GENERAL STRUCTURAL NOTES

(The following apply unless shown otherwise on the plans)

CRITERIA

1. ALL MATERIALS, WORKMANSHIP, DESIGN, AND CONSTRUCTION SHALL CONFORM TO THE DRAWINGS, SPECIFICATIONS, THE 2018 EDITION OF THE INTERNATIONAL BUILDING CODE (IBC).

2. DESIGN LOADING CRITERIA

ROOF SNOW LOAD	25 PSF
FLOOR LIVE LOAD	125 PSF OR 2,000 LBS
STAIR AND EXITS LIVE LOAD	100 PSF
GUARDRAILS/BALCONY RAILS (EXIT FACILITY)	50 PLF OR 200 LBS.
GUARDRAILS/BALCONY RAILS (OTHER THAN EXIT FACILITY)	20 PLF OR 200 LBS.
MECHANICAL UNITS	WEIGHTS FURNISHED BY MANUFACTURER

WIND : ANALYSIS PROCEDURE: ASCE 7-16 CHAPTER 27 "PART 1 - BUILDINGS OF ALL HEIGHTS"
RISK CATEGORY II
104 MPH
EXPOSURE "B"
TOPOGRAPHIC FACTOR Kzt = 1.0

EARTHQUAKE : ANALYSIS PROCEDURE: IBC "EQUIVALENT LATERAL FORCE PROCEDURE"
SEISMIC DESIGN CATEGORY (SDC) = D
RISK CATEGORY = II
SEISMIC SITE CLASS = D
IMPORTANCE FACTOR Ie = 1.0
MAPPED MCE Ss = 1.26; S_1 = 1.01
DESIGN ACCELERATION Sds = 0.43; Sd_1 = 0.54

3. LATERAL LOADS ARE TRANSFERRED BY THE ROOF AND FLOOR DIAPHRAGMS TO THE SHEAR WALLS OR BRACED FRAMES. MOMENTS, SHEARS AND ROTATIONAL FORCES ARE BASED ON THE RIGIDITY OF EACH SHEAR WALL OR BRACED FRAME AND ARE CARRIED BY THE SHEAR WALLS OR BRACED FRAMES TO THE FOUNDATION.

4. STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH ARCHITECTURAL DRAWINGS FOR BIDDING AND CONSTRUCTION. CONTRACTOR SHALL VERIFY DIMENSIONS AND CONDITIONS FOR COMPATIBILITY AND SHALL NOTIFY ARCHITECT OF ANY DISCREPANCIES PRIOR TO CONSTRUCTION.

5. CONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS, MEMBER SIZES, AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THE DRAWINGS ARE INTENDED AS GUIDELINES ONLY AND MUST BE VERIFIED.

6. CONTRACTOR SHALL PROVIDE TEMPORARY BRACING FOR THE STRUCTURE AND STRUCTURAL COMPONENTS UNTIL ALL FINAL CONNECTIONS HAVE BEEN COMPLETED IN ACCORDANCE WITH THE PLANS.

7. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SAFETY PRECAUTIONS AND THE METHODS, TECHNIQUES, SEQUENCES OR PROCEDURES REQUIRED TO PERFORM THEIR WORK. THE STRUCTURAL ENGINEER HAS NO OVERALL SUPERVISORY AUTHORITY OR ACTUAL AND/OR DIRECT RESPONSIBILITY FOR THE SPECIFIC WORKING CONDITIONS AT THE SITE AND/OR FOR ANY HAZARDS RESULTING FROM THE ACTIONS OF ANY TRADE CONTRACTOR. THE STRUCTURAL ENGINEER HAS NO DUTY TO INSPECT, SUPERVISE, NOTE, CORRECT, OR REPORT ANY HEALTH OR SAFETY DEFICIENCIES OF THE OWNER, CONTRACTORS, OR OTHER ENTITIES OR PERSONS AT THE PROJECT SITE.

8. CONTRACTOR-INITIATED CHANGES SHALL BE SUBMITTED IN WRITING TO THE ARCHITECT AND STRUCTURAL ENGINEER FOR APPROVAL PRIOR TO FABRICATION OR CONSTRUCTION. CHANGES SHOWN ON SHOP DRAWINGS ONLY WILL NOT SATISFY THIS REQUIREMENT.

9. DRAWINGS INDICATE GENERAL AND TYPICAL DETAILS OF CONSTRUCTION. WHERE CONDITIONS ARE NOT SPECIFICALLY INDICATED BUT ARE OF SIMILAR CHARACTER TO DETAILS SHOWN, SIMILAR DETAILS OF CONSTRUCTION SHALL BE USED, SUBJECT TO REVIEW AND APPROVAL BY THE ARCHITECT AND THE STRUCTURAL ENGINEER. WHERE INFORMATION ON THE DRAWINGS IS IN CONFLICT WITH THE SPECIFICATIONS, THE MORE STRINGENT SHALL APPLY, SUBJECT TO REVIEW AND APPROVAL BY THE ARCHITECT AND THE STRUCTURAL ENGINEER. DO NOT SCALE THE DRAWINGS.

10. ALL STRUCTURAL SYSTEMS WHICH ARE COMPOSED OF FIELD ERECTED COMPONENTS SHALL BE SUPERVISED BY THE SUPPLIER DURING MANUFACTURING, DELIVERY, HANDLING, STORAGE AND ERECTION IN ACCORDANCE WITH INSTRUCTIONS PREPARED BY THE SUPPLIER.

11. SHOP DRAWINGS FOR REINFORCING STEEL (FOR BOTH CONCRETE AND MASONRY CONSTRUCTION), STRUCTURAL STEEL, AND METAL DECKING, SHALL BE SUBMITTED TO THE ARCHITECT AND STRUCTURAL ENGINEER FOR REVIEW PRIOR TO FABRICATION OF THESE ITEMS.

    CONTRACTOR SHALL SUBMIT WALL ELEVATION DRAWINGS OF AT LEAST 1/8" = 1'-0" SCALE INDICATING LOCATIONS OF CONNECTION EMBEDMENTS AND WALL OPENINGS FOR REVIEW PRIOR TO CONSTRUCTION. CONTRACTOR SHALL COORDINATE WITH REINFORCEMENT SHOP DRAWINGS.

12. SHOP DRAWING REVIEW: DIMENSIONS AND QUANTITIES ARE NOT REVIEWED BY THE ENGINEER OF RECORD, AND THEREFORE MUST BE VERIFIED BY THE CONTRACTOR. CONTRACTOR SHALL REVIEW AND STAMP DRAWINGS PRIOR TO REVIEW BY ENGINEER OF RECORD. CONTRACTOR SHALL REVIEW DRAWINGS FOR CONFORMANCE WITH THE MEANS, METHODS, TECHNIQUES, SEQUENCES AND OPERATIONS OF CONSTRUCTION, AND ALL SAFETY PRECAUTIONS AND PROGRAMS INCIDENTAL THERETO.

13. SHOP DRAWING SUBMITTALS PROCESSED BY THE ENGINEER ARE NOT CHANGE ORDERS. THE PURPOSE OF SHOP DRAWING SUBMITTALS BY THE CONTRACTOR IS TO DEMONSTRATE TO THE ENGINEER THAT THE CONTRACTOR UNDERSTANDS THE DESIGN CONCEPT, BY INDICATING WHICH MATERIAL IS INTENDED TO BE FURNISHED AND INSTALLED AND BY DETAILING THE INTENDED FABRICATION AND INSTALLATION METHODS. IF DEVIATIONS, DISCREPANCIES, OR CONFLICTS BETWEEN SHOP DRAWING SUBMITTALS AND THE CONTRACT DOCUMENTS ARE DISCOVERED EITHER PRIOR TO OR AFTER SHOP DRAWING SUBMITTALS ARE PROCESSED BY THE ENGINEER, THE DESIGN DRAWINGS AND SPECIFICATIONS SHALL CONTROL AND SHALL BE FOLLOWED.

14. DEFERRED SUBMITTALS OF DESIGN BUILD COMPONENTS SHALL BEAR THE STAMP AND SIGNATURE OF A STATE OF WASHINGTON REGISTERED PROFESSIONAL ENGINEER AND SHALL BE APPROVED BY THE COMPONENT DESIGNER PRIOR TO CURSORY REVIEW BY THE ENGINEER OF RECORD FOR LOADS IMPOSED ON THE BASIC STRUCTURE. THE COMPONENT DESIGNER IS RESPONSIBLE FOR CODE CONFORMANCE AND ALL NECESSARY CONNECTIONS NOT SPECIFICALLY CALLED OUT ON ARCHITECTURAL OR STRUCTURAL DRAWINGS. DEFERRED SUBMITTALS SHALL INDICATE MAGNITUDE AND DIRECTION OF ALL LOADS IMPOSED ON BASIC STRUCTURE AND SHALL INCLUDE DESIGN CALCULATIONS WITH THE ENGINEER'S STAMP.

    THE FOLLOWING COMPONENTS SHALL BE DEFERRED SUBMITTALS FOR THIS PROJECT:
    STAIRS, RAILINGS, AND METAL BUILDINGS

15. MECHANICAL UNIT CONNECTIONS TO THE BUILDING SHALL BE DESIGNED BY THE MANUFACTURER FOR THE DESIGN CRITERIA AND CONDITIONS SHOWN ON THE STRUCTURAL DRAWINGS.° MANUFACTURER SHALL SUBMIT DETAIL DRAWINGS AND CALCULATIONS, BOTH OF WHICH BEAR THE STAMP AND SIGNATURE OF A STATE OF WASHINGTON REGISTERED PROFESSIONAL ENGINEER.° MANUFACTURER'S ENGINEER SHALL BE RESPONSIBLE FOR DESIGN, CODE CONFORMANCE, AND CONNECTION OF THE UNIT TO THE BASIC STRUCTURE.° ALL NECESSARY BRACING, TIES, ANCHORAGE, DISTRIBUTION MEMBERS, AND SIMILAR ELEMENTS SHALL BE FURNISHED AND INSTALLED IN CONFORMANCE WITH SUBMITTED DRAWINGS AND CALCULATIONS.

16. SPECIAL INSPECTION: CONCRETE CONSTRUCTION, MASONRY CONSTRUCTION, STRUCTURAL STEEL FABRICATION AND ERECTION (INCLUDING FIELD WELDING AND HIGH-STRENGTH FIELD BOLTING), METAL DECK INSTALLATION, EXPANSION BOLTS AND THREADED EXPANSION INSERTS, SCREW ANCHORS, AND EPOXY GROUTED INSTALLATIONS SHALL BE SUPERVISED IN ACCORDANCE WITH IBC SECTIONS 1704 & 1705 AND THE PROJECT SPECIFICATIONS BY A QUALIFIED TESTING AGENCY DESIGNATED BY THE OWNER. THE TESTING AGENCY AND INSPECTOR SHALL BE REGISTERED WITH WABO AND SHALL SEND COPIES OF ALL STRUCTURAL TESTING AND INSPECTION REPORTS DIRECTLY TO THE OWNER, ARCHITECT, STRUCTURAL ENGINEER, CONTRACTOR AND BUILDING OFFICIAL. ANY MATERIALS WHICH FAIL TO MEET PROJECT SPECIFICATIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT.

GEOTECHNICAL

17. FOUNDATION NOTES: ALLOWABLE SOIL PRESSURE AND LATERAL EARTH PRESSURE ARE BASED VALUES LISTED ON ON PREVIOUSLY PERMITTED BUILDING PLANS DATED DECEMBER 22, 1995 AND THEREFORE MUST BE VERIFIED IN THE FIELD. IF SOILS ARE FOUND TO BE OTHER THAN ASSUMED, NOTIFY THE STRUCTURAL ENGINEER FOR POSSIBLE FOUNDATION REDESIGN.

    FOOTINGS SHALL BEAR ON FIRM, UNDISTURBED EARTH (CONTROLLED, COMPACTED STRUCTURAL FILL OR BOTH) AT LEAST 18" BELOW LOWEST ADJACENT FINISHED GRADE. FOOTING DEPTHS/ELEVATIONS SHOWN ON PLANS (OR IN DETAILS) ARE MINIMUM AND FOR GUIDANCE ONLY; THE ACTUAL ELEVATIONS OF FOOTINGS MUST BE ESTABLISHED BY THE CONTRACTOR IN THE FIELD. UNLESS OTHERWISE NOTED, FOOTINGS SHALL BE CENTERED UNDER COLUMNS OR WALLS ABOVE.

    BACKFILL BEHIND ALL RETAINING WALLS WITH FREE DRAINING, GRANULAR FILL AND PROVIDE FOR SUBSURFACE DRAINAGE.

    THE STRUCTURAL DESIGN IS BASED ON THE FOLLOWING VALUES FROM THE REFERENCED GEOTECHNICAL REPORT:

ALLOWABLE SOIL BEARING PRESSURE	2,000 PSF
LATERAL EARTH PRESSURE (RESTRAINED/UNRESTRAINED)	55 PCF/35 PCF
SEISMIC SURCHARGE PRESSURE (RESTRAINED/UNRESTRAINED)	8H PSF/5H PSF
PASSIVE SOIL PRESSURE	350 PCF
SOIL COEFFICIENT OF FRICTION	0.35
SOIL DENSITY	120 PCF

RENOVATION

18. DEMOLITION: VERIFY ALL EXISTING CONDITIONS BEFORE COMMENCING ANY DEMOLITION. SHORING SHALL BE INSTALLED TO SUPPORT EXISTING CONSTRUCTION AS REQUIRED AND IN A MANNER SUITABLE TO THE WORK SEQUENCES. EXISTING REINFORCING SHALL BE SAVED WHERE AND AS NOTED ON THE PLANS. SAW CUTTING, IF AND WHERE USED, SHALL NOT CUT EXISTING REINFORCING THAT IS TO BE SAVED. DEMOLITION DEBRIS SHALL NOT BE ALLOWED TO DAMAGE OR OVERLOAD THE EXISTING STRUCTURE. LIMIT CONSTRUCTION LOADING (INCLUDING DEMOLITION DEBRIS) ON EXISTING FLOOR SYSTEMS TO 40 PSF.

    A. ALL NEW OPENINGS THROUGH EXISTING WALLS, SLABS AND BEAMS SHALL BE ACCOMPLISHED BY SAW CUTTING WHEREVER POSSIBLE.
    B. VERIFY ALL EXISTING CONDITIONS AND LOCATION OF MEMBERS PRIOR TO CUTTING ANY OPENINGS.
    C. SMALL ROUND OPENINGS SHALL BE ACCOMPLISHED BY CORE DRILLING, IF POSSIBLE.
    D. WHERE NEW REINFORCING TERMINATES AT EXISTING CONCRETE, REBAR DOWELS EPOXIED INTO THE EXISTING CONCRETE SHALL BE PROVIDED TO MATCH HORIZONTAL REINFORCING, UNLESS OTHERWISE NOTED ON PLANS.

CONCRETE

19. CONCRETE SHALL BE MIXED, PROPORTIONED, CONVEYED AND PLACED IN ACCORDANCE WITH ACI 301. CONSTRUCTION TOLERANCES SHALL NOT EXCEED THOSE LISTED IN ACI 117. CONCRETE SHALL ATTAIN A 28-DAY STRENGTH OF f'c = 3,000 PSI. ALL CONCRETE EXPOSED TO THE WEATHER AND ALL GARAGE SLABS-ON-GRADE SHALL ATTAIN A 28-DAY STRENGTH f'c OF 3,500 PSI IN ACCORDANCE WITH IBC SECTION 1904.1. AND ACI 318 TABLE 19.3.2.1. MIX SHALL CONTAIN NOT LESS THAN 5-1/2 SACKS OF CEMENT PER CUBIC YARD AND SHALL BE PROPORTIONED TO PRODUCE A SLUMP OF 5" OR LESS (BEFORE THE ADDITION OF ADMIXTURES). THE WATER/CEMENT RATIO SHALL NOT EXCEED 0.55 FOR FOOTINGS AND 0.45 FOR ALL SLABS AND EXPOSED CONCRETE UNLESS OTHERWISE NOTED. EXCEPT FOR FOOTINGS AND SLAB ON GRADE, AGGREGATE SIZE SHALL NOT EXCEED 3/4".

    THE MINIMUM AMOUNT OF CEMENT AND THE MAXIMUM SLUMP MAY BE CHANGED IF A CONCRETE PERFORMANCE MIX IS SUBMITTED TO THE STRUCTURAL ENGINEER AND THE BUILDING DEPARTMENT FOR APPROVAL TWO WEEKS PRIOR TO PLACING ANY CONCRETE. (THE W/C RATIO LIMITS STILL APPLY). THE PERFORMANCE MIX SHALL INCLUDE THE AMOUNTS OF CEMENT, CEMENTITIOUS MATERIAL, FINE AND COARSE AGGREGATE, WATER AND ADMIXTURES AS WELL AS THE WATER CEMENT RATIO, SLUMP, CONCRETE YIELD AND SUBSTANTIATING STRENGTH DATA IN ACCORDANCE WITH ACI 301. CHEMICAL ADMIXTURES AND FLY ASH SHALL CONFORM TO ASTM C494 AND C618 RESPECTIVELY. FLY ASH PERCENTAGE OF TOTAL CEMENTITIOUS MATERIAL SHALL NOT EXCEED 20%. THE USE OF A PERFORMANCE MIX REQUIRES BATCH PLANT INSPECTION, THE COST OF WHICH SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER. REVIEW OF MIX SUBMITTALS BY THE ENGINEER OF RECORD INDICATES ONLY THAT INFORMATION PRESENTED CONFORMS GENERALLY TO CONTRACT DOCUMENTS. CONTRACTOR MAINTAINS FULL RESPONSIBILITY FOR SPECIFIED PERFORMANCE.

    ALL CONCRETE WITH SURFACES EXPOSED TO STANDING WATER SHALL BE AIR-ENTRAINED WITH AN AIR-ENTRAINING AGENT CONFORMING TO ASTM C260. TOTAL AIR CONTENT FOR FROST-RESISTANT CONCRETE SHALL BE IN ACCORDANCE WITH ACI 318-14 TABLE 19.3.3.1. ALL CONCRETE TO RECEIVE A STEEL TROWELED FINISH SHALL NOT BE AIR-ENTRAINED.

20. REINFORCING STEEL SHALL CONFORM TO ASTM A615 (INCLUDING SUPPLEMENT S1), AND SHALL BE DETAILED (INCLUDING HOOKS AND BENDS) IN ACCORDANCE WITH ACI 315 AND 318. LAP ALL CONTINUOUS REINFORCEMENT #5 AND SMALLER 60 BAR DIAMETERS, 2'-0" MINIMUM. PROVIDE CORNER BARS AT ALL WALL AND FOOTING INTERSECTIONS. LAP CORNER BARS #5 AND SMALLER 60 BAR DIAMETERS OR 2'-0" MINIMUM. LAPS OF LARGER BARS SHALL BE MADE IN ACCORDANCE WITH ACI 318, CLASS B. PROVIDE (2) #5 MIN. U.N.O. TRIM BARS AROUND ALL OPENINGS IN CONCRETE WALLS OR SLABS EXTENDING 2'-6" PAST CORNERS, TYPICAL.

21. CONCRETE PROTECTION (COVER) FOR REINFORCING STEEL SHALL BE AS FOLLOWS:

FOOTINGS AND OTHER UNFORMED SURFACES CAST AGAINST EARTH	3"
FORMED SURFACES EXPOSED TO EARTH (i.e. WALLS BELOW GROUND) OR WEATHER	
(#6 BARS OR LARGER)	2"
(#5 BARS OR SMALLER)	1-1/2"
COLUMN TIES OR SPIRALS AND BEAM STIRRUPS	1-1/2"
SLABS AND WALLS (INTERIOR FACE)	GREATER OF (BAR DIAMETER PLUS 1/8") OR 3/4"

22. CAST-IN-PLACE CONCRETE: SEE ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS AND DIMENSIONS OF DOOR AND WINDOW OPENINGS IN ALL CONCRETE WALLS. SEE MECHANICAL DRAWINGS FOR SIZE AND LOCATION OF MISCELLANEOUS MECHANICAL OPENINGS THROUGH CONCRETE WALLS. SEE ARCHITECTURAL DRAWINGS FOR ALL GROOVES, NOTCHES, CHAMFERS, FEATURE STRIPS, COLOR, TEXTURE, AND OTHER FINISH DETAILS AT ALL EXPOSED CONCRETE SURFACES, BOTH CAST-IN-PLACE AND PRECAST.

23. NON-SHRINK GROUT SHALL BE NON-METALLIC CONFORMING TO ASTM C1107 AND BE FURNISHED BY AN APPROVED MANUFACTURER AND SHALL BE MIXED AND PLACED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S PUBLISHED RECOMMENDATIONS. GROUT STRENGTH SHALL BE AT LEAST EQUAL TO THE MATERIAL ON WHICH IT IS PLACED (5000 PSI MINIMUM).

24. POLYSTYRENE (RIGID INSULATION) LIGHTWEIGHT STRUCTURAL FILL PLACED BELOW CONCRETE SLABS SHALL BE RIGID CELLULAR POLYSTYRENE CONFORMING TO ASTM D6817 OR ASTM C578, WITH A MINIMUM COMPRESSIVE RESISTANCE OF 5 PSI @ 1% DEFORMATION AND A MINIMUM COMPRESSIVE RESISTANCE OF 15 PSI @ 10 % DEFORMATION, U.O.N. MAXIMUM DENSITY SHALL BE 2.0 PCF. OFFSET BLOCK JOINTS BETWEEN ADJACENT LAYERS AND ATTACH BLOCKS PER THE MANUFACTURER'S RECOMMENDATIONS.

ANCHORAGE

25. EXPANSION BOLTS INTO CONCRETE SHALL BE "KWIK BOLT 3" EXPANSION ANCHORS AS MANUFACTURED BY HILTI CORP. INSTALLED IN STRICT ACCORDANCE WITH I.C.C. REPORT NO. ESR-2302 INCLUDING STANDARD EMBEDMENT REQUIREMENTS U.O.N. PROPOSED SUBSTITUTIONS SHALL BE SUBMITTED FOR REVIEW WITH I.C.C. OR IAPMO UES REPORTS INDICATING EQUIVALENT OR GREATER LOAD CAPACITIES. SPECIAL INSPECTION IS REQUIRED FOR ALL EXPANSION BOLT INSTALLATION.

26. EXPANSION BOLTS INTO GROUT FILLED CMU SHALL BE "KWIK BOLT 3" EXPANSION ANCHORS AS MANUFACTURED BY HILTI CORP. INSTALLED IN STRICT ACCORDANCE WITH I.C.C. REPORT NO. ESR-1385 INCLUDING STANDARD EMBEDMENT REQUIREMENTS U.O.N. PROPOSED SUBSTITUTIONS SHALL BE SUBMITTED FOR REVIEW WITH I.C.C. OR IAPMO UES REPORTS INDICATING EQUIVALENT OR GREATER LOAD CAPACITIES. SPECIAL INSPECTION IS REQUIRED FOR ALL EXPANSION BOLT INSTALLATION.

27. EXPANSION BOLTS INTO CONCRETE SHALL BE "STRONG-BOLT 2 WEDGE ANCHOR", AS MANUFACTURED BY SIMPSON STRONG-TIE ANCHOR SYSTEMS. INSTALL IN STRICT ACCORDANCE WITH I.C.C. REPORT NO. ESR-3037 INCLUDING STANDARD EMBEDMENT REQUIREMENTS U.O.N. PROPOSED SUBSTITUTIONS SHALL BE SUBMITTED FOR REVIEW WITH I.C.C. OR IAPMO UES REPORTS INDICATING EQUIVALENT OR GREATER LOAD CAPACITIES. SPECIAL INSPECTION IS REQUIRED FOR ALL EXPANSION BOLT INSTALLATION.

28. EXPANSION BOLTS INTO GROUT FILLED CMU SHALL BE "STRONG-BOLT 2 WEDGE ANCHOR", AS MANUFACTURED BY SIMPSON STRONG-TIE ANCHOR SYSTEMS. INSTALL IN STRICT ACCORDANCE WITH IAPMO UES REPORT NO. ER-240 INCLUDING STANDARD EMBEDMENT REQUIREMENTS U.O.N. PROPOSED SUBSTITUTIONS SHALL BE SUBMITTED FOR REVIEW WITH I.C.C. OR IAPMO UES REPORTS INDICATING EQUIVALENT OR GREATER LOAD CAPACITIES. SPECIAL INSPECTION IS REQUIRED FOR ALL EXPANSION BOLT INSTALLATION.

29. SCREW ANCHORS INTO CONCRETE SHALL BE "KWIK HUS-EZ", AS MANUFACTURED BY HILTI, INC. INSTALL IN STRICT ACCORDANCE WITH I.C.C. REPORT NO. ESR-3027 INCLUDING STANDARD EMBEDMENT REQUIREMENTS U.O.N. PROPOSED SUBSTITUTIONS SHALL BE SUBMITTED FOR REVIEW WITH I.C.C. OR IAPMO UES REPORTS INDICATING EQUIVALENT OR GREATER LOAD CAPACITIES. SPECIAL INSPECTION IS REQUIRED FOR ALL SCREW ANCHOR INSTALLATION.

30. SCREW ANCHORS INTO GROUT FILLED CMU SHALL BE "KWIK HUS-EZ", AS MANUFACTURED BY HILTI, INC. INSTALL IN STRICT ACCORDANCE WITH I.C.C. REPORT NO. ESR-3056 INCLUDING STANDARD EMBEDMENT REQUIREMENTS U.O.N. PROPOSED SUBSTITUTIONS SHALL BE SUBMITTED FOR REVIEW WITH I.C.C. OR IAPMO UES REPORTS INDICATING EQUIVALENT OR GREATER LOAD CAPACITIES. SPECIAL INSPECTION IS REQUIRED FOR ALL SCREW ANCHOR INSTALLATION.

31. DRIVE PINS, SHOT PINS AND OTHER POWDER-ACTUATED FASTENERS SHALL BE LOW VELOCITY TYPE FASTENERS AS MANUFACTURED BY HILTI CORPORATION. WHEN CALLED FOR IN THE DRAWINGS, PROVIDE THE APPROPRIATE FASTENER AS NOTED IN THE TABLE BELOW FOR EACH GIVEN APPLICATION. INSTALL IN STRICT ACCORDANCE WITH I.C.C. REPORTS NO. ESR-2269 FOR THE X-U FASTENERS AND ESR-2379 FOR THE X-CP FASTENERS. MINIMUM EMBEDMENT IN CONCRETE SHALL BE 1" UNLESS OTHERWISE NOTED. MAINTAIN AT LEAST 3" TO NEAREST CONCRETE EDGE AND 4" CENTER TO CENTER SPACING. PROPOSED SUBSTITUTIONS SHALL BE SUBMITTED FOR REVIEW WITH I.C.C. OR IAPMO UES REPORTS INDICATING EQUIVALENT OR GREATER LOAD CAPACITIES.

ALLOWABLE APPLICATION	ALLOWABLE FASTENER TYPE	SHEAR CAPACITY (LBS)	TENSION CAPACITY (LBS)
2X TREATED LUMBER TO CONCRETE (2000 PSI MIN.)	X-CP 72 P8 S23 W/ 1.33" EMBED	250	175
LIGHT GAUGE STEEL 33 MILS (20 GA.) MIN. TO CONCRETE (2000 PSI MIN.)	X-U 27 P8 S15	190	165
2X LUMBER TO STRUCTURAL STEEL (3/16" MIN., 36 OR 50 KSI)	X-U 52 MX PLUS R-23 WASHERS	250	175
LIGHT GAUGE STEEL 43 & 33 MILS (18 & 20 GA.) TO STRUCTURAL STEEL (3/16" MIN. TO 11/16" MAX)	X-U 19 P8 TH	445	360
LIGHT GAUGE STEEL 97, 68 & 54 MILS (12, 14 & 16 GA.) TO STRUCTURAL STEEL (3/16" MIN. TO 11/16" MAX)	X-U 19 P8 TH	720	535
LIGHT GAUGE STEEL (ALL GA.) TO STRUCTURAL STEEL (3/4" AND GREATER)	X-U 19 P8 TH	350	375
2X TREATED LUMBER TO GROUTED CMU	X-CP 72 P8 S23	105	100
LIGHT GAUGE STEEL 33 MILS (20 GA.) MIN. TO GROUTED CMU	X-U 32 P8 S15	220	225

32. EPOXY-GROUTED ITEMS (THREADED RODS OR REINFORCING BAR) INTO CONCRETE SHALL BE INSTALLED USING "HIT-RE 500 V3" AS MANUFACTURED BY HILTI CORP. INSTALL IN STRICT ACCORDANCE WITH I.C.C. REPORT NO. ESR-3814, INCLUDING STANDARD EMBEDMENT REQUIREMENTS, U.O.N. PROPOSED SUBSTITUTIONS SHALL BE SUBMITTED FOR REVIEW WITH I.C.C. OR IAPMO UES REPORTS INDICATING EQUIVALENT OR GREATER LOAD CAPACITIES. SPECIAL INSPECTION OF INSTALLATION IS REQUIRED.

33. EPOXY-GROUTED ITEMS (THREADED RODS OR REINFORCING BAR) INTO GROUT FILLED CMU SHALL BE INSTALLED USING "HIT HY 270" AS MANUFACTURED BY HILTI CORP. INSTALL IN STRICT ACCORDANCE WITH I.C.C. REPORT NO. ESR-4143, INCLUDING STANDARD EMBEDMENT REQUIREMENTS, U.O.N. PROPOSED SUBSTITUTIONS SHALL BE SUBMITTED FOR REVIEW WITH I.C.C. OR IAPMO UES REPORTS INDICATING EQUIVALENT OR GREATER LOAD CAPACITIES. SPECIAL INSPECTION OF INSTALLATION IS REQUIRED.

MASONRY

34. CONCRETE MASONRY UNIT WALLS SHALL BE CONSTRUCTED OF MEDIUM WEIGHT UNITS CONFORMING TO ASTM C90, LAID IN A RUNNING BOND. CONTACT ENGINEER FOR RE-DESIGN OF REINFORCING WHERE STACK BOND LAYOUT IS REQUIRED. LINEAR SHRINKAGE SHALL NOT EXCEED 0.065%. MORTAR SHALL BE TYPE "S" IN ACCORDANCE WITH ASTM C270. GROUT SHALL CONFORM TO IBC REQUIREMENTS AND ATTAIN A MINIMUM COMPRESSIVE STRENGTH OF 2,000 PSI AT 28 DAYS, DESIGN F'm = 2,000 PSI. FULL STRESSES ARE REQUIRED. STRENGTH SHALL BE VERIFIED BY THE UNIT STRENGTH METHOD IN ACCORDANCE WITH TMS 602-16.

    PROVIDE (2) #5 ((2)#4 @ 6" AND 4" WALLS) VERT. AT EACH SIDE OF OPENINGS, AT WALL CORNERS AND INTERSECTIONS AND AT FREE ENDS OF WALLS AND (2) #4 HORIZ. AT ELEVATED FLOOR AND ROOF LEVELS, AT TOPS OF WALLS AND ABOVE AND BELOW ALL OPENINGS. ALL HORIZONTAL REINFORCEMENT SHALL BE PLACED IN BOND BEAMS. EXTEND REINFORCEMENT AROUND OPENINGS 2'-0" BEYOND FACE OF OPENING. IF 2'-0" IS UNAVAILABLE, EXTEND AS FAR AS POSSIBLE AND HOOK. PROVIDE CORNER BARS TO LAP HORIZONTAL REINFORCING AT CORNERS AND INTERSECTIONS. UNLESS NOTED OTHERWISE, LAP ALL REINFORCING STEEL IN CMU 48 BAR DIAMETERS, 2'-0" MINIMUM.

    ALL CELLS ARE TO BE SOLID GROUTED UNLESS NOTED AS PARTIAL GROUTING. FOR PARTIAL GROUTING FILL ALL CELLS CONTAINING REINFORCEMENT OR EMBEDDED ITEMS AND ALL CELLS BELOW GRADE WITH GROUT. ALL REINFORCEMENT SHALL BE IN PLACE PRIOR TO GROUTING AND SHALL BE HELD AT TOP, BOTTOM AND 192 BAR DIAMETERS (MAX.) O.C. PER TMS 602 SPECIFICATION 3.5, GROUT POURS SHALL NOT EXCEED 5'-4" IN HEIGHT UNLESS A TEST PANEL IS CONSTRUCTED BY THE MASON AND APPROVED BY THE STRUCTURAL ENGINEER. PROVIDE CLEANOUT HOLES AT BOTTOM OF ALL CELLS CONTAINING REINFORCEMENT FOR ALL GROUT POURS OVER 5'-4" IN HEIGHT. PROVIDE 1 1/2 IN. GROUT KEYS BETWEEN EACH POUR.

STEEL

35. STRUCTURAL STEEL DESIGN, FABRICATION, AND ERECTION SHALL BE BASED ON THE LATEST EDITIONS OF THE A.I.S.C. SPECIFICATIONS AND CODES:

    A. AISC - STEEL CONSTRUCTION MANUAL, 15TH EDITION
    B. AISC 303-16 - CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES.
    C. 2014 RCSC SPECIFICATION FOR STRUCTURAL JOINTS USING HIGH STRENGTH BOLTS.

36. STRUCTURAL STEEL SHALL CONFORM TO THE FOLLOWING REQUIREMENTS:

TYPE OF MEMBER	ASTM SPECIFICATION	Fy
A. WIDE FLANGE (W AND WT) SHAPES	A992	50 KSI
B. ALL OTHER SHAPES	A36	36 KSI
C. PLATE	A36 OR A572	36 KSI (MIN)
D. PIPE SECTIONS	A53 (TYPE E OR S, GRADE B)	35 KSI
E. STRUCTURAL TUBING (SQUARE OR RECTANGULAR)	A500 (GRADE C)	50 KSI
F. ANCHOR BOLTS AND THREADED RODS	F1554 (GRADE 36) OR	36 KSI
(EMBEDDED IN MASONRY OR CONCRETE)	F1554 (GRADE 55, SUPP. S1)	55 KSI
G. CONNECTION BOLTS	F3125 GRADE A325-N	92 KSI
(7/8" ROUND, UNLESS SHOWN OTHERWISE)		
H. HEADED SHEAR STUDS	A29	49 KSI
I. THREADED RODS	A36	36 KSI
J. STAINLESS STEEL	AISI 316L	30 KSI

SUBSTITUTION OF MEMBER SIZES OR STEEL GRADE SHALL NOT BE ALLOWED WITHOUT PRIOR APPROVAL OF THE ENGINEERALL STEEL TO BE FIREPROOFED SHALL BE LEFT UNPAINTED. ALL OTHER STEEL SHALL HAVE ONE COAT OF APPROVED SHOP PAINT.

STRUCTURAL STEEL AND CONNECTIONS EXPOSED TO WEATHER OR EARTH SHALL BE HOT-DIPPED GALVANIZED AFTER FABRICATION IN COMPLIANCE WITH ASTM A123. GALVANIZE BOLTS AND SIMILAR THREADED FASTENERS EXPOSED TO WEATHER OR EARTH IN ACCORDANCE WITH ASTM A153. ALL FIELD WELDS EXPOSED TO WEATHER OR EARTH SHALL BE COATED WITH BRUSH APPLIED ZINC RICH PAINT COMPLYING WITH ASTM A780 (Z.R.C. OR EQUIVALENT).

A MINIMUM OF TWO BOLTS ARE REQUIRED FOR ALL CONNECTIONS. ALTERNATE CONNECTIONS TO THOSE SHOWN ON THESE DRAWINGS WILL REQUIRE PRIOR APPROVAL OF THE ENGINEER.

ALL MEMBERS ARE TO BE ERECTED WITH THE NATURAL MILL CAMBER OR INDUCED CAMBER UP, UNLESS OTHERWISE NOTED ON THE DRAWINGS. BEAM CAMBER ON THE DRAWINGS IS THE UPWARD CAMBER REQUIRED IN THE BEAM AS DELIVERED TO THE JOBSITE. CONTRACTOR TO CONSIDER CAMBER LOSS, IF ANY, DUE TO SHIPPING AND HANDLING.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ERECTION AIDS AND JOINT PREPARATIONS THAT INCLUDE, BUT ARE NOT LIMITED TO, ERECTION ANGLES, LIFT HOLES, AND OTHER AIDS, WELDING PROCEDURES, REQUIRED ROOT OPENINGS, ROOT FACE DIMENSIONS, GROOVE ANGLES, BACKING BARS, COPES, SURFACE ROUGHNESS VALUES AND UNEQUAL PARTS.

37. ARCHITECTURALLY EXPOSED STRUCTURAL STEEL SHALL CONFORM TO SECTION 10 OF THE AISC CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES.

38. ALL A325 CONNECTION BOLTS SHALL BE INSTALLED TO THE SNUG-TIGHT CONDITION PER RCSC SPECIFICATION FOR STRUCTURAL JOINTS USING HIGH STRENGTH BOLTS IN STRICT ACCORDANCE WITH THE MANUFACTURER'S PUBLISHED RECOMMENDATIONS. ALL NUTS SHALL CONFORM TO ASTM A563. ALL WASHERS SHALL CONFORM TO ASTM F436 OR ASTM F959 TYPE 325. ALL BOLT HOLES SHALL BE STANDARD SIZE UNLESS OTHERWISE NOTED.

39. ALL WELDING SHALL BE IN CONFORMANCE WITH A.I.S.C. AND A.W.S. STANDARDS AND SHALL BE PERFORMED BY W.A.B.O. CERTIFIED WELDERS USING E70 XX ELECTRODES. ONLY PREQUALIFIED WELDS (AS DEFINED BY A.W.S.) SHALL BE USED. ALL WELDING OF STAINLESS STEEL SHALL USE E309 ELECTRODES WITH A GMAW PROCESS. ALL WELDING SHALL BE PERFORMED BY WELDERS WITH AWS / W.A.B.O. CERTIFICATION WITH THE MATERIAL AND METHOD REQUIRED.

    SHOP DRAWINGS SHALL SHOW ALL WELDING WITH AWS A2.4 SYMBOLS. WELDS SHOWN ON DRAWINGS ARE MINIMUM SIZES. INCREASE WELD SIZE TO AWS MINIMUM SIZES BASED ON PLATE THICKNESS. MINIMUM WELDING SHALL BE 3/16-INCH. THE WELDS SHOWN ARE FOR THE FINAL CONNECTIONS. FIELD WELD ARROWS ARE SHOWN WHERE A FIELD WELD IS REQUIRED BY THE STRUCTURAL DESIGN; THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING IF A WELD SHOULD BE SHOP OR FIELD WELDED IN ORDER TO FACILITATE THE STRUCTURAL STEEL DELIVERY AND ERECTION. SEE THE SPECIFICATIONS AND DRAWINGS FOR ADDITIONAL WELDING REQUIREMENTS, ESPECIALLY AT SPECIAL MOMENT RESISTING FRAMES AND OTHER SEISMIC CRITICAL WELDS.

40. WELDING OF LATERAL FORCE RESISTING MEMBERS SHALL BE PERFORMED IN ACCORDANCE WITH A WELDING PROCEDURE SPECIFICATION (WPS) AS REQUIRED IN AWS D1.1 (INCLUDING AWS D1.8 SEISMIC SUPPLEMENT) AND APPROVED BY THE STRUCTURAL ENGINEER BEFORE WORK BEGINS. THE WPS VARIABLES SHALL BE WITHIN THE PARAMETERS ESTABLISHED BY THE FILLER METAL MANUFACTURER. WELDING ELECTRODES SHALL BE E70T7-K2 OR E70T-6 WITH A MINIMUM SPECIFIED CHARPY V-NOTCH (CVN) OF 20 ft-lbs AT -20 DEGREES FAHRENHEIT AND 40 ft-lbs AT 70 DEGREES FAHRENHEIT. REMOVE BOTTOM FLANGE WELD TAB AT MOMENT FRAME CONNECTIONS AND REINFORCE WITH 5/16'" FILLET WELD IN CONFORMANCE WITH FEMA-353 RECOMMENDATIONS. WELD ACCESS HOLE DETAILING AT MOMENT FRAME CONNECTIONS SHALL CONFORM WITH FEMA-350 AND FEMA-353 RECOMMENDATIONS.

41. METAL FLOOR AND ROOF DECKING - PROVIDE SIZE, TYPE, GAUGE, AND ATTACHMENT TO THE SUPPORTING STRUCTURE AS SHOWN ON THE PLANS. ALTERNATES MUST BE CONNECTED ACCORDING TO PUBLISHED I.C.C. OR IAPMO UES CRITERIA FOR DIAPHRAGM SHEARS SHOWN. PROVIDE SHORING WHERE REQUIRED PER MANUFACTURER'S PUBLISHED CRITERIA. ALL DECKING SHALL CONFORM TO THE REQUIREMENTS OF THE STEEL DECK INSTITUTE.

42. HEADED STUDS FOR COMPOSITE CONNECTION OF STRUCTURAL STEEL TO CAST-IN-PLACE CONCRETE SHALL BE MANUFACTURED FROM MATERIAL CONFORMING TO ASTM A29 AND SHALL BE WELDED IN CONFORMANCE WITH A.W.S. REQUIREMENTS.

43. DEFORMED BAR ANCHORS (DBA) SHALL BE TYPE D2L ANCHORS BY NELSON STUD WELDING DIVISION, TRW ASSEMBLIES AND FASTENERS GROUP (OR EQUIVALENT). ANCHORS SHALL BE MADE FROM COLD ROLLED, DEFORMED STEEL CONFORMING TO ASTM A1064.

FULL SIZED LEDGIBLE **COLOR** PLANS ARE REQUIRED TO BE PROVIDED BY THE PERMITTEE ON SITE FOR ALL INSPECTIONS **(MIN. PLAN SIZE 24" X 36")**

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NO.	DESCRIPTION	DATE	BY
	FAN WALLS & FLOOR OPENINGS	2/2/24	

ISSUES: ○ REVISIONS: △

P.M.	SHT
P.E.	TVM
DRAWN BY:	SC
SCALE:	AS SHOWN
DATE:	2/2/24
JOB NO.	23444.01

SHEET TITLE:

GENERAL STRUCTURAL NOTES

SHEET NO.

S1.0

GENERAL STRUCTURAL NOTES

(The following apply unless shown otherwise on the plans)

44. COLD-FORMED STEEL FRAMING NOTES - THE FOLLOWING APPLY UNLESS OTHERWISE SHOWN ON THE PLANS:

A. COLD-FORMED STEEL FRAMING MEMBERS SHALL BE OF THE SHAPE, SIZE, AND GAUGE SHOWN ON THE PLANS. ALL FRAMING MEMBERS SHALL COMPLY WITH I.C.C. REPORT NO. ESR-3064P. NOTATIONS ON THE DRAWINGS, RELATING TO MEMBER TYPES AND SIZES OR MISCELLANEOUS FRAMING ITEMS, REFER TO CATALOG NUMBERS OF MEMBERS MANUFACTURED BY THE STEEL STUD MANUFACTURERS ASSOCIATION (SSMA). PRODUCTS BY OTHER MANUFACTURERS MAY BE SUBSTITUTED FOR FRAMING SHOWN, PROVIDED THEY ARE EQUIVALENT IN SHAPE, SIZE, STIFFNESS, AND STRENGTH. ALTERNATE FRAMING SHALL BE SUBJECT TO REVIEW BY THE ARCHITECT AND STRUCTURAL ENGINEER PRIOR TO FABRICATION. ALL COLD-FORMED STEEL FRAMING SHALL CONFORM TO THE A.I.S.I. "SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS."

B. MATERIAL:
METAL FRAMING SHALL BE GALVANIZED UNLESS OTHERWISE NOTED, CONFORMING AS FOLLOWS:

ASTM A653 SS GRADE 50, CLASS 1 OR 3	Fy = 50 KSI	118, 97, 68, AND 54 MIL
ASTM A653 SS GRADE 33	Fy = 33 KSI	43 AND 33 MIL

WHERE NOTED, PAINTED STUDS SHALL CONFORM TO:

ASTM A1011 SS GRADE 50	Fy = 50 KSI	118, 97, 68, AND 54 MIL

C. WELDING OF COLD-FORMED METAL FRAMING SHALL CONFORM TO AWS D1.3 AND SHALL BE PERFORMED BY WELDERS QUALIFIED TO PRODUCE THE SPECIFIED CLASSES OF WELD.

D. WALL FRAMING: ALL STUD WALLS SHOWN AND NOT OTHERWISE NOTED SHALL BE 600S162-43 @ 16" O.C. AT INTERIOR WALLS AND 600S162-43 AT 16" O.C. AT EXTERIOR WALLS. TWO STUDS MINIMUM SHALL BE PROVIDED AT THE END OF ALL WALLS AND AT EACH SIDE OF ALL OPENINGS. TWO 800S162-54 HEADERS SHALL BE PROVIDED OVER ALL OPENINGS UNLESS OTHERWISE NOTED. JOISTS SHALL BE LOCATED DIRECTLY OVER BEARING STUDS. SOLID BLOCKING FOR MULTI-STUD OR STEEL COLUMNS SHALL BE PROVIDED THROUGH FLOORS TO SUPPORTS BELOW. PROVIDE CONTINUOUS FULL WIDTH BLOCKING AT 1/3 POINTS OF ALL STUD WALLS UNLESS NOTED OTHERWISE. MAXIMUM GAP BETWEEN STUD AND TRACK AT ANY POINT SHALL NOT EXCEED 1/16-INCH. NO SPLICES ARE PERMITTED IN STUDS.

ALL STUD WALLS SHALL HAVE THEIR BOTTOM TRACKS ATTACHED TO FRAMING BELOW WITH #10 SCREWS AT 16" O.C. OR ATTACHED TO CONCRETE WITH 5/32" DIAMETER DRIVE-PINS @ 16" O.C. UNLESS INDICATED OTHERWISE. INDIVIDUAL MEMBERS OF BUILT-UP POSTS SHALL BE WELDED OR SCREWED TO EACH OTHER IN ACCORDANCE WITH THE DETAILS. REFER TO THE PLANS AND SHEAR WALL SCHEDULE FOR REQUIRED SHEATHING AND STRAP BRACING. WHEN NOT OTHERWISE NOTED, PROVIDE GYPSUM WALLBOARD ON INTERIOR SURFACES AND GYPSUM SHEATHING ON EXTERIOR SURFACES SCREWED TO ALL STUDS, TOP AND BOTTOM TRACKS, AND BLOCKING WITH SCREWS AT 12" O.C. ALL SCREWS SHALL BE "GRABBER" TYPE FASTENERS COMPLYING WITH I.C.C. REPORT NO. ESR-1271. ALL SPECIFIED PNEUMATIC FASTENERS SHALL BE ET&F, COMPLYING WITH I.C.C. REPORT NO. ESR-1777
ALL BEARING STUDS SHALL BE LATERALLY SUPPORTED TO PREVENT WEAK AXIS BUCKLING WITH A CENTER U-CHANNEL AT 1/3 POINTS AS SHOWN IN THE DETAILS AND CONNECTING EACH FLANGE TO GYPSUM WALLBOARD PER IBC SECTION 2508.1.

TRACK SECTIONS SHALL BE UNPUNCHED AND HAVE AT LEAST 1" FLANGES AND MATCH STUD THICKNESS.

WALLS WHICH HAVE SHEATHING CONNECTED ON ONE SIDE ONLY SHALL HAVE UNSHEATHED FLANGES LATERALLY SUPPORTED IN ACCORDANCE WITH THE DETAILS.

45. METAL BUILDING SYSTEM (MBS)

A. BUILDING MANUFACTURER SHALL DESIGN BUILDINGS FOR THE LOADS, SPANS AND CONDITIONS SHOWN ON THESE DRAWINGS.

B. ALL COLUMNS SHALL BE DESIGNED ASSUMING THEY ARE FREE TO ROTATE, DO NOT FIX COLUMN BASES.

C. DESIGN AND PROVIDE SUPPORTS AROUND OVERHEAD DOORS. A MINIMUM COLLATERAL LOADING OF 10 PSF SHALL BE INCLUDED IN THE DESIGN OF THE ROOF TO ACCOUNT FOR MISCELLANEOUS DEAD LOAD. THE LATERAL DRIFT OF THE BUILDING SHALL BE LIMITED TO 0.02H, WHERE H IS THE HEIGHT OF THE BUILDING. ALL ROOF MEMBERS SHALL BE LIMITED TO A MAXIMUM TOTAL DEFLECTION OF L/180.

D. COORDINATE ALL DETAILS WHICH ARE SHOWN ON THESE DRAWINGS WITH THE PREFABRICATED BUILDING DESIGN.

E. COORDINATE THE FINAL FOUNDATION LOADING AND BASE PLATE CONFIGURATION WITH THE STRUCTURAL ENGINEER. FOUNDATION DESIGN SHOWN IN THESE PLANS MAY NEED TO BE REVISED BASED UPON THE FINAL DESIGN AND/OR COLUMN LOCATIONS.

F. SUBMIT SHOP DRAWINGS AND DESIGN CALCULATIONS TO THE ARCHITECT AND STRUCTURAL ENGINEER FOR REVIEW PRIOR TO FABRICATION. DESIGN SUBMITTALS SHALL BEAR THE STAMP AND SIGNATURE OF A STATE OF WASHINGTON REGISTERED PROFESSIONAL ENGINEER. THE BUILDING MANUFACTURER IS RESPONSIBLE FOR CODE CONFORMANCE AND ALL NECESSARY CONNECTIONS NOT SPECIFICALLY CALLED OUT ON THE ARCHITECTURAL OR STRUCTURAL DRAWINGS. SHOP DRAWINGS SHALL INDICATE MAGNITUDE AND DIRECTION OF ALL LOADS IMPOSED ON THE BASIC STRUCTURE.

SUBMIT ALL AS-BUILTS AND REDESIGN SEALED BY EOR TO BUILDING INSPECTOR

*BUILDING INSPECTORS DISCRETION IF EXTENT OF REVISON REQUIRES TO BE SUBMITTED AS A REVISION

STRUCTURAL OBSERVATION

AS NOTED IN IBC SECTION 1704.6, STRUCTURAL OBSERVATION IS REQUIRED FOR THIS PROJECT. STRUCTURAL OBSERVATION MEANS THE VISUAL OBSERVATION OF THE STRUCTURAL SYSTEM, INCLUDING BUT NOT LIMITED TO, THE ELEMENTS AND CONNECTIONS AT SIGNIFICANT CONSTRUCTION STAGES AND THE COMPLETED STRUCTURE FOR GENERAL CONFORMANCE TO THE APPROVED PLANS AND SPECIFICATIONS. STRUCTURAL OBSERVATION DOES NOT INCLUDE OR WAIVE THE RESPONSIBILITY OF THE INSPECTIONS REQUIRED BY IBC SECTIONS 110 AND 1704.

IN OUR STRUCTURAL OBSERVATION, WE WILL SELECT PORTIONS OF WORK TO REVIEW CLOSELY AS WELL AS OBSERVE THE STRUCTURAL SYSTEM FOR GENERAL CONFORMANCE TO THE APPROVED PLANS AND SPECIFICATIONS. SUCH REVIEW PROCEDURES WILL BE CONDUCTED IN ACCORDANCE WITH COMMONLY ACCEPTED STANDARDS OF PRACTICE. THE BUILDING OFFICIAL UNDERSTANDS THAT SUCH PROCEDURES INDICATE ACTUAL CONDITIONS ONLY WHERE THE REVIEW IS PERFORMED AND THAT THE RESULTS WILL BE INFERRED TO EXIST IN OTHER AREAS NOT REVIEWED.

THE BUILDING OFFICIAL ALSO RECOGNIZES THAT STRUCTURAL REVIEW IS A TECHNIQUE EMPLOYED TO MINIMIZE THE RISK OF PROBLEMS ARISING DURING CONSTRUCTION. STRUCTURAL OBSERVATION BY THE DESIGN PROFESSIONAL DOES NOT CONSTITUTE WARRANTY OR GUARANTEE OF ANY TYPE. IN ALL CASES, THE CONTRACTOR SHALL RETAIN RESPONSIBILITY FOR THE QUALITY OF WORK AND FOR ADHERENCE TO THE APPROVED PLANS AND SPECIFICATIONS.

PROVIDE ALL SPECIAL INSPECTIONS AND STRUCTURAL OBSERVATION REPORTS TO THE BUILDING INSPECTOR.

ABBREVIATIONS

@	At	L	Angle
d	Penny (Nails)	LB.	Pound
ϕ	Diameter	LL	Live Load
°	Degrees	LLH	Long Leg Horizontal
.#	Pounds	LLV	Long Leg Vertical
#...	Number	LONGIT.	Longitudinal
		LT. WT.	Lightweight
(A)	Above		
A.B.	Anchor Bolt	MAX.	Maximum
ADD'L	Additional	MECH.	Mechanical
ALT.	Alternate	MEZZ.	Mezzanine
APPROX.	Approximate	MF	Moment Frame
ARCH.	Architect	MFR.	Manufacturer
A.S.D.	Allowable Stress Design	MIN.	Minimum
		MISC.	Miscellaneous
(B)	Below	MK.	Mark
B/	Bottom of		
BF	Braced Frame	(N)	New
BLKG.	Blocking	N.	North
BLDG.	Building	N.S.	Near Side
BM.	Beam	NOM.	Nominal
BOT.	Bottom	NTS	Not to Scale
BRG.	Bearing		
BTWN.	Between	O.C.	On Center
		O.D.	Outside Diameter
CL or ℄	Centerline	O.F.	Outside Face
C	Camber	O.H.	Overhang
CIP	Cast In Place	OPNG.	Opening
C.J.	Construction Joint or Control Joint	OPP.	Opposite
CJP	Complete Joint Penetration		
CLG.	Ceiling	PAF	Powder Actuated Fastener
CLR.	Clear	PC	Precast
CMU	Concrete Masonry Unit	PERM.	Permanent
COL.	Column	PERP.	Perpendicular
CONC.	Concrete	PJP	Partial Joint Penetration
CONN.	Connections	PL or ℗	Plate
CONST.	Construction	PLF	Pounds per linear Foot
CONT.	Continuous	PLYWD	Plywood
CSK.	Countersink	PREFAB.	Prefabricated
		PSF	Pounds per Square Foot
DBA	Deformed Bar Anchor	PSI	Pounds per Square Inch
DBL.	Double	P.T. or PT	Post-Tensioning
DEG.	Degree	P/T	Pressure-Treated
DF	Doug Fir-Larch		
DIA.	Diameter	RAD.	Radius
DIAG.	Diagonal	REF.	Reference
DIAPH.	Diaphragm	REINF.	Reinforce or Reinforcement
DIM.	Dimension	REQD.	Required
DN.	Down	REV.	Revise
DO	Ditto	R.O.	Rough Opening
DTL.	Detail		
DTP	Double Top Plate	S.	South
DWG.	Drawing	SCH. or SCHED.	Schedule
		SECT.	Section
(E)	Existing	SHT.	Sheet
E.	East	SIM.	Similar
EA.	Each	SOG	Slab On Grade
E.F.	Each Face	SPEC.	Specification
EL.	Elevation	SQ.	Square
ELEV.	Elevator	SQ. FT.	Square Feet
EMBED.	Embedment Length	SQ. IN.	Square Inch(es)
ENGR.	Engineer	SPF	Spruce-Pine-Fir
EQ.	Equal	S.S.	Stainless Steel
E.W.	Each Way	STD.	Standard
EXP.	Expansion	STIFF.	Stiffener
EXT.	Exterior	STL.	Steel
		STR.	Structural
FDN.	Foundation	SUB.	Substitute
FIN.	Finish	SYM.	Symmetrical
FLR.	Floor		
FRP	Fiber Reinforced Polymer	T/	Top of
F.S.	Far Side	T&B	Top and Bottom
FT.	Foot or Feet	T&G	Tongue & Groove
FTG.	Footing	TEMP.	Temporary
		THRU	Through
GA.	Gauge	T.O.C.	Top of Concrete
GALV.	Galvanized	T.O.S.	Top of Steel
GL	Glue Laminated	T.O.W.	Top of Wall
GWB	Gypsum Wall Board	TRANS.	Transverse
		TS	Tube Steel
HDG	Hot Dipped Galvanized	TYP.	Typical
HDR.	Header		
HF	Hem Fir	U.O.N.	Unless Otherwise Noted
HGR.	Hanger		
HORIZ.	Horizontal	VERT.	Vertical
HSS	Hollow Structural Section	VIF	Verify In Field
HT.	Height		
		W.	West
I.D.	Inside Diameter	W/ or w/	With
I.F.	Inside Face	W.H.S.	Welded Headed Stud
IN.	Inch	W/O	Without
INFO.	Information	W.P.	Work Point
INT.	Interior	W.T.S.	Welded Threaded Stud
		WWF	Welded Wire Fabric
JT.	Joint		
		X SECT.	Cross Section
K	Kips	X-STR	Extra Strong
KSF	Kips per Square Foot	XX-STR	Double Extra Strong
KSI	Kips per Square Inch		

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ISSUES: ◯ REVISIONS: △

P.M.	SHT
P.E.	TVM
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SCALE:	AS SHOWN
DATE:	2/2/24
JOB NO.	23444.01

SHEET TITLE:

GENERAL STRUCTURAL NOTES

SHEET NO.

S1.1

File: 444-1201.dwg Revised: 01/31/24 8:59 am

SEE REVISED SHEET S4.0

DETAIL	SCALE: NONE	1

DETAIL	SCALE: NONE	2

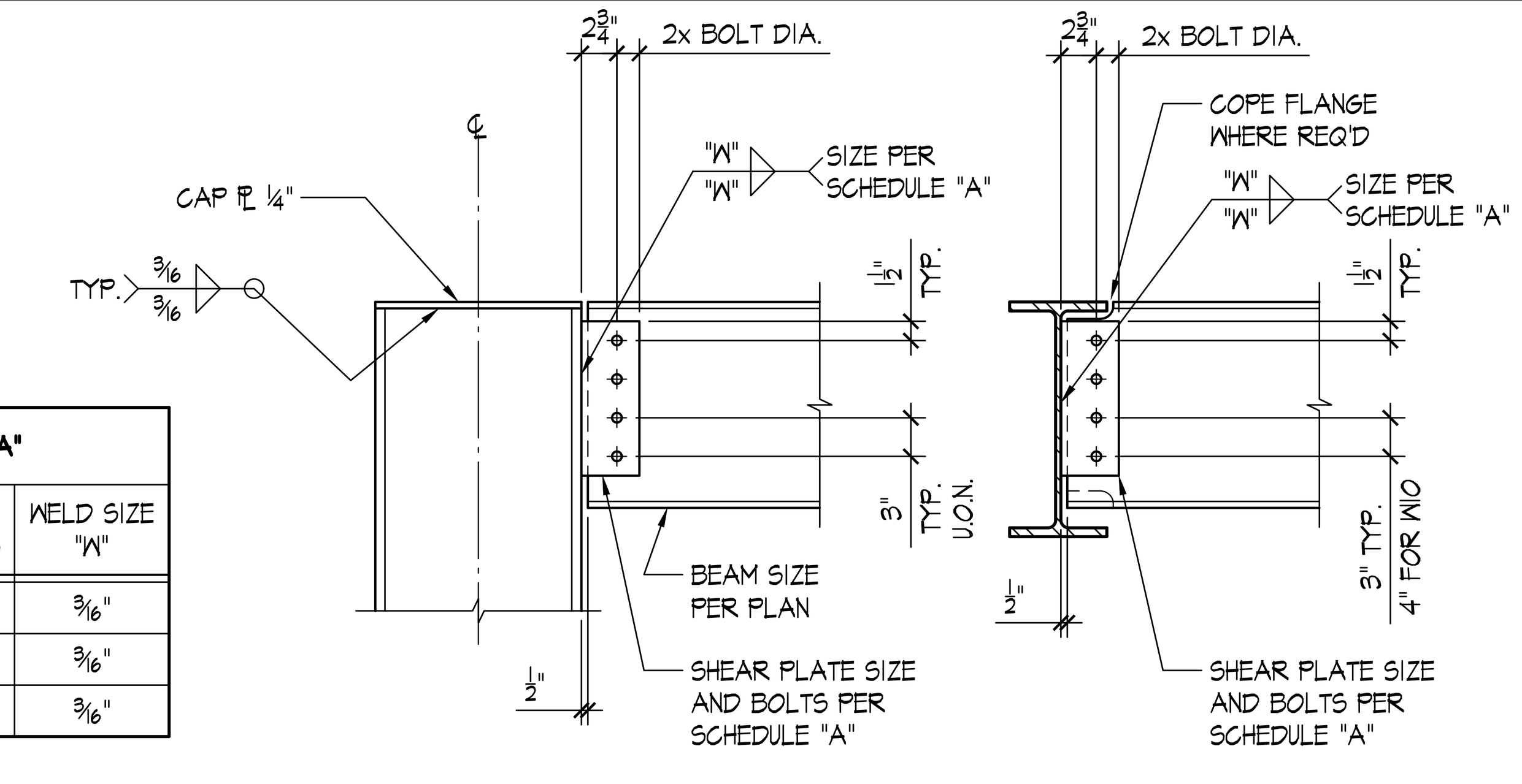
DETAIL	SCALE: NONE	3

TYPICAL BOLTED BEAM CONNECTION DETAIL (SCALE: NONE) 5

BOLTED BEAM CONNECTION SCHEDULE "A"				
BEAM SIZE	NO. OF BOLTS	BOLT * SIZE	PLATE * THICKNESS	WELD SIZE "W"
W8, C8	(2)	7/8"Φ	1/4"	3/16"
W10**	(2)	7/8"Φ	1/4"	3/16"
W12	(3)	7/8"Φ	1/4"	3/16"

* BOLT TYPE = A325N
PL MATERIAL = A36

** BOLTS SHALL BE AT 4" O.C. SPACING FOR W10 BEAMS.



NOTES:

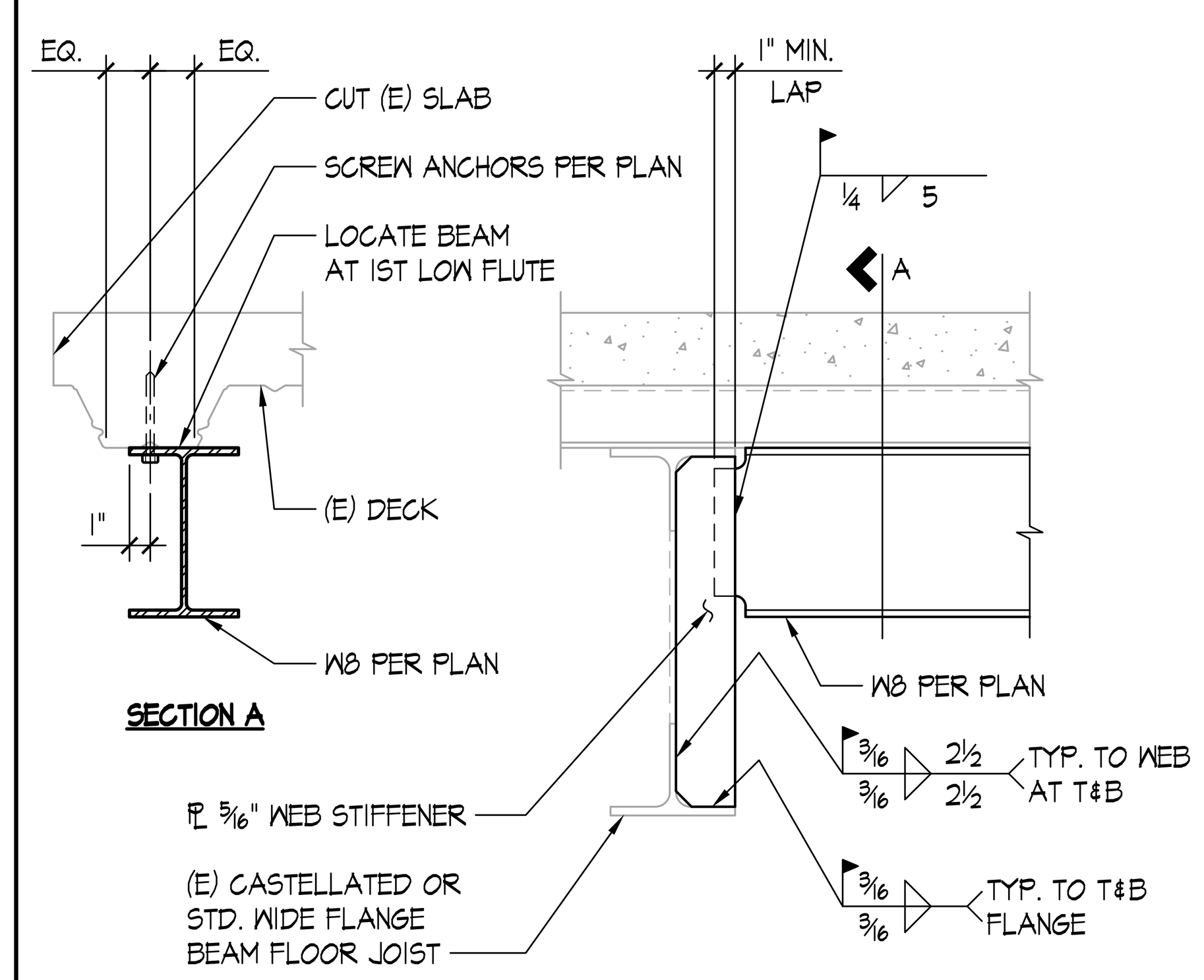
1. FOR BEAM TO COLUMN WEB CONNECTION FOR W14 AND SMALLER COLUMNS SEE TYPICAL BEAM TO COLUMN WEB CONNECTION DETAIL.
2. FIELD WELD AT SIMILAR CONDITION.
3. 1/4" VERTICAL WELD (SHEAR PLATE TO BEAM) MAY BE USED IN PLACE OF BOLTS.

DETAIL	SCALE: NONE	6

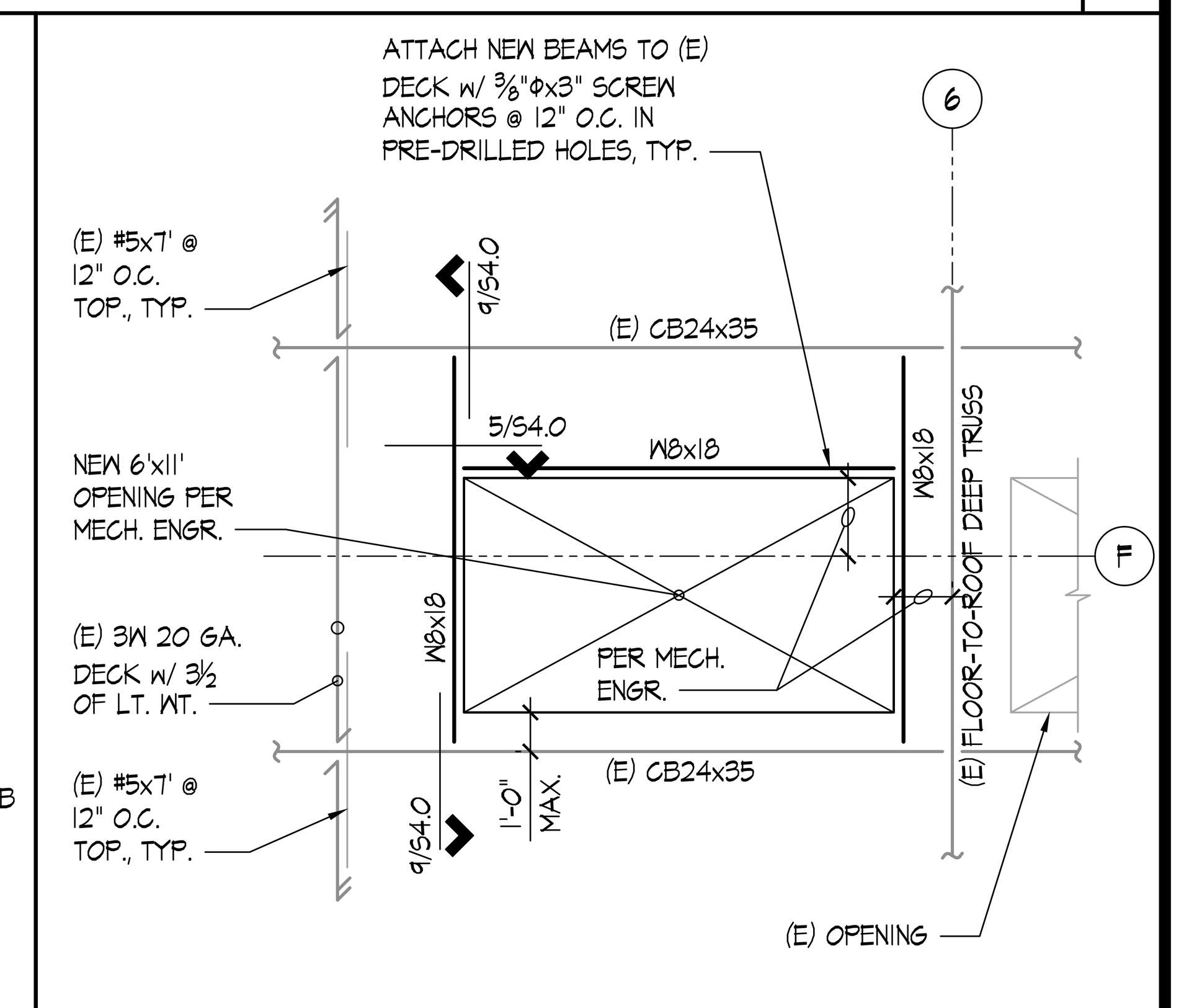
DETAIL	SCALE: NONE	7

DETAIL	SCALE: NONE	8

TYPICAL W8 CONNECTION TO (E) FLOOR BEAM (SCALE: NONE) 9



NEW FLOOR OPENING SUPPORT AT 3RD FLOOR RAU's (SCALE: NONE) 10



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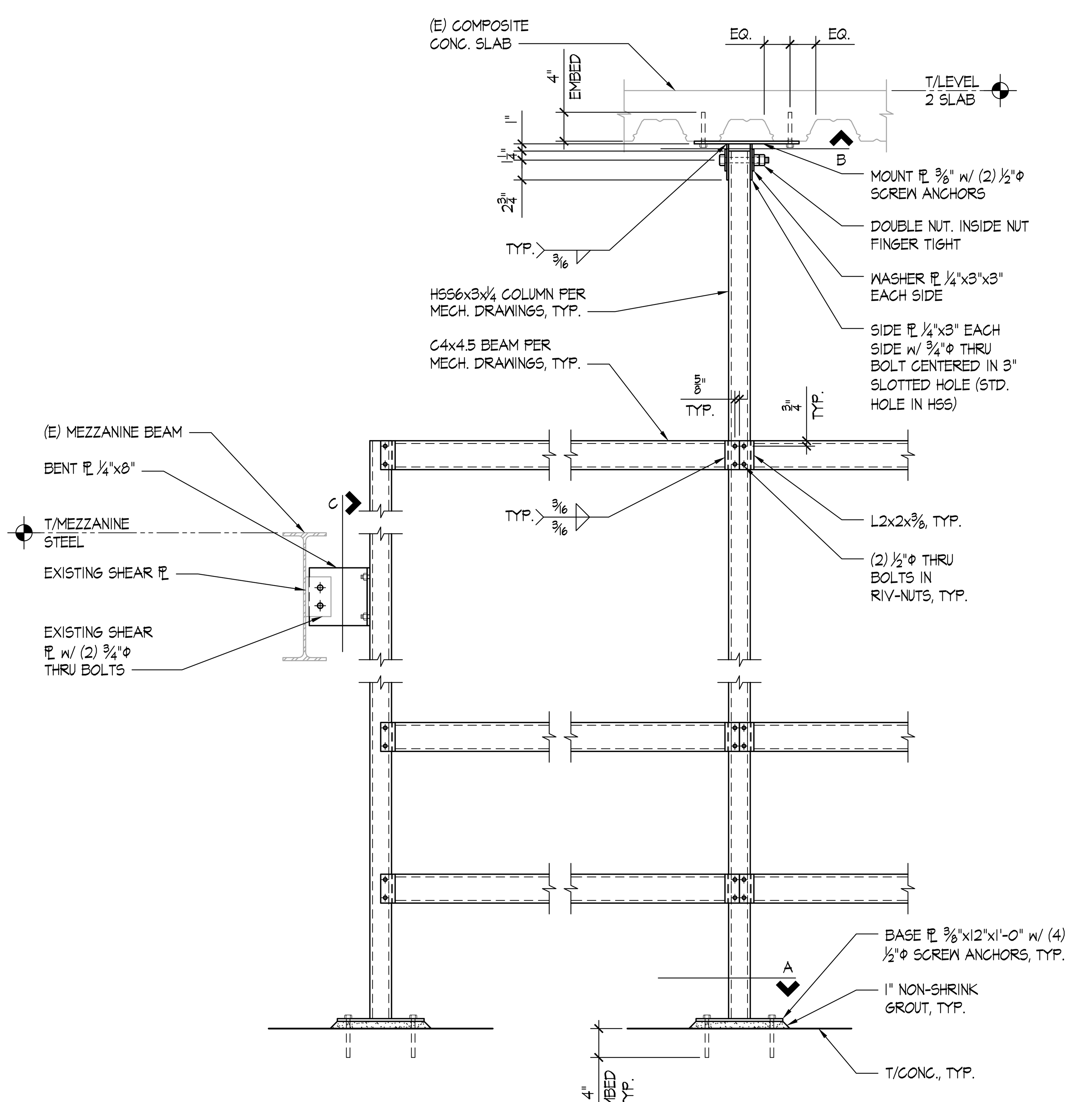
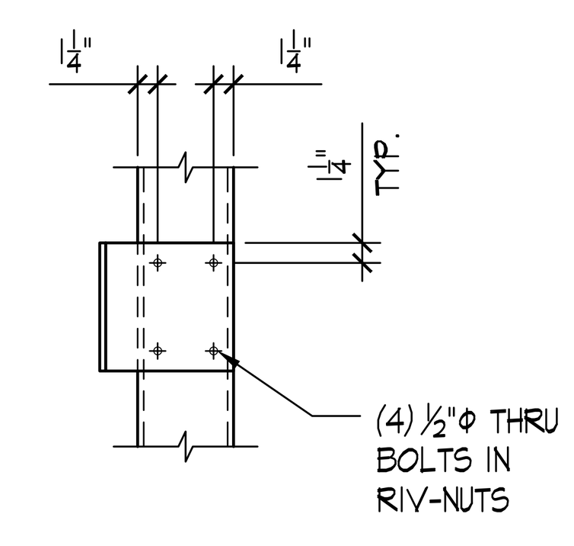
DETAIL	SCALE: NONE	15

FAN WALL ANCHORAGE (SCALE: NONE) 18





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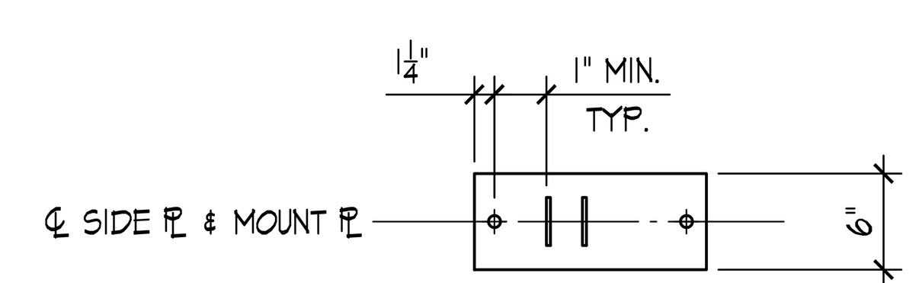

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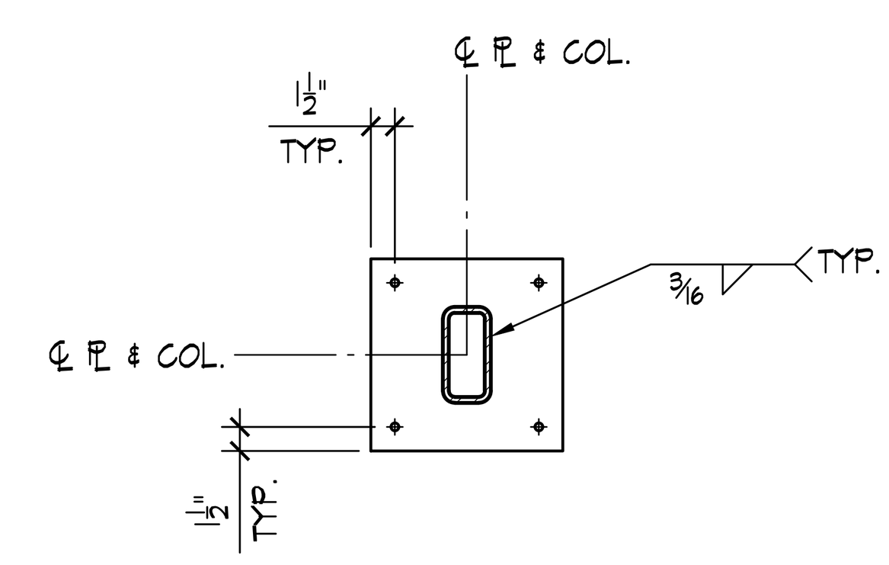

SECTION A

DETAIL	SCALE: NONE	19

DETAIL	SCALE: NONE	20

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DETAILS

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