GENERAL STRUCTURAL NOTES

THE FOLLOWING NOTES APPLY UNLESS INDICATED OTHERWISE:

GOVERNING CODE:

INTERNATIONAL BUILDING CODE, 2018 EDITION.

AUTHORITY HAVING JURISDICTION (AHJ):

CITY OF PUYALLUP, WA

DESIGN LOADS:

LIVE:

ROOF LIVE = 20 PSF
FLOORS = 80 PSF
PARTITIONS = 20 PSF
LOBBY,FIRST FLOOR,
CORRIDOR & STAIRS = 100 PSF
SEE DESIGN LOADING DIAGRAMS FOR AREA LOADS(S-021 & FOLLOWING).

SNOW:

Pg = 20 PSF Is = 1.0
Ce = 1.0, Cs = 1.0, Ct = 1.0
Pf = 25 PSF (PER WABO-SEAW WHITE PAPER #8)

SNOW DRIFT LOADING NOT REQUIRED PER WABO-SEAW WHITE PAPER #8: GUIDELINES FOR DETERMINING SNOW LOAD IN WASHINGTON STATE.

SEISMIC:

SITE CLASS D RISK CATEGORY II Ie = 1.0
Ss = 1.300 S1 = 0.510
Sds = 0.867 Sd1 = 0.510
SEISMIC DESIGN CATEGORY D

SEISMIC DEMANDS ON NONSTRUCTURAL COMPONENTS PER ASCE 7-10 13.3.1:
Ip = 1.0, ap = 1.0, Rp = 2.5

APPLICABLE CODES AND STANDARDS:

BUILDING CODE	INTERNATIONAL BUILDING CODE (IBC), 2018 EDITION
ACI	AMERICAN CONCRETE INSTITUTE, "BUILDING CODE FOR STRUCTURAL CONCRETE" (ACI 318), 2014 EDITION
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION, "SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS" (AISC 360-2016 EDITION)
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION, "SEISMIC PROVISIONS FOR STRUCTURAL STEEL BUILDINGS" (ANSI / AISC 341), 2016 EDITION
ASCE	AMERICAN SOCIETY OF CIVIL ENGINEERS, "MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURAL" (ASCE 7), 2016 EDITION
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM INTERNATIONAL)
AWS	AMERICAN WELDING SOCIETY, "STRUCTURAL WELDING CODE - STEEL" (AWS A2.4), 2012 EDITION
AWS	AMERICAN WELDING SOCIETY, "STRUCTURAL WELDING CODE - STEEL" (AWS D1.1), 2015 EDITION
AWS	AMERICAN WELDING SOCIETY, "STRUCTURAL WELDING CODE - STEEL" (AWS D1.4), 2018 EDITION
AWS	AMERICAN WELDING SOCIETY, "STRUCTURAL WELDING CODE - STEEL" (AWS D1.8), 2016 EDITION
ICC	COUNCIL - EVALUATION SERVICE (ICC-ES)
MSJC	THE MASONRY SOCIETY, "BUILDING CODE REQUIREMENTS AND SPECIFICATION FOR MASONRY STRUCTURES AND RELATED COMMENTARIES" (TMS 402 / ACI 530), 2013 EDITION
RCSC	RESEARCH COUNCIL ON STRUCTURAL CONNECTIONS, "SPECIFICATION FOR STRUCTURAL JOINTS USING HIGH-STRENGTH BOLTS", 2014 EDITION

SUPPORT OF NON-STRUCTURAL/NON-BUILDING EQUIPMENT AND STRUCTURES SHALL COMPLY WITH THE APPLICABLE CODE AS NOTED BELOW:

NFPA 13
ASCE 7-2016 CH 13 AND CH 15
IBC 2018

REINFORCED CONCRETE:

UNLESS OTHERWISE NOTED, ALL CONCRETE SHALL BE AS FOLLOWS:
f'c = 5,000 PSI, @ 28 DAYS MAXIMUM W/C = 0.42, MINIMUM
6 SACKS OF CEMENT PER CUBIC YARD

THE USE OF FLY ASH, OTHER POZZOLANS, SILICA FUME, OR SLAG SHALL CONFORM TO ACI 318 SECTIONS 4.3.1 AND 4.4.2. MAXIMUM AMOUNT OF FLY ASH SHALL BE 25% OF TOTAL CEMENTITIOUS CONTENT. CONCRETE USED IN ELEVATED SLABS AND BEAMS IN FLOORS WITH A DIMENSION GREATER THAN 125 FEET SHALL HAVE A SHRINKAGE LIMIT OF 0.045% AT 28 DAYS MEASURED IN ACCORDANCE WITH ASTM C157. SUBMIT LABORATORY TEST RESULTS TO SER FOR APPROVAL PRIOR TO CONSTRUCTION. SUBMIT MIX DESIGNS. SEE SPECIFICATIONS FOR ADMIXTURES.

TABLE R1

EXPOSURE CATEGORIES AND CLASS (ACI 318-14, TABLE 19.3.1.1)

MIN f'c, PSI	MAX W/C	FREEZING AND THAWING Fx	SULFATE Sx	WATER PERMEABILITY Wx	CORROSION PROTECTION OF REINF Cx
4000	0.46	F0 (NOT APPLICABLE)	S0 (NOT APPLICABLE)	W0 (NOT APPLICABLE)	C1 (MODERATE)
4500	0.45	F1 (MODERATE)	S0 (NOT APPLICABLE)	W0 (NOT APPLICABLE)	C1 (MODERATE)
5000 OR HIGHER	0.42	F0 (NOT APPLICABLE)	S0 (NOT APPLICABLE)	W0 (NOT APPLICABLE)	C1 (MODERATE)

REINFORCEMENT:

UNLESS OTHERWISE NOTED, REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 60 UON. SUBMIT REINFORCING STEEL SHOP DRAWINGS WITH DETAILS INCLUDING HOOKS AND BENDS PER ACI 315 MANUAL OF STANDARD PRACTICE AND ACI 318.

ALL REINFORCING STEEL CALLOUTS ARE IN INCHES ON CENTER UNLESS OTHERWISE NOTED.

WELDED WIRE FABRIC PER ASTM A185. DEFORMED WELDED WIRE FABRIC PER ASTM A497. FURNISH IN FLAT SHEETS, NOT ROLLS. LAP EDGES 1 1/2 MESH MINIMUM.

REINFORCING SPLICES SHALL CONFORM TO ACI 301 SECTION 3.3.2.7. REFER TO "LAP SPLICE AND DEVELOPMENT LENGTH SCHEDULE" FOR TYPICAL REINFORCEMENT SPLICES. SPLICES INDICATED ON INDIVIDUAL SHEETS SHALL CONTROL OVER THE SCHEDULE. MECHANICAL CONNECTIONS MAY BE USED WHEN APPROVED BY THE SER. FOR REINFORCING WITHIN THE LATERAL SYSTEM (SHEAR WALLS) AND REINFORCING CONNECTING THE DIAPHRAGM SLAB TO THE LATERAL SYSTEM, MECHANICAL SPLICE STRENGTH IS INCREASED TO DEVELOP 125% OF THE SPECIFIED TENSILE STRENGTH OF THE SPLICED BAR.

FIELD BENDING OF ASTM A615 REINFORCING BAR SIZES #3 TO #5 MAY BE FIELD BENT COLD THE FIRST TIME. OTHER BARS REQUIRE PREHEATING. DO NOT TWIST BARS. BARS SHALL NOT BE BENT PAST 45 DEGREES.

SEE ARCHITECTURAL DRAWINGS FOR ALL GROOVES, CHAMFERS, FEATURE STRIPS, COLOR, TEXTURE, AND ALL OTHER FINISH DETAILS AT ALL EXPOSED CONCRETE SURFACES, UNLESS OTHERWISE NOTED. PROVIDE 3/4" CHAMFER STRIPS AT ALL EXPOSED CONCRETE EDGES.

CONSTRUCTION JOINTS:

ALL CONSTRUCTION JOINTS IN SLABS, JOISTS, BEAMS, AND GIRDERS SHALL BE OFFSET A DISTANCE EQUAL TO TWICE THE WIDTH OF THE BEAM.

ALL CONSTRUCTION, CONTROL, AND ISOLATION JOINTS FOR SLABS ON GRADE SHALL BE IN ACCORDANCE WITH THE TYPICAL SLAB ON GRADE DETAILS. THE CONTRACTOR SHALL SUBMIT THE PROPOSED LOCATIONS OF CONSTRUCTION JOINTS TO THE ENGINEER FOR ACCEPTANCE BEFORE STARTING CONSTRUCTION.

SLEEVES:

EXCEPT AS DETAILED ON STRUCTURAL DRAWINGS, NO CONCRETE FOOTINGS, BEAMS, OR GIRDERS SHALL BE SLEEVED FOR PIPING OR DUCTS, UNLESS APPROVED BY THE SER.

BEAMS AND SLABS:

RIGIDLY SUPPORT BARS WITH CONCRETE BLOCKS OR APPROVED ACCESSORIES. PROVIDE #5 SUPPORTS BARS ALL SLABS.

WHERE MAIN SLAB BARS ARE PARALLEL TO A SUPPORT, PROVIDE #4 @ 12 TOP BARS EXCEPT #4@18 TOP BARS FOR SLABS LESS THAN 6" THICK, EXTENDING 2'-0" BEYOND EACH FACE OF SUPPORT INTO SLAB. WHERE SLAB IS ON ONE SIDE ONLY, PROVIDE A 90° STANDARD HOOK AT DISCONTINUOUS FACE.

AT SLAB OPENINGS OVER 12" SQUARE, PROVIDE TWO ADDITIONAL BOTTOM MAIN SLAB BARS OR 2-#5 MINIMUM ON ALL FOUR SIDES OF THE OPENING EXTENDING 40 DIAMETER PAST OPENING. PROVIDE 1-#5x4'-0" DIAGONAL BOTTOM BAR ALL FOUR CORNERS.

PROVIDE SLAB TEMPERATURE BARS AS FOLLOWS :

4" SLABS, #3 @ 15 BOTTOM,
5" SLABS, #4 @ 18 BOTTOM,
6" SLABS, #4 @ 18 BOTTOM,
7" SLABS, #4 @ 15 BOTTOM,
8" SLABS, #3 @ 18 TOP, #4 @ 18 BOTTOM
9" SLABS, #3 @ 18 TOP, #4 @ 18 BOTTOM
10" SLABS, #3 @ 16 TOP, #4 @ 18 BOTTOM
11" SLABS, #4 @ 18 TOP, #4 @ 18 BOTTOM
12" SLABS, #4 @ 18 TOP, #4 @ 18 BOTTOM

FLOOR FLATNESS AND FLOOR LEVELNESS:

ALL CONCRETE SLABS (INCLUDING SLABS ON GRADE) SHALL HAVE A MINIMUM FLOOR FLATNESS (FF) OF 20 AS MEASURED IN ACCORDANCE WITH ACI 117. CONCRETE SLABS THAT WILL RECEIVE WOOD FLOORING SHALL HAVE A MINIMUM FF OF 35. ALL CONCRETE SLABS ON GRADE SHALL HAVE A MINIMUM FLOOR LEVELNESS OF 20 AS MEASURED IN ACCORDANCE WITH ACI 117.

WALLS, CURBS & PARAPETS:

REINFORCE AS FOLLOWS:

6" WALLS, #4 @ 12 HORIZONTAL AND VERTICAL @ CENTER OF WALL
8" WALLS, #5 @ 15 HORIZONTAL AND VERTICAL @ CENTER OF WALL
10" WALLS, #4 @ 16 HORIZONTAL AND VERTICAL EACH FACE
12" WALLS, #4 @ 12 HORIZONTAL AND VERTICAL EACH FACE

AT OPENINGS OVER 12" SQUARE, PROVIDE 2-#5 BARS @ CENTER OF WALL ALL FOUR SIDES, EXCEPT 10" WALLS AND OVER PROVIDE 1-#6 BAR EACH FACE ALL FOUR SIDES, EXTENDING 40 DIAMETER PAST OPENING. PROVIDE 1-#5x4'-0" DIAGONAL BAR @ CENTER OF WALL ALL FOUR CORNERS.

AT CORNERS, PROVIDE CORNER BAR IN OUTSIDE FACE OF SAME SIZE AND SPACING AS HORIZONTAL BARS OF INTERSECTING WALL, LAP 40 DIAMETER EACH LEG.

PROVIDE 2-#5 LONGITUDINAL BARS AT TOP OF WALLS. PROVIDE ROUGHENED SURFACE AT CONSTRUCTION JOINTS.

PROVIDE VERTICAL DOWELS OF SAME SIZE, NUMBER AND SPACING AS VERTICAL BARS.

GROUT:

GROUT - 5,000 PSI MINIMUM 7-DAY CUBE STRENGTH PER ASTM C1157-11. GROUT TO BE PREMIXED, NON-SHRINK "MASTERFLOW 928 GROUT" BY MASTER BUILDERS OR APPROVED EQUAL. USE SPECIFIC GROUT MIX RECOMMENDED BY MANUFACTURE FOR EACH GROUT APPLICATION AND FOLLOW MANUFACTURER'S INSTRUCTIONS.

WELDED HEADED STUD ANCHORS:

ALL WELDED HEADED STUDS ASTM A108, MIN Fy = 55 KSI. HEADED STUDS SHALL CONFORM TO REQUIREMENTS OF AWS D1.1.

ANCHOR BOLTS:

ANCHOR BOLTS, ASTM F1554, GR 36. SPECIAL INSPECTION REQUIRED. SET ALL ANCHOR BOLTS FOR STRUCTURAL STEEL MEMBERS BY TEMPLATE.

ANCHOR RODS:

ANCHOR RODS SHALL BE ASTM F1554 GRADE 36 WITH CLASS 1A THREADS, UNLESS NOTED OTHERWISE. FURNISH ANCHOR RODS PREFABRICATED WITH MATCHING DOUBLE HEAVY HEX NUTS JAMMED AT THE END EMBEDDED IN CONCRETE. FURNISH HARDENED PLATE WASHERS, LOCK WASHERS, AND MATCHING HEAVY HEX NUTS FOR SECURING THE BASE PLATE TO THE ANCHOR RODS.

HOOKED ANCHOR RODS SHALL NOT BE USED EXCEPT WHERE NOTED. A RIGID STEEL TEMPLATE SHALL BE USED TO LOCATE ANCHOR RODS WHILE PLACING CONCRETE. ANCHOR RODS SHALL HAVE SUFFICIENT LENGTH TO PROVIDE THE MINIMUM EMBEDMENT SHOWN ON THE DRAWINGS, MEASURED FROM THE FACE OF THE CONCRETE TO THE NEAR FACE OF THE DOUBLE NUT, WITH ADEQUATE EXTENSION AS REQUIRED TO RECEIVE THE BASE PLATE WITH FULL THREAD PROJECTION FOR NUT INSTALLATION.

ANCHOR ROD INSTALLATION SHALL BE COORDINATED WITH REINFORCING AND FORMWORK. LEVELING NUTS SHALL NOT BE USED EXCEPT AFTER EVALUATION BY THE CONTRACTOR'S ERECTION ENGINEER. AFTER BASE INSTALLATION, ANCHOR ROD NUTS SHALL BE INSTALLED TO A SNUG-TIGHT CONDITION. NO HEATING OR BENDING OF THE ANCHOR RODS IS PERMITTED. HOLES IN THE BASE MATERIAL SHALL NOT BE ENLARGED BY BURNING.

SCREW ANCHORS:

"TITEN HD" BY SIMPSON STRONG-TIE ANCHOR SYSTEMS (ICC-ESR-2713) OR "HUS-EZ" BY HILTI FASTENING SYSTEMS (ICC-ESR-3027) OR "WEDGE BOLT+ SCREW ANCHOR" BY POWERS FASTENERS (ICC-ESR-2526) OR APPROVED EQUAL. ICC CERTIFICATION REQUIRED. SPECIAL INSPECTION REQUIRED.

DRILL-IN EXPANSION BOLTS:

"KWIK-BOLT TZ" BY HILTI FASTENING SYSTEMS (ICC-ESR-1917), "STRONG BOLT 2" BY SIMPSON STRONG-TIE ANCHOR SYSTEMS (ICC-ESR-3037) OR APPROVED EQUAL. ICC CERTIFICATION REQUIRED. SPECIAL INSPECTION REQUIRED.

DRILL-IN ADHESIVE ANCHOR:

FOR ANCHORAGE TO UNREINFORCED MASONRY OR BRICK, USE "HIT HY 70" ADHESIVE ANCHOR SYSTEM FOR UNREINFORCED MASONRY OR BRICK WITH CAVITIES (ICC-ESR-3027) OR APPROVED EQUAL. ICC CERTIFICATION REQUIRED. SPECIAL INSPECTION REQUIRED.

FOR ANCHORAGE TO SOLID MASONRY OR CONCRETE, USE "HIT-HY 200" BY HILTI FASTENING SYSTEMS (FOR EMBEDMENT DEPTH LESS THAN OR EQUAL TO 20 BAR DIAMETERS) (ICC-ESR-3187), OR "HIT RE 500 V3" ADHESIVE ANCHOR SYSTEM BY HILTI FASTENING SYSTEMS (ICC-ESR-3814), OR "SET-XP" EPOXY ANCHOR SYSTEM BY SIMPSON STRONG-TIE ANCHOR SYSTEMS (ICC-ESR-2508), OR "SET-3G" EPOXY ANCHOR SYSTEM BY SIMPSON STRONG-TIE ANCHOR SYSTEMS (ICC-ESR-4057) OR APPROVED EQUAL. ICC CERTIFICATION REQUIRED. SPECIAL INSPECTION REQUIRED.

ANCHORAGE INTO EXISTING CONCRETE OR MASONRY:

ALL FASTENERS ATTACHING TO EXISTING CONCRETE OR MASONRY MUST HAVE THE CONCRETE OR MASONRY SURFACE OR HOLE BE CLEANED AND PREPARED PER MANUFACTURER'S REQUIREMENTS FOR THE TYPE OF ANCHOR BEING USED.

INSTALL ONLY WHERE SPECIFICALLY SHOWN IN THE DETAILS OR ALLOWED BY SER. ALL POST-INSTALLED ANCHORS TYPES AND LOCATIONS SHALL BE APPROVED BY THE SER AND SHALL HAVE A CURRENT ICC-EVALUATION SERVICE REPORT THAT PROVIDES RELEVANT DESIGN VALUES NECESSARY TO VALIDATE THE AVAILABLE STRENGTH EXCEEDS THE REQUIRED STRENGTH. SUBMIT CURRENT MANUFACTURER'S DATA AND ICC ESR REPORT TO SER FOR APPROVAL REGARDLESS OF WHETHER OR NOT IT IS A PRE-APPROVED ANCHOR. ANCHORS SHALL BE INSTALLED IN STRICT ACCORDANCE TO ICC-ESR AND MANUFACTURER'S INSTRUCTIONS. NO REINFORCING BARS SHALL BE DAMAGED DURING INSTALLATION OF POST-INSTALLED ANCHORS. SPECIAL INSPECTION SHALL BE PER THE TESTS AND INSPECTIONS SECTION. ANCHOR TYPE, DIAMETER AND EMBEDMENT SHALL BE AS INDICATED ON DRAWINGS.

GROUTING REINFORCING BARS AND BOLTS:

REINFORCING BARS AND BOLTS EMBEDDED IN EXISTING CONCRETE SHALL BE GROUTED INTO HOLES DRILLED INTO THE EXISTING CONCRETE. HOLES MAY BE CUT BY EITHER ROTARY PERCUSSION DRILLING FOLLOWED BY AIR BLOWOUT WITH OIL-FREE COMPRESSED AIR OR DIAMOND CORE BORING FOLLOWED BY WATER FLUSH. THE CONTRACTOR SHALL CHIP AWAY A SUFFICIENT QUANTITY OF CONCRETE COVER FOR EXISTING REINFORCING TO ASSURE LOCATION OF DRILL HOLES SO THAT THEY CLEAR EXISTING REINFORCING. CONSULT MANUFACTURER'S RECOMMENDATIONS FOR PROPER INSTALLATION METHODS, INCLUDING PRE-WETTING HOLES.

FOR REINFORCING BARS EMBEDDED LESS THAN 2'-0", INSTALL A MEASURED AMOUNT OF GROUT INTO THE BOTTOM OF THE HOLE WITH A CAULKING GUN EQUIPPED WITH AN EXTENSION NOZZLE. INSERT THE BAR OR BOLT DISPLACING THE GROUT AND SECURE IT IN THE CENTER OF THE HOLE. REMOVE EXCESS GROUT FROM AROUND THE HOLES BEFORE IT HARDENS.

FOR REINFORCING BARS EMBEDDED DEEPER THAN 2'-0", INSERT THE BAR IN THE HOLE AND USE AN APPROVED PRESSURE GROUTING PROCEDURE TO INSTALL A MEASURED AMOUNT OF GROUT.

GROUT FOR BONDING REINFORCING BARS AND BOLTS INTO EXISTING CONCRETE SHALL BE AN APPROVED EPOXY BONDING AGENT. APPROVED ADHESIVE GROUTS INCLUDE HILTI HIT ADHESIVE ANCHOR (ICC-ES ER-4419) OR APPROVED EQUAL. PROVIDE POSITIVE PROTECTION SO DOWELS ARE NOT DISTURBED DURING CURING.

TABLE R2

REINFORCING BAR DEVELOPMENT AND LAP SPLICE LENGTH SCHEDULE

BAR SIZE		#3	#4	#5	#6	#7	#8	#9	#10	#11
STD HOOK LENGTH		6"	8"	10"	1'-0"	1'-2"	1'-4"	1'-7"	1'-10"	2'-0"
HOOKED BAR DEVELOPMENT LENGTH, Ldh	f'c=3,000 PSI	6"	8"	10"	12"	1'-2"	1'-4"	1'-6"	1'-8"	1'-0"
	f'c=4,000 PSI	6"	7"	9"	10"	1'-0"	1'-2"	1'-3"	1'-5"	1'-5"
	f'c=5,000 PSI	6"	6"	8"	9"	11"	1'-0"	1'-2"	1'-4"	1'-5"
	f'c=6,000 PSI	6"	6"	7"	9"	10"	11"	1'-1"	1'-2"	1'-4"
	f'c=7,000 PSI	6"	6"	7"	8"	9"	10"	10"	1'-3"	1'-4"
	f'c=8,000 PSI	6"	6"	6"	8"	9"	10"	11"	1'-0"	1'-2"
TYPICAL DEVELOPMENT LENGTH, Ld	f'c=3,000 PSI	1'-5"	1'-10"	2'-4"	2'-9"	4'-0"	4'-7"	5'-2"	5'-10"	6'-6"
	f'c=4,000 PSI	1'-3"	1'-7"	2'-0"	2'-5"	3'-6"	4'-0"	4'-6"	5'-1"	5'-7"
	f'c=5,000 PSI	1'-1"	1'-5"	1'-10"	2'-2"	3'-2"	3'-7"	4'-0"	4'-6"	5'-0"
	f'c=6,000 PSI	1'-0"	1'-4"	1'-8"	2'-0"	2'-10"	3'-3"	3'-8"	4'-2"	4'-7"
	f'c=7,000 PSI	1'-0"	1'-3"	1'-6"	1'-10"	2'-8"	3'-0"	3'-5"	3'-10"	4'-3"
	f'c=8,000 PSI	1'-0"	1'-2"	1'-5"	1'-9"	2'-6"	2'-10"	3'-2"	3'-7"	4'-0"
TYPICAL LAP SPLICE LENGTH, Ls	f'c=3,000 PSI	1'-10"	2'-5"	3'-0"	3'-7"	5'-3"	6'-0"	6'-9"	7'-7"	8'-5"
	f'c=4,000 PSI	1'-7"	2'-1"	2'-7"	3'-1"	4'-6"	5'-2"	5'-10"	6'-7"	7'-3"
	f'c=5,000 PSI	1'-5"	1'-11"	2'-4"	2'-10"	4'-1"	4'-8"	5'-3"	5'-11"	6'-6"
	f'c=6,000 PSI	1'-4"	1'-9"	2'-2"	2'-7"	3'-9"	4'-3"	4'-9"	5'-4"	5'-11"
	f'c=7,000 PSI	1'-4"	1'-7"	2'-0"	2'-4"	3'-5"	3'-11"	4'-5"	5'-0"	5'-6"
	f'c=8,000 PSI	1'-4"	1'-6"	1'-10"	2'-3"	3'-3"	3'-8"	4'-2"	4'-8"	5'-2"
DEVELOPMENT LENGTH OF TOP BARS IN THICK CONCRETE, Lt	f'c=3,000 PSI	1'-10"	2'-5"	3'-0"	3'-7"	5'-3"	6'-0"	6'-9"	7'-7"	8'-5"
	f'c=4,000 PSI	1'-7"	2'-1"	2'-7"	3'-1"	4'-6"	5'-2"	5'-10"	6'-7"	7'-3"
	f'c=5,000 PSI	1'-5"	1'-11"	2'-4"	2'-10"	4'-1"	4'-8"	5'-3"	5'-11"	6'-6"
	f'c=6,000 PSI	1'-4"	1'-9"	2'-2"	2'-7"	3'-9"	4'-3"	4'-9"	5'-4"	5'-11"
	f'c=7,000 PSI	1'-2"	1'-7"	2'-0"	2'-4"	3'-5"	3'-11"	4'-5"	5'-0"	5'-6"
	f'c=8,000 PSI	1'-2"	1'-6"	1'-10"	2'-3"	3'-3"	3'-8"	4'-2"	4'-8"	5'-2"
LAP SPLICE LENGTH OF TOP BARS IN THICK CONCRETE, Lts	f'c=3,000 PSI	2'-4"	3'-2"	3'-11"	4'-8"	6'-9"	7'-9"	8'-9"	9'-10"	10'-9"
	f'c=4,000 PSI	2'-1"	2'-9"	3'-5"	4'-1"	5'-11"	6'-9"	7'-7"	8'-6"	9'-6"
	f'c=5,000 PSI	1'-10"	2'-5"	3'-0"	3'-8"	5'-3"	6'-0"	6'-9"	7'-8"	8'-6"
	f'c=6,000 PSI	1'-8"	2'-3"	2'-9"	3'-4"	4'-10"	5'-6"	6'-2"	7'-0"	7'-9"
	f'c=7,000 PSI	1'-7"	2'-1"	2'-7"	3'-1"	4'-6"	5'-1"	5'-9"	6'-5"	7'-2"
	f'c=8,000 PSI	1'-6"	1'-11"	2'-5"	2'-11"	4'-2"	4'-9"	5'-4"	6'-0"	6'-8"

STRUCTURAL STEEL:

GENERAL:

STRUCTURAL STEEL MATERIALS SHALL CONFORM TO THE REQUIREMENTS LISTED IN AISC 360 SECTION A3. UNLESS OTHERWISE NOTED ON THE PLANS OR DETAILS, ALL STRUCTURAL STEEL MATERIALS SHALL CONFORM TO THE FOLLOWING:

WIDE FLANGE (W) AND TEE (WT) SHAPES	ASTM A992, Fy = 50 KSI
CHANNEL (C) AND ANGLE (L) SHAPES	ASTM A36, Fy = 36 KSI
STRUCTURAL PLATE (PL)	ASTM A36, Fy = 36 KSI
HOLLOW STRUCTURAL SECTIONS, SQ/RECT (HSS)	ASTM A500, GRADE C, Fy = 50 KSI
HOLLOW STRUCTURAL SECTIONS, ROUND (HSS)	ASTM A500, GRADE C, Fy = 46 KSI
STRUCTURAL PIPE (PIP)	ASTM A53, GRADE B, Fy = 35 KSI
HIGH STRENGTH, HEAVY HEX BOLTS	ASTM A325/F1852, TYPE 1 OR 3, PLAIN
HIGH STRENGTH, HEAVY HEX BOLTS, HEAVY HEX NUTS	ASTM A325/F1852, TYPE 1, GALV ASTM A563, GRADE & FINISH PER RCSC TABLE 2.1
WASHERS (HARDENED, FLAT, OR BEVELED)	ASTM F436, GRADE & FINISH PER RCSC TABLE 2.1
ANCHOR RODS AND ANCHOR BOLTS	ASTM F1554, GRADE 36, Fy = 36 KSI
MILD THREADED RODS	ASTM A36, Fy = 36 KSI
WELDED HEADED CONCRETE ANCHORS (HCA)	ASTM A108, NELSON/TRW H4L
WELDED SHEAR STUD CONNECTOR (WSC)	ASTM A108, NELSON/TRW S3L
DOWEL BAR ANCHORS (DBA)	ASTM A496, NELSON/TRW D2L, Fy = 70 KSI

SPECIAL INSPECTION REQUIRED. FABRICATION AND ERECTION PER AISC SPECIFICATIONS AND CODE OF STANDARD PRACTICE. SUBMIT SHOP DRAWINGS.

CAMBER FLOOR COMPOSITE BEAMS L/600 AND NON-COMPOSITE ROOF BEAMS L/800 AT MIDSPAN FOR ALL SPANS GREATER THAN OR EQUAL TO 25'-0", EXCEPT MOMENT FRAME BEAMS, UON.

ALL HSS MEMBERS SHALL HAVE A 3/16" CAP PLATE AT ENDS UNLESS CONNECTED TO PLATE OR OTHER STEEL MEMBER, UON.

CONNECTIONS:

BOLTED CONNECTIONS:

HIGH-STRENGTH BOLTS PER ASTM A325. TYPICAL BOLTED CONNECTIONS - ASTM A325-N, BEARING TYPE WITH THREADS INCLUDED IN SHEAR PLANE. TENSION HIGH-STRENGTH BOLTS PER ASTM F959 INSTALLED PER MANUFACTURER'S INSTRUCTIONS, OR USING "TWIST-OFF" TYPE TENSION CONTROL ASSEMBLIES PER ASTM F1852 INSTALLED PER MANUFACTURER'S INSTRUCTIONS, AND PER RCSC SECTION 8 AND TABLE 4.1.

WASHERS PER ASTM F436, GRADE AND FINISH PER RCSC TABLE 2.1. HEAVY HEX NUTS PER ASTM A563, GRADE AND FINISH PER RCSC TABLE 2.1. PROVIDE WASHERS OVER OUTER PLY OF SLOTTED HOLES AND OVERSIZE HOLES PER RCSC TABLE 6.1.

WELDED CONNECTIONS:

WELDING PER AWS D1.1. AND D1.8 AS APPLICABLE FOR SEISMIC ELEMENTS WITH PREQUALIFIED WELDING PROCESSES EXCEPT AS MODIFIED BY AISC 360 SECTION J2 AND AISC 341 AS APPLICABLE. WELDERS SHALL BE QUALIFIED IN ACCORDANCE WITH AWS D1.1 AND D1.8 FOR DEMAND CRITICAL WELDS REQUIREMENTS (WHERE APPLICABLE). WELDERS TO BE CERTIFIED PER WABO AND AWS FOR ROD AND POSITION. MINIMUM SIZE WELDS 3/16" CONTINUOUS FILLET OR PER AISC 360 SECTION J.2b (WHICHEVER IS LARGER), UON. USE E7018 OR E71T ELECTRODES AS APPROPRIATE FOR THE PROCESS SELECTED. WELDING OF HIGH STRENGTH ANCHOR RODS IS PROHIBITED.

STRUCTURAL STEEL SHOP DRAWINGS SHALL SHOW ALL WELDING WITH AWS A2.4 SYMBOLS. ALL WELDING SHALL BE DONE BY AWS/WABO ([STATE] ASSOCIATION OF BUILDING OFFICIALS) CERTIFIED WELDERS AND IN ACCORDANCE WITH AWS D1.1. WELDS SHOWN ON THE DRAWINGS ARE THE MINIMUM SIZES. INCREASE WELD SIZE TO AWS MINIMUM SIZES, BASED ON PLATE THICKNESS. THE MINIMUM WELD SIZE SHALL BE 3/16 INCH. FIELD WELDING SYMBOLS HAVE NOT NECESSARILY BEEN INDICATED ON THE DRAWINGS. WHERE SHOWN, PROPER FIELD WELDING PER AWS D1.1 SHALL BE USED. WHERE NO FIELD WELDING SYMBOLS ARE SHOWN, IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE THE USE OF SHOP AND FIELD WELDS. ALL PARTIAL PENETRATION GROOVE WELD SIZES SHOWN ON THE DRAWINGS REFER TO EFFECTIVE THROAT THICKNESS.

ALL WELDS SHALL BE MADE USING LOW HYDROGEN ELECTRODES WITH MINIMUM TENSILE STRENGTH PER AWS D1.1 (MINIMUM 70 KSI). LOW HYDROGEN SMAW ELECTRODES SHALL BE USED WITHIN 4 HOURS OF OPENING THEIR HERMETICALLY SEALED CONTAINERS, OR SHALL BE REDRIED PER AWS D1.1, SECTION 4.5. ELECTRODES SHALL BE REDRIED NO MORE THAN ONE TIME, AND ELECTRODES THAT HAVE BEEN WET SHALL NOT BE USED.

ALL WELDING SHALL BE PERFORMED IN STRICT ADHERENCE TO A WRITTEN WELDING PROCEDURE SPECIFICATION (WPS) PER AWS D1.1. ALL WELDING PARAMETERS SHALL BE WITHIN THE ELECTRODE MANUFACTURER'S RECOMMENDATIONS. WELDING PROCEDURES SHALL BE SUBMITTED TO THE OWNER'S TESTING AGENCY FOR REVIEW BEFORE STARTING FABRICATION OR ERECTION. COPIES OF THE WPS SHALL BE ON SITE AND AVAILABLE TO ALL WELDERS AND THE SPECIAL INSPECTOR.

ALL COMPLETE-PENETRATION WELDS SHALL BE ULTRASONICALLY TESTED UPON COMPLETION OF THE CONNECTION, EXCEPT PLATE LESS THAN OR EQUAL TO 1/4 INCH THICK SHALL BE MAGNETIC PARTICLE TESTED. REDUCTION IN TESTING MAY BE MADE IN ACCORDANCE WITH THE BUILDING CODE WITH APPROVAL OF THE ENGINEER.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE JOINT PREPARATIONS AND WELDING PROCEDURES THAT INCLUDE, BUT ARE NOT LIMITED TO: REQUIRED ROOT OPENINGS, ROOT FACE DIMENSIONS, GROOVE ANGLES, BACKING BARS, COPES, SURFACE ROUGHNESS VALUES, AND TAPERS AND TRANSITIONS OF UNEQUAL PARTS.

WELDS AT MEMBERS AND CONNECTIONS OF THE SEISMIC FORCE RESISTING SYSTEM SHALL BE MADE WITH FILLER METAL PRODUCING WELDS WITH A MINIMUM CHARPY V-NOTCH TOUGHNESS OF 20 FT-LBF AT 0°F AS DETERMINED BY THE APPROPRIATE AWS A5 CLASSIFICATION TEST METHOD.

CONTRACTOR SHALL SUBMIT TO THE BUILDING OFFICIAL WELDING PROCEDURE SPECIFICATIONS VERIFYING THE ABOVE REQUIREMENTS FOR WELDS ON SEISMIC RESISTING ELEMENTS.

HEADED SHEAR STUDS:

HEADED SHEAR STUDS TO BE ASTM A108 "NELSON STUDS" BY NELSON DIVISION OF TRW INC OR APPROVED EQUAL, AUTOMATICALLY END WELDED. USE 3/4" DIA STUDS @ 12" OC MAXIMUM ON TOP OF ALL BEAMS SUPPORTING A CONCRETE SLAB, EXCEPT AT NO-WELD ZONES OF MOMENT FRAME BEAMS. STUD LENGTH TO BE 1" LESS THAN THE OVERALL CONCRETE FILLED COMPOSITE STEEL DECK THICKNESS.

PROTECTIVE COATING REQUIREMENTS:

INTERIOR STEEL:

INTERIOR STEEL EXPOSED TO VIEW SHALL BE PAINTED WITH ONE COAT OF SHOP PRIMER UNLESS OTHERWISE INDICATED BY THE PROJECT SPECIFICATIONS. APPLY FIELD TOUCH-UPS PER PROJECT SPECIFICATIONS.

UNLESS OTHERWISE NOTED, DO NOT PAINT ANY OF THE STEEL MEETING ANY OF THE FOLLOWING CONDITIONS:

- CONCEALED BY THE INTERIOR BUILDING FINISHES
- FIREPROOFED
- EMBEDDED IN CONCRETE
- WELDED: IF THE AREA REQUIRES PAINTING, DO NOT PAINT UNTIL AFTER WELD INSPECTIONS AND NON-DESTRUCTIVE TESTING REQUIREMENTS (IF ANY) ARE SATISFIED
- SPECIALLY PREPARED AS A "FAYING SURFACE" FOR TYPE SC "SLIP-CRITICAL" CONNECTIONS, INCLUDING BOLTED CONNECTIONS THAT FORM A PART OF THE SEISMIC FORCE RESISTING SYSTEM GOVERNED BY AISC 341 UNLESS THE COATING CONFORMS TO THE REQUIREMENTS OF THE RCSC BOLT SPECIFICATION AND IS APPROVED BY THE SER.

EXTERIOR STEEL:

EXPOSED EXTERIOR STEEL SHALL BE PROTECTED BY EITHER:
- PAINT, WITH AN EXTERIOR MULTI-COAT SYSTEM AS PER THE PROJECT SPECIFICATIONS. FIELD TOUCH-UP PAINTING SHALL BE AS PER THE PROJECT SPECIFICATIONS.
- GALVANIZING, UNLESS PROTECTED WITH A PAINT SYSTEM, SHALL BE HOT-DIPPED GALVANIZED, WHERE NOTED ON THE PLANS OR OTHERWISE INDICATED BY THE FINISHES SPECIFIED BY THE ARCHITECT. APPLY FIELD TOUCH-UPS PER PROJECT SPECIFICATIONS.

UPON COMPLETION OF FABRICATION, THE CONTRACTOR SHALL SUBMIT TO THE BUILDING OFFICIAL A CERTIFICATE OF COMPLIANCE FROM THE AISC CERTIFIED FABRICATOR STATING THAT THE WORK WAS PERFORMED IN ACCORDANCE WITH THE APPROVED CONSTRUCTION DOCUMENTS.

ANCHORAGE TO CONCRETE:

SHEAR STUDS ON STEEL BEAMS FOR COMPOSITE CONSTRUCTION:

HEADED SHEAR STUDS WELDED TO TOPS OF WIDE FLANGE BEAMS, SHALL BE 3/4" DIAMETER WHS WITH NOMINAL STUD LENGTHS AS INDICATED. UNLESS NOTED OTHERWISE, PROVIDE MINIMUM SHEAR STUD HEIGHT EQUAL TO THE (METAL DECK DEPTH +1 1/2") AND A MAXIMUM SHEAR STUD HEIGHT THAT ALLOWS FOR 1" OF CONCRETE COVER OVER THE STUD.

EMBEDDED STEEL PLATES FOR ANCHORAGE TO CONCRETE:

PLATES (PL) EMBEDDED IN CONCRETE WITH STUDS (WHS) OR DOWEL BAR ANCHORS (DBA) SHALL BE OF THE SIZES AND LENGTHS AS INDICATED ON THE PLANS WITH MINIMUM 1/2" DIA WHS x 6" LONG BUT PROVIDE NOT LESS THAN 3/4" INTERIOR COVER OR 1 1/2" EXTERIOR COVER TO THE OPPOSITE FACE OF CONCRETE, UNLESS NOTED OTHERWISE.

COLUMN ANCHOR RODS AND BASE PLATES:

ALL COLUMNS (VERTICAL MEMBER ASSEMBLIES WEIGHING OVER 300 POUNDS) SHALL BE PROVIDED WITH A MINIMUM OF FOUR 3/4" DIAMETER ANCHOR RODS. COLUMN BASE PLATES SHALL BE AT LEAST 3/4" THICK, UNLESS NOTED OTHERWISE. CAST-IN-PLACE ANCHOR RODS SHALL BE PROVIDED UNLESS OTHERWISE APPROVED BY THE ENGINEER. UNLESS OTHERWISE NOTED, EMBEDMENT OF CAST-IN-PLACE ANCHOR RODS SHALL BE 12 TIMES THE ANCHOR DIAMETER (12D).

ERECTION:

CONFORM TO AISC 360 SECTION M4 "ERECTION" AND AISC 303 SECTION 7 "ERECTION".

CONFORM TO AISC 360 CHAPTER N "QUALITY CONTROL AND QUALITY ASSURANCE" AND AISC 303 SECTION 8.

- THE ERECTOR SHALL MAINTAIN DETAILED ERECTION QUALITY CONTROL PROCEDURES THAT ENSURE THAT THE WORK IS PERFORMED IN ACCORDANCE WITH THESE REQUIREMENTS AND THE CONTRACT DOCUMENTS.

STEEL WORK SHALL BE CARRIED UP TRUE AND PLUMB WITHIN THE LIMITS DEFINED IN AISC 303 SECTION 7.13.

HIGH STRENGTH BOLTING SHALL COMPLY WITH THE RCSC REQUIREMENTS INCLUDING RCSC SECTION 7.2 "REQUIRED TESTING", AS APPLICABLE AND AISC 360 CHAPTER J, SECTION M2.5 AND SECTION N5.6.

WELDING OF HEADED STUD ANCHORS SHALL BE IN ACCORDANCE WITH AWS D1.1 CHAPTER 7 "STUD WELDING".

PROVIDE HEADED (SHEAR) STUD ANCHORS WELDED THROUGH THE METAL DECK TO TOPS OF BEAMS DENOTED IN PLANS.

THE CONTRACTOR SHALL PROVIDE TEMPORARY BRACING AND SAFETY PROTECTION REQUIRED BY AISC 360 SECTION M4.2 AND AISC 303 SECTION 7.10 AND 7.11.

THE APPROVED CONSTRUCTION PLANS, DOCUMENTS AND ALL ENGINEERING MUST BE POSTED ON THE JOB AT ALL INSPECTIONS IN A VISIBLE AND READILY ACCESSIBLE LOCATION.

FULL SIZED LEDGIBLE COLOR PLANS ARE REQUIRED TO BE PROVIDED BY THE PERMITEE ON SITE FOR INSPECTION

City of Puyallup
Building
ACCEPTED
JMontgomery
12/14/2022
3:15:40 PM

City of Puyallup
Development & Permitting Services
ISSUED PERMIT
Building | Planning
Engineering | Public Works
Fire | Traffic

STRUCTURAL DRAWING LIST

SHEET #	SHEET NAME	REV #	REV DATE

STRUCTURAL DRAWING INDEX

PRCTI20221788

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A part of MultiCare Health System

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401 15TH AVE SE, PUYALLUP, WA 98372

PERMIT SET
11/11/2022
REVISIONS

19057

GENERAL STRUCTURAL NOTES

S0.01

STEEL DECKING:

STEEL DECKING DESIGNED, MANUFACTURED AND INSTALLED PER STEEL DECK INSTITUTE SPECIFICATIONS. ICC CERTIFICATION REQUIRED. SUBMIT SHOP DRAWINGS. COMMERCIAL WEIGHT GALVANIZED FINISH ON ALL DECKING.

FLOOR DECKING:

- 3" DP x 20 GA COMPOSITE DECK, Imin = 0.898 IN4 PER FOOT, Smin = 0.505 IN³ PER FOOT, OR
- 3" DP x 18 GA COMPOSITE DECK, Imin = 1.201 IN4 PER FOOT, Smin = 0.744 IN³ PER FOOT, OR
- 3" DP x 16 GA COMPOSITE DECK, Imin = 1.501 IN4 PER FOOT, Smin = 0.956 IN³ PER FOOT, OR
- 2" DP x 20 GA COMPOSITE DECK, Imin = 0.418 IN4 PER FOOT, Smin = 0.320 N³ PER FOOT, OR
- 2" DP x 18 GA COMPOSITE DECK, Imin = 0.558 IN4 PER FOOT, Smin = 0.466 IN³ PER FOOT, OR
- 2" DP x 16 GA COMPOSITE DECK, Imin = 0.700 IN4 PER FOOT, Smin = 0.617 IN³ PER FOOT, OR
- 1 1/2" DP x 20 GA COMPOSITE DECK, Imin = 0.218 IN4 PER FOOT, Smin = 0.228 IN³ PER FOOT, OR
- 1 1/2" DP x 18 GA COMPOSITE DECK, Imin = 0.299 IN4 PER FOOT, Smin = 0.311 IN³ PER FOOT, OR
- 1 1/2" DP x 16 GA COMPOSITE DECK, Imin = 0.375 IN4 PER FOOT, Smin = 0.395 IN³ PER FOOT

DECK TO BE CONTINUOUS OVER 3 SPANS MINIMUM WHERE POSSIBLE. fy = 50 KSI. DESIGN COMPOSITE FLOOR DECK AS A FORM PER AISI AND SDI SPECIFICATIONS AND PROVIDE EMBOSSMENTS AND INDENTATIONS IN THE DECK TO DEVELOP COMPOSITE ACTION WITH THE CONCRETE FILL. CONCRETE FILL OVER FLOOR DECK - 2 1/2" THICK, f'c = 3,000 PSI, MAXIMUM W/C = 0.50 MINIMUM 5 1/2 SACKS OF CEMENT PER CUBIC YARD, HARDROCK AGGREGATE, UNIT WEIGHT - 145 PCF MAXIMUM. REINFORCE WITH 6x6-W2.1xW2.1 WELDED WIRE FABRIC.

FASTEN FLOOR DECK UNITS TO STEEL AT TRANSVERSE, END AND SIDE SUPPORTS WITH 1/2" DIAMETER SPOT WELDS AT 12" ON CENTER. FASTEN SIDE LAPS OF ADJACENT UNITS WITH BUTTON PUNCH AT 24" ON CENTER.

ROOF DECKING:

- 3" DP x 20 GA NON-COMPOSITE DECK, Imin = 0.943 IN4 PER FOOT, Smin = 0.439 IN³ PER FOOT, OR
- 3" DP x 18 GA NON-COMPOSITE DECK, Imin = 1.260 IN4 PER FOOT, Smin = 0.645 IN³ PER FOOT, OR
- 3" DP x 16 GA NON-COMPOSITE DECK, Imin = 1.571 IN4 PER FOOT, Smin = 0.829 IN³ PER FOOT, OR
- 1 1/2" DP x 20 GA NON-COMPOSITE DECK GA, Imin = 0.229 IN4 PER FOOT, Smin = 0.227 IN³ PER FOOT, OR
- 1 1/2" DP x 18 GA NON-COMPOSITE DECK GA, Imin = 0.303 IN4 PER FOOT, Smin = 0.311 IN³ PER FOOT, OR
- 1 1/2" DP x 16 GA NON-COMPOSITE DECK GA, Imin = 0.377 IN4 PER FOOT, Smin = 0.395 IN³ PER FOOT

DECK TO BE CONTINUOUS OVER 3 SPANS MINIMUM WHERE POSSIBLE. fy = 50 KSI. DIAPHRAGM SHEAR CAPACITY - 400 PLF. ANCHOR SUPPORTS TO RESIST A 15 PSF UPLIFT.

FASTEN ROOF DECK UNITS TO STEEL AT TRANSVERSE, END AND SIDE SUPPORTS WITH 1/2" DIAMETER SPOT WELDS AT 12" ON CENTER. FASTEN SIDE LAPS OF ADJACENT UNITS WITH BUTTON PUNCH AT 12" ON CENTER.

PROVIDE ADDITIONAL STEEL REINFORCEMENT AND CLOSURE PIECES AS REQUIRED FOR STRENGTH, CONTINUITY OF DECKING AND SUPPORT OF OTHER WORK.

STEEL SCREWS:

"TEK" BY ITW BUILDEX OR APPROVED EQUAL. ICC CERTIFICATION REQUIRED. SPACING AND EDGE DISTANCE OF SCREWS SHALL NOT BE LESS THAN 1/2".

POWDER ACTUATED FASTENERS:

ALL POWDER ACTUATED FASTENERS (PAF) CALLED OUT ON PLAN SHALL BE HILTI X-DNI 0.145" DIA OR APPROVED EQUAL UNO (EXCEPT PAF INSTALLED IN STEEL SHALL BE HILTI X-EDNI 0.145" DIA). ALL PAF SHALL BE INSTALLED PER THE MANUFACTURER'S RECOMMENDATION AND ICBO REPORT #2388. WHEN EMBEDDED INTO CONCRETE, THE MINIMUM PENETRATION IS 1 1/4", WITH MIN SPACING BETWEEN PAF OF 4" AND MIN EDGE DISTANCE OF 3" UNO ON PLANS.

WHEN EMBEDDED INTO STEEL, THE PIN SHALL BE DRIVEN TO A DEPTH SUCH THAT THE SHANK PIERCES THE STEEL (EXCEPT WHERE ALLOWED OTHERWISE BY ICBO ER #2388), WITH MIN SPACING BETWEEN PAF OF 1 1/2" AND MIN EDGE DISTANCE OF 1/2" UNO ON PLANS.

WHEN PAF ARE USED WITH WOOD MEMBERS, WASHERS ARE REQUIRED.

COLD-FORMED LIGHT GAGE STEEL:

DEPTH, GAUGE, AND SECTION PROPERTIES OF STEEL STUDS AND JOISTS SHALL MEET OR EXCEED THOSE OF THE SECTIONS SPECIFIED, ALL STEEL STUDS, TRACKS, JOISTS AND STRAPS SHALL HAVE G-60 GALVANIZED COATING PER ASTM A653 SPECIFICATION AS A MINIMUM. ALL SECTIONS SHALL BE FORMED FROM STEEL THAT CORRESPONDS TO THE FOLLOWING REQUIREMENTS.

ALL COLD-FORMED LIGHT GAGE STEEL FRAMING SHALL CONFORM TO AISI S100.

FOR 97, 68 & 54 MIL THICKNESS (GAGES 12, 14 & 16), STEEL SHALL BE ASTM A466 GRADE D, OR ASTM A570 GRADE E, WITH MIN YIELD STRESS 50 KSI. FOR 43, 33 & 27 MIL THICKNESS (GAGES 18, 20 & 22), STEEL SHALL BE ASTM A446 GRADE A, OR ASTM A570 GRADE C, WITH MIN YIELD STRESS OF 33 KSI. ALL TRACKS, BRIDGING, STRAPS, ETC ARE TO BE FORMED FROM STEEL OF THE SAME THICKNESS OF STUDS OR JOISTS TO WHICH THEY ARE ATTACHED, UNLESS NOTED OTHERWISE.

ALL STEEL STUDS AND JOISTS ARE SPECIFIED WITH A FOUR PART IDENTIFICATION CODE THAT IDENTIFIES THE SIZE, STYLE AND STEEL THICKNESS OF EACH MEMBER. A MEMBER NOTED AS "600S162-54" HAS THE FOLLOWING PROPERTIES:

"600" - MEMBER DEPTH IN 1/100 INCH (6")
"S" - STYLE OF MEMBER (S = STUD/JOIST, T = TRACK, U = CHANNEL, F= FURRING CHANNEL)
"162" - MEMBER FLANGE WIDTH IN 1/100 INCH (1.625" = 1-5/8")
"33" - MIN STEEL THICKNESS IN MILS (33 MILS=0.033", 20 GA)

FASTENINGS SHALL BE AS SHOWN ON THE DRAWINGS. FASTENINGS NOT SHOWN SHALL BE AS RECOMMENDED BY THE MANUFACTURER. ALL FRAMING COMPONENTS SHALL BE CUT SQUARE FOR ATTACHMENT TO PERPENDICULAR MEMBERS. STUDS SHALL BE INSTALLED IN A MANNER THAT WILL ASSURE THAT ENDS OF THE STUDS ARE POSITIONED AGAINST THE INSIDE TRACK WEB PRIOR TO STUD AND TRACK ATTACHMENT. PROVIDE WALL BRIDGING PER MANUFACTURER'S SPECIFICATIONS AND AS SHOWN IN DRAWINGS. JOISTS SHALL BE LOCATED DIRECTLY OVER BEARING STUDS.

STUD OR JOIST SPLICES ARE NOT PERMITTED AND STUD OR JOIST FLANGES ARE NOT TO BE CUT UNDER ANY CIRCUMSTANCES. PROVIDE LATERAL BRACING AT 2'-6" OC FOR ANY STUD WITHOUT GYPSUM WALLBOARD OR SHEATHING ON BOTH FLANGES IN AREAS WITHOUT SUCH WALL COVERINGS. LATERAL BRACING TO BE HORIZONTAL CHANNEL OR CUT TRACK AND STRAP TYPE.

ALL CONNECTIONS SHALL BE WELDED, SCREWED OR POWDER FASTENED AS INDICATED.

WELDS - WELDING PER AWS D1.3 AND AISI SPECIFICATION. MINIMUM WELDS 1/8" CONTINUOUS FILLET. WELDERS CERTIFIED PER AWS SPECIFICATIONS FOR ROD AND POSITION. ALL WELDS SHALL BE CLEANED AND COATED WITH RUST INHIBITIVE ZINC PAINT.

SCREWS #10 SELF DRILLING SCREWS MANUFACTURED BY GRABBER OR HILTI AND INSTALLED PER THE FASTENER MANUFACTURER'S SPECIFICATIONS. MINIMUM 1/2" LENGTH FOR LIGHT GAGE TO LIGHT GAGE CONNECTIONS, AND MINIMUM 1 1/2 ' LENGTH FOR LIGHT GAGE TO TIMBER CONNECTIONS. SCREWS SHALL BE SPACED A MINIMUM OF 1/2" BETWEEN ADJACENT SCREWS AND FROM THE METAL EDGES.

POWDER ACTUATED FASTENERS - 0.138 MINIMUM SHANK DIAMETER, MANUFACTURED BY POWERS FASTENERS, ITW RED HEAD OR HILTI AND INSTALLED PER THE FASTENER MANUFACTURER'S SPECIFICATIONS. ICC CERTIFICATION REQUIRED.

PROVIDE MINIMUM 1 1/4" LONG POWDER ACTUATED FASTENER FOR LIGHT GAGE CONNECTIONS TO CONCRETE. POWDER ACTUATED FASTENERS IN CONCRETE SHALL BE SPACED A MINIMUM Of 4" BETWEEN ADJACENT POWDER ACTUATED FASTENER AND A MINIMUM OF 3" FROM CONCRETE EDGES. MINIMUM POWDER ACTUATED FASTENER EMBEDMENT IN CONCRETE SHALL BE 1 1/8".

PROVIDE MINIMUM 1/2" LONG POWDER ACTUATED FASTENER WITH KNURLED SHANKS FOR LIGHT GAGE CONNECTIONS TO STRUCTURAL STEEL. POWDER ACTUATED FASTENERS SHALL BE SPACED A MINIMUM OF 1 1 /2" BETWEEN ADJACENT POWDER ACTUATED FASTENER IN STRUCTURAL STEEL AND A MINIMUM 1/2" FROM STEEL EDGES. THE POWDER ACTUATED FASTENER POINT SHALL BE DRIVEN COMPLETELY THROUGH THE BACK SIDE OF THE STRUCTURAL STEEL MEMBER.

MASONRY ANCHORS - 1/4" DIAMETER x 2" LONG SELF DRILLING SCREW ANCHORS, TAPCON BY ITW BUILDEX OR KWIK-CON II BY HILTI AND INSTALLED PER THE FASTENER MANUFACTURER'S SPECIFICATIONS FOR LIGHT GAGE CONNECTIONS TO CONCRETE MASONRY. ICC CERTIFICATION REQUIRED.

DRIVE-IN EXPANSION ANCHORS (MUSHROOM HEAD) - 1/4" DIAMETER 1 1/4" LONG ZAMAC HAMMER-SCREW BY POWERS FASTENERS, METAL HIT BY HILTI, OR HAMMER SET BY ITW RED HEAD AND INSTALLED PER THE MANUFACTURER'S SPECIFICATIONS. ANCHORS IN CONCRETE SHALL BE SPACED A MINIMUM OF 4" BETWEEN ADJACENT ANCHORS AND A MINIMUM OF 3" FROM CONCRETE EDGES. MINIMUM ANCHOR EMBEDMENT IN CONCRETE SHALL BE 1 1/8". ICC CERTIFICATION REQUIRED.

EXPANSION ANCHORS - PROVIDE MINIMUM 3/8" DIAMETER KWIK BOLT TZ EXPANSION ANCHORS BY HILTI OR EQUAL WITH A MINIMUM 2 1/2" EMBEDMENT INTO CONCRETE. MINIMUM SPACING BETWEEN ADJACENT EXPANSION ANCHORS TO BE 5". EXPANSION ANCHORS SHALL BE LOCATED A MINIMUM Of 3" FROM CONCRETE EDGES. USE OVERSIZE WASHERS FOR ATTACHING LIGHT GAGE WITH EXPANSION ANCHORS. INSTALL PER THE MANUFACTURER'S SPECIFICATIONS FOR LIGHT GAGE CONNECTIONS TO CONCRETE. ICC CERTIFICATION REQUIRED.

ALL MEMBERS SHALL BE CUT SQUARELY FOR ATTACHMENT TO PERPENDICULAR MEMBERS OR SLOPE CUT AS REQUIRED FOR AN ANGULAR FIT AGAINST ABUTTING MEMBERS.

FIELD CUTTING OF LIGHT GAGE MEMBERS SHALL BE DONE BY SAWING OR SHEARING. TORCH CUTTING OF LIGHT GAGE MEMBERS IS NOT PERMITTED.

DO NOT CUT OR SPLICE LIGHT GAGE FRAMING MEMBERS UNLESS OTHERWISE NOTED.

DO NOT BEAR OR CONNECT LIGHT GAGE MEMBERS WITHIN TWELVE INCHES OF THE PUNCHED OPENINGS IN THE MEMBER WEBS UNLESS THE MEMBERS ARE REINFORCED WITH A MINIMUM 12" LONG UNPUNCHED TRACK OR STUD AT THE PUNCH OPENING. THE TRACK OR STUD REINFORCING PIECE SHALL BE THE SAME SIZE AND GAGE AS THE PUNCHED MEMBER. FASTEN THE REINFORCING PIECE TO THE MEMBER WITH A MINIMUM Of FOUR SCREWS.

ADDITIONAL TEMPORARY BRACING AND SHORING SHALL BE PROVIDED AS REQUIRED TO STABILIZE THE FRAMING AND TO SUPPORT CONSTRUCTION LOADS. TEMPORARY BRACING SHALL REMAIN IN PLACE UNTIL PERMANENT BRACING IS INSTALLED AND/OR ADDITIONAL CONSTRUCTION LOADS ARE REMOVED.

THE CONTRACTOR SHALL PROVIDE LIGHT GAGE MEMBERS AT THE SIZE AND SPACING INDICATED ON THESE DRAWINGS. LARGER SIZES AND/OR CLOSER SPACING MAY BE SUBSTITUTED PROVIDED THE SUBSTITUTIONS ARE COORDINATED WITH THE PROJECT ARCHITECTURAL AND STRUCTURAL DRAWINGS.

SHEATHING ON THE LIGHT GAGE FRAMING SHALL BE INSTALLED AS INDICATED IN THE PROJECT CONSTRUCTION DOCUMENTS AND SPECIFICATIONS AND PER ASTM C385.

ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH OSHA STANDARDS.

LIGHT GAGE JOISTS, RAFTERS AND TRUSSES SHALL ALIGN OVER BEARING WALL STUDS UNLESS DETAILED OTHERWISE.

HORIZONTAL BRACING SHALL BE PROVIDED WHERE GYPBOARD OR SHEATHING IS ABSENT ON ONE OR MORE SIDES OF WALL.

EXISTING STRUCTURE:

EXISTING STRUCTURAL DIMENSIONS AND MEMBER SIZES ARE FOR REFERENCE ONLY. CONTRACTOR SHALL VERIFY ALL DIMENSIONS IN THE FIELD PRIOR TO FABRICATION. THE CONTRACTOR SHALL VERIFY THE ACTUAL CONFIGURATION OF EXISTING CONSTRUCTION AND THE CONDITION OF THE STRUCTURE BEFORE BEGINNING WORK. ANY DISCREPANCIES OR UNSOUND CONDITIONS SHALL BE REPORTED TO THE ENGINEER FOR RESOLUTION BEFORE BEGINNING WORK. REFER TO MECHANICAL AND ELECTRICAL PLANS FOR EXISTING DUCTS, PIPING, EMBEDMENTS, AND OPENINGS NOT SHOWN.

MISCELLANEOUS:

CONTRACTOR SHALL BE RESPONSIBLE FOR ALL REQUIRED SAFETY PRECAUTIONS AND THE METHODS, TECHNIQUES, AND SEQUENCES OR PROCEDURES REQUIRED TO PERFORM THE WORK. IF ANY ERROR OR OMISSION APPEARS IN THESE DRAWINGS, SPECIFICATIONS, OR OTHER DOCUMENTS, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT IN WRITING OF SUCH OMISSION OR ERROR BEFORE PROCEEDING WITH THE WORK, OR ACCEPT FULL RESPONSIBILITY FOR THE COST TO RECTIFY THE SAME.

THE ENGINEER HAS NOT BEEN RETAINED TO PROVIDE DESIGN AND/OR CONSTRUCTION REVIEW SERVICES RELATED TO THE CONTRACTOR'S SAFETY PRECAUTIONS OR THE MEANS, METHODS, TECHNIQUES, SEQUENCES OR PROCEDURES FOR THE CONTRACTOR TO PERFORM THEIR WORK.

VERIFY AND COORDINATE OPENINGS IN FLOORS, WALLS AND ROOF WITH THE ARCHITECTURAL DRAWINGS. REFER TO ARCHITECTURAL DRAWINGS FOR OTHER WALLS, FINISHES, AND DIMENSIONS. REFER TO MECHANICAL AND ELECTRICAL DRAWINGS FOR SIZE AND LOCATION OF DUCT OPENINGS, PIPING, CONDUITS, ETC, NOT SHOWN.

SHOP DRAWINGS SHALL BE SUBMITTED AND REVIEWED PRIOR TO FABRICATION.

REFER TO THE PRODUCT SPECIFICATIONS ISSUED AS PART OF THE CONTRACT DOCUMENTS FOR INFORMATION SUPPLEMENTAL TO THESE STRUCTURAL DRAWINGS.

REFER TO THE ARCHITECTURAL, STRUCTURAL, MECHANICAL, ELECTRICAL, CIVIL AND PLUMBING DRAWINGS FOR ADDITIONAL INFORMATION INCLUDING BUT NOT LIMITED TO: DIMENSIONS, ELEVATIONS, SLOPES, DOOR AND WINDOW OPENINGS, NON-BEARING WALLS, STAIR, FINISHES, DRAIN, WATERPROOFING, RAILINGS, CURTAIN WALLS, ELEVATORS, CURBS, DEPRESSIONS, MECHANICAL UNIT LOCATIONS, AND OTHER NONSTRUCTURAL ITEMS.

THE STRUCTURAL DRAWINGS ARE INTENDED TO SHOW THE GENERAL CHARACTER AND EXTENT OF THE PROJECT AND ARE NOT INTENDED TO SHOW ALL DETAILS OF THE WORK.

THE STRUCTURAL ENGINEER (SER) IS RESPONSIBLE FOR THE STRENGTH AND STABILITY OF THE MAIN STRUCTURE AND CONNECTIONS TO THE WOOD MODULAR STRUCTURE. THE SSE IS RESPONSIBLE FOR THE STRENGTH AND STABILITY OF THE WOOD MODULAR STRUCTURE IN ITS COMPLETED FORM.

THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING DETAILS AND ACCURACY OF THE WORK; FOR THE TECHNIQUES OF ASSEMBLY; AND FOR PERFORMING WORK IN A SAFE AND SECURE MANNER.

THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING PRE-CONSTRUCTION MEETINGS PRIOR TO COMMENCING WORK. PRE-CON MEETINGS, SCHEDULED APPROXIMATELY TWO WEEKS PRIOR TO THE START OF THE RELEVANT WORK, ARE REQUIRED FOR THE FOLLOWING PHASES OF CONSTRUCTION: STRUCTURAL STEEL, WOOD MODULAR INSTALLATION. ATTENDEES FOR PRE-CONSTRUCTION MEETING ARE TO INCLUDE CONTRACTOR, RELEVANT SUBCONTRACTORS, FABRICATORS, INSPECTORS, ARCHITECT/ENGINEER, AND REPRESENTATIVE OF THE AUTHORITY HAVING JURISDICTION WHERE REQUIRED. MEETING AGENDAS ARE TO INCLUDE REVIEW OF THE WORK SCOPE, PROJECT SCHEDULE RELEVANT TO THE WORK, CONTACT INFORMATION OF RESPONSIBLE PARTIES, INSPECTION POINTS, REVIEW OF MATERIAL AND ANY SPECIAL CASES OR ISSUES, PROCEDURES FOR CLARIFICATIONS IS REQUIRED, TESTING AND ACCEPTANCE, ETC.

THE CONTRACTOR IS RESPONSIBLE FOR THE MEANS AND METHODS OF CONSTRUCTION AND ALL JOB RELATED SAFETY STANDARDS SUCH AS OSHA AND DOSH (DEPARTMENT OF OCCUPATIONAL SAFETY AND HEALTH). CONTRACTOR IS RESPONSIBLE TO ADHERE TO OSHA REGULATIONS REGARDING STEEL ERECTION ITEMS SPECIFICALLY ADDRESSED IN THE LATEST OSHA REGULATIONS. BOLTING AND FIELD WELDING AT ALL MEMBER CONNECTION IS TO BE COMPLETED PRIOR TO THE RELEASE OF THE MEMBER FROM THE HOISTING MECHANISM UNLESS REVIEWED AND APPROVED BY THE GENERAL CONTRACTOR'S TEMPORARY BRACING AND SHORING DESIGN ENGINEER.

THE CONTRACTOR SHALL AT HIS DISCRETION EMPLOY AN SSE, A REGISTERED PROFESSIONAL ENGINEER FOR THE DESIGN OF ANY TEMPORARY BRACING AND SHORING. SUBMIT CONSTRUCTION SEQUENCE TO ARCHITECT/ENGINEER FOR REVIEW.

THE CONTRACTOR IS RESPONSIBLE FOR THE STRENGTH AND STABILITY OF THE STRUCTURE DURING CONSTRUCTION AND SHALL PROVIDE TEMPORARY SHORING, BRACING AND OTHER ELEMENTS REQUIRED TO MAINTAIN STABILITY UNTIL THE STRUCTURE IS COMPLETE. IT IS THE CONTRACTORS RESPONSIBILITY TO BE FAMILIAR WITH THE WORK REQUIRED IN THE CONSTRUCTION DOCUMENTS AND THE REQUIREMENTS FOR EXECUTING IT PROPERLY.

LOADS ON THE STRUCTURE DURING CONSTRUCTION SHALL NOT EXCEED THE DESIGN LOADS AS NOTED IN DESIGN CRITERIA & LOADS BELOW OR THE CAPACITY OF PARTIALLY COMPLETED CONSTRUCTION AS DETERMINED BY THE CONTRACTOR'S SSE FOR BRACING/SHORING.

THE CONTRACTOR HAS THE RESPONSIBILITY TO NOTIFY THE SER OF ANY ARCHITECTURAL, MECHANICAL, ELECTRICAL OR PLUMBING LOAD IMPOSED ONTO THE STRUCTURE THAT DIFFERS FROM, OR THAT IS NOT DOCUMENTED ON THE ORIGINAL CONTRACT DOCUMENTS (ARCHITECTURAL / STRUCTURAL / MECHANICAL / ELECTRICAL AND PLUMBING DRAWINGS). PROVIDE DOCUMENTATION OF LOCATION, LOAD, SIZE, AND ANCHORAGE OF ALL UNDOCUMENTED LOADS IN EXCESS OF 400 POUNDS. PROVIDE MARKED-UP STRUCTURAL PLAN INDICATING LOCATIONS OF ANY NEW EQUIPMENT OR LOADS. SUBMIT PLANS TO THE ARCHITECT/ENGINEER FOR REVIEW PRIOR TO INSTALLATION.

PLAN AND DETAIL NOTES AND SPECIFIC LOADING DATA PROVIDED ON INDIVIDUAL PLANS DETAIL DRAWINGS SUPPLEMENTS INFORMATION IN THE STRUCTURAL GENERAL NOTES.

IN CASE OF DISCREPANCIES BETWEEN THE GENERAL NOTES, SPECIFICATIONS PLAN/DETAIL OR REFERENCE STANDARDS, THE ARCHITECT/ENGINEER SHALL DETERMINE WHICH SHALL GOVERN. DISCREPANCIES SHALL BE BROUGHT THE ATTENTION OF THE ARCHITECT/ENGINEER BEFORE PROCEEDING WITH WORK. SHOULD ANY DISCREPANCY BE FOUND IN THE CONTROL DOCUMENTS, THE CONTRACTOR WILL BE DEEMED TO HAVE INCLUDED IN THE PRICE THE MOST EXPENSIVE WAY OF COMPLETING THE WORK, UNLESS PRIOR TO THE SUBMISSION OF THE PRICE, THE CONTRACTOR ASKS FOR A DECISION FROM THE ARCHITECT AS TO WHICH SHALL GOVERN. ACCORDINGLY, ANY CONFLICT OR BETWEEN THE CONTRACT DOCUMENTS SHALL NOT BE A BASIS FOR ADJUSTMENT IN THE CONTRACT PRICE.

THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS AT THE SITE. CONFLICT BETWEEN THE DRAWINGS AND ACTUAL SITE CONDITIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT/ENGINEER BEFORE PROCEEDING WITH THE WORK.

THE CONTRACTOR SHALL DETERMINE THE LOCATION OF ALL ADJACENT UNDERGROUND UTILITIES PRIOR TO EARTHWORK, FOUNDATIONS, SHORING, AND EXCAVATION. ANY UTILITY INFORMATION SHOWN ON THE DRAWINGS AND DETAIL IS APPROXIMATE AND NOT NECESSARILY COMPLETE.

ALTERNATE PRODUCTS OF SIMILAR STRENGTH, NATURE AND FORM FOR SPECIFIED ITEMS MAY BE SUBMITTED WITH ADEQUATE TECHNICAL DOCUMENTATION TO THE ARCHITECT/ENGINEER FOR REVIEW. ALTERNATE MATERIALS THAT ARE SUBMITTED WITHOUT ADEQUATE TECHNICAL DOCUMENTATION OR THAT SIGNIFICANTLY DEVIATE FROM THE DESIGN INTENT OF MATERIALS SPECIFIED MAY BE RETURNED WITHOUT REVIEW. ALTERNATES THAT REQUIRE SUBSTANTIAL EFFORT TO REVIEW WILL NOT BE REVIEWED UNLESS AUTHORIZED BY THE OWNER.

DISCLAIMER:

THESE DESIGN DRAWINGS ARE THE PROPERTY OF ABKJ, INC, AND HAVE BEEN PREPARED SPECIFICALLY FOR THIS PROJECT IN ACCORDANCE WITH GENERALLY ACCEPTED STRUCTURAL ENGINEERING PRACTICES.

IT IS INTENDED FOR THE EXCLUSIVE USE OF THIS PROJECT ONLY. ABKJ DOES NOT GUARANTEE PROJECT PERFORMANCE IN ANY RESPECT, ONLY THAT THE WORK MEETS NORMAL STANDARDS OF PROFESSIONAL CARE. NO OTHER WARRANTY, EXPRESSED OR IMPLIED, IS PROVIDED.

SUBMITTALS:

SUBMIT FOR REVIEW:

SUBMITTALS OF SHOP DRAWINGS, AND PRODUCT DATA AND MILL TESTS ARE REQUIRED FOR ITEMS NOTED IN THE INDIVIDUAL MATERIALS SECTIONS AND FOR BIDDER-DESIGNED ELEMENTS.

SHOP DRAWINGS SHALL BE SUBMITTED TO THE ARCHITECT PRIOR TO ANY FABRICATION OR CONSTRUCTION AND PRIOR TO SUBMISSION TO THE AHJ FOR APPROVAL FOR ALL STRUCTURAL ITEMS INCLUDING THE FOLLOWING:

- CONCRETE MIX DESIGNS
- PRECAST CONCRETE
- EMBEDDED STEEL ITEMS
- FIBER REINFORCED PLASTIC COMPOSITES
- METAL GRATINGS
- ROOF-MOUNTED COMPONENTS: SKYLIGHTS, HATCHES
- HANDRAILS, GUARDRAILS, AND BALCONY RAIL ANCHORAGES
- EXTERIOR SIGNAGE
- CANVAS AWNINGS
- TEMPORARY SHORING SYSTEMS
- METAL DECK EDGE FORMS
- MECHANICAL, ELECTRICAL, PLUMBING AND SPRINKLER HANGER PLANS

IF THE SHOP DRAWINGS DIFFER FROM OR ADD TO THE DESIGN OF THE STRUCTURAL DRAWINGS, THEY SHALL BEAR THE SEAL AND SIGNATURE OF THE [STATE] STATE REGISTERED STRUCTURAL ENGINEER WHO IS RESPONSIBLE FOR THE DESIGN.

DESIGN DRAWINGS AND CALCULATIONS OR SHOP DRAWINGS FOR THE DESIGN AND FABRICATION OF ITEMS THAT ARE DESIGNED BY OTHERS, SUCH AS STAIRS OR SKYLIGHT FRAMING, SHALL BEAR THE SEAL AND SIGNATURE OF THE [STATE] STATE REGISTERED STRUCTURAL ENGINEER WHO IS RESPONSIBLE FOR THE DESIGN AND SHALL BE SUBMITTED TO THE ARCHITECT AND THE AUTHORITY HAVING JURISDICTION FOR REVIEW PRIOR TO FABRICATION. SUBMITTED CALCULATIONS ARE FOR INFORMATION ONLY AND WILL NOT BE STAMPED OR RETURNED.

SUBMITTAL REVIEW PERIOD:

SUBMITTALS SHALL BE MADE IN TIME TO PROVIDE A MINIMUM OF TWO WEEKS FOR REVIEW BY THE ARCHITECT/ENGINEER PRIOR TO THE ONSET OF FABRICATION.

GENERAL CONTRACTOR'S PRIOR REVIEW:

PRIOR TO SUBMISSION TO THE ARCHITECT/ENGINEER, THE CONTRACTOR SHALL REVIEW THE SUBMITTAL FOR COMPLETENESS. DIMENSIONS AND QUANTITIES ARE NOT REVIEWED BY THE SER, AND THEREFORE, MUST BE VERIFIED BY THE GENERAL CONTRACTOR. CONTRACTOR SHALL PROVIDE ANY NECESSARY DIMENSIONAL DETAILS REQUESTED BY THE DETAILER AND PROVIDE THE CONTRACTOR'S REVIEW STAMP AND SIGNATURE BEFORE FORWARDING TO THE ARCHITECT/ENGINEER.

SHOP DRAWING REVIEW:

ONCE THE CONTRACTOR HAS COMPLETED HIS REVIEW, THE SER WILL REVIEW THE SUBMITTAL FOR GENERAL CONFORMANCE WITH THE DESIGN CONCEPT AND THE CONTRACT DOCUMENTS OF THE BUILDING AND WILL STAMP THE SUBMITTAL ACCORDINGLY. MARKINGS OR COMMENTS SHALL NOT BE CONSTRUED AS RELIEVING THE CONTRACTOR FROM COMPLIANCE WITH THE PROJECT PLANS AND SPECIFICATIONS, NOR DEPARTURES THERE FROM. THE SER WILL RETURN SUBMITTALS IN THE FORM THEY ARE SUBMITTED IN (EITHER HARD COPY OR ELECTRONIC). FOR HARD COPY SUBMITTALS, THE CONTRACTOR IS RESPONSIBLE FOR SUBMITTING THE REQUIRED NUMBER OF COPIES TO THE SER FOR REVIEW.

SHOP DRAWING DEVIATIONS:

WHEN SHOP DRAWINGS (COMPONENT DESIGN DRAWINGS) DIFFER FROM OR ADD TO THE REQUIREMENTS OF THE STRUCTURAL DRAWINGS, THEY SHALL BE DESIGNED AND STAMPED BY THE RESPONSIBLE SSE.

SPECIAL INSPECTIONS:

SPECIAL INSPECTIONS SHALL MEET THE REQUIREMENTS OF IBC CHAPTER 17.

INSPECTION NOTES:

THE CONSTRUCTION INSPECTIONS LISTED ARE IN ADDITION TO THE CALLED INSPECTIONS REQUIRED BY SECTION 110 OF THE INTERNATIONAL BUILDING CODE. SPECIAL INSPECTION IS NOT A SUBSTITUTE FOR INSPECTION BY A CITY INSPECTOR. SPECIALLY INSPECTED WORK WHICH IS INSTALLED OR COVERED WITHOUT THE APPROVAL OF THE CITY INSPECTOR IS SUBJECT TO REMOVAL OR EXPOSURE.

CONTINUOUS INSPECTION IS REQUIRED DURING THE PERFORMANCE OF THE WORK WHERE REQUIRED BY THE BUILDING CODE/LOCAL

JURISDICTION/MANUFACTURER'S REQUIREMENTS UNLESS OTHERWISE SPECIFIED.

THE SPECIAL INSPECTOR MUST BE CERTIFIED TO PERFORM THE TYPES OF INSPECTION SPECIFIED AND SHALL DEMONSTRATE COMPETENCE TO THE SATISFACTION OF THE BUILDING OFFICIAL.

IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO INFORM THE SPECIAL INSPECTOR OR INSPECTION AGENCY AT LEAST ONE WORKING DAY BEFORE PERFORMING ANY WORK THAT REQUIRES SPECIAL INSPECTION. ALL WORK PERFORMED WITHOUT THE REQUIRED SPECIAL INSPECTION IS SUBJECT TO REMOVAL.

SPECIAL INSPECTORS SHALL:

BE UNDER THE SUPERVISION OF A [STATE] STATE REGISTERED CIVIL ENGINEER.

OBSERVE THE WORK ASSIGNED FOR CONFORMANCE WITH APPROVED DRAWINGS AND SPECIFICATIONS.

FURNISH INSPECTION REPORTS TO THE BUILDING DEPARTMENT AND ENGINEER. DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION; THEN, IF NOT CORRECTED, TO THE BUILDING DEPARTMENT AND ENGINEER.

SUBMIT A FINAL REPORT, SIGNED BY A [STATE] STATE REGISTERED CIVIL ENGINEER, STATING THE WORK WAS IN CONFORMANCE WITH THE APPROVED DRAWINGS AND SPECIFICATIONS AND THE APPLICABLE WORKMANSHIP PROVISIONS OF THE IBC.

SPECIAL INSPECTIONS REQUIRED:

SOILS/FOUNDATIONS:

PERIODIC INSPECTION OF SOILS EARTHWORK PER TABLE 1705.6 IS REQUIRED FOR:

- FOOTING SOIL BEARING SURFACES PRIOR TO PLACING ANY REINFORCING STEEL.
- EXCAVATION DEPTH AND BEARING LAYER PRIOR TO PLACING ANY REINFORCING STEEL.
- COMPACTED FILL MATERIAL CLASSIFICATION.
- SUBGRADE PREPARATION PRIOR TO FILLING.

CONTINUOUS INSPECTION PER TABLE(S) 1705.6, 1705.7 AND 1705.8 REQUIRED FOR:

- FILLING OPERATIONS TO SATISFY REQUIREMENTS OF IBC TABLE 1705.6 AND THE GEOTECHNICAL REPORT LISTED UNDER SOILS FOUNDATIONS SECTION.
- COMPACTED FILL DENSITY TESTING OF EACH LIFT, PROPER LIFT THICKNESS.
- DRIVING AND TESTING OF DEEP FOUNDATIONS - STEEL PIPE, HP, PILES PER IBC SECTION & TABLE 1705.7 AND 1808.

SHOTCRETE CONSTRUCTION:

- CONTINUOUS INSPECTION REQUIRED PER IBC 1908 DURING THE:
  - SHOTCRETE PLACEMENT FOR THE PRECONSTRUCTION TEST PANEL (IF REQUIRED BY THE AHJ OR THE EOR).
  - TAKING OF CORE SPECIMENS FOR CONSTRUCTION SPECIMENS.
  - PLACING OF ALL PRODUCTION SHOTCRETE.

SHOP FABRICATIONS:

STEEL:

- AS REQUIRED BY IBC SECTION 1704.2.5.1 EXCEPT WHEN PERFORMED IN AN APPROVED SHOP.
- HIGH STRENGTH BOLTING, WELDING (EXCEPT WELDING PERFORMED IN AN APPROVED SHOP), MEMBER LAYOUT AND DETAILING, AND AS REQUIRED BY IBC SECTION 1705.2.
- AS REQUIRED BY IBC TABLE 1705.3.

CONCRETE:

- CONCRETE STRENGTH (WHERE f'c IS GREATER THAN 2,500 PSI, EXCEPT SLAB ON GRADE), SLUMP, AIR CONTENT AND MIX DESIGN AND AS REQUIRED BY IBC SECTION 1705.3.
- CONTINUOUS INSPECTION OF CONCRETE AND SHOTCRETE PLACEMENT AS REQUIRED BY ACI 318.
- CONTINUOUS INSPECTION OF APPLICATION OF PRESTRESS FORCES IN PRESTRESSED CONCRETE AS REQUIRED BY ACI 318.
- PERIODIC INSPECTION OF PLACEMENT OF REINFORCEMENT, BOLTS, EMBEDS AND PRESTRESSING TENDONS IN CONCRETE.

MISCELLANEOUS:

POST-INSTALLED ANCHORS TO CONCRETE AND MASONRY

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GREGORY J. LEE, STATE OF WASHINGTON, 47387, REGISTERED PROFESSIONAL STRUCTURAL ENGINEER

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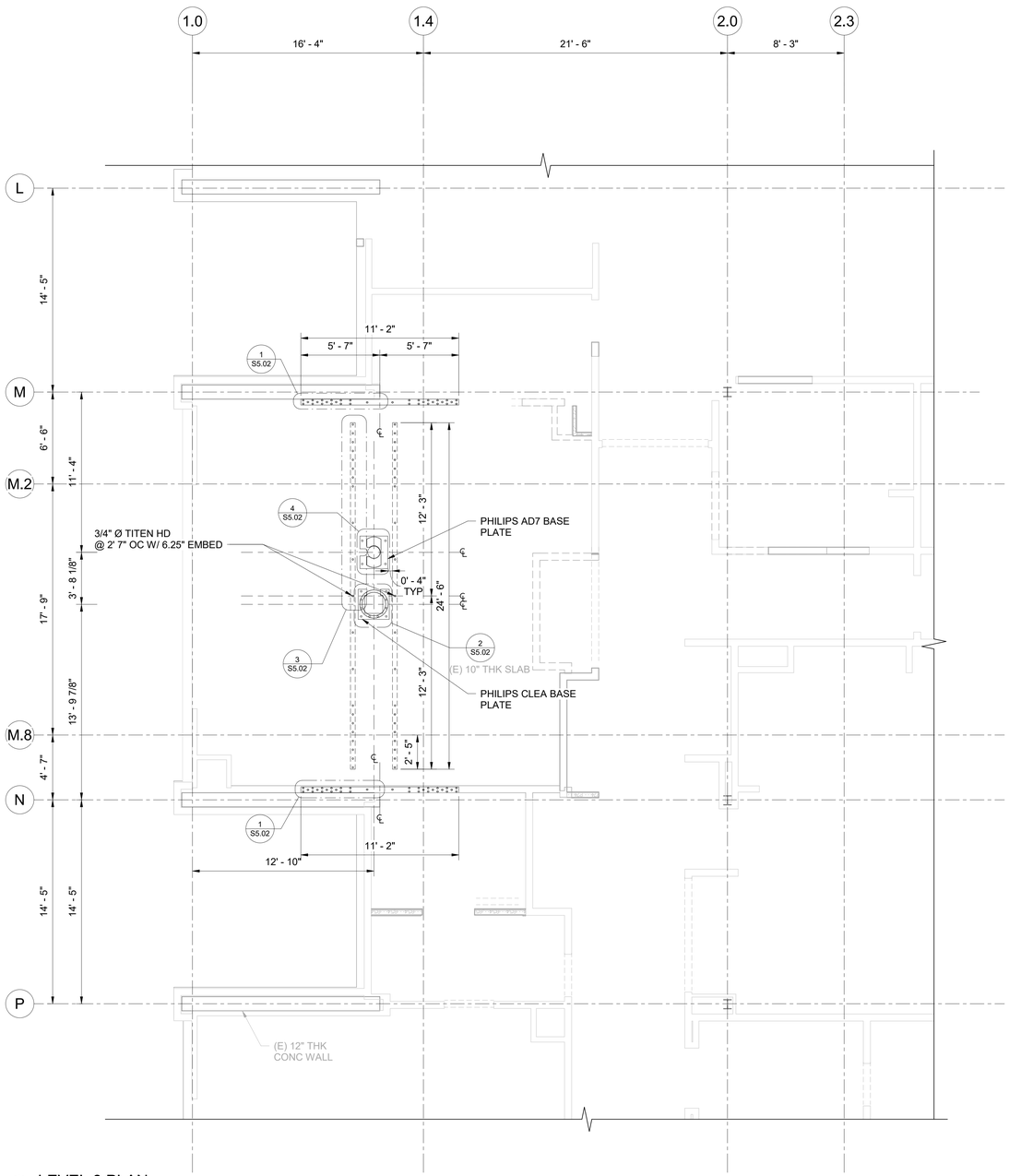
GENERAL STRUCTURAL NOTES

S0.02



1 LEVEL 2 PLAN
1/4" = 1'-0"

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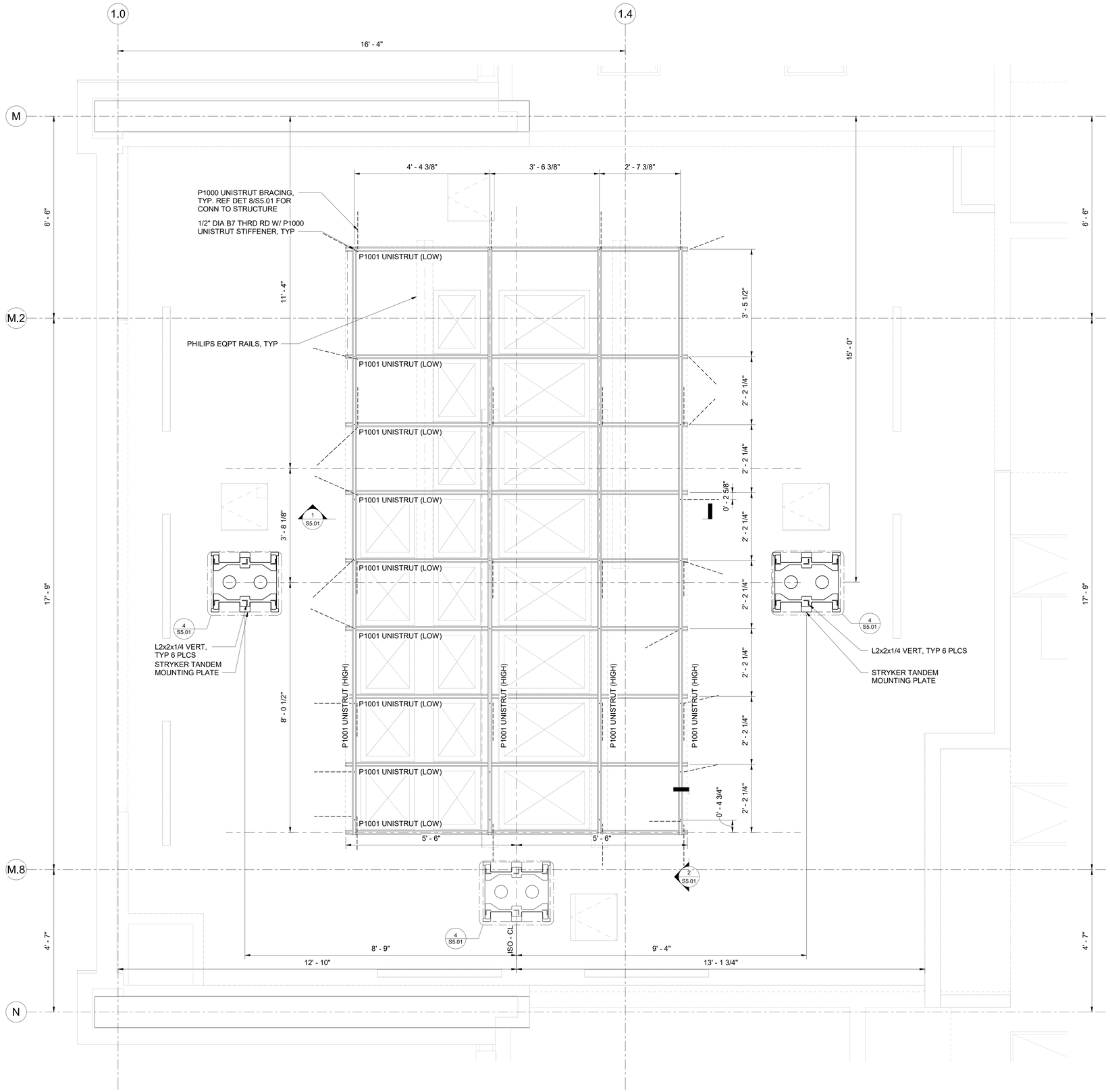
LEVEL 2 PLAN

S1.01



2 LEVEL 2 - EQUIPMENT REFLECTED CEILING PLAN
3/4" = 1'-0"

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EQUIPMENT REFLECTED CEILING PLAN

S1.01A

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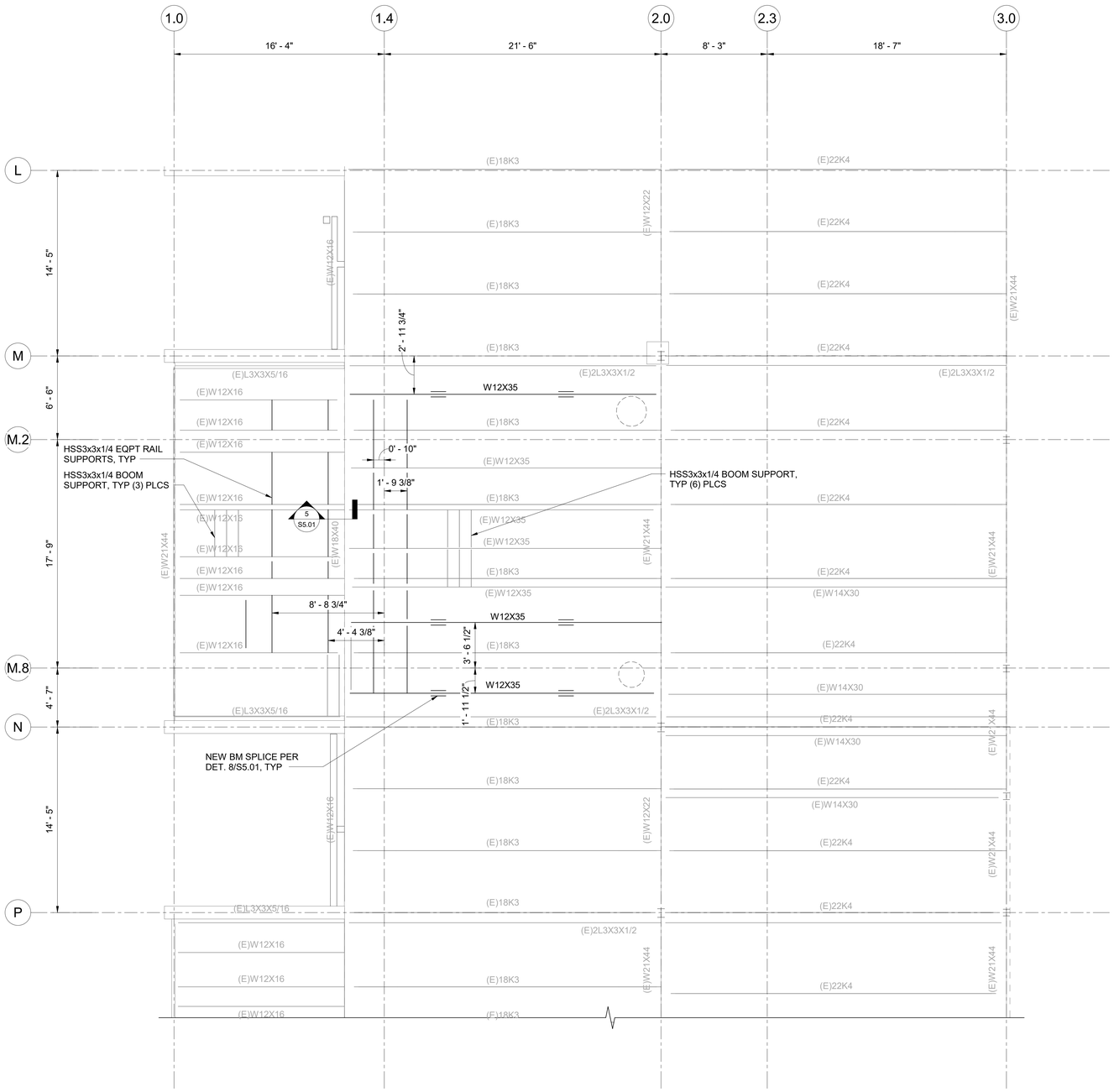

2 ROOF PLAN GRIDS M-N
1/4" = 1'-0"

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ROOF PLAN
GRIDS M-N

S1.02

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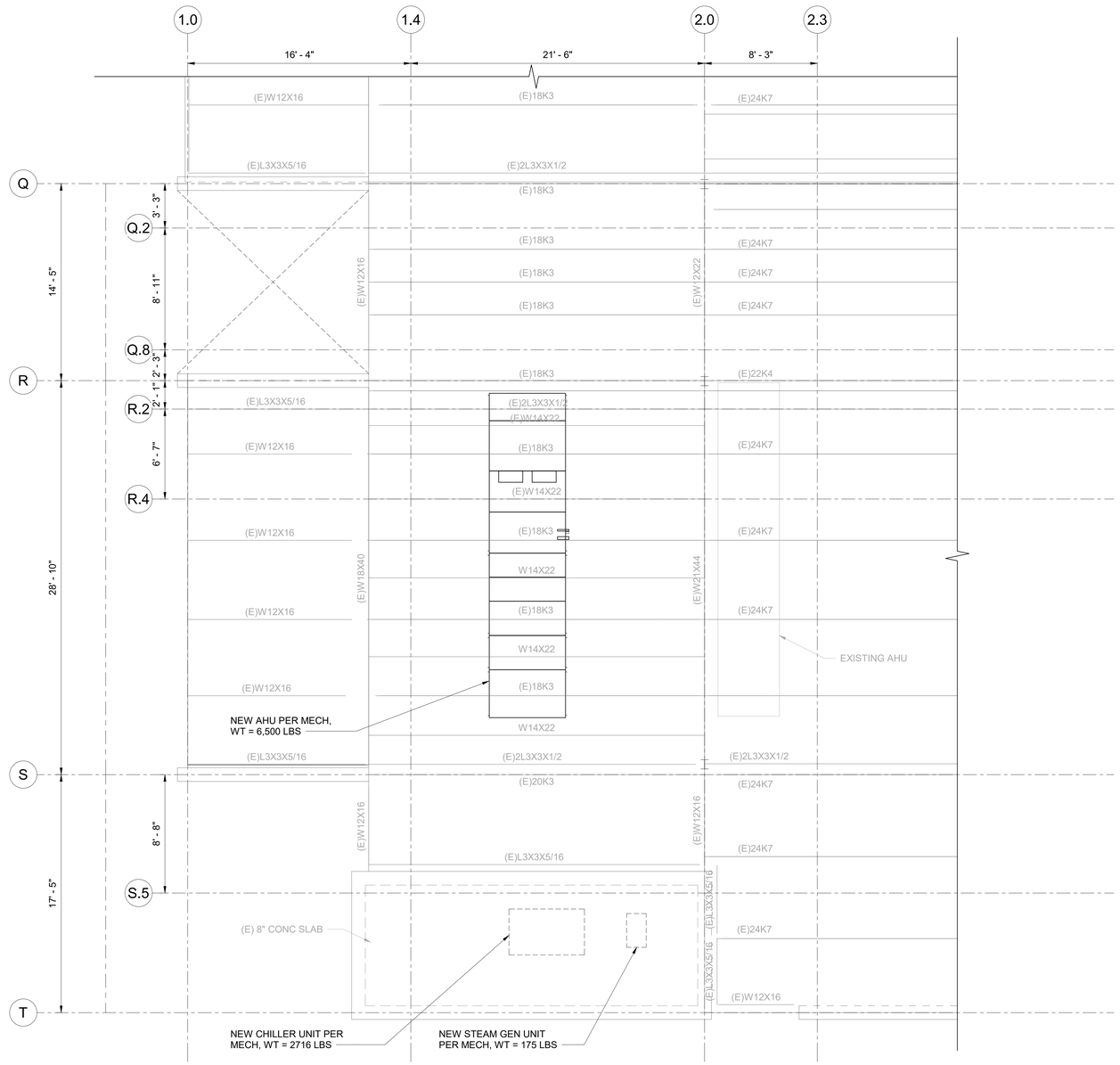

1 ROOF PLAN GRIDS Q-T
1/4" = 1'-0"

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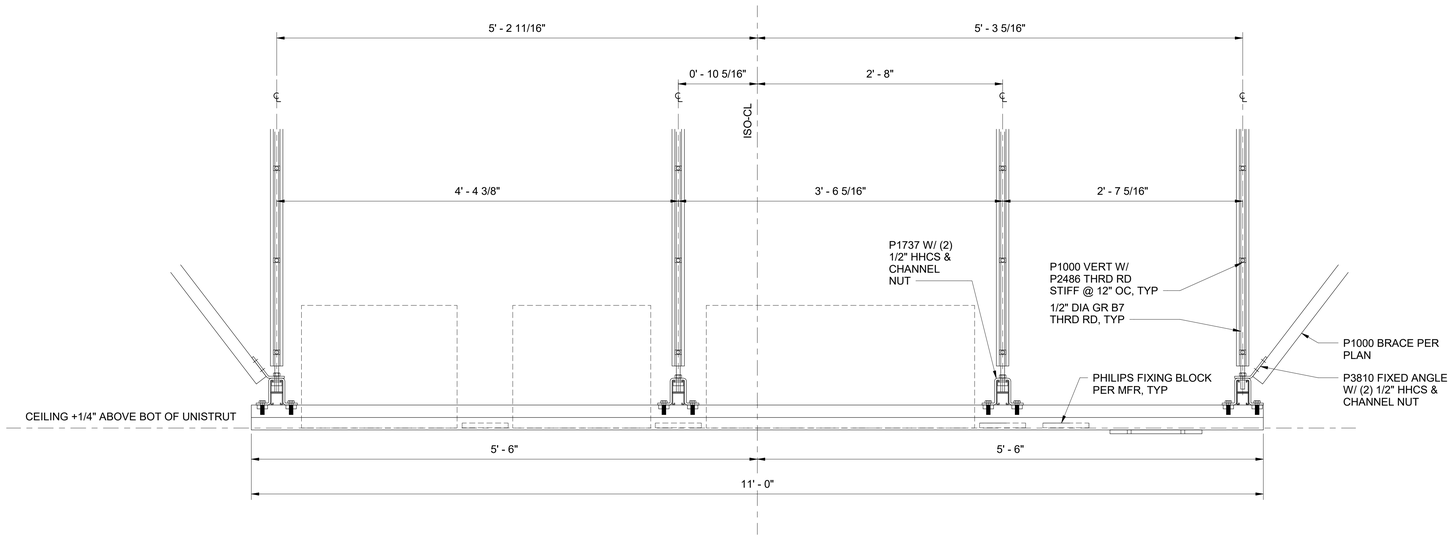
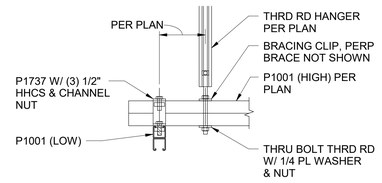
ROOF PLAN
GRIDS Q-T

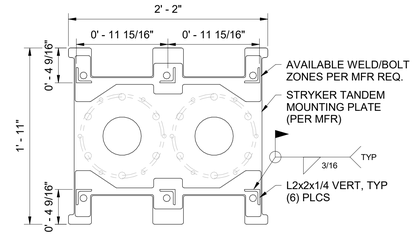
S1.03



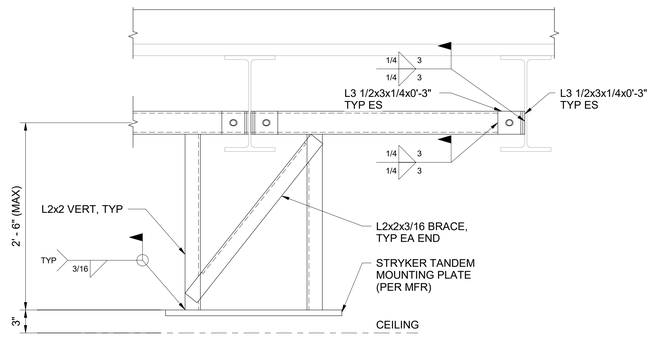
1 GSH UNISTRUT SECTION
1 1/2" = 1'-0"

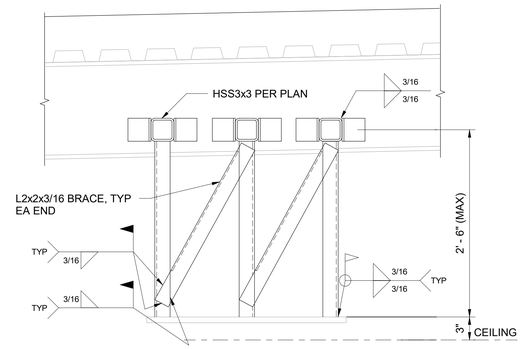


2 OFFSET ROD HANGER
1 1/2" = 1'-0"

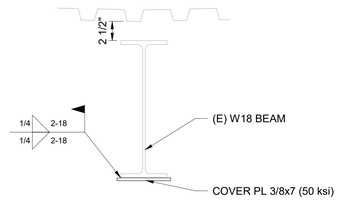


NOTE:
CONTRACTOR TO VERIFY ALL DIMENSIONS W/ VENDOR PROVIDED DRAWINGS

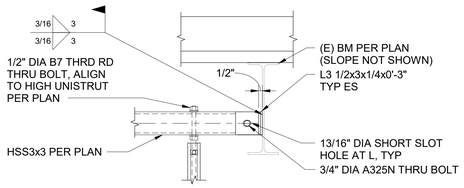




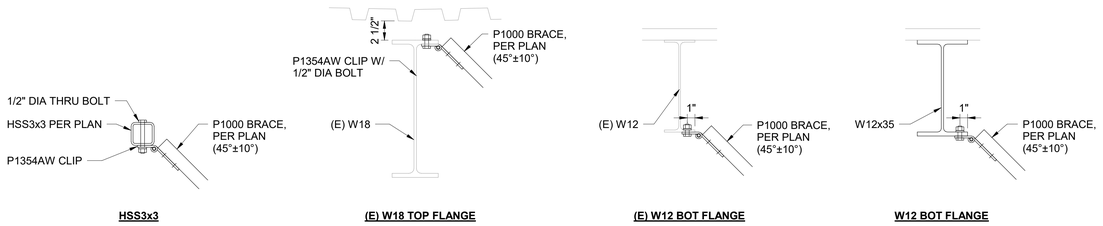
4 BOOM SUPPORT
1 1/2" = 1'-0"



5 W18 COVER PL
1 1/2" = 1'-0"



7 THRD RD CONN
1 1/2" = 1'-0"



8 UNISTRUT BRACE CONN
1 1/2" = 1'-0"

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DETAILS

S5.01

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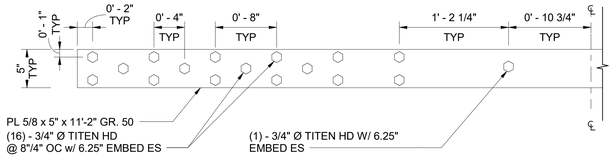
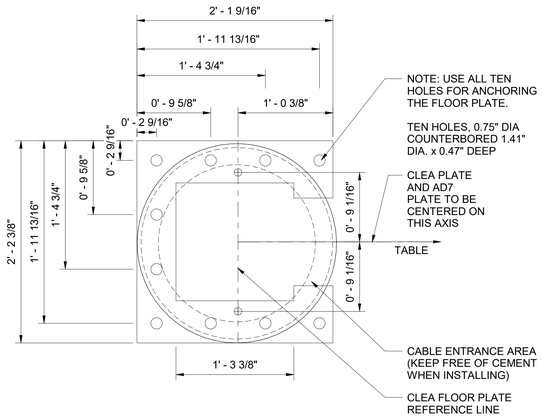
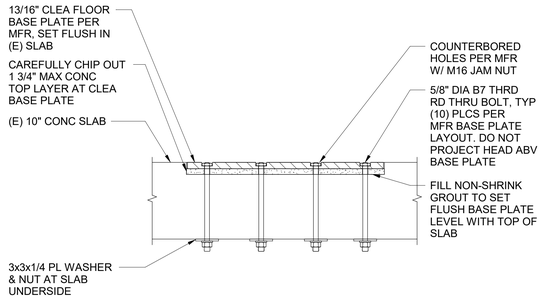


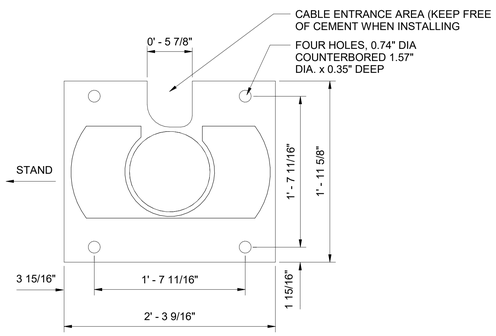
1 TOP REINF PLATE
1 1/2" = 1'-0"

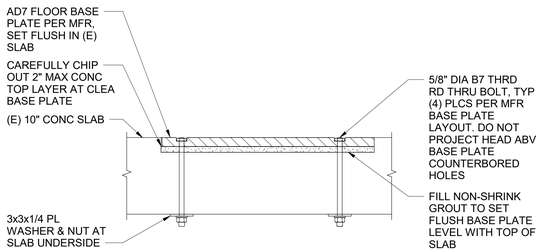




NOTE: CONTRACTOR TO SCAN ALL BOLT LOCATIONS PRIOR TO DRILLING. VERIFY ALL BASE PLATE REQUIREMENTS WITH PHILIPS DRAWINGS

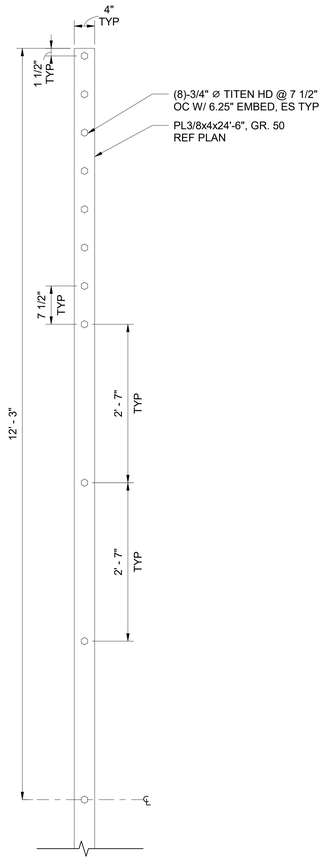
2 CLEA BASEPLATE
1 1/2" = 1'-0"





NOTE: CONTRACTOR TO SCAN ALL BOLT LOCATIONS PRIOR TO DRILLING. VERIFY ALL BASE PLATE REQUIREMENTS WITH PHILIPS DRAWINGS.

4 AD7 BASEPLATE
1 1/2" = 1'-0"



3 SLAB BOTTOM REINF PLATE
1" = 1'-0"

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