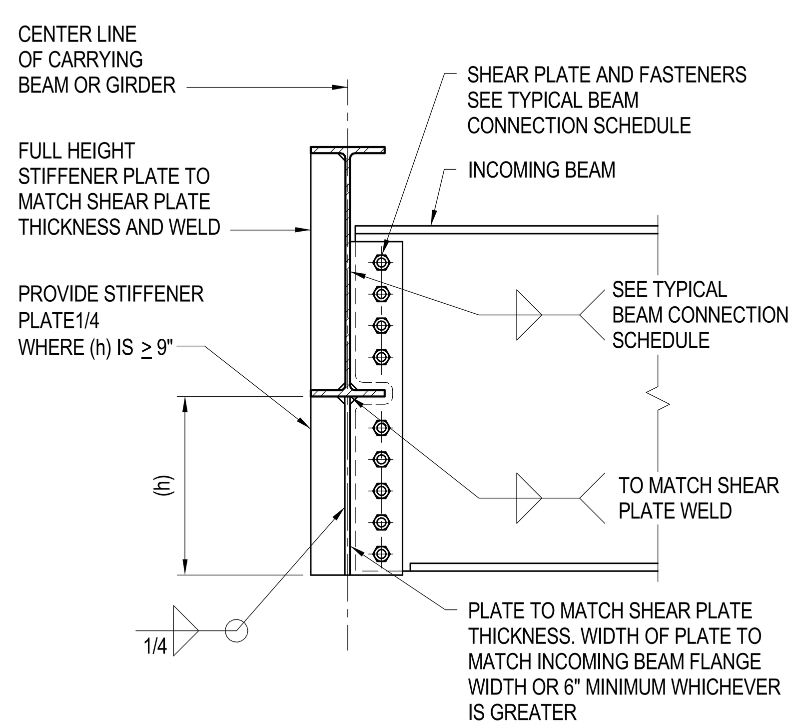


DETAIL B

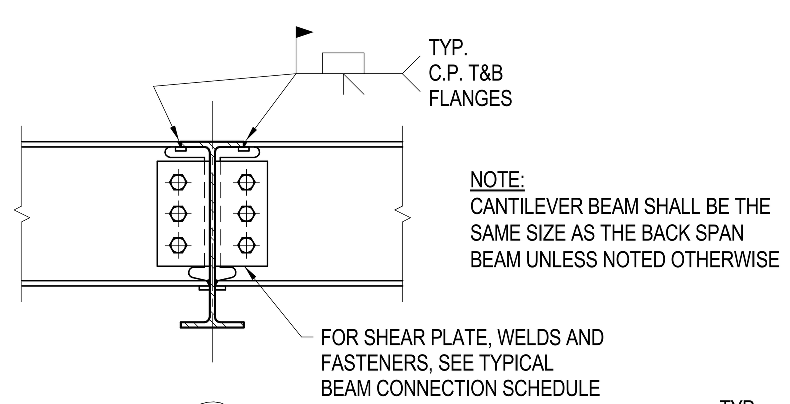


DETAIL A

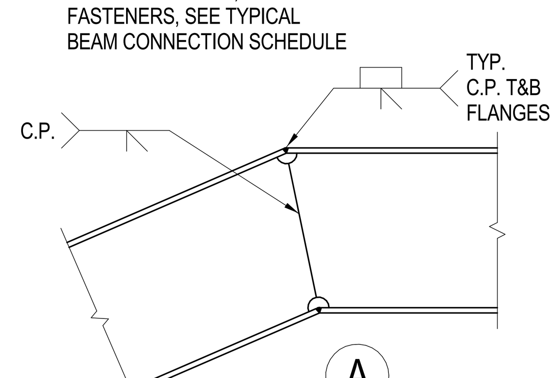
TYPICAL
HSS BEAM TO COLUMN CONNECTION DETAIL 7
TSC302



TYPICAL
OFFSET BEAM CONNECTION DETAIL 4
TSG111

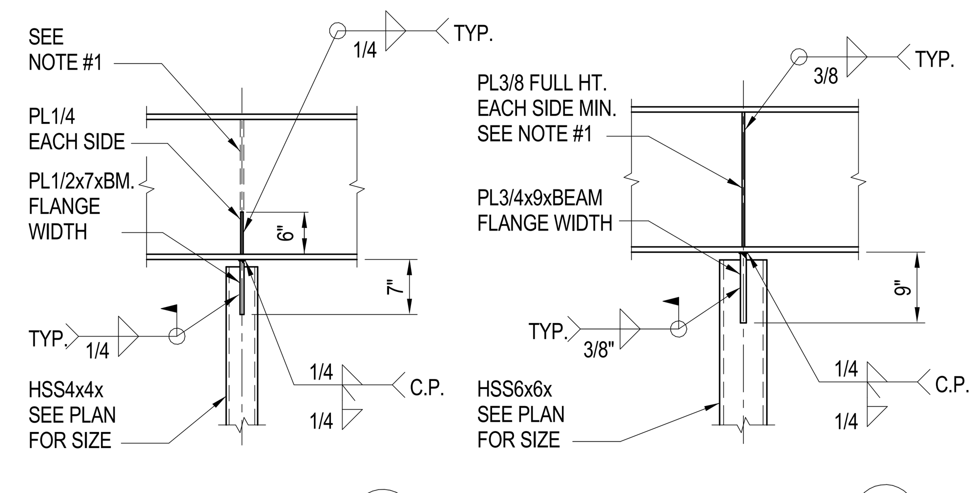


B



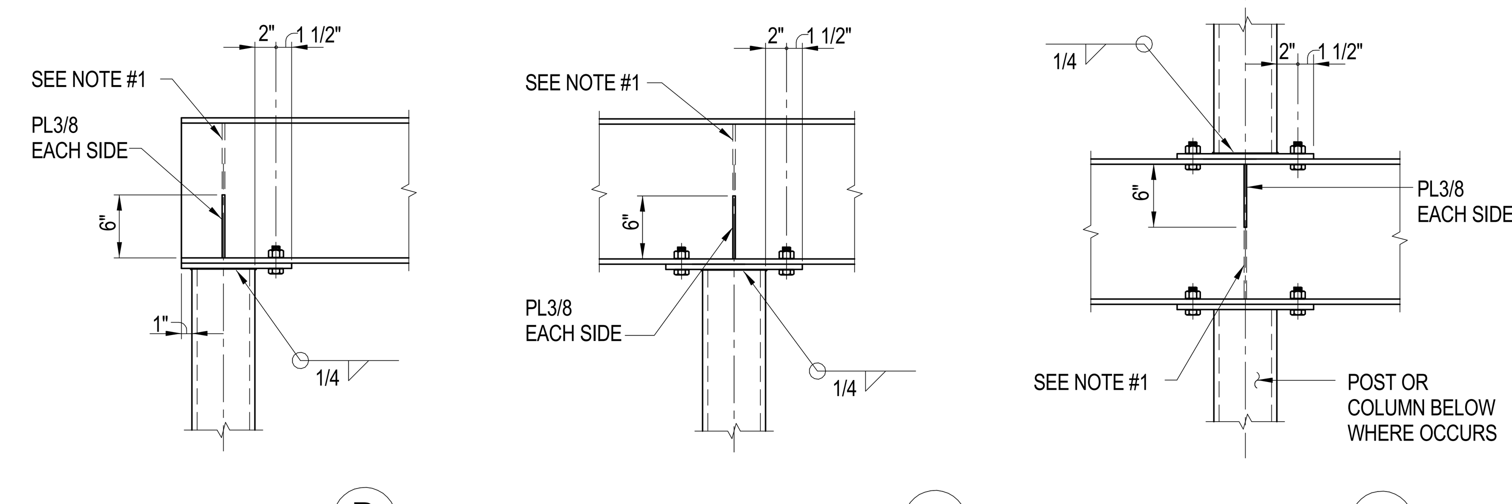
A

TYPICAL
MOMENT CONNECTION BEAM TO BEAM 3
TSG103



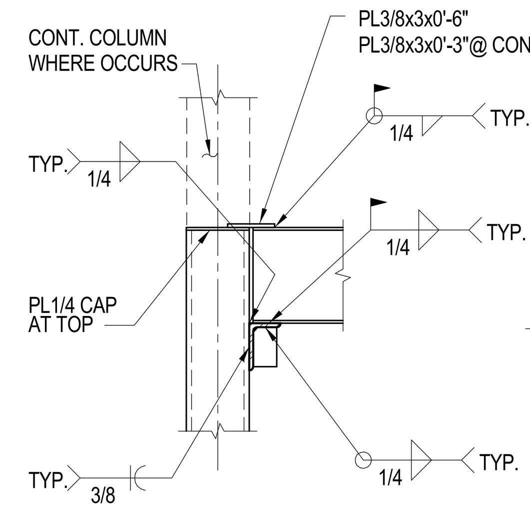
HSS4x4x HANGER F
HSS6x6x HANGER E

NOTES:
1. WHERE PERPENDICULAR BEAM OCCURS ABOVE HANGER CONNECTION PROVIDE FULL HEIGHT STIFFENER EACH SIDE AND USE PLATES AND WELDS PER TYPICAL BEAM CONNECTION SCHEDULE.

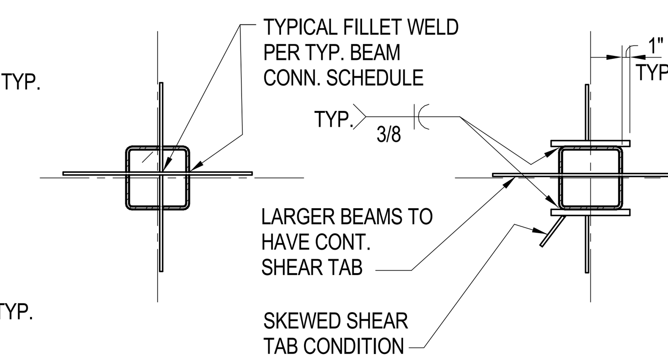


END BEARING PLATE D
INTERMEDIATE BEARING PLATE C
BASE BEARING PLATE B

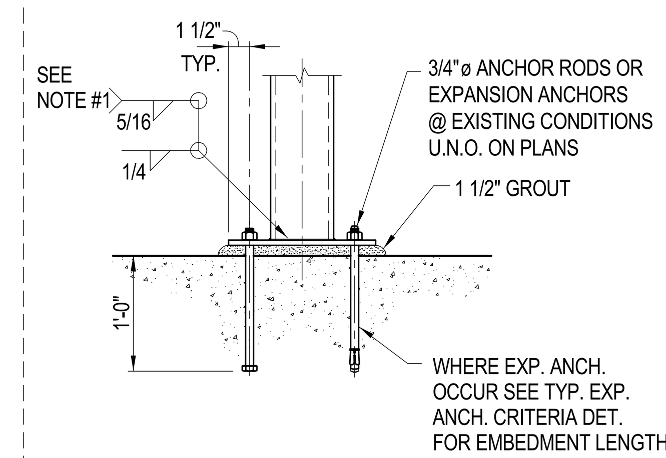
NOTES:
1. WHERE PERPENDICULAR BEAM OCCURS ABOVE OR BELOW POST OR COLUMN CONNECTION PROVIDE FULL HEIGHT STIFFENER EACH SIDE AND USE PLATES AND WELDS PER TYPICAL BEAM CONNECTION SCHEDULE.
2. ALL HSS AND PIPE BEARING PLATES SHALL BE 1/2" THICK UNLESS NOTED OTHERWISE ON PLAN OR SECTION.
3. ALL BEARING PLATES SHALL BE AS WIDE AS SUPPORTING SURFACE AND SHALL BE 1" MINIMUM WIDER ON EACH SIDE OF THE HSS OR PIPE.
5. ALL BOLTS AT BEARING PLATES SHALL BE 3/4"ø A325-N U.N.O.



SEAT CONNECTION AT HSS COLUMN K



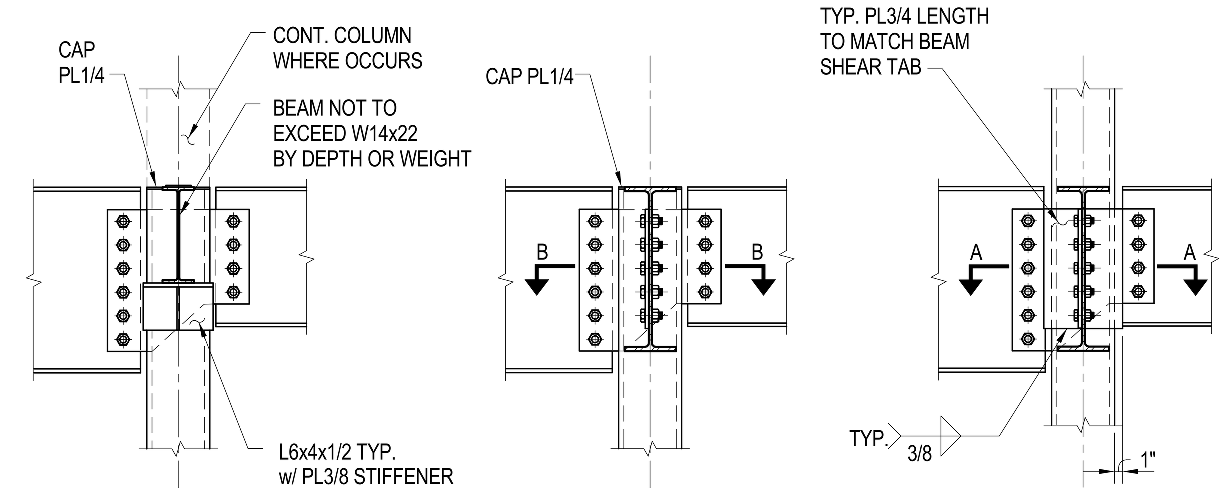
PLAN VIEW B-B
PLAN VIEW A-A



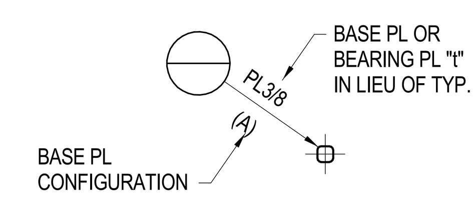
NOTES:
1. PROVIDE WELD WHERE BASE PL THICKNESS EXCEEDS 3/4".
2. FOR ANCHOR ROD HOLES > ROD DIAMETER +5/16", PROVIDE STANDARD PL WASHERS (PL1/4"x3"x3").

BASE PLATE A

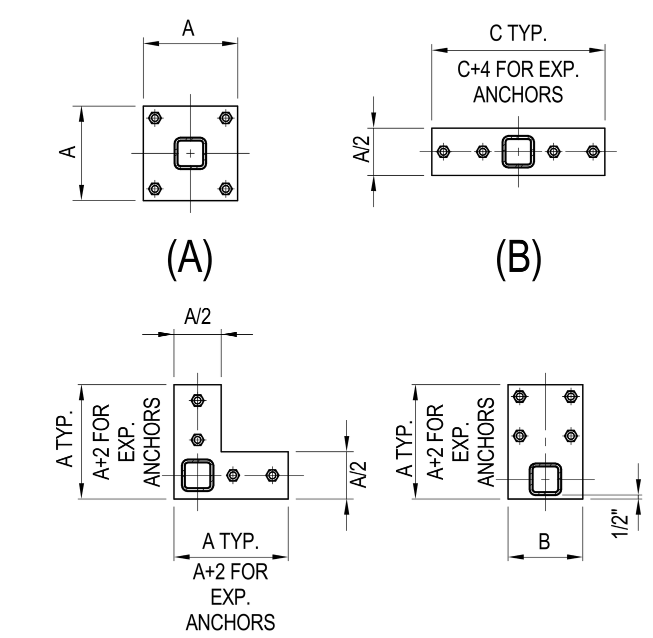
COLUMN POST SIZE	BASE PLATE SIZE IN. A	B	C	"t" (MIN.)
HSS4x,3"ø,3 1/2"ø	12	9 1/2	17	PL1/2
HSS6x,4"ø,5"ø,6"ø	14	11	19	PL5/8
HSS8x	18			PL3/4



SEAT CONNECTION AT HSS COLUMN J
BEAM CONNECTION TO HSS OR PIPE COLUMN H
BEAM CONNECTION TO CONTINUOUS HSS COLUMN G



EXAMPLE

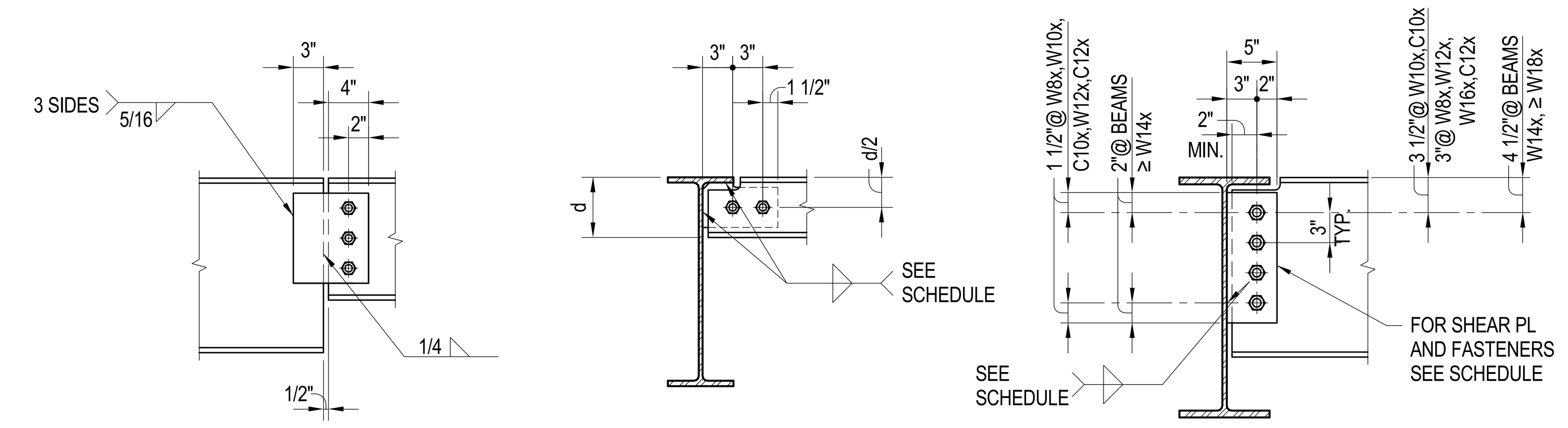


BASE PLATE CONFIGURATIONS

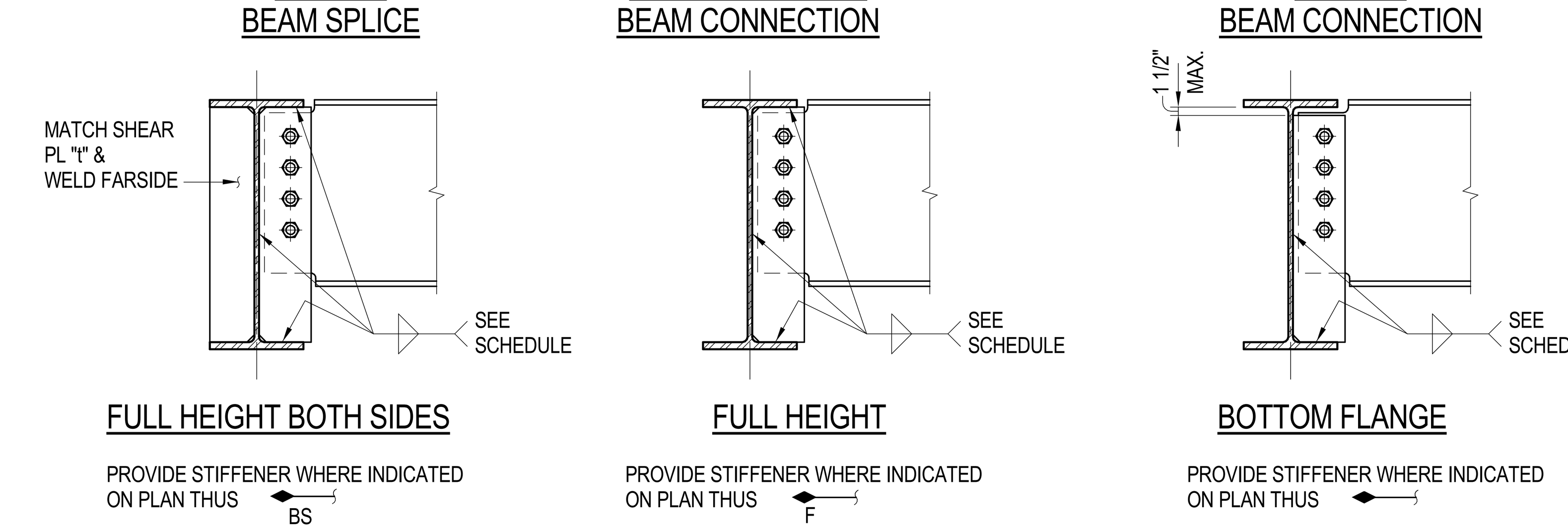
NOTES:
1. SEE PLAN FOR HSS OR PIPE SIZES.
2. FOR PLATE CONFIGURATIONS (B), (C) AND (D), MAXIMUM POST SIZE SHALL BE HSS4x4x OR 5"ø STANDARD PIPE.

NOTES:
1. ALL SHEAR PLATE CONNECTIONS AS SHOWN IN DETAILS SHALL BE ATTACHED BY SLOTTING THE HSS OR PIPE. WHERE SINGLE BEAM CONNECTION OCCURS THE SHEAR PLATE EXTENDS 1" PAST THE BACKSIDE OF THE HSS OR BEAM.
2. FOR BEAM SHEAR PLATE CONNECTIONS, USE PLATES, WELDS AND BOLTS PER TYPICAL BEAM CONNECTION SCHEDULE.

TYPICAL PIPE AND HSS COLUMN AND HANGER DETAILS 2
TSC301



TYPICAL BEAM SPLICE
TYPICAL W6x&C6x BEAM CONNECTION
TYPICAL BEAM CONNECTION



FULL HEIGHT BOTH SIDES
PROVIDE STIFFENER WHERE INDICATED ON PLAN THUS BS

FULL HEIGHT
PROVIDE STIFFENER WHERE INDICATED ON PLAN THUS F

BOTTOM FLANGE
PROVIDE STIFFENER WHERE INDICATED ON PLAN THUS

TYPICAL SHEAR PLATE BEAM STIFFENERS

CONNECTION SCHEDULE					
BEAM SIZE	A325-N	SHEAR PLATE "t"	WELD BOTH SIDES	ASD AVAILABLE STRENGTH	LFRD AVAILABLE STRENGTH
W6x, C6x	(2)3/4"ø	3/8	5/16	4.9k	7.4k
W8x, W10x C8x, C10x	(2)3/4"ø	3/8	5/16	8.8k	13.1k
W12x, W14x C12x	(3)7/8"ø	3/8	5/16	23.9k	35.8k
W16x, W18x	(4)7/8"ø	3/8	5/16	45.5k	68.3k
W21x	(5)7/8"ø	3/8	5/16	63.2k	94.8k
W24x	(6)7/8"ø	3/8	5/16	80.7k	121.0k
W27x	(7)7/8"ø	1/2	5/16	98.2k	147.3k
W30x	(8)7/8"ø	1/2	5/16	115.3k	173.0k
W33x	(9)7/8"ø	1/2	5/16	132.4k	198.5k
W36x	(10)1"ø	1/2	5/16	166.7k	250.0k

NOTES:
1. ALL STIFFENERS SHALL EXTEND TO EDGE OF FLANGE MINIMUM. SEE CONNECTION SCHEDULE AND TYPICAL BEAM CONNECTION DETAIL ABOVE FOR REMAINDER OF INFORMATION.
2. 7/8"ø BOLTS MAY BE USED INSTEAD OF 3/4"ø BOLTS.

TYPICAL BEAM CONNECTION SCHEDULE 1
TS101

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10801 NATIONAL BLVD., STE 510 LOS ANGELES, CA. 90064

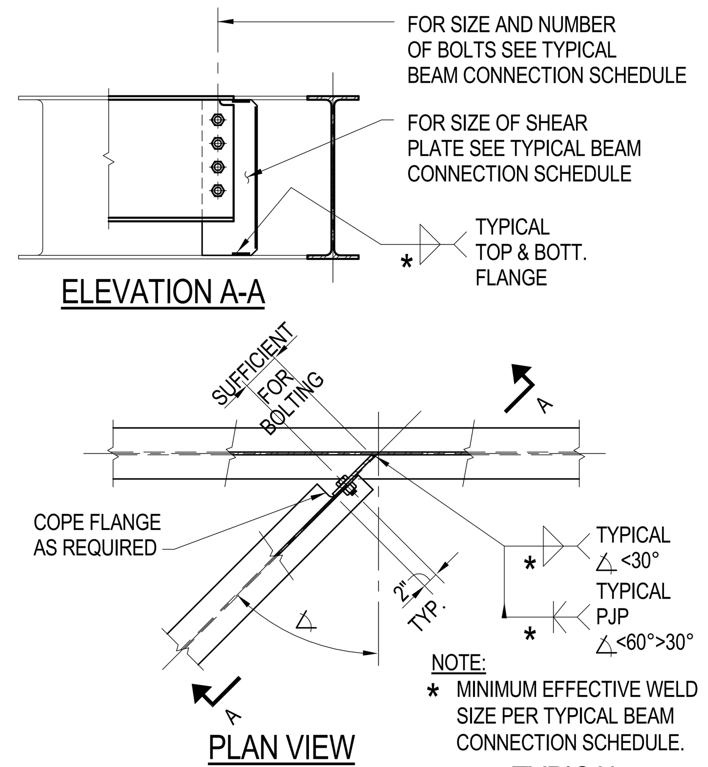
REVISIONS

NO :	DATE	DESCRIPTION
	07/14/17	3RD PLAN CHECK SUBMITTAL

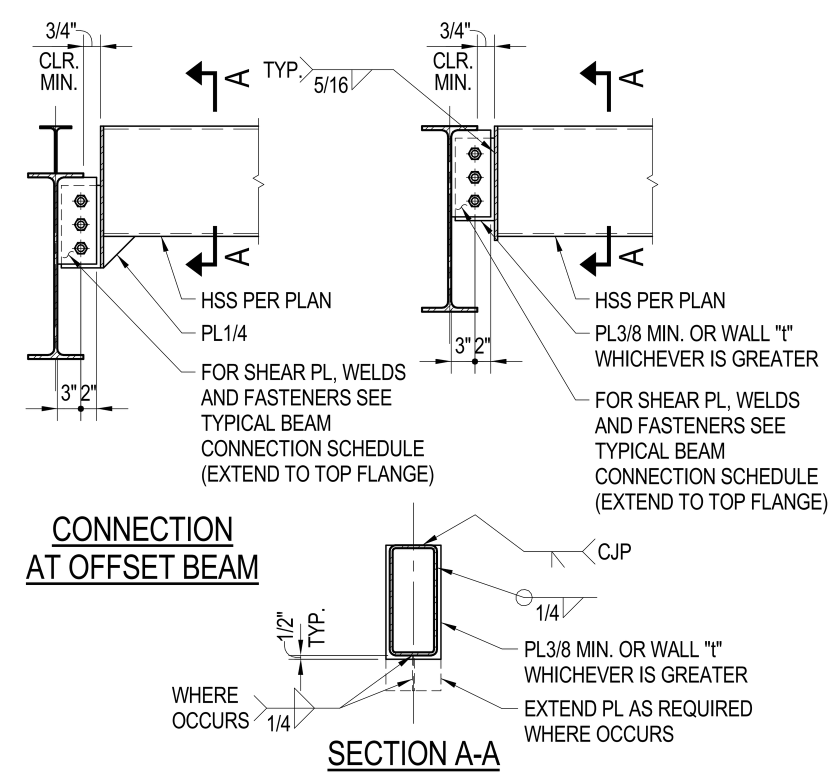
TYPICAL STEEL DETAILS

SHEET SCALE :	As indicated
PROJECT MANAGER :	MH
DESIGNER :	JN
DRAWN BY :	FS
REVIEWED BY :	
1st DEPT. SUBMITTAL :	X/X/2016
ISSUED FOR CONST. :	
JOB NUMBER	16-S003
CAD FILE NAME	
	S0.51

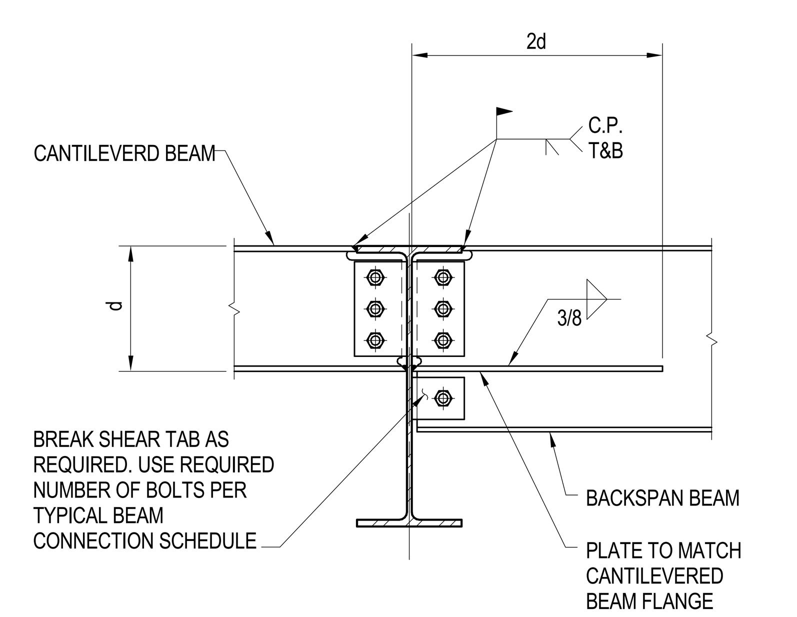
2ND BUILDING PLAN CHECK COORDINATION 05.18.2017



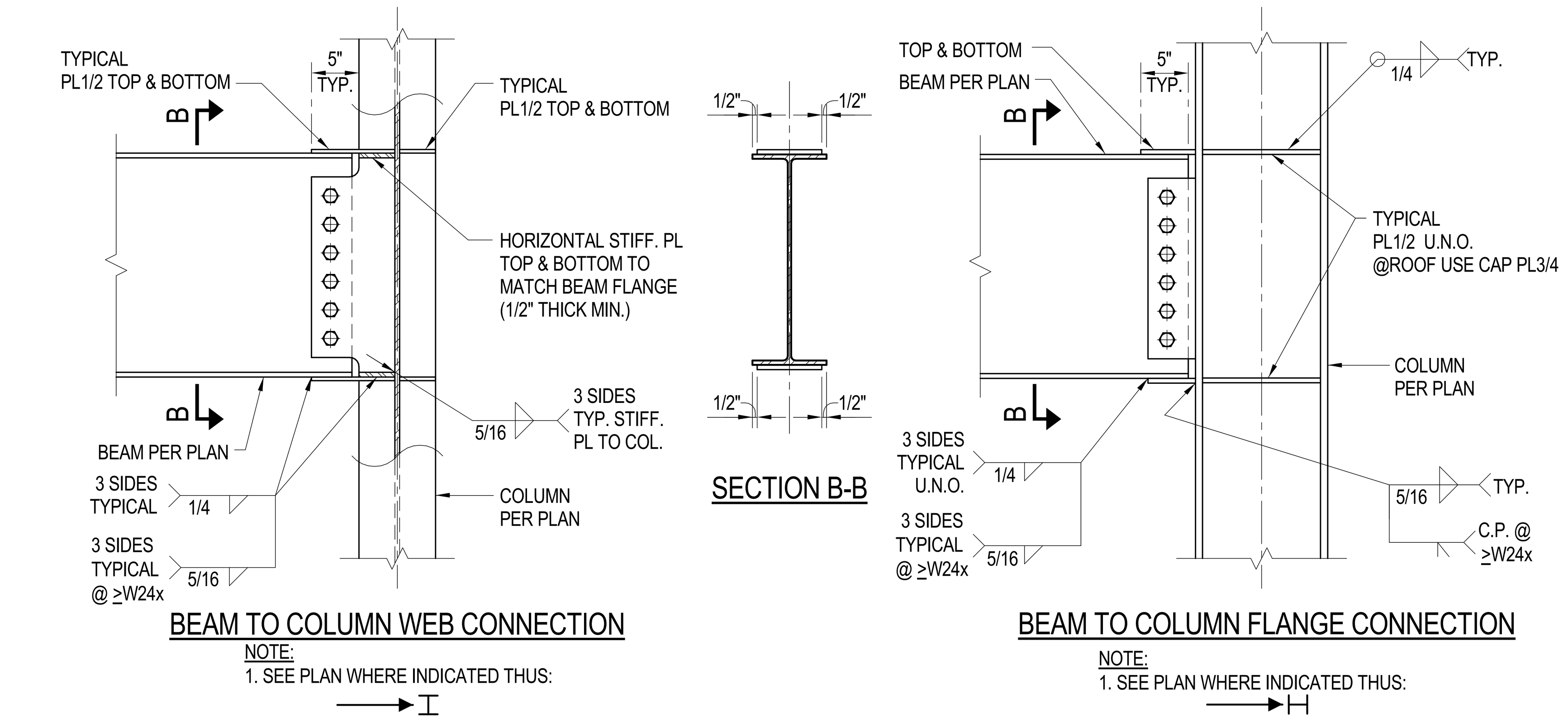
TYPICAL
SKEWED BEAM CONNECTION DETAIL 5
TSG109



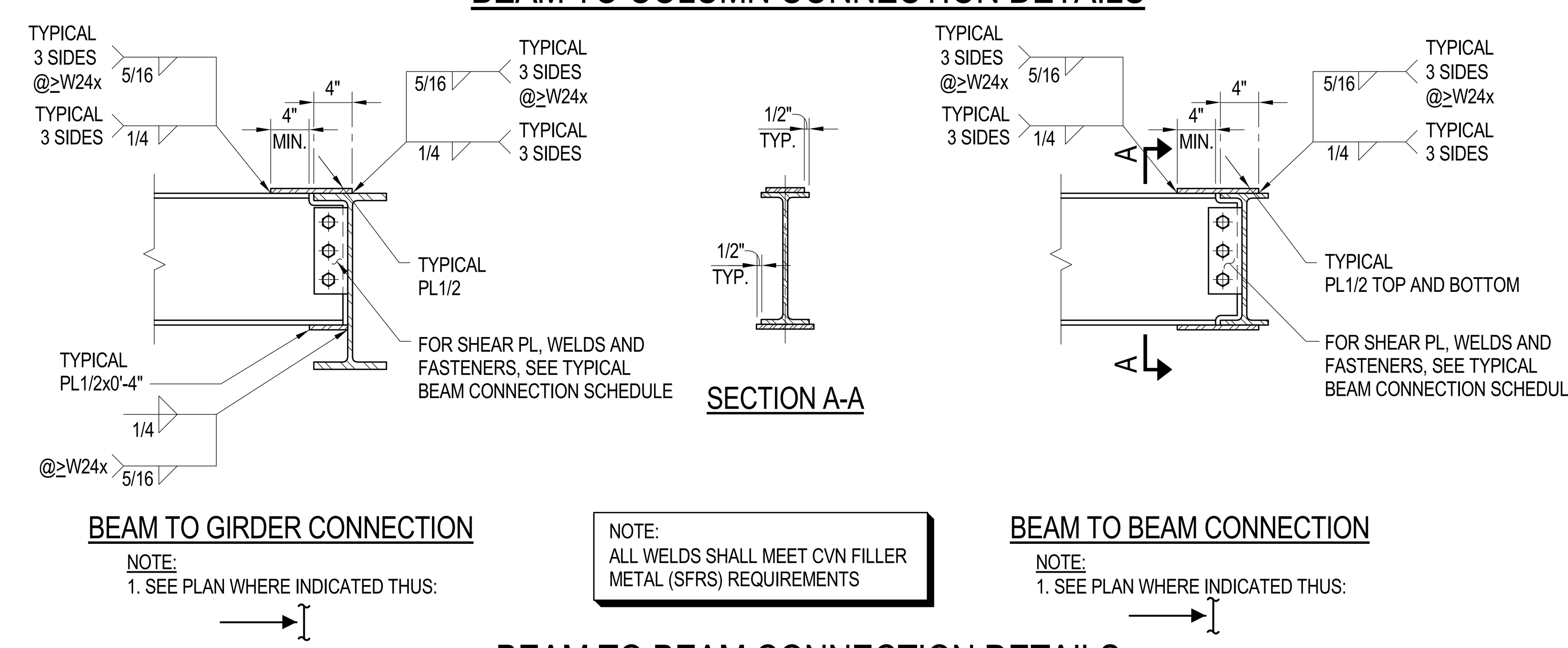
TYPICAL
HSS TO BEAM CONNECTION DETAIL 4
TSG601



TYPICAL MOMENT
CONNECTION WITH OFFSET BEAM DEPTHS 3
TSG115

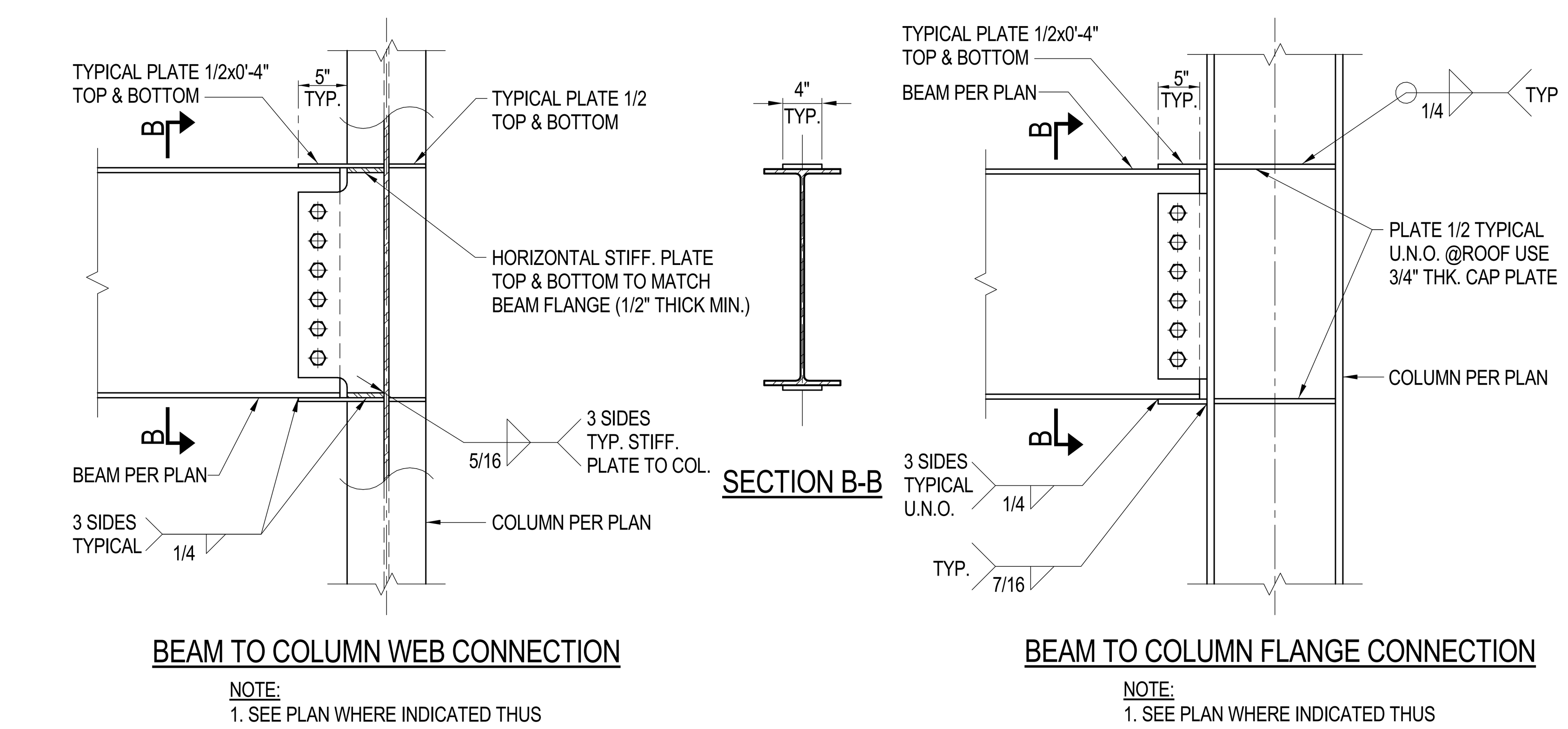


BEAM TO COLUMN CONNECTION DETAILS

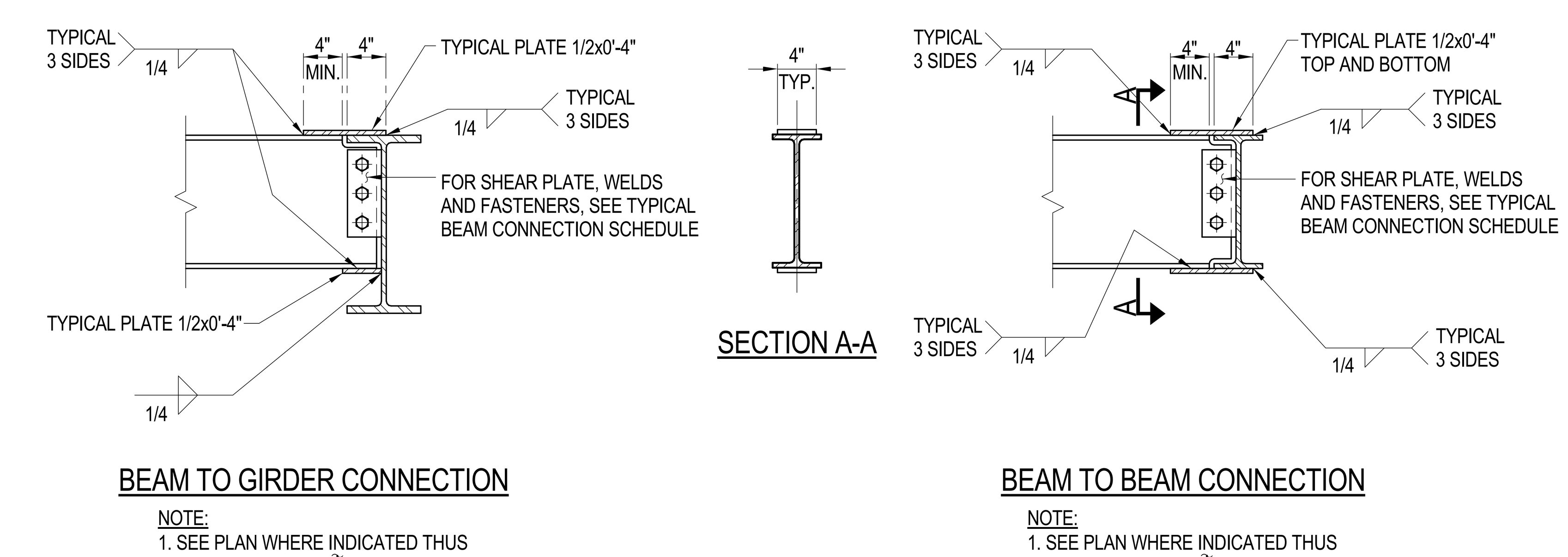


BEAM TO BEAM CONNECTION DETAILS

TYPICAL DRAG BEAM FLANGE CONNECTION DETAILS (SLRS) 2
TSG112



BEAM TO COLUMN CONNECTION DETAILS



BEAM TO BEAM CONNECTION DETAILS

TYPICAL BRACED BEAM FLANGE CONNECTION DETAILS 1
TSG107

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REVISIONS

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TYPICAL STEEL DETAILS

SHEET SCALE :	As indicated
PROJECT MANAGER :	MH
DESIGNER :	JN
DRAWN BY :	FS
REVIEWED BY :	
1st DEPT. SUBMITTAL :	X/X/2016
ISSUED FOR CONST. :	
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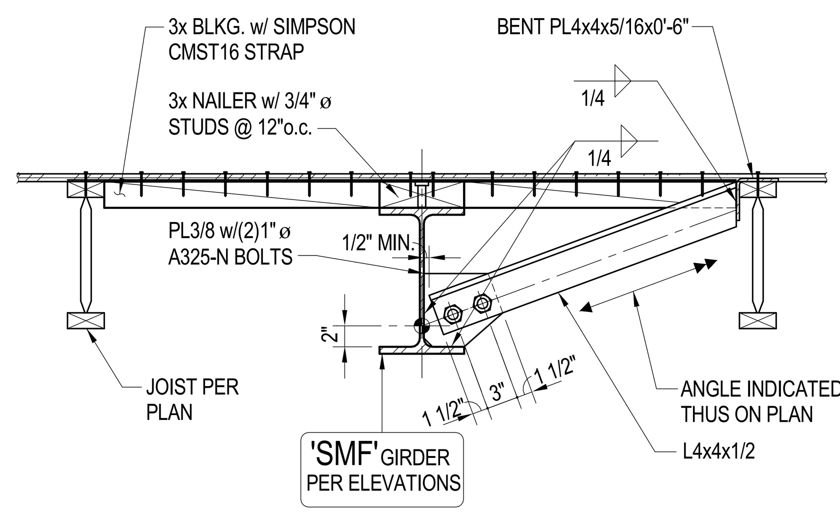
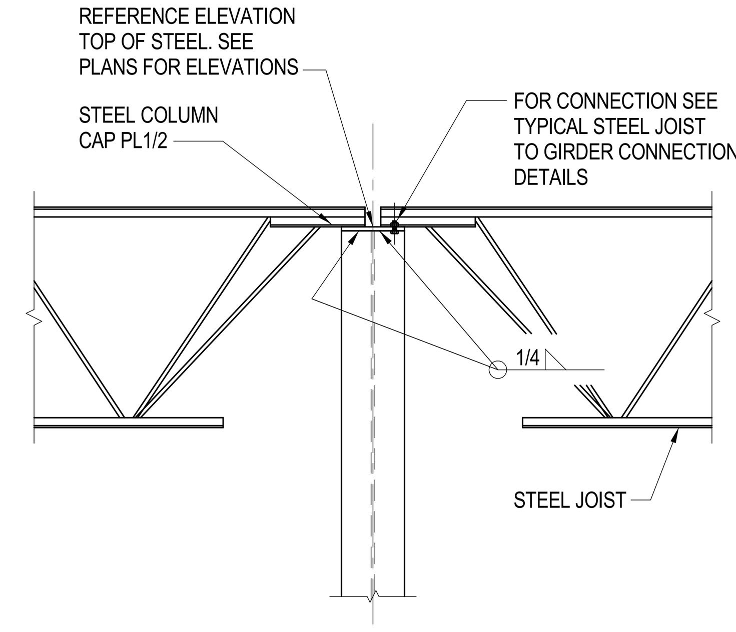
S0.52

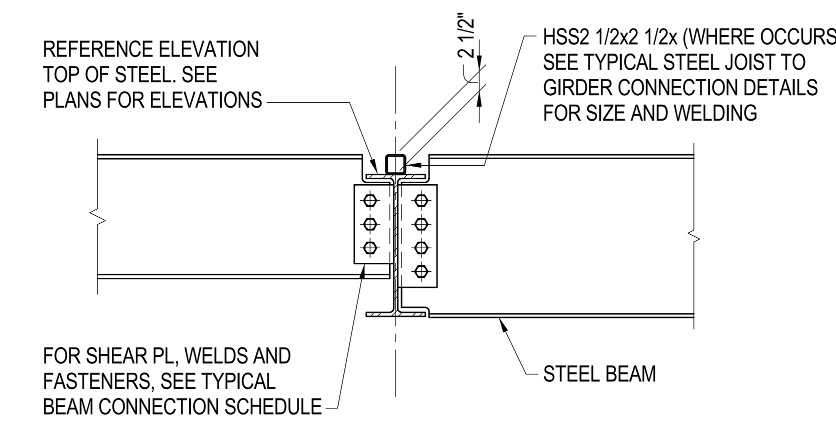
2ND BUILDING PLAN CHECK COORDINATION 05.18.2017



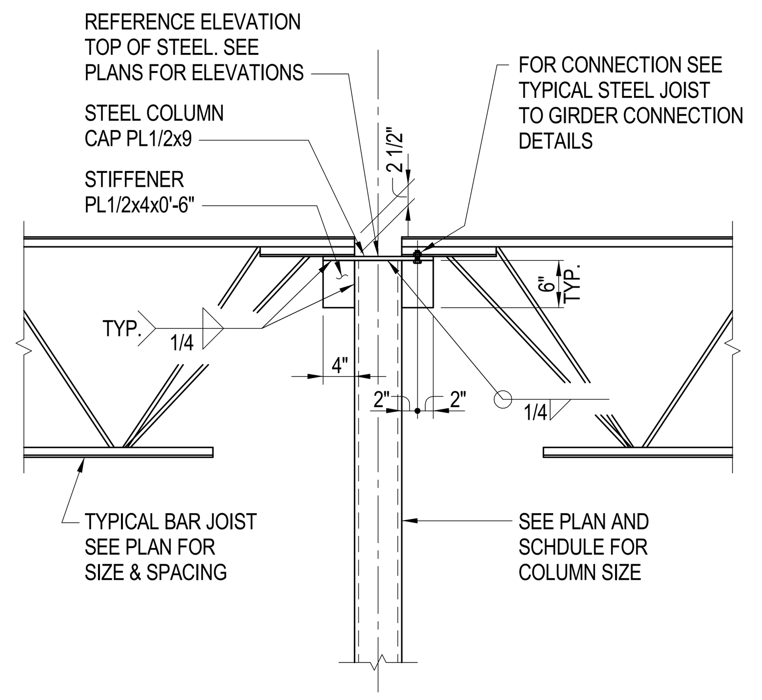
TYPICAL 'SMF' BEAM BRACE DETAIL 10
1"=1'-0"



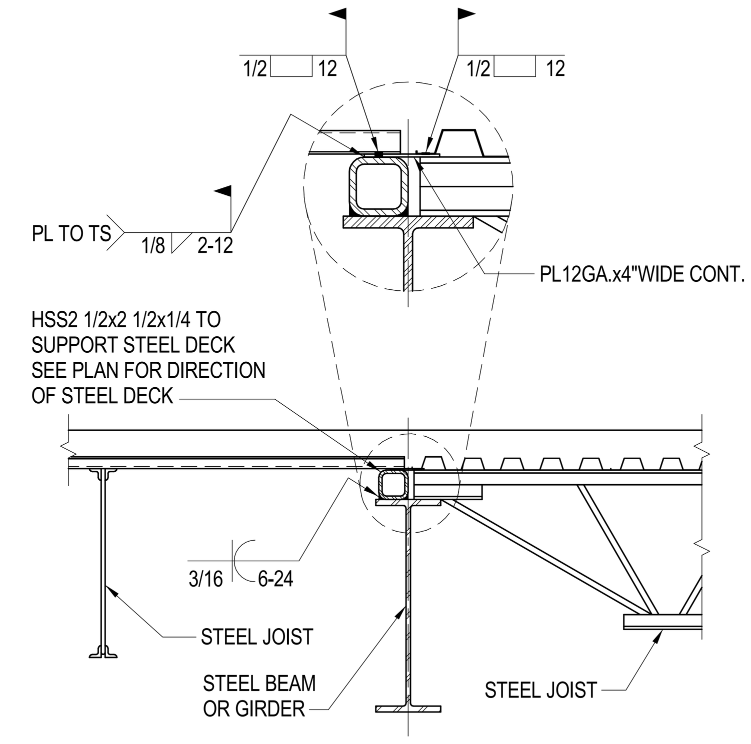
TYPICAL STEEL JOIST AT TOP OF COLUMN CONNECTION DETAIL 6
TSG406



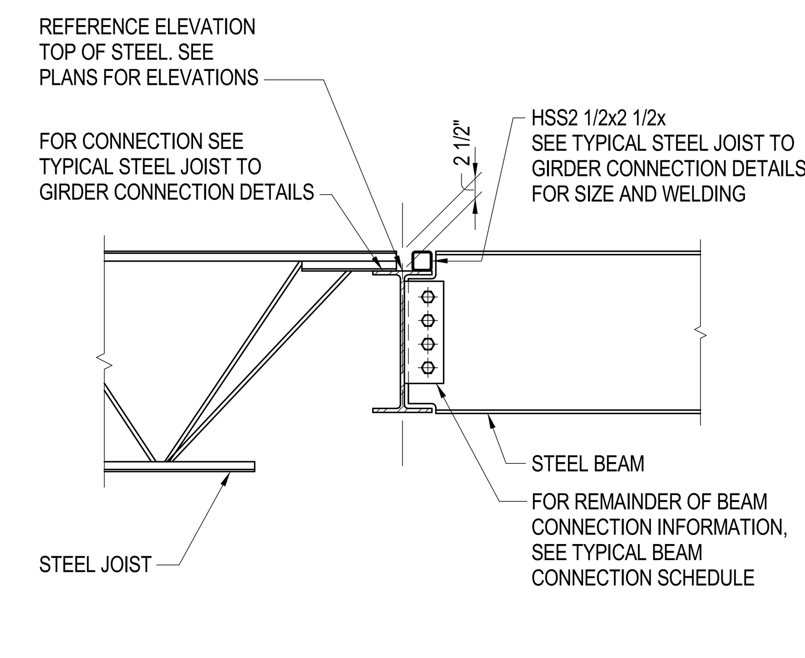
TYPICAL BEAM CONNECTION DETAIL 4
TSG404



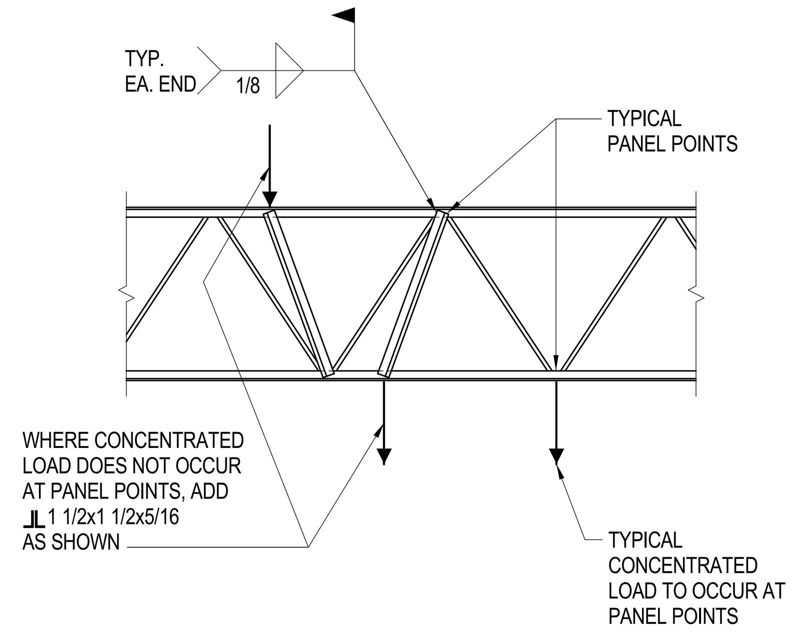
TYPICAL BARJOIST AT TOP OF COLUMN CONNECTION DETAIL 9
TSG409



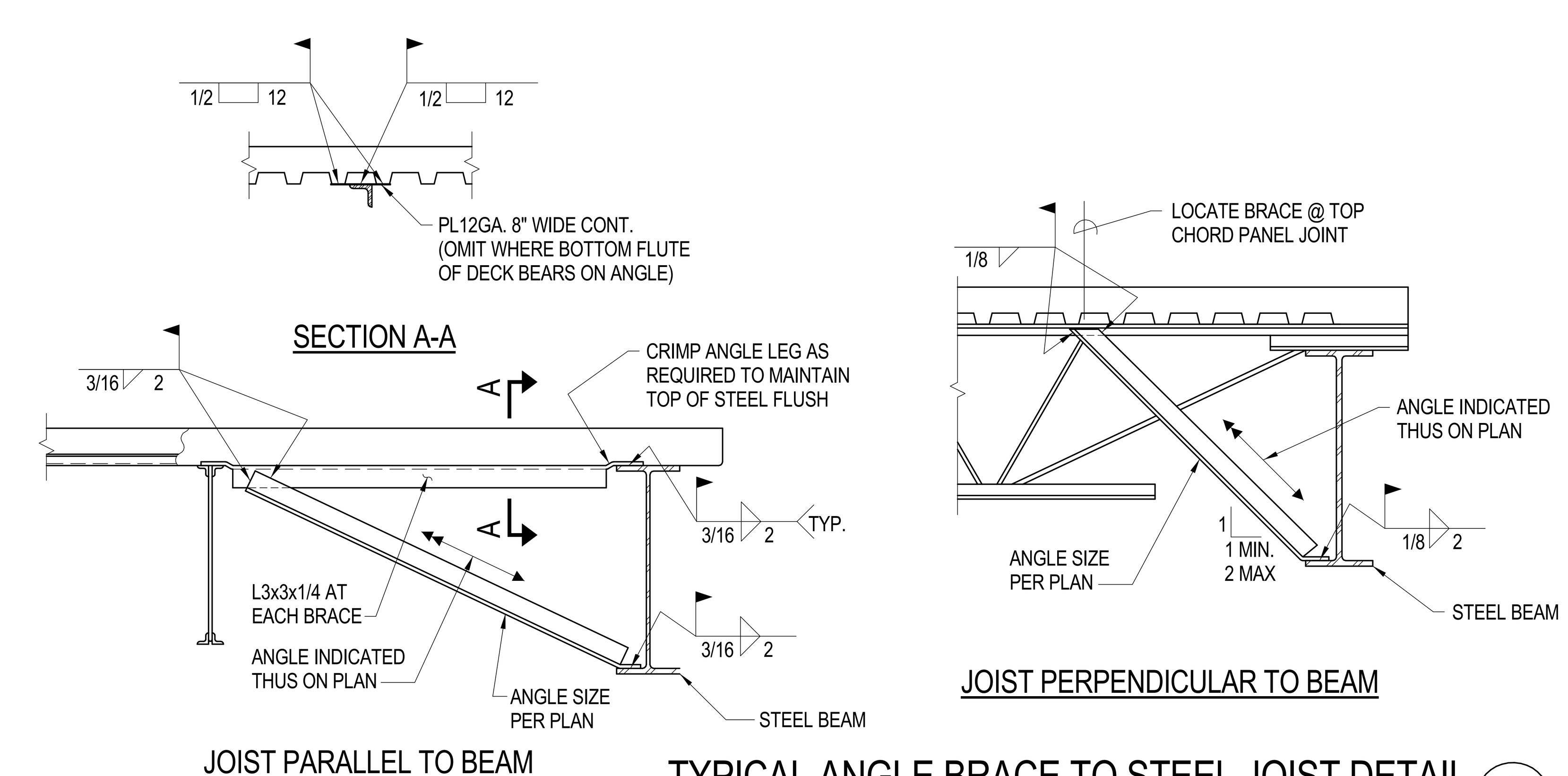
TYPICAL DECK SUPPORT AT INTERIOR STEEL BEAM DETAIL 5
TSG405



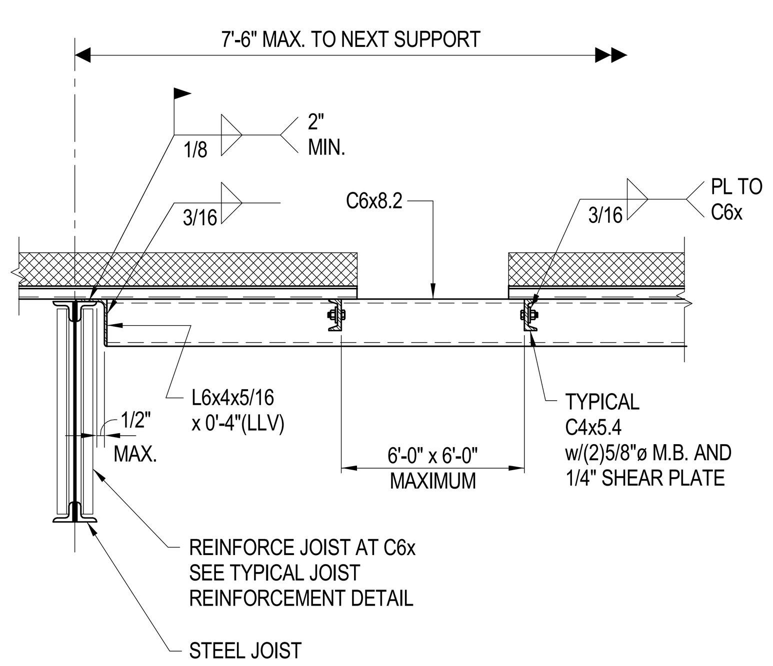
TYPICAL BEAM AND STEEL JOIST CONNECTION DETAIL 3
TSG403



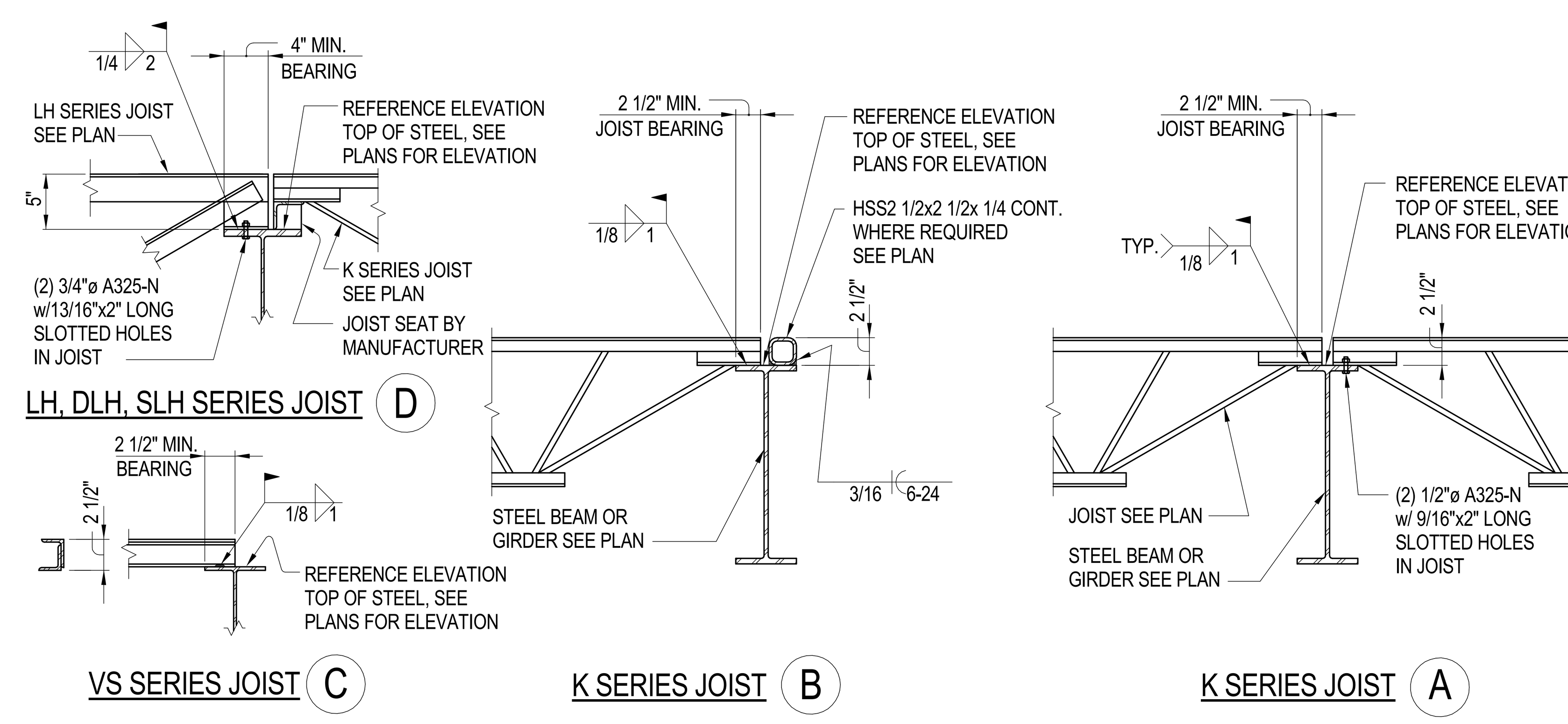
TYPICAL JOIST REINFORCEMENT DETAIL 8
TSG408



TYPICAL ANGLE BRACE TO STEEL JOIST DETAIL 2
TSG402 MOD.



TYPICAL OPENING THRU ROOF DETAIL 7
TSG407



TYPICAL STEEL JOIST TO GIRDER CONNECTION DETAILS 1
TSG401

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REVISIONS

NO :	DATE	DESCRIPTION
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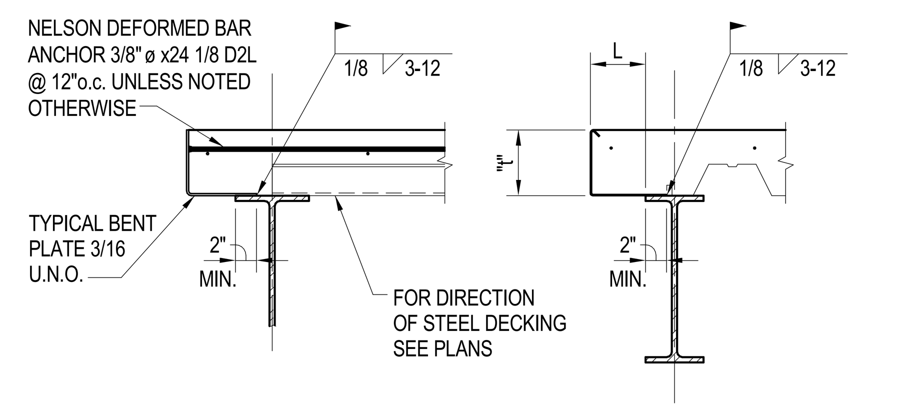
	07/14/17	3RD PLAN CHECK SUBMITTAL

TYPICAL STEEL DETAILS

SHEET SCALE :	As indicated
PROJECT MANAGER :	MH
DESIGNER :	JN
DRAWN BY :	FS
REVIEWED BY :	
1st DEPT. SUBMITTAL :	X/X/2016
ISSUED FOR CONST. :	
JOB NUMBER	16-S003
CAD FILE NAME	

S0.53

2ND BUILDING PLAN CHECK COORDINATION 05.18.2017



POURSTOP AT BUILDING PERIMETER (B)

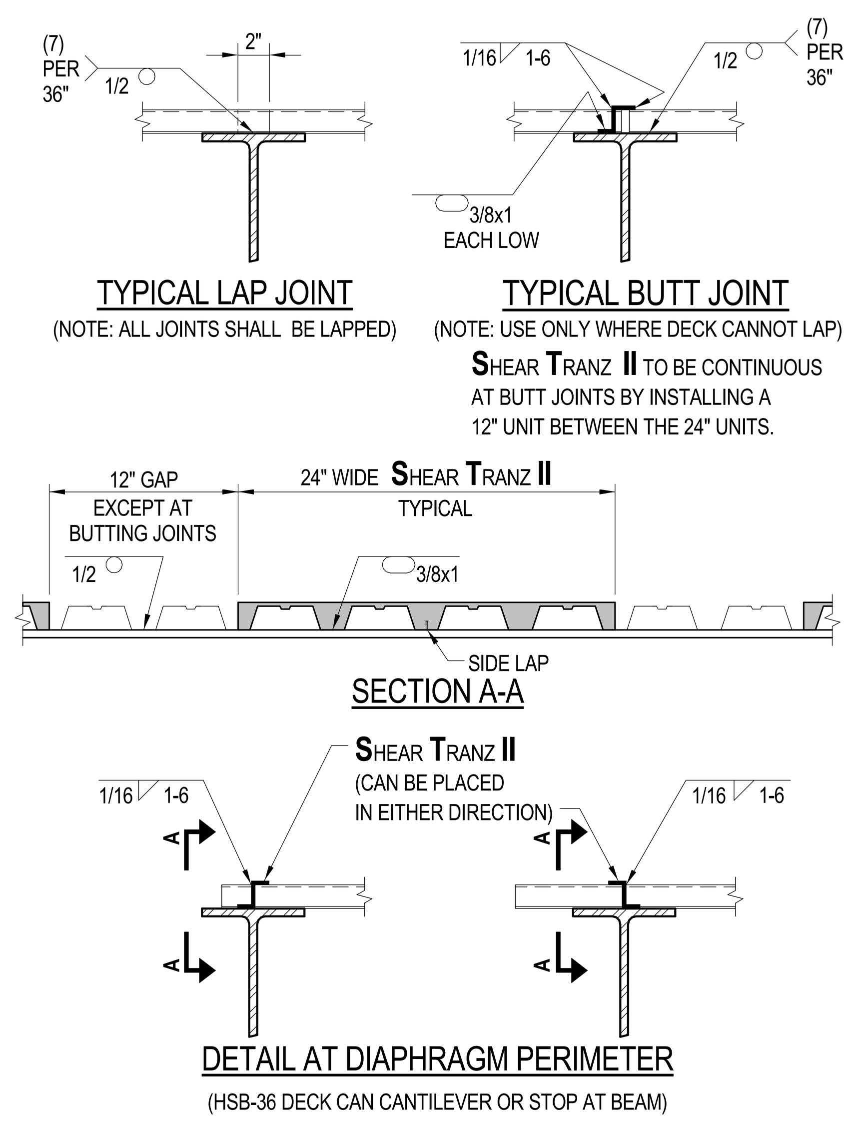
TYPICAL POURSTOP (A)

LENGTH OF POURSTOP (L)						
SLAB THICKNESS "t"	≤ 2"	≤ 4"	≤ 6"	≤ 8"	≤ 10"	≤ 12"
4" HARDROCK CONCRETE	18GA.	18GA.	14GA.	12GA.	10GA.	PLATE 3/16
5 1/2" HARDROCK CONCRETE	18GA.	16GA.	14GA.	12GA.	PLATE 3/16	PLATE 3/16
6" HARDROCK CONCRETE	18GA.	16GA.	14GA.	12GA.	PLATE 3/16	PLATE 3/16
7 1/2" HARDROCK CONCRETE	18GA.	16GA.	12GA.	10GA.	PLATE 3/16	PLATE 1/4
4 3/4" LIGHTWEIGHT CONCRETE	18GA.	18GA.	14GA.	12GA.	10GA.	PLATE 3/16
6 1/4" LIGHTWEIGHT CONCRETE	18GA.	16GA.	14GA.	12GA.	PLATE 3/16	PLATE 3/16

NOTE:

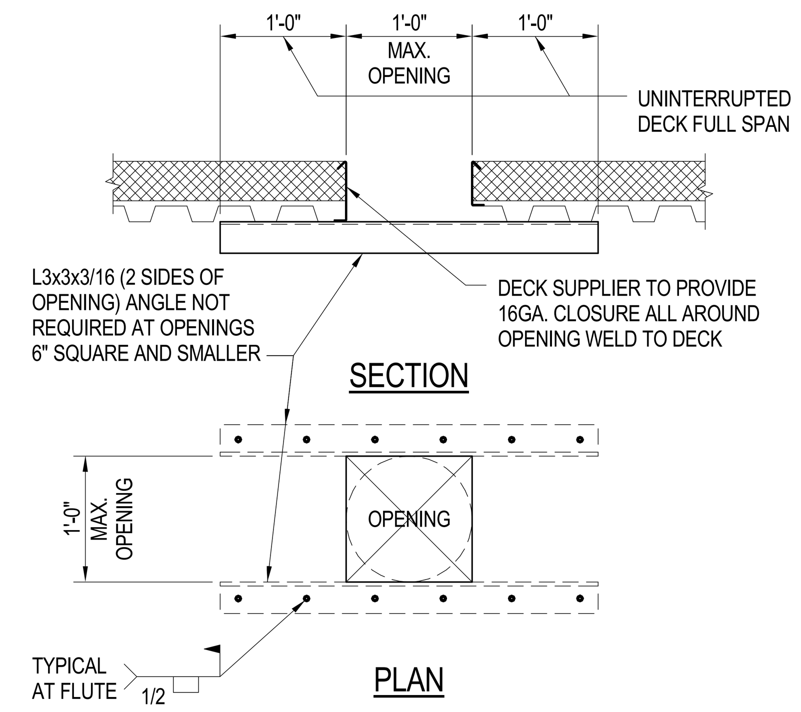
1. PROVIDE POURSTOPS AS INDICATED IN THE SCHEDULE AND USE DETAIL A UNLESS NOTED OTHERWISE.
2. FOR ALL BUILDING PERIMETER CONDITIONS USE DETAIL B UNLESS NOTED OTHERWISE.

TYPICAL CONCRETE SLAB POURSTOP SCHEDULE (11) TSD301

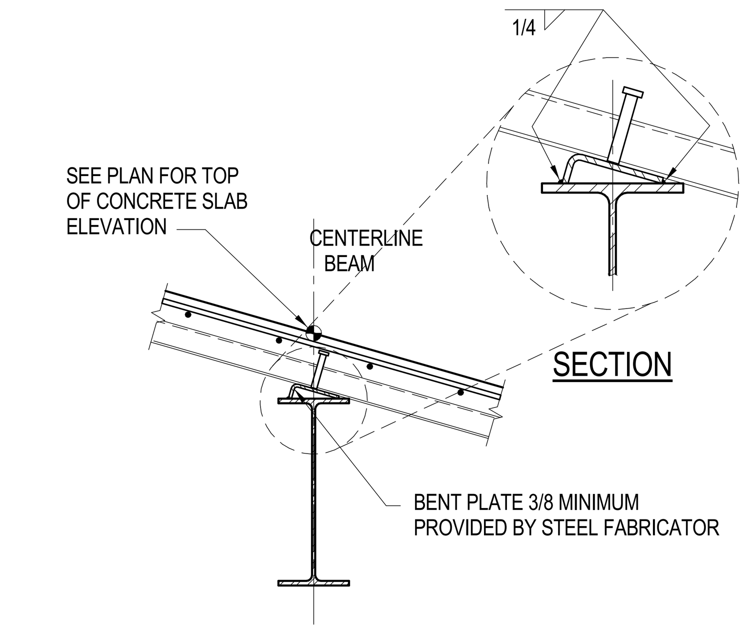


NOTE:
1. SHEAR TRANZ II IS ONLY REQUIRED AS SHOWN ON PLAN. REQUIRED PARALLEL TO THE RIBS OF THE DECK.

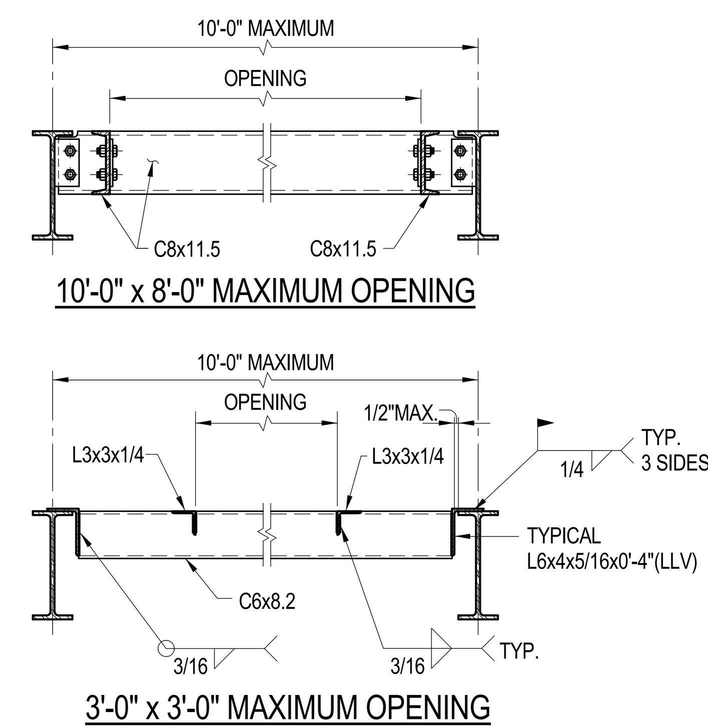
TYPICAL SHEAR TRANZ® II DECK (10) TSD402



TYPICAL OPENINGS IN ROOF UP TO 1'-0" SQUARE (7) TSD403

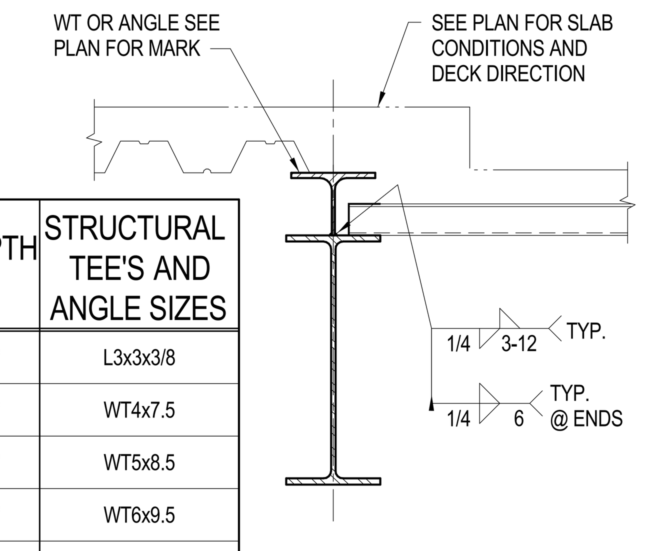


TYPICAL BEAM SECTION AT SLOPED FLOOR DETAIL (4) TSD205



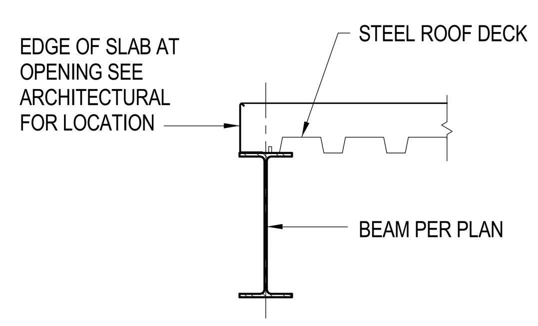
TYPICAL STEEL DECK OPENING AT ROOF DETAILS (6) TSD401

MARK *TC	DEPTH d	STRUCTURAL TEE'S AND ANGLE SIZES
T3	3"	L3x3x3/8
T4	4"	WT4x7.5
T5	5"	WT5x8.5
T6	6"	WT6x9.5
TX6	6"	WT6x20
T7	7"	WT7x13
T8	8"	WT8x15.5
T9	9"	WT9x20

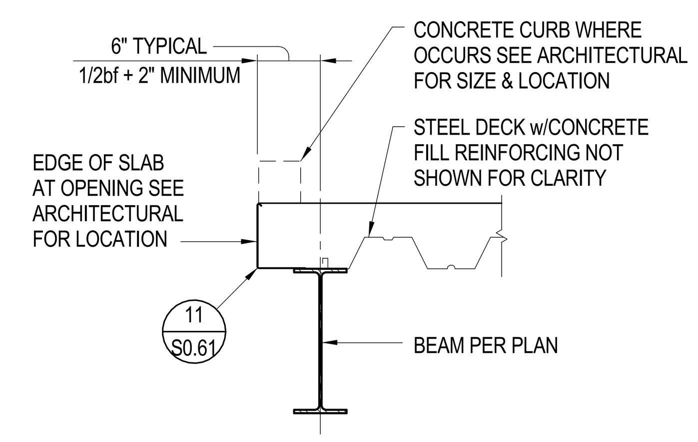


NOTES:
*TC MARKS INDICATED THUS ON PLAN, INDICATE TEE IN SCHEDULE REQUIRES STEM CUTTING FOR PROPER FIT

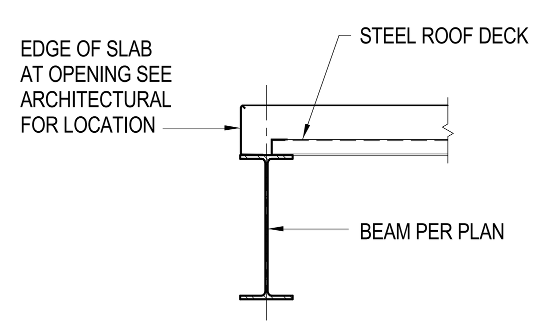
TYPICAL STRUCTURAL TEE DETAIL (3) TSD203



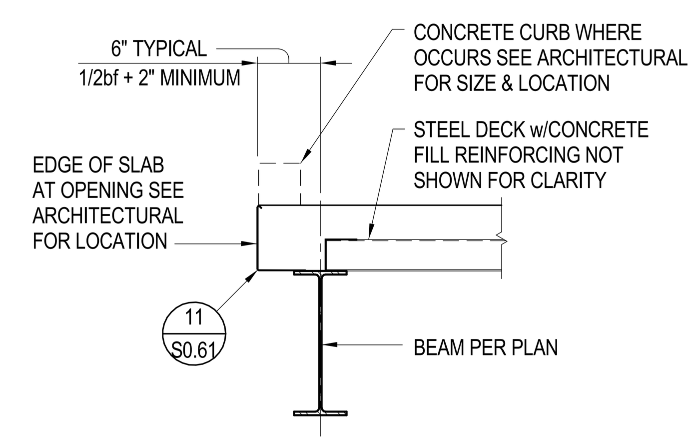
STEEL DECK PARALLEL TO BEAM AT ROOF
(NO CONCRETE)



STEEL DECK PARALLEL TO BEAM AT FLOOR

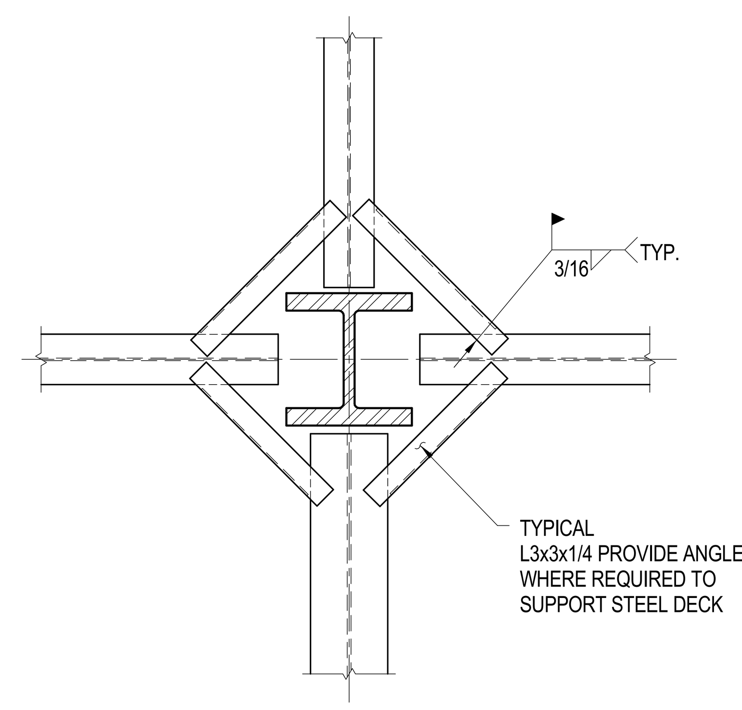


STEEL DECK PERPENDICULAR TO BEAM AT ROOF
(NO CONCRETE)

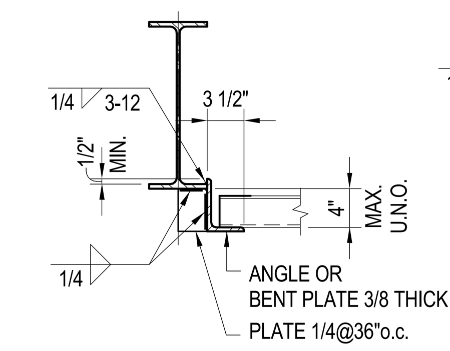


STEEL DECK PERPENDICULAR TO BEAM AT FLOOR

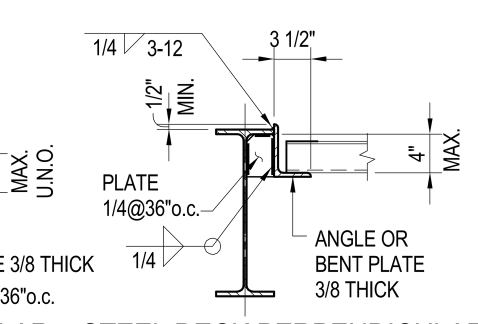
TYPICAL STEEL BEAM LOCATION AT EDGE OF OPENING DETAIL (9) TSD307



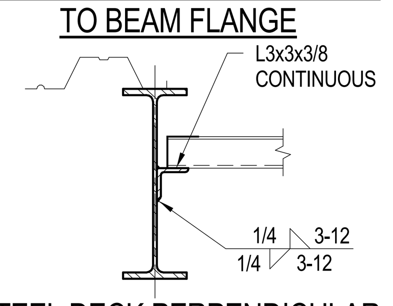
TYPICAL STEEL DECK SUPPORT AT COLUMN DETAIL (5) TSD206



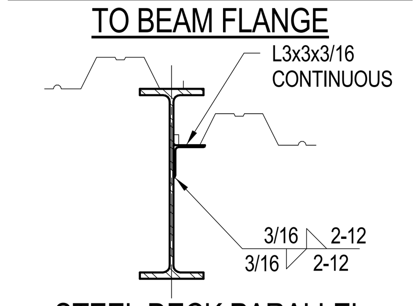
STEEL DECK PERPENDICULAR TO BEAM FLANGE



STEEL DECK PERPENDICULAR TO BEAM FLANGE

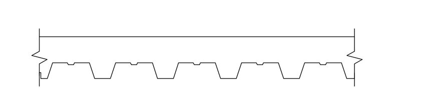


STEEL DECK PERPENDICULAR TO BEAM WEB

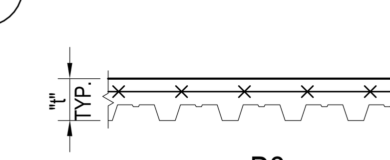


STEEL DECK PARALLEL TO BEAM WEB

TYPICAL LEDGER ANGLE ON STEEL BEAM DETAIL (2) TSD202



D1

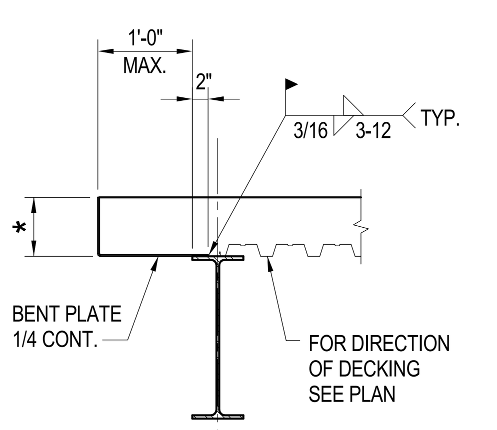


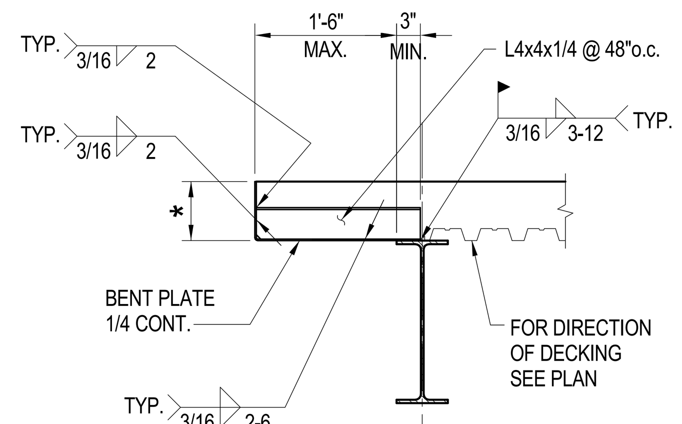
D2

STEEL DECK NOTES:
1. ALL STEEL DECKING SHALL CONFORM TO IAPMO REPORT #0217 DATED NOVEMBER 2011, REVISED JUNE 2014.
2. DEPUTY INSPECTOR SHALL BE REQUIRED FOR LIGHT GAGE WELDING ON STEEL DECK.
3. DEPUTY INSPECTOR SHALL BE REQUIRED FOR STUDS USED ON STEEL DECK.
4. ALL STEEL DECKING SHALL BE 38 KSI. MINIMUM.
5. SLABS EXPOSED TO WEATHER OR MOISTURE SENSITIVE COVERINGS SHALL BE PROVIDED WITH POSITIVE VENTED STEEL DECK.

MARK	STEEL DECK TYPE	GAGE	TOTAL SLAB "t"	SLAB DESCRIPTION	STEEL DECK ATTACHMENT PATTERN				MAXIMUM UNSHORED SPAN			REMARKS
					PERPENDICULAR TO SUPPORT		PARALLEL TO SUPPORT	SEAMS	SINGLE	DOUBLE	TRIPLE	
					ENDS	INTERMEDIATE						
D1	VERCO HSB-36	18	-	SEE ARCHITECTURAL	(7)1/2"ø PUDDLE WELDS	(7)1/2"ø PUDDLE WELDS	1/2"ø @ 12"o.c. PUDDLE WELDS	TOP SEAM WELD AT 12"o.c.	8'-0"	9'-0"	9'-0"	
D2	VERCO B FORMLOK	20	4"	2 1/2" HARDROCK CONCRETE w/ WWF6x6x-W2.9xW2.9	(4)1/2"ø PUDDLE WELDS	(4)1/2"ø PUDDLE WELDS	1/2"ø @ 12"o.c. PUDDLE WELDS	BUTTON PUNCH 36"o.c.	6'-0"	7'-6"	7'-6"	1

TYPICAL SLAB AND STEEL DECK SCHEDULE (1) TSD101 MOD.





* VERIFY HEIGHT OF BENT PLATE w/ARCHITECT.

TYPICAL PERIMETER OF NON-CONCRETE ROOF EDGE (8) TSD306

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REVISIONS

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TYPICAL STEEL DECK DETAILS

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PROJECT MANAGER :	MH
DESIGNER :	JN
DRAWN BY :	FS
REVIEWED BY :	
1st DEPT. SUBMITTAL :	X/X/2016
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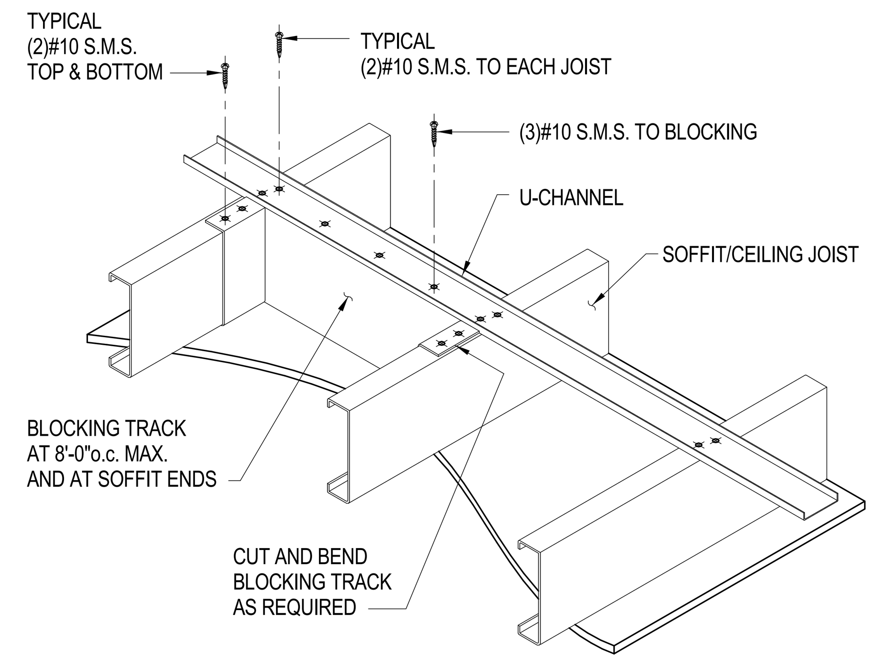
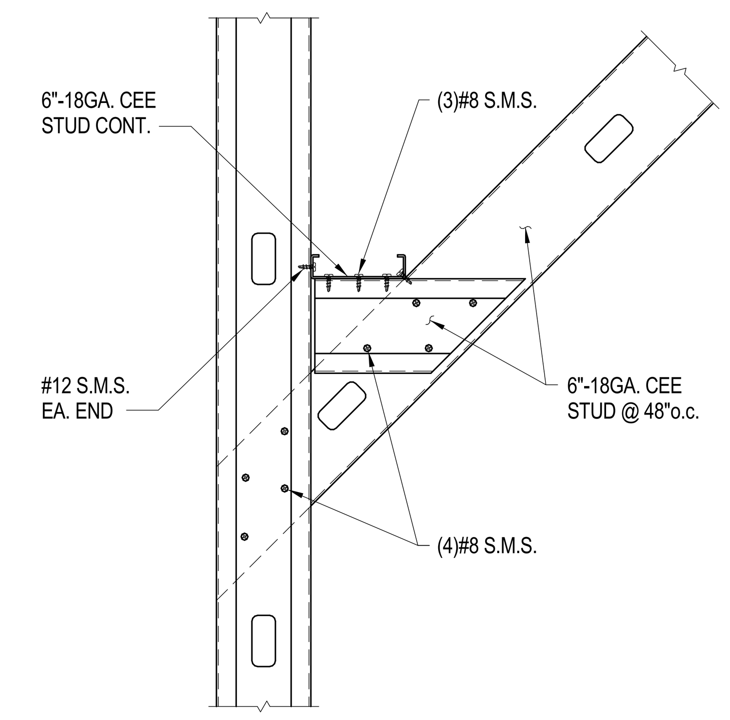
	S0.61

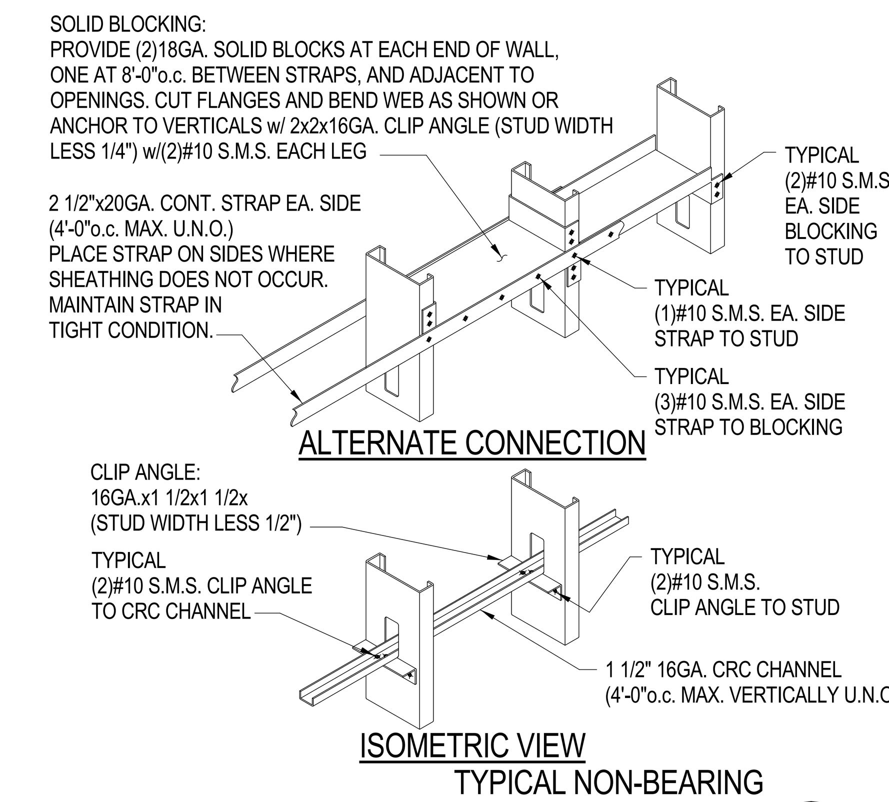
2ND BUILDING PLAN CHECK COORDINATION 05.18.2017



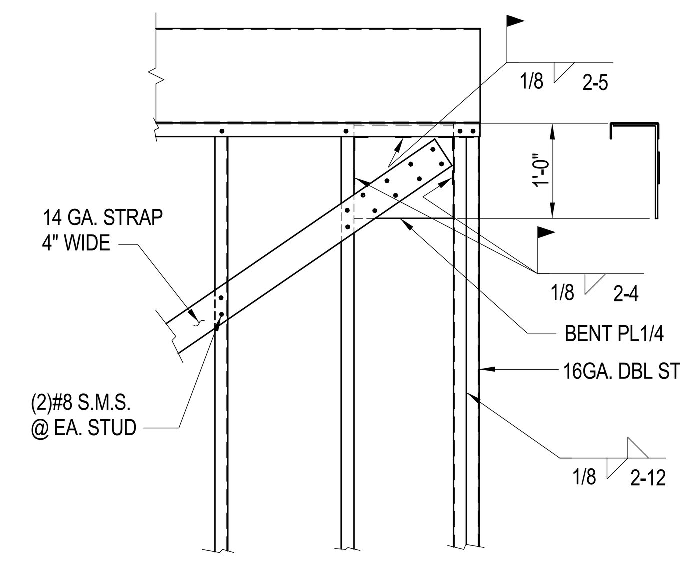
TYPICAL
SOFFIT/CEILING JOIST BLOCKING DETAIL 8
TSW702



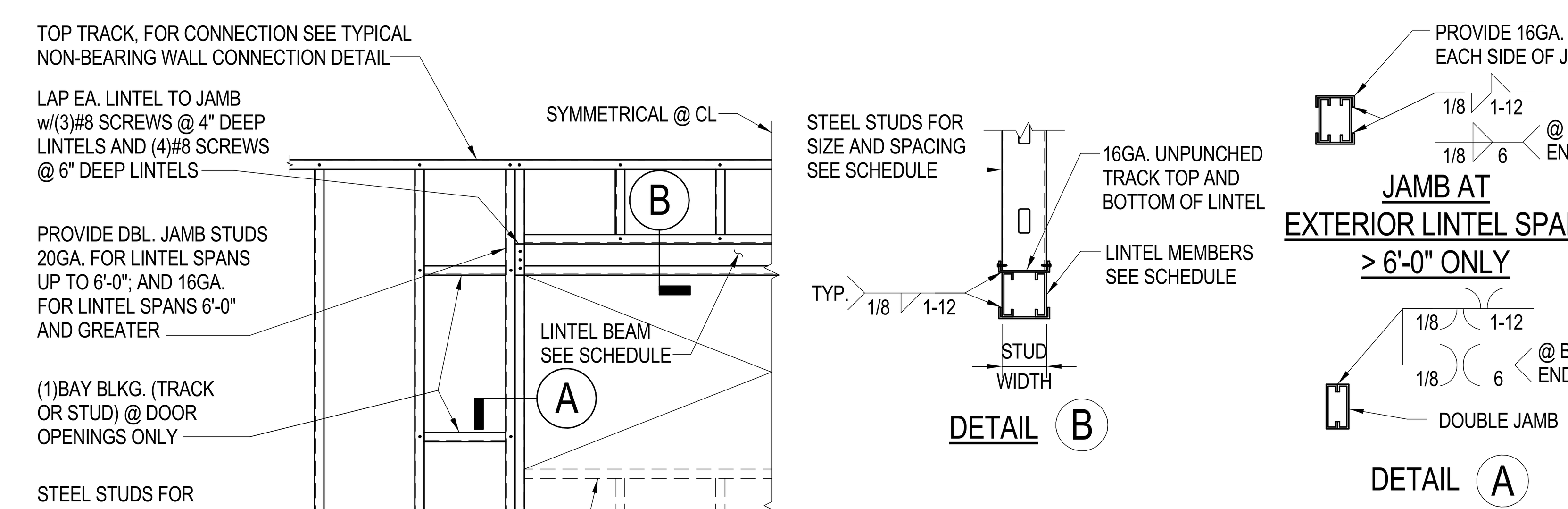
TYPICAL
METAL STUD KICKER CONNECTION DETAIL 4
TSW403



TYPICAL NON-BEARING
METAL STUD WALL BRIDGING DETAILS 3
TSW201

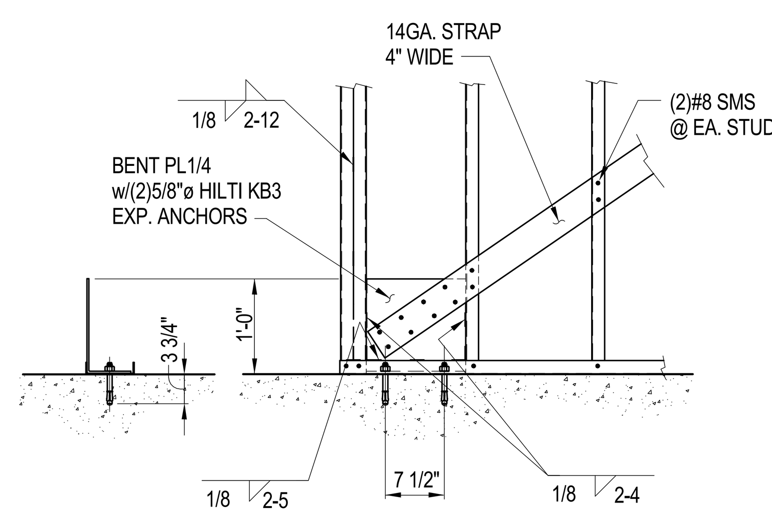


TYPICAL
METAL STUD BRACE CONNECTION DETAIL 7
TSW502

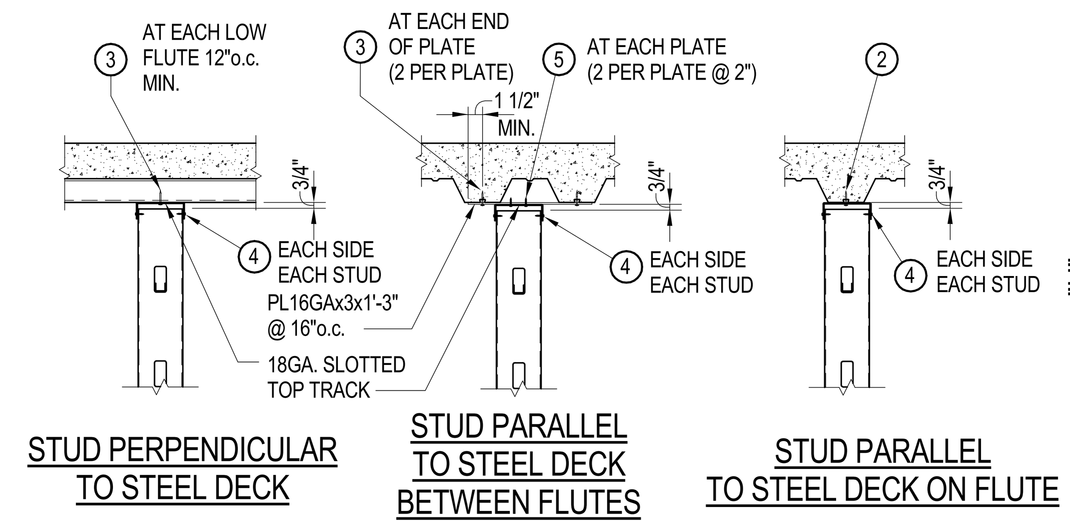


LINTEL SCHEDULE U.N.O.	
SPAN	LINTEL SIZE
≤ 6'-0"	(2)4"x16 GA. METAL CEE STUDS
< 6'-0" ≤ 8'-0"	(2)6"x18 GA. METAL CEE STUDS
< 8'-0" ≤ 10'-0"	(2)6"x16 GA. METAL CEE STUDS

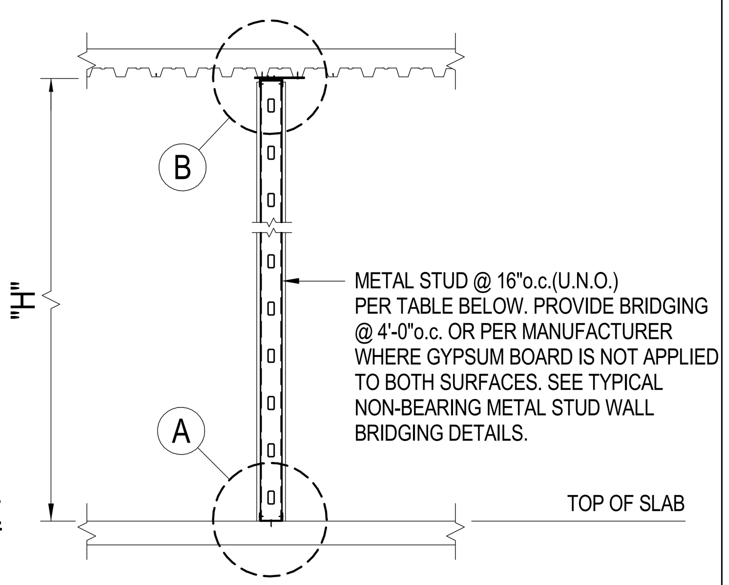
TYPICAL METAL STUD WALL FRAMING AT OPENING DETAIL 2
TSW103



TYPICAL
METAL STUD BRACE CONNECTION DETAIL 6
TSW501



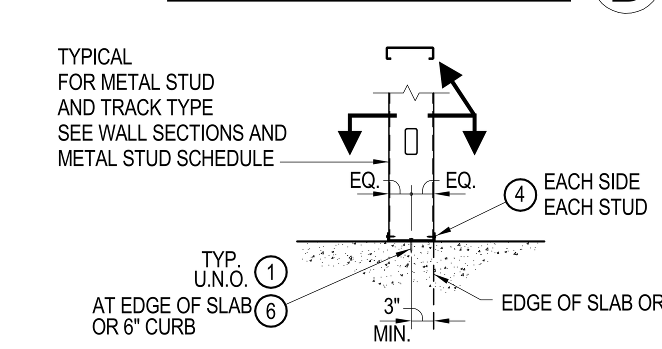
STUD TO DECK DETAIL B



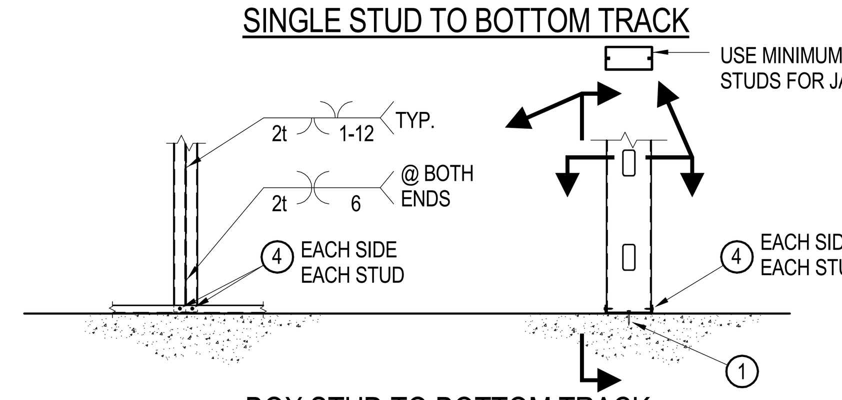
METAL STUD ELEVATION

METAL STUD SIZE (1 1/4" FLANGE - 125)				
GAUGE	3 5/8"	4"	6"	8"
14	19'-4"	21'-6"	29'-11"	-
16	18'-1"	20'-1"	27'-11"	-
18	16'-11"	18'-9"	26'-0"	-
20	15'-0"	16'-8"	23'-1"	-

NOTES:
1. MAXIMUM STUD HEIGHT "H" FOR STUDS @ 16" o.c.
2. SEE ARCHITECTURAL FOR OTHER CONDITIONS.
3. LIMIT DEFLECTION TO "H"/240.
4. NO ARCH'L, MECH'L OR MISC. ELEMENTS SHALL BE ATTACHED TO THE STUDS.
5. ALL TRACKS TO MATCH STUD GAUGE AS A MINIMUM WITH 1 1/4" FLANGE.



SINGLE STUD TO BOTTOM TRACK



BOX STUD TO BOTTOM TRACK

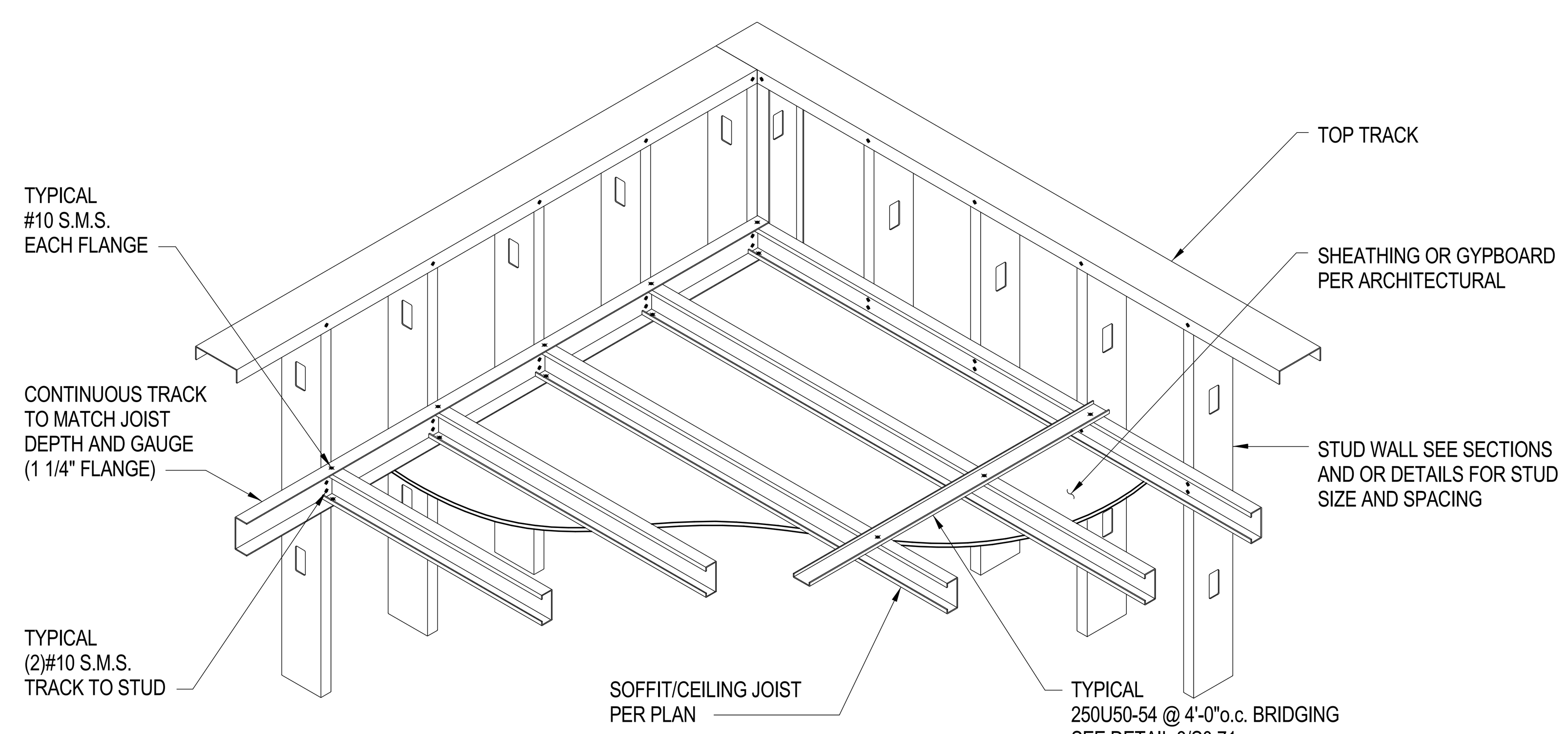
NOTES:
1. "t" INDICATES STUD THICKNESS.
2. WELDING PROCEDURE PER AWS D1.3.

STUD TO SLAB DETAIL A

NOTES:
1. FOR STEEL STUD AND TRACK TYPE, SEE PLANS, SECTIONS AND METAL STUD SIZE SCHEDULE.
2. FOR METAL STUD FASTENERS, SEE METAL STUD FASTENER SCHEDULE.
3. ALL POWER DRIVEN FASTENERS TO HAVE A MINIMUM PENETRATION OF 1".

METAL STUD FASTENER SCHEDULE		
MARK	FASTENERS SIZE AND SPACING	REMARKS
1	HILTI X-U UNIVERSAL POWDER DRIVEN FASTENERS @ 32"o.c.	ESR-2269
2	HILTI X-U UNIVERSAL POWDER DRIVEN FASTENERS @ 32"o.c. AT METAL DECK w/ CONC. FILL, USE #10 SHEET METAL SCREWS x 1" LONG @ 16"o.c. AT METAL DECK w/ NO CONC. FILL	ESR-2269
3	HILTI X-U UNIVERSAL POWDER DRIVEN FASTENER AT METAL DECK w/ CONC. FILL, USE #10 SHEET METAL SCREW x 1" LONG AT METAL DECK w/ NO CONC. FILL	ESR-2269
4	#10 SHEET METAL SCREW x 5/8" LONG	-
5	#10 SHEET METAL SCREW x 5/8" LONG	-
6	HILTI KB-TZ 3/8"øx2 5/8" EXPANSION ANCHORS @ 32"o.c.	ESR-1917

TYPICAL NON-BEARING INTERIOR STUD WALL DETAILS 1
TSW101



TYPICAL SOFFIT/CEILING JOIST BRIDGING DETAIL 5
TSW701

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REVISIONS

NO :	DATE	DESCRIPTION
	07/14/17	3RD PLAN CHECK SUBMITTAL

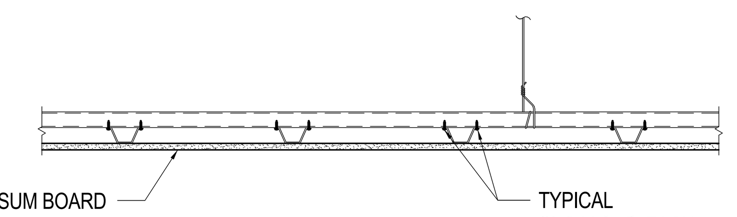
TYPICAL METAL STUD DETAILS

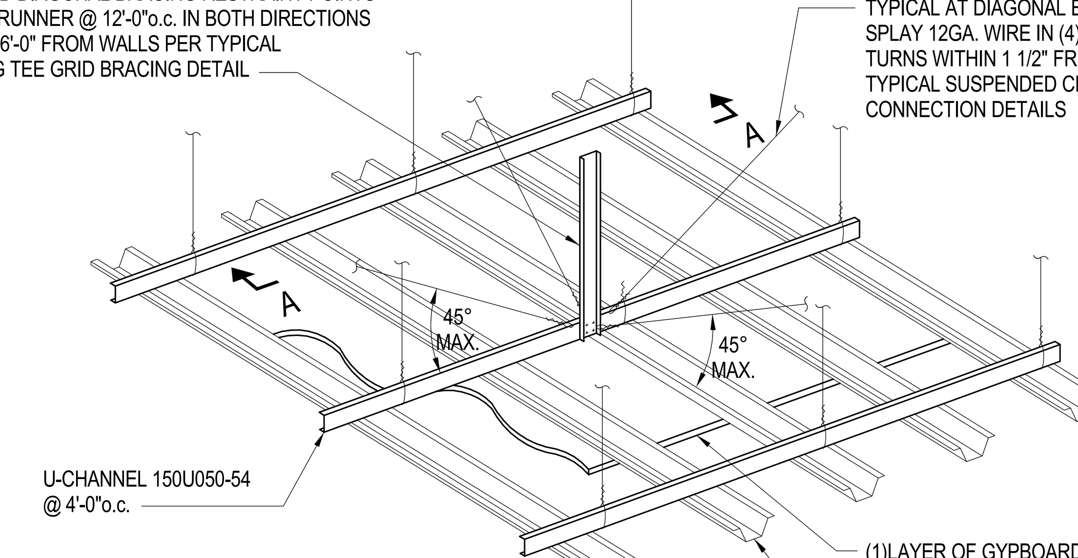
SHEET SCALE :	As indicated
PROJECT MANAGER :	MH
DESIGNER :	JN
DRAWN BY :	FS
REVIEWED BY :	
1st DEPT. SUBMITTAL :	X/X/2016
ISSUED FOR CONST. :	
JOB NUMBER	16-S003
CAD FILE NAME	

S0.71

2ND BUILDING PLAN CHECK COORDINATION 05.18.2017

SECTION A-A



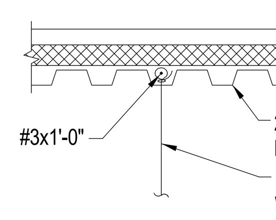


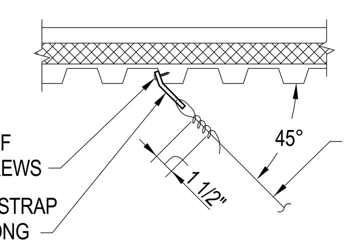
GYPSUM BOARD CEILNG NOTES:

1. GYPSUM BOARD CEILING ARE NOT TO SUPPORT BUILDING COMPONENTS OTHER THAN AIR CONDITIONING/HEATING GRILLS. ALL SUCH BUILDING COMPONENTS SHALL BE SUPPORTED EITHER DIRECTLY FROM MAIN RUNNERS OR BY SUPPLEMENTAL FRAMING WHICH IS SUPPORTED BY MAIN RUNNERS. NO VERTICAL LOADS OTHER THAN GYPSUM BOARD DEAD LOADS SHALL BE APPLIED TO CROSS-FURRING.
2. MAXIMUM CEILING SELF WEIGHT INCLUDING SUPPORT FRAMING = 4 PSF.
3. WHEN THE DISTANCE BETWEEN THE STRUCTURAL DECK AND THE CEILING EXCEEDS 4'-0" THE SPACING OF THE VERTICAL HANGERS SHALL NOT EXCEED 2'-0"o.c. ALONG THE ENTIRE MEANS OF THE EGRESS SERVING ON OCCUPANT LOAD OF 30 OR MORE AND AT LOBBIES ACCESSORY TO A GROUP A OCCUPANIES

TYPICAL SUSPENDED GYPSUM BOARD CEILING BRACING DETAILS 4

CELG106





NOTES:

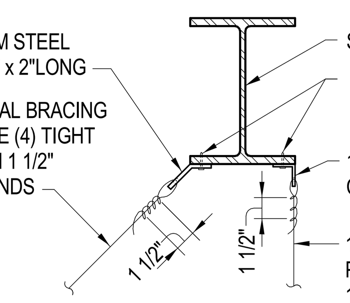
1.IF SELF TAPPING SCREWS ARE USED WITH CONCRETE FILL, SET SCREWS BEFORE PLACING CONCRETE FILL.

2.ALTERNATIVE SUSPENSION METHODS TO THOSE INDICATED ARE NOT ALLOWED UNLESS APPROVED BY THE ARCHITECT (STRUCTURAL ENGINEER).

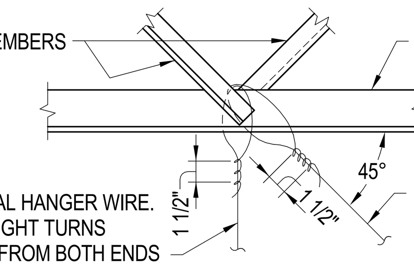
TYPICAL SUSPENDED CEILING HANGER & SWAY WIRE TO ROOF DECK CONN. DETAIL 4

CELG104

AT STEEL BEAM

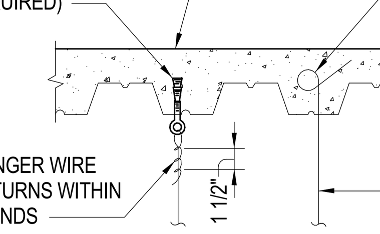


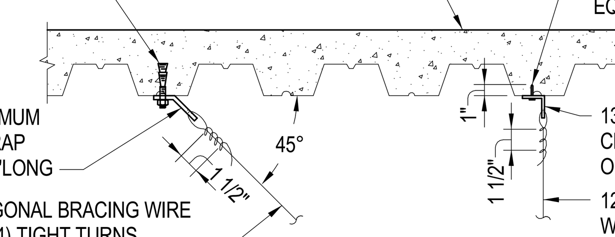
AT OPEN-WEB STEEL JOIST



NOTE:
DIAGONAL BRACING WIRE SHALL BE PARALLEL TO JOIST. DIAGONAL BRACING WIRE CAN NOT BE PERPENDICULAR TO JOIST.

AT METAL DECK WITH CONCRETE FILL

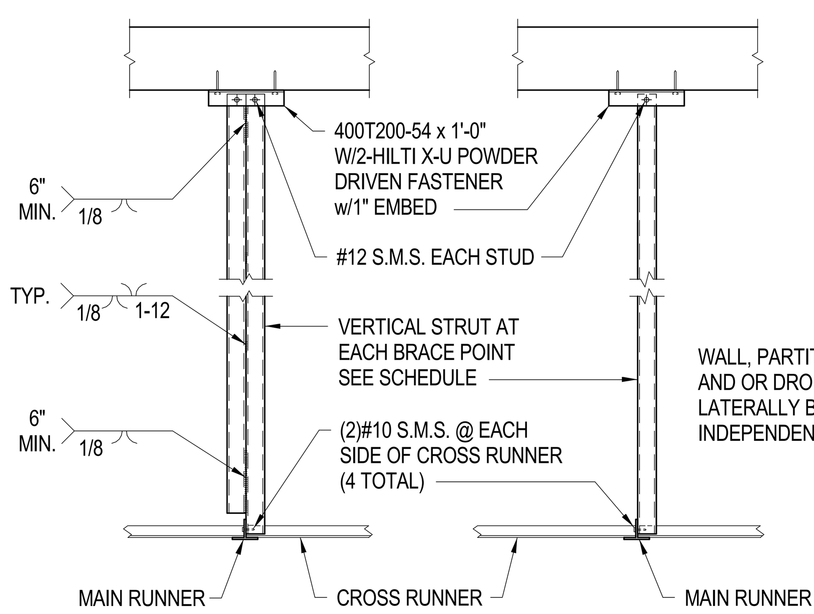




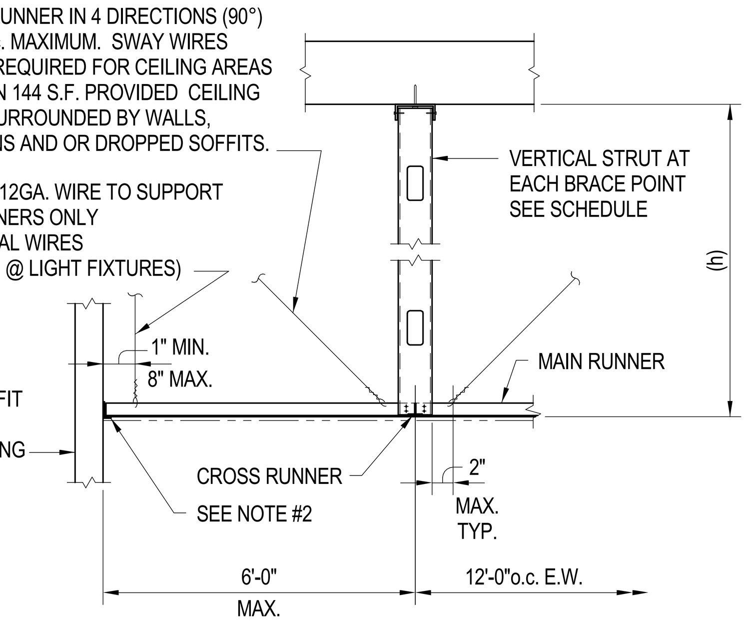
NOTE:
ALTERNATIVE SUSPENSION METHODS TO THOSE INDICATED ARE NOT ALLOWED UNLESS APPROVED BY THE ARCHITECT (STRUCTURAL ENGINEER).

TYPICAL SUSPENDED CEILING HANGER AND SWAY WIRE TO STEEL FRAMING CONNECTION DETAILS CONNECTION DETAIL 3

CELG103



ELEVATION B ELEVATION A



STUD HEIGHT (h)	METAL STUD SIZE	REMARKS
≤ 6'-0"	400S162-18	SEE ELEVATION A
>6'-0" ≤ 8'-0"	400S162-43	SEE ELEVATION A
>8'-0" ≤ 14'-0"	(2)400S162-43	SEE ELEVATION B

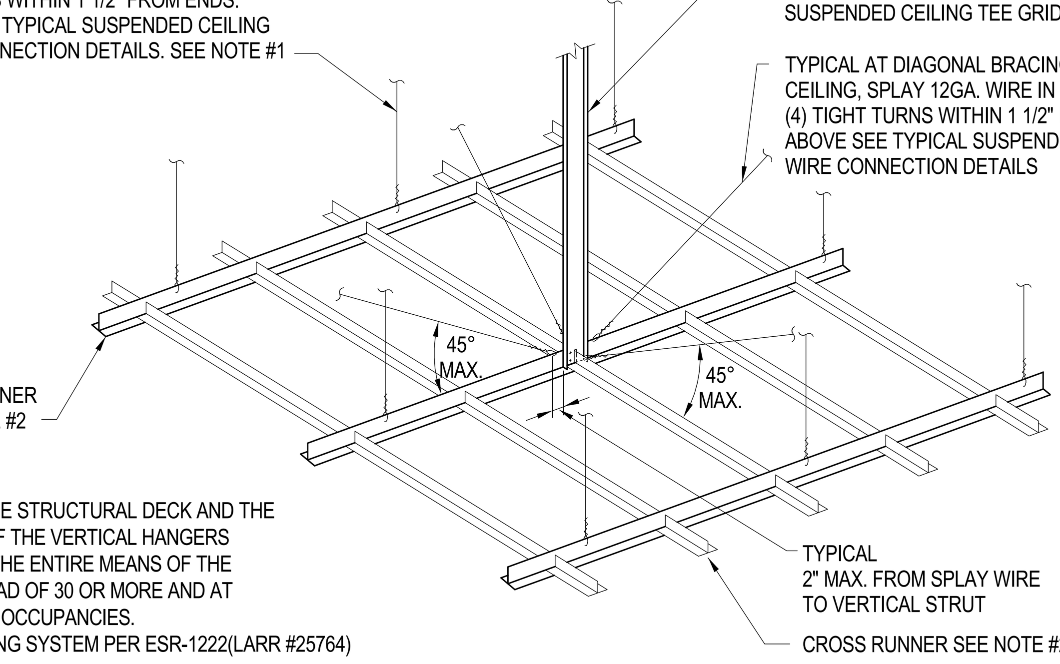
NOTES:

1.FOR CONNECTION OF VERTICAL AND DIAGONAL WIRES TO FLOOR OR ROOF SEE TYPICAL SUSPENDED CEILING HANGER AND SWAY WIRE CONNECTION DETAILS.

2.IN EACH ORTHOGONAL HORIZONTAL DIRECTION, ONE END OF THE CEILING GRID SHALL BE ATTACHED TO A MAXIMUM 2" WIDE CLOSURE ANGLE. THE OTHER END IN EACH HORIZONTAL DIRECTION SHALL HAVE A 0.75" CLEARANCE FROM THE WALL AND SHALL REST UPON AND BE FREE TO SLIDE ON A CLOSURE ANGLE.

TYPICAL SUSPENDED CEILING TEE GRID BRACING DETAIL 2

CELG102



NOTES:
1.WHEN THE DISTANCE BETWEEN THE STRUCTURAL DECK AND THE CEILING EXCEEDS 4' THE SPACING OF THE VERTICAL HANGERS SHALL NOT EXCEED 2'-0"o.c. ALONG THE ENTIRE MEANS OF THE EGRESS SERVING ON OCCUPANT LOAD OF 30 OR MORE AND AT LOBBIES ACCESSORY TO A GROUP A OCCUPANCIES.
2.ACCOUSTICAL TILE CEILING FRAMING SYSTEM PER ESR-1222(LARR #25764) OR EQUAL.

TYPICAL SUSPENDED CEILING PANEL AND TEE GRID BRACING DETAIL 1

CELG101

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REVISIONS

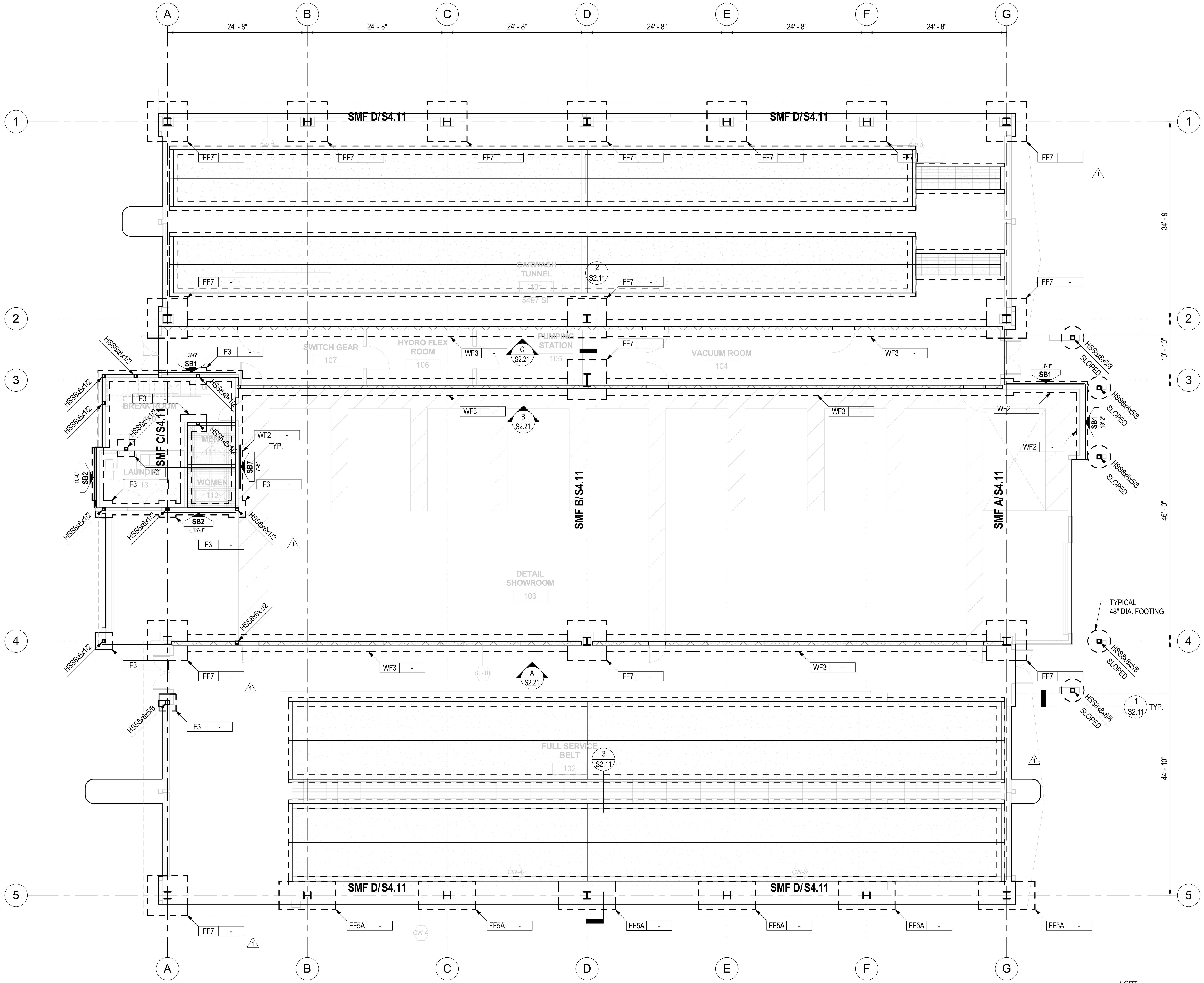
NO :	DATE	DESCRIPTION
	07/14/17	3RD PLAN CHECK SUBMITTAL

TYPICAL DETAILS

SHEET SCALE :	1" = 1'-0"
PROJECT MANAGER :	MH
DESIGNER :	JN
DRAWN BY :	FS
REVIEWED BY :	
1st DEPT. SUBMITTAL :	X/X/2016
ISSUED FOR CONST. :	
JOB NUMBER	16-S003
CAD FILE NAME	

S0.81

2ND BUILDING PLAN CHECK COORDINATION 05.18.2017



LEVEL 1 FOUNDATION PLAN (A)

1/8" = 1'-0"

NORTH

PLAN NOTES:

1. ELEVATION TOP OF CONCRETE SLAB SHALL BE COORDINATED WITH ARCHITECTURAL DRAWINGS, UNLESS NOTED OTHERWISE THUS (±0'-0")
2. SLAB ON GRADE SHALL BE 5" THICK w/ #5@16"o.c. EACH WAY OVER PREPARED SUBGRADE PER GEOTECHNICAL'S RECOMMENDATION. 5" THICK MINIMUM AT THE DRAIN. SLAB THICKNESS VARIES PER SLOPE TO DRAIN PER ARCHITECTURAL DRAWINGS.
3. ALL FOOTINGS SHALL BE CENTERED UNDER WALLS OR COLUMNS, UNLESS NOTED OTHERWISE.
4. FOR GENERAL NOTES SEE S0 SERIES SHEETS.
5. FOR TYPICAL DETAILS SEE S0 SERIES SHEETS. DETAILS AND SCHEDULES INDICATED AS 'TYPICAL' MAY NOT BE SPECIFICALLY REFERENCED ON DRAWINGS. DETERMINE WHERE EACH TYPICAL DETAIL OR SCHEDULE APPLIES BEFORE PROCEEDING WITH WORK.
6. SEE ARCHITECTURAL DRAWINGS FOR CONCRETE SLAB ELEVATIONS, DEPRESSIONS, SLOPES, OPENINGS, CURBS, DRAINS, TRENCHES, SLAB EDGE LOCATIONS, ETC., AND FOR WALL OVERALL DIMENSIONS, LOCATIONS OF OPENINGS, ETC., NOT INDICATED ON STRUCTURAL DRAWINGS.
7. VERIFY ALL DIMENSIONS WITH ARCHITECTURAL DRAWINGS PRIOR TO START OF WORK.
8. GENERAL CONTRACTOR IS RESPONSIBLE FOR COORDINATING AND LOCATING ALL OPENINGS THROUGH THE SLAB INCLUDING BUT NOT LIMITED TO ELECTRICAL, MECHANICAL, PLUMBING, SPRINKLER AND TELEPHONE. SUBMIT TO THE STRUCTURAL ENGINEER FOR APPROVAL PRIOR TO SUBMITTAL OF REINFORCING STEEL SHOP DRAWINGS.

PLAN SYMBOLS:

1. F- | - — INDICATE CONCRETE FOOTING MARK, SEE TYPICAL CONCRETE FOOTING SCHDULE ON S2.11. INDICATES ELEVATION TOP OF FOOTING. ALL TOP OF FOOTINGS SHALL BE -1'-6" BELOW LOWEST ADJACENT GRADE OR TOP OF CONCRETE SLAB ON GRADE, U.N.O.
2. INDICATES SLAB ELEVATION DROP, SEE PLAN.
3. (±0'-0") INDICATES TOP OF CONCRETE SLAB ELEVATION FROM LEVEL DATUM.
5. INDICATES SIDE OF SUREBOARD SHEAR WALL.
6. INDICATES SUREBOARD SHEAR WALL BELOW.
7. SB 5'-0" — INDICATES SUREBOARD SHEAR WALL PER 1/S6.11 AS FOLLOWS: FULLY BLOCKED 22 GAGE SUREBOARD SHEAR WALL PER ICC ES ER-5762 AND LARR 25563 w/(2)4"x6" PACO COLUMNS AT EACH END. INDICATES MINIMUM LENGTH OF SHEAR WALL
8. INDICATES 8" BEARING C.M.U. WALL.

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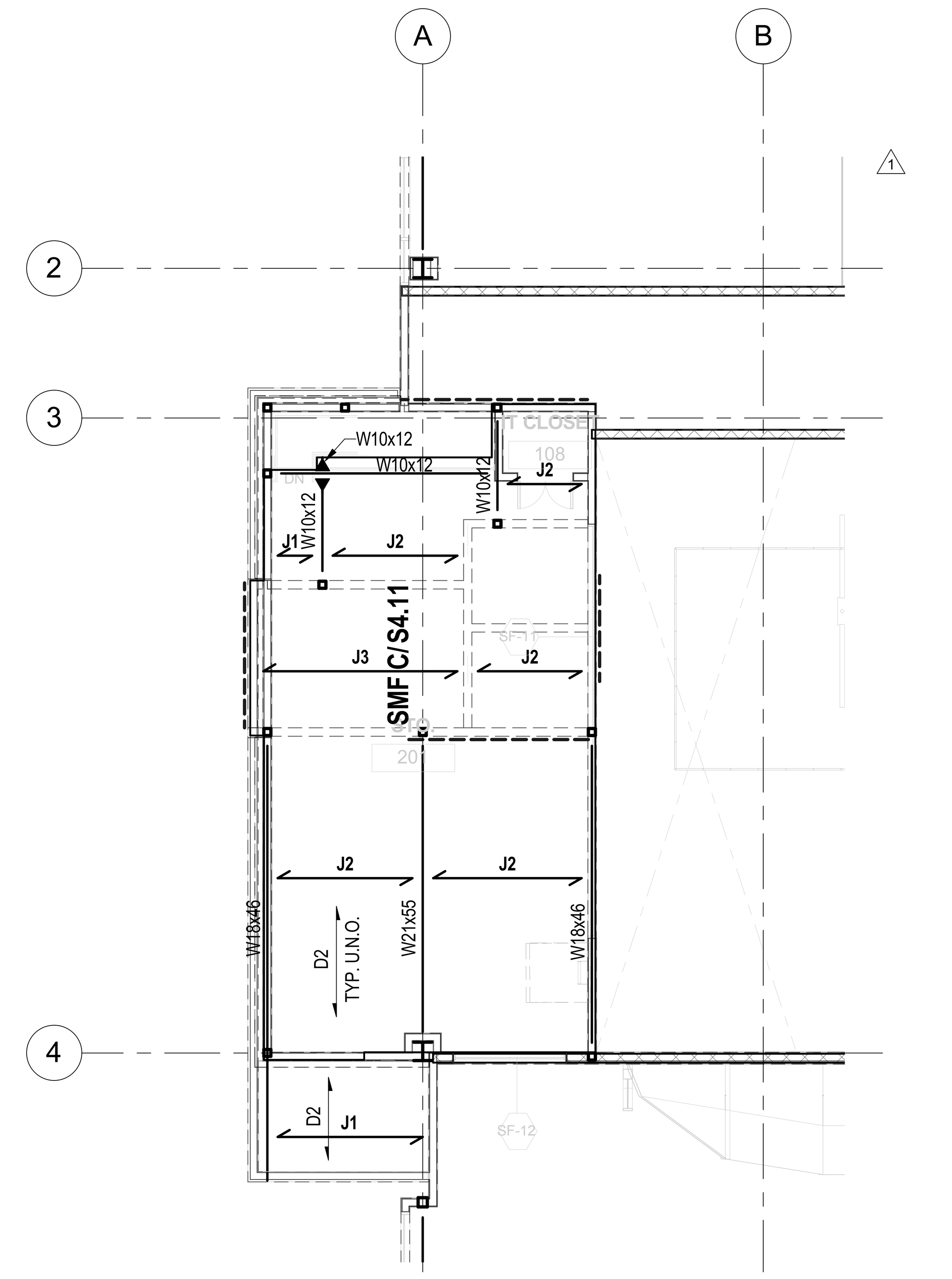
REVISIONS

NO :	DATE	DESCRIPTION
1	05/18/17	2ND PLAN CHECK SUBMITTAL
	07/14/17	3RD PLAN CHECK SUBMITTAL

CARWASH BUILDING LEVEL 1 FOUNDATION PLAN

SHEET SCALE :	1/8" = 1'-0"
PROJECT MANAGER :	MH
DESIGNER :	JN
DRAWN BY :	FS
REVIEWED BY :	
1st DEPT. SUBMITTAL :	X/X/2016
ISSUED FOR CONST. :	
JOB NUMBER	16-S003
CAD FILE NAME	
	S1.11

2ND BUILDING PLAN CHECK COORDINATION 05.18.2017



LEVEL 2 FRAMING PLAN (A)
1/8" = 1'-0"

NORTH

TYPICAL JOIST SCHEDULE		
MARK	CEMCO TYPE OR EQUAL	MAXIMUM SPAN
J1	1000S200-68 @ 24"o.c.	
J2	(2)1000S200-54 @ 24"o.c.	
J3	(2)1000S200-68 @ 24"o.c.	

NOTES:
FLOOR JOIST SHALL BE BY "CEMCO" COMPLYING WITH ICC - ESR3016.

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BRISTOL SPEEDWASH, INC.
10801 NATIONAL BLVD., STE 510 LOS ANGELES, CA. 90064

DO NOT SCALE PLANS

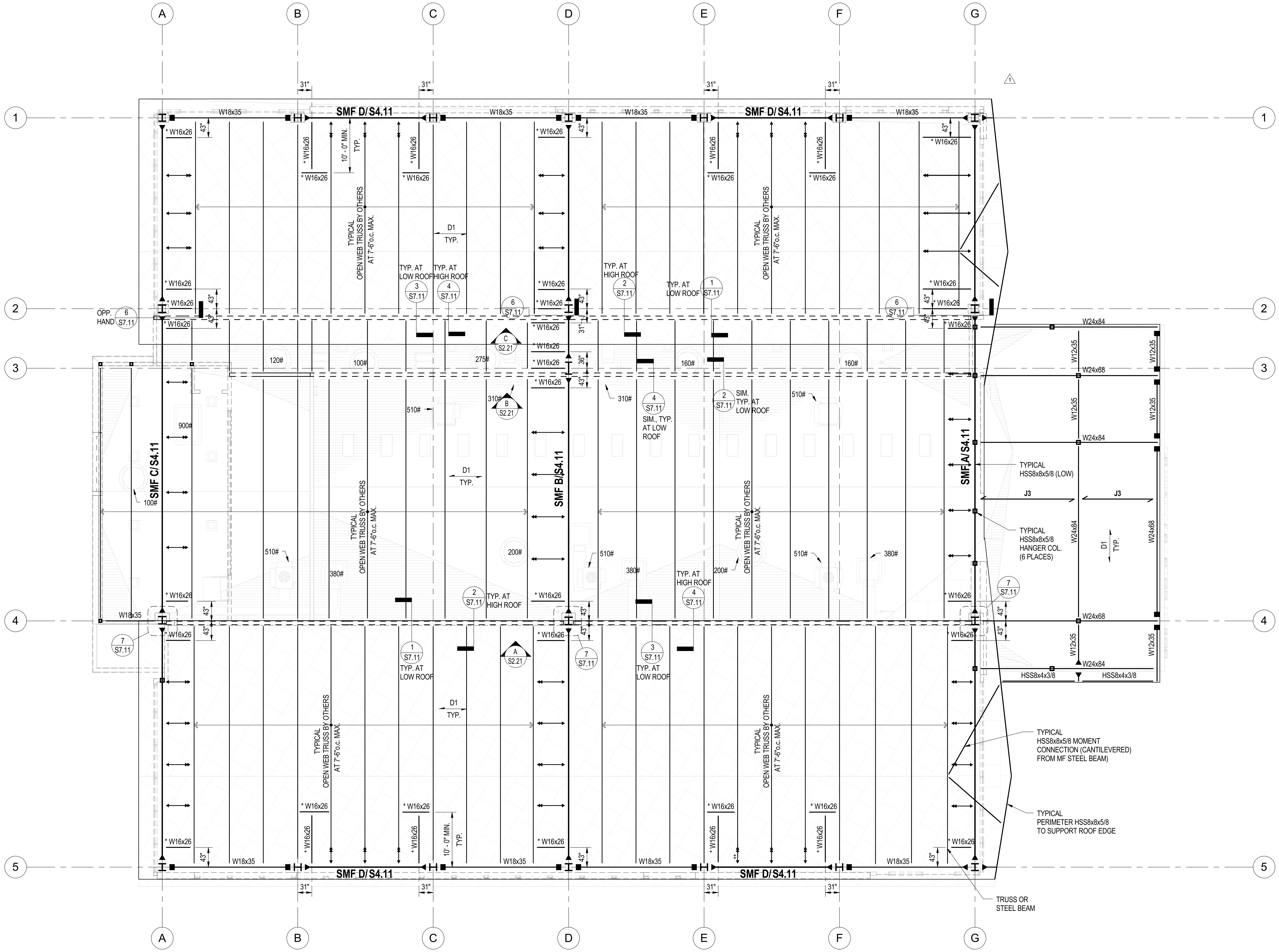
REVISIONS

NO :	DATE	DESCRIPTION
1	05/18/17	2ND PLAN CHECK SUBMITTAL
	07/14/17	3RD PLAN CHECK SUBMITTAL

CARWASH BUILDING
LEVEL 2 FRAMING PLAN

SHEET SCALE :	1/8" = 1'-0"
PROJECT MANAGER :	MH
DESIGNER :	JN
DRAWN BY :	FS
REVIEWED BY :	
1st DEPT. SUBMITTAL :	X/X/2016
ISSUED FOR CONST. :	
JOB NUMBER	16-S003
CAD FILE NAME	
	S1.12

2ND BUILDING PLAN CHECK COORDINATION 05.18.2017



ROOF FRAMING PLAN (A)

1/8" = 1'-0"

NORTH

NOTES:

1. FOR GENERAL NOTES AND TYPICAL DETAILS, SEE S0 SERIES SHEETS.
2. VERIFY ALL DIMENSIONS BEFORE START OF WORK.
9. GENERAL NOTE FOR ALL STRUCTURAL FRAMING PLANS "FRAMING CONTRACTOR SHALL COORDINATE WITH MECHANICAL, ELECTRICAL AND PLUMBING FIXTURES, PIPE OR CONDUIT OR MECHANICAL VENT RISERS.

PLAN SYMBOLS:

1. SMF — INDICATES SEISMIC MOMENT FRAME MARK, SEE REFERENCE FRAME ELEVATION FOR COLUMNAND BEAM SIZES AND BASE PLATE INFORMATION. SEE DETAIL 3/S4.22 FOR LATERAL BRACING OF SMF w/ W16x BEAMS.
2. INDICATES L4x4x1/2 BRACE PER 2/S0.53
3. D1 — INDICATES DECK SPAN DIRECTION AND TYPE PER SCHEDULE ON 1/S0.61.
4. * INDICATES BEAM WITH PRETENSIONED BOLTS WITH CLASS A FAYING SURFACE CONNECTION ON BOTH ENDS.
5. INDICATES BRACED BEAM FLANGE CONNECTION, SEE DETAIL 1/S0.52.

TYPICAL JOIST SCHEDULE

MARK	CEMCO TYPE OR EQUAL	MAXIMUM SPAN
J1	1000S200-68 @ 24"o.c.	
J2	(2)1000S200-54 @ 24"o.c.	
J3	(2)1000S200-68 @ 24"o.c.	

NOTES:
FLOOR JOIST SHALL BE BY "CEMCO" COMPLYING WITH ICC - ESR3016.

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BRISTOL SPEEDWASH, INC.
10801 NATIONAL BLVD., STE 510 LOS ANGELES, CA. 90064

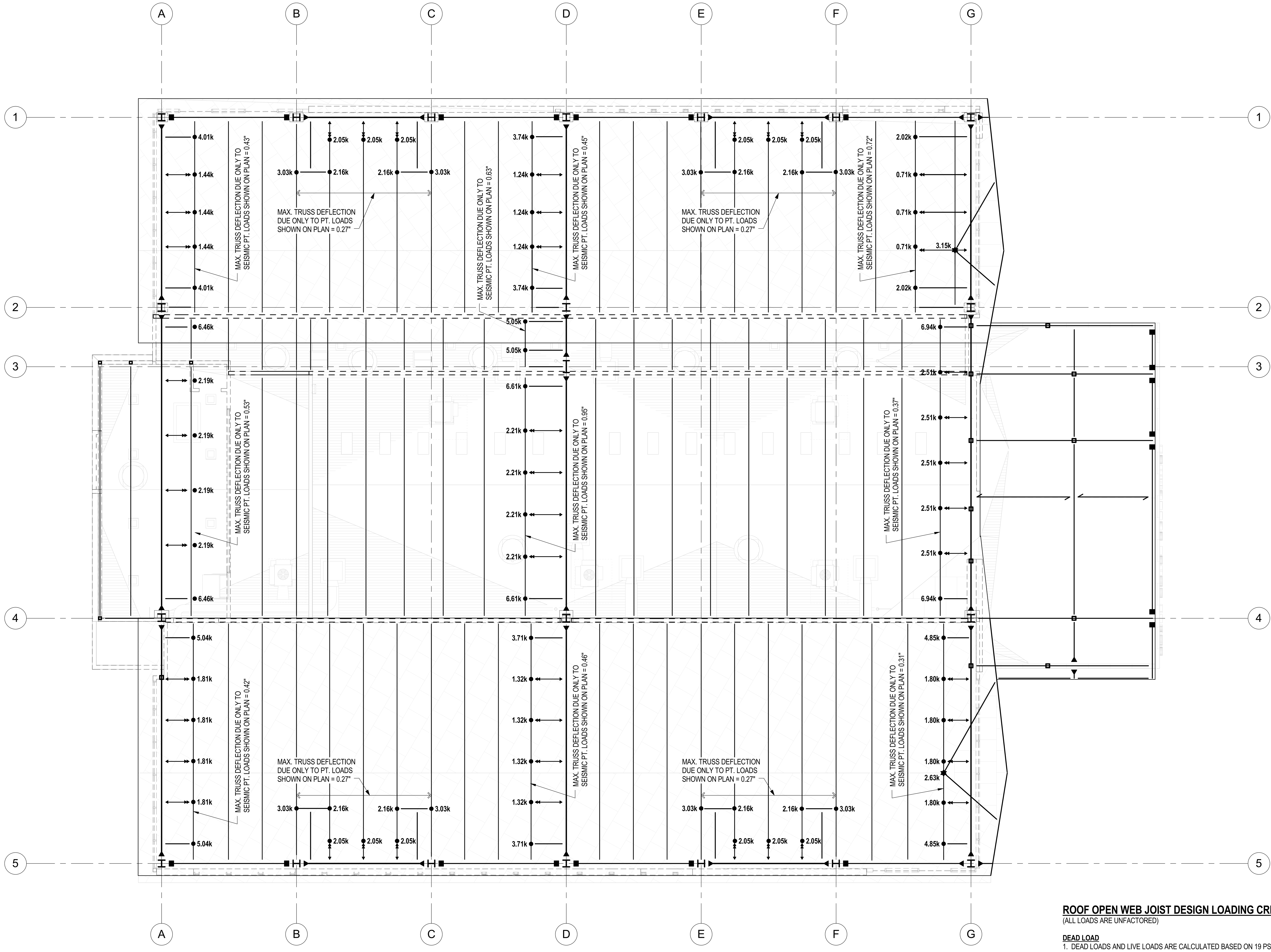
REVISIONS

NO :	DATE	DESCRIPTION
1	05/18/17	2ND PLAN CHECK SUBMITTAL
	07/14/17	3RD PLAN CHECK SUBMITTAL

CARWASH BUILDING ROOF FRAMING PLAN

SHEET SCALE :	1/8" = 1'-0"
PROJECT MANAGER :	MH
DESIGNER :	JN
DRAWN BY :	FS
REVIEWED BY :	
1st DEPT. SUBMITTAL :	X/X/2016
ISSUED FOR CONST. :	
JOB NUMBER	16-S003
CAD FILE NAME	
	S1.13

2ND BUILDING PLAN CHECK COORDINATION 05.18.2017



TRUSS LOAD PLAN A
1/8" = 1'-0"

NORTH

ROOF OPEN WEB JOIST DESIGN LOADING CRITERIA
(ALL LOADS ARE UNFACTORED)

DEAD LOAD

1. DEAD LOADS AND LIVE LOADS ARE CALCULATED BASED ON 19 PSF AND 20 PSF UNIFORM LOAD, RESPECTIVELY.
2. APPLY ADDITIONAL MEP EQUIPMENT LOAD ON ROOF. SEE MECHANICAL DRAWINGS FOR WEIGHTS AND LOCATIONS OF THE EQUIPMENTS.
3. ROOF HUNG LOADS PER ELECTRICAL, PLUMBING, MECHANICAL, ARCHITECTURAL DRAWINGS. ANY CONCENTRATED HANGING LOAD SHALL BE LOCATED AT PANEL POINT. GENERAL CONTRACTOR TO COORDINATE.
4. APPLY ADDITIONAL SPRINKLER MAINS AND SWAY BRACE LOADS PER SPRINKLER DRAWINGS.
5. THE ALLOWABLE DEFLECTION SHALL BE LIMITED TO:
   - L/240 FOR LIVE LOAD ONLY
   - L/180 FOR TOTAL LOAD
6. APPLY 38 PLF DEAD LOAD ON BOTTOM CHORD FOR CEILING LOAD. TOTAL LOAD SHOWN ON NOTE 1 INCLUDES THIS CEILING LOAD.
7. ALL TRUSSES SHALL BE DESIGNED FOR A POINT LOAD OF 500# HUNG FROM THE BOTTOM CHORD FOR ANY CARWASH EQUIPMENT.

SEISMIC LOAD

1. APPLY SEISMIC LOAD PER PLAN AT THE BRACES AS INDICATED BY ● .
2. APPLY SEISMIC LOAD AT C.M.U. WALL CONNECTION PER DETAILS 1/S7.11 AND 2/S7.11.

WIND LOAD

1. APPLY WIND LOAD DOWNWARD PER PLAN AS INDICATED BY ✱ .

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REVISIONS

NO :	DATE	DESCRIPTION
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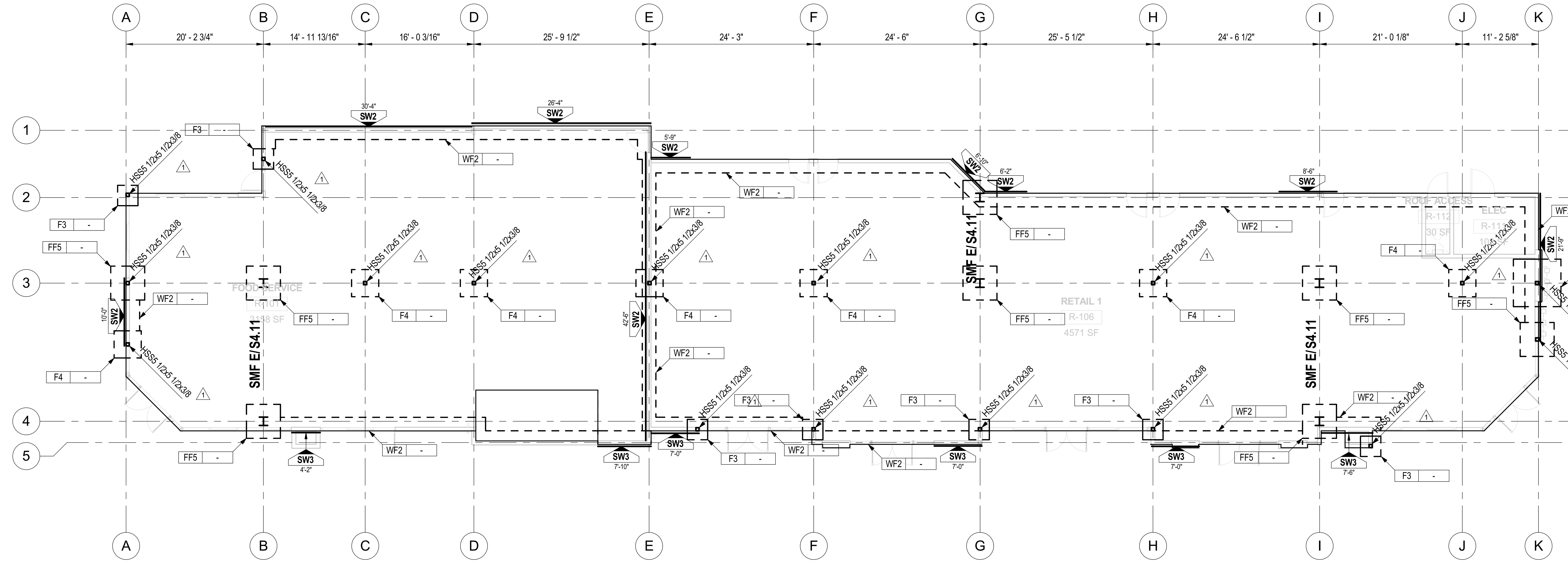
	07/14/17	3RD PLAN CHECK SUBMITTAL

CARWASH BUILDING
TRUSS LOAD PLAN

SHEET SCALE :	1/8" = 1'-0"
PROJECT MANAGER :	MH
DESIGNER :	JN
DRAWN BY :	FS
REVIEWED BY :	
1st DEPT. SUBMITTAL :	X/X/2016
ISSUED FOR CONST. :	
JOB NUMBER	16-S003
CAD FILE NAME	

S1.13A 1

2ND BUILDING PLAN CHECK COORDINATION 05.18.2017



LEVEL 1 FOUNDATION PLAN A

1/8" = 1'-0"

PLAN NOTES:

1. ELEVATION TOP OF CONCRETE SLAB SHALL BE COORDINATED WITH ARCHITECTURAL DRAWINGS, UNLESS NOTED OTHERWISE THUS (±0'-0")
2. SLAB ON GRADE SHALL BE 5" THICK w/ #5@16" EACH WAY OVER PREPARED SUBGRADE PER GEOTECHNICAL'S RECOMMENDATION. 5" THICK MINIMUM AT THE DRAIN. SLAB THICKNESS VARIES PER SLOPE TO DRAIN PER ARCHITECTURAL DRAWINGS.
3. ALL FOOTINGS SHALL BE CENTERED UNDER WALLS OR COLUMNS, UNLESS NOTED OTHERWISE.
4. FOR GENERAL NOTES SEE S0 SERIES SHEETS.
5. FOR TYPICAL DETAILS SEE S0 SERIES SHEETS. DETAILS AND SCHEDULES INDICATED AS 'TYPICAL' MAY NOT BE SPECIFICALLY REFERENCED ON DRAWINGS. DETERMINE WHERE EACH TYPICAL DETAIL OR SCHEDULE APPLIES BEFORE PROCEEDING WITH WORK.
6. SEE ARCHITECTURAL DRAWINGS FOR CONCRETE SLAB ELEVATIONS, DEPRESSIONS, SLOPES, OPENINGS, CURBS, DRAINS, TRENCHES, SLAB EDGE LOCATIONS, ETC., AND FOR WALL OVERALL DIMENSIONS, LOCATIONS OF OPENINGS, ETC., NOT INDICATED ON STRUCTURAL DRAWINGS.
7. VERIFY ALL DIMENSIONS WITH ARCHITECTURAL DRAWINGS PRIOR TO START OF WORK.
8. GENERAL CONTRACTOR IS RESPONSIBLE FOR COORDINATING AND LOCATING ALL OPENINGS THROUGH THE SLAB INCLUDING BUT NOT LIMITED TO ELECTRICAL, MECHANICAL, PLUMBING, SPRINKLER AND TELEPHONE. SUBMIT TO THE STRUCTURAL ENGINEER FOR APPROVAL PRIOR TO SUBMITTAL OF REINFORCING STEEL SHOP DRAWINGS.

PLAN SYMBOLS:

1. F- | - — INDICATE CONCRETE FOOTING MARK, SEE TYPICAL CONCRETE FOOTING SCHDULE ON S2.11. INDICATES ELEVATION TOP OF FOOTING. ALL TOP OF FOOTINGS SHALL BE -1'-6" BELOW LOWEST ADJACENT GRADE OR TOP OF CONCRETE SLAB ON GRADE, U.N.O.
2. INDICATES SLAB ELEVATION DROP, SEE PLAN.
3. (±0'-0") INDICATES TOP OF CONCRETE SLAB ELEVATION FROM LEVEL DATUM.
5. INDICATES SIDE OF SHEAR WALL PLYWOOD TO BE NAILED.
6. SW 5'-0" — INDICATES WOOD SHEAR WALL MARK PER SCHEDULE 1/S5.11. INDICATES MINIMUM LENGTH OF SHEAR WALL

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REVISIONS

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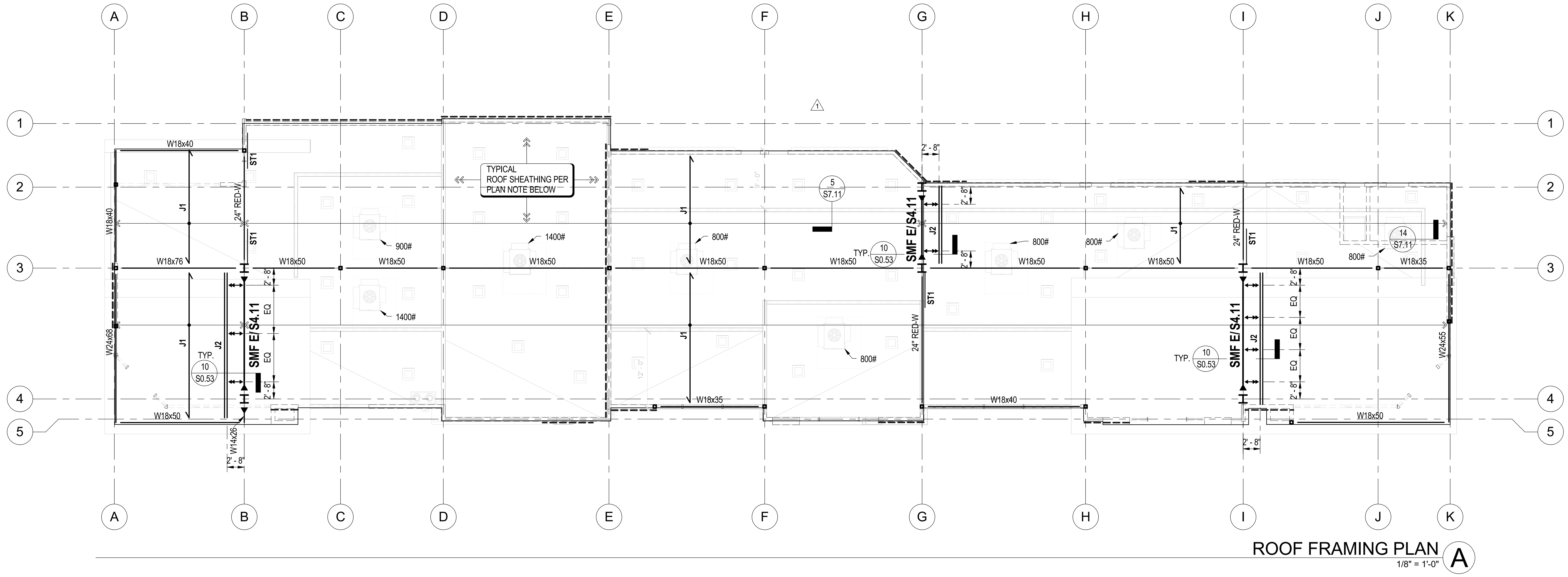
1	05/18/17	2ND PLAN CHECK SUBMITTAL
	07/14/17	3RD PLAN CHECK SUBMITTAL

RETAIL BUILDING FOUNDATION PLAN

SHEET SCALE :	1/8" = 1'-0"
PROJECT MANAGER :	MH
DESIGNER :	JN
DRAWN BY :	FS
REVIEWED BY :	
1st DEPT. SUBMITTAL :	X/X/2016
ISSUED FOR CONST. :	
JOB NUMBER	16-S003
CAD FILE NAME	
	S1.21

2ND BUILDING PLAN CHECK COORDINATION 05.18.2017



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

NOTES:

1. FOR GENERAL NOTES AND TYPICAL DETAILS, SEE S0 SERIES SHEETS.
2. VERIFY ALL DIMENSIONS BEFORE START OF WORK.
3. ROOF SHEATHING TO BE 3/4" CDX PLYWOOD WITH 10d NAILS @ 4:6:12, UNLESS NOTED OTHERWISE. BLOCK ALL EDGES (ALLOWABLE VALUE = XXX PLF)
4. SPLICE ALL DOUBLE PLATES PER DETAIL -/-. UNLESS NOTED OTHERWISE.
5. ALL NAILS SHALL BE COMMON NAILS.
6. ALL HARDWARE BY SIMPSON OR APPROVED EQUAL.
7. SHEATH ALL EXTERIOR WALLS WITH X" CDX PLYWOOD, UNLESS NOTED OTHERWISE. PLYWOOD NAILING SHALL BE 8d @ X"o.c. AT ALL EDGES AND 8d @ X"o.c. AT ALL INTERMEDIATE SUPPORTS MINIMUM.
8. NO PENETRATIONS ARE ALLOWED THROUGH SHEAR WALLS UNLESS SPECIFICALLY DETAILED ON THESE PLANS.
9. GENERAL NOTE FOR ALL STRUCTURAL FRAMING PLANS "FRAMING CONTRACTOR SHALL COORDINATE WITH MECHANICAL, ELECTRICAL AND PLUMBING FIXTURES, PIPE OR CONDUIT OR MECHANICAL VENT RISERS.
10. PROVIDE HEADER PER TYPICAL HEADER SCHEDULE ABOVE OPENINGS IN BEARING WALLS.

PLAN SYMBOLS:

1. J# INDICATES JOIST MARK PER JOIST SCHEDULE ON THIS SHEET.
2. SMF INDICATES SEISMIC MOMENT FRAME MARK, SEE REFERENCE FRAME ELEVATION FOR COLUMNAND BEAM SIZES AND BASE PLATE INFORMATION. SEE DETAIL 3/S4.22 FOR LATERAL BRACING OF SMF w/ W16x BEAMS.
3. ⟷ INDICATES L4x4x1/2 BRACE PER 10/S0.53

JOIST SCHEDULE

MARK	JOIST SIZE AND SPACING	REMARKS
J1	24" RED-W @ 32"o.c.	
J2	(2)24" RED-W	

NOTES:

STRAP SCHEDULE

MARK	SIMPSON STRAP	REMARKS
ST1	CMST16 x 4'-0"	

NOTES:

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REVISIONS

NO :	DATE	DESCRIPTION
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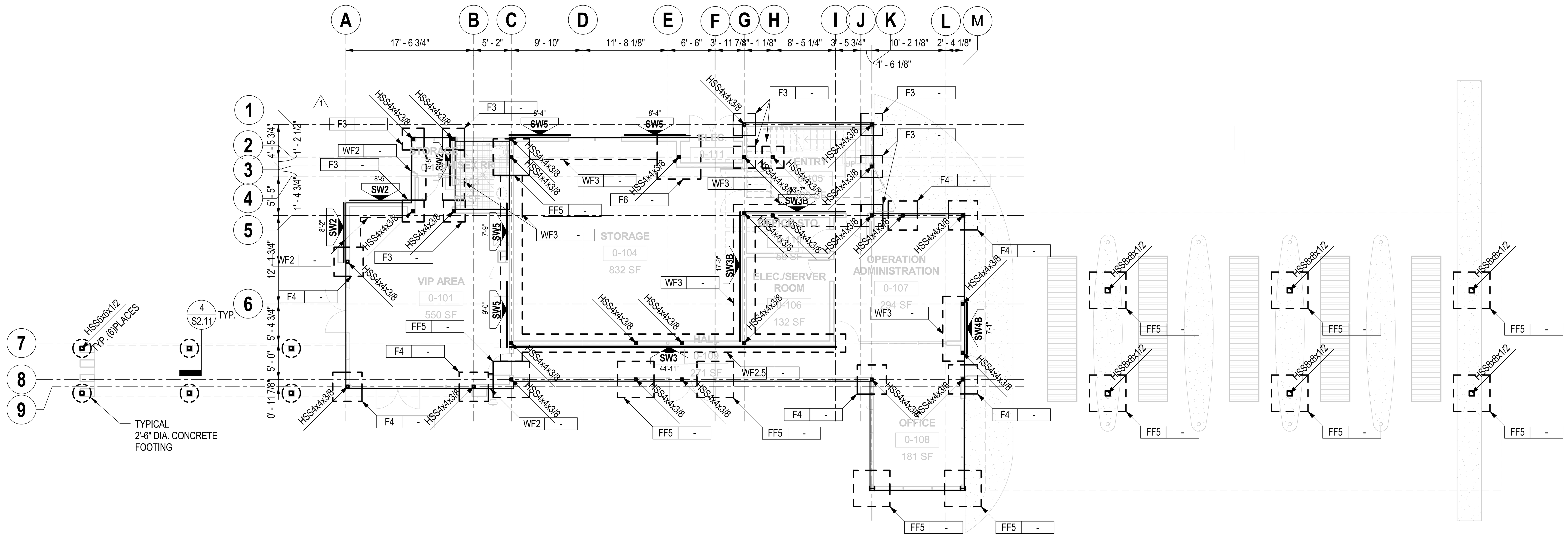
RETAIL BUILDING ROOF FRAMING PLAN

SHEET SCALE :	1/8" = 1'-0"
PROJECT MANAGER :	MH
DESIGNER :	JN
DRAWN BY :	FS
REVIEWED BY :	
1st DEPT. SUBMITTAL :	X/X/2016
ISSUED FOR CONST. :	
JOB NUMBER	16-S003
CAD FILE NAME	
	S1.22

2ND BUILDING PLAN CHECK COORDINATION 05.18.2017



LEVEL 1 FOUNDATION PLAN (A)

1/8" = 1'-0"

PLAN NOTES:

1. ELEVATION TOP OF CONCRETE SLAB SHALL BE COORDINATED WITH ARCHITECTURAL DRAWINGS, UNLESS NOTED OTHERWISE THUS (±0'-0")
2. SLAB ON GRADE SHALL BE 5" THICK w/ #5@16" EACH WAY OVER PREPARED SUBGRADE PER GEOTECHNICAL'S RECOMMENDATION. 5" THICK MINIMUM AT THE DRAIN. SLAB THICKNESS VARIES PER SLOPE TO DRAIN PER ARCHITECTURAL DRAWINGS.
3. ALL FOOTINGS SHALL BE CENTERED UNDER WALLS OR COLUMNS, UNLESS NOTED OTHERWISE.
4. FOR GENERAL NOTES SEE S0 SERIES SHEETS.
5. FOR TYPICAL DETAILS SEE S0 SERIES SHEETS. DETAILS AND SCHEDULES INDICATED AS 'TYPICAL' MAY NOT BE SPECIFICALLY REFERENCED ON DRAWINGS. DETERMINE WHERE EACH TYPICAL DETAIL OR SCHEDULE APPLIES BEFORE PROCEEDING WITH WORK.
6. SEE ARCHITECTURAL DRAWINGS FOR CONCRETE SLAB ELEVATIONS, DEPRESSIONS, SLOPES, OPENINGS, CURBS, DRAINS, TRENCHES, SLAB EDGE LOCATIONS, ETC., AND FOR WALL OVERALL DIMENSIONS, LOCATIONS OF OPENINGS, ETC., NOT INDICATED ON STRUCTURAL DRAWINGS.
7. VERIFY ALL DIMENSIONS WITH ARCHITECTURAL DRAWINGS PRIOR TO START OF WORK.
8. GENERAL CONTRACTOR IS RESPONSIBLE FOR COORDINATING AND LOCATING ALL OPENINGS THROUGH THE SLAB INCLUDING BUT NOT LIMITED TO ELECTRICAL, MECHANICAL, PLUMBING, SPRINKLER AND TELEPHONE. SUBMIT TO THE STRUCTURAL ENGINEER FOR APPROVAL PRIOR TO SUBMITTAL OF REINFORCING STEEL SHOP DRAWINGS.

PLAN SYMBOLS:

1. F- | - — INDICATE CONCRETE FOOTING MARK, SEE TYPICAL CONCRETE FOOTING SCHDULE ON S2.11. INDICATES ELEVATION TOP OF FOOTING. ALL TOP OF FOOTINGS SHALL BE -1'-6" BELOW LOWEST ADJACENT GRADE OR TOP OF CONCRETE SLAB ON GRADE, U.N.O.
2. INDICATES SLAB ELEVATION DROP, SEE PLAN.
3. (±0'-0") INDICATES TOP OF CONCRETE SLAB ELEVATION FROM LEVEL DATUM.
5. INDICATES SIDE OF SHEAR WALL PLYWOOD TO BE NAILED.
6. SW 5'-0" — INDICATES WOOD SHEAR WALL MARK PER SCHEDULE 1/S5.11; INDICATES MINIMUM LENGTH OF SHEAR WALL

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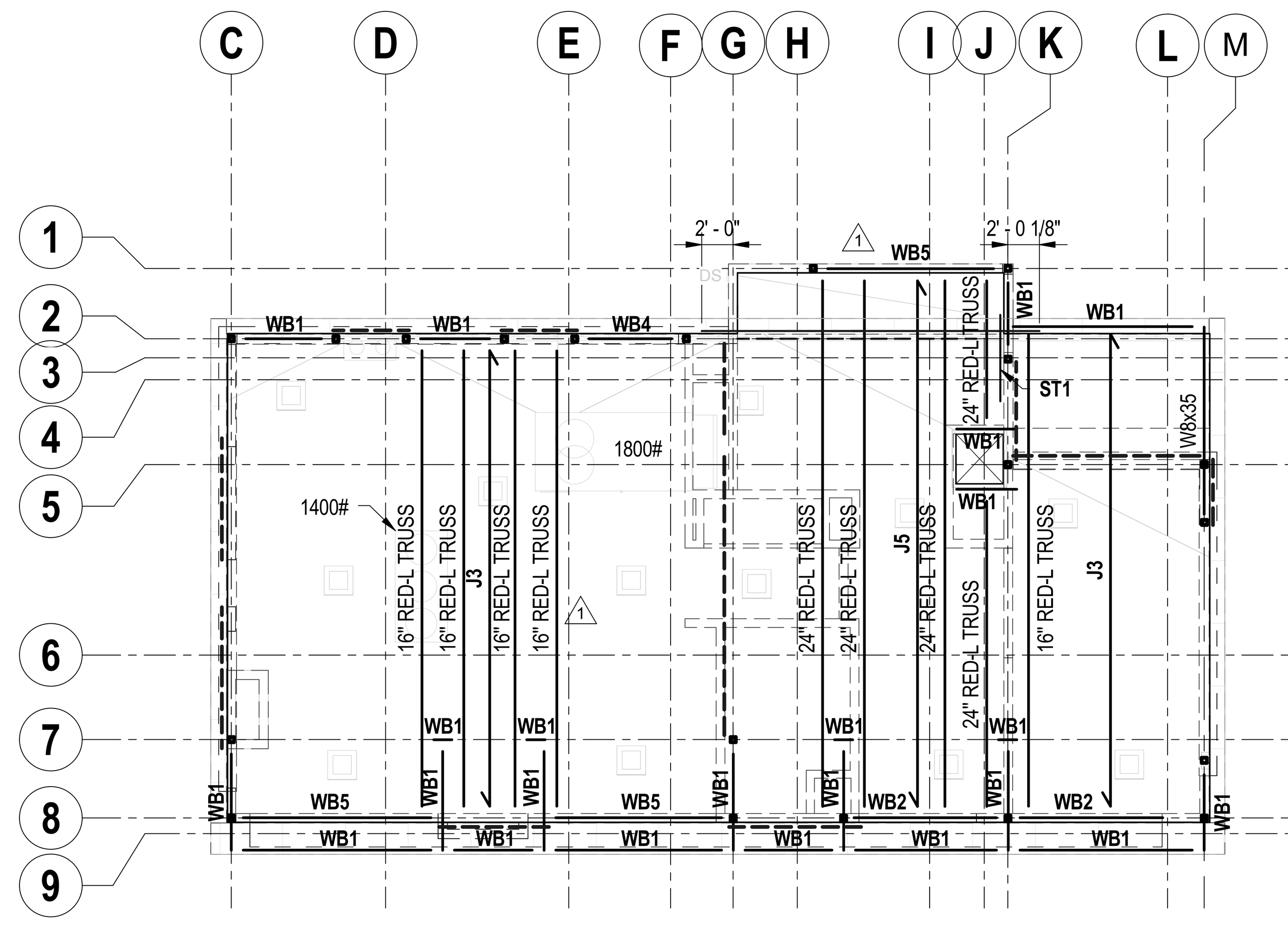
REVISIONS

NO :	DATE	DESCRIPTION
1	05/18/17	2ND PLAN CHECK SUBMITTAL
	07/14/17	3RD PLAN CHECK SUBMITTAL

OPERATIONS BUILDING FOUNDATION PLAN

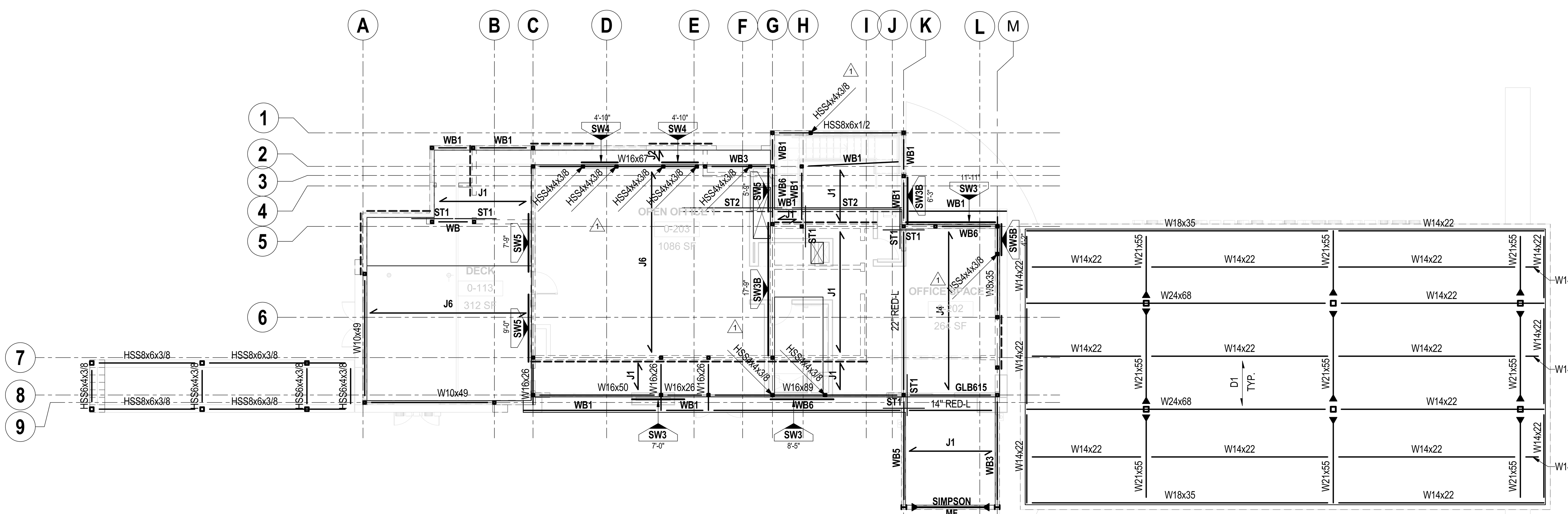
SHEET SCALE :	1/8" = 1'-0"
PROJECT MANAGER :	MH
DESIGNER :	JN
DRAWN BY :	FS
REVIEWED BY :	
1st DEPT. SUBMITTAL :	X/X/2016
ISSUED FOR CONST. :	
JOB NUMBER	16-S003
CAD FILE NAME	
	S1.31

2ND BUILDING PLAN CHECK COORDINATION 05.18.2017



ROOF FRAMING PLAN (B)

1/8" = 1'-0"



LEVEL 2 FRAMING PLAN (A)

1/8" = 1'-0"

NOTES:

1. FOR GENERAL NOTES AND TYPICAL DETAILS, SEE S0 SERIES SHEETS.
2. VERIFY ALL DIMENSIONS BEFORE START OF WORK.
3. FLOOR SHEATHING TO BE 3/4" CDX PLYWOOD WITH 10d NAILS @ 4:6:12, UNLESS NOTED OTHERWISE. BLOCK ALL EDGES (ALLOWABLE VALUE = XXX PLF).
4. ROOF SHEATHING TO BE 3/4" CDX PLYWOOD WITH 10d NAILS @ 4:6:12, UNLESS NOTED OTHERWISE. BLOCK ALL EDGES (ALLOWABLE VALUE = XXX PLF).
5. SPLICE ALL DOUBLE PLATES PER DETAIL -/-. UNLESS NOTED OTHERWISE.
6. ALL NAILS SHALL BE COMMON NAILS.
7. ALL HARDWARE BY SIMPSON OR APPROVED EQUAL.
8. SHEATH ALL EXTERIOR WALLS WITH X" CDX PLYWOOD, UNLESS NOTED OTHERWISE. PLYWOOD NAILING SHALL BE 8d @ X"o.c. AT ALL EDGES AND 8d @ X"o.c. AT ALL INTERMEDIATE SUPPORTS MINIMUM.
9. NO PENETRATIONS ARE ALLOWED THROUGH SHEAR WALLS UNLESS SPECIFICALLY DETAILED ON THESE PLANS.
10. GENERAL NOTE FOR ALL STRUCTURAL FRAMING PLANS "FRAMING CONTRACTOR SHALL COORDINATE WITH MECHANICAL, ELECTRICAL AND PLUMBING FIXTURES, PIPE OR CONDUIT OR MECHANICAL VENT RISERS.
11. PROVIDE HEADER PER TYPICAL HEADER SCHEDULE ABOVE OPENINGS IN BEARING WALLS.

PLAN SYMBOLS:

1. INDICATES WALL ABOVE.
2. INDICATES WALLS BELOW.
3. J — INDICATES FLOOR/ROOF JOIST MARK, SEE SCHEDULE ON PLAN.
4. WB — INDICATES WOOD BEAM MARK, SEE SCHEDULE ON PLAN.
5. GLB615 — INDICATES GLU-LAM BEAM MARK, SEE SCHEDULE ON PLAN.
6. INDICATES SIDE OF SHEAR WALL PLYWOOD TO BE NAILED.
7. INDICATES SHEAR WALL BELOW.
8. SW 5'-0" — INDICATES WOOD SHEAR WALL MARK PER SCHEDULE 1/S5.11. INDICATES MINIMUM LENGTH OF SHEAR WALL
9. D1 — INDICATES DECK SPAN DIRECTION AND TYPE PER SCHEDULE ON 1/S0.61.

JOIST SCHEDULE

MARK	JOIST SIZE AND SPACING	REMARKS
J1	14" RED-L @ 16"o.c.	
J2	14" RED-L @ 24"o.c.	
J3	16" RED-L @ 32"o.c.	
J4	22" RED-L @ 16"o.c.	
J5	24" RED-L @ 32"o.c.	
J6	24" RED-W @ 16"o.c.	

NOTES:

WOOD BEAM SCHEDULE

MARK	BEAM SIZE	REMARKS
WB1	6x12 D.F.#1	
WB2	6x14 D.F.#1	
WB3	6x14 D.F.#SS	
WB4	8x12 #SS	
WB5	8x14 #SS	
WB6	8x14 D.F.#1	
GLB615	6 3/4 x 15 GLULAM BEAM	

NOTES:

STRAP SCHEDULE

MARK	SIMPSON STRAP	REMARKS
ST1	CMST16 x 4'-0"	
ST2	CMST16 x PER PLAN	

NOTES:
1. PROVIDE 2x FRAMING OR BLOCKING w/E.N. AS NEEDED AT STRAP U.N.O.

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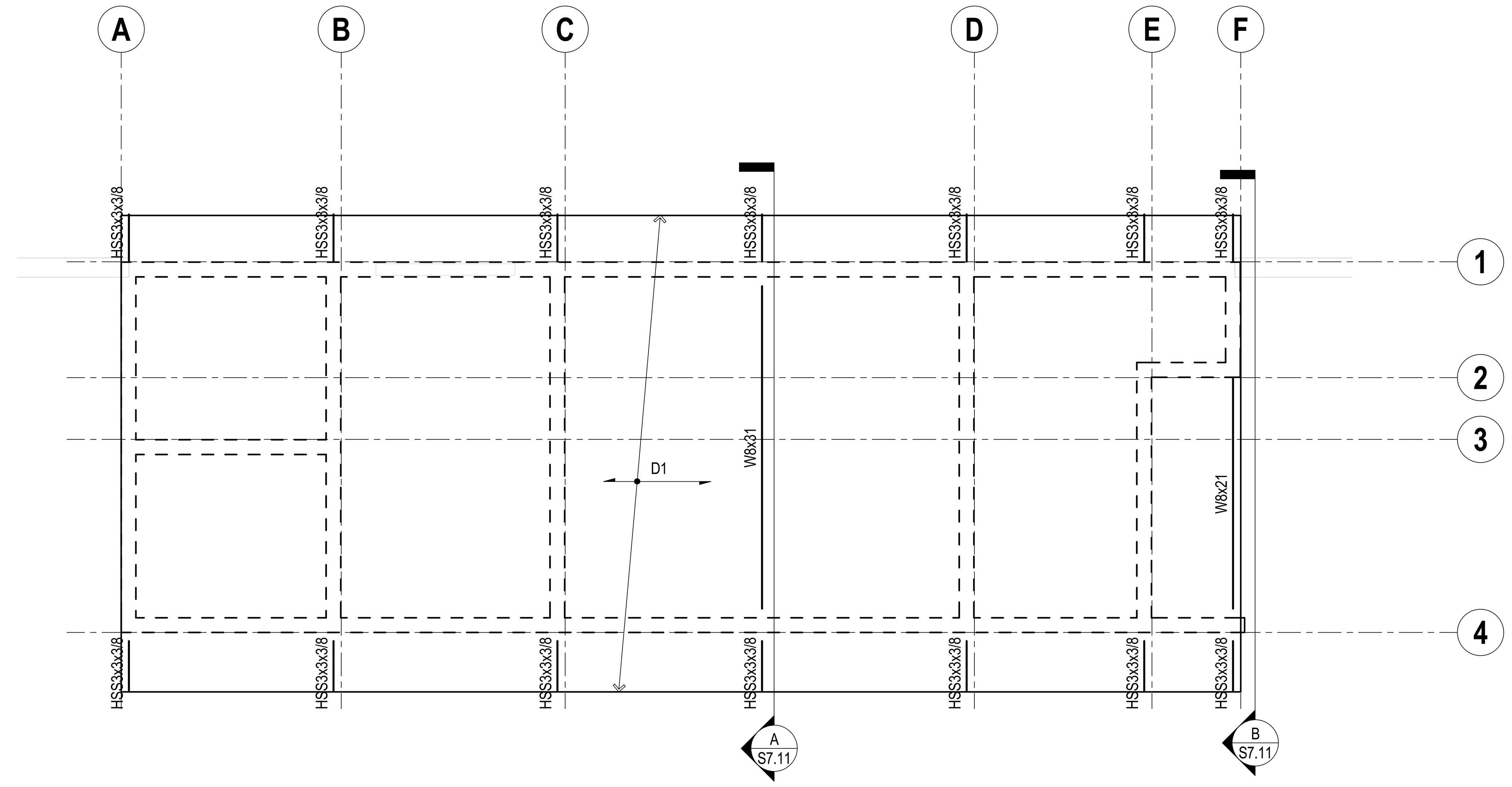
REVISIONS

NO :	DATE	DESCRIPTION
1	05/18/17	2ND PLAN CHECK SUBMITTAL
	07/14/17	3RD PLAN CHECK SUBMITTAL

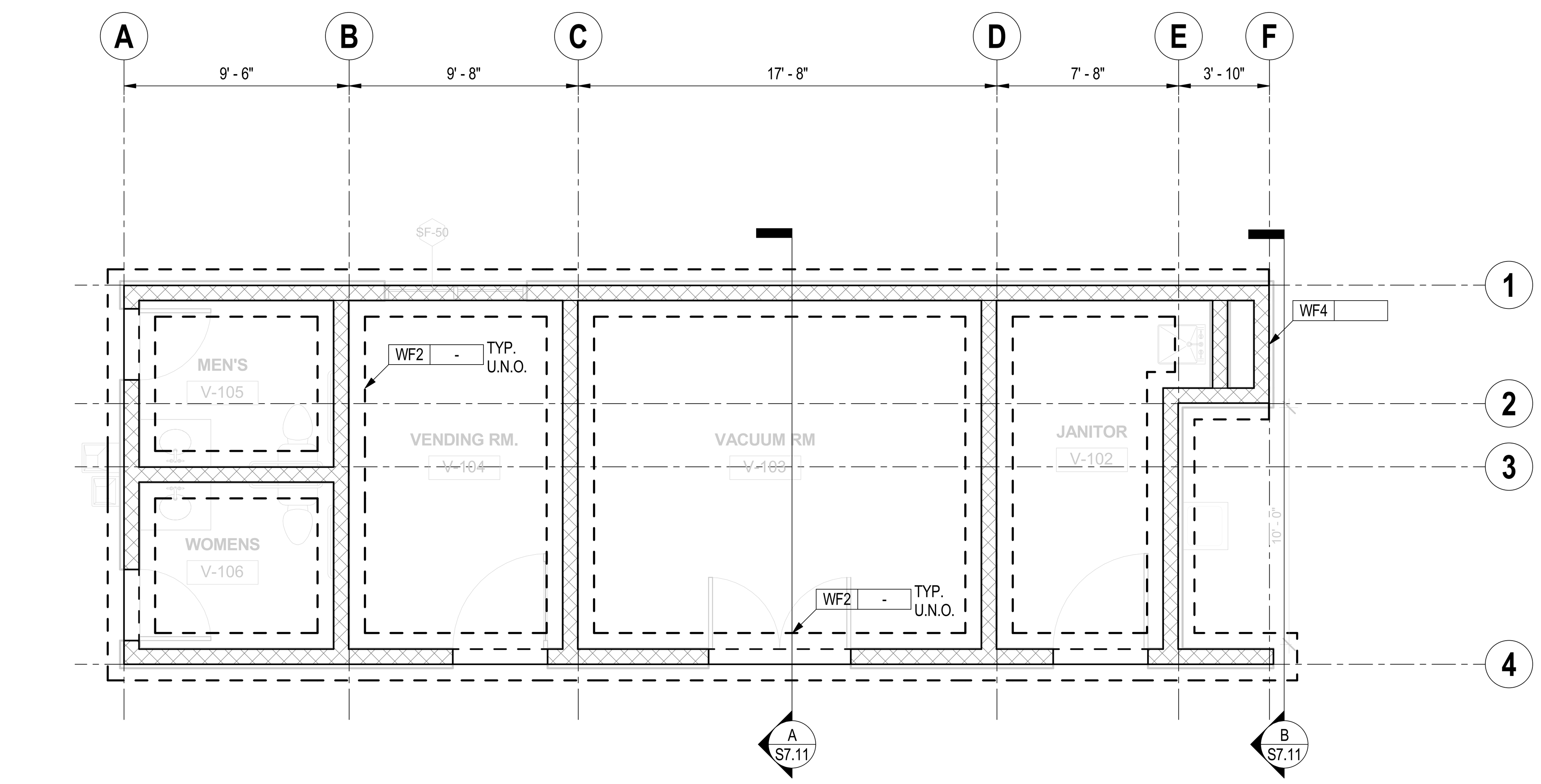
OPERATIONS BUILDING LEVEL 2, CARPORT AND ROOF FRAMING PLANS

SHEET SCALE :	1/8" = 1'-0"
PROJECT MANAGER :	MH
DESIGNER :	JN
DRAWN BY :	FS
REVIEWED BY :	
1st DEPT. SUBMITTAL :	X/X/2016
ISSUED FOR CONST. :	
JOB NUMBER	16-S003
CAD FILE NAME	

2ND BUILDING PLAN CHECK COORDINATION 05.18.2017



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



FOUNDATION PLAN A
1/4" = 1'-0"

PLAN NOTES:

1. ELEVATION TOP OF CONCRETE SLAB SHALL BE COORDINATED WITH ARCHITECTURAL DRAWINGS, UNLESS NOTED OTHERWISE THUS (±0'-0")
2. SLAB ON GRADE SHALL BE 5" THICK w/ #5@16" EACH WAY OVER PREPARED SUBGRADE PER GEOTECHNICAL'S RECOMMENDATION. 5" THICK MINIMUM AT THE DRAIN. SLAB THICKNESS VARIES PER SLOPE TO DRAIN PER ARCHITECTURAL DRAWINGS.
3. ALL FOOTINGS SHALL BE CENTERED UNDER WALLS OR COLUMNS, UNLESS NOTED OTHERWISE.
4. FOR GENERAL NOTES SEE S0 SERIES SHEETS.
5. FOR TYPICAL DETAILS SEE S0 SERIES SHEETS. DETAILS AND SCHEDULES INDICATED AS 'TYPICAL' MAY NOT BE SPECIFICALLY REFERENCED ON DRAWINGS. DETERMINE WHERE EACH TYPICAL DETAIL OR SCHEDULE APPLIES BEFORE PROCEEDING WITH WORK.
6. SEE ARCHITECTURAL DRAWINGS FOR CONCRETE SLAB ELEVATIONS, DEPRESSIONS, SLOPES, OPENINGS, CURBS, DRAINS, TRENCHES, SLAB EDGE LOCATIONS, ETC., AND FOR WALL OVERALL DIMENSIONS, LOCATIONS OF OPENINGS, ETC., NOT INDICATED ON STRUCTURAL DRAWINGS.
7. VERIFY ALL DIMENSIONS WITH ARCHITECTURAL DRAWINGS PRIOR TO START OF WORK.
8. GENERAL CONTRACTOR IS RESPONSIBLE FOR COORDINATING AND LOCATING ALL OPENINGS THROUGH THE SLAB INCLUDING BUT NOT LIMITED TO ELECTRICAL, MECHANICAL, PLUMBING, SPRINKLER AND TELEPHONE. SUBMIT TO THE STRUCTURAL ENGINEER FOR APPROVAL PRIOR TO SUBMITTAL OF REINFORCING STEEL SHOP DRAWINGS.

PLAN SYMBOLS:

1. F- - INDICATE CONCRETE FOOTING MARK, SEE TYPICAL CONCRETE FOOTING SCHDULE ON S2.11
   INDICATES ELEVATION TOP OF FOOTING. ALL TOP OF FOOTINGS SHALL BE -1'-6" BELOW LOWEST ADJACENT GRADE OR TOP OF CONCRETE SLAB ON GRADE, U.N.O.
2. INDICATES SLAB ELEVATION DROP, SEE PLAN
3. (±0'-0") INDICATES TOP OF CONCRETE SLAB ELEVATION FROM LEVEL DATUM
4. D1 INDICATES DIRECTION OF STEEL DECKING AND SLAB CONSTRUCTION. SEE SCHEDULE ON 1/S0.61.
5. INDICATES 8" BEARING C.M.U. WALL.
6. INDICATES 8" NON-BEARING C.M.U. WALL.

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REVISIONS

NO :	DATE	DESCRIPTION
	07/14/17	3RD PLAN CHECK SUBMITTAL

VACUUM STORAGE BUILDING FOUNDATION AND ROOF FRAMING PLAN

SHEET SCALE :	1/4" = 1'-0"
PROJECT MANAGER :	MH
DESIGNER :	JN
DRAWN BY :	FS
REVIEWED BY :	
1st DEPT. SUBMITTAL :	X/X/2016
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JOB NUMBER	16-S003
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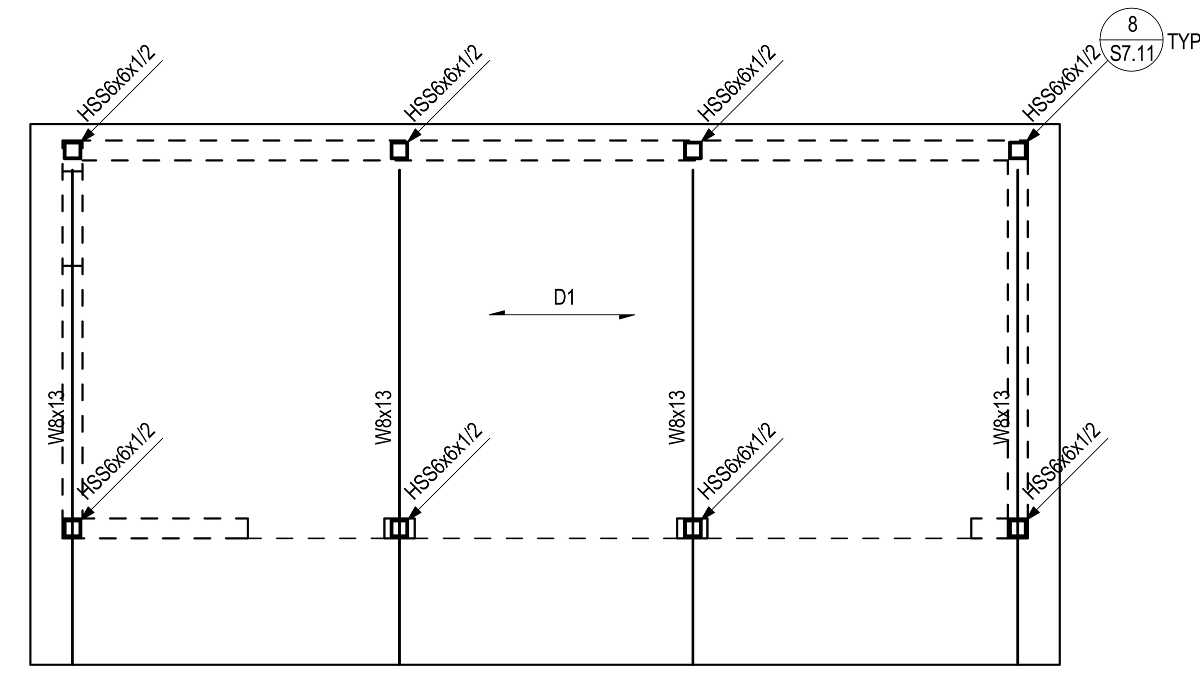
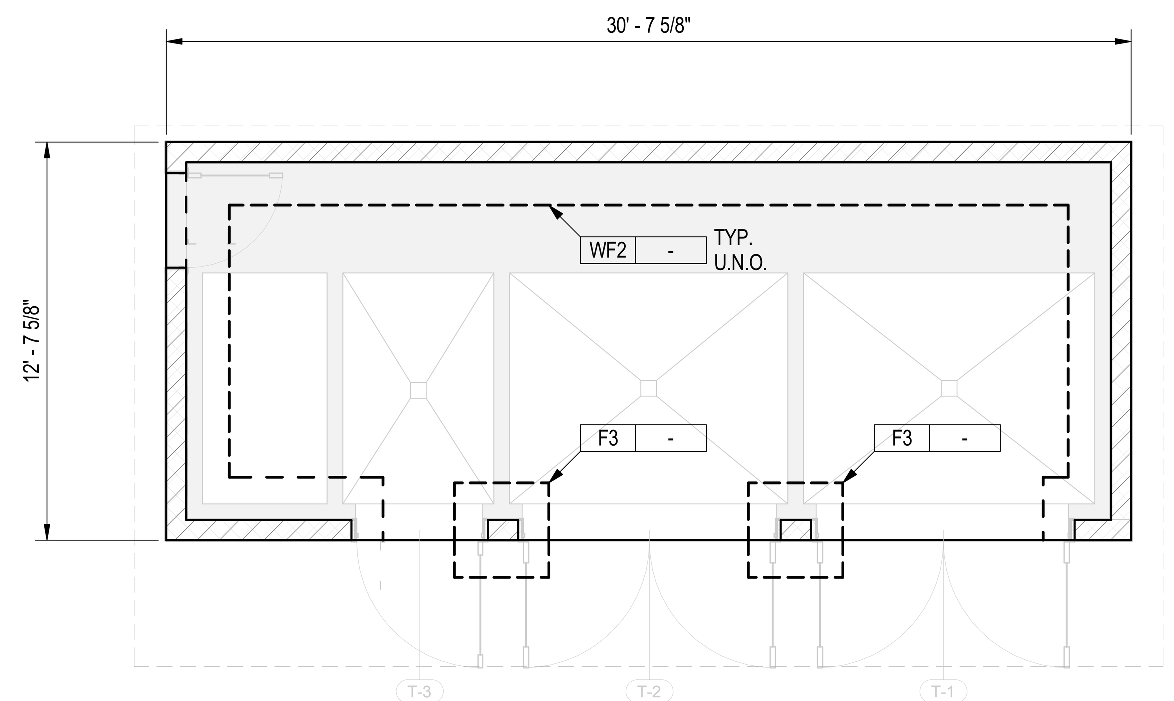
S1.41

2ND BUILDING PLAN CHECK COORDINATION 05.18.2017



ROOF FRAMING PLAN (B)

1/4" = 1'-0"



FOUNDATION PLAN (A)

1/4" = 1'-0"

PLAN NOTES:

1. ELEVATION TOP OF CONCRETE SLAB SHALL BE COORDINATED WITH ARCHITECTURAL DRAWINGS, UNLESS NOTED OTHERWISE THUS (±0'-0")
2. SLAB ON GRADE SHALL BE 5" THICK w/ #5@16" EACH WAY OVER PREPARED SUBGRADE PER GEOTECHNICAL'S RECOMMENDATION. 5" THICK MINIMUM AT THE DRAIN. SLAB THICKNESS VARIES PER SLOPE TO DRAIN PER ARCHITECTURAL DRAWINGS.
3. ALL FOOTINGS SHALL BE CENTERED UNDER WALLS OR COLUMNS, UNLESS NOTED OTHERWISE.
4. FOR GENERAL NOTES SEE S0 SERIES SHEETS.
5. FOR TYPICAL DETAILS SEE S0 SERIES SHEETS. DETAILS AND SCHEDULES INDICATED AS 'TYPICAL' MAY NOT BE SPECIFICALLY REFERENCED ON DRAWINGS. DETERMINE WHERE EACH TYPICAL DETAIL OR SCHEDULE APPLIES BEFORE PROCEEDING WITH WORK.
6. SEE ARCHITECTURAL DRAWINGS FOR CONCRETE SLAB ELEVATIONS, DEPRESSIONS, SLOPES, OPENINGS, CURBS, DRAINS, TRENCHES, SLAB EDGE LOCATIONS, ETC., AND FOR WALL OVERALL DIMENSIONS, LOCATIONS OF OPENINGS, ETC., NOT INDICATED ON STRUCTURAL DRAWINGS.
7. VERIFY ALL DIMENSIONS WITH ARCHITECTURAL DRAWINGS PRIOR TO START OF WORK.
8. GENERAL CONTRACTOR IS RESPONSIBLE FOR COORDINATING AND LOCATING ALL OPENINGS THROUGH THE SLAB INCLUDING BUT NOT LIMITED TO ELECTRICAL, MECHANICAL, PLUMBING, SPRINKLER AND TELEPHONE. SUBMIT TO THE STRUCTURAL ENGINEER FOR APPROVAL PRIOR TO SUBMITTAL OF REINFORCING STEEL SHOP DRAWINGS.

PLAN SYMBOLS:

1. F- - INDICATE CONCRETE FOOTING MARK, SEE TYPICAL CONCRETE FOOTING SCHDULE ON S2.11
   INDICATES ELEVATION TOP OF FOOTING. ALL TOP OF FOOTINGS SHALL BE -1'-6" BELOW LOWEST ADJACENT GRADE OR TOP OF CONCRETE SLAB ON GRADE, U.N.O.
2. INDICATES SLAB ELEVATION DROP, SEE PLAN
3. (±0'-0") INDICATES TOP OF CONCRETE SLAB ELEVATION FROM LEVEL DATUM
4. D1 INDICATES DIRECTION OF STEEL DECKING AND SLAB CONSTRUCTION. SEE SCHEDULE ON 1/S0.61.
5. INDICATES 8" BEARING C.M.U. WALL.
6. INDICATES 8" NON-BEARING C.M.U. WALL.

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REVISIONS

NO :	DATE	DESCRIPTION
	07/14/17	3RD PLAN CHECK SUBMITTAL

TRASH ENCLOSURE FOUNDATION AND ROOF FRAMING PLAN

SHEET SCALE :	1/4" = 1'-0"
PROJECT MANAGER :	MH
DESIGNER :	JN
DRAWN BY :	FS
REVIEWED BY :	
1st DEPT. SUBMITTAL :	X/X/2016
ISSUED FOR CONST. :	
JOB NUMBER	16-S003
CAD FILE NAME	

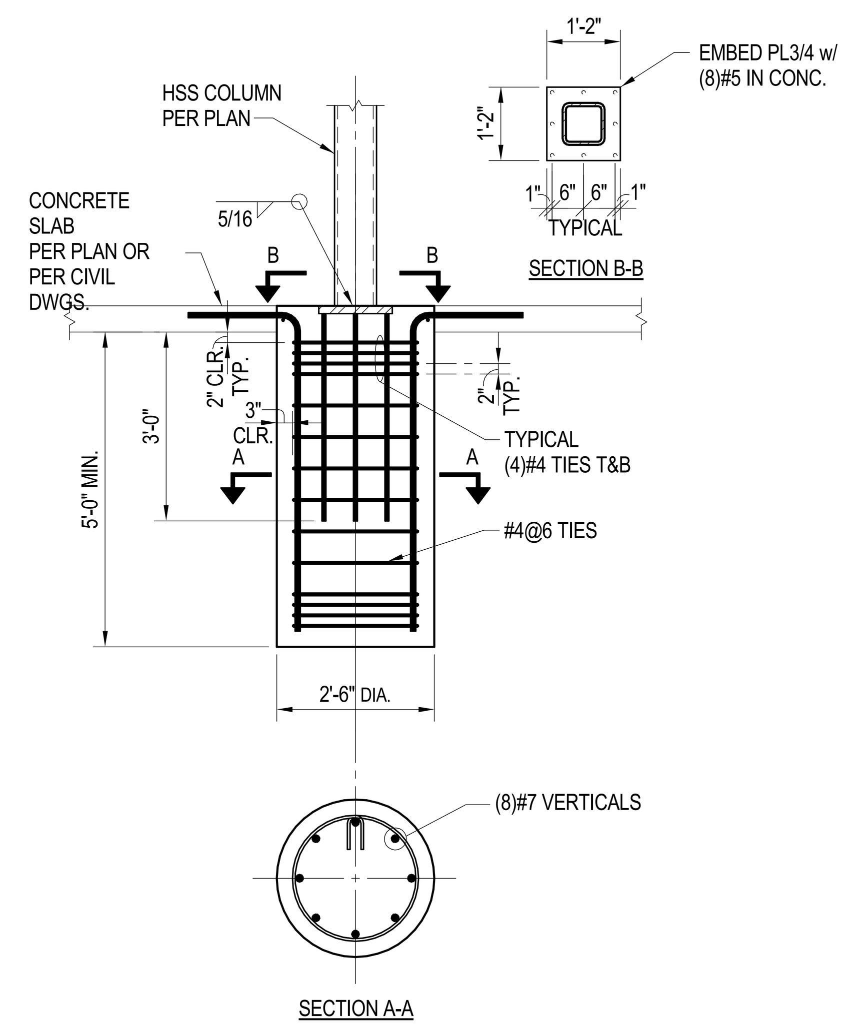
S1.50

2ND BUILDING PLAN CHECK COORDINATION 05.18.2017

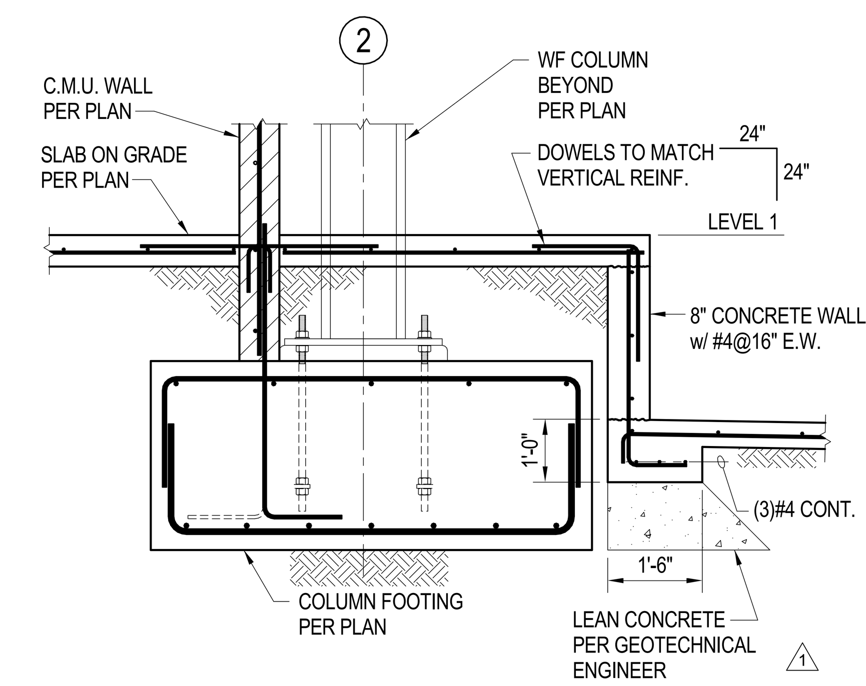
TYPICAL CONCRETE FOOTING SCHEDULE

MARK	SIZE			TOP REINFORCING		BOTTOM REINFORCING		REMARKS
	WIDTH	LENGTH	THICKNESS	LONG REINFORCING	SHORT REINFORCING	LONG REINFORCING	SHORT REINFORCING	
NON-FRAME SPREAD FOOTINGS								
F3	3'-0"	3'-0"	2'-0"	-	-	(6)#5	(6)#5 1	
F4	4'-0"	4'-0"	2'-0"	-	-	(5)#6	(5)#6	
F6	6'-0"	6'-0"	2'-0"	-	-	(6)#7	(6)#7	
FRAME SPREAD FOOTINGS								
FF5	5'-0"	5'-0"	3'-0"	(5)#6	(5)#6	(7)#7	(7)#7	
FF5A	5'-0"	10'-0"	3'-0"	(5)#6	(9)#6	(7)#7	(10)#8	
FF7	7'-0"	7'-0"	3'-0"	(7)#6	(7)#6	(10)#7	(10)#7 1	
WALL FOOTINGS								
WF2	2'-0"	CONT.	24"	(2)#5	-	(3)#7	#6@10	
WF2.5	2'-6"	CONT.	24"	(2)#5	-	(4)#7	#6@10	
WF3	3'-0"	CONT.	24"	-	-	(4)#6	#6@10	

1



TYPICAL
CANOPY COLUMN FOOTING DETAIL 4
1/2"=1'-0"



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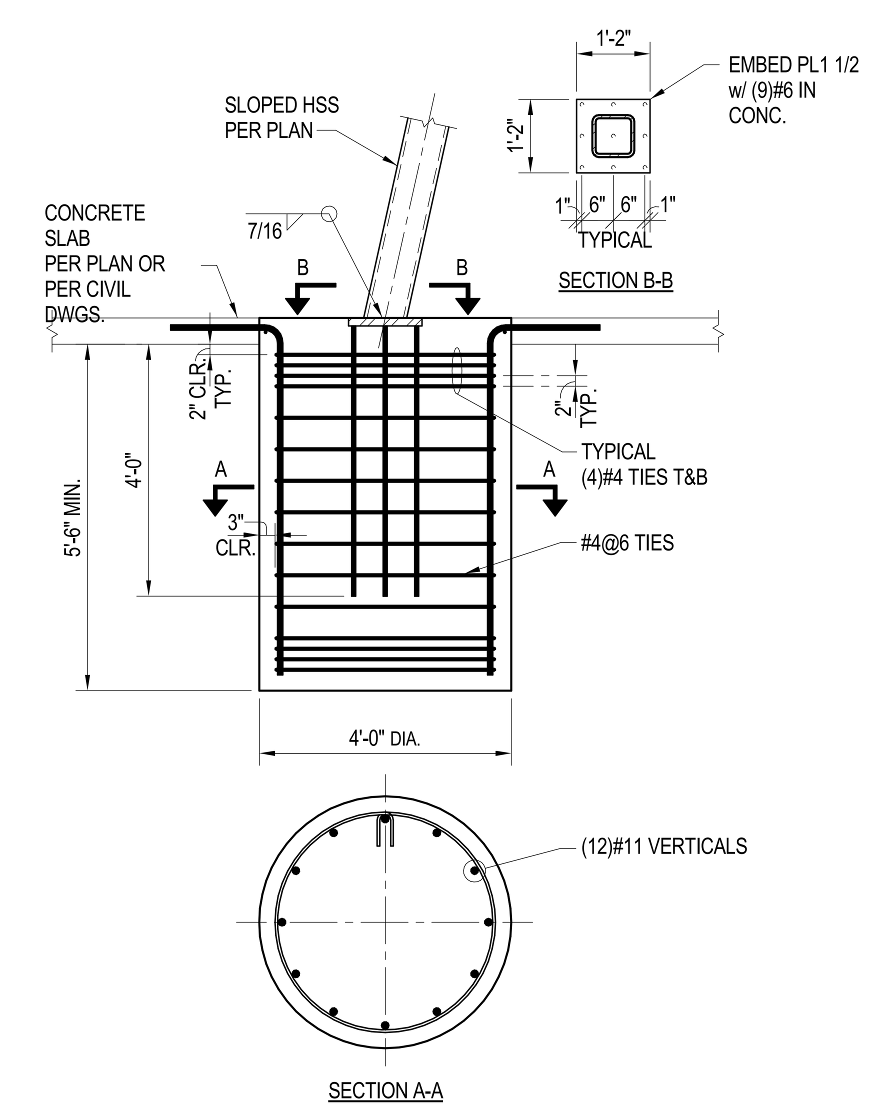
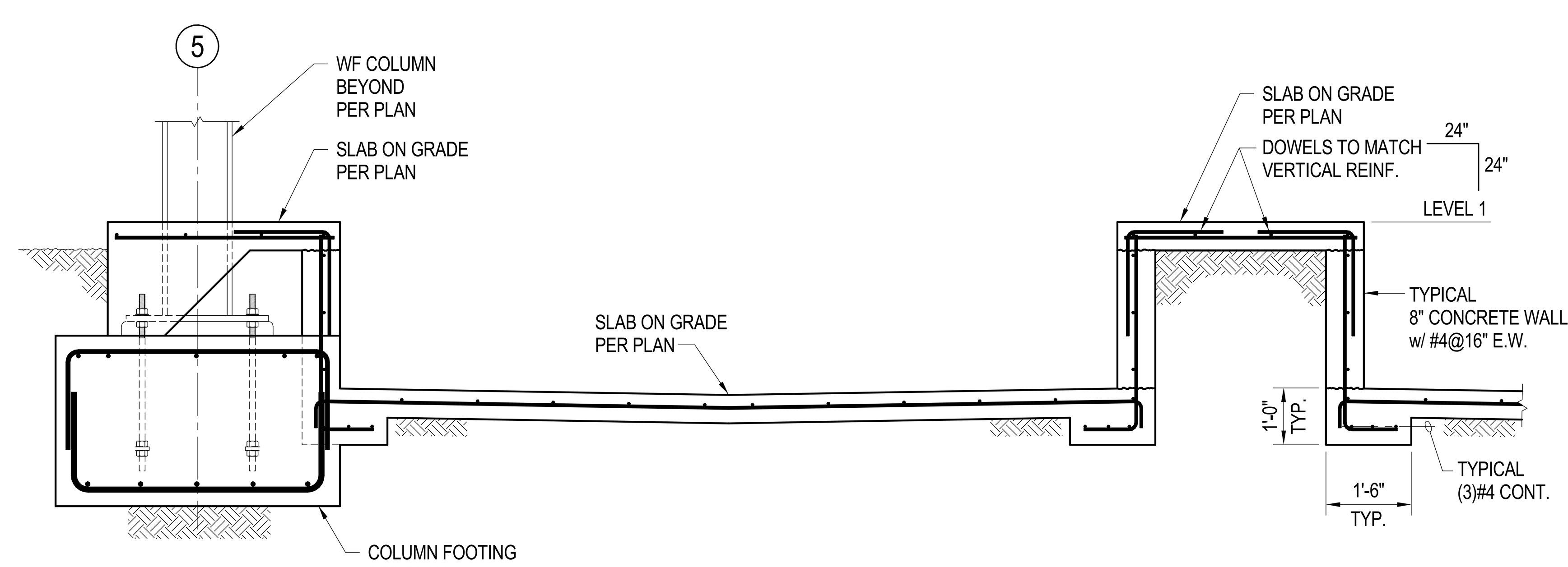
CARWASH BUILDING PIT SECTION 2
1/2"=1'-0"





1

CARWASH BUILDING PIT SECTION 3
1/2"=1'-0"

TYPICAL
CANTILEVER COLUMN FOOTING DETAIL 1
1/2"=1'-0"

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REVISIONS

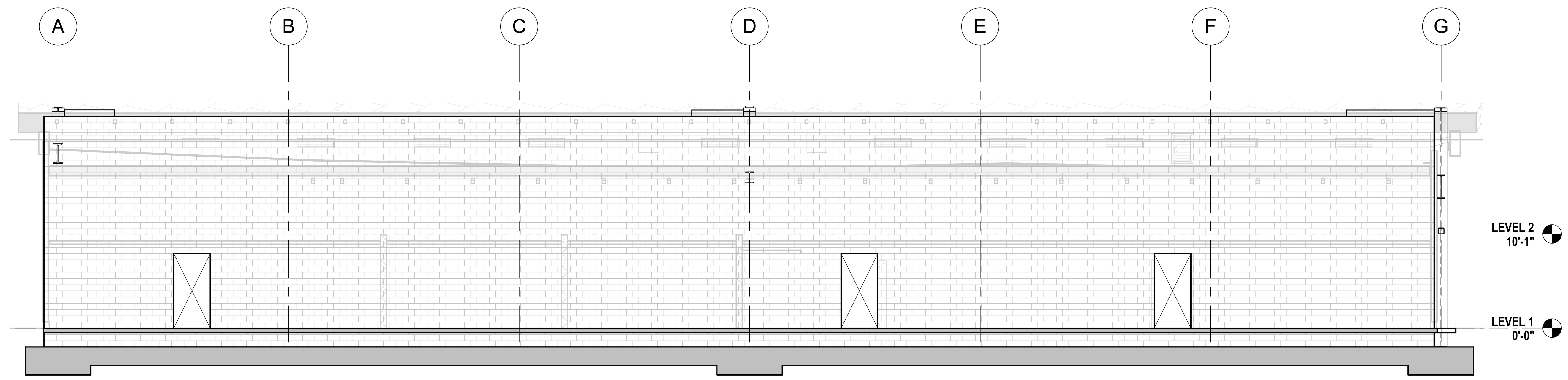
NO :	DATE	DESCRIPTION
1	05/18/17	2ND PLAN CHECK SUBMITTAL
	07/14/17	3RD PLAN CHECK SUBMITTAL

CONCRETE FOOTING SCHEDULE AND FOUNDATION DETAILS

SHEET SCALE :	As indicated
PROJECT MANAGER :	MH
DESIGNER :	JN
DRAWN BY :	FS
REVIEWED BY :	
1st DEPT. SUBMITTAL :	X/X/2016
ISSUED FOR CONST. :	
JOB NUMBER	16-S003
CAD FILE NAME	

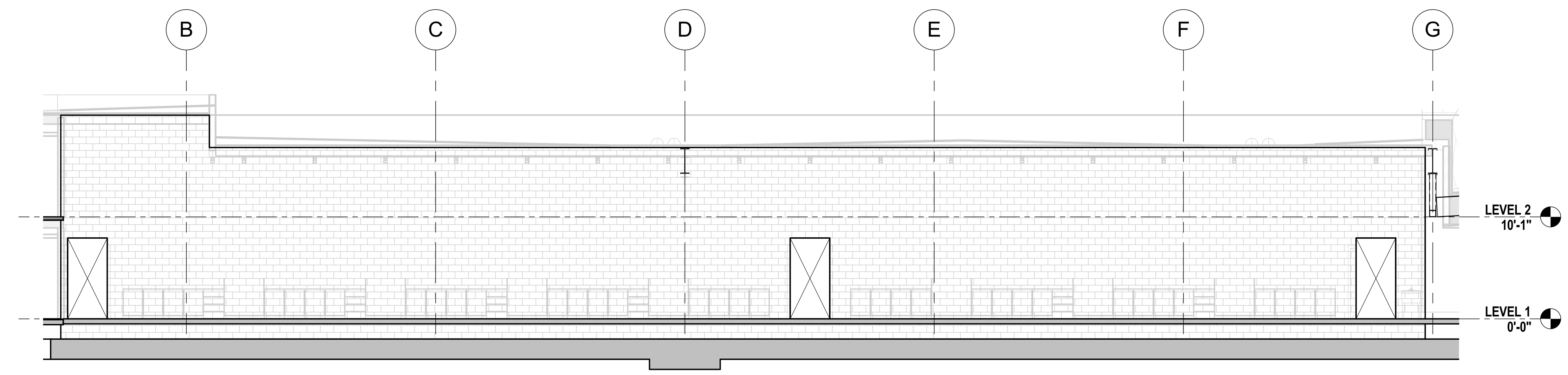
S2.11

2ND BUILDING PLAN CHECK COORDINATION 05.18.2017



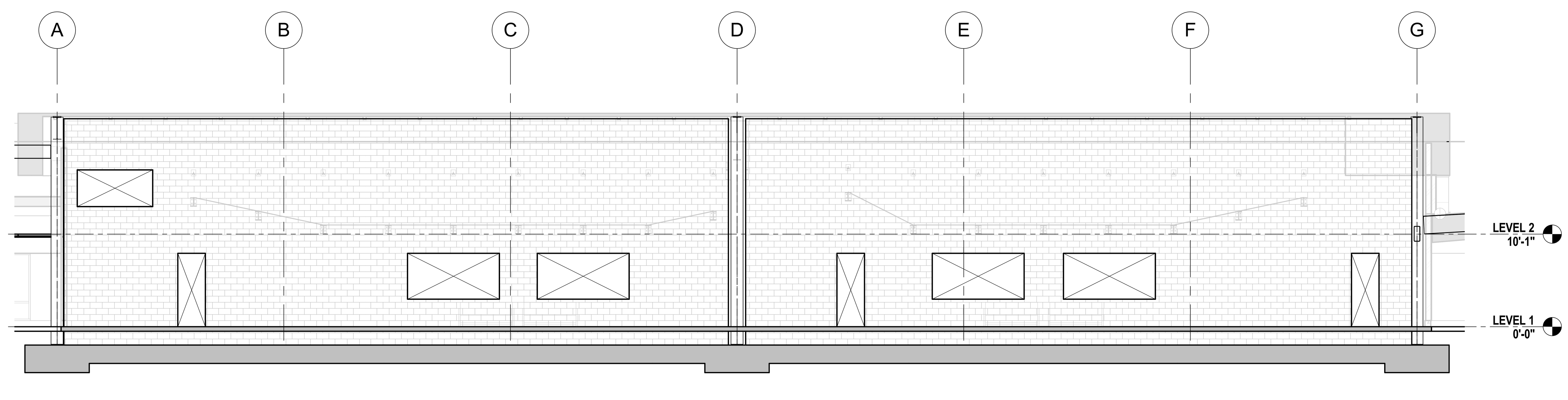
C.M.U. SHEAR WALL ELEVATION C

1/8" = 1'-0"



C.M.U. SHEAR WALL ELEVATION B

1/8" = 1'-0"



C.M.U. SHEAR WALL ELEVATION A

1/8" = 1'-0"

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1	05/18/17	2ND PLAN CHECK SUBMITTAL
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CARWASH BUILDING
C.M.U. SHEAR WALL
ELEVATIONS

SHEET SCALE :	1/8" = 1'-0"
PROJECT MANAGER :	MH
DESIGNER :	JN
DRAWN BY :	FS
REVIEWED BY :	
1st DEPT. SUBMITTAL :	X/X/2016
ISSUED FOR CONST. :	
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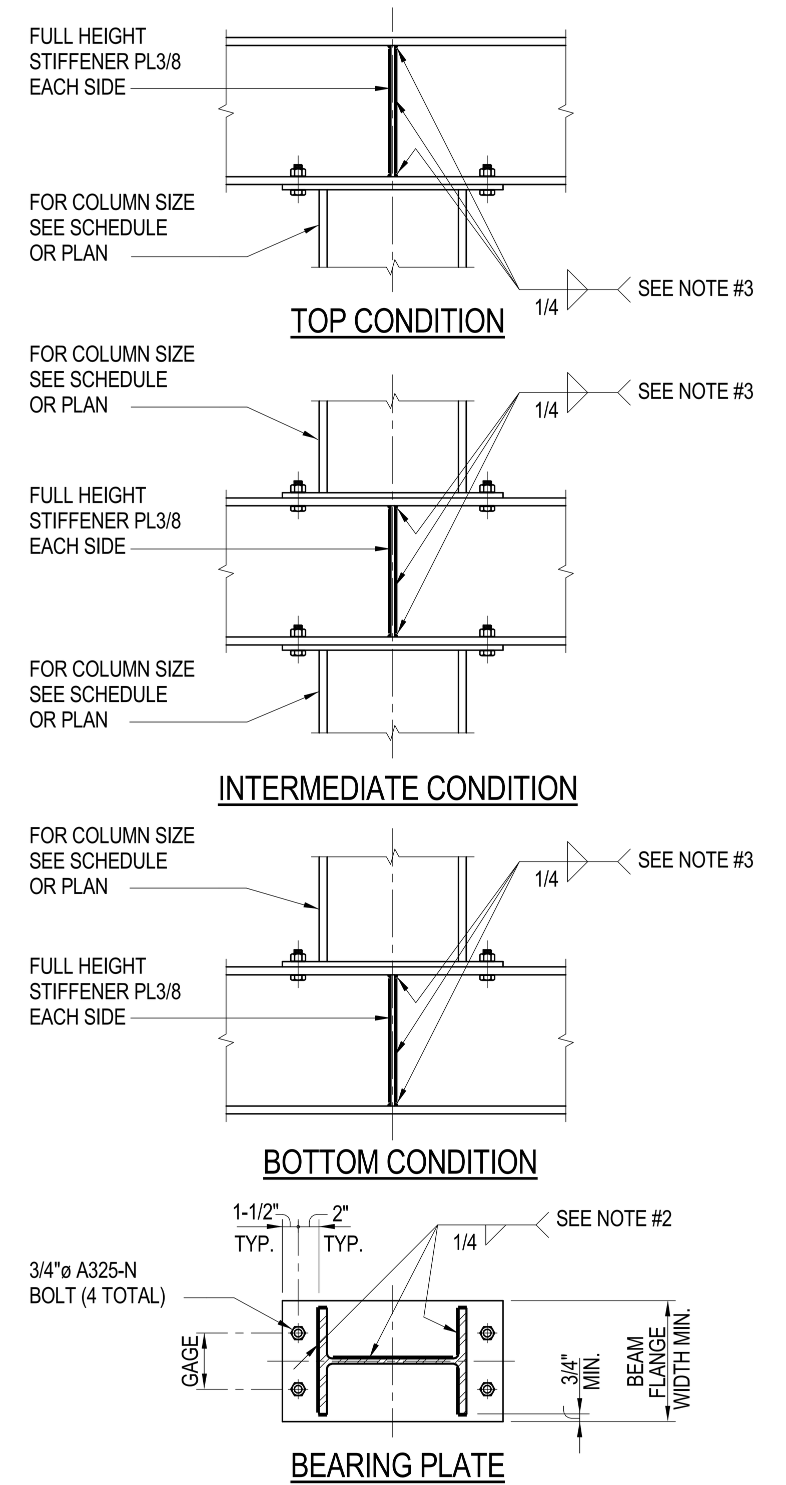
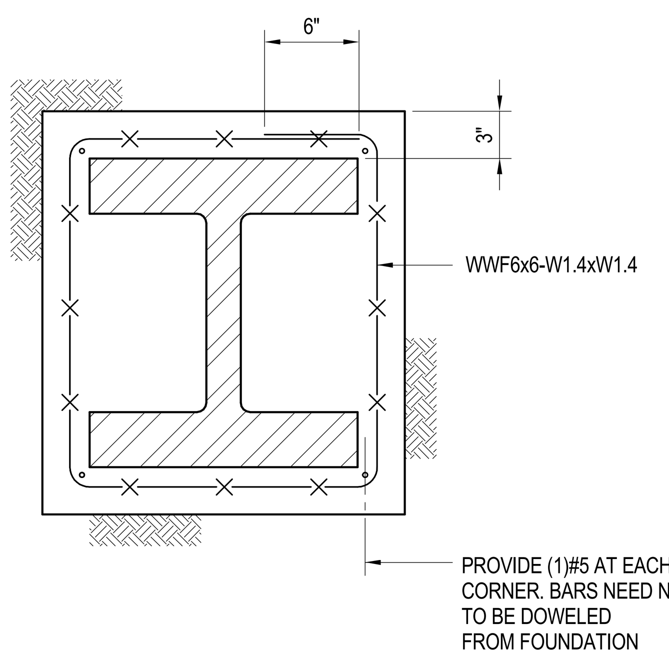
S2.21

2ND BUILDING PLAN CHECK COORDINATION 05.18.2017



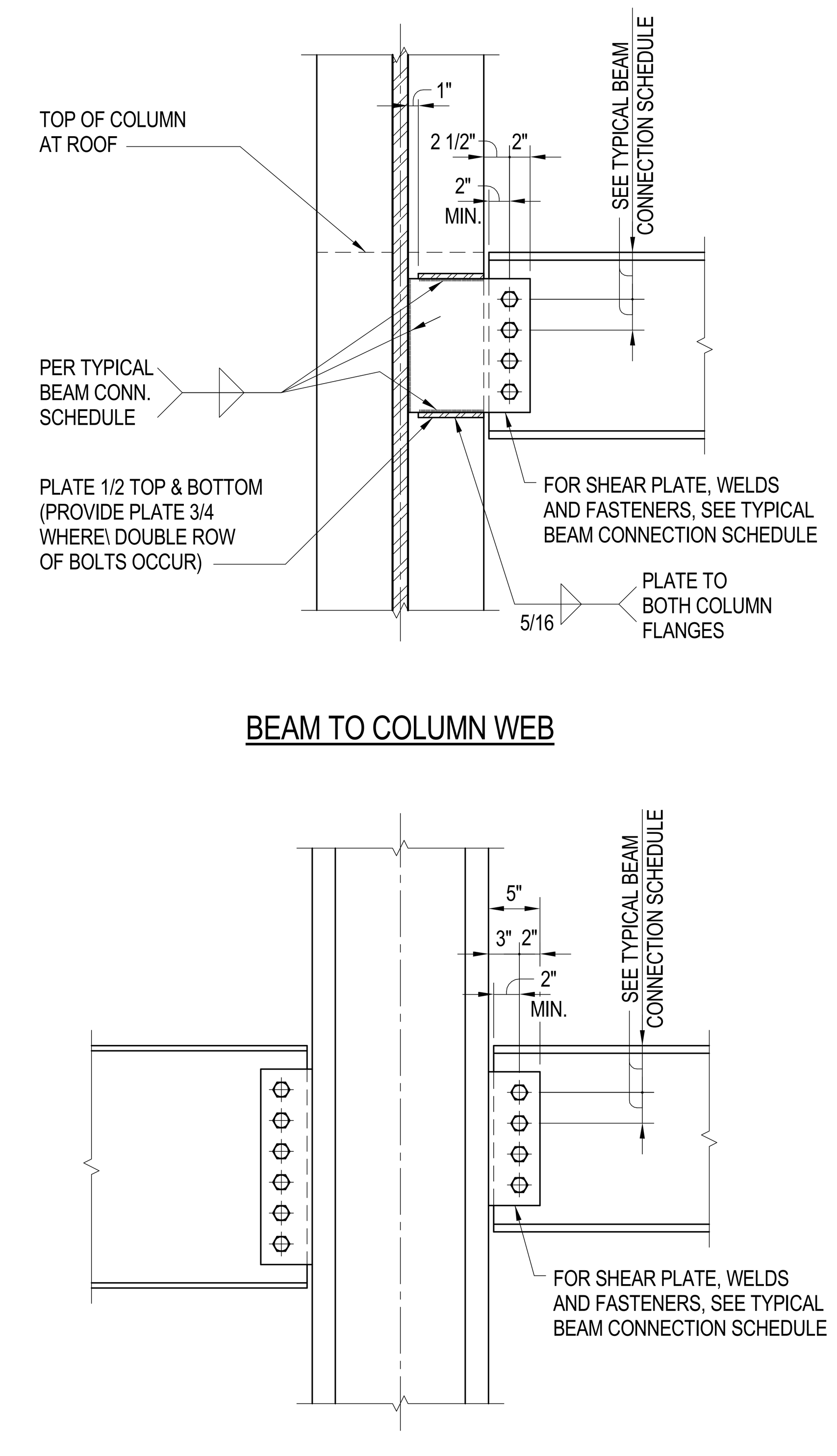
NOTES:
1. BEARING PL SHALL MATCH BEAM FLANGE THICKNESS AND SHALL BE 1/2" THICK MINIMUM, UNLESS NOTED OTHERWISE IN COLUMN SCHEDULE.
2. PROVIDE 5/16" FILLET WELD WHERE BEARING PL EXCEEDS 3/4".
3. PROVIDE 5/16" FILLET WELD WHERE BEAM WEB EXCEEDS 3/4".

TYPICAL
COLUMN BEARING PLATE DETAILS 5
TSC104

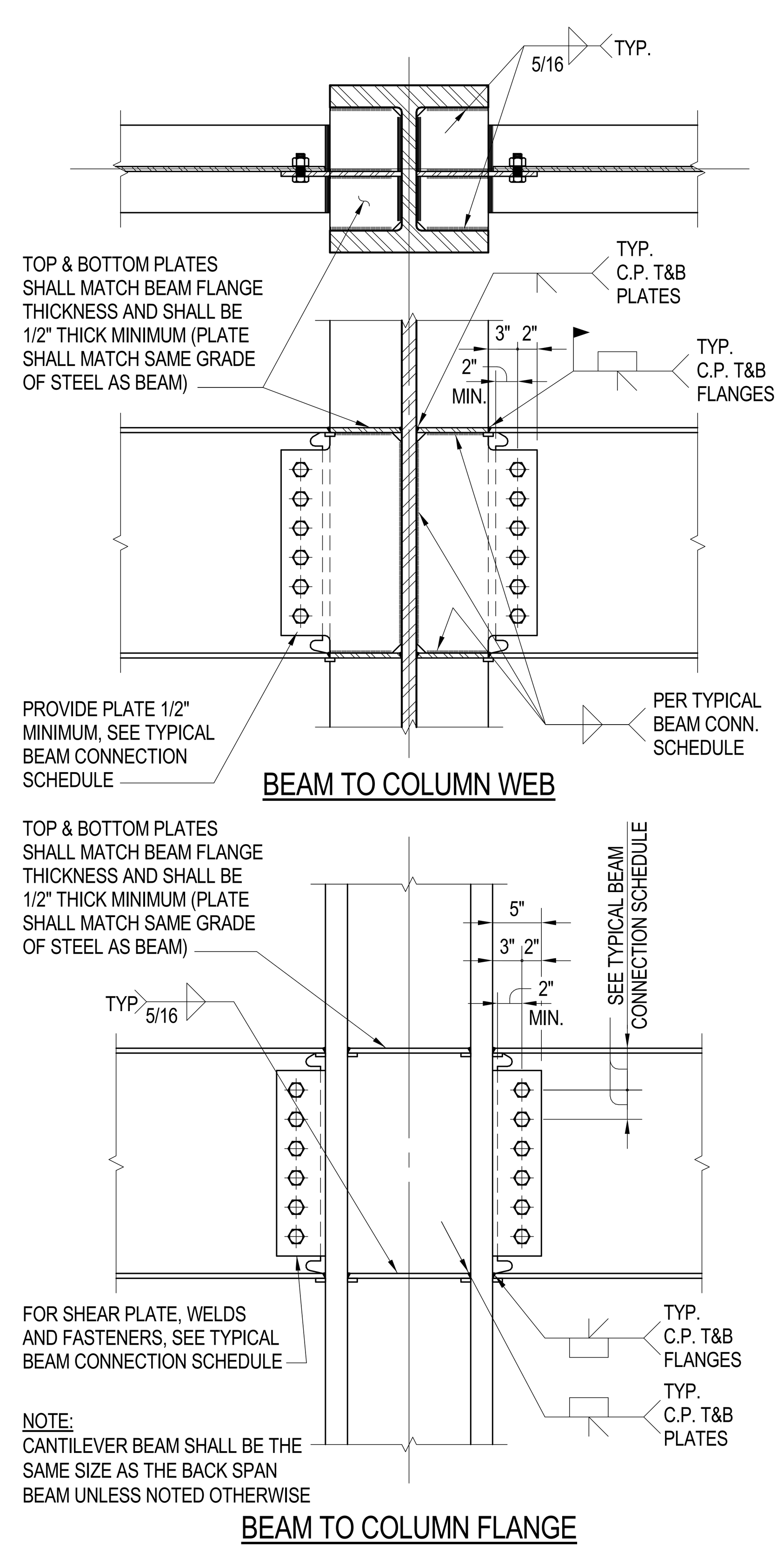


NOTE:
PROVIDE SAME COVERAGE FOR ANCHOR BOLTS AND BASE PLATES

TYPICAL
STEEL COLUMN CONCRETE ENCASEMENT DETAIL 3
TSC501



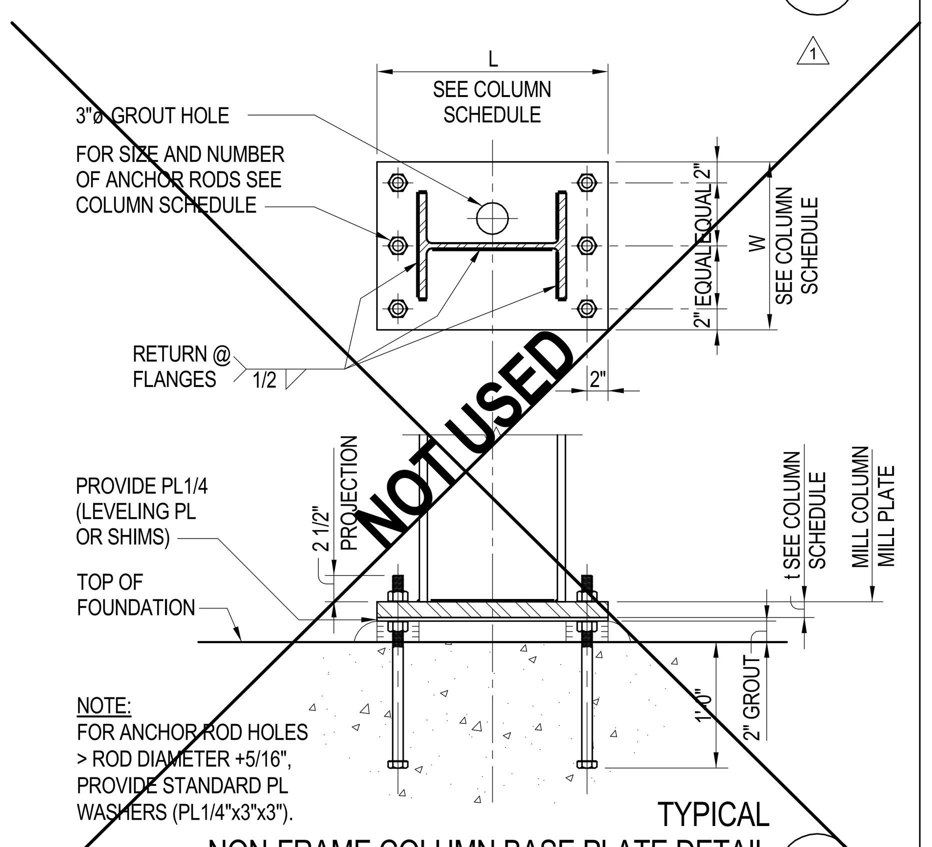
TYPICAL
BEAM TO COLUMN CONNECTION DETAILS 2
TSG101



NOTE:
CANTILEVER BEAM SHALL BE THE SAME SIZE AS THE BACK SPAN BEAM UNLESS NOTED OTHERWISE

BEAM TO COLUMN FLANGE

TYPICAL
MOMENT CONNECTION TO COLUMN DETAILS 4
TSG102



NOTE:
FOR ANCHOR ROD HOLES > ROD DIAMETER +5/16", PROVIDE STANDARD PL WASHERS (PL1/4"x3"x3").

TYPICAL
NON-FRAME COLUMN BASE PLATE DETAIL 1
TSC101

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TYPICAL STEEL COLUMN DETAILS

SHEET SCALE :	As indicated
PROJECT MANAGER :	MH
DESIGNER :	JN
DRAWN BY :	FS
REVIEWED BY :	
1st DEPT. SUBMITTAL :	X/X/2016
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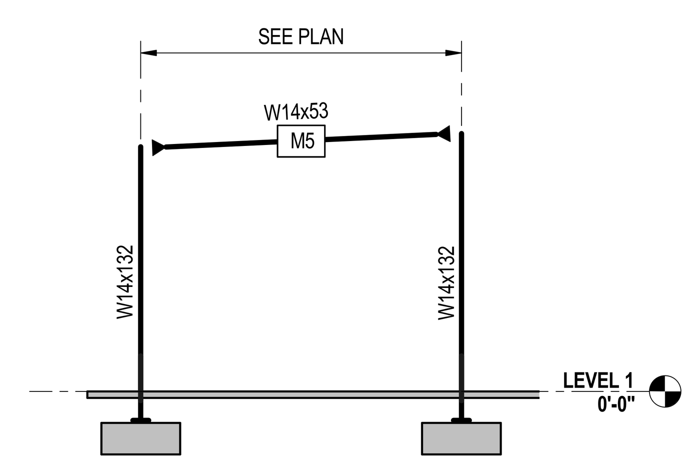
2ND BUILDING PLAN CHECK COORDINATION 05.18.2017



PL1 1/4x30x2'-6"	
(8) 1 1/2" DIA.	
PL3/4x3x0'-3"	

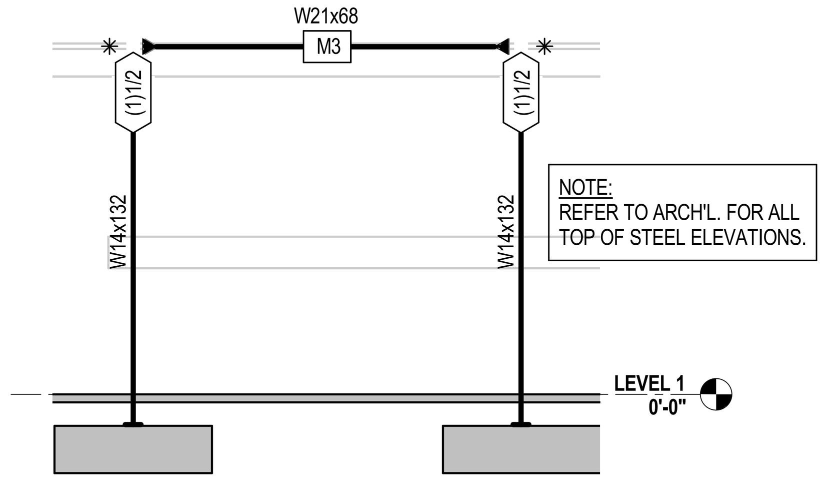
PL1 1/4x30x2'-6"	BASE PLATE
(8) 1 1/2" DIA.	ANCHOR RODS
PL3/4x3x0'-3"	UPLIFT PLATE SIZE

NOTES:
1. SEE "TYPICAL S.M.F. FRAME ELEVATION LEGEND" 2/S4.21 FOR TYPICAL DETAIL CALLOUT U.N.O.
2. ALL BASE PLATES SHALL BE ASTM A572 GR. 50, U.N.O.
3. ALL ANCHOR BOLTS SHALL BE F1554 GR. 105, U.N.O.
4. ALL UPLIFT PLATES SHALL BE ASTM A572 GR. 50, U.N.O.

1

RETAIL BUILDING TYPICAL SMF ELEVATION (E)

1/8" = 1'-0"



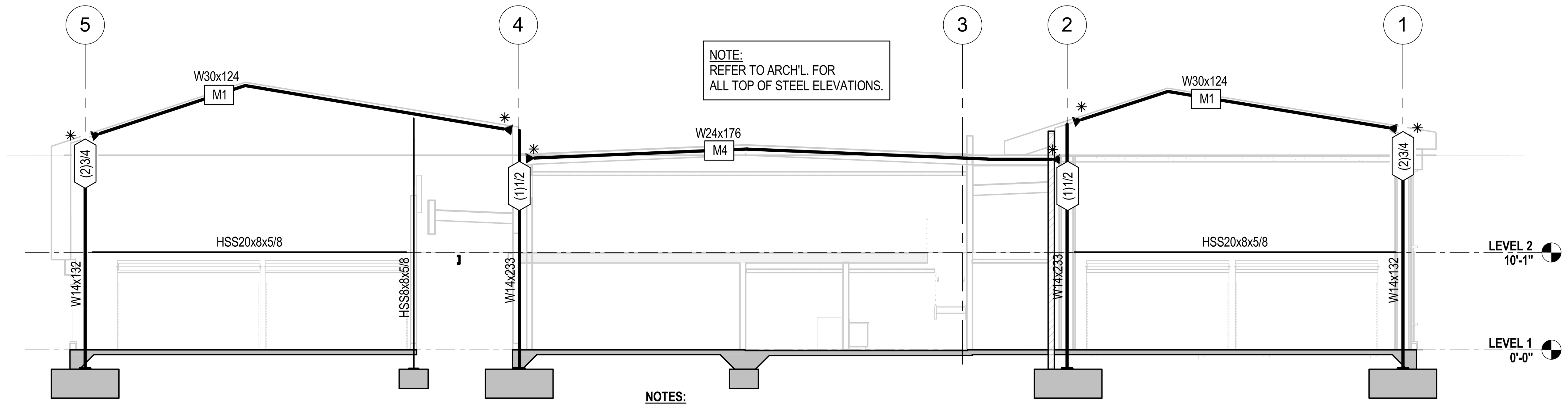
PL1 1/4x30x2'-6"	
(8) 1 1/2" DIA.	
PL3/4x3x0'-3"	

PL1 1/4x30x2'-6"	BASE PLATE SIZE
(8) 1 1/2" DIA.	ANCHOR RODS
PL3/4x3x0'-3"	UPLIFT PLATE SIZE

NOTES:
1. SEE "TYPICAL S.M.F. FRAME ELEVATION LEGEND" 2/S4.21 FOR TYPICAL DETAIL CALLOUT U.N.O.
2. ALL BASE PLATES SHALL BE ASTM A572 GR. 50, U.N.O.
3. ALL ANCHOR BOLTS SHALL BE F1554 GR. 105, U.N.O.
4. ALL UPLIFT PLATES SHALL BE ASTM A572 GR. 50, U.N.O.

CARWASH BUILDING TYPICAL SMF ELEVATION (D)

1/8" = 1'-0"

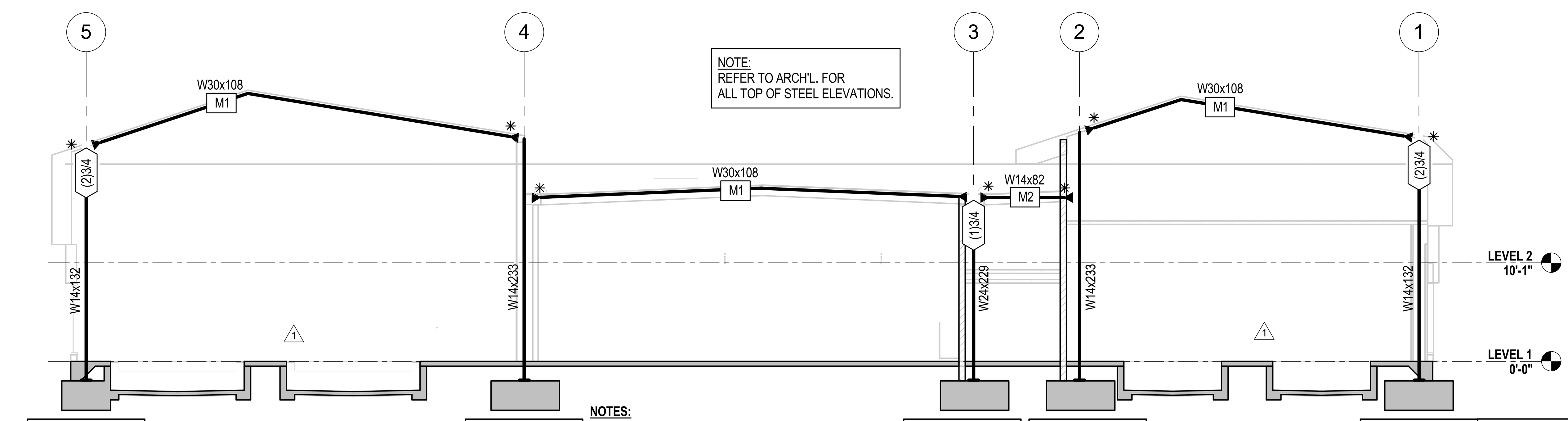


PL1 1/4x30x2'-6"	PL1 1/4x30x2'-6"	PL1 1/4x30x2'-6"	PL1 1/4x30x2'-6"	BASE PLATE SIZE
(8) 1 1/2" DIA.	(8) 1 1/2" DIA.	(8) 1 1/2" DIA.	(8) 1 1/2" DIA.	ANCHOR RODS
PL3/4x3x0'-3"	PL3/4x3x0'-3"	PL3/4x3x0'-3"	PL3/4x3x0'-3"	UPLIFT PLATE SIZE

NOTES:
1. SEE "TYPICAL S.M.F. FRAME ELEVATION LEGEND" 2/S4.21 FOR TYPICAL DETAIL CALLOUT U.N.O.
2. ALL BASE PLATES SHALL BE ASTM A572 GR. 50, U.N.O.
3. ALL ANCHOR BOLTS SHALL BE F1554 GR. 105, U.N.O.
4. ALL UPLIFT PLATES SHALL BE ASTM A572 GR. 50, U.N.O.

CARWASH BUILDING SMF ELEVATION AT GRIDLINE A (C)

1/8" = 1'-0"

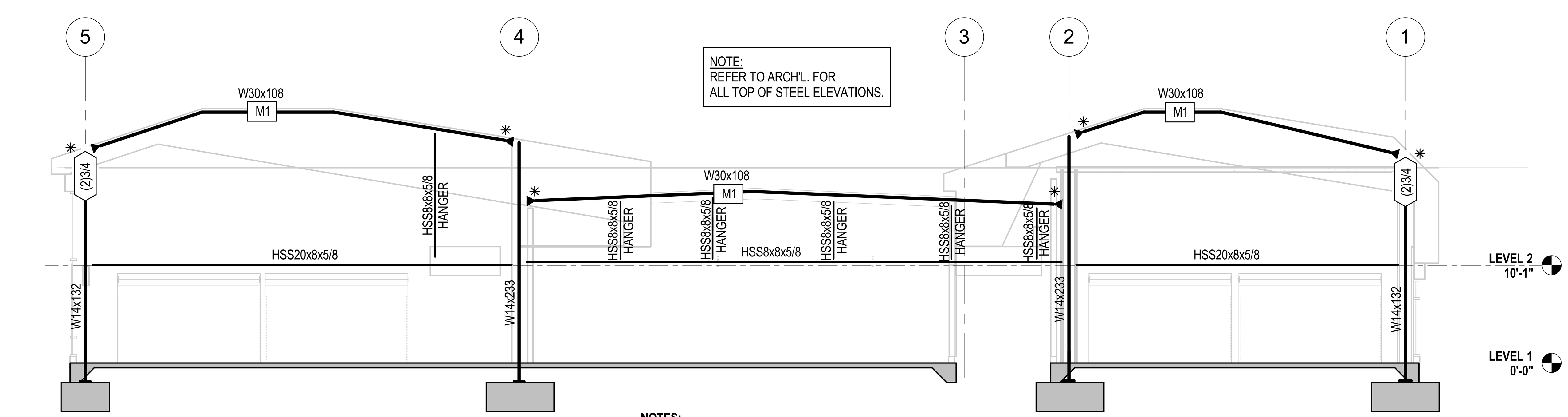


PL1 1/4x30x2'-6"	PL1 1/4x30x2'-6"	PL1 1/4x30x3'-2"	PL1 1/4x30x2'-6"	PL1 1/4x30x2'-6"	BASE PLATE SIZE
(8) 1 1/2" DIA.	(8) 1 1/2" DIA.	(8) 1 1/2" DIA.	(8) 1 1/2" DIA.	(8) 1 1/2" DIA.	ANCHOR RODS
PL3/4x3x0'-3"	PL3/4x3x0'-3"	PL3/4x3x0'-3"	PL3/4x3x0'-3"	PL3/4x3x0'-3"	UPLIFT PLATE SIZE

NOTES:
1. SEE "TYPICAL S.M.F. FRAME ELEVATION LEGEND" 2/S4.21 FOR TYPICAL DETAIL CALLOUT U.N.O.
2. ALL BASE PLATES SHALL BE ASTM A572 GR. 50, U.N.O.
3. ALL ANCHOR BOLTS SHALL BE F1554 GR. 105, U.N.O.
4. ALL UPLIFT PLATES SHALL BE ASTM A572 GR. 50, U.N.O.

CARWASH BUILDING SMF ELEVATION AT GRIDLINE D (B)

1/8" = 1'-0"



PL1 1/4x30x2'-6"	PL1 1/4x30x2'-6"	PL1 1/4x30x2'-6"	PL1 1/4x30x2'-6"	BASE PLATE SIZE
(8) 1 1/2" DIA.	(8) 1 1/2" DIA.	(8) 1 1/2" DIA.	(8) 1 1/2" DIA.	ANCHOR RODS
PL3/4x3x0'-3"	PL3/4x3x0'-3"	PL3/4x3x0'-3"	PL3/4x3x0'-3"	UPLIFT PLATE SIZE

NOTES:
1. SEE "TYPICAL S.M.F. FRAME ELEVATION LEGEND" 2/S4.21 FOR TYPICAL DETAIL CALLOUT U.N.O.
2. ALL BASE PLATES SHALL BE ASTM A572 GR. 50, U.N.O.
3. ALL ANCHOR BOLTS SHALL BE F1554 GR. 105, U.N.O.
4. ALL UPLIFT PLATES SHALL BE ASTM A572 GR. 50, U.N.O.

CARWASH BUILDING SMF ELEVATION AT GRIDLINE G (A)

1/8" = 1'-0"

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REVISIONS

NO :	DATE	DESCRIPTION
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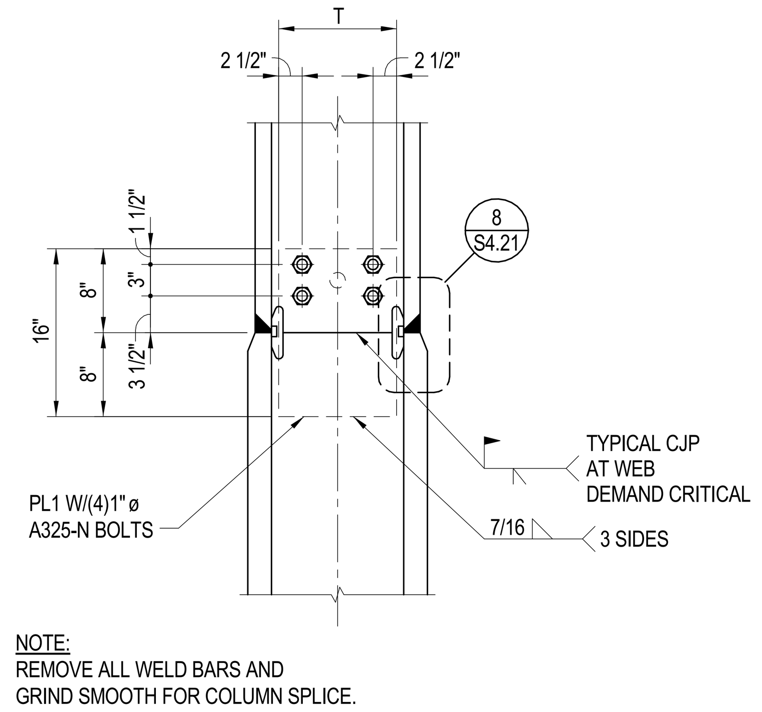
	07/14/17	3RD PLAN CHECK SUBMITTAL

SEISMIC MOMENT FRAME ELEVATIONS (SLRS)

SHEET SCALE :	1/8" = 1'-0"
PROJECT MANAGER :	MH
DESIGNER :	JN
DRAWN BY :	FS
REVIEWED BY :	
1st DEPT. SUBMITTAL :	X/X/2016
ISSUED FOR CONST. :	
JOB NUMBER	16-S003
CAD FILE NAME	

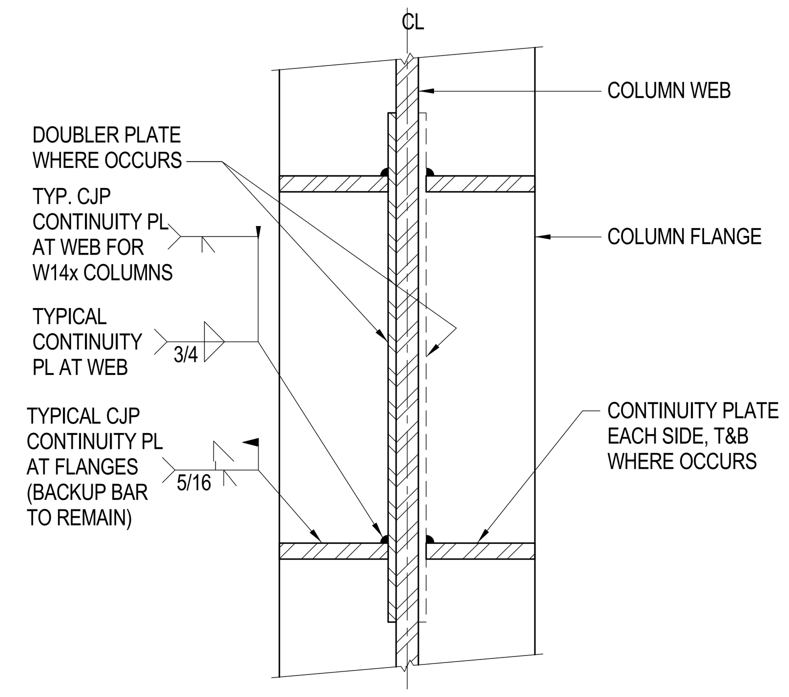
S4.11

2ND BUILDING PLAN CHECK COORDINATION 05.18.2017



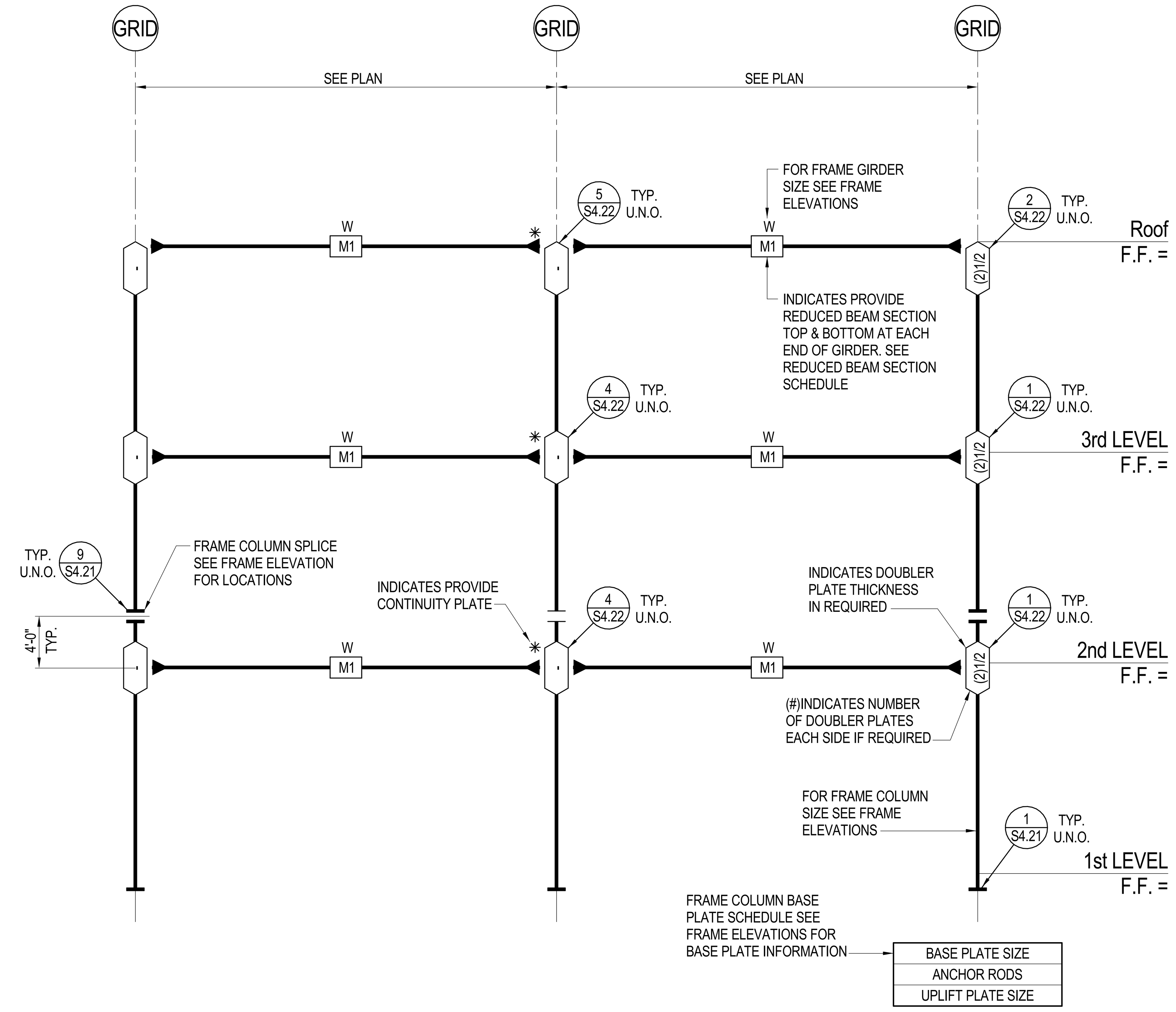
NOTE:
REMOVE ALL WELD BARS AND GRIND SMOOTH FOR COLUMN SPLICE.

TYPICAL
SEISMIC FRAME COLUMN SPLICE DETAIL 9
TSG201

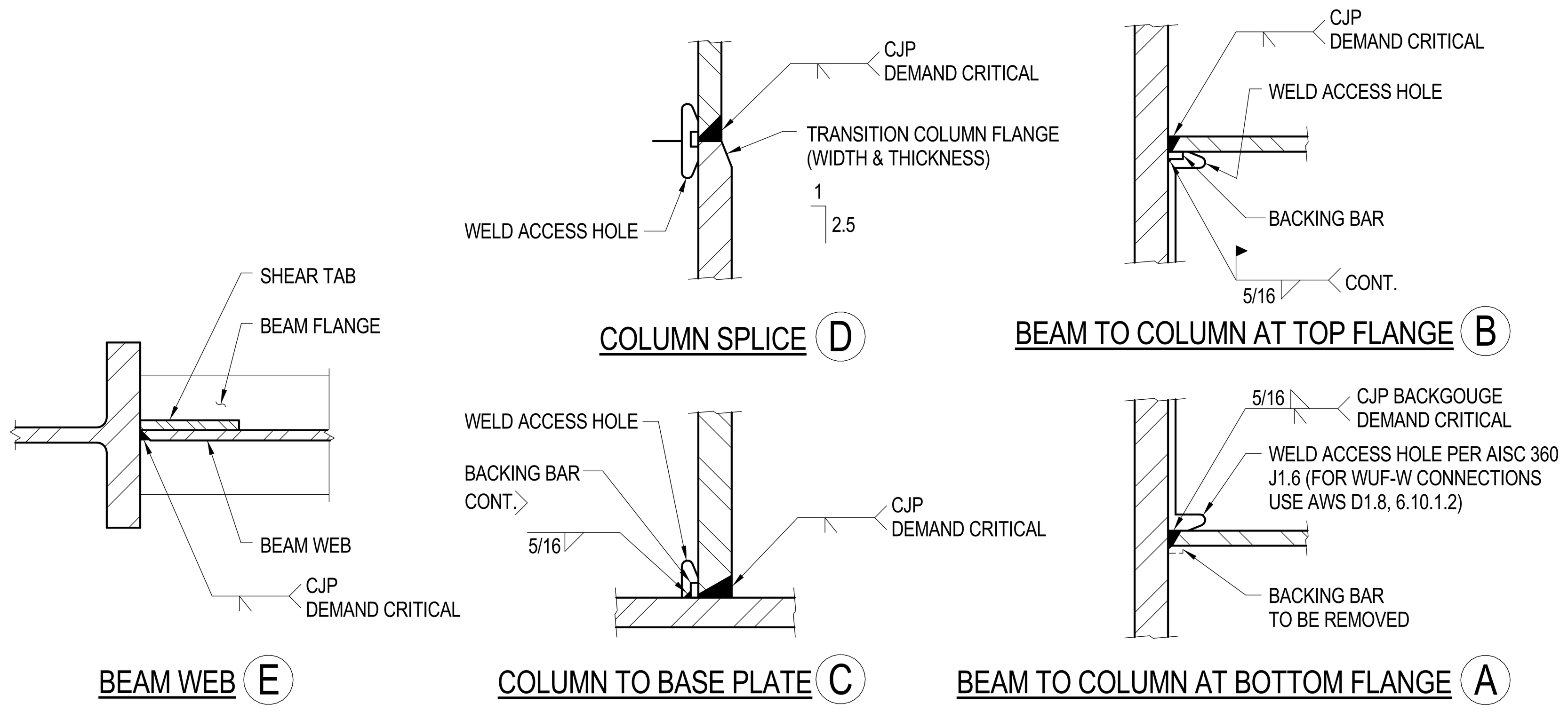


NOTE:
REMOVE ALL WELD TABS AND GRIND SMOOTH.

TYPICAL CONTINUITY PLATE DETAIL 6
TSG506



TYPICAL 'SMF' FRAME ELEVATION LEGEND 2
TSG509 MOD.



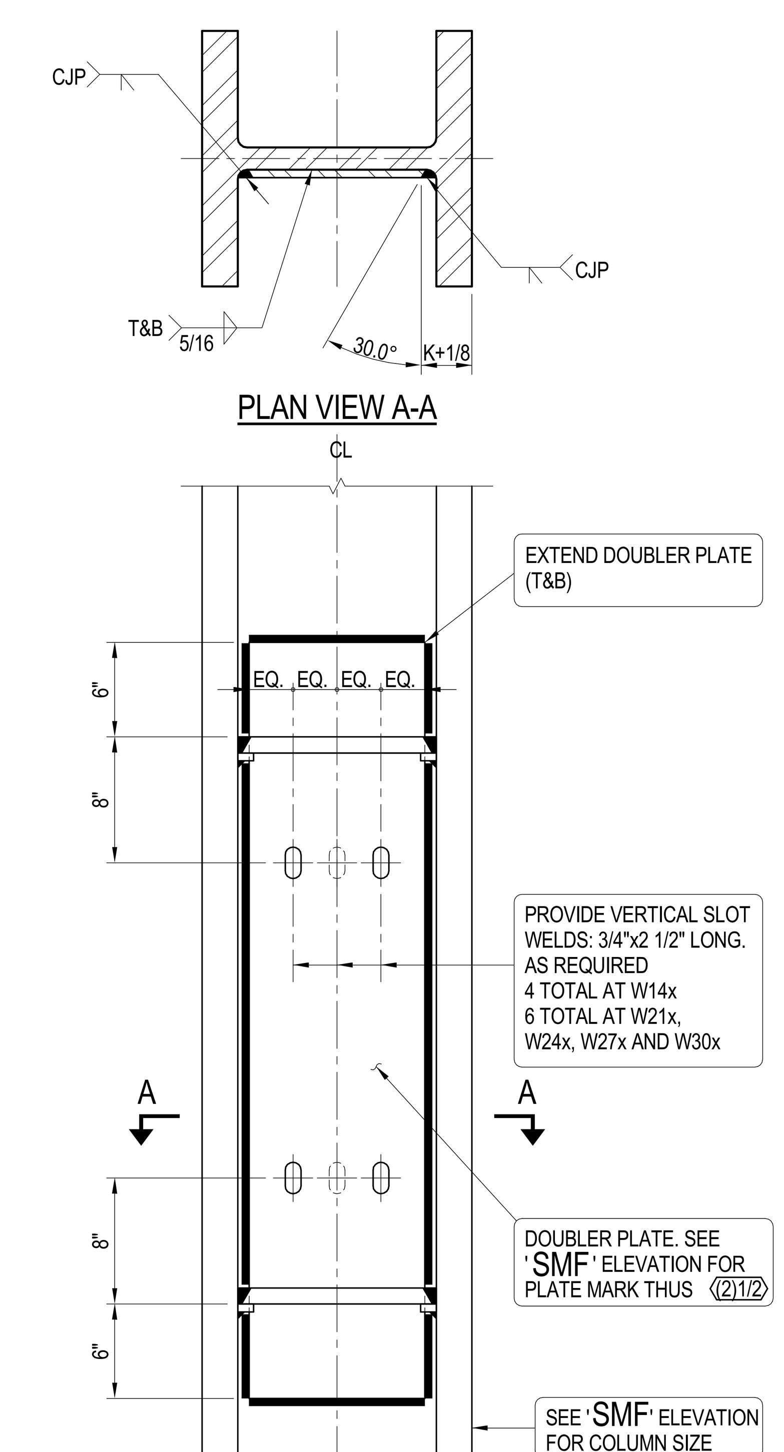
TYPICAL DEMAND CRITICAL & BACKING BAR WELDING DETAIL 8
TSG201A

WELDED PLATE WASHER SCHEDULE

ANCHOR ROD SIZE	WASHER PLATE "t"	WASHER PLATE SIZE	WASHER PLATE WELDING
≤ 1"ø	3/8"	4" x 4"	5/16
11/8"ø - 1 1/4"ø	1/2"	4 1/2" x 4 1/2"	5/16
1 3/8"ø -1 1/2"ø	5/8"	5" x 5"	5/16
1 3/8"ø - 1 3/4"ø	3/4"	5" x 5"	5/16
1 7/8"ø - 2"ø	7/8"	5 1/2" x 5 1/2"	3/8
2 1/8"ø - 2 3/8"ø	1"	6" x 6"	3/8

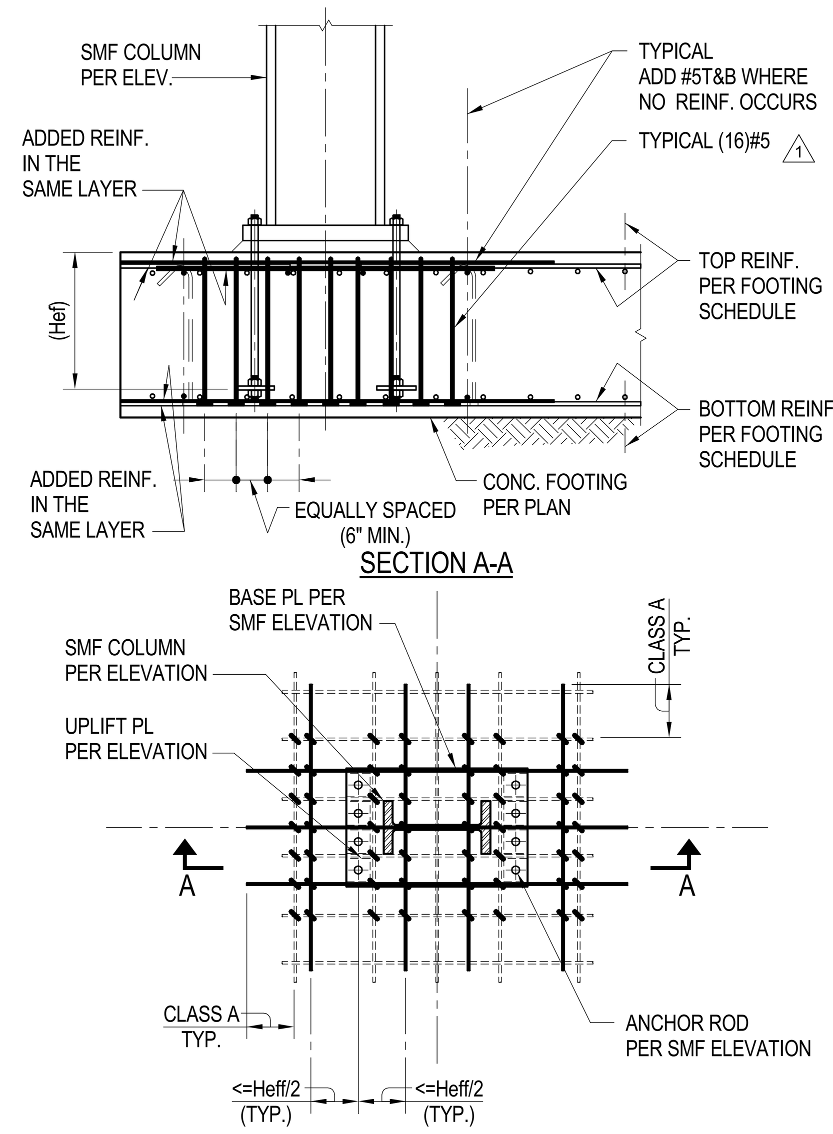
NOTES:
1.WELDED PLATE WASHERS ARE TO BE PROVIDED FOR ANCHOR ROD HOLES > ROD DIAMETER + 5/16".
2.TYPICAL WELDED PLATE WASHER SHALL BE ASTM A572 GRADE 50.

TYPICAL
WELDED PLATE WASHER SCHEDULE 5
TSG200



NOTES:
1.PROVIDE SLOT WELDS WHERE PL ≤ 1/2".
2.DOUBLER PLATE TO MATCH GRADE OF 'SMF' COLUMN.
3.ALL PLATES SHALL BE ASTM A572 GRADE 50.
4.REMOVE ALL WELD TABS AND GRIND SMOOTH.

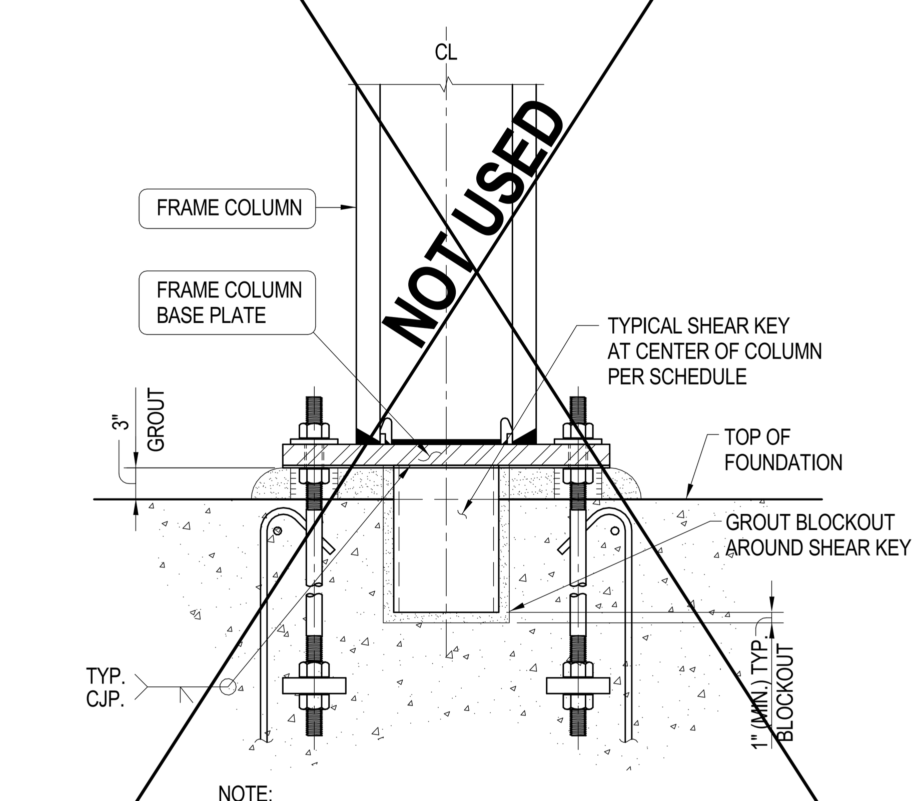
TYPICAL
'SMF' DOUBLER PLATE DETAIL 7
TSG505



TYPICAL SUPPLEMENTAL
REINFORCING AT SMF FRAME COLUMN 4
TSG501B MOD.

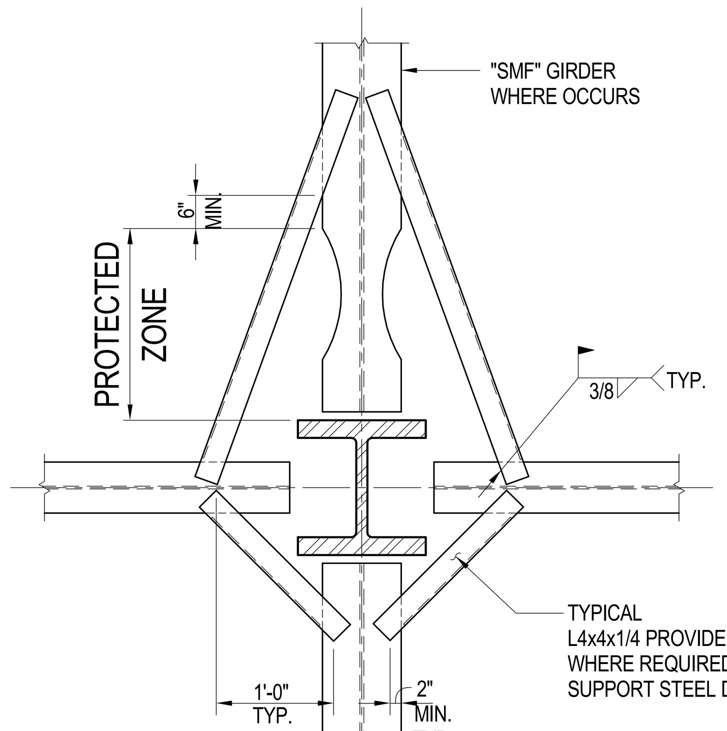
SHEAR KEY SCHEDULE

COLUMN SIZE	HSS SIZE
W14x311	HSS10x10x1/2x1'-2"

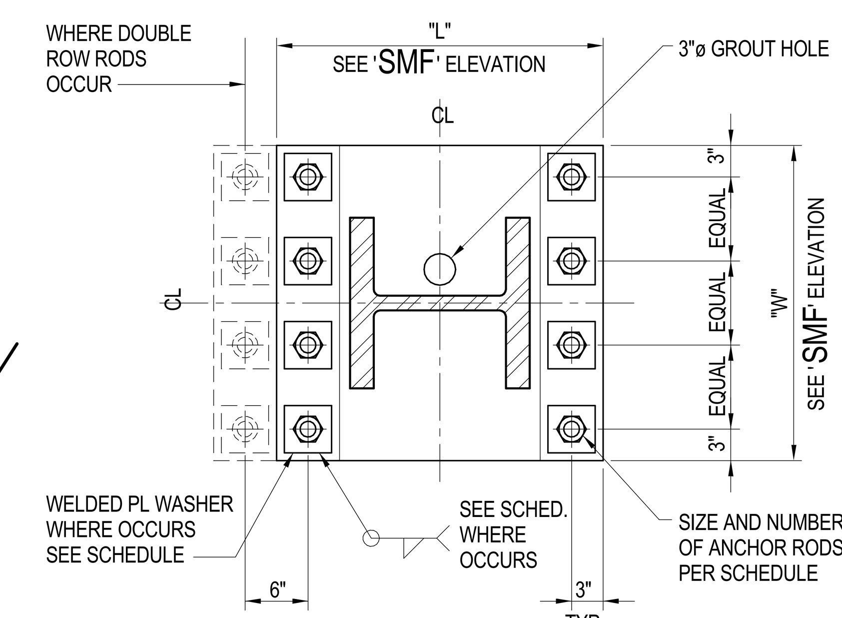


NOTE:
FOOTING REINFORCING TO BE RELOCATED AROUND SHEAR KEY.

TYPICAL
FRAME COLUMN SHEAR KEY DETAIL 3
TSG501A

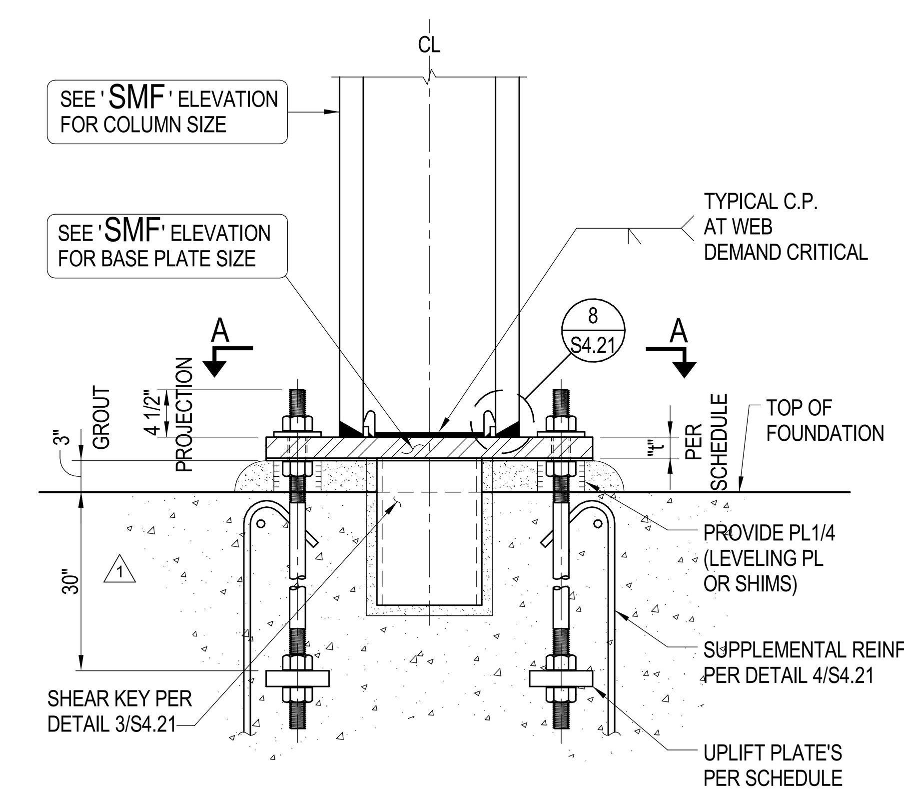


TYPICAL
STEEL DECK SUPPORT AT SMF COLUMN DETAIL 10
TSG512



NOTE:
PROVIDE WELDED PLATE WASHERS FOR ANCHOR ROD HOLES > ROD DIAMETER + 5/16". SEE TYPICAL WELDED PLATE WASHER SCHEDULE 5/S4.21.

PLAN A-A



TYPICAL
'SMF' COLUMN BASE PLATE CONNECTION DETAIL 1
TSG501 MOD.

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REVISIONS

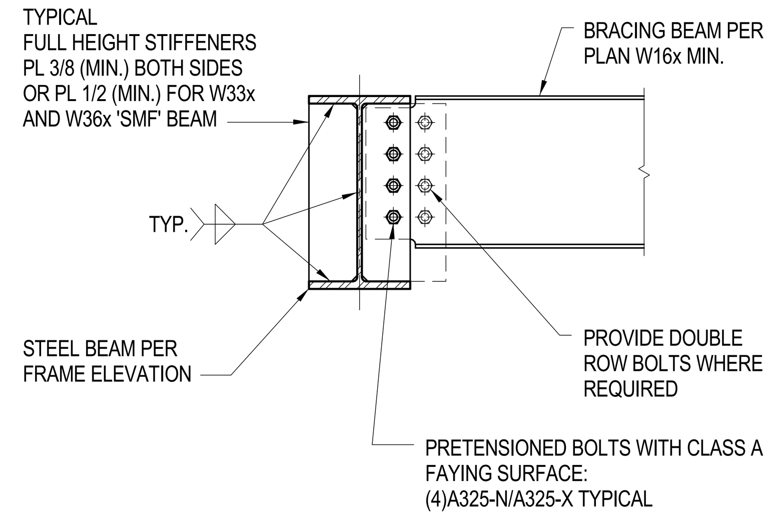
NO :	DATE	DESCRIPTION
1	05/18/17	2ND PLAN CHECK SUBMITTAL
	07/14/17	3RD PLAN CHECK SUBMITTAL

SEISMIC MOMENT FRAME DETAILS (SLRS)

SHEET SCALE :	As indicated
PROJECT MANAGER :	MH
DESIGNER :	JN
DRAWN BY :	FS
REVIEWED BY :	
1st DEPT. SUBMITTAL :	X/X/2016
ISSUED FOR CONST. :	
JOB NUMBER	16-S003
CAD FILE NAME	

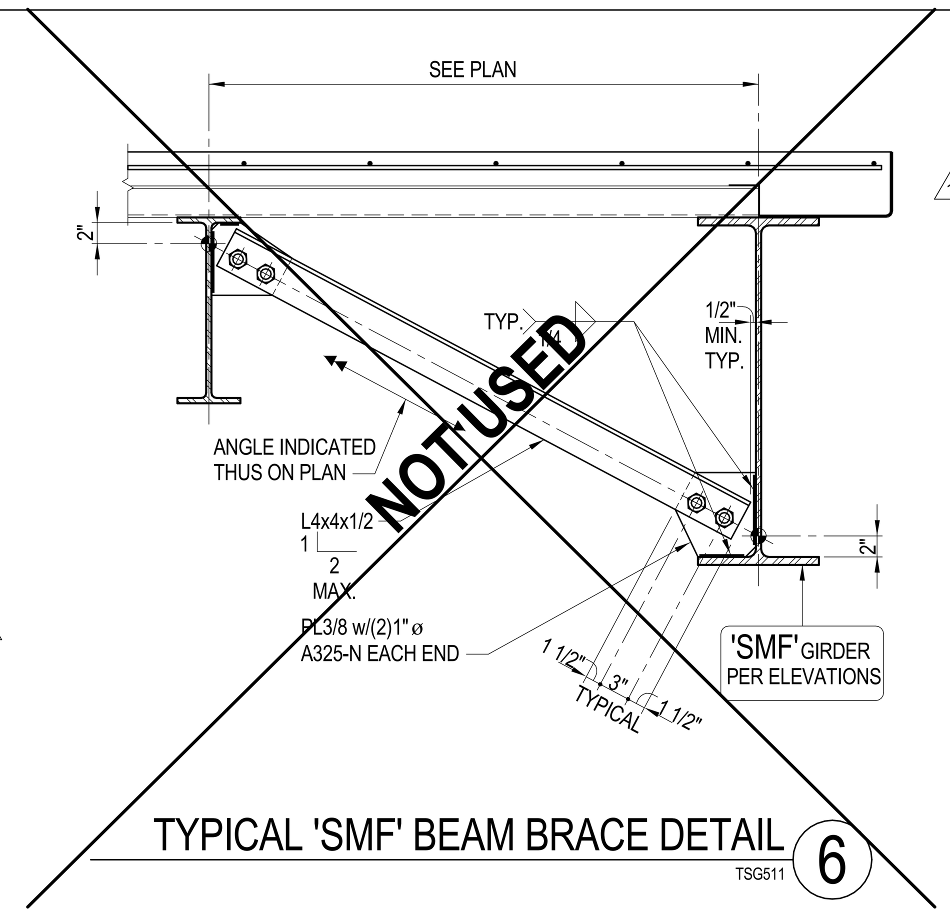
S4.21

2ND BUILDING PLAN CHECK COORDINATION 05.18.2017

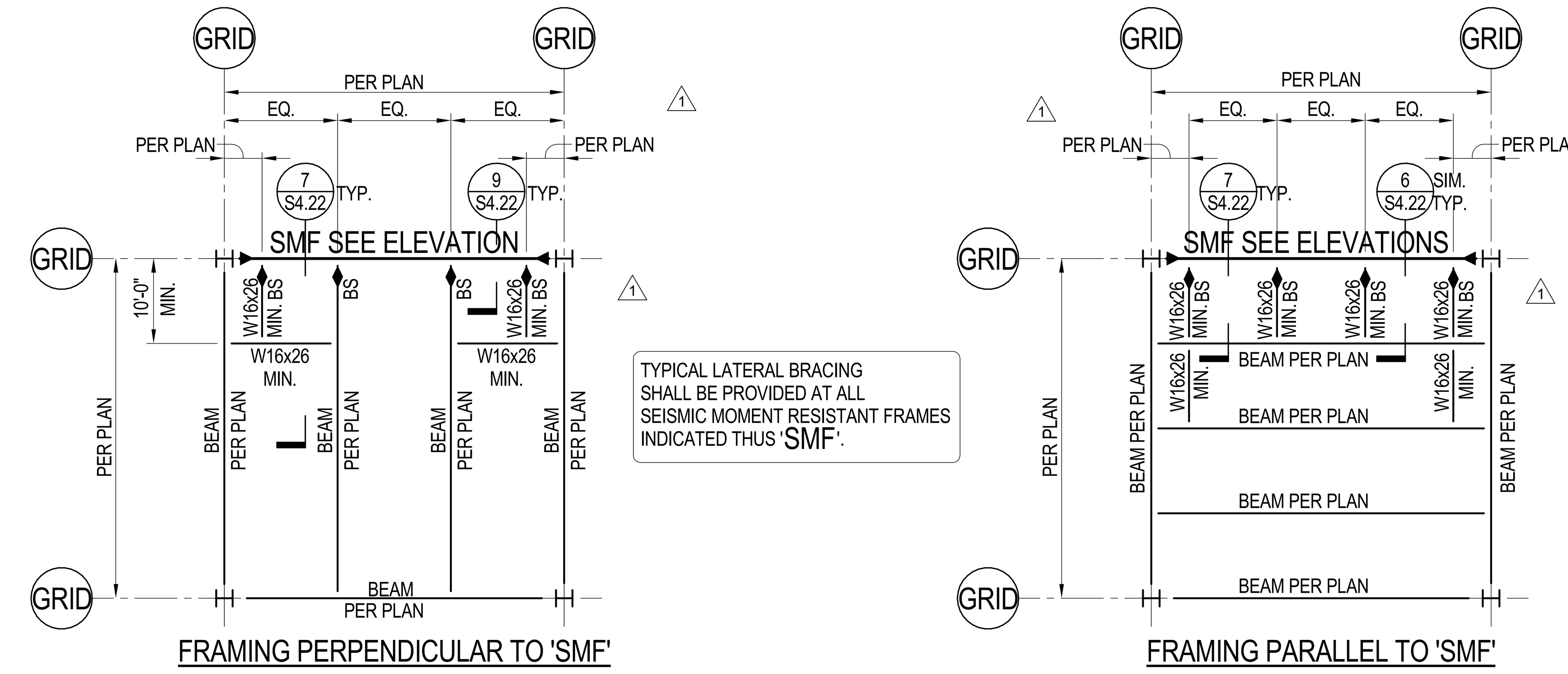


NOTE:
SEE TYPICAL BEAM CONNECTION SCHEDULE FOR REMAINDER OF INFORMATION.

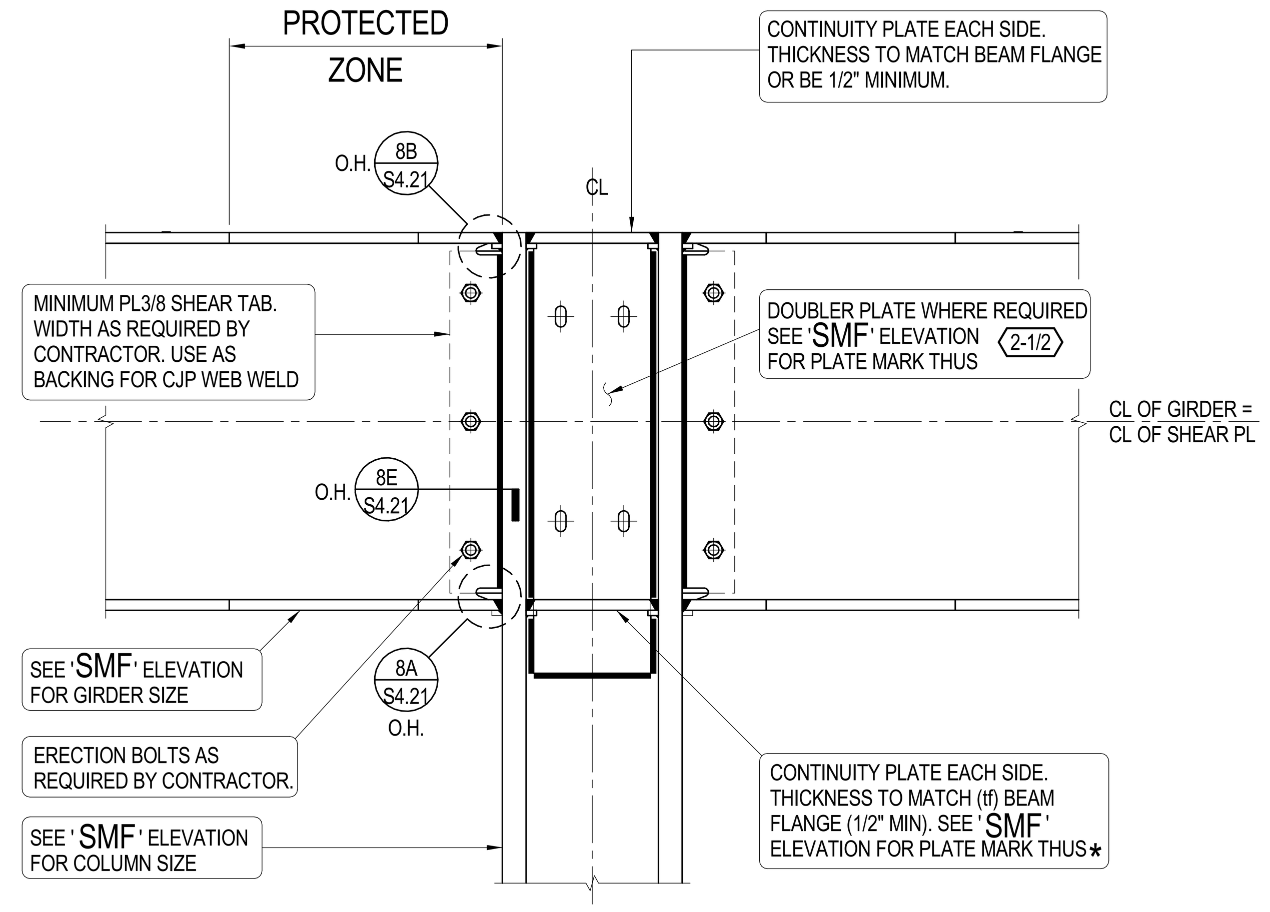
TYPICAL
'SMF' LATERAL BEAM BRACING DETAIL 9
TSG514 MOD.



TYPICAL 'SMF' BEAM BRACE DETAIL 6
TSG511

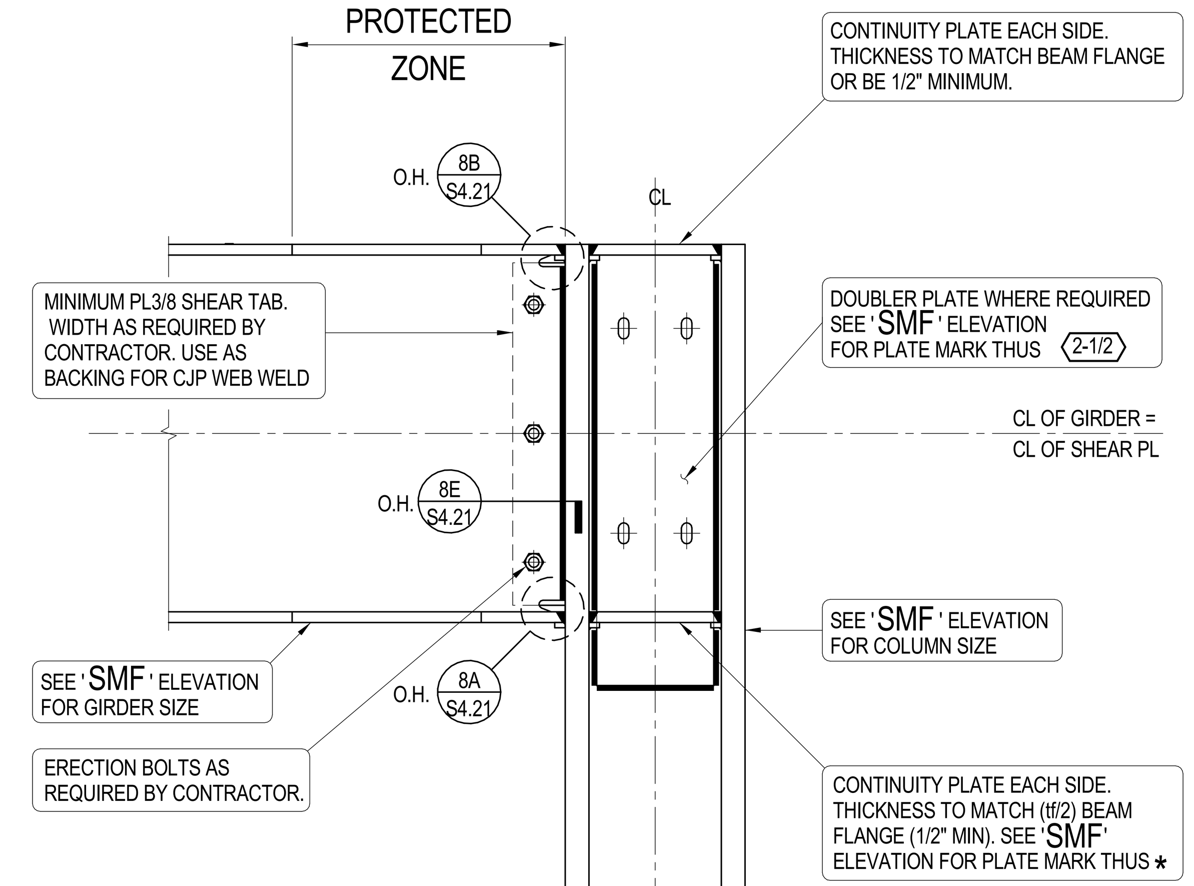


TYPICAL
"SMF" LATERAL BRACING FRAMING PLANS AT DECK (NON-CONCRETE FILL)/PLYWOOD DIAPHRAGMS 3
TSG510A MOD.



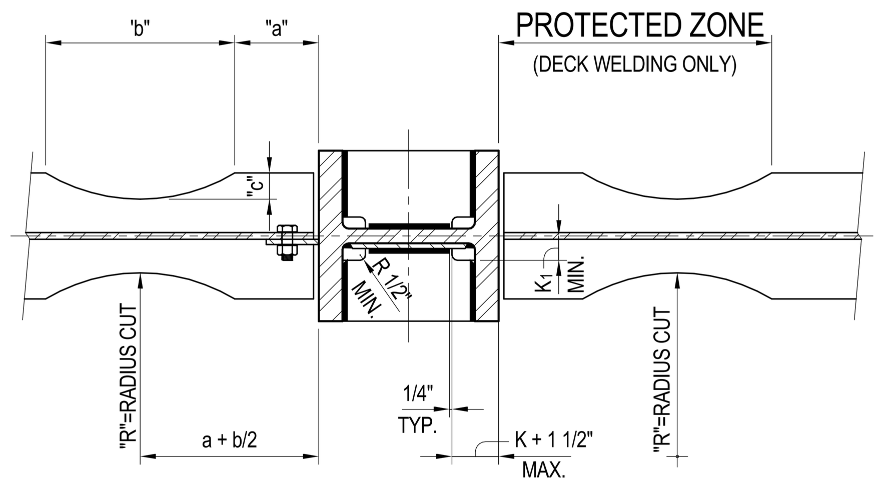
NOTES:
1. ALL CONTINUITY AND DOUBLER PLATES TO MATCH COLUMN GRADE.
2. SHEAR PLATES SHALL BE ASTM A572 GRADE 50.
3. FOR CONTINUITY PLATE WELDING, SEE TYPICAL CONTINUITY PLATE DETAIL.

TYPICAL
'SMF' BEAM TO INTERIOR COLUMN AT ROOF CONNECTION DETAIL 5
TSG503A MOD.



NOTES:
1. ALL CONTINUITY AND DOUBLER PLATES TO MATCH COLUMN GRADE.
2. SHEAR PLATE SHALL BE ASTM A572 GRADE 50.
3. FOR CONTINUITY PLATE WELDING, SEE TYPICAL CONTINUITY PLATE DETAIL.

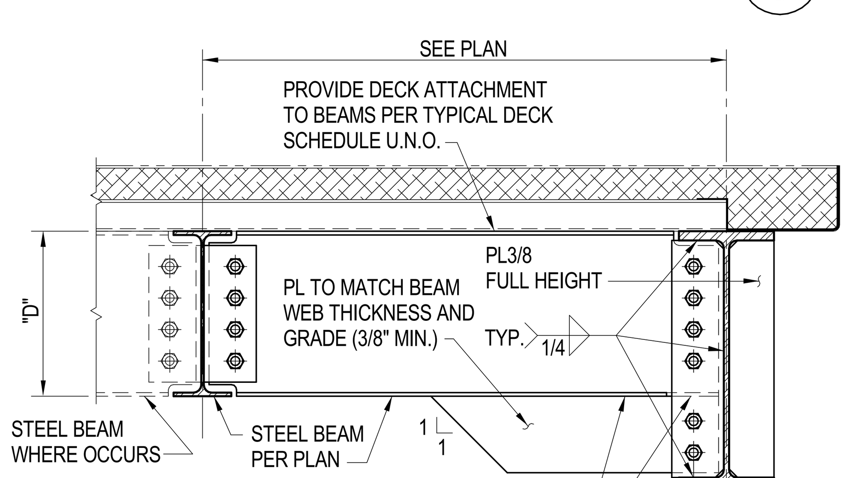
TYPICAL
'SMF' BEAM TO END COLUMN AT ROOF CONNECTION DETAIL 2
TSG503 MOD.



REDUCED BEAM SECTION (RBS) TOP & BOTTOM FLANGE SCHEDULE				
MARK	TOP & BOTTOM FLANGE			
	"a"	"b"	"c"	"R"
M1	7.0	22.0	2.25	28.01
M2	5.25	9.5	2.5	6.25
M3	4.5	14.0	1.5	17.08
M4	8.0	18.0	2.75	16.10
M5	5.0	11.0	1.5	10.83

NOTES:
1. SUPPLEMENTAL WELDER QUALIFICATION AND SPECIMEN TEST SHALL MEET AWS D1.8 ANNEX C REQUIREMENTS.
2. REMOVE ALL WELD TABS AND GRIND SMOOTH FOR BEAM/COLUMN CONNECTION.

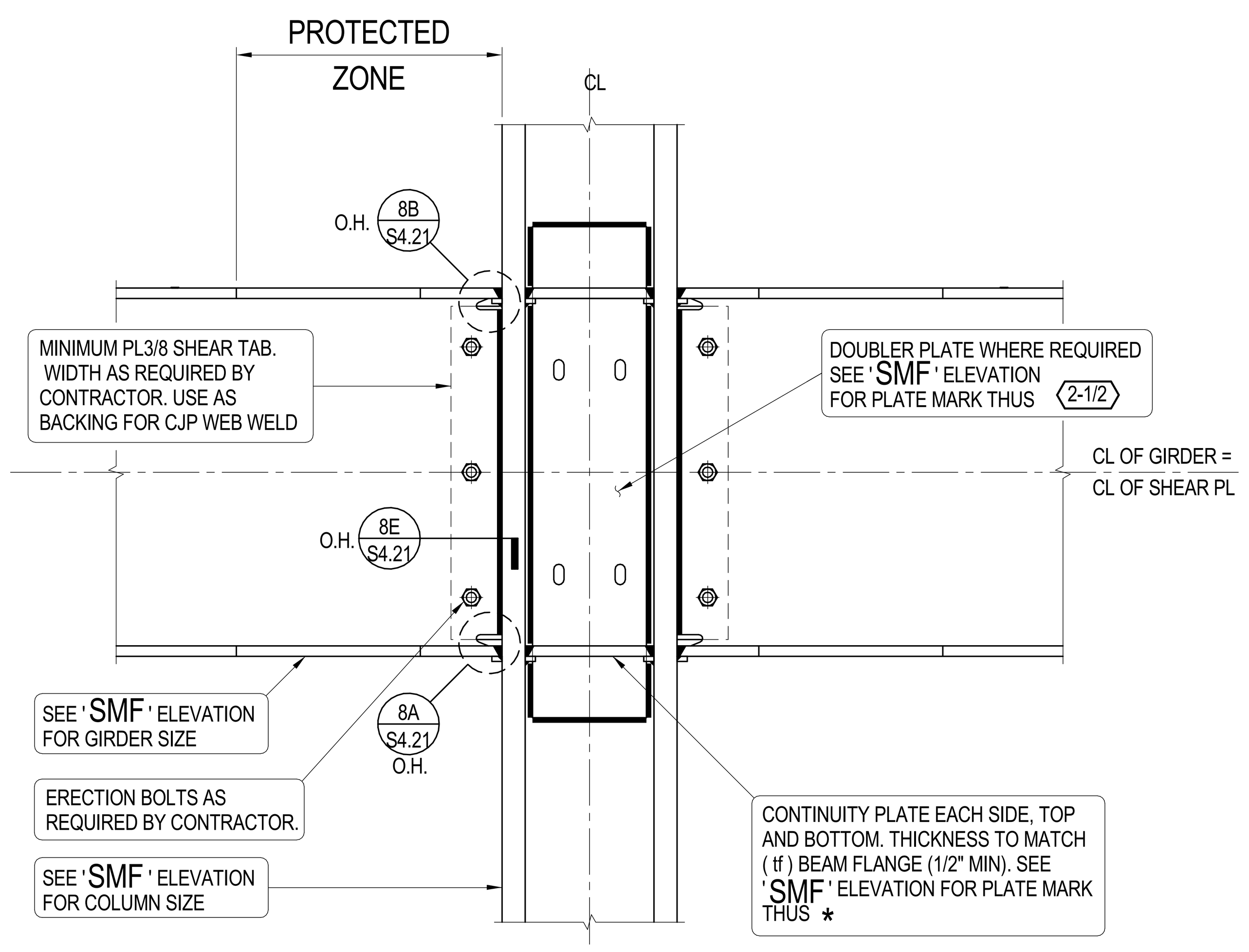
TYPICAL 'SMF' REDUCED
BEAM SECTION (RBS) CONNECTION DETAIL 8
TSG504 MOD.



FRAME BEAM SIZE	SIZE & NUMBER OF BOLTS
W14x	(4) 1"ø A490-N
W21x	(5) 1"ø A490-N
W24x	(6) 1"ø A490-N
W30x	(8) 1"ø A490-N

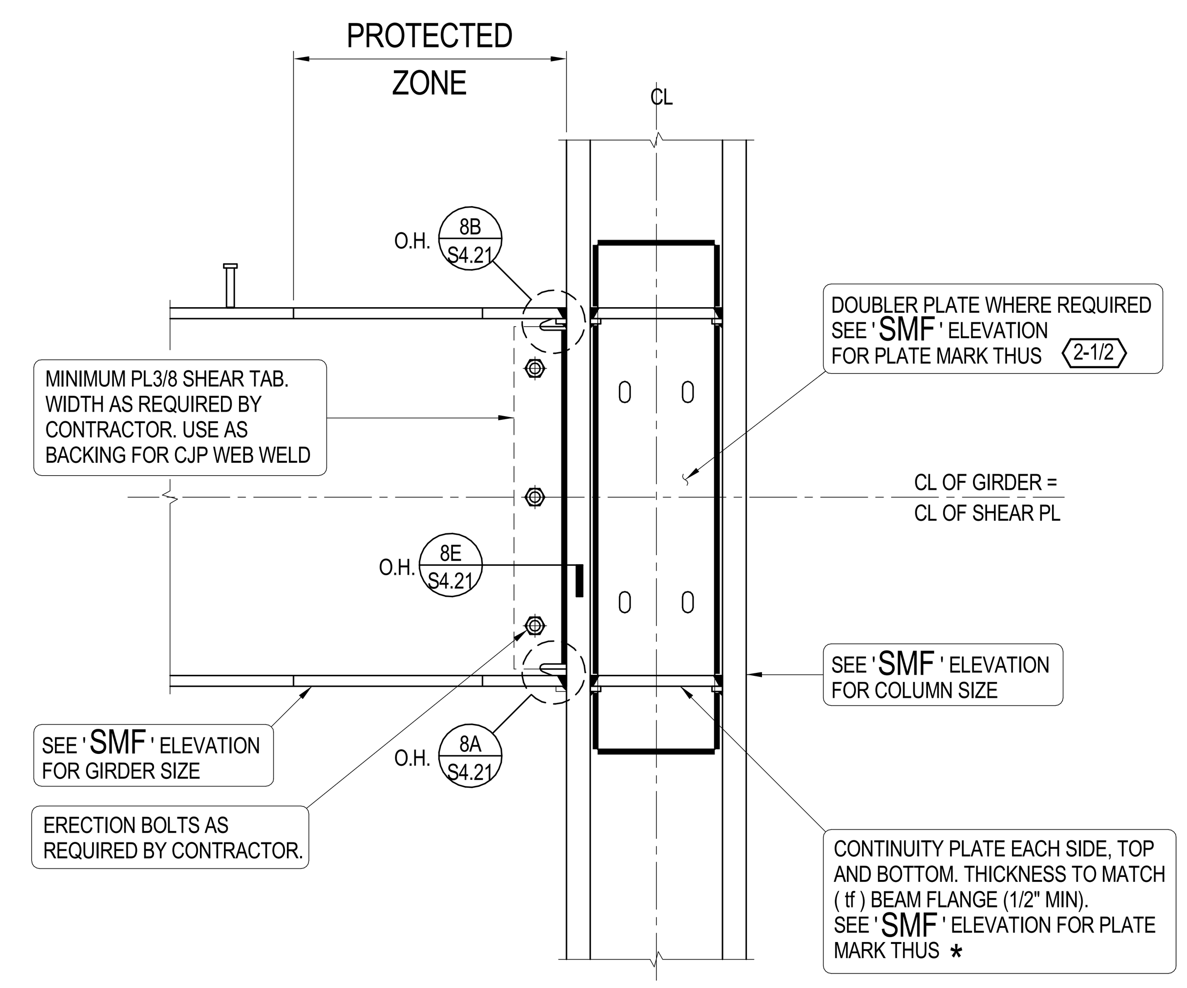
NOTE:
ALL BOLTS TO BE PRETENSIONED WITH CLASS A FAYING SURFACE.

TYPICAL 'SMF' BEAM
BRACE DETAIL AT DECK (NON-CONCRETE FILL) 7
TSG511A MOD.



NOTES:
1. ALL CONTINUITY AND DOUBLER PLATES TO MATCH COLUMN GRADE.
2. SHEAR PLATES SHALL BE ASTM A572 GRADE 50.
3. FOR CONTINUITY PLATE WELDING, SEE TYPICAL CONTINUITY PLATE DETAIL.

TYPICAL
'SMF' BEAM TO INTERIOR COLUMN CONNECTION DETAIL 4
TSG502A MOD.



NOTES:
1. ALL CONTINUITY AND DOUBLER PLATES TO MATCH COLUMN GRADE.
2. SHEAR PLATE SHALL BE ASTM A572 GRADE 50.
3. FOR CONTINUITY PLATE WELDING, SEE TYPICAL CONTINUITY PLATE DETAIL.

TYPICAL 'SMF' BEAM TO END COLUMN CONNECTION DETAIL 1
TSG502

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REVISIONS

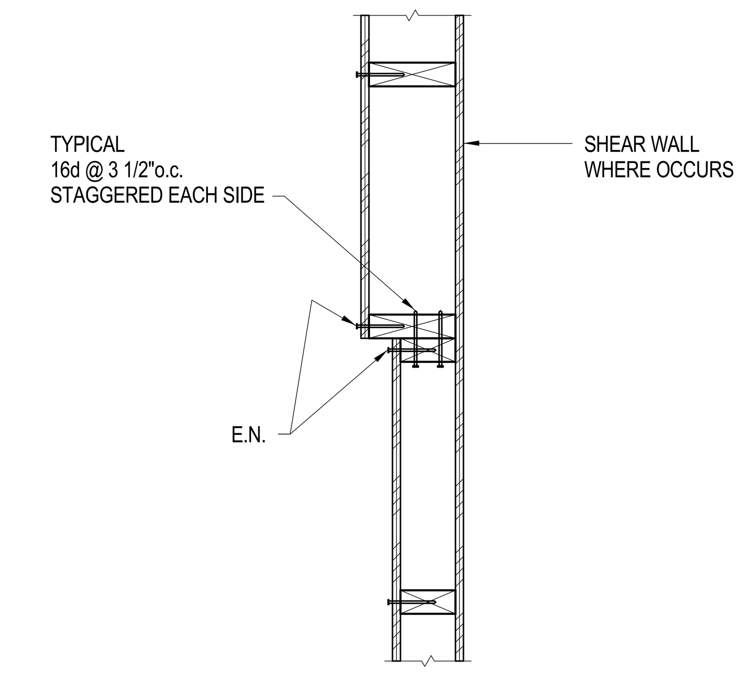
NO :	DATE	DESCRIPTION
1	05/18/17	2ND PLAN CHECK SUBMITTAL
	07/14/17	3RD PLAN CHECK SUBMITTAL

SEISMIC MOMENT
FRAME DETAILS (SLRS)

SHEET SCALE :	1" = 1'-0"
PROJECT MANAGER :	MH
DESIGNER :	JN
DRAWN BY :	FS
REVIEWED BY :	
1st DEPT. SUBMITTAL :	X/X/2016
ISSUED FOR CONST. :	
JOB NUMBER	16-S003
CAD FILE NAME	

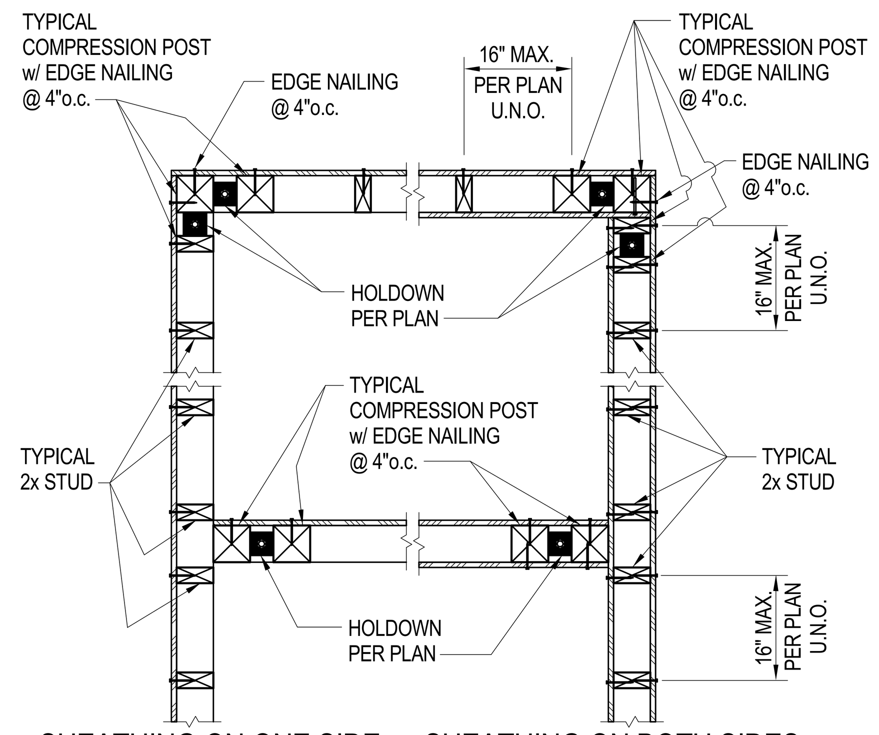
S4.22

2ND BUILDING PLAN CHECK COORDINATION 05.18.2017



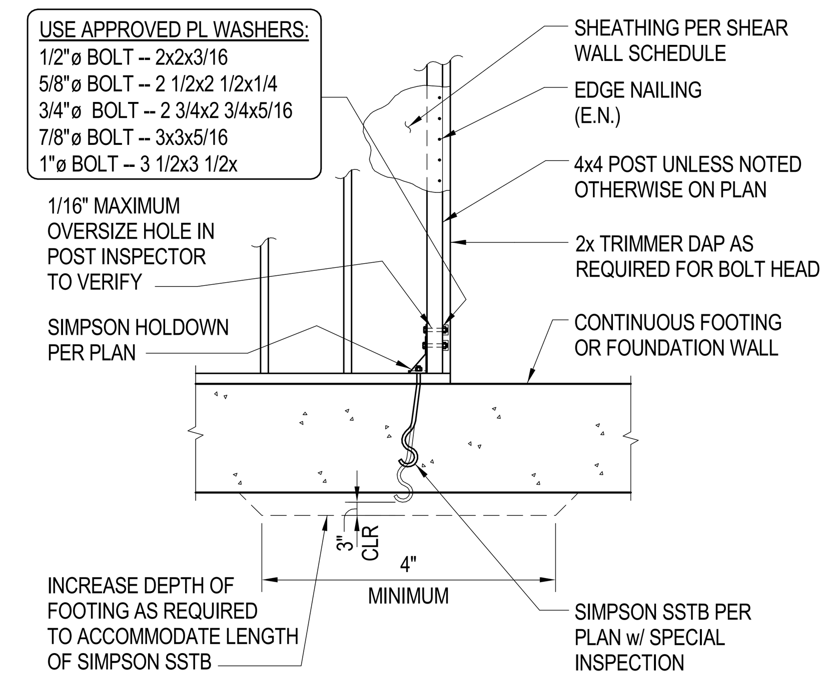
PLAN VIEW

TYPICAL
SHEAR WALL PANEL AT CHANGE IN STUD SIZE
TWW414 7



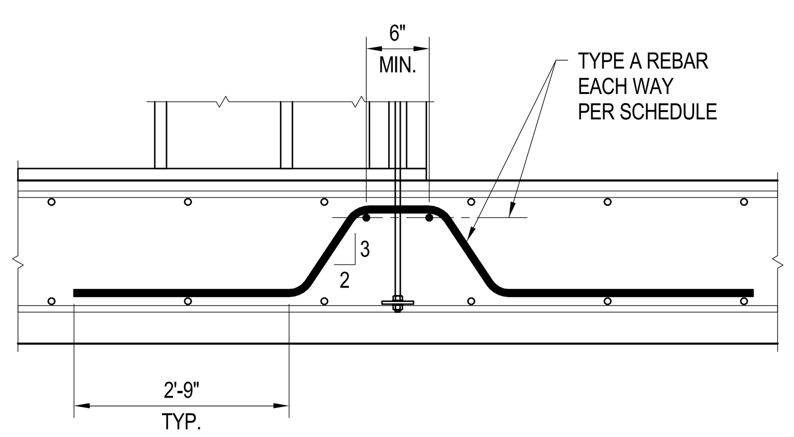
SHEATHING ON ONE SIDE
SHEATHING ON BOTH SIDES

TYPICAL
SHEAR WALL DETAILS AT INTERSECTIONS
TWW405 4

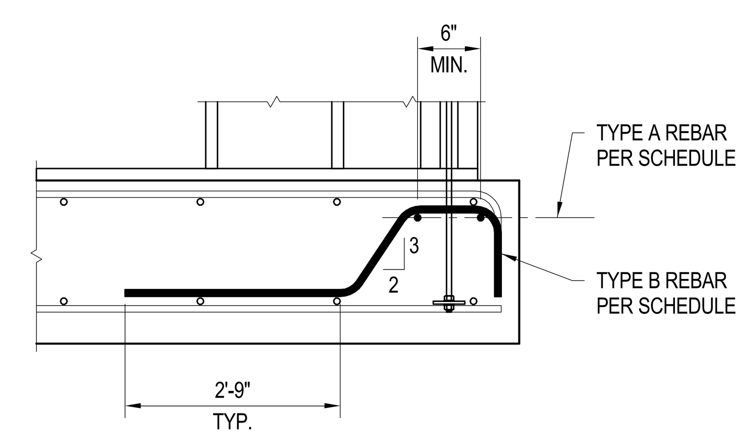


NOTE:
HOLDOWNS SHALL BE TIGHTENED JUST PRIOR TO COVERING
THE WALL FRAMING.

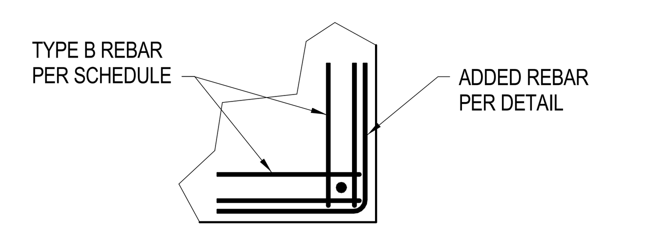
TYPICAL HOLDOWN DETAIL
TWF401 3



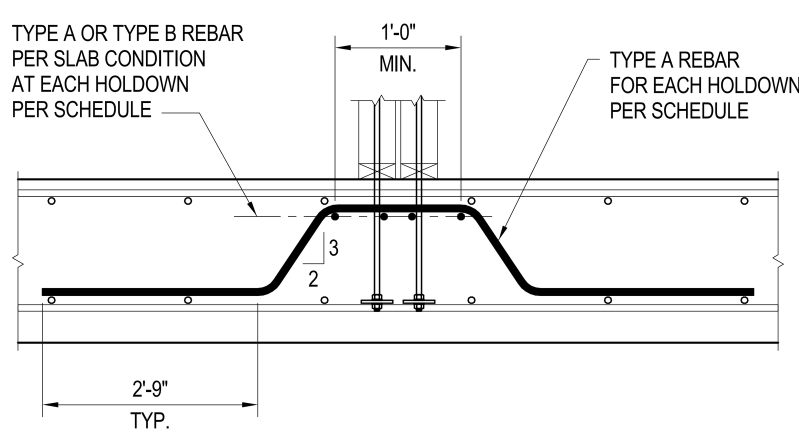
TYPICAL FOOTING INTERIOR CONDITION



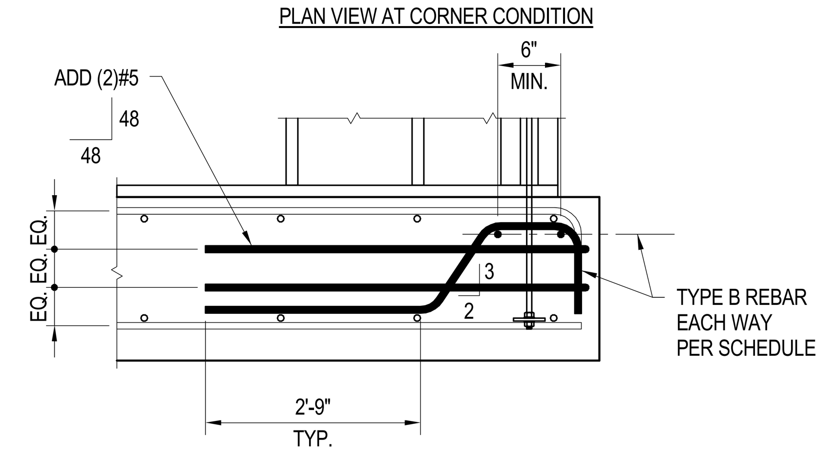
TYPICAL FOOTING EDGE CONDITION



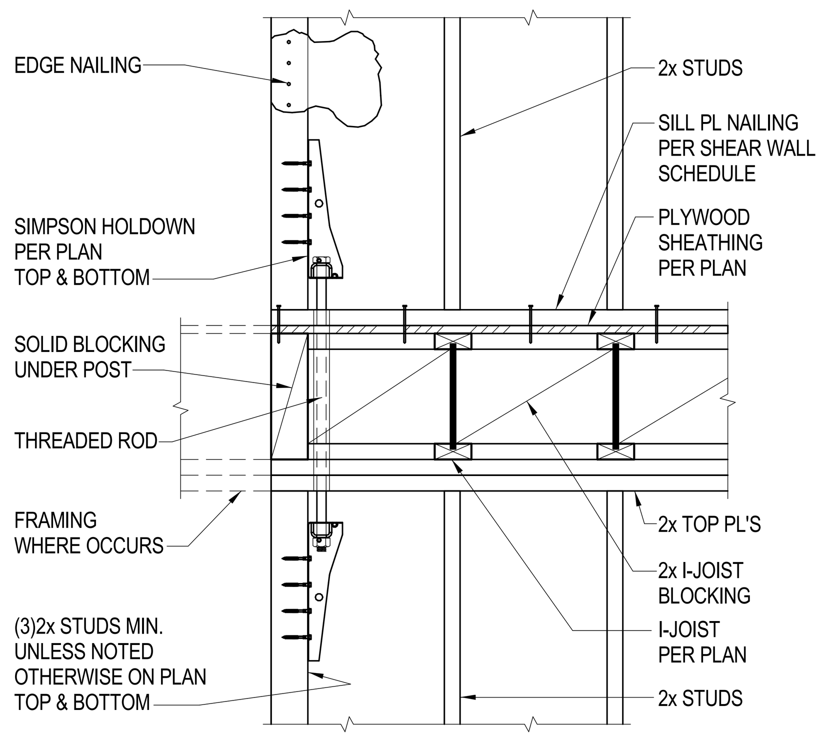
PLAN VIEW AT CORNER CONDITION



TYPICAL FOOTING AT PARTY WALL CONDITION



TYPICAL FOOTING CORNER CONDITION



TYPICAL
SHEAR WALL HOLDOWN AT UPPER FLOOR DETAIL
TWW705 6

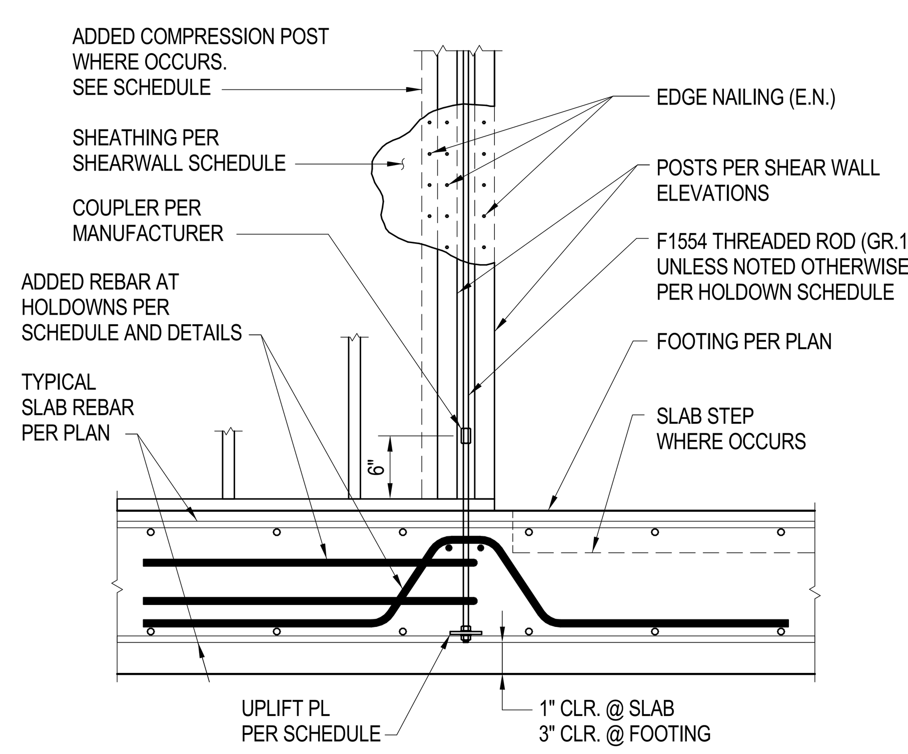
* ADDED REBAR SCHEDULE

ROD DIAMETER	ADDED REBAR	
	TYPE A	TYPE B
UP TO 7/8"	---	---
1"	---	(2)#6
1 1/8"	---	(3)#6
1 1/4"	(2)#6	(3)#6
1 1/2"	(3)#6	(5)#6

* TYPICAL ADDED REBAR SHALL BE (2)#5 U.N.O. IN SCHEDULE. PROVIDE MINIMUM 3" SPACING BETWEEN ADDED REBARS.

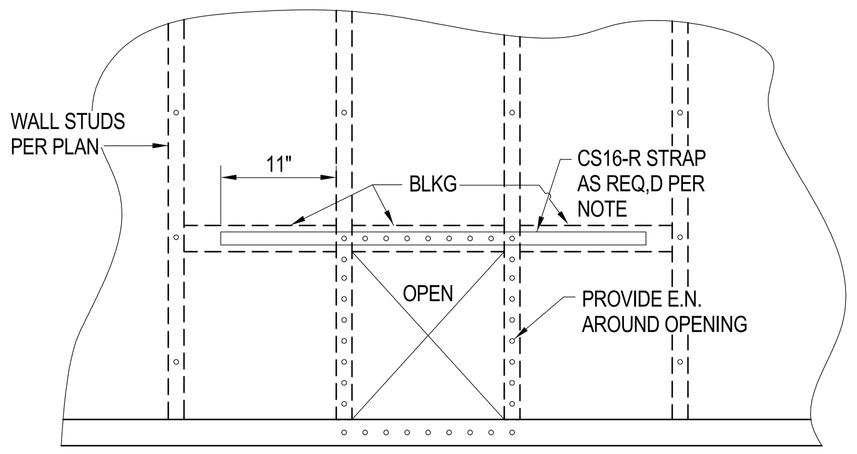
UPLIFT PL (GR.36) SCHEDULE

ROD DIAMETER	UPLIFT PLATE (txLxW)
UP TO 7/8"	5/8"x2 1/2"x2 1/2"
1" TO 1 1/4"	1"x3 1/2"x3 1/2"
1 1/2"	1 1/8"x4"x4"



NOTE:
1. HOLDOWNS SHALL BE TIGHTENED JUST PRIOR TO COVERING THE WALL FRAMING.
2. HOLDOWNS MUST BE TIED IN PLACE PRIOR TO SLAB INSPECTION.

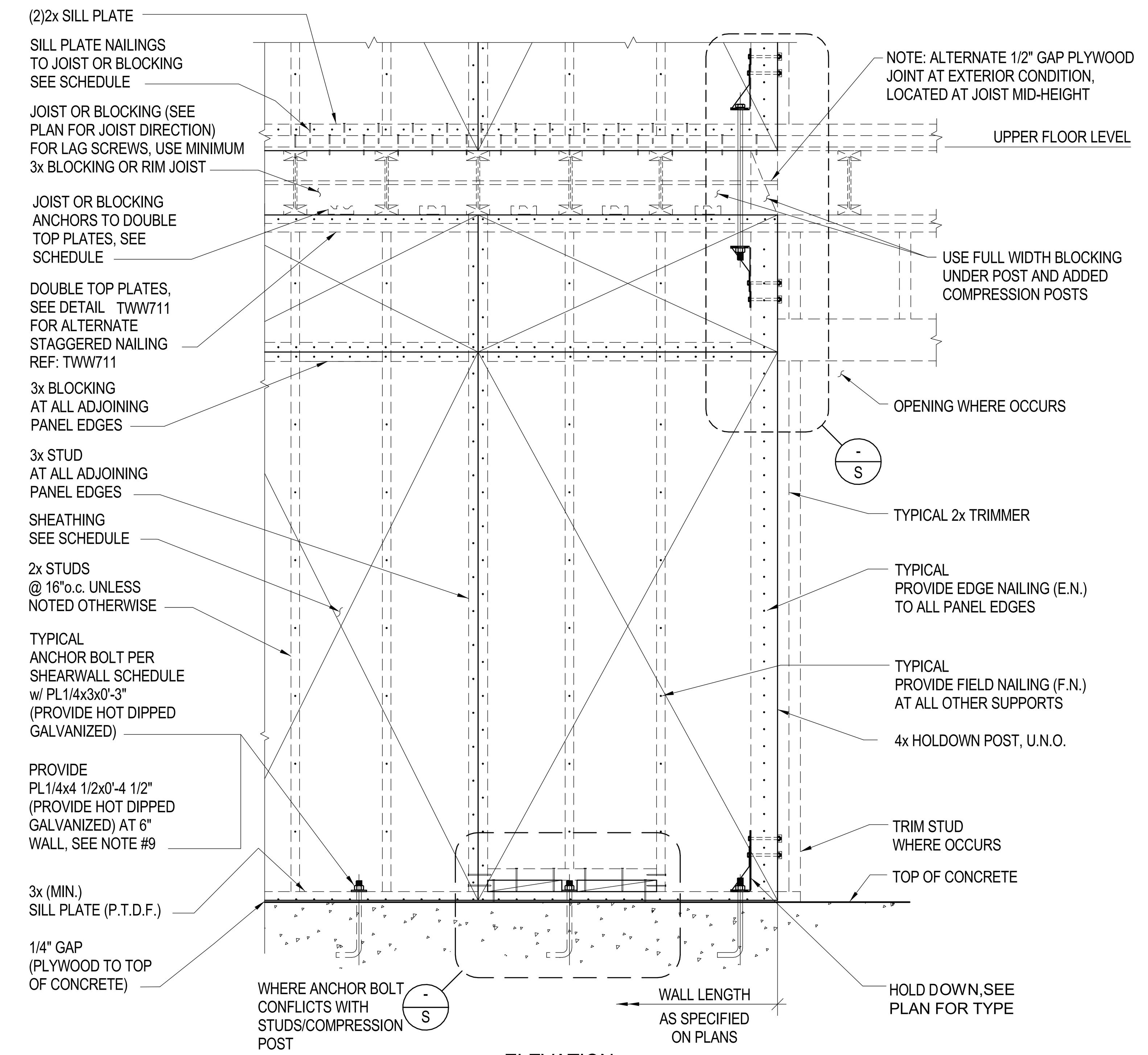
TYPICAL HOLDOWN ANCHORAGE DETAIL
TWW407 MOD. 2



NOTES:
CS16-R STRAP IS REQUIRED WHEN:
1. THE PENETRATION IS LARGER THAN 25% OF WALL LENGTH.
2. THE PENETRATIONS ARE CLOSER THAN 32"o.c.
3. A SECOND HORIZONTAL STRAP IS REQUIRED AT THE BOTTOM OF OPENING WHEN BOTTOM OF OPENING IS NOT AT BOTTOM PLATE. 16"x16" MAXIMUM OPENING SIZE.

BLOCKING AND STRAPS NOT REQUIRED WHEN PENETRATION IS LESS THAN OR EQUAL TO 6" AND SPACED AT 2 OR MORE STUD BAYS.

TYPICAL
SHEAR WALL PENETRATION (16"x16") DETAIL
TWW411 5



ELEVATION

SHEAR WALL SCHEDULE

MARK	MATERIAL	NAILING (EDGE:FIELD)	UPPER FLOOR SILL PL NAILING	BLOCKING TO DOUBLE PL	ANCHOR BOLT SPACING	REMARKS
SW1	15/32" CDX 4-PLY OR 5-PLY PLYWOOD 32/16	10d @ 6:12	16d @ 6"o.c.	SIMPSON A35 @ 16"o.c. ALT. SIMPSON LTP4 @ 24"o.c.	5/8"ø @ 48"o.c.	CAPACITY:310 PLF
SW2	15/32" STRUCT-I 4-PLY OR 5-PLY PLYWOOD 32/16	10d @ 6:12	16d @ 4"o.c.	SIMPSON A35 @ 16"o.c. ALT. SIMPSON LTP4 @ 22"o.c.	5/8"ø @ 32"o.c.	CAPACITY:340 PLF
SW3	15/32" STRUCT-I 4-PLY OR 5-PLY PLYWOOD 32/16	10d @ 4:12	16d @ 3 1/2"o.c.	SIMPSON A35 @ 10"o.c. ALT. SIMPSON LTP4 @ 16"o.c.	5/8"ø @ 32"o.c.	CAPACITY:510 PLF
SW4	15/32" STRUCT-I 4-PLY OR 5-PLY PLYWOOD 32/16	10d @ 3:12	1/2"ø LAG SCREW @ 13"o.c. *	SIMPSON A35 @ 8"o.c. ALT. SIMPSON LTP4 @ 12"o.c.	5/8"ø @ 24"o.c.	CAPACITY:665 PLF PRE-DRILL FOR LAG SCREW
SW5	15/32" STRUCT-I 4-PLY OR 5-PLY PLYWOOD 32/16	10d @ 2:12	1/2"ø LAG SCREW @ 9"o.c. *	SIMPSON A35 @ 6"o.c. ALT. SIMPSON LTP4 @ 9"o.c.	5/8"ø @ 18"o.c.	CAPACITY:870 PLF PRE-DRILL FOR LAG SCREW
SW3B	15/32" STRUCT-I 4-PLY OR 5-PLY PLYWOOD 32/16	10d @ 4:12	1/2"ø LAG SCREW @ 8"o.c. *	SIMPSON A35 @ 5"o.c. ALT. SIMPSON LTP4 @ 8"o.c.	5/8"ø @ 16"o.c.	CAPACITY:1020 PLF PRE-DRILL FOR LAG SCREW
SW4B	15/32" STRUCT-I 4-PLY OR 5-PLY PLYWOOD 32/16	10d @ 3:12	1/2"ø LAG SCREW @ 6"o.c. *	SIMPSON A35 @ 8"o.c. EA. SIDE ALT. SIMPSON LTP4 @ 12"o.c. EA. SIDE	5/8"ø @ 12"o.c.	CAPACITY:1330 PLF PRE-DRILL FOR LAG SCREW
SW5B	15/32" STRUCT-I 4-PLY OR 5-PLY PLYWOOD 32/16	10d @ 2:12	1/2"ø LAG SCREW @ 5"o.c. *	SIMPSON A35 @ 6"o.c. EA. SIDE ALT. SIMPSON LTP4 @ 9"o.c. EA. SIDE	5/8"ø @ 9"o.c.	CAPACITY:1740 PLF PRE-DRILL FOR LAG SCREW

* INDICATES WITH 4 1/4" EMBEDMENT INTO MINIMUM 1 3/4"x TIMBER STRAND BLOCKING OR RIM JOIST. MINIMUM EDGE DISTANCE SHALL BE 3/4". USE FULL BODY DIAMETER LAG SCREEWS ONLY.

NOTES:

1. FRAMING AT ADJOINING PANEL EDGES SHALL BE NOMINAL 3" OR WIDER. NAILS SHALL BE STAGGERED IN TWO ROWS ALONG PANEL EDGES.
2. ALL NAILS SHALL BE COMMON NAILS. PROVIDE HOT DIPPED GALVANIZED NAILS AT ALL FIRE TREATED OR PRESSURE TREATED PLYWOOD AND STUDS.
3. WHERE PLYWOOD IS APPLIED ON BOTH FACES OF A WALL AND NAIL SPACING IS LESS THAN 6"o.c. ON EITHER SIDE, PANEL JOINTS SHALL BE OFFSET TO FALL ON DIFFERENT FRAMING MEMBERS OR FRAMING SHALL BE 3" NOMINAL OR THICKER AND NAILS ON EACH SIDE BE STAGGERED. 3x FRAMING SHALL BE USED AT BOTTOM SILL PLATE AND ALL BLOCKING.
4. NAILS SHALL BE PLACED AT LEAST 3/8" FROM PANEL EDGES AND AT LEAST 1/4" FROM THE EDGE OF THE CONNECTING MEMBERS.
5. SIMPSON 'LTP4' FRAMING ANCHOR (LARR #25293) MAY BE APPLIED OVER 1/2" SHEATHING WITH 8d COMMON NAILS IN LIEU OF 8dx1 1/2" NAILS.
6. SW3B INDICATES SHEATHING OCCURS ON BOTH SIDES OF WALL AS SHOWN ON PLAN.
7. SHEATHING NAILS OR OTHER APPROVED SHEATHING CONNECTORS SHALL BE DRIVEN SUCH THAT THEIR HEAD OR CROWN IS FLUSH WITH THE SURFACE OF THE SHEATHING. OVER-DRIVEN NAILS WILL BE DEEMED UNSATICFACTORY.
8. PROVIDE A SINGLE 3x NOMINAL OR WIDER FRAMING MEMBER AT BOTTOM SILL PLATE AND BEHIND VERTICAL AND HORIZONTAL EDGES, MINIMUM 1/2" EDGE NAILING DISTANCE AT PANEL ENDS AND EDGES, AND STRUCTURAL OBSERVATION PER GENERAL NOTES.
9. PL1/4x3x0'-3" CAN BE USED IN 6" WALLS WHEN STAGGERED. SEE DETAIL .
REF: TWW401

TYPICAL SHEAR WALL SCHEDULE
TWW404 1

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REVISIONS

NO :	DATE	DESCRIPTION
	07/14/17	3RD PLAN CHECK SUBMITTAL

TYPICAL WOOD SHEAR WALL SCHEDULE AND DETAILS

SHEET SCALE :	As indicated
PROJECT MANAGER :	MH
DESIGNER :	JN
DRAWN BY :	FS
REVIEWED BY :	
1st DEPT. SUBMITTAL :	X/X/2016
ISSUED FOR CONST. :	
JOB NUMBER	16-S003
CAD FILE NAME	
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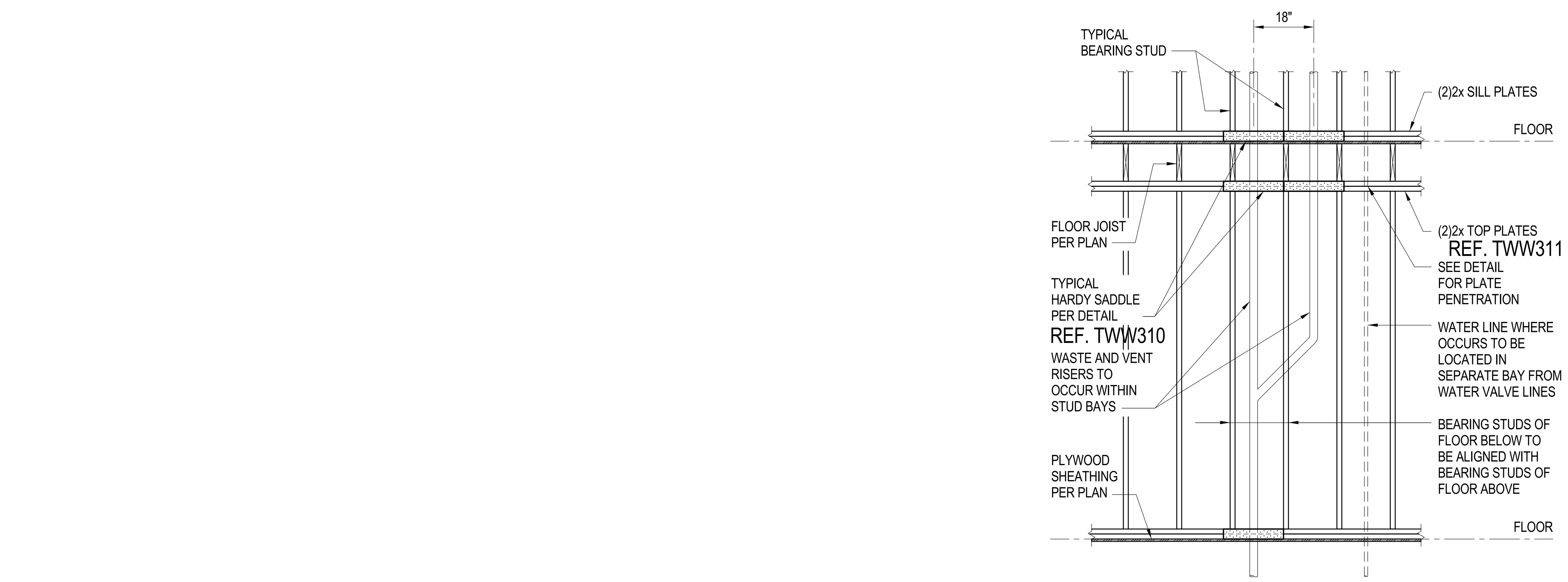
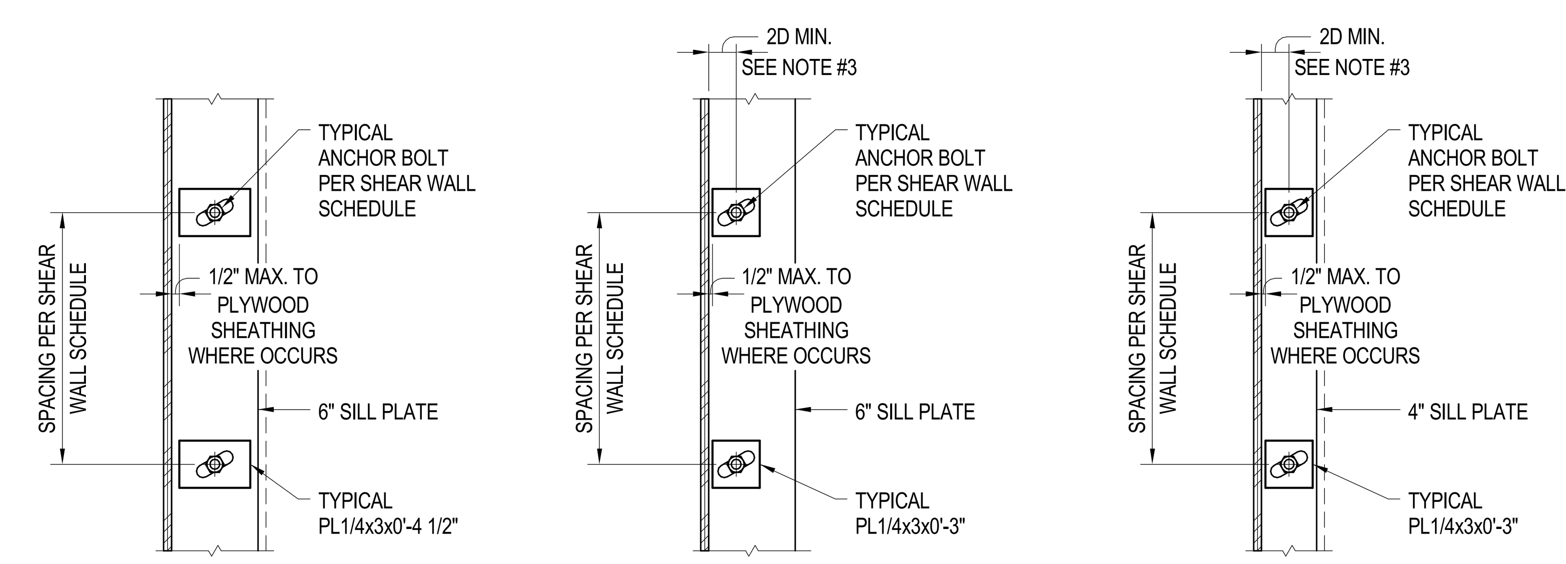
2ND BUILDING PLAN CHECK COORDINATION 05.18.2017



NOTE:
THIS DETAIL APPLIES WHEN PENETRATION SIZE LIMITS OF "TYPICAL DETAIL FOR PENETRATIONS IN TOP OR BOTTOM PLATE MEMBER" CAN NOT BE MET.

TYPICAL PLUMBING RISERS PENETRATION AT BEARING OR SHEAR WALL DETAIL 2

TWW309



PLAN VIEW
6" SILL PLATE w/PLYWOOD SHEATHING ON ONE OR TWO SIDES

PLAN VIEW
6" SILL PLATE w/PLYWOOD SHEATHING ON ONE SIDE

PLAN VIEW
4" SILL PLATE w/PLYWOOD SHEATHING ON ONE OR TWO SIDES

NOTES:
1. AT CONTRACTOR'S OPTION, DIAGONAL SLOTS IN PLATE CAN BE USED. DIAGONAL SLOT SHALL BE BOLT DIAMETER + 3/16" WIDE x 1 3/4" LONG MAX. CENTERED ON PLATE. USE STANDARD WASHER BETWEEN SLOTTED PLATE AND NUT.
2. SIMPSON BP-3, BPS-3 OR BPS-6 MAY BE USED AT CONTRACTORS OPTION.
3. ANCHOR BOLT SHALL BE PLACED A MINIMUM OF 2x BOLT DIAMETER FROM SHEATHING EDGE OF SILL PLATE.

TYPICAL ALTERNATE WASHER PLATE DETAIL 1

TWW401

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REVISIONS

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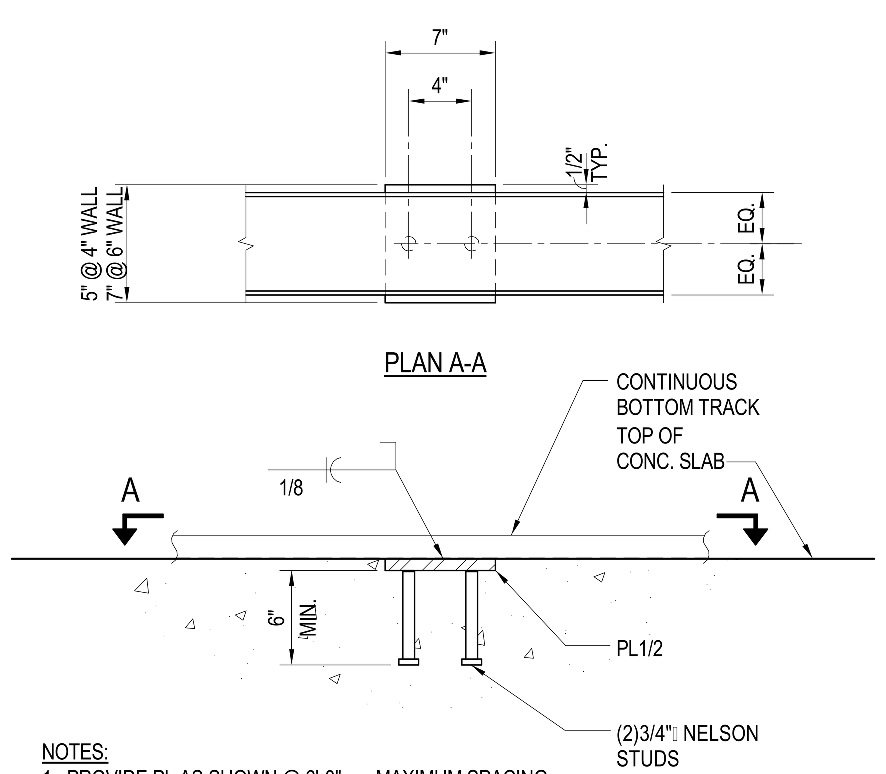
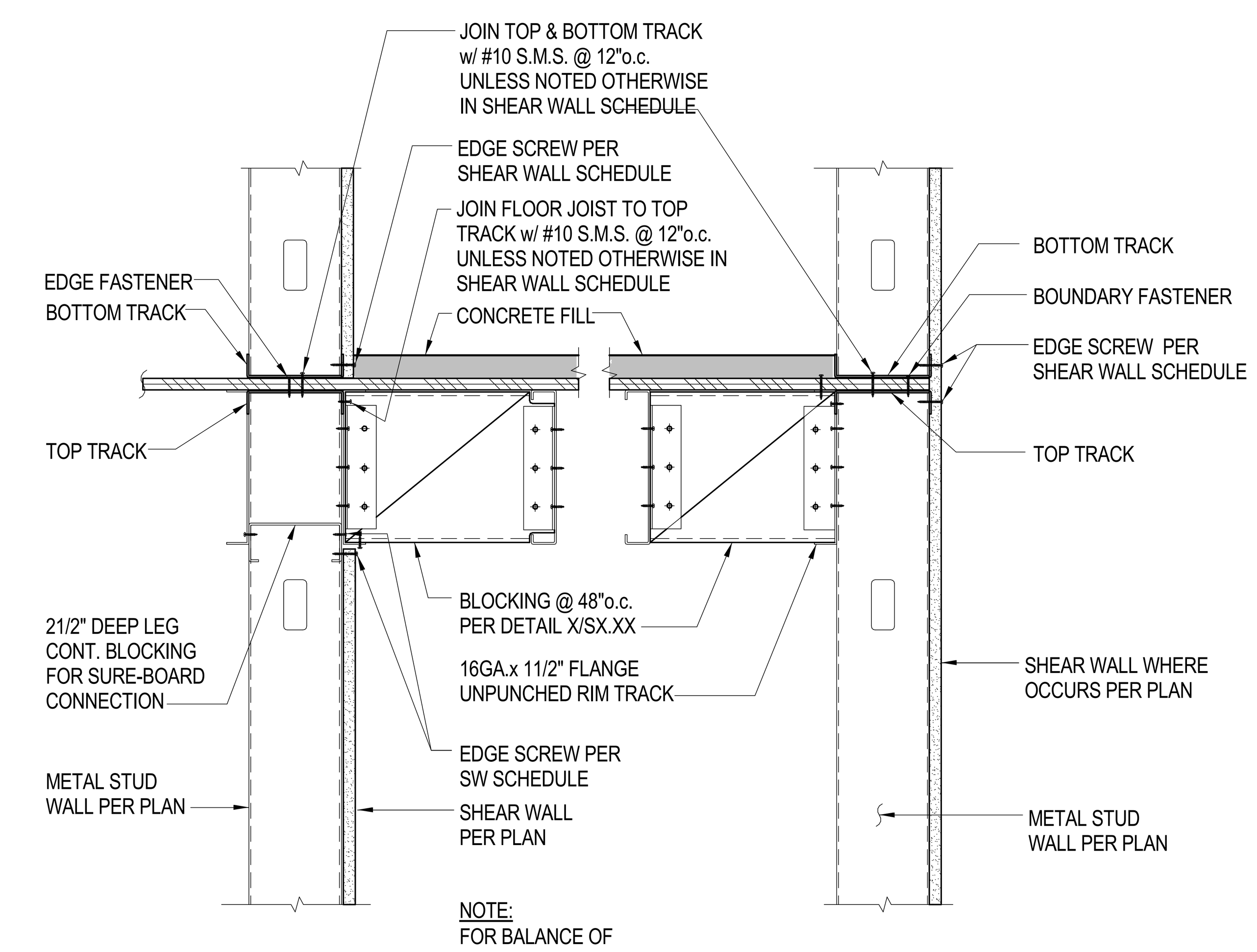


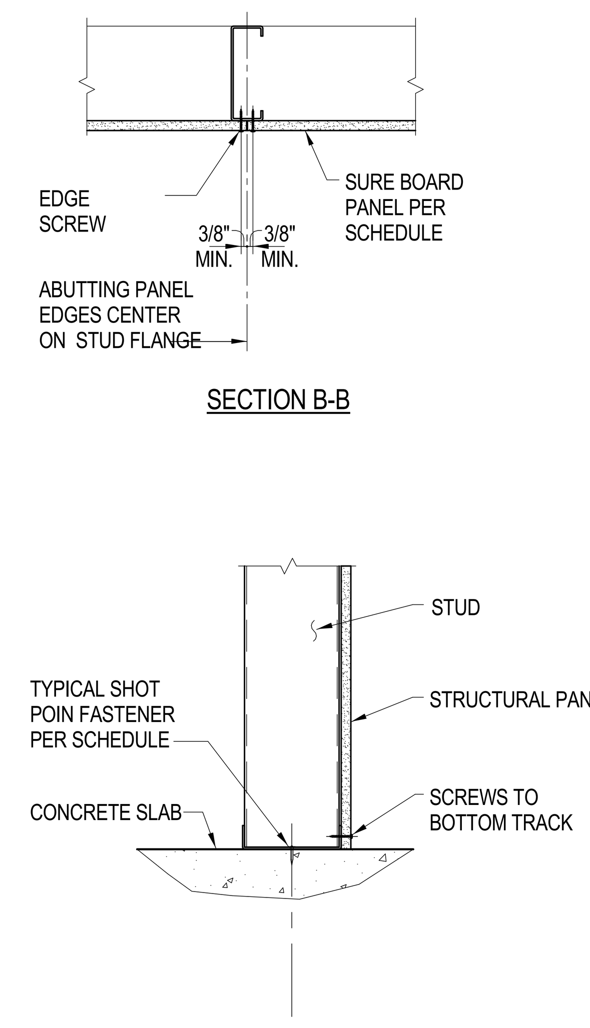
NOTES:
1. PROVIDE PL AS SHOWN @ 6'-0"o.c. MAXIMUM SPACING.
2. PROVIDE EMBED PL 3'-0"o.c. MAXIMUM FROM SHEAR WALL BOUNDARY ELEMENT (2 EMBED PL'S MINIMUM PER SHEAR WALL).

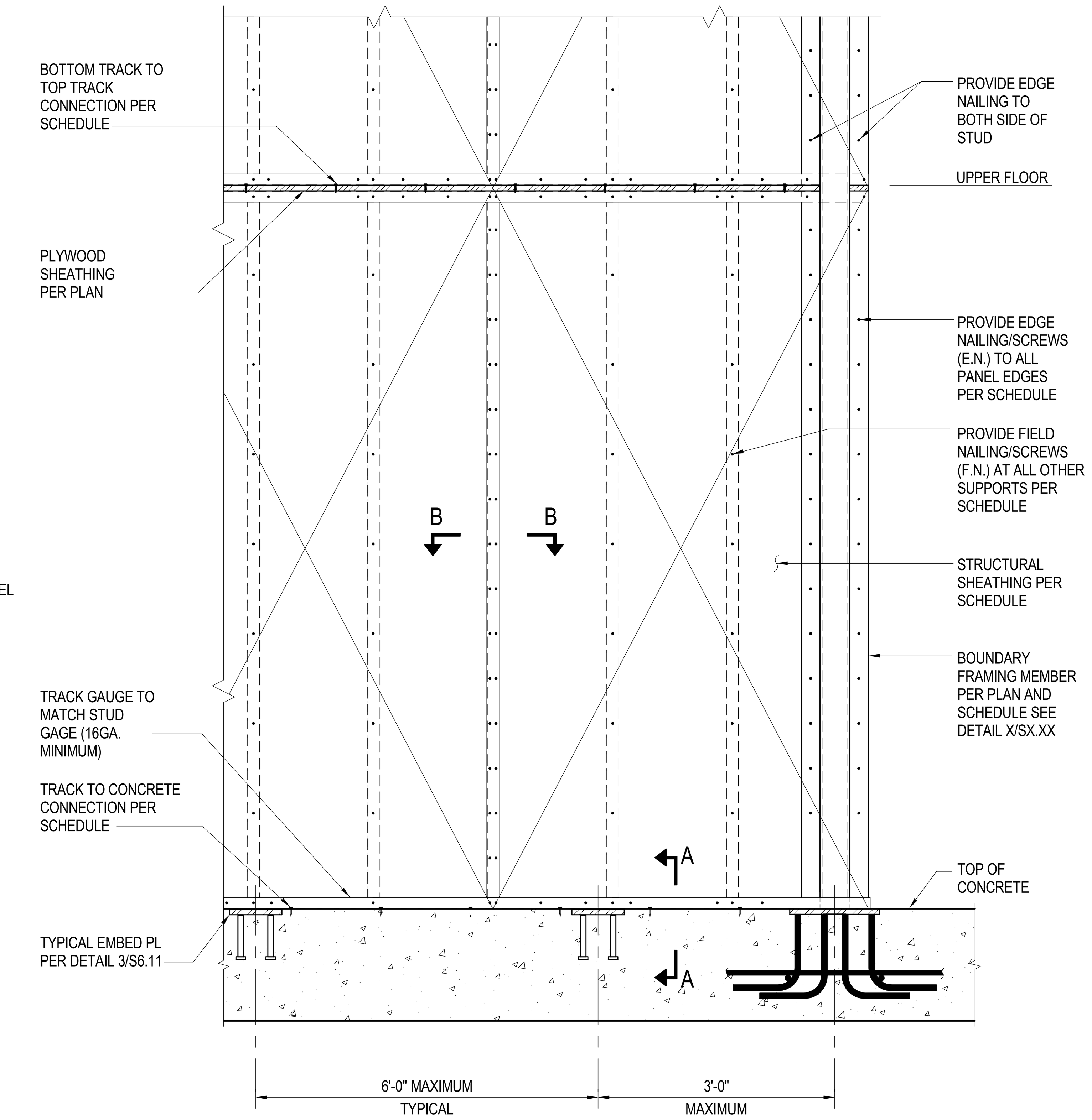
TYPICAL
SHEAR WALL CONNECTION AT BASE DETAIL 5
1 1/2"=1'-0"



NOTE:
FOR BALANCE OF INFORMATION NOT NOTED SEE DETAIL 1/S6.12.

SHEAR WALL AT TYPICAL FLOOR JOIST
PARALLEL TO WALL DETAIL (WHERE STUD WALL STOPS AND STARTS) 3
1 1/2"=1'-0"





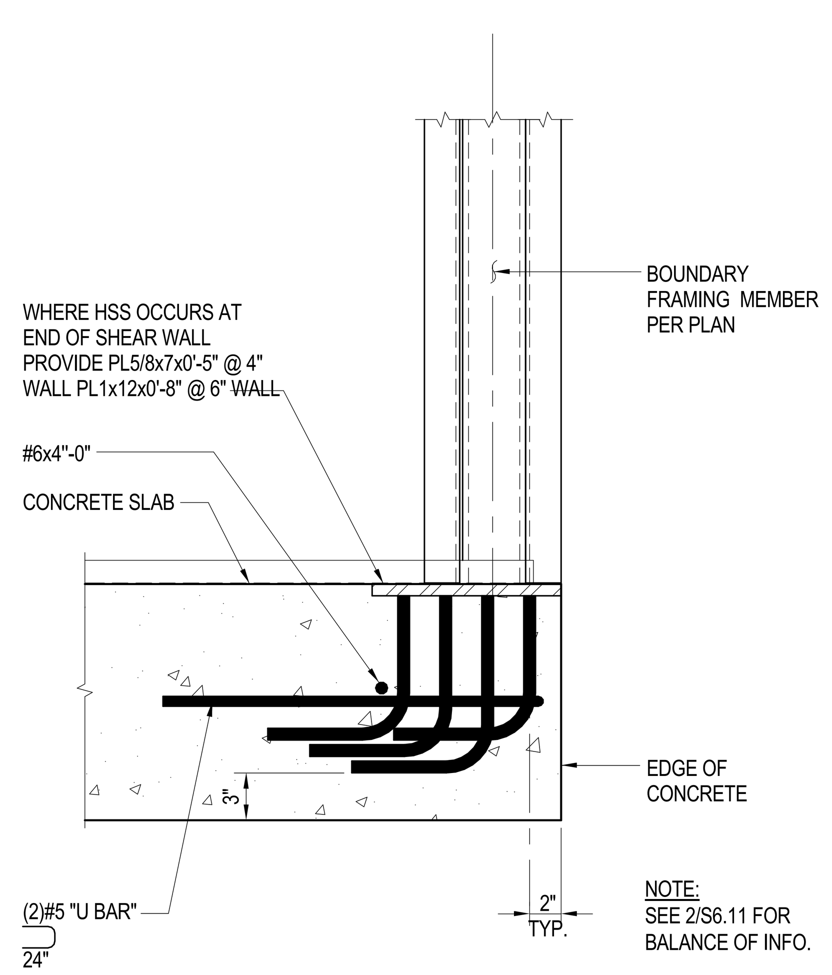
SUREBOARD SHEAR WALL ELEVATION

SUREBOARD SHEAR WALL SCHEDULE — ICBO ER-5762

MARK	MATERIAL	MIN. GAUGE STUDS/TRACK	BOTTOM TRACK TO CONCRETE	BOTTOM TRACK TO TOP TRACK	RIM TRACK TO TOP TRACK	ALLOWABLE CAPACITY
SB1	SUREBOARD FULLY BLOCKED, w/#10 S.M.S. @6"o.c. AT PANEL EDGES AND @12"o.c. AT FIELD	20GA.	HILTI DN32 P8 @24"o.c. POWDER DRIVEN	#12 S.M.S. @6"o.c.	#10 S.M.S. @ 12"o.c.	434 PLF
SB2	SUREBOARD FULLY BLOCKED, w/#10 S.M.S. @4"o.c. AT PANEL EDGES AND @12"o.c. AT FIELD	20GA.	HILTI DN32 P8 @24"o.c. POWDER DRIVEN	#12 S.M.S. @4"o.c.	#10 S.M.S. @ 6"o.c.	618 PLF
SB3	SUREBOARD FULLY BLOCKED, w/#10 S.M.S. @3"o.c. AT PANEL EDGES AND @12"o.c. AT FIELD	20GA.	HILTI DN32 P8 @24"o.c. POWDER DRIVEN	#12 S.M.S. @3"o.c.	#10 S.M.S. @ 6"o.c.	692 PLF
SB4	SUREBOARD FULLY BLOCKED, w/#10 S.M.S. @2"o.c. AT PANEL EDGES AND @12"o.c. AT FIELD	20GA.	HILTI DN32 P8 @24"o.c. POWDER DRIVEN	#12 S.M.S. @3"o.c.	#10 S.M.S. @ 6"o.c.	766 PLF
SB5	SUREBOARD FULLY BLOCKED, w/#10 S.M.S. @6"o.c. AT PANEL EDGES AND @12"o.c. AT FIELD	18GA.	HILTI DN32 P8 @24"o.c. POWDER DRIVEN	#12 S.M.S. @4"o.c.	#10 S.M.S. @ 12"o.c.	562 PLF
SB6	SUREBOARD FULLY BLOCKED, w/#10 S.M.S. @4"o.c. AT PANEL EDGES AND @12"o.c. AT FIELD	18GA.	HILTI DN32 P8 @24"o.c. POWDER DRIVEN	#12 S.M.S. @3"o.c.	#10 S.M.S. @ 6"o.c.	770 PLF
SB7	SUREBOARD FULLY BLOCKED, w/#10 S.M.S. @3"o.c. AT PANEL EDGES AND @12"o.c. AT FIELD	18GA.	HILTI DN32 P8 @24"o.c. POWDER DRIVEN	#12 S.M.S. @3"o.c.	#10 S.M.S. @ 6"o.c.	858 PLF
SB8	SUREBOARD FULLY BLOCKED, w/#10 S.M.S. @2"o.c. AT PANEL EDGES AND @12"o.c. AT FIELD	18GA.	HILTI DN32 P8 @24"o.c. POWDER DRIVEN	(2) ROWS #12 S.M.S. @4"o.c.	#10 S.M.S. @ 6"o.c.	944 PLF
SB9	SUREBOARD FULLY BLOCKED, w/#10 S.M.S. @3"o.c. AT PANEL EDGES AND @12"o.c. AT FIELD	16GA.	HILTI DN32 P8 @24"o.c. POWDER DRIVEN	(2) ROWS #12 S.M.S. @4"o.c.	#10 S.M.S. @ 4"o.c.	1158 PLF
SB10	SUREBOARD FULLY BLOCKED, w/#10 S.M.S. @2"o.c. AT PANEL EDGES AND @12"o.c. AT FIELD	16GA.	HILTI DN32 P8 @24"o.c. POWDER DRIVEN	(2) ROWS #12 S.M.S. @4"o.c.	#10 S.M.S. @ 4"o.c.	1384 PLF

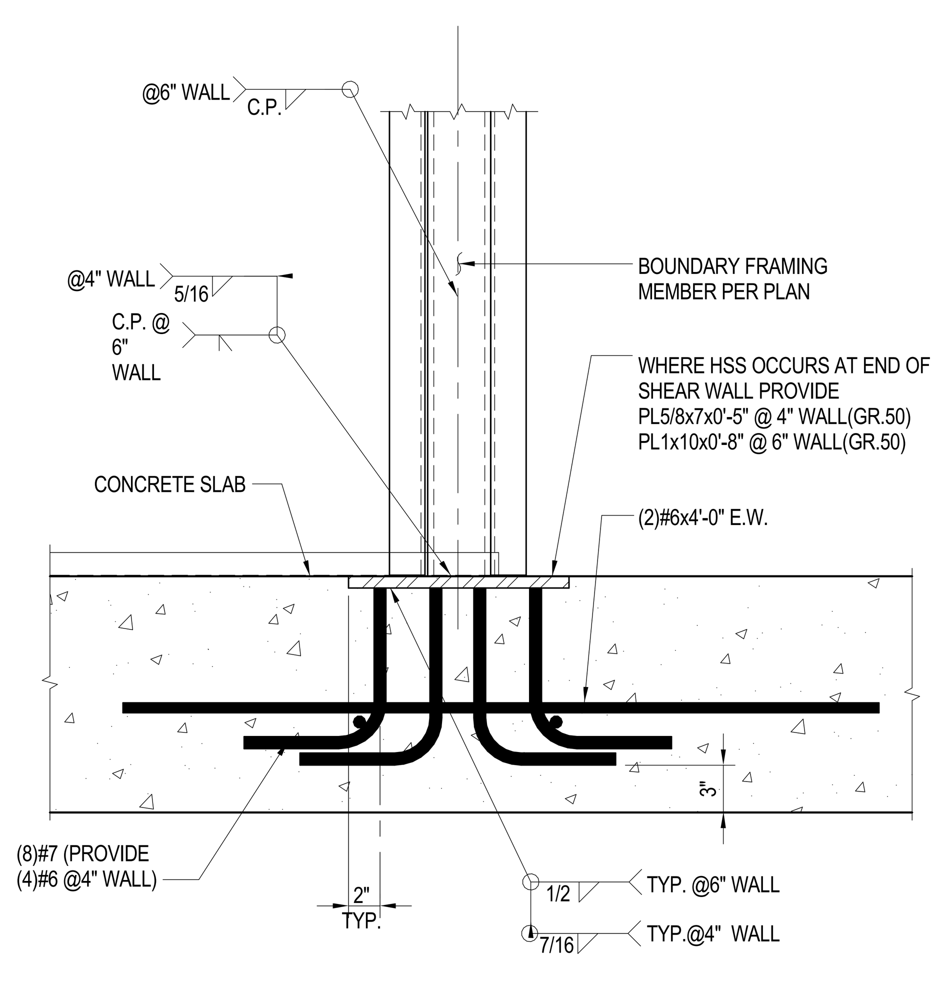
NOTES:
1. INSTALLATION OF SUREBOARD SHEAR WALLS MUST BE IN ACCORDANCE WITH ICBO IAPMO-ER-126 AND THE MANUFACTURER'S PUBLISHED INSTALLATION INSTRUCTIONS.
2. ALL PANEL EDGES MUST BE BLOCKED. FRAMING MEMBERS SUCH AS STUDS, TOP AND BOTTOM TRACKS ARE CONSIDERED BLOCKING; PANEL EDGES THAT DO NOT FALL ON FRAMING MEMBERS MUST BE BLOCKED WITH STUDS, TRACK, OR CONTINUOUS FLAT STRAP MATERIAL WITH MINIMUM THICKNESS AND STEEL PROPERTIES AS THE STUD FRAMING MEMBERS PER THE TABLE.
3. SEE PLAN FOR SHEAR WALL BOUNDARY FRAMING MEMBERS.
4. SEE PLAN FOR SHEAR WALL HOLDOWN ANCHORS.
5. ALL SURE-BOARD STEEL SHEATHING SHALL BE 22GA.
6. PROVIDE STEEL FRAMING PER BEARING WALL SCHEDULE IF GAGE NOTED IN BEARING WALL SCHEDULE IS THICKER THAN STEEL MINIMUM GAGE SHOWN IN SCHEDULE ABOVE.

TYPICAL SUREBOARD SHEAR WALL SCHEDULE 1
N.T.S.



NOTE:
SEE 2/S6.11 FOR BALANCE OF INFO.

TYPICAL
SHEAR WALL BOUNDARY EMBED PLATE DETAIL 4
1 1/2"=1'-0"



TYPICAL
SHEAR WALL BOUNDARY EMBED PLATE DETAIL 2
1 1/2"=1'-0"

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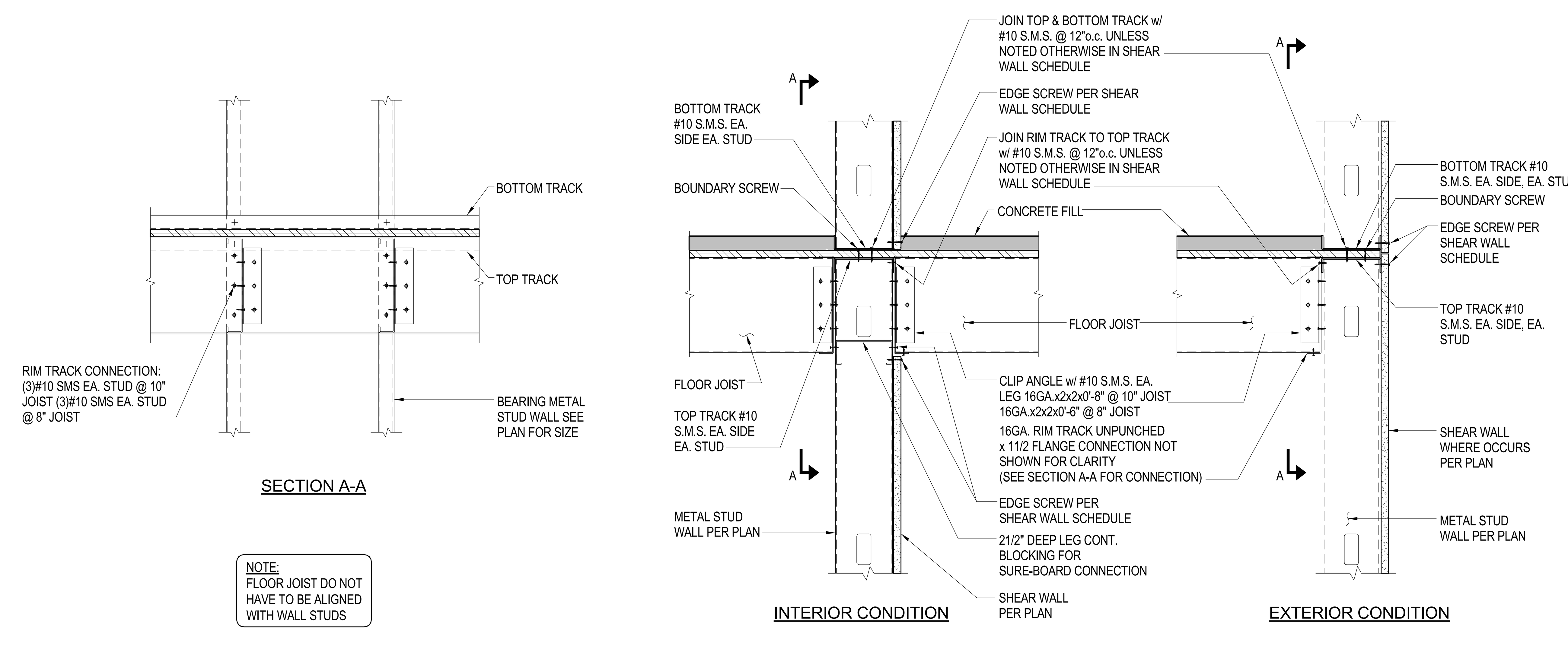

SHEAR WALL AT TYPICAL BEARING METAL STUD WALL DETAILS AT FLOOR 1

1 1/2"=1'-0"

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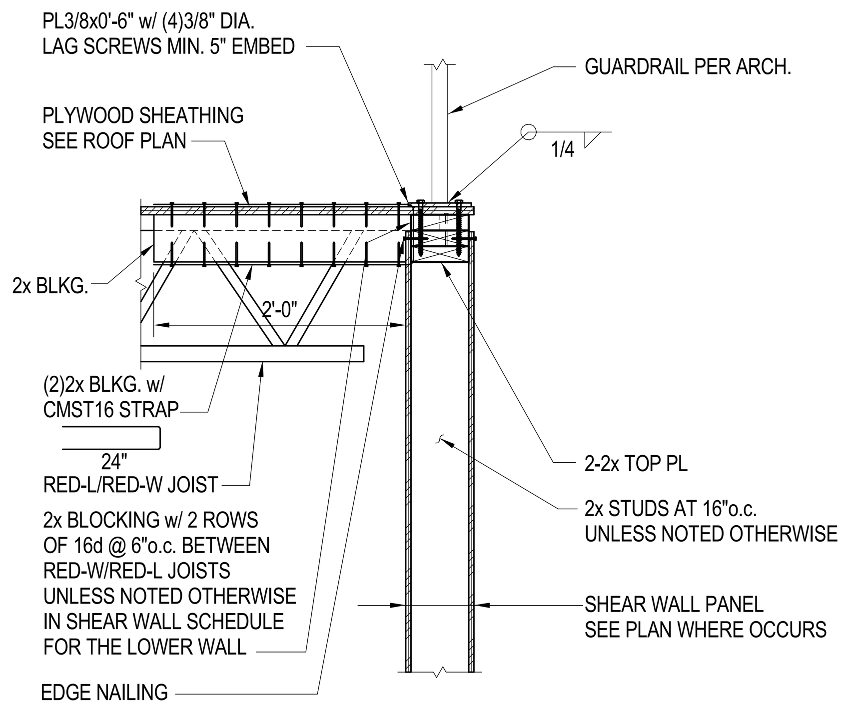
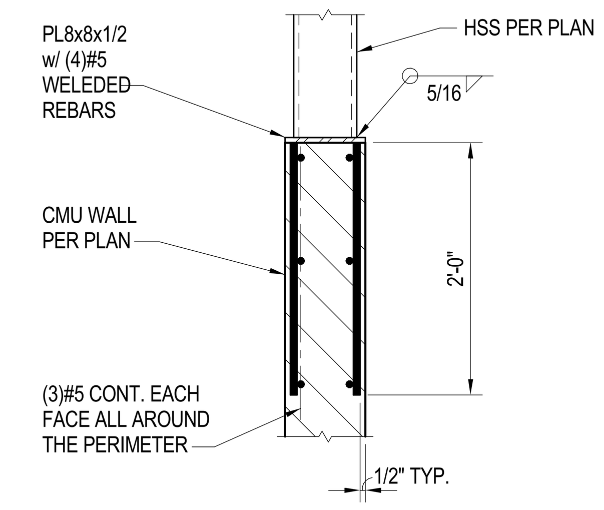
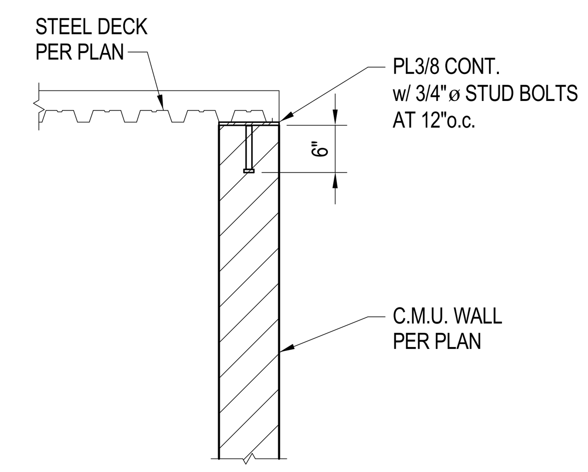


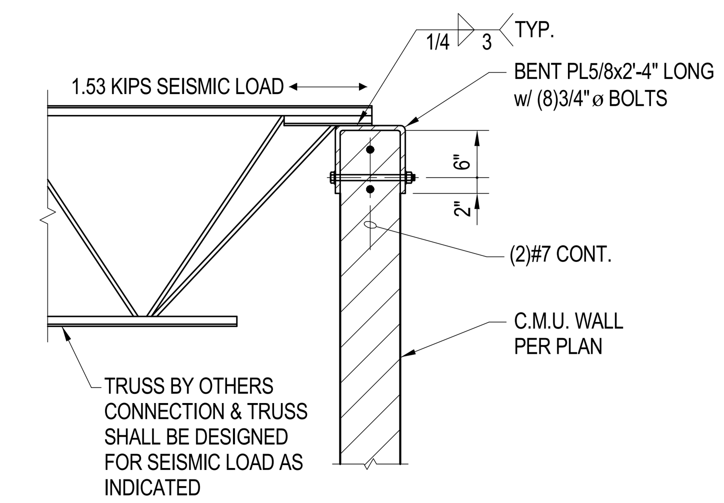
TYPICAL
GUARDRAIL AT WOOD DECK 12
1"=1'-0"



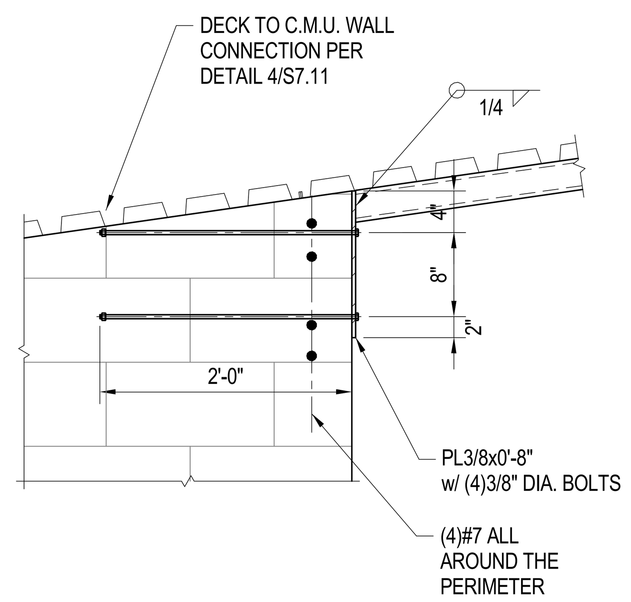
DETAIL 8
1"=1'-0"



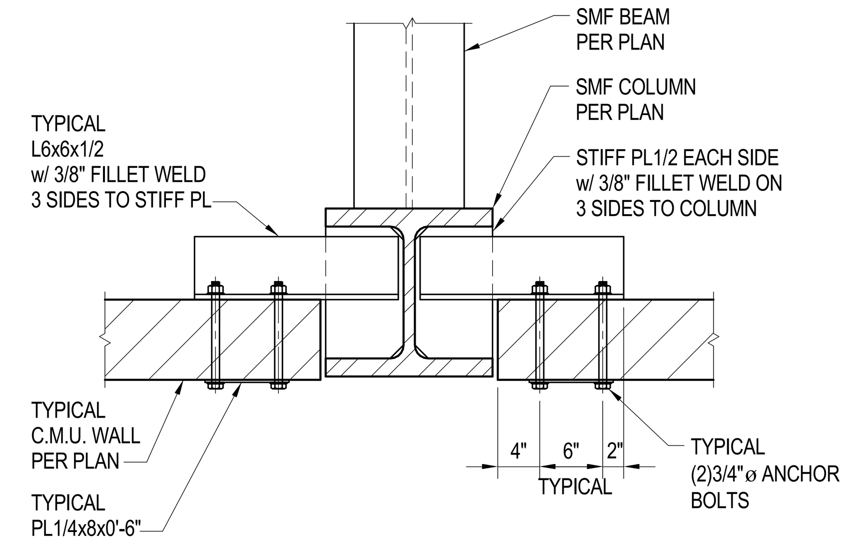
TYPICAL
STEEL DECK TO TOP OF C.M.U. WALL DETAIL 4
3/4"=1'-0"



TYPICAL
STEEL JOIST TO TOP OF C.M.U. WALL DETAIL 2
3/4"=1'-0"



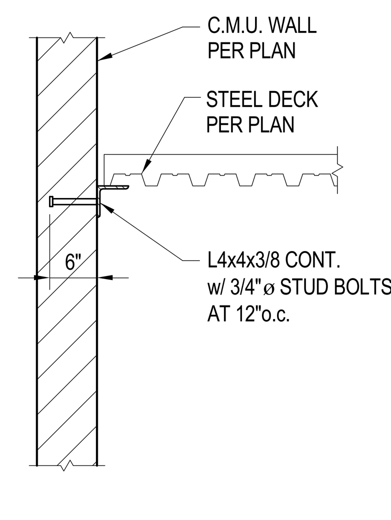
DETAIL 11
1"=1'-0"



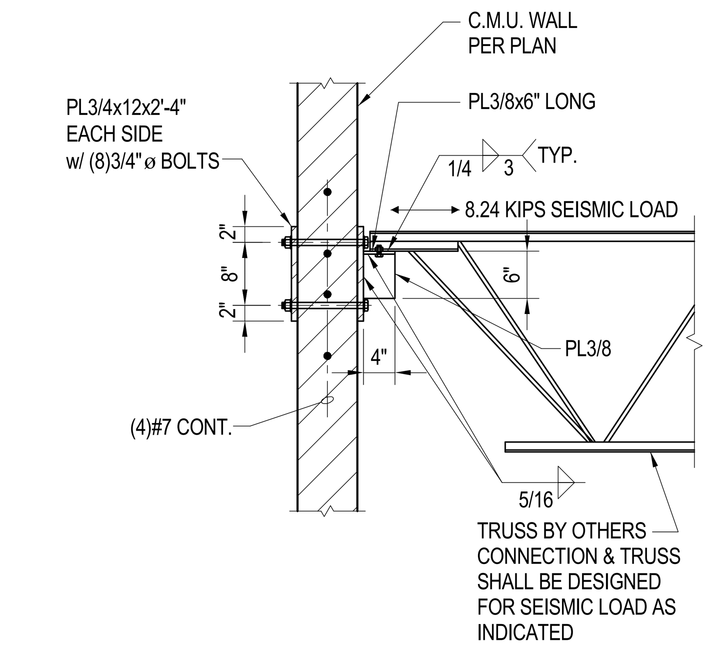
PLAN VIEW

NOTE:
PROVIDE THIS CONNECTION AT BOTH HIGH AND LOW SMF BEAM.

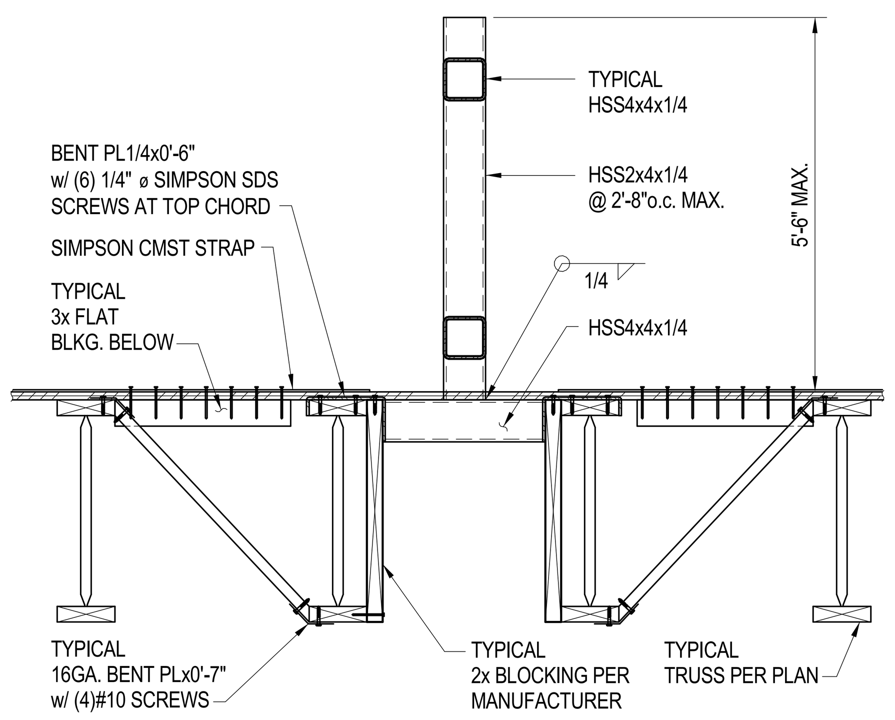
DETAIL 7
1"=1'-0"



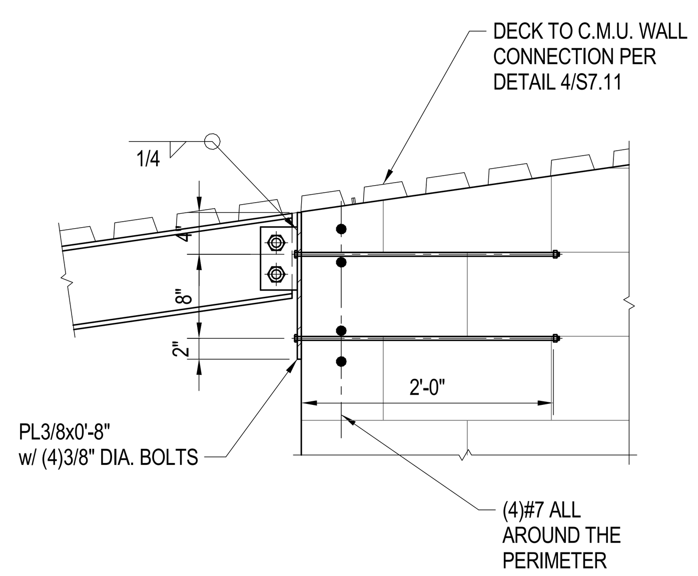
TYPICAL
STEEL DECK TO C.M.U. WALL DETAIL 3
3/4"=1'-0"



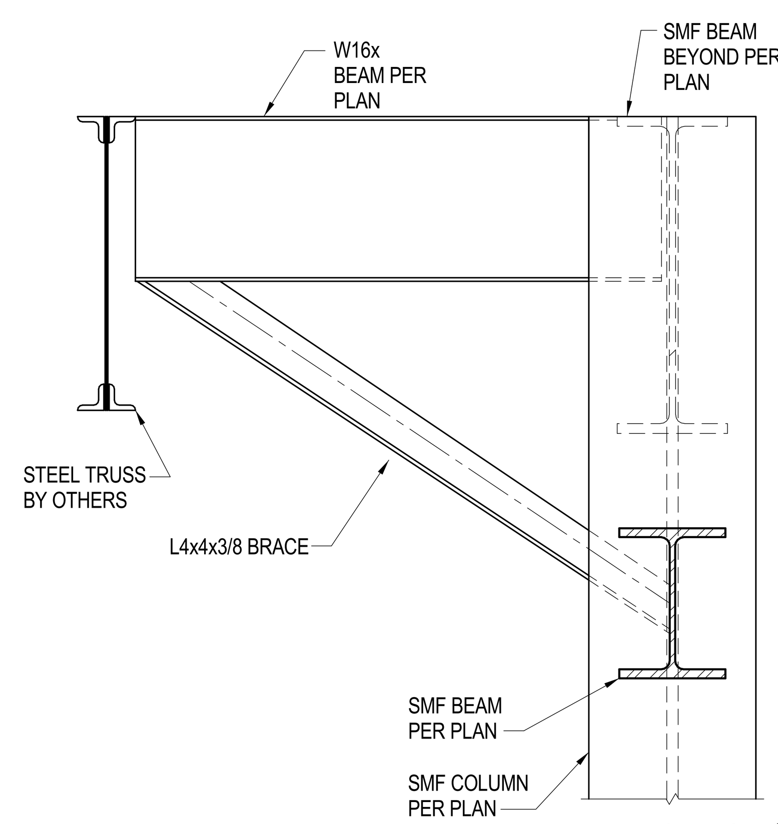
TYPICAL
STEEL JOIST TO C.M.U. WALL DETAIL 1
3/4"=1'-0"



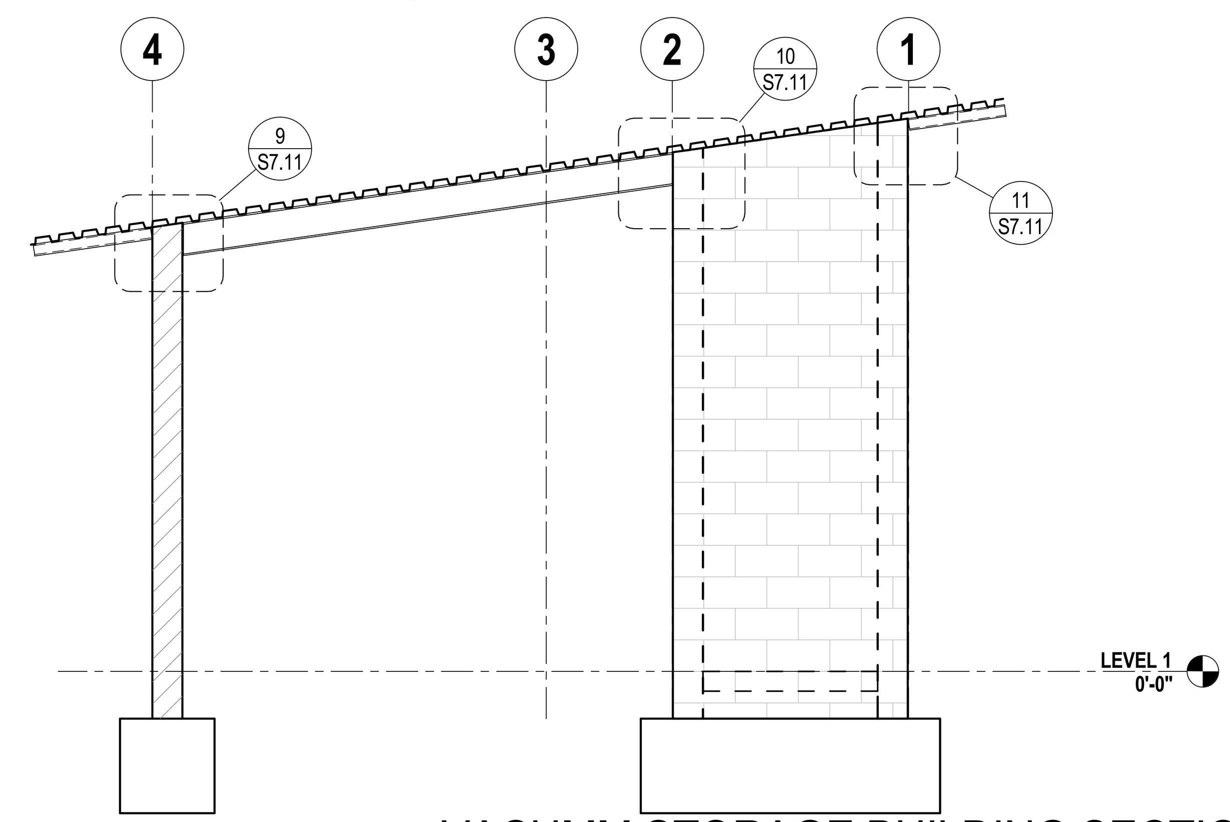
TYPICAL SCREEN WALL
PARALLEL TO JOIST AT RETAIL BUILDING DETAIL 14
1"=1'-0"



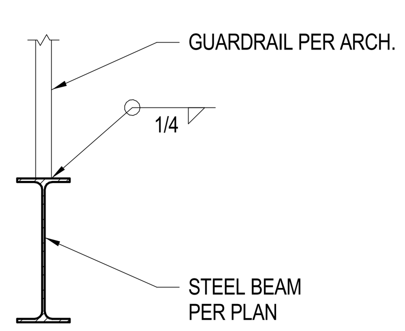
DETAIL 10
1"=1'-0"



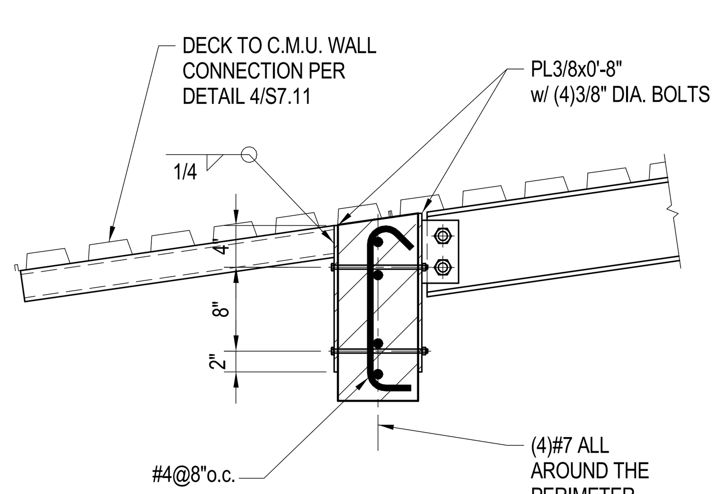
DETAIL 6
1"=1'-0"



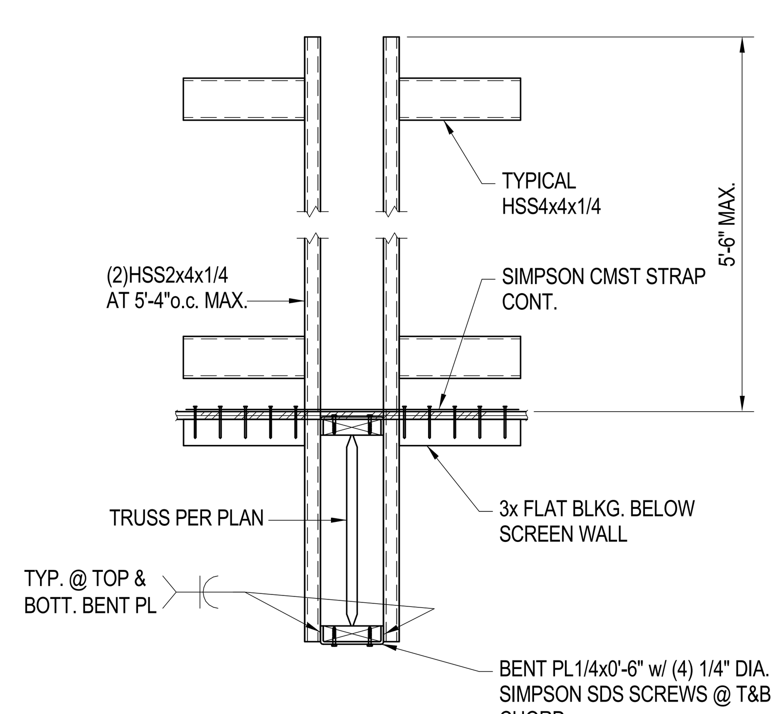
VACUMM STORAGE BUILDING SECTION B
3/8" = 1'-0"



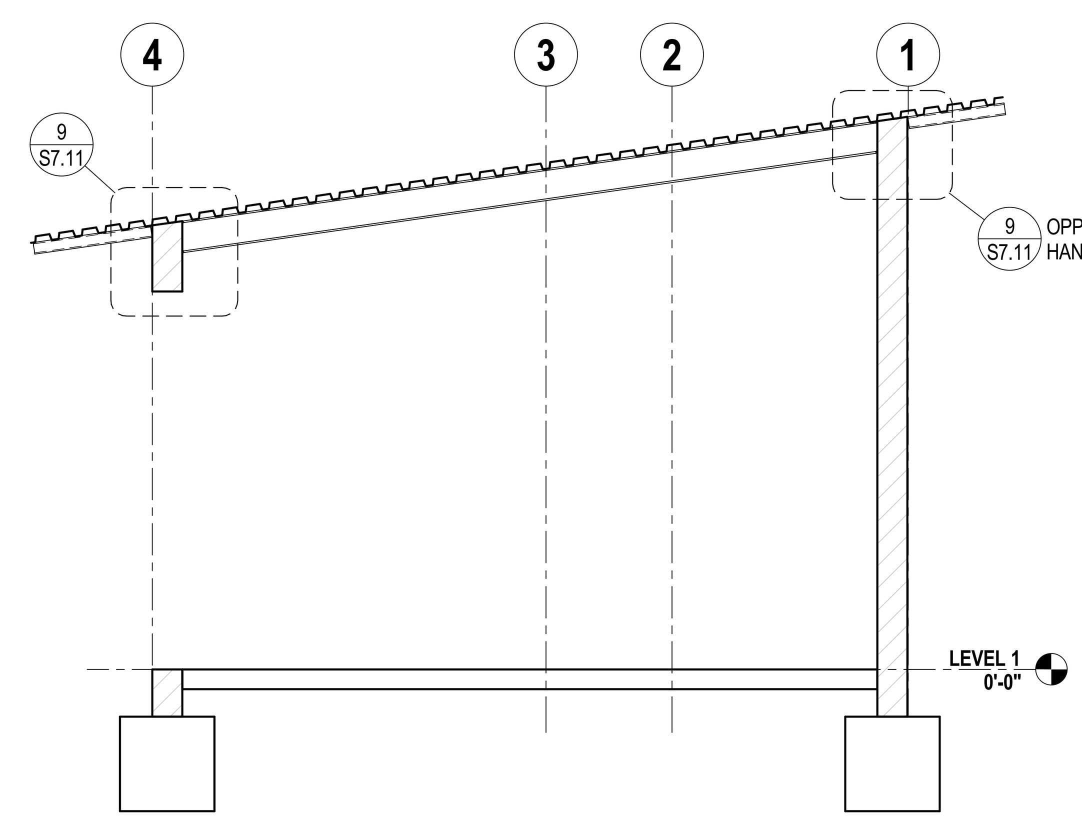
TYPICAL
GUARDRAIL AT STEEL BEAM 13
1"=1'-0"



DETAIL 9
1"=1'-0"



TYPICAL SCREEN WALL PERPENDICULAR
TO JOIST AT RETAIL BUILDING DETAIL 5
1"=1'-0"



VACUMM STORAGE BUILDING SECTION A
3/8" = 1'-0"

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