GENERAL STRUCTURAL NOTES

APPLY UNLESS NOTED OTHERWISE

BUILDING CODE:

2021 EDITION OF THE INTERNATIONAL BUILDING CODE.
2023 PIKES PEAK REGIONAL BUILDING CODE.

LOADS:

ROOF LIVE LOAD = 20 PSF (REDUCIBLE).
TOTAL ROOF DEAD LOAD = 20 PSF.
SUPERIMPOSED DEAD LOAD ON ROOF JOISTS = 17 PSF. (14 PSF TOP CHORD, 3 PSF BOTTOM CHORD)
MEZZANINE LIVE LOAD = 100 PSF (REDUCIBLE).
MEZZANINE DEAD LOAD = 68 PSF.
GROUND SNOW LOAD, Pg = 45 PSF C_e=1.0, C_t=1.0.
FLAT ROOF SNOW, Pf = 31.5 PSF LOAD.

WIND:

130 MPH BASIC WIND SPEED, (ULTIMATE) EXPOSURE C.
Iw = 1.0.
RISK CATEGORY = II.
INTERNAL PRESSURE COEFFICIENT (GCpi) = 0.18.
SEE S009 FOR COMPONENTS AND CLADDING WIND PRESSURES.

SEISMIC:

RISK CATEGORY = II.
Ie = 1.0.
DESIGN CATEGORY = B.
SITE CLASS = C.
Ss = 0.196, S1 = 0.059.
Sds = 0.17 Sd1 = 0.057.
BASIC SEISMIC – FORCE–RESISTING SYSTEM = ORDINARY REINFORCED CONCRETE SHEAR WALLS (R=4.0)
STEEL SYSTEMS NOT SPECIFICALLY DETAILED FOR SEISMIC RESISTANCE (R=3.0)
ANALYSIS PROCEDURE USED (EQUIVALENT LATERAL FORCE).
Cs = 0.043 (R = 4.0).
Cs = 0.057 (R = 3.0).
Vs = 823K (ULTIMATE).

FOUNDATIONS:

SOIL REPORT BY KUMAR AND ASSOCIATES, INC, PROJECT NO. 20–2–234; DATED DECEMBER 03, 2020; SPREAD FOOTINGS SHALL BEAR ON AT LEAST 3'–0" OF NON EXPANSIVE STRUCTURAL FILL IN ACCORDANCE WITH THE ABOVE REPORT. BOTTOM OF FOOTING TO BE 3'–0" MINIMUM BELOW FINISHED GRADE. (THESE FOOTING DEPTHS ARE MINIMUMS AND THE CONTRACTOR SHALL COORDINATE WITH SOILS REPORT AND OTHERS TRADES TO ENSURE THESE MINIMUMS ARE SUFFICIENT FOR THE WORK. FINISHED GRADE IS DEFINED AS TOP OF SLAB FOR INTERIOR FOOTINGS AND LOWEST ADJACENT GRADE WITHIN 5 FEET FOR PERIMETER FOOTINGS. (COORDINATE WITH GEOTECH REPORT) DESIGN SOIL BEARING VALUE = 2,500 PSF. FOUNDATION EXCAVATIONS SHALL BE INSPECTED BY SOILS ENGINEER PRIOR TO PLACEMENT OF CONCRETE.

CONCRETE:

MINIMUM 28 DAY STRENGTH 3,000 PSI EXCEPT AS FOLLOWS: (TYPE I/II, U.N.O.)
CONCRETE OVER STEEL DECK --4,500 PSI
CONCRETE TILT WALLS --4,500 PSI U.N.O.
SLABS ON GRADE --4,500 PSI*
FOUNDATIONS --4,500 PSI

MECHANICALLY VIBRATE ALL CONCRETE WHEN PLACED, EXCEPT THAT SLABS ON GRADE NEED BE VIBRATED ONLY AROUND UNDER–FLOOR DUCTS, ETC. MAXIMUM SLUMP 4 1/2" FOR CONCRETE WITHOUT PLASTICIZER. IF PLASTICIZER IS USED, A HIGHER FINAL SLUMP MAY BE ALLOWED UPON STRUCTURAL ENGINEER'S APPROVAL. CAST CLOSURE POUR AROUND COLUMNS AFTER COLUMN DEAD LOAD IS APPLIED. UNLESS APPROVED OTHERWISE IN WRITING BY THE ARCHITECT, ALL CONCRETE SLABS ON GRADE SHALL BE BOUND BY CONTROL JOINTS (KEYED OR SAW CUT), SUCH THAT THE ENCLOSED AREA DOES NOT EXCEED 225 SQUARE FEET. KEYED CONTROL JOINTS NEED ONLY OCCUR AT EXPOSED EDGES DURING POURING, ALL OTHER JOINTS MAY BE SAW CUT. CONTRACTOR SHALL SUBMIT PROPOSED LOCATIONS FOR APPROVAL PRIOR TO CONSTRUCTION.

*AT SLABS ON GRADE PLACED OVER VAPOR BARRIER (USE IN SHOWROOM AREAS), PROVIDE CONCRETE MIX DESIGN TO REDUCE THE EFFECTS OF SLAB CURL AND VAPOR/MOISTURE TRANSMISSION. THE USE OF FLY ASH AND SHRINKAGE REDUCING ADMIXTURES IS ENCOURAGED. PLACE SLAB REINFORCING (MIN. #3 AT 18" O.C. EACH WAY) WITHIN TOP 1/3 OF SLAB DEPTH. MAXIMUM WATER–CEMENT RATIO SHALL BE 0.45. VAPOR BARRIER SHALL BE PLACED DIRECTLY BENEATH THE SLAB ON TOP OF THE A.B.C.

SLAB CURING SHALL BE PER THE ARCHITECTURAL SPECS. AND ACI MANUAL OF CONCRETE PRACTICE. FILL/SEAL CONTROL JOINTS PER THE ARCHITECTURAL SPECIFICATIONS. CEMENTITIOUS MATERIALS AND SHALL HAVE A REPLACEMENT FACTOR OF 1.2 RELATIVE TO CEMENT REPLACED.

ALL CONCRETE SLABS OVER STEEL DECK SHALL BE BOUND BY CONTROL JOINTS (KEYED OR SAW CUT) SUCH THAT THE ENCLOSED AREA DOES NOT EXCEED 900 SQUARE FEET. CONTRACTOR SHALL SUBMIT PROPOSED LOCATIONS FOR APPROVAL PRIOR TO CONSTRUCTION.

CONTRACTOR SHALL REVIEW ARCHITECTURAL DRAWINGS AND SPECIFICATION FOR SPECIAL SLAB TREATMENTS AND VAPOR BARRIERS REQUIRED FOR FINISH FLOORING.

CONCRETE SLAB ON GRADE SHALL BE 7" THICKNESS (WAREHOUSE) AND 5" THICKNESS (SHOWROOM) W/ #3 AT 12" O.C. EACH WAY UNLESS NOTED OTHERWISE. INSTALL OVER 4" MINIMUM A.B.C. FILL. REFER TO SOILS REPORT FOR ADDITIONAL INFORMATION.

MASONRY:

MECHANICALLY VIBRATE GROUT IN VERTICAL SPACES IMMEDIATELY AFTER POURING AND AGAIN ABOUT 5 MINUTES LATER. PROVIDE CLEANOUTS IF GROUT LIFT EXCEEDS 4'–0" IN BLOCK WALLS. MAXIMUM GROUT LIFT SHALL BE 8'–0". UNLESS NOTED OTHERWISE ON THE PLANS, PLACE CONTROL JOINTS IN MASONRY WALLS SUCH THAT NO STRAIGHT RUN OF WALL EXCEEDS 24'–0". CONTROL JOINTS SHALL NOT OCCUR WITHIN 8'–0" OF WALL CORNERS, INTERSECTIONS, ENDS, WITHIN 24" OF CONCENTRATED POINTS OF BEARING OR JAMBS, OR OVER OPENINGS UNLESS SPECIFICALLY SHOWN ON THE STRUCTURAL DRAWINGS. ALL MASONRY BELOW FINISHED FLOOR OR GRADE SHALL BE GROUTED SOLID. LAP SPLICES SHALL BE AS FOLLOWS:

BAR SIZE	#3	#4	#5	#6	#7	#8	#9
BAR LAPS (inches)	27	36	45	54	63	72	81

HOLLOW CONCRETE MASONRY UNITS SHALL CONFORM TO ASTM C90, NORMAL WEIGHT, RUNNING BOND, MORTAR TYPE S (1800 PSI), COMPRESSIVE STRENGTHS AS FOLLOWS:

F'm(PSI)	UNIT STRENGTH, NET (PSI)	GROUT (PSI)	LOCATION
(2012 and 2015 IBC)			
1500	1900	2000	TYPICAL U.N.O.
2000	2800	2500	WHERE NOTED
2500	3750	3200	WHERE NOTED
3000	4800	3800	WHERE NOTED
(2018 & 2021 IBC)			
2000	2000	2000	TYPICAL U.N.O.
2500	3250	2500	WHERE NOTED
3000	4500	3000	WHERE NOTED

SOLID BRICK MASONRY UNITS SHALL CONFORM TO ASTM C216, GRADE MW, TYPE FBS, F'm – 1,500 PSI, RUNNING BOND, MORTAR TYPE S, 1,800 PSI. GROUT 2,000 PSI. LAY UP TWO–WYTHE WALL WITH FULL HEAD AND BED MORTAR JOINTS. ALL LONGITUDINAL VERTICAL JOINTS SHALL BE GROUTED SOLID. ONE TIER MAY BE CARRIED UP 16" BEFORE GROUTING, BUT THE OTHER TIER SHALL BE LAID UP AND GROUTED IN LIFTS NOT TO EXCEED SIX TIMES THE WIDTH OF THE GROUT SPACE OR 8" MAXIMUM. AT THE CONTRACTORS OPTION, TWO–WYTHE WALLS MAY BE GROUTED IN FOUR–FOOT LIFTS PROVIDING IT MEETS ALL THE REQUIREMENTS OF I.C.B.O. REPORT 3038. ROD GROUT IN VERTICAL SPACES IMMEDIATELY AFTER POURING AND AGAIN ABOUT 5 MINUTES LATER.

GLASS BLOCK MASONRY UNITS SHALL CONFORM TO ASTM C240 PART 18. MORTAR SHALL BE TYPE S, 1,800 PSI CONFORMING TO ASTM C270. HORIZONTAL REINFORCING SHALL CONSIST OF TWO PARALLEL #9 GAGE WIRES 1 5/8" TO 2" O.C. WITH CROSS WIRES AT REGULAR INTERVALS. LOCATE REINFORCING AT 16" O.C. MAXIMUM. PANEL ANCHORS SHALL BE #20 GAGE GALVANIZED PERFORATED STEEL STRIPS 24" LONG X 1 3/4" WIDE LOCATED AT 24" O.C. AT ALL JAMBS AND INTERMEDIATE SUPPORTS. 1/2" THICK EXPANSION MATERIAL SHALL BE PROVIDED AT SIDES AND TOP.

VERTICAL REINFORCING:

1 #5 IN CENTER OF GROUT AT CENTER OF WALL, CONTINUOUS FULL HEIGHT OF WALL AT ALL CORNERS, INTERSECTIONS, WALL ENDS, BEAM BEARINGS, JAMBS, EACH SIDE OF CONTROL JOINTS AND AT INTERVALS NOT TO EXCEED 48" O.C. UNLESS NOTED OTHERWISE. TIE AT 8'–0" VERTICALLY, WITH SINGLE WIRE LOOP TIE BY A.A. WIRE PRODUCTS COMPANY. LAP SPLICES SHALL BE 40 BAR DIAMETERS FOR GRADE 40 BARS AND 48 BAR DIAMETERS FOR GRADE 60 BARS. LAP SPLICES SHALL BE 1.3 X LAP LENGTH WHEN ADJACENT SPLICES ARE SEPERATED BY MORE THAN 1" BUT NOT EXCEED 3". DOWEL ALL VERTICAL REINFORCING TO FOUNDATION WITH DOWELS TO MATCH VERTICAL REINFORCING.

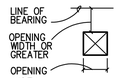
HORIZONTAL REINFORCING:

2 #5 IN MINIMUM 8" DEEP GROUTED CONTINUOUS BOND BEAM AT (ELEVATED FLOORS AND) ROOFLINE. 1 #5 IN MINIMUM 8" DEEP GROUTED CONTINUOUS BOND BEAM AT TOP OF PARAPET OR TOP OF A FREESTANDING WALL. PLACE THESE BARS CONTINUOUS THRU CONTROL JOINTS PER TYPICAL DETAIL. PROVIDE BENT BARS PER TYPICAL DETAILS, TO MATCH HORIZONTAL BOND BEAM REINFORCING, AT CORNERS AND WALL INTERSECTION TO MAINTAIN BOND BEAM CONTINUITY. LAP SPLICES SHALL BE 40 BAR DIAMETERS FOR GRADE 40 BARS AND 48 BAR DIAMETERS FOR GRADE 60 BARS. STAGGER SPLICES A MINIMUM OF 40 BAR DIAMETERS. DO NOT SPLICE WITHIN 8'–0" OF CONTROL JOINTS. STANDARD WEIGHT (NO. 9 GAGE WIRE) DUR–O–WAL OR DUR–O–WIRE (OR EQUIVALENT) LADDER TYPE JOINT REINFORCEMENT AT 16" O.C. IN MASONRY WALLS.

DOUBLE ANGLE LINTELS:

UNLESS NOTED OTHERWISE OR SHOWN, PROVIDE THE FOLLOWING LINTELS IN 8" NON–BEARING MASONRY WALLS. USE THESE LINTELS FOR OPENINGS REQUIRED BY OTHER DISCIPLINES (MECHANICAL, ELECTRICAL, PLUMBING, ETC.). PROVIDE MINIMUM 5" BEARING OF ANGLES ON JAMBS. FOR BEARING WALLS SEE SKETCH WHERE THESE ANGLES MAY BE USED. (NOTE: WHERE THE REQUIREMENTS OF THIS SKETCH ARE NOT POSSIBLE, NOTIFY THE STRUCTURAL ENGINEER PRIOR TO START OF MASONRY CONSTRUCTION).

OPENING WIDTH	LINTEL ANGLES
0' ---- 3'–4"	2 – 3 1/2" X 2 1/2" X 1/4" (SLV)
3'–5" – 4'–8"	2 – 3 1/2 X 3" X 1/4" (SLV)
4'–9" – 6'–0"	2 – 3 1/2" X 3 1/2" X 1/4"
6'–1" OR LARGER	NOTIFY STRUCTURAL ENGINEER



THESE LINTELS, OR THE OPENING THEY SPAN, SHALL NOT BE PLACED SO AS TO INTERFERE WITH THE REQUIREMENTS OF OTHER STRUCTURAL ELEMENTS (I.E. BOND BEAMS, LINTELS, CONTROL JOINTS, CONCENTRATED POINTS OF BEARING, ETC.) WITHOUT THE PRIOR APPROVAL OF THE STRUCTURAL ENGINEER.

SOLID GROUT SHALL BE PROVIDED BETWEEN WEBS AND MASONRY FACE SHELLS FOR FULL LENGTH OF ALL STEEL LINTELS. MORTAR MAY BE USED FOR GROUT FOR THIS PURPOSE ONLY. FACE UNITS, SOAPS, ROMANS, ETC., SHALL BE LAID WITH FULL HEAD AND BED JOINTS.
FOR ADDITIONAL INFORMATION AT OPENINGS IN MASONRY WALLS, SEE TYPICAL DETAILS.

REINFORCING:

ASTM A615 (Fy = 60 KSI) DEFORMED BARS FOR ALL BARS. ALL GRADE 60 REINFORCING TO BE WELDED SHALL BE ASTM A706. WELDED WIRE FABRIC PER ASTM A185, WIRE PER ASTM A82. NO TACK WELDING OF REINFORCING BARS ALLOWED WITHOUT PRIOR REVIEW OF PROCEDURE WITH THE STRUCTURAL ENGINEER. LATEST ACI CODE AND DETAILING MANUAL APPLY. CLEAR CONCRETE COVERAGES AS FOLLOWS:

CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH ------------- 3"
EXPOSED TO EARTH OR WEATHER
#6 OR LARGER ------------------------------------ 2"
#5 AND SMALLER ---------------------------------- 1 1/2"
ALL OTHER PER LATEST EDITION OF ACI 318.

LAP SPLICES IN CONCRETE:

LAP SPLICES, UNLESS NOTED OTHERWISE, SHALL BE CLASS "B" TENSION LAP SPLICES PER LATEST EDITION OF ACI 318. LAP SPLICES IN CONCRETE COLUMNS SHALL BE STANDARD COMPRESSION LAP SPLICES. STAGGER SPLICES A MINIMUM OF ONE LAP LENGTH. LAPS IN WELDED WIRE FABRIC SHALL BE MADE SO THAT THE OVERLAP, MEASURED BETWEEN OUTERMOST CROSS WIRES OF EACH FABRIC SHEET, IS NOT LESS THAN THE SPACING OF CROSS WIRES PLUS 2 INCHES. ALL WELDED WIRE FABRIC SHALL BE CHAIRED TO ENSURE PROPER CLEARANCES.

ALL SPLICE LOCATIONS SUBJECT TO APPROVAL BY THE STRUCTURAL ENGINEER. PROVIDE BENT CORNER BARS TO MATCH AND LAP WITH HORIZONTAL BARS AT ALL CORNERS AND INTERSECTIONS PER TYPICAL DETAILS. REINFORCING BAR SPACING GIVEN ARE MAXIMUM ON CENTERS. ALL BARS PER CRSI SPECIFICATIONS AND HANDBOOK. DOWEL ALL VERTICAL REINFORCING TO FOUNDATION WITH STANDARD 90–DEGREE HOOKS UNLESS NOTED OTHERWISE. SECURELY TIE ALL BARS IN LOCATION BEFORE PLACING CONCRETE. CONCRETE COLUMN DOWEL EMBEDMENT SHALL BE A STANDARD COMPRESSION DOWEL WITH EMBEDMENT LENGTH ACCORDING TO THE LATEST EDITION OF THE ACI 318. (UNLESS NOTED OTHERWISE ON PLANS OR DETAILS).

DRYPACK:

DRYPACK SHALL BE 5,000 PSI NON–SHRINK GROUT, FIVE STAR OR EQUIVALENT. INSTALL DRYPACK UNDER BEARING PLATES BEFORE FRAMING MEMBER IS INSTALLED. AT COLUMNS, INSTALL DRYPACK UNDER BASEPLATES AFTER COLUMN HAS BEEN PLUMBED BUT PRIOR TO FLOOR OR ROOF INSTALLATION.

STRUCTURAL STEEL:

STEEL SETIONS – MINIMUM GRADE AND STRENGTH

STEEL WIDE FLANGES = ASTM A992 (50KSI)
STEEL CHANNELS = ASTM A36 (36KSI)
STEEL ANGLES = ASTM A36 (36KSI)
STEEL COLUMN BASE PLATES = ASTM A992 (50KSI)
STEEL PLATES AT MOMENT FRAME AND BRACED FRAME CONNECTIONS = ASTM A992 (50KSI)
STEEL PLATES (MISCELLLANEOUS) = ASTM A36 (36KSI)
STEEL HSS (RECTANGLE) = ASTM A500 (46KSI)
STEEL HSS (ROUND) = ASTM A500 (42KSI)
STEEL PIPES = ASTM A501 (36KSI) – OR –
ASTM A53 (35KSI), TYPE E OR S

NOTE: ALL 36KSI STEEL MAY BE SUBSTITUTED WITH 50KSI STEEL UNLESS NOTED OTHERWISE.

ALL CONSTRUCTION PER LATEST AISC HANDBOOK. ALL REFERENCE TO HEADED STUDS SHALL BE HIGH STRENGTH HEADED STUDS. ATTACHMENT OF HEADED STUDS SHALL CONFORM TO ALL REQUIREMENTS OF THE LATEST EDITION OF THE "RECOMMENDED PRACTICES FOR STUD WELDING" AND THE "STRUCTURAL WELDING CODE" PUBLISHED BY AWS. ALL BOLTS, ANCHOR BOLTS, EXPANSION BOLTS, ETC. SHALL BE INSTALLED WITH STEEL WASHERS AT FACE OF WOOD OR AT SLOTTED HOLES IN STEEL SECTIONS. ALL HIGH STRENGTH BOLTING SHALL BE INSPECTED BY AN INDEPENDENT TESTING LABORATORY. ALL WELDING SHALL BE PERFORMED BY WELDERS HOLDING VALID CERTIFICATES AND HAVING CURRENT EXPERIENCE IN THE TYPE OF WELD SHOWN ON THE DRAWINGS OR NOTES. CERTIFICATES SHALL BE THOSE ISSUED BY AN ACCEPTED TESTING AGENCY. PER AISC, CHARPY V–NOTCH (CVN) IMPACT TEST RESULTS IN ACCORDANCE WITH ASTM A6/A6M ARE REQUIRED FOR HOT–ROLLED SHAPES WITH A FLANGE THICKNESS EXCEEDING 2" AND BUILT–UP MEMBERS CONSISTING OF PLATES WITH A THICKNESS EXCEEDING 2" THAT ARE SPLICED USING COMPLETE JOINT PENETRATION GROOVE WELDS. IN ADDITION, WHEN USED IN THE LATERAL FORCE RESISTING SYSTEM, HOT–ROLLED SHAPES WITH FLANGES 1 1/2" AND GREATER THICKNESS, AND PLATES 2" AND GREATER THICKNESS, SHALL ALSO MEET (CVN) TOUGHNESS REQUIREMENTS PER AISC 341. ALL WELDING DONE BY E70 SERIES LOW HYDROGEN RODS UNLESS NOTED OTHERWISE. FOR GRADE 60 REINFORCING BARS, USE E90 SERIES. AT MOMENT CONNECTIONS, REMOVE ALL WELD BACKING AND RUN–OFF TABS AND BACKGOUGE TO SOUND WELD METAL. BACKWELD WITH A MINIMUM 5/16" FILLET. ALL WELDING PER LATEST AMERICAN WELDING SOCIETY STANDARDS, (EXCEPT STEEL JOISTS AND JOIST GIRDERS SHALL COMPLY WITH SJI STANDARDS). THESE DRAWINGS DO NOT DISTINGUISH BETWEEN SHOP AND FIELD WELDS; THE CONTRACTOR MAY SHOP WELD OR FIELD WELD AT HIS DISCRETION. SHOP WELDS AND FIELD WELDS SHALL BE SHOWN ON THE SHOP DRAWINGS SUBMITTED FOR REVIEW. ALL FULL (COMPLETE) PENETRATION WELDS SHALL BE TESTED AND CERTIFIED BY AN INDEPENDENT TESTING LABORATORY. WHEN STRUCTURAL STEEL IS FURNISHED TO A SPECIFIED MINIMUM YIELD POINT GREATER THAN 36 KSI, THE ASTM OR OTHER SPECIFICATION DESIGNATION SHALL BE INCLUDED NEAR THE ERECTION MARK ON EACH SHIPPING ASSEMBLY OR IMPORTANT CONSTRUCTION COMPONENT, OVER ANY SHOP COAT OF PAINT, PRIOR TO SHIPMENT FROM THE FABRICATOR'S PLANT. STRUCTURAL STEEL COMPONENTS, AND FASTENERS AT ALL EXTERIOR CONDITIONS SHALL BE GALVANIZED OR PROTECTED AGAINST CORROSION USING APPROVED METHOD PUBLISHED BY AISC OR ANSI. WELDS ON GALVANIZED STEEL SHALL FOLLOW AWS D–19.0 SPECIFICATIONS.

STRUCTURAL BOLTS:

ALL STRUCTURAL BOLTS SHALL BE ASTM F3125 GRADE A325 TYPE 1 AND SHALL BE INSTALLED AS BEARING–TYPE CONNECTIONS WITH THREADS INCLUDED IN SHEAR PLANE (I.E. A TYPE "N" CONNECTION) UNLESS NOTED OTHERWISE. USE A325 TYPE 3 BOLTS AT ALL CONNECTIONS EXPOSED TO WEATHERING. USE SC (SLIP CRITICAL) AT ALL MOMENT FRAMES AND BRACED FRAMES. USE ASTM A354 BOLTS WHERE THE BOLT LENGTH REQUIRED FOR THE CONNECTION EXCEEDS THE MINIMUM LENGTH OF AN A325 BOLT. BOLTS MAY BE TIGHTENED USING ANY AISC APPROVED METHOD. ALL STRUCTURAL BOLTING SHALL BE INSPECTED BY AN INDEPENDENT TESTING LABORATORY TO ENSURE BOLT TENSION.

ANCHOR BOLTS:

ALL ANCHOR BOLTS SHALL BE ASTM F1554 GRADE 36 (WELDABLE), U.N.O., WHEN SPECIFIED ON PLAN, ALL ASTM F1554 GRADE ANCHOR BOLTS SHALL BE 511 (WELDABLE) ANCHOR BOLTS.

MAY BE BENT IN FIELD PER AISC REQUIREMENTS TO FIX DAMAGED ANCHOR BOLTS; FIELD BENT IS LIMITED TO 45° OR LESS. ANCHOR BOLTS CAN HAVE HEADED OR HOOKED BOLTS SHAPES. USE HEADED ANCHOR BOLTS WHERE ANCHOR BOLT SHAPE IS NOT SPECIFIED. ANCHOR BOLTS SHALL BE INSPECTED PER SPECIAL INSPECTION TABLE REQUIREMENTS.

STEEL JOISTS AND JOIST GIRDERS:

ALL JOISTS AND JOIST GIRDERS SHALL BE DESIGNED, FABRICATED, WELDED AND ERECTED IN ACCORDANCE WITH THE LATEST EDITION OF THE "STANDARD SPECIFICATIONS" OF THE STEEL JOIST INSTITUTE.

LOADS SHOWN ON PLANS FOR JOIST AND JOIST GIRDERS ARE SUPERIMPOSED LOADS AND DO NOT INCLUDE SELF–WEIGHT.

JOIST SIZES INDICATED ON PLANS ARE MINIMUMS. JOIST AND GIRDER LOADS SHOWN ON PLANS ARE SUPERIMPOSED AND DO NOT INCLUDE SELF–WEIGHT. JOIST MANUFACTURER SHALL DESIGN AND SUBMIT CALCULATIONS BY A REGISTERED ENGINEER FOR ALL JOISTS, EXCEPT PARALLEL CHORD JOISTS WITH UNIFORM LOADS AND CONTINUOUSLY SUPPORTED COMPRESSION CHORDS PER SJI STANDARD LOAD TABLES. JOIST MANUFACTURER SHALL DESIGN AND SUBMIT CALCULATIONS BY A REGISTERED ENGINEER FOR ALL JOIST GIRDERS. CALCULATIONS SHALL INCLUDE DEFLECTION AND CAMBER REQUIREMENTS. LIVE LOAD DEFLECTIONS SHALL BE LIMITED TO SPAN/240,. TOTAL LOAD DEFLECTIONS SHALL BE LIMITED TO SPAN/180. ALL JOISTS AND JOIST GIRDERS SHALL BE CAMBERED FOR 75% OF THE DESIGN DEAD LOAD. MANUFACTURER SHALL ADD ADDITIONAL WEB MEMBERS AS REQUIRED AND ADJUST CHORD AND WEB SIZES ACCORDINGLY, BUT SHALL NOT ALTER DEPTH OF JOISTS AND JOIST GIRDERS. DESIGN CALCULATIONS SHALL INCLUDE SUPERIMPOSED LOADS FOR FRAMING SUPPORTED EQUIPMENT. VERIFY SIZE, WEIGHT AND LOCATION OF EQUIPMENT WITH ARCHITECTURAL, MECHANICAL, PLUMBING AND ELECTRICAL DRAWINGS. SPRINKLER OR PLUMBING PIPING 4" DIA. OR GREATER MUST BE ADDED TO JOIST DESIGN LOADS (SEE FIRE PROTECTION AND PLUMBING DRAWINGS).

JOIST SUPPLIER SHALL DESIGN FOR LOADS FROM OTHER DISCIPLINES. LOADS SHOWN ON STRUCTURAL PLAN DO NOT INCLUDE ADDITIONAL CAPACITY TO SUPPORT MECHANICAL OR PLUMBING LOADS. JOIST SUPPLIER TO VERIFY ALL BRACE LOADS AND EXTENDED END LOADS NOT SPECIFICALLY SHOWN ON PLANS OR DETAILS (FOR BID PURPOSES ASSUME 1000 LB FORCE MINIMUM). ALL ROOF JOISTS AND JOIST GIRDER SHALL BE DESIGNED TO ACCOMMODATE A FUTURE MECHANICAL LOAD OF 500 POUNDS PER JOIST AT ANY LOCATION IN ADDITION TO ANY MECHANICAL LOADS SHOWN ON DRAWINGS.

CONTRACTOR SHALL SUBMIT SHOP DRAWINGS WITH DESIGN CALCULATIONS SEALED BY A REGISTERED ENGINEER FOR REVIEW PRIOR TO MANUFACTURE. SHOP DRAWINGS AND CALCULATIONS SHALL INCLUDE DETAILS OF ANY OPTIONAL FIELD SPLICES, AND IF HIGH STRENGTH BOLTS OR FULL PENETRATION WELDS ARE UTILIZED, CONTRACTOR SHALL RETAIN AN INDEPENDENT TESTING LABORATORY TO CERTIFY COMPLIANCE WITH AISC AND AWS SPECIFICATIONS RESPECTIVELY.

ALL STEEL JOISTS/GIRDERS OR BEAMS SHALL BEAR AT A PANEL POINT. JOISTS OR BEAMS TO BE EQUALLY SPACED BETWEEN COLUMN LINES – TYPICAL U.N.O. PROVIDE BRIDGING AS REQUIRED, PER SJI SPECIFICATIONS. WHERE BOTTOM CHORD WELDING IS INDICATED, DO NOT WELD BOTTOM CHORD TO SUPPORT UNTIL FULL DEAD LOAD IS IN PLACE.

WHERE CROSS BRIDGING INTERFERES WITH MECHANICAL INSTALLATIONS, REMOVE THIS CROSS BRIDGING AFTER TOTAL DEAD LOAD IS APPLIED AND REPLACE WITH HORIZONTAL ANGLES 2" X 2" X 3/16" AT TOP AND BOTTOM CHORDS.

MANUFACTURER SHALL DESIGN JOIST AND JOIST GIRDERS IN ACCORDANCE WITH THE UL DESIGN REQUIREMENTS IN ORDER TO ACHIEVE THE FIRE RATING SPECIFIED IN ARCHITECTURAL DRAWINGS.

MANUFACTURER SHALL DESIGN JOIST SHOES WHERE BEARING LENGTH IS LESS THAN 4" AT LH SERIES JOIST AND LESS THAN 3" AT K SERIES JOIST.

JOIST MANUFACTURER SHALL DESIGN ALL JOISTS AND GIRDERS FOR A 2000LB VERTICAL CONCENTRATED LOAD AT ANY BOTTOM PANEL JOINT ALONG THE LENGTH OF THE MEMBER. LOAD DOES NOT NEED TO ACT CONCURRENTLY WITH UNIFORM LOAD.

STEEL DECKING:

ROOF DECK:

DECK SHALL BE 3" DEEP, 32" WIDE, 20 GAGE GALVANIZED STEEL, WITH MINIMUM YIELD STRESS OF 50 KSI, WITH MINIMUM S = 0.452 IN3 AND I = 0.953 IN4 PER FOOT OF WIDTH. DECK SHALL BE ERECTED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AS 3 SPAN MINIMUM AND SHALL BE ATTACHED FOR A MINIMUM DIAPHRAGM SHEAR CAPACITY OF 1365 PLF USING THE FOLLOWING MINIMUM ATTACHMENTS:

WELD DECK TO SUPPORTING MEMBERS WITH 5 – 1/2" DIAMETER OR 3/8" X 1" PUDDLE WELDS PER SHEET AT ENDS, END LAPS AND AT INTERMEDIATE SUPPORTS, AND AT 12" O.C. AT PERIMETER BEAMS AND OPENING EDGES RUNNING PARALLEL TO THE DECK. SIDE SEAM ATTACHMENT SHALL BE PUNCHLOK II AT 8" O.C.

COMPOSITE FLOOR DECK:

DECK SHALL BE 2" DEEP, 36" WIDE, 20 GAGE GALVANIZED STEEL, WITH MINIMUM YIELD STRESS OF 50 KSI, WITH MINIMUM S = 0.333 IN3 AND I = 0.422 IN4 PER FOOT OF WIDTH. DECK SHALL BE DEFORMED/INDENTED TO PROVIDE A MECHANICAL BOND WITH THE CONCRETE. DECK SHALL BE ERECTED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AS 3 SPAN MINIMUM AND SHALL BE ATTACHED FOR A MINIMUM DIAPHRAGM SHEAR CAPACITY OF 2179 PLF USING THE FOLLOWING MINIMUM ATTACHMENTS (SHORE DECK IF SPAN BETWEEN SUPPORT MEMBERS EXCEEDS 9'–6"):

WELD DECK TO SUPPORTING MEMBERS WITH 4 – 1/2" DIAMETER OR 3/8" X 3/4" PUDDLE WELDS PER SHEET AT ENDS, END LAPS AND AT INTERMEDIATE SUPPORTS, AND AT 12" O.C. AT PERIMETER BEAMS AND OPENINGS EDGES RUNNING PARALLEL TO THE DECK. SIDE SEAM ATTACHMENT SHALL BE BUTTON PUNCHES AT 12" O.C.

HEADED STUDS ON COMPOSITE STEEL BEAM:

GENERAL:

ALL REFERENCE TO HEADED STUDS SHALL BE AUTOMATIC WELDED HIGH STRENGTH HEADED STUDS. ATTACHMENT SHALL CONFORM TO ALL REQUIREMENTS OF THE LATEST EDITION OF THE "RECOMMENDED PRACTICES FOR STUD WELDING" AND THE "STRUCTURAL WELDING CODE" PUBLISHED BY THE AMERICAN WELDING SOCIETY. CONFORMANCE SHALL INCLUDE, BUT NOT BE LIMITED TO, ALL QUALITY CONTROL TESTING PROVISIONS OF THE AFOREMENTIONED PUBLICATIONS.

SPACING OF HEADED SHEAR CONNECTOR STUDS ON COMPOSITE STEEL BEAMS:

HEADED STUDS SHALL BE UNIFORMLY SPACED. USE NOT MORE THAN ONE STUD PER RIB WHERE THE NUMBER OF STUDS REQUIRED IS LESS THAN OR EQUAL TO THE NUMBER OF RIBS AVAILABLE. WHERE THE NUMBER OF STUDS REQUIRED EXCEEDS THE NUMBER OF RIBS AVAILABLE, PLACE A MINIMUM OF ONE STUD PER RIB FULL LENGTH OF THE BEAM. PLACE ADDED STUDS (NO MORE THAN TWO PER RIB TOTAL) IN EACH RIB BEGINNING AT THE SUPPORTS AT EACH END AND MOVING TOWARDS MIDSPAN UNTIL REQUIRED NUMBER OF STUDS IS SUPPLIED. MINIMUM LONGITUDINAL STUD SPACING IS 6 STUD DIAMETERS CENTER TO CENTER. CENTER TO CENTER. MAXIMUM LONGITUDINAL STUD SPACING IS 18" CENTER TO CENTER. MINIMUM TRANSVERSE STUD SPACING IS 4 STUD DIAMETERS CENTER TO CENTER. MINIMUM TRANSVERSE DISTANCE BETWEEN EDGE OF BEAM AND CENTERLINE OF STUD IS 1". STUDS SHALL PROJECT A MINIMUM OF 1 1/2" ABOVE THE TOP OF THE STEEL DECK AND SHALL BE HELD A MINIMUM 3/4" CLEAR OF THE TOP OF THE CONCRETE SLAB. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR REVIEW PRIOR TO FABRICATION.

STEEL STAIRS:

REFER TO PROJECT SPECIFICATIONS, ACHITECTURAL DRAWINGS AND STRUCTURAL DRAWINGS TO DETERMINE EXTENT OF STAIRS AND WHAT SHALL BE PROVIDED BY THE STAIR MANUFACTURER. STAIRS ARE TO FRAME INTO FLOOR BEAMS AND BUILDING COLUMNS ONLY. DO NOT CONNECT STAIRS TO ELEVATOR GUIDE RAIL SUPPORTS OR DIAGONAL BRACING. VERIFY ALL OTHER CONDITIONS WITH ACHITECT PRIOR TO PROCEEDING. IF STAIR FRMING RESULTS IN ECCENTRIC LOADING OF THE STRUCTURAL MEMBERS, STAIR MANUFACTURER SHALL PROVIDE BRACING OF STRUCTURAL MEMBERS. CONTRACTOR SHALL SUBMIT DETAILED SHOP DRAWINGS TO THE ACHITECT/ENGINEER FOR REVIEW PRIOR TO FABRICATION.

STAIRS SHALL BE DESIGNED FOR SELF WEIGHT PLUS A LIVE LOAD EQUAL TO 100 PSF. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS WITH DESIGN CALCULATIONS SEALED BY A REGISTERED ENGINEER FOR REVIEW PRIOR TO MFR. LANDING PANS SHALL BE 12 GAGE MINIMUM. TREAD PANS SHALL BE 14 GAGE MINIMUM. CONCRETE FILL SHALL BE REINFORCED WITH 6 X 6 – W1.4 X W1.4 W.W.F. FOR ACTUAL LANDING AND STAIR PAN CONFIGURATIONS, SEE ARCHITECTURAL DRAWINGS.

PRECAST WORK:

REINFORCING SHOWN IN DETAIL IS FOR IN–PLACE CONDITION. CONTRACTOR SHALL BE RESPONSIBLE FOR PICK UP POINT INSERTS AND LOCATIONS, SPECIAL PICK UP REINFORCING AND STRONG BACKS, AND ALL PICK UP AND PLACING OPERATIONS.

CONSTRUCTION JOINTS:

ALL CONSTRUCTION JOINTS IN WALLS SHALL BE KEYED IN ACCORDANCE WITH THE TYPICAL CONSTRUCTION JOINT DETAILS SHOWN ON THE STRUCTURAL DRAWINGS OR, AT THE CONTRACTOR'S OPTION, SHALL BE INTENTIONALLY ROUGHENED IN ACCORDANCE WITH THE FOLLOWING: THE SURFACE OF ROUGHENED JOINTS SHALL BE SAND BLASTED OR ROUGHENED WITH A CHIPPING HAMMER TO EXPOSE THE AGGREGATE EMBEDDED IN THE PREVIOUS POUR. THE EXPOSED AGGREGATE SHALL PROTRUDE A MINIMUM OF 1/4 INCH. ALL SURFACES OF CONSTRUCTION JOINTS SHALL BE CLEANED AND LAITANCE REMOVED. IMMEDIATELY BEFORE NEW CONCRETE IS PLACED, ALL CONSTRUCTION JOINTS SHALL BE WETTED AND STANDING WATER REMOVED. VERTICAL CONSTRUCTION JOINTS IN WALLS SHALL BE HELD TO A MAXIMUM SPACING OF 30'–0". ALL CONSTRUCTION JOINTS IN SLABS, JOISTS, BEAMS, AND GIRDERS SHALL BE OFFSET A DISTANCE EQUAL TO TWICE THE WIDTH OF THE BEAM.

ACCORDANCE WITH THE TYPICAL SLAB ON DECK CONSTRUCTION JOINT DETAIL SHOWN ON THE STRUCTURAL DRAWINGS. BEAMS AND GIRDERS HAVE BEEN DESIGNED ASSUMING THE CONSTRUCTION JOINTS TO BE LOCATED IN THE MIDDLE THIRD OF THE BEAM, GIRDER, OR SLAB SPAN. 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.

EXPANSION AND SCREW ANCHORS:

USE STUD TYPE EXPANSION ANCHOR WITH A SINGLE PIECE WEDGE ONLY WHERE NOTED ON PLANS. IF USE IS REQUESTED FOR OTHER THAN WHERE NOTED CONTACT STRUCTURAL ENGINEER THROUGH ARCHITECT FOR APPROVAL.

CONTRACTOR SHALL SUBMIT MANUFACTURER'S SIZE AND STRENGTH DATA TO ENGINEER THROUGH ARCHITECT PRIOR TO CONSTRUCTION. INSTALL ALL BOLTS AS OUTLINED IN MANUFACTURER'S SPECIFICATIONS, UTILIZING PROPER SIZE AND TYPE OF DRILL, CLEANING HOLE, DRIVING AND TIGHTENING BOLT.

IN CONCRETE:

ANCHORS USED MUST HAVE ICC APPROVAL AND INCLUDE HILTI KWIK BOLT TZ2 (ESR–4266), AND SIMPSON STRONG BOLT–2 (ESR–3037), AND DEWALT POWER–STUD+SD2 (ESR–2502), AND SIMPSON TITEN HD (ESR–2713), HILTI KWIK HUS–EZ (ESR–3027), AND DEWALT SCREW–BOLT+ (ESR–3889) OR APPROVED EQUAL.

IN MASONRY:

ANCHORS USED MUST HAVE ICC APPROVAL AND INCLUDE HILTI KWIK BOLT 3 (ESR–1385), AND SIMPSON STRONG BOLT–2 (ES–240), DEWALT POWER–STUD+SD1 (ESR–2966), HILTI KWIK HUS–EZ (ESR–3056) AND SIMPSON TITEN HD (ESR–1056), AND DEWALT SCREW–BOLT+ (ESR–4042) OR APPROVED EQUAL.

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CHECKED BY: RH
CHECKED BY: PK
CHECKED BY: ---

PK ASSOCIATES, LLC
6900 E. Belleview Ave. #200
Greenwood Village, Colorado 80111
Phone: (720) 799–1058
Email: cadd@pkastructural.com
Website: www.pkastructural.com

Butler Design Group Inc.
architects & planners

5017 East Washington St. #107
Phoenix, Arizona 85034
Phone 602-957-1800

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AMERICAN HEIGHTS & TUTT BOULEVARD
COLORADO SPRINGS, COLORADO

Case #:
Plan Check #:
Date: 10/15/2024
Revisions:

Project Number: 21002
Drawn By: PKA
Title: GENERAL STRUCTURAL NOTES

S001

GENERAL STRUCTURAL NOTES

APPLY UNLESS NOTED OTHERWISE

EPOXY ANCHORS IN CONCRETE AND MASONRY:

INJECTABLE ADHESIVE SHALL BE USED FOR INSTALLATION OF REINFORCING STEEL DOWELS OR THREADED ANCHOR RODS AND INSERTS INTO NEW OR EXISTING CONCRETE OR SOLID GROUTED CONCRETE MASONRY UNITS ONLY WHERE SPECIFIED ON PLANS. IF USE IS REQUESTED FOR OTHER THAN WHERE NOTED CONTACT STRUCTURAL ENGINEER THROUGH ARCHITECT FOR APPROVAL. ADHESIVE SHALL BE FURNISHED IN SIDE BY SIDE PACKS WHICH KEEP COMPONENT A AND COMPONENT B SEPARATE. USE ONLY INJECTION TOOLS AND STATIC MIXING NOZZLES RECOMMENDED BY MANUFACTURER. MANUFACTURER'S INSTRUCTIONS SHALL BE FOLLOWED.

IN CONCRETE:

ANCHORS USED MUST HAVE I.C.C. APPROVAL IN CRACKED CONCRETE AND INCLUDE SIMPSON SET-XP (ESR-2508), HILTI HIT-RE500-V3 (ESR-3814), DEWALT PURE110+ (ESR-3298) OR APPROVED EQUIVALENT. THE USE OF ANY EPOXY ANCHOR MUST BE APPROVED BY THE ENGINEER OF RECORD PRIOR TO INSTALLATION.

IN MASONRY:

ANCHORS USED MUST HAVE ICC APPROVAL AND INCLUDE SIMPSON SET (ESR-1772) AND HILTI HIT-HY 270 MAX (ESR-4143) AND DEWALT AC100+GOLD (ESR-3200) OR APPROVED EQUIVALENT. THE USE OF ANY EPOXY ANCHOR MUST BE APPROVED BY THE ENGINEER OR RECORD PRIOR TO INSTALLATION.

1. ADHESIVE ANCHORS INSTALLED IN HORIZONTAL TO VERTICALLY OVERHEAD ORIENTATION TO SUPPORT SUSTAINED TENSION LOADS SHALL BE DONE BY A CERTIFIED ADHESIVE ANCHOR INSTALLER (AAI) AS CERTIFIED THROUGH ACI (ACI 318-14 17.8.2.2) PROOF OF CURRENT CERTIFICATION SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO COMMENCEMENT OF INSTALLATION.
2. ADHESIVE ANCHORS MUST BE INSTALLED IN CONCRETE AGED A MINIMUM OF 21 DAYS (ACI 318-14 17.1.2).
3. THE REMOVAL AND RESETTING OF POST INSTALLED ANCHORS IS PROHIBITED (ACI 318-19 17.3.1).
4. PROVIDE SPECIAL INSPECTION FOR ALL MECHANICAL AND ADHESIVE ANCHORS PER THE APPLICABLE BUILDING CODE AND PER THE CURRENT ICC-ES REPORT (IBC 2021 TABLE 1705.3 TYPE 4, NOTE B)

NOTES ON CRACKING OF CONCRETE STRUCTURES:

CRACKING IS INHERENT TO THE MATERIAL PROPERTIES OF CONCRETE CONSTRUCTION WHILE EVERY EFFORT HAS BEEN MADE TO MINIMIZE THE EFFECTS OF UNSIGHTLY CRACKING, THE PRESENCE OF CRACKS ARE NORMAL AND UNAVOIDABLE. THE DESIGN OF THE CONCRETE STRUCTURAL ITEMS HAVE BEEN ANALYZED USING A "CRACKING SECTION." THE PRESENCE OF THE CRACKING SHOULD NOT BE CONSIDERED DETRIMENTAL TO THE STRUCTURE. CRACKS LARGER THAN 5 MILS SHALL BE FILLED AND SEALED WITH AM APPROVED CRACK FILLER TO PREVENT FUTURE DETERIORATION. ALLOWANCE SHALL BE MADE IN THE CONSTRUCTION BUDGET FOR SEALING OF SUCH CRACKS. IN SOME CASE, CRACKS DO NOT APPEAR UNTIL WELL AFTER CONSTRUCTION HAS BEEN COMPLETED. IT IS THE RESPONSIBILITY OF THE OWNER TO MAINTAIN THE STRUCTURE PROPERLY OVER THE LIFE OF THE STRUCTURE. CONCRETE CRACKS, SHOULD THEY OCCUR, SHALL BE FILLED AND SEALED TO PREVENT PREMATURE DETERIORATION OF THE STRUCTURE.

SHOP DRAWINGS:

SHOP DRAWINGS SHALL BE SUBMITTED FOR ALL STRUCTURAL ITEMS IN ADDITION TO ITEMS REQUIRED BY ARCHITECTURAL SPECIFICATIONS.

THE CONTRACTOR SHALL REVIEW ALL SHOP DRAWINGS PRIOR TO SUBMITTAL. ITEMS NOT IN ACCORDANCE WITH CONTRACT DOCUMENTS SHALL BE FLAGGED UPON HIS REVIEW.

VERIFY ALL DIMENSIONS WITH ARCHITECT AND ALL FINISHED GRADE WITH CIVIL DRAWINGS.

ANY CHANGES, SUBSTITUTIONS, OR DEVIATIONS FROM CONTRACT DOCUMENTS SHALL BE CLOUDED BY MANUFACTURER OR FABRICATOR. ANY OF THE AFOREMENTIONED WHICH ARE NOT CLOUDED OR FLAGGED BY SUBMITTING PARTIES, SHALL NOT BE CONSIDERED APPROVED AFTER ENGINEER'S REVIEW, UNLESS NOTED ACCORDINGLY.

THE ENGINEER HAS THE RIGHT TO APPROVE OR DISAPPROVE ANY CHANGES TO CONTRACT DOCUMENTS AT ANYTIME BEFORE OR AFTER SHOP DRAWING REVIEW.

THE SHOP DRAWINGS DO NOT REPLACE THE CONTRACT DOCUMENTS. ITEMS OMITTED OR SHOWN INCORRECTLY AND ARE NOT FLAGGED BY THE STRUCTURAL ENGINEER OR ARCHITECT ARE NOT TO BE CONSIDERED CHANGES TO CONTRACT DOCUMENTS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAKE SURE ITEMS ARE CONSTRUCTED TO CONTRACT DOCUMENTS.

THE ADEQUACY OF ENGINEERING DESIGNS AND LAYOUT PERFORMED BY OTHERS RESTS WITH THE DESIGNING OR SUBMITTING AUTHORITY.

REVIEWING IS INTENDED ONLY AS AN AID TO THE CONTRACTOR IN OBTAINING CORRECT SHOP DRAWINGS. RESPONSIBILITY FOR CORRECTNESS SHALL REST WITH THE CONTRACTOR.

DEFERRED SUBMITTALS: (PER 2021 IBC 107.3.4.1)

FOR THE PURPOSES OF THIS SECTION, DEFERRED SUBMITTALS ARE DEFINED AS THOSE PORTIONS OF THE DESIGN WHICH ARE NOT SUBMITTED AT THE TIME OF THE APPLICATION AND THAT ARE TO BE SUBMITTED TO THE BUILDING OFFICIAL WITHIN A SPECIFIED PERIOD.

DOCUMENTS FOR DEFERRED SUBMITTAL ITEMS SHALL BE SUBMITTED TO THE PROFESSIONAL IN RESPONSIBLE CHARGE FOR REVIEW. THE CONTRACTOR SHALL FORWARD THE REVIEWED DOCUMENTS TO BUILDING OFFICAL WITH A NOTATION INDICATING THAT THE DEFERRED SUBMITTAL DOCUMENTS HAVE BEEN REVIEWED AND BEEN FOUND TO BE IN GENERAL CONFORMANCE TO THE DESIGN OF THE BUILDING. THE DEFERRED SUBMITTAL ITEMS SHALL NOT BE INSTALLED UNTIL THE DESIGN AND SUBMITTAL DOCUMENTS HAVE BEEN APPROVED BY THE BUILDING OFFICIAL.

DEFERRED SUBMITTAL ITEMS:

STEEL JOISTS / JOIST GIRDERS

GENERAL:

ENTIRE CONTRACT DOCUMENTS SHALL BE USED TO BUILD BUILDING. SOME CRITICAL ITEMS REQUIRED BY OTHER DISCIPLINES MAY NOT BE SHOWN ON STRUCTURAL DRAWING (i.e. WALL, FLOOR AND ROOF OPENING, ARCHITECTURAL, MECHANICAL AND PLUMBING LOADS, SUPPORT PLATES ETC.)

ITEMS SHOWN BY OTHER DISCIPLINES WITH REFERENCE TO STRUCTURAL DRAWING BUT NOT SHOWN ON THESE STRUCTURAL DOCUMENT SHALL BE CONSIDERED DESIGN BUILD ITEMS. CONTRACTOR SHALL SUBMIT DESIGN BY OTHERS FOR REVIEW.

THE STRUCTURAL CONSTRUCTION DOCUMENTS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY TO PROTECT THE STRUCTURE DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE, BUT NOT BE LIMITED TO, BRACING, SHORING FOR LOADS DUE TO CONSTRUCTION EQUIPMENT, ETC. THE STRUCTURAL ENGINEER SHALL NOT BE RESPONSIBLE FOR THE CONTRACTOR'S MEANS, METHODS, TECHNIQUES, SEQUENCES FOR PROCEDURE OF CONSTRUCTION, OR THE SAFETY PRECAUTIONS AND THE PROGRAMS INCIDENT THERETO (NOR SHALL OBSERVATION VISITS TO THE SITE INCLUDE INSPECTION OF THESE ITEMS).

CONSTRUCTION MATERIALS SHALL BE SPREAD OUT IF PLACED ON FRAMED CONSTRUCTION. LOAD SHALL NOT EXCEED THE DESIGN LIVE LOAD PER SQUARE FOOT.

WHERE REFERENCE IS MADE TO VARIOUS TEST STANDARDS FOR MATERIALS, SUCH STANDARDS SHALL BE THE LATEST EDITION AND/OR ADDENDA.

ESTABLISH AND VERIFY ALL OPENINGS AND INSERTS FOR ARCHITECTURAL, MECHANICAL, PLUMBING AND ELECTRICAL WITH APPROPRIATE TRADES, DRAWINGS AND SUBCONTRACTORS PRIOR TO CONSTRUCTION.

OPTIONS ARE FOR CONTRACTOR'S CONVENIENCE. IF HE CHOOSES AN OPTION, CONTRACTOR SHALL BE RESPONSIBLE FOR ALL NECESSARY CHANGES AND SHALL COORDINATE ALL DETAILS.

NOTES AND DETAILS ON DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL STRUCTURAL NOTES AND TYPICAL DETAILS. WHERE NO DETAILS ARE SHOWN, CONSTRUCTION SHALL CONFORM TO SIMILAR WORK ON THE PROJECT.

ALL DIMENSIONS SHOWN (INCLUDING ELEVATIONS) ON STRUCTURAL DRAWINGS ARE TO ASSIST CONTRACTOR IN VERIFICATION. SCALING DIMENSIONS FROM DRAWINGS IS NOT PERMITTED. LOCATION OF ALL ITEMS SHALL BE DETERMINED BY DIMENSIONS OR NOTES ONLY; DO NOT USE GRAPHIC APPEARANCE TO ASSUME SPECIFIC LOCATIONS.

CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF ALL DIMENSIONS WITH ARCHITECTURAL AND FINISHED GRADE WITH CIVIL DRAWINGS PRIOR TO START OF CONSTRUCTION. RESOLVE ANY DISCREPANCY WITH THE ARCHITECT.

TYPICAL DETAILS MAY NOT NECESSARILY BE CUT ON PLANS, BUT APPLY UNLESS NOTED OTHERWISE.

GENERAL (CONTINUED):

WHERE DISCREPANCIES OCCUR BETWEEN PLANS, DETAILS, GENERAL STRUCTURAL NOTES AND SPECIFICATIONS, THE GREATER REQUIREMENTS SHALL GOVERN.

ANY ENGINEERING DESIGN, PROVIDED BY OTHERS AND SUBMITTED FOR REVIEW, SHALL BEAR THE SEAL OF AN ENGINEER REGISTERED IN THE STATE OF COLORADO.

SUPPLIER OF ENGINEERED STRUCTURAL COMPONENTS (i.e. STEEL JOISTS, STAIRS, PRECAST ITEMS) SHALL BE RESPONSIBLE FOR COMPLETE DESIGN AND SHALL USE ENTIRE CONTRACT DOCUMENTS TO INCLUDE ALL LOADS AND DETAIL REQUIREMENTS FROM ALL DISCIPLINES. SUPPLIER SHALL PROVIDE ADDITIONAL MATERIAL REQUIRED TO MEET ALL THEIR REQUIREMENTS FOR INSTALLATION (i.e. WIDER BEARING PLATES, STRUCTURAL STEEL SUPPLIER SHALL FURNISH BOLTS FOR OSHA CONNECTIONS (SEE DRAWINGS FOR DETAILS). SHIMS, ERECTION BOLTS ETC.).

STRUCTURAL STEEL SUPPLIER SHALL FURNISH BOLTS FOR OSHA CONNECTIONS (SEE DRAWINGS FOR DETAILS).

WALL SHORING SHALL BE INSTALLED PRIOR TO BACKFILLING BEHIND ALL BUILDING RETAINING WALLS, UNLESS ALL RESTRAINING SLABS ARE INSTALLED. USE HANDTAPPING ONLY WHEN WITHIN 8'-0", OR WITHIN HALF THE WALL HEIGHT OF BACKFILLED WALL.

CONTINUOUS FOUNDATION DRAIN PIPES (FRENCH DRAINS) OR WEEP HOLES SHALL BE PROVIDED BEHIND ALL BASEMENT WALLS AND ALL EXTERIOR RETAINING WALLS THAT RETAIN MORE THAN 3'-0" OF SOIL WEEP HOLES WHERE USED SHALL BE 2" IN DIAMETER AT 6'-0" O.C. MAXIMUM.

BUILDING TOLERANCES:

STANDARD TOLERANCES SHALL BE BASED ON THE REQUIREMENTS OF THE AISC CODE OF STANDARD PRACTICE AND ACI 117, STANDARD SPECIFICATIONS FOR TOLERANCES FOR CONCRETE CONSTRUCTION AND MATERIALS.

SEQUENCING CONSTRUCTION AND LATERAL STABILITY:

THE STRUCTURAL COMPONENTS BY THEMSELVES ARE A NON-SELF-SUPPORTING STRUCTURE. LATERAL FORCES DUE TO WIND, EARTHQUAKE, OR SOIL ARE CARRIED BY THE ROOF AND FLOOR DIAPHRAGMS TO THE LATERAL SYSTEM. CERTAIN ELEMENTS SHOWN ON OR LOCAL STABILITY OF OTHER ELEMENTS (SUCH AS BEAMS, COLUMNS, AND WALLS). IF, DUE TO SEQUENCING OF CONSTRUCTION, THESE STABILITY ELEMENTS ARE NOT IN PLACE, THE CONTRACTOR SHALL RETAIN A LICENSED STRUCTURAL ENGINEER WHO SHALL INVESTIGATE WHERE TEMPORARY SHORING/BRACING IS REQUIRED, AND SHALL DESIGN THIS TEMPORARY SHORING/BRACING. THE CONTRACTOR SHALL PROVIDE THIS SHORING/BRACING UNTIL THE REQUIRED STRUCTURAL ELEMENTS AND THEIR CONNECTIONS HAVE BEEN INSTALLED AND REACH THEIR FINAL DESIGN STRENGTHS.

MISCELLANEOUS:

REFER TO ARCHITECTURAL, MECHANICAL, ELECTRICAL, CIVIL, ELEVATOR, OR OTHER SPECIALTY ENGINEERING DRAWINGS FOR DIMENSIONS NOT SHOWN, INCLUDING BUT NOT LIMITED TO: SIZE AND LOCATION OF CURBS, EQUIPMENT HOUSEKEEPING PADS, WALL AND FLOOR OPENINGS, BLOCKOUTS, FLOOR DEPRESSIONS, SUMPS, DRAINS, ANCHOR BOLTS, EMBEDDED ITEMS, ARCHITECTURAL TREATMENT, ETC. CONTRACTOR SHALL VERIFY DIMENSIONS AND RESOLVE DISCREPANCIES OR CONFLICTS PRIOR TO CONSTRUCTION. WHERE SECTIONS ARE INDICATED ON THE PLAN BY A NUMBER AND A DRAWING NUMBER THUS, 1/S5.01, THE INDICATED SECTION (1) IS SHOWN ON STRUCTURAL DRAWING S5.01.

ALL WINDOW SYSTEMS SHALL BE DESIGNED TO ACCOMMODATE VERTICAL DEFLECTION OF THE STRUCTURE OF 1/2" MINIMUM LIVE LOAD DEFLECTION, UNLESS GREATER VALUE IS NOTED ON PLANS OR DETAILS.

FLOOR FLATNESS/LEVELNESS SHALL MEET ARCHITECTURAL SPECIFICATIONS (1/4" IN 10 FOOT MINIMUM LEVELNESS UNLESS TIGHTER REQUIREMENT IN SPECIFICATIONS) IN HEIGHT FOR ALL STRUCTURAL SYSTEMS. CONTRACTOR SHALL INCLUDE COST FOR LEVELING ALL FLOORS. FOR ESTIMATING PURPOSES ONLY, ASSUME 1/2" THICK LEVELING AGENT OVER 15% OF FLOOR AREA.

FABRICATOR APPROVAL:

SPECIAL INSPECIONS NOTED ABOVE APPLY TO SHOP FABRICATED ASSEMBLIES IN ADDITION TO ON-SITE WORK UNLESS THE FABRICATOR IS AN "APPROVED FABRICATOR" AS DEFINED IN 2021 IBC.

NOTE TO CONTRACTOR REGARDING PRICING/BIDDING OF CITY SUBMITTAL DRAWINGS:

THESE DRAWINGS HAVE BEEN PREPARED FOR CITY SUBMITTAL, AND ARE NOT TO BE CONSIDERED 100% CONSTRUCTION DOCUMENTS UNTIL CITY PLAN REVIEW HAS BEEN COMPLETED AND FINAL BUILDING PERMIT HAS BEEN ISSUED. IF THESE DOCUMENTS ARE TO BE USED FOR PRICING, BID, OR STEEL MILL ORDER, THE CONTRACTOR SHALL PROVIDE IN THE PROJECT BUDGET AN ALLOWANCE FOR POTENTIAL CHANGES BETWEEN THE CITY SUBMITTAL DRAWINGS AND THE FINAL APPOVED SUBMITTAL AND CONSTRUCTION DOCUMENTS. ADDITIONALLY, MISCELLANEOUS ITEMS MAY NOT BE SHOWN ON THESE DRAWINGS. THESE ITEMS INCLUDE, BUT ARE NOT LIMITED TO, ELEVATOR AND EQUIPMENT SUPPORTS, BLOCKOUTS, ETC. REFER TO ARCHITECTURAL, MECHANICAL, ELECTRICAL, AND OTHER SPECIALTY DRAWINGS FOR ADDITIONAL INFORMATION. THE CONSTRUCTION BUDGET SHALL INCLUDE THESE ITEMS. THE STRUCTURAL ENGINEER WILL NOT BE RESPONSIBLE FOR CHANGE ORDER COSTS INCURRED (INCLUDING DISCARDED MATERIAL COSTS) DUE TO BIDDING OR STEEL MILL ORDER FROM THESE DRAWINGS. CONTACT STRUCTURAL ENGINEER FOR CLARIFICATION IF THE SCOPE AND QUANTITY OF ALLOWANCE TO BE CARRIED IS NOT CLEAR .

INSTRUCTIONS TO BIDDERS CONTINGENCIES:

1. UNDER NO CIRCUMSTANCES SHALL THESE DRAWINGS BE "FINAL BID" UNTIL THE PROJECT IS FULLY PERMITTED.
2. ALL PRELIMINARY PRICING EFFORTS SHALL BE CONSIDERED TO BE ESTIMATES ONLY AND SHALL INCLUDE THE NECESSARY CONTINGENCIES, ALLOWANCES, ALTERNATES, ETC. AS APPROPRIATE TO ACCOUNT FOR MODIFICATIONS AND ADDITIONS THAT WILL OCCUR TO THE DRAWINGS DURING THE FINALIZATION OF THE DESIGN AND PERMITTING.
3. THE OWNER OR CONTRACTOR SHALL UTILIZE THE FOLLOWING MINIMUM CONTINGENCIES FOR EACH OF THE STRUCTURAL ELEMENT COSTS TO BE USED AT THE SOLE DISCRETION OF THE STRUCTURAL ENGINEER:

CONSTRUCTION DOCUMENTS/FINAL BID 3% MINIMUM

ALL OF THE "FINAL BID" CONTINGENCIES NOT USED BY THE STRUCTURAL ENGINEER SHALL BE REFUNDED TO THE OWNER PRIOR TO THE CLOSEOUT OF THE PROJECT.
4. ANY MODIFICATIONS, DELETIONS OR ELIMINATIONS TO THE STRUCTURAL BIDDING AND CONTINGENCY REQUIREMENTS, WITHOUT THE CONSENT OF THE STRUCTURAL ENGINEER, SHALL AUTOMATICALLY INDEMNIFY THE STRUCTURAL ENGINEER OF ANY COSTS THAT MAY ARISE DURING THE DESIGN AND CONSTRUCTION OF THE PROJECT.
5. WHERE DISCREPANCIES OCCUR WITHIN THE DRAWINGS THE CONTRACTOR WILL EITHER RESOLVE THE DISCREPANCIES WITH THE ARCHITECT BEFORE BIDDING OR INCLUDE THE GREATER COST ITEM IN THE BID AND RESOLVE THE DISCREPANCY PRIOR TO CONSTRUCTION.

SPECIAL INSPECTION:

PER IBC CHAPTER 17, SPECIAL INSPECTION IS REQUIRED FOR THE FOLLOWING ITEMS:

CONCRETE: VERIFICATION AND INSPECTION	CONTINUOUS	PERIODIC	REFERRENCED STANDARD (NOTE 1)	IBC REFERENCE
1. Inspection of reinforcing steel, including prestressing tendons, and placement.	–	X	ACI 318: Ch. 20, 25.2 25.3, 26.6.1–26.6.3	1908.4
2. Reinforcing bar welding: a. Verify weldability of reinforcing bars other than ASTM A706; b. Inspect single–pass fillet welds, maximum 5/16"; and c. Inspect all other welds.	– – X	X X –	AWS D1.4 ACI 318: 26.6.4	---
3. Inspect anchors to be installed in concrete prior to and during placement of concrete where allowable loads have been increased or where strength design is used.	–	X	ACI 318: 17.8.2	---
4. Inspection of anchors post–installed in hardened concrete members. a. Adhesive anchors installed in horizontally or upwardly inclined orientations to resist sustained tension loads. b. Mechanical anchors and adhesive anchors not defined in 4.a.	X –	– X	ACI 318: 17.8.2.4 ACI 318: 17.8.2	---
5. Verifying use of required design mix.	–	X	ACI318: Ch. 19, 26.4.3, 26.4.4	1904.1, 1904.2 1908.2, 1908.3
6. Prior to concrete placement, fabricate specimens for strength tests, per form slump and air content tests, and determine the temperature of the concrete.	X	–	ASTM C172 ASTM C31 ACI 318: 26.4, 26.12	1908.10
7. Inspection of concrete and shotcrete placement for proper application techniques.	X	–	ACI 318: 26.5	1908.6, 1908.7, 1908.8
8. Verify maintenance of specified curing temperature and techniques.	–	X	ACI 318: 26.5.3–26.5.5	1908.9
9. Inspect prestressed concrete for: a. Application of prestressing forces; and b. Grouting of bonded prestressing tendons	X X	– –	ACI 318: 26.10	--- ---
10. Inspect erection of precast concrete members.	–	X	ACI 318: Ch. 26.8	---
11. Verification of in–situ concrete strength, prior to stressing of tendons in post–tensioned concrete and prior to removal of shores and forms from beams and structural slab.	–	X	ACI 318: 26.11.2	---
12. Inspect formwork for shape, location and dimensions of the concrete member being formed.	–	X	ACI 318: 26.11.1.2(b)	---

NOTES:
1. WHERE APPLICABLE, SEE ALSO SECTION 1707.1, SPECIAL INSPECTION FOR SEISMIC RESISTANCE.
2. TABLES TAKEN DIRECTLY FROM IBC FOR REFERENCE.

MASONRY INSPECTION TASK	FREQUENCY (a)	REFERENCE FOR CRITERIA		IBC REFERENCE
		TMS 402	TMS 602	
1. As masonry construction begins, verify that the following are in compliance: a. Proportions of site–prepared mortar. b. Grade, type and size of reinforcement connectors and anchor bolts. c. Sample panel construction.	P P P		ART. 2.1, 2.6A, & 2.6C ART. 3.4 ART. 1.6D	
2. Prior to grouting, verify that the following are in compliance: a. Grout space. b. Placement of reinforcement, connectors, & anchor bolts. c. Proportions of site–prepared grout.	P P P	SEC. 6.1, 6.3.1, 6.3.6, & 6.3.7	ART. 3.2D & 3.2F ART. 3.2E & 3.4 ART. 2.6B & 2.4 G.1.b	
3. Verify compliance of the following during construction: a. Materials and procedures with the approved submittals. b. Placement of masonry units and mortar joint construction. c. Size and location of structural members. d. Type, size, and location of anchors, including other details of anchorage of masonry to structural members, frames, or other construction. e. Welding of reinforcement. f. Preparation, construction, and protection of masonry during cold weather (temperature below 40°F (4.4°C) or hot weather (temperature above 90°F (32.2°C). g. Placement of grout is in compliance.	P P P P C P C	SEC. 1.2.1(e), 6.2.1, & 6.3.1 SEC. 6.1.6.1.2	ART. 1.5 ART. 3.3B ART. 3.3F ART. 1.8C & 1.8D ART. 3.5	1705.04, 2104 & 2105
4. Observe preparation of grout specimens, mortar specimens, and/or prisms.	P		ART. 1.4 B.2.a.3, 1.4 B.2.b.3, 1.4 B.2.c.3, 1.4 b.3, & 1.4 B.4	

NOTES:
(a) Frequency refers to the frequency of inspection, which may be continuous during the listed task or periodically during the listed task, as defined in the table.
NR=Not Required, P=Periodic, C=Continuous
(b) Required for the first 5000 sq. ft. (465 sq. m.) of AAC masonry.
(c) Required after the first 5000 sq. ft. (465 sq. m.) of AAC masonry.

STEEL: VERIFICATION AND INSPECTION	CONTINUOUS	PERIODIC	REFERENCED STANDARD (NOTE1)	IBC REFERENCE
1. Material verification of high–strength bolts, nuts and washers: a. Identification markings to conform to ASTM standards specified in the approved construction documents. b. Manufacturer's certified test reports of compliance required.	– –	X X	APPLICABLE ASTM MATERIAL SPECS AISC 360, SEC. A3.3	
2. Inspection of high–strength bolting: a. Bearing–type connections. AISC 360, Section M2.5 1704.3.3	–	X		
3. Material verification of structural steel: a. Identification markings to conform to ASTM standards specified in the approved construction documents. b. Manufacturers' certified mill test reports.	–	–	AISC 360, SEC. M2.5 ASTM A 6 OR ASTM A 568	
4. Material verification of weld filler materials: a. Identification markings to conform to AWS specification in the approved construction documents. b. Manufacturer's certificate of compliance required.	– –	–	AISC 360, SEC. A3.5	
5. Inspection of welding: a. Structural steel: 1) Complete and partial penetration groove welds. 2) Multipass fillet welds. 3) Single–pass fillet welds > 5/16" 4) Single–pass fillet welds = 5/16" 5) Floor and roof deck welds. b. Reinforcing steel: 1) Verification of weld ability of reinforcing steel other than ASTM A 706. 2) Reinforcing steel–resisting flexural and Axial forces in intermediate and special Moment frames, and boundary elements of Special reinforced concrete shear walls and shear reinforcement. 3) Shear reinforcement. 4) Other reinforcing steel.	– X X – – – – X X –	– – – X X – X – – X	AWS D1.1 AWS D1.1 AWS D1.1 AWS D1.1 AWS D1.3 AWS D1.4 ACI 318: 3.5.2	
6. Inspection of steel frame joint details for compliance with approved construction documents: a. Details such as bracing and stiffening. b. Member locations. c. Application of joint details at each connection.	– – – –	X – – –		

NOTES:
1. WHERE APPLICABLE SEE ALSO SECTION 1701.1, SPECIAL INSPECTION FOR SEISMIC RESISTANCE.
2. TABLES TAKEN DIRECTLY FROM IBC FOR REFERENCE.

STEEL: CONSTRUCTION OTHER THAN STRUCTURAL STEEL: VERIFICATION AND INSPECTION	CONTINUOUS	PERIODIC	REFERENCED STANDARD (NOTE1)	IBC REFERENCE
1. Material verification of cold–formed steel deck: a. Identification markings to conform to ASTM standards specified in the approved construction documents. b. Manufacturer's certified test reports.	– –	X	APPLICABLE ASTM MATERIAL STANDARDS	
2. Inspection of welding: a. Cold formed steel deck: 1) Floor and roof deck welds. b. Reinforcing steel: 1) Verification of weldability of reinforcing steel other than ASTM A 706. 2) Reinforcing steel resisting flexural and axial forces in intermediate and special moment frames, and boundary elements of special structural walls of concrete and shear reinforcement. 3) Shear reinforcement. 4) Other reinforcing steel. Not the responsibility of the structural engineer. Special inspection certificate to be completed by geotechnical engineer.	– – X – X – X	X – – X	AWS D1.3 ACI 318: 3.5.2 AWS D1.4	

SOILS:				
1. Verify materials below shallow foundations are adequate to achieve the design bearing apacity.	–	X		
2. Verify excavations are extended to proper depth and have reached proper material.	–	X		
3. Perform classification and testing of compacted fill materials.	–	X		
4. Verify use of proper materials, densities and lift thicknesses during placement and compaction of compacted fill.	X	–		
5. Prior to placement of compacted fill, inspect subgrade and verify that site has been properly prepared.	–	X		

EXPANSION, SCREW, AND EPOXY BOLTS:				
1. During placement of all expansion, screw, & epoxy bolts, for visual verification of hole diameter and depth and placement of bolt and/or epoxy.	–	X		

DUTIES AND RESPONSIBILITIES OF THE SPECIAL INSPECTOR:

A) THE SPECIAL INSPECTOR SHALL OBSERVE THE WORK ASSIGNED TO BE CERTAIN IT CONFORMS WITH THE APPROVED DESIGN DRAWINGS AND SPECIFICATION.

B) THE SPECIAL INSPECTOR SHALL FURNISH INSPECTION REPORTS TO THE BUILDING OFFICIAL, AND TO THE ENGINEER.

C) UPON COMPLETION OF THE ASSIGNED WORK THE ENGINEER OR ARCHITECT SHALL COMPLETE AND SIGN THE APPROPRIATE FORMS CERTIFYING THAT TO THE BEST OF HIS KNOWLEDGE THE WORK IS IN CONFORMANCE WITH THE APPROVED PLANS AND SPECIFICATIONS AND THE APPLICABLE WORKMANSHIP PROVISIONS OF THE CODE.

PK ASSOCIATES, LLC
6900 E. Belleview Ave. #200
Greenwood Village, Colorado 80111
Phone: (720) 799–1058
Email: cadd@pkastructural.com
Website: www.pkastructural.com

Butler Design Group Inc.
architects & planners
5017 East Washington St. #107
Phoenix, Arizona 85034
Phone 602-957-1800

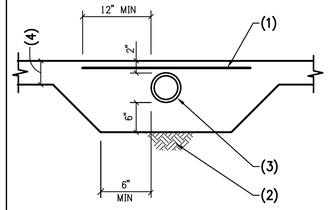
PROGRESS PRINT NOT FOR CONSTRUCTION

Case #:
Plan Check #:
Date: 10/15/2024
Revisions:

Project Number: 21002
Drawn By: PKA
Title: GENERAL STRUCTURAL NOTES

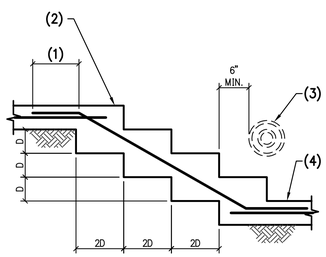
S002

PK ASSOCIATES, LLC
6900 E. Belleview Ave. #200
Greenwood Village, Colorado 80111
Phone: (720) 799-1058
Email: cadd@pkastructural.com
Website: www.pkastructural.com



NOTES:
1. 4x4 – W1.4xW1.4 W.W.F. OR #4 AT 12" O.C.
2. FIRM UNDISTURBED SOIL OR COMPACTED BASE.
3. PIPE OR CONDUIT.
4. TYPICAL SLAB THICKNESS.

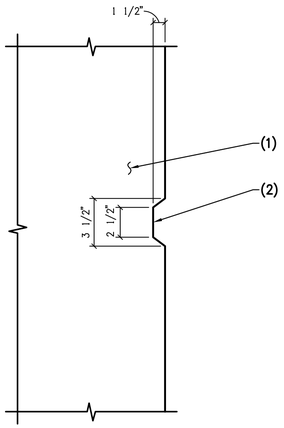
07 SLEEVE FOR PIPE AT SLAB — NO SCALE



NOTES:
1. LAP PER G.S.N. (24" MIN.) – TYPICAL.
2. TOP OF WALL FOOTING.
3. PIPE THRU STEM WALL AS OCCURS – SEE TYPICAL DETAIL.
4. RETURN TO FOOTING THICKNESS AS SHOWN ON PLAN.

NOTE:
D = 2'–0" MAXIMUM.

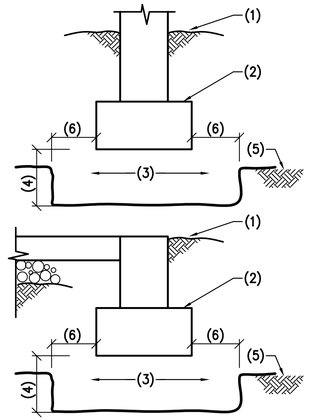
04 TYPICAL STEP IN CONCRETE FOOTING — NO SCALE



NOTES:
1. CONCRETE.
2. KEYED JOINT – REMOVE FORM MATERIAL PRIOR TO PLACING ADJACENT CONCRETE.

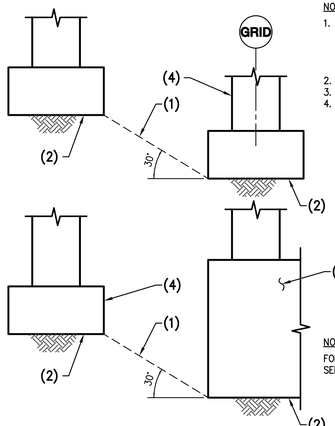
NOTE:
ALL DIMENSIONS ARE ± 1/2".

01 TYPICAL KEY IN CONCRETE — NO SCALE



NOTES:
1. FOR DEPTH OF FOOTING, SEE G.S.N.
2. SEE SOILS REPORT AND G.S.N. FOR LOCATIONS WHERE ENGINEERED FILL IS REQUIRED.

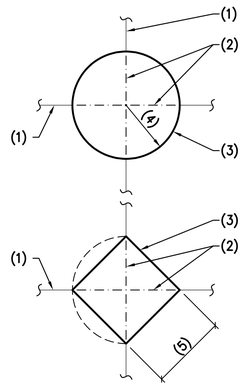
08 TYPICAL SPREAD FOOTING ON ENGINEERED COMPACTED FILL — NO SCALE



NOTES:
1. MAXIMUM SLOPE BETWEEN BOTTOM OF FOOTINGS SHALL BE 30 DEGREES. STEP FOOTINGS AS REQUIRED – SEE TYPICAL DETAIL.
2. BOTTOM OF FOUNDATION.
3. CONCRETE FOOTING.
4. WALL OR COLUMN AS OCCURS.

NOTE:
FOR ADDITIONAL INFORMATION, SEE PLANS AND DETAILS.

05 MAXIMUM SLOPE BETWEEN ADJACENT FOOTING – TYP. U.N.O. — NO SCALE



NOTES:
1. "CONC. C.J." WHERE SHOWN ON PLAN.
2. CENTERLINE OF COLUMN.
3. KEYED JOINT – SEE TYPICAL THICKENED SLAB AT CONCRETE CLOSURE POUR DETAIL.
4. RADIUS 1'–6" MIN. / 3'–0" MAX.
5. 2'–0" MIN. / 4'–0" MAX.

NOTE:
FOR CLARITY, COLUMNS OMITTED FOR CONFIGURATION OF SPECIFIC CLOSURE POURS, SEE PLAN.

02 TYPICAL COLUMN CLOSURE POUR AT CONCRETE SLAB ON GRADE — NO SCALE

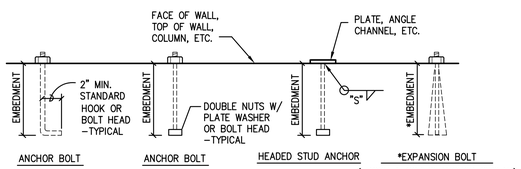
BOLT DIAMETER	VERT BOLT EMBEDMENT LENGTH	HORIZ BOLT EMBEDMENT LENGTH	HEADED STUD FILLET WELD SIZE, "S".
1/2"	6"	4"	1/4"
5/8"	6"	4"	5/16"
3/4"	7"	5"	5/16"
7/8"	8"	6"	5/16"
1"	9"	7"	3/8"
1 1/8"	10"	8"	-----
1 1/4"	11"	9"	-----

NOTES:
PROVIDE ANCHORS, ANCHOR BOLTS AND EXPANSION BOLTS PER THIS SCHEDULE UNLESS NOTED OTHERWISE ON PLANS OR DETAILS.

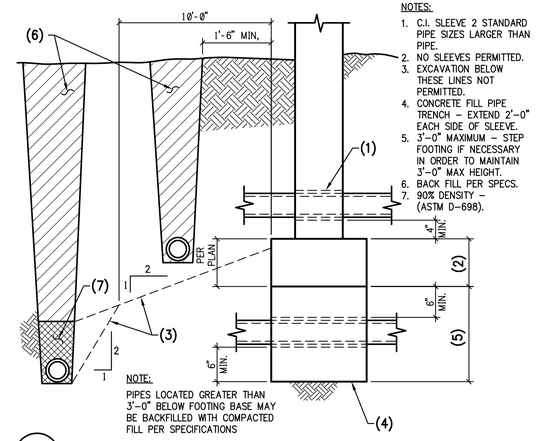
THICKNESS OF DRYPACK DOES NOT APPLY TOWARDS EMBEDMENT.

SEE GENERAL STRUCTURAL NOTES FOR SPECIFICATIONS ON EXPANSION BOLTS AND EPOXY ANCHORS.

*WHERE ANCHORS ARE USED FOR TENSION/UPLIFT APPLICATION, EMBEDMENT DEPTH FROM TABLE SHALL BE INCREASED BY 1 1/2" TIMES



09 TYPICAL ANCHOR, ANCHOR BOLT, AND EXPANSION BOLT SCHEDULE — NO SCALE



NOTES:
1. C.I. SLEEVE 2 STANDARD PIPE SIZES LARGER THAN PIPE.
2. NO SLEEVES PERMITTED.
3. EXCAVATION BELOW THESE LINES NOT PERMITTED.
4. CONCRETE FILL PIPE TRENCH – EXTEND 2'–0" EACH SIDE OF SLEEVE.
5. 3'–0" MAXIMUM – STEP FOOTING IF NECESSARY IN ORDER TO MAINTAIN 3'–0" MAX HEIGHT.
6. BACK FILL PER SPECS.
7. 90% DENSITY – (ASTM D–698).

NOTE:
PIPES LOCATED GREATER THAN 3'–0" BELOW FOOTING BASE MAY BE BACKFILLED WITH COMPACTED FILL PER SPECIFICATIONS

06 PIPE THROUGH FOOTING AND TRENCH — NO SCALE

CONC. PSI	CLASS B TENSION SPLICE LENGTHS						COMP. BARS	
	f'c = 2,500 PSI / f'c = 3,000 PSI		f'c = 4,000 PSI		f'c = 5,000 PSI AND HIGHER		f'c = ALL	
BAR LOCATION	REGULAR	TOP	REGULAR	TOP	REGULAR	TOP	STD	ENCLOSED
SIZE	CLASS	CLASS	CLASS	CLASS	CLASS	CLASS	LAP	W/ SPIRAL TIES
#3	24"	31"	19"	24"	17"	22"	12"	12"
#4	32"	41"	25"	33"	23"	29"	15"	12"
#5	39"	51"	31"	41"	28"	36"	19"	14"
#6	47"	61"	37"	49"	34"	43"	23"	17"
#7	69"	89"	54"	71"	49"	63"	26"	20"
#8	78"	102"	62"	81"	56"	72"	30"	23"
#9	88"	115"	70"	91"	63"	81"	34"	25"
#10	100"	129"	79"	102"	70"	92"	38"	29"
#11	110"	143"	87"	113"	78"	102"	42"	32"

NOTES:
1. TOP BARS ARE ANY HORIZONTAL BARS PLACED SO THAT MORE THAN 12" OF FRESH CONCRETE IS CAST IN THE MEMBER BELOW THE REINFORCEMENT.
2. UNLESS NOTED OTHERWISE, LAP SPLICES IN CONCRETE BEAMS, SLABS, AND WALLS WILL BE CLASS B TENSION SPLICE LENGTHS. COLUMNS SHALL HAVE STANDARD COMPRESSION LAP SPLICE.
3. CONTACT STRUCTURAL ENGINEER IF CENTER TO CENTER SPACING OF REINFORCING IS LESS THAN OR EQUAL TO 3 BAR DIAMETERS <3db OR 2db CLEAR SPACING BETWEEN BARS.
4. ALL SPLICES MUST BE FULL CONTACT.
5. SPLICES WITH #14 OR #18 BARS SHALL USE MECHANICAL COUPLERS. (THIS INCLUDES #14 OR #18 BARS TO SMALLER BARS SHOWN IN SCHEDULE).

03 LAP SCHEDULE FOR REINFORCING STEEL — NO SCALE

INTERPRETATION OF DRAWINGS

LOCATION OF INFORMATION

ITEM	INFORMATION	LOCATION	SHEET
FOOTINGS	SIZE, REINFORCING DEPTH OF FOOTING	SCHEDULE (F) (WF) GENERAL STRUCTURAL NOTES (G.S.N.) SEE PLAN(S) AND/OR DETAILS	S008 S001
FRAMING MEMBERS	TYPE, SIZE, CONNECTION CAMBER, BEARING PLATES	SCHEDULE (L)	S008
COLUMNS	TYPE, SIZE, BASE PLATES, REINFORCING	SCHEDULE (C)	S008
MASONRY WALLS	TYPICAL REINFORCING SPECIAL REINFORCING	GENERAL STRUCTURAL NOTES (G.S.N.) SEE PLAN(S) AND/OR DETAILS	S001
CONCRETE WALLS	THICKNESS, REINFORCING	SEE PLAN(S) AND/OR DETAILS	S301–S305

PLAN LEGEND

SYMBOL	DESCRIPTION	REMARKS
101 / 201 PLAN VIEW	DETAIL CUTS SHOWN ON PLANS	TYPICAL DETAILS ARE TWO DIGIT SERIES NUMBERS FOUNDATION DETAILS ARE 100 SERIES NUMBERS PANEL DETAILS ARE 200 SERIES NUMBERS FRAMING DETAILS ARE 300 SERIES NUMBERS
	TILT UP CONCRETE WALL U.N.O.	SEE PLANS AND SCHEDULES FOR REINFORCING
	8" MASONRY WALL	SEE PLANS AND SCHEDULES FOR REINFORCING
	STEEL MEMBERS	SEE G.S.N., PLANS & SCHED. FOR SIZE AND SPACING
	MECHANICAL EQUIPMENT	SEE PLANS FOR UNIT WEIGHTS
	OPENING IN FRAMING	SEE NOTE #4

NOTES

1. FOR MATERIAL STRENGTHS, SEE GENERAL STRUCTURAL NOTES
2. VERIFY ALL DIMENSION WITH ARCHITECTURAL DRAWINGS PRIOR TO START OF CONSTRUCTION – RESOLVE ANY DISCREPANCIES WITH ARCHITECT.
3. FOR CLARITY, ALL EXTERIOR SLABS AND SIDEWALKS MAY NOT BE SHOWN. FOR EXACT DIMENSIONS, LOCATIONS, JOINT AND SCORE LINES, SEE ARCHITECTURAL DRAWINGS
4. FOR CLARITY, ALL OPENINGS MAY NOT BE SHOWN ON FRAMING PLANS. FOR EXACT SIZE, NUMBER, AND LOCATION OF OPENINGS, SEE ARCHITECTURAL, MECHANICAL, ELECTRICAL AND PLUMBING DRAWINGS. FOR FRAMING AT OPENINGS, SEE TYPICAL STRUCTURAL DETAILS. VERIFY ALL SIZES, WEIGHTS AND LOCATIONS OF MECHANICAL EQUIPMENT WITH MECHANICAL ENGINEER AND MECHANICAL CONTRACTOR THROUGH ARCHITECT.
5. DETAILS MARKED "TYPICAL" MAY NOT BE CUT ON PLANS.
6. CONC C.J. – AS SHOWN ON PLAN INDICATES LOCATION OF EITHER KEYED OR SAW CUT CONTROL JOINT IN SLAB ON GRADE AT CONTRACTOR'S OPTION, SEE GENERAL STRUCTURAL NOTES AND PLANS.
7. MAS C.J. – AS SHOWN ON PLAN INDICATES MASONRY CONTROL JOINT IN MASONRY WALL, SEE G.S.N. AND TYPICAL DETAIL.
8. FOR CLARITY, DETAILS MAY SHOW ONLY ONE SIDE OF FRAMING CONDITION.
9. CONTRACTOR TO VERIFY, AND BE RESPONSIBLE FOR VARIATIONS IN CONCRETE QUANTITY DUE TO CAMBER, CONSTRUCTION DEAD LOAD DEFLECTIONS AND/OR TOLERANCES OF STRUCTURAL STEEL ELEMENTS (i.e. BEAMS, STEEL DECK, ETC.) AND PRECAST CONCRETE ELEMENTS.
10. ALL SCHEDULE MARK DESIGNATIONS MAY NOT NECESSARILY BE FOUND ON THE PLANS WHERE THE SCHEDULES OCCUR. SCHEDULES ARE TYPICAL TO THE PROJECT.

ABBREVIATIONS

A.B.C.	AGGREGATE BASE COURSE
A/C	AIR CONDITIONER
A.F.F.	ABOVE FINISHED FLOOR
ALT.	ALTERNATE
A.B.	ANCHOR BOLT
@	AT (MEASUREMENT)
BM	BEAM
B.F.F	BELOW FINISHED FLOOR
B.O.B.	BOTTOM OF BEAM
B.O.D.	BOTTOM OF DECK
B.O.F.	BOTTOM OF FOOTING
BRG	BEARING
C.I.P.	CAST IN PLACE
C.L.	CENTERLINE
C.L.B.	CENTERLINE OF BEAM
C.L.C.	CENTERLINE OF COLUMN
C.L.F.	CENTERLINE OF FOOTING
C.L.W.	CENTERLINE OF WALL
CLR	CLEAR
CONC	CONCRETE
CONC C.J.	CONCRETE CONTROL JOINT
CONC S.J.	CONCRETE SAWCUT JOINT
C.M.U.	CONCRETE MASONRY UNIT
CONN	CONNECTION
CONT	CONTINUOUS
D.L.	DEAD LOAD
ø OR DIA.	DIAMETER
DN	DOWN
DWG(S)	DRAWING(S)
E.O.S.	EDGE OF SLAB
EQ	EQUAL
EQUIP	EQUIPMENT
EXP. BOLT	EXPANSION BOLT
EXP. JT (E.J.)	EXPANSION JOINT
E.W.	EACH WAY
F.F.	FINISHED FLOOR
F.O.M.	FACE OF MEMBER
F.O.S.	FACE OF STEEL
F.O.W.	FACE OF WALL
GA	GAGE
GALV	GALVANIZED
G.S.N.	GENERAL STRUCTURAL NOTES
GLB (GLULAM)	GLUED–LAMINATED BEAM
I.F.W.	INSIDE FACE OF WALL
HORIZ	HORIZONTAL
K(KIP)	1000 POUNDS
L.L.	LIVE LOAD
LBS (#)	POUNDS
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
MFR('S)	MANUFACTURER('S)
MAS C.J.	MASONRY CONTROL JOINT
MECH'L	MECHANICAL
N/A	NOT APPLICABLE
N.T.S.	NOT TO SCALE
O.C.	ON CENTER
O.F.W.	OUTSIDE FACE OF WALL
OPP	OPPOSITE
P.C.	PRECAST CONCRETE
P.J.	PANEL JOINT
PLF	POUNDS PER LINEAR FOOT
PLYWD	PLYWOOD
PREFAB	PREFABRICATED
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
REINF	REINFORCING
SLH	SHORT LEG HORIZONTAL
SLV	SHORT LEG VERTICAL
SIM	SIMILAR
SQ.	SQUARE
STD	STANDARD
T.L.	TOTAL LOAD
T.O.B.	TOP OF BEAM
T.O.C.	TOP OF CONCRETE
T.O.D.	TOP OF DECK
T.O.F.	TOP OF FOOTING
T.O.L.	TOP OF LEDGER
T.O.M.	TOP OF MASONRY
T.O.P.	TOP OF PLATE
T.O.S.	TOP OF STEEL
T.O.W.	TOP OF WALL
TYP	TYPICAL
U.N.O.	UNLESS NOTED OTHERWISE
VERT	VERTICAL
W.W.F.	WELDED WIRE FABRIC
W/	WITH
W/O	WITHOUT

Butler Design Group Inc.
architects & planners
5017 East Washington St. #107
Phoenix, Arizona 85034
Phone 602-957-1800

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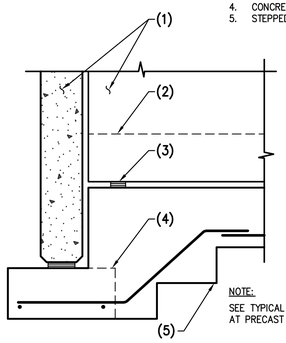
Case #:
Plan Check #:
Date: 10/15/2024
Revisions:

Project Number: 21002
Drawn By: PKA
Title: TYPICAL DETAILS

S003

PK ASSOCIATES, LLC
6900 E. Belleview Ave. #200
Greenwood Village, Colorado 80111
Phone: (720) 799-1058
Email: cadd@pkastructural.com
Website: www.pkastructural.com

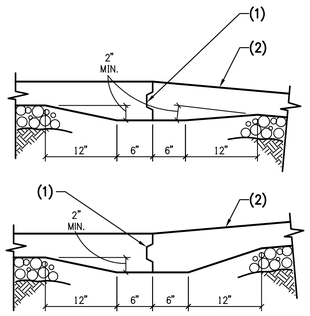
NOTES:
1. PRECAST CONCRETE PANEL.
2. FINISHED FLOOR LINE.
3. SETTING PAD AS REQUIRED.
4. CONCRETE FOOTING BEYOND.
5. STEPPED CONCRETE FOOTING.



NOTE:
SEE TYPICAL STEPPED FOOTING AT PRECAST PANEL DETAIL.

19 *STEPPED FOOTING AT CORNER*
NO SCALE

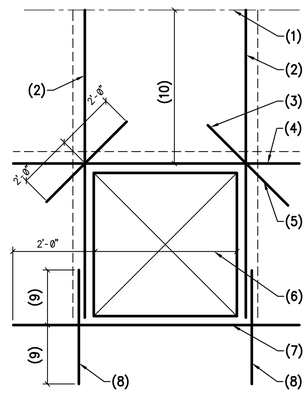
NOTES:
1. CONTINUOUS KEY – SEE TYPICAL KEY IN CONCRETE DETAIL.
2. CONCRETE SLAB ON GRADE.



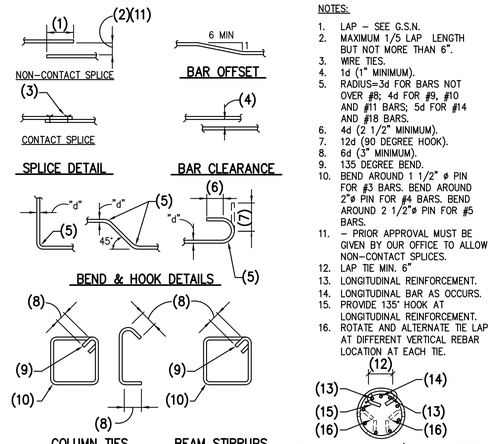
16 *TYPICAL RAMP AT CONCRETE SLAB ON GRADE*
NO SCALE

NOTES:
1. FLOOR OR ROOF LINE.
2. 1 VERT. E.F. TO MATCH SIZE OF TYPICAL WALL REINFORCING WHERE OPENING WIDTH IS GREATER THAN 4'–0" USE 2 VERT. E.F. SAME SIZE AS WALL REINFORCING.
3. WHERE 2'–0" CANNOT BE OBTAINED, EXTEND BAR AS FAR AS POSSIBLE AND HOOK OR BEND.
4. 2– #5 FOR OPENINGS 4'–0" WIDE OR LESS; 2– #6 FOR OPENINGS WIDER THAN 4'–0"; 4– #6 (2 ROWS OF 2 AT 4" O.C.) PER OPENINGS WIDER THAN 6'–0".
5. 2– #5 TYPICAL CORNER DIAGONAL BARS.
6. 8'–0" MAX. OPENING WIDTH– WHERE WIDTH OF OPENING EXCEEDS 2 TIMES WALL THICKNESS. JAMB BARS SHALL EXTEND FULL HEIGHT OF WALL.
7. 2– #5 UNLESS LARGER BARS ARE SHOWN ON PLANS OR DETAILS.
8. DOWELS ARE SAME SIZE AS JAMB BARS.
9. EMBED AND LAP PER G.S.N.
10. MINIMUM DIMENSION MUST BE GREATER THAN OPENING WIDTH. NOTIFY ENGINEER IF THIS CRITERIA IS NOT MET.

NOTES:
MAXIMUM OPEN WIDTH IS 8'–0" FOR THIS DETAIL. NOTIFY ENGINEER IF LARGER OPENING IS REQUIRED.

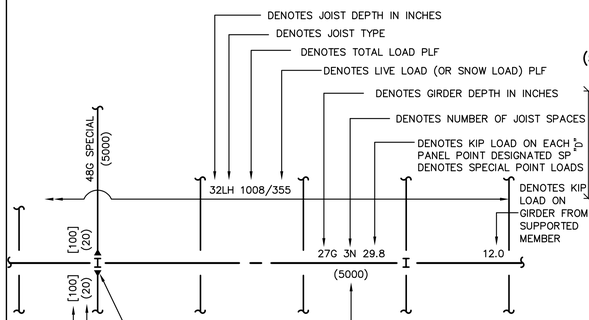


13 *TYPICAL OPENING IN CONCRETE WALL*
NO SCALE



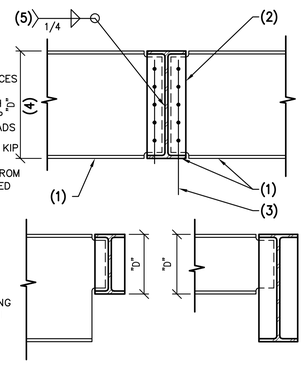
NOTES:
1. LAP – SEE G.S.N.
2. MAXIMUM 1/5 LAP LENGTH BUT NOT MORE THAN 6".
3. WIRE TIES.
4. 1d (1" MINIMUM).
5. RADIUS=3d FOR BARS NOT OVER #8; 4d FOR #9, #10 AND #11 BARS; 5d FOR #14 AND #18 BARS.
6. 4d (2 1/2" MINIMUM).
7. 12d (90 DEGREE HOOK).
8. 6d (3" MINIMUM).
9. 135 DEGREE BEND.
10. BEND AROUND 1 1/2" ø PIN FOR #3 BARS. BEND AROUND 2"ø PIN FOR #4 BARS. BEND AROUND 2 1/2"ø PIN FOR #5 BARS.
11. – PRIOR APPROVAL MUST BE GIVEN BY OUR OFFICE TO ALLOW NON–CONTACT SPLICES.
12. LAP TIE MIN. 6"
13. LONGITUDINAL REINFORCEMENT.
14. LONGITUDINAL BAR AS OCCURS.
15. PROVIDE 135° HOOK AT LONGITUDINAL REINFORCEMENT.
16. ROTATE AND ALTERNATE TIE LAP AT DIFFERENT VERTICAL REBAR LOCATION AT EACH TIE.

10 *TYPICAL CONCRETE REINFORCING BAR DETAILS*
NO SCALE



20 *NOTE TO STEEL JOIST AND JOIST GIRDER MANUFACTURER*
NO SCALE

NOTES:
1. STEEL BEAM.
2. 3/8" STEEL SHEAR PLATE –USE 5/8" STEEL SHEAR PLATE WHERE "D" = 27" OR GREATER.
3. FOR SIZE, TYPE & NUMBER OF BOLTS, SEE TYPICAL BOLT SCHEDULE.
4. "D" = LESSER OF BEAM DEPTHS AS OCCURS.
5. WELD 3 SIDES TYPICAL – USE SAME CONNECTION AT STIFFENER PLATES WHEN REQUIRED.



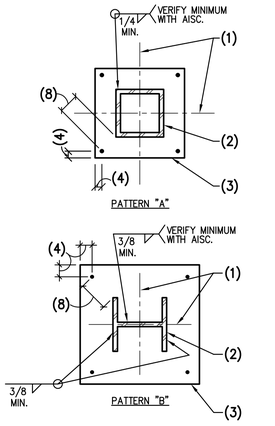
NOTE:
AT ONE SIDED CONNECTIONS, INSTALL 3/8" STIFFENER PLATE OPPOSITE SHEAR PLATE.

17 *TYPICAL CONNECTION WIDE FLANGE BEAM TO BEAM*
NO SCALE

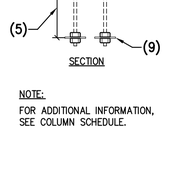
NOMINAL BEAM DEPTH "D"	NUMBER OF 1" DIA. ASTM, A325N BOLTS
UP TO 7"	2
8" – 11"	2
12" – 14"	3
15" – 17"	4
18" – 20"	5
21" – 23"	6
24" – 29"	7
30" – 32"	8

FRAMING NOTES:
1. THE TYPICAL STEEL BEAM TO STEEL COLUMN OR STEEL BEAM TO STEEL BEAM CONNECTION CONSISTS OF 3/8" SINGLE SHEAR PLATES WITH 1" DIA. ASTM A325N BOLTS. USE 5/8" SHEAR PLATES WHERE "D" = 27" OR GREATER.
2. ALL BOLTS SHALL BE INSTALLED USING SHORT SLOTTED HOLES IN EITHER THE BEAM WEB OR THE SHEAR PLATE PER LATEST AISC SPECIFICATIONS.
3. CONNECTIONS REQUIRING DOUBLE PLATE REQUIRED FOR THE FOLLOWING MEMBERS (AND HEAVIER) –
W16X57
W18x65
W21x83
W24x94
W27X102
W30x116

14 *BOLT SCHEDULE FOR TYPICAL STEEL CONNECTIONS*
NO SCALE



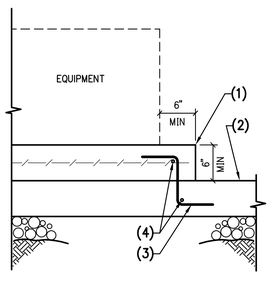
NOTES:
1. CENTERLINE OF COLUMN AND STEEL BASE PLATE.
2. STEEL COLUMN.
3. STEEL BASE PLATE.
4. DIMENSION PER AISC TABLE J3.4 (1 1/4" MIN), TYPICAL U.N.O.
5. EMBEDMENT PER SCHEDULE U.N.O.
6. DOUBLE NUTS.
7. 1 1/2" DRYPACK.
8. 2" MINIMUM.
9. 3/8"x2"x2" PLATE WASHER U.N.O.



SECTION

NOTE:
FOR ADDITIONAL INFORMATION, SEE COLUMN SCHEDULE.

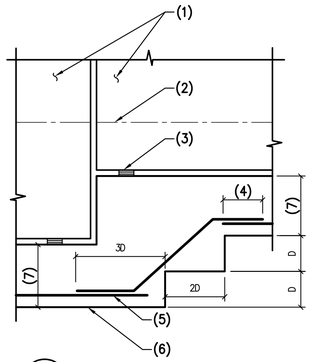
11 *PLAN VIEW – STEEL COLUMN AT STEEL BASE PLATE*
NO SCALE



NOTES:
1. 6" CONCRETE PAD MIN. WITH 6x6–W2.1xW2.1 W.W.F. UNDER EQUIPMENT.
2. CONCRETE SLAB ON GRADE PER PLAN.
3. #4 Z–BARS WITH 12" HOOKS AT 18" O.C. MAX AROUND PERIMETER OF PAD – TYP.
4. 1– #4 CONT.

21 *TYPICAL CONCRETE EQUIPMENT PAD*
NO SCALE

NOTES:
1. PRECAST CONCRETE PANEL.
2. FINISHED FLOOR LINE.
3. PANEL SETTING PADS.
4. LAP PER G.S.N. (24" MIN.) – TYPICAL.
5. FOOTING REINFORCING.
6. CONCRETE FOOTING.
7. RETURN TO FOOTING THICKNESS AS SHOWN ON PLAN.

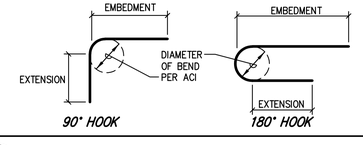


NOTES:
D = 2'–0" MAXIMUM.

18 *STEPPED WALL FOOTING AT PRECAST CONCRETE PANEL*
NO SCALE

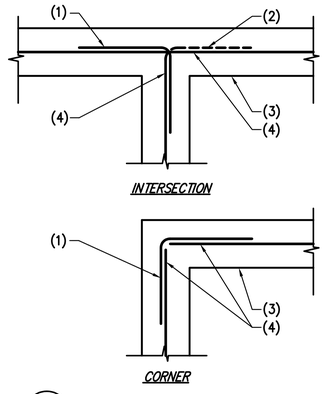
BAR SIZE	HOOKED EMBEDMENT			EXTENSION		STRAIGHT BAR EMBEDMENT		
	3000 PSI CONCRETE	4000 PSI CONCRETE	5000 PSI CONCRETE	90° HOOK	180° HOOK	5000 PSI	4000 PSI	3000 PSI
#3	6	6	6	4.5	2.5	13	14	16
#4	8	7	6	6.0	2.5	17	19	22
#5	10	8	7	7.5	2.5	21	24	27
#6	12	10	9	9.0	3.0	26	28	33
#7	13	12	10	10.5	3.5	37	42	48
#8	15	13	12	12.0	4.0	43	47	55
#9	17	15	13	13.5	4.5	48	54	62
#10	19	17	15	15.2	5.1	54	60	70
#11	22	19	17	16.9	5.6	60	67	77

NOTES:
1. EMBEDMENT LENGTH IS BASED ON 2 1/2" MINIMUM SIDE COVER AND 2" MINIMUM END COVER.
2. CONTACT STRUCTURAL ENGINEER IF CENTER TO CENTER SPACING OF REINFORCING IS LESS THAN OR EQUAL TO 3 BAR DIAMETERS <3db OR 2db CLEAR SPACING BETWEEN BARS.
3. WHERE CLEAR COVER <db, MULTIPLY EMBEDMENT AND STRAIGHT BAR DEVELOPMENT BY 1.5.



15 *DOWEL DEVELOPMENT LENGTH IN TENSION (INCHES)*
NO SCALE

NOTES:
1. CORNER BARS SAME SIZE AND SPACING AS HORIZONTAL REINFORCING. LAP PER G.S.N. (24" MINIMUM).
2. ALTERNATE BEND.
3. CONCRETE STEM WALL OR FOOTING.
4. REINFORCING PER PLANS AND/OR G.S.N.



12 *PLAN – CORNER REINFORCING IN CONCRETE FOOTING AND/OR STEM WALL*
NO SCALE

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architects & planners
5017 East Washington St. #107
Phoenix, Arizona 85034
Phone 602-957-1800

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American Furniture Warehouse
Your LIFESTYLE FURNITURE Store
AMERICAN HEIGHTS & TUTT BOULEVARD
COLORADO SPRINGS, COLORADO

Case #:
Plan Check #:
Date: 10/15/2024
Revisions:

Project Number: 21002
Drawn By: PKA
Title: TYPICAL DETAILS

S004

PK ASSOCIATES, LLC
6900 E. Belleview Ave. #200
Greenwood Village, Colorado 80111
Phone: (720) 799-1058
Email: cadd@pkastructural.com
Website: www.pkastructural.com

Butler Design Group Inc.
architects & planners
5017 East Washington St. #107
Phoenix, Arizona 85034
Phone 602-957-1800

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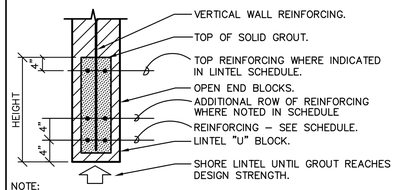
JAMB BARS	WALL OPENING
1 BAR IN FIRST * 3 CELLS	0'–0" ⟶ 4'–0"
2 BARS IN FIRST 2 CELLS (4 BARS)	4'–1" ⟶ 6'–0"
2 BARS IN FIRST 3 CELLS (6 BARS)	6'–1" ⟶ 8'–0"
2 BARS IN FIRST 4 CELLS (8 BARS)	8'–1" ⟶ 10'–0"
2 BARS IN FIRST 5 CELLS (10 BARS)	10'–1" ⟶ 14'–0"
2 BARS IN FIRST 6 CELLS (12 BARS)	14'–1" ⟶ 16'–0"

FOR OPENINGS LARGER THAN 16'–0" SEE PLAN. IF SPECIAL JAMB BARS ARE NOT SHOWN. USE WALL BRACES TO STRUCTURE.

* WHERE ADJACENT WALL IS NOT ALLOW FOR 3 CELL USE 2 CELLS WITH 2 BARS PER CELL.

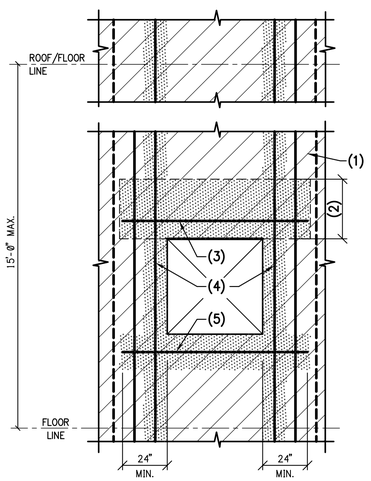
NOTES:
1. MASONRY WALL.
2. DEPTH OF MASONRY LINTEL BEAM – SEE PLANS, TYPICAL MASONRY LINTEL SCHEDULE ABOVE AND DETAILS.
3. LINTEL REINFORCING.
4. #5 VERTICAL BAR IN GROUTED CELL TO MATCH VERTICAL WALL REINFORCING – FULL HEIGHT OF WALL – SEE SCHEDULE BELOW.
5. 2 #5 BARS IN 8" DEEP SOLID GROUTED BOND BEAM – HOOK BARS UP AT CORNERS.

TYPICAL MASONRY LINTEL SCHEDULE FOR OPENINGS IN MASONRY WALLS

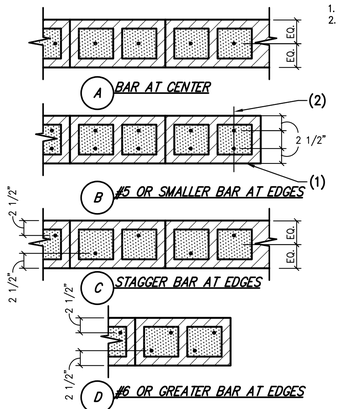


NOTE:
1. VERTICAL REINFORCING TO MATCH AND LAP WALL REINFORCING PER G.S.N.
2. EXTEND GROUT, OPEN END MASONRY UNITS AND REINFORCING 2'–0" PAST EACH JAMB. USE CORNER BARS WHERE 2'–0" CANNOT BE ACHIEVED.

ROUGH OPENING WIDTH	HEIGHT	REINFORCING	REMARKS
0 – 4'–0"	16"	2 #5 TOP & BOTTOM	---
4'–1" – 6'–0"	24"	2 #5 TOP & BOTTOM	---
6'–1" – 8'–0"	32"	2 #5 TOP & BOTTOM	---
8'–1" – 10–0"	48"	4 #5 BOTTOM (2 ROWS OF 2) 2 #5 TOP	---

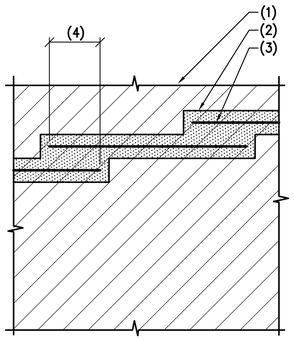


30 TYPICAL OPENING IN MASONRY WALL – U.N.O. ON PLANS
NO SCALE



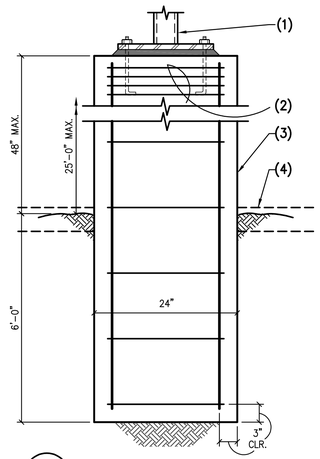
NOTES:
1. MASONRY WALL.
2. VERTICAL REINFORCING AS SHOWN ON PLANS.

28 PLAN VIEW – TYPICAL MASONRY WALL REINFORCING PLACEMENT
NO SCALE



NOTES:
1. MASONRY WALL.
2. SOLID GROUTED BOND BEAM.
3. BOND BEAM REINFORCING.
4. LAP REINFORCING PER G.S.N. (24" MINIMUM).

25 STEPPED MASONRY WALL BOND BEAM
NO SCALE

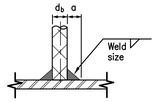


NOTES:
1. LIGHT POLE, BASEPLATE, AND ANCHOR BOLTS BY OTHERS.
2. 4– #3 TIES IN TOP 5".
3. CONCRETE BASE W/ 8– #5 VERTICALS AND #3 TIES AT 12" O.C., VERTICALLY (CONCRETE STRENGTH = 3000 PSI).
4. FINISHED GRADE OR CONCRETE SLAB AS OCCURS.

NOTE:
–REFER TO ARCH'L. FOR ADDITIONAL INFO.
–SOIL BEARING PRESSURE = 1000 PSF.
–COEFFICIENT OF FRICTION (WITH PASSIVE PRESSURE) = 0.30.
–ACTIVE PRESSURE = 35 PCF.
–PASSIVE PRESSURE = 250 PCF.

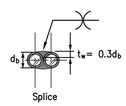
22 TYPICAL LIGHT POLE BASE DETAIL
NO SCALE

Bar size, number	E70 Electrodes
	Weld size, in.
4	1/4
5	5/16
6	3/8
7	7/16
8	1/2
9	9/16
10	5/8
11	11/16



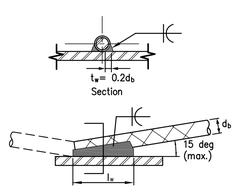
A SIZE OF FILLET WELD REQUIRED TO DEVELOP DESIGN STRENGTH OF BAR; BUTTED TO PLATE

Bar size, number	Electrode material grade: E80 OR E90 A706 OR A615
	Minimum Splice Length, in.
4	3½
5	3½
6	4
7	4
8	5
9	6
10	8
11	10



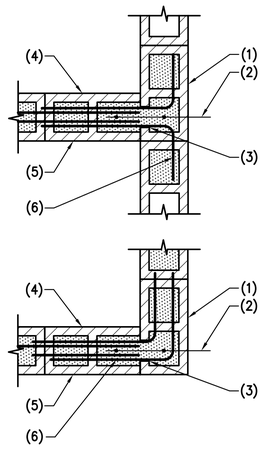
B MINIMUM SPLICE LENGTH OF WELD TO DEVELOP BAR STRENGTHS SHOWN; WELD PARALLEL TO BAR LENGTH

Bar size, number	E70 Electrodes
	Minimum length of weld, in.
4	3
5	4
6	4½
7	5
8	5
9	6
10	8
11	9



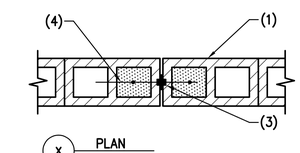
C MINIMUM LENGTH OF WELD TO DEVELOP DESIGN STRENGTH OF BAR; WELD PARALLEL TO BAR LENGTH

29 WELD DEVELOPMENT LENGTHS
NO SCALE



NOTES:
1. MASONRY WALL.
2. VERTICAL REINFORCING FULL HEIGHT.
3. BREAK OUT FACE SHELL AND GROUT SOLID – FULL HEIGHT OF WALLS.
4. OPEN END MASONRY UNIT.
5. MASONRY LINTEL.
6. DOWELS IN GROUTED BOND BEAM TO MATCH AND LAP LINTEL REINFORCING PER G.S.N. – 24" X 24" MIN. BEND AS REQUIRED.

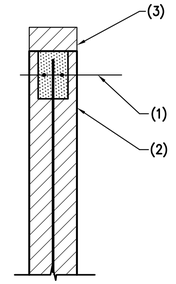
26 PLAN VIEW – MASONRY WALL INTERSECTION AT MASONRY LINTEL
NO SCALE



NOTES:
1. MASONRY WALL.
2. CONTROL JOINT.
3. CONTROL JOINT MATERIAL PER ARCHITECTURAL DRAWINGS AND SPECIFICATIONS.
4. 1 VERTICAL BAR EACH SIDE IN SOLID GROUTED CELLS TO MATCH VERTICAL WALL REINFORCING.
5. CONTINUOUS BOND BEAM BARS – WRAP BARS WITH MASTIC FOR BOND BREAK.

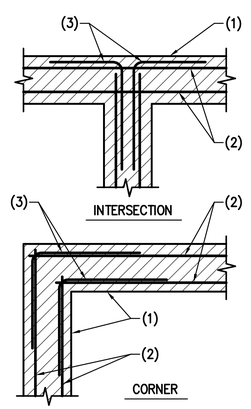
NOTE:
–BOND BEAM BARS SHALL NOT BE LAPPED WITHIN 8'–0" OF CONTROL JOINT.
–MAX C.J. SPACING = 24'–0" U.N.O.

27 CONTROL JOINT IN MASONRY WALL
NO SCALE



NOTES:
1. CONTINUOUS BOND BEAM PER G.S.N.
2. MASONRY WALL.
3. SOLID 4" MASONRY CAP CONTINUOUS.

23 BOND BEAM IN MASONRY WALL PARAPET
NO SCALE



NOTES:
1. MASONRY WALL.
2. BOND BEAM REINFORCING.
3. CORNER BARS SAME SIZE AND SPACING AS HORIZONTAL REINFORCING – LAP PER G.S.N. (24" MINIMUM).

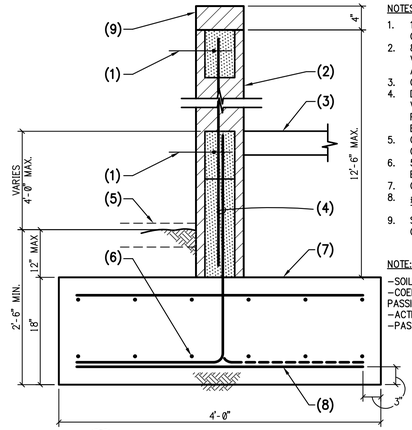
24 MASONRY BOND BEAM AT INTERSECTING WALLS
NO SCALE

Case #:
Plan Check #:
Date: 10/15/2024
Revisions:

Project Number: 21002
Drawn By: PKA
Title: TYPICAL DETAILS

S005

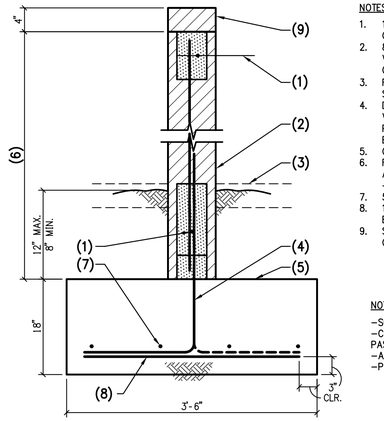
PK ASSOCIATES, LLC
6900 E. Belleview Ave. #200
Greenwood Village, Colorado 80111
Phone: (720) 799-1058
Email: cadd@pkastructural.com
Website: www.pkastructural.com



NOTES:
1. 1– #5 IN CONTINUOUS 8" DEEP GROUTED BOND BEAM.
2. 8" MASONRY WALL WITH #5 VERTICALS AT 16" O.C. GROUT ALL CELLS SOLID BELOW GRADE.
3. CONCRETE SLAB.
4. DOWELS TO MATCH AND LAP VERTICAL WALL REINFORCING PER G.S.N. – ALTERNATE BENDS.
5. CONCRETE SLAB OR FINISHED GRADE AS OCCURS.
6. 5– #5 CONTINUOUS TOP AND BOTTOM.
7. CONCRETE FOOTING.
8. #5 AT 12" O.C. TRANSVERSE TOP AND BOTTOM.
9. SOLID 4" MASONRY CAP CONTINUOUS.

NOTE:
–SOIL BEARING PRESSURE = 1500 PSF.
–COEFFICIENT OF FRICTION (WITH PASSIVE PRESSURE) = 0.30.
–ACTIVE PRESSURE = 35 PCF.
–PASSIVE PRESSURE = 250 PCF.

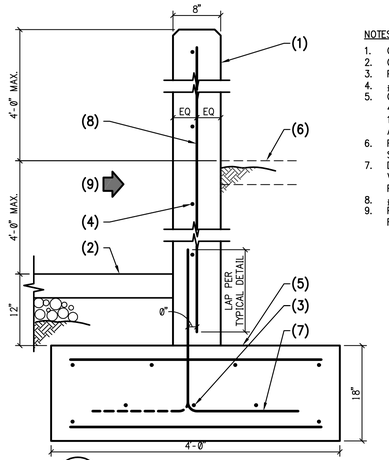
31 *MASONRY RETAINING WALL AT RAMP SLAB*
NO SCALE



NOTES:
1. 1– #5 CONTINUOUS IN 8" DEEP GROUTED BOND BEAM.
2. 8" MASONRY WALL WITH 1– #5 VERTICALS AT 40" O.C. GROUT SOLID BELOW GRADE.
3. FINISHED GRADE OR CONCRETE SLAB WHERE OCCURS.
4. DOWELS TO MATCH AND LAP VERTICAL WALL REINFORCING PER G.S.N. – ALTERNATE BENDS.
5. CONCRETE FOOTING.
6. FOR TOP OF WALL, SEE ARCHITECTURAL DRAWINGS – 8'–8" MAX.
7. 5– #5 CONTINUOUS.
8. 1– #5 AT 12' O.C. TRANSVERSE BOTTOM
9. SOLID 4" MASONRY CAP CONTINUOUS.

NOTE:
–SOIL BEARING PRESSURE = 1500 PSF.
–COEFFICIENT OF FRICTION (WITH PASSIVE PRESSURE) = 0.30.
–ACTIVE PRESSURE = 35 PCF.
–PASSIVE PRESSURE = 250 PCF.

32 *8'–8" FREE–STANDING MASONRY WALL AND FOOTING*
NO SCALE



NOTES:
1. C.I.P. CONCRETE PANEL.
2. CONCRETE SLAB ON GRADE.
3. PROVIDE 1– #5 AT HOOK.
4. #5 HORIZONTAL AT 12" O.C.
5. CONT. CONCRETE FOOTING. 4– #5 CONT. AND #5 AT 18" O.C. TRANSVERSE TOP AND BOTTOM.
6. FINISHED GRADE OR CONCRETE SLAB WHERE OCCURS.
7. DOWELS TO MATCH AND LAP VERTICAL WALL REINFORCING PER G.S.N.
8. #5 AT 12" O.C. VERTICALS.
9. PROVIDE SUPPORT UNTIL SLAB REACHES DESIGN STRENGTH.

33 *C.I.P. CONCRETE WALL AT RAMP*
NO SCALE

Butler Design Group Inc.
architects & planners
5017 East Washington St. #107
Phoenix, Arizona 85034
Phone 602-957-1800

PROGRESS PRINT NOT FOR CONSTRUCTION

American Furniture Warehouse
Your LIFESTYLE FURNITURE *Store*

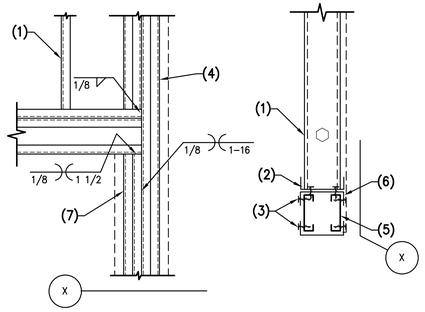
AMERICAN HEIGHTS & TUTT BOULEVARD
COLORADO SPRINGS, COLORADO

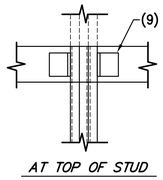
Case #:
Plan Check #:
Date: 10/15/2024
Revisions:

Project Number: 21002
Drawn By: PKA
Title: TYPICAL DETAILS

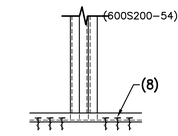
S006

PK ASSOCIATES, LLC
6900 E. Belleview Ave. #200
Greenwood Village, Colorado 80111
Phone: (720) 799-1058
Email: cadd@pkastructural.com
Website: www.pkastructural.com





AT TOP OF STUD



AT BOTTOM OF STUD

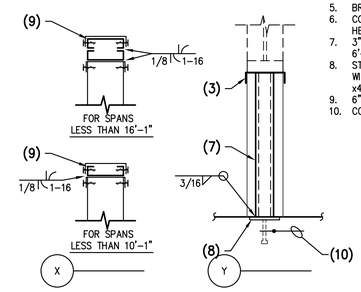
NOTES:
1. STEEL STUD WALL.
2. CONT. 16 GAGE TRACK W/ 2 – #12 TEK SCREWS AT 12" O.C. STAGGERED THROUGH TRACKS TO STUDS BELOW.
3. #12 TEK SCREWS AT 12" O.C., EACH LEG OF TRACK.
4. 2 (FULL HEIGHT) JAMB STUDS MIN. REFER TO SCHEDULE BELOW FOR ADDITIONAL STUDS WHERE REQUIRED.
5. STEEL HEADER PER SCHEDULE.
6. CONT. STEEL TRACK – TOP AND BOTTOM. REFER TO SCHEDULE FOR HEAVIER GAGE WHERE REQUIRED.
7. DOUBLE TRIMMER STUD, 16 GA. MIN. (ADD ONE ADDITIONAL STUDS AT EVERY 4'–0" OPENING. INCREASE AFTER 6'–0" WIDE).
8. TYPICAL PINS OR SCREWS AT 2" O.C. EACH SIDE FOR EVERY STUD IN THE GROUP.
9. TYPICAL CLIP ANGLE, ONE FOR EVERY TWO STUDS.

NOTE:
– FOR OPENING LARGER THAN SHOWN – SEE FRAMING PLAN
– ALL HEADER'S STUDS AND TRACKS SHALL BE UNPUNCHED MEMBERS.

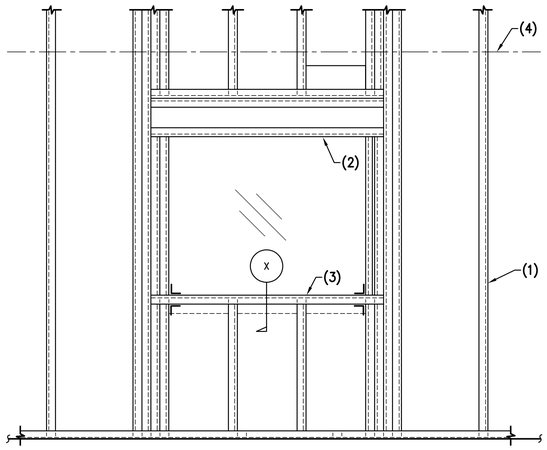
OPENING	EXTERIOR WALLS		INTERIOR WALLS			
	HEADER SIZE (6" WALL)	JAMB STUDS (6" WALL)	HEADER SIZE		JAMB STUDS	
			4" WALL	6" WALL	4" WALL	6" WALL
0" – 4'–0"	2– 6"x20 GA (600S137–33) STUDS AND 2– 6"x18 GA (600T125–43) TRACKS	2– 6"x16 GA (600S200–54)	2– 6"x20 GA (600S137–33) STUDS AND 2– 4"x18 GA (400T125–43) TRACKS	2– 6"x20 GA (600S137–33) STUDS AND 2– 6"x18 GA (600T125–43) TRACKS	2– 4"x20 GA (400S137–33)	2– 6"x20 GA (600S137–33)
4'–1" – 6'–0"	2– 6"x20 GA (600S137–33) STUDS AND 2– 6"x18 GA (600T125–43) TRACKS	2– 6"x16 GA (600S200–54)	2– 6"x20 GA (600S137–33) STUDS AND 2– 4"x18 GA (400T125–43) TRACKS	2– 6"x20 GA (600S137–33) STUDS AND 2– 6"x18 GA (600T125–43) TRACKS	2– 4"x20 GA (400S137–33)	2– 6"x20 GA (600S137–33)
6'–1" – 8'–0"	2– 6"x18 GA (600S162–43) STUDS AND 2– 6"x18 GA (600T125–43) TRACKS	2– 6"x16 GA (600S200–54)	2– 6"x20 GA (600S137–33) STUDS AND 2– 4"x18 GA (400T125–43) TRACKS	2– 6"x20 GA (600S137–33) STUDS AND 2– 6"x18 GA (600T125–43) TRACKS	2– 4"x20 GA (400S137–33)	2– 6"x20 GA (600S137–33)
8'–1" – 10'–0"	2– 6"x16 GA (600S200–54) STUDS AND 2– 6"x18 GA (600T125–43) TRACKS	3– 6"x16 GA (600S200–54)	2– 6"x20 GA (600S137–33) STUDS AND 2– 4"x18 GA (400T125–43) TRACKS	2– 6"x20 GA (600S137–33) STUDS AND 2– 6"x18 GA (600T125–43) TRACKS	2– 4"x20 GA (400S137–33)	2– 6"x20 GA (600S137–33)
10'–1" – 12'–0"	3– 6"x16 GA (600S250–54) STUDS AND 2– 6"x16 GA (600T200–54) TRACKS	3– 6"x16 GA (600S200–54)	3– 6"x20 GA (600S137–33) STUDS AND 2– 4"x16 GA (400T150–54) TRACKS	3– 6"x20 GA (600S137–33) STUDS AND 2– 6"x18 GA (600T125–43) TRACKS	2– 4"x20 GA (400S137–33)	2– 6"x20 GA (600S137–33)
12'–1" – 14'–0"	3– 8"x16 GA (800S250–54) STUDS AND 2– 6"x14 GA (600T200–68) TRACKS	4– 6"x16 GA (600S200–54)	3– 8"x20 GA (800S137–33) STUDS AND 2– 4"x16 GA (400T200–54) TRACKS	3– 8"x20 GA (800S137–33) STUDS AND 2– 6"x18 GA (600T125–43) TRACKS	2– 4"x20 GA (400S137–33)	2– 6"x20 GA (600S137–33)
14'–1" – 16'–0"	3– 8"x14 GA (800S200–68) STUDS AND 3– 6"x14 GA (600T200–68) TRACKS	5– 6"x16 GA (600S200–54)	3– 8"x18 GA (800S137–43) STUDS AND 3– 4"x16 GA (400T200–54) TRACKS	3– 8"x18 GA (800S137–43) STUDS AND 2– 6"x18 GA (600T125–43) TRACKS	2– 4"x20 GA (400S162–33)	2– 6"x20 GA (600S137–33)
CONTINUOUS SPANDREL OPENING	2– 6"x18 GA (600S162–43) STUDS AND 2– 6"x18 GA (600T125–43) TRACKS	N/A USE BRACE PER DETAIL	2– 6"x20 GA (600S137–33) STUDS AND 2– 4"x18 GA (400T125–43) TRACKS	2– 6"x20 GA (600S137–33) STUDS AND 2– 6"x18 GA (600T125–43) TRACKS	N/A USE BRACE PER DETAIL	N/A USE BRACE PER DETAIL
DESIGN HEIGHT IS 16'–0" OR LESS, IF GREATER HEIGHT REQUIRED USE BRACES ACROSS OPENING. VERIFY BRACES ARE ABOVE CEILING LINE.						

CF4 HEADER IN NON–BEARING STEEL STUD WALL

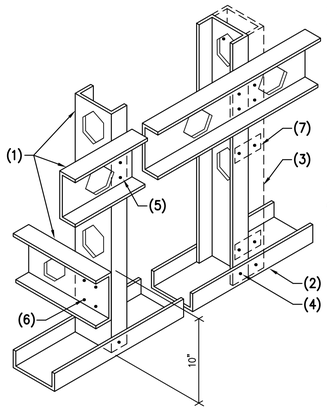
NO SCALE



NOTES:
1. STEEL STUD.
2. STEEL HEADER PER SCHEDULE.
3. 12 GAGE STEEL STUD TRACK FOR SPANS LESS THAN 16'–1".
4. CEILING LINE.
5. BRACES PER DETAIL.
6. CONT. SPANDREL OPENING HEADER.
7. 3"ø STEEL PIPE AT 6'–0" O.C.
8. STEEL PLATE 1/2"x5"x10" WITH 2– 1/2"ø HEADED STUDS x4" LONG AT 8" O.C.
9. 6"x16 GAGE (600 S200).
10. CONT. 1 #5 AT H.S.



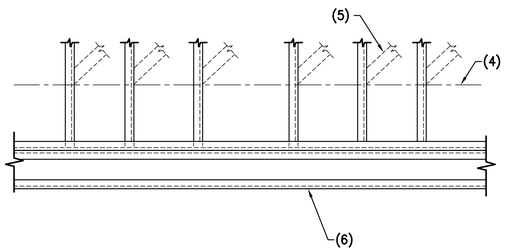
TYPICAL PUNCHED OPENING IN STUD WALL



CF1 TYPICAL STEEL STUD WALL – SCREW CONNECTION

NO SCALE

NOTES:
1. STEEL STUD.
2. UNPUNCHED STEEL STUD TRACK – ATTACHMENT REQUIRED 1 HILTI 3/4" LONG X–U TYPE POWDER DRIVEN PINS @ 8" O.C. (I.C.C. #ERS–1663) OR APPROVED EQUAL FOR ALL STUDS 6" OR SMALLER. FOR 8" STUDS USE 2 PINS AT 8: O.C. – TYP. U.N.O.
3. MULTIPLE STUDS WHERE SHOWN ON PLAN OR DETAILS.
4. #10x3/4" LONG TEKS SCREWS EACH SIDE.
5. 2 #10x3/4" LONG TEKS SCREWS.
6. 4 #10x3/4" LONG TEKS SCREWS.
7. 2"x20 GAGE FLAT STRAP BOTH SIDES AT 24" O.C. WITH 1 #10 SCREW AT EACH VERTICAL STUD.



TYPICAL SPANDREL OPENING IN STUD WALL

CF3 TYPICAL OPENINGS IN STEEL STUD WALL

NO SCALE

COLD FORMED STRUCTURAL STEEL FRAMING:

ALL COLD–FORMED STEEL FRAMING SHALL BE DESIGNED, FABRICATED AND ERECTED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND IN ACCORDANCE WITH THE LATEST EDITION OF "SPECIFICATIONS FOR THE DESIGN OF COLD–FORMED STEEL STRUCTURAL MEMBERS" BY THE AMERICAN IRON AND STEEL INSTITUTE.

STEEL FOR 14 AND 16 GAGE STUDS AND JOISTS, AND FOR ALL DIAGONAL TENSION STRAPS SHALL HAVE A MINIMUM YIELD STRENGTH OF 50 KSI. STEEL FOR ALL 18 AND 20 GAGE STUDS AND JOISTS, AND FOR ALL GAGES OF TRACK, ACCESSORIES AND BRIDGING SHALL HAVE A MINIMUM YIELD STRENGTH OF 33 KSI. STEEL SHALL BE GALVANIZED AT LOCATIONS EXPOSED TO WEATHER AND WHEREVER NOTED.

ALL STUD FRAMING (BOTH INTERIOR AND EXTERIOR) SHALL BE DESIGNED AND CONSTRUCTED TO ACCOMMODATE VERTICAL DEFLECTION OF THE STRUCTURE OF UP TO 1/2" LIVE LOAD DEFLECTION, UNLESS GREATER VALUE IS NOTED ON PLANS OR DETAILS. UTILIZE SLIP TRACK OR OTHER SIMILAR MEANS.

ALL STUDS SHALL BE SECURELY SEATED FOR FULL END BEARING ON TOP AND BOTTOM TRACK. UNLESS NOTED OTHERWISE, PROVIDE DOUBLE STUDS AT ALL JAMBS, CORNERS, INTERSECTIONS, BEAM BEARINGS AND JOIST BEARINGS. BRIDGING SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATION WITH THE FOLLOWING MINIMUM REQUIREMENTS.

FOR WALLS WITH NO AXIAL LOAD, PROVIDE BRIDGING AT MID–HEIGHT FOR WALLS LESS THAN OR EQUAL TO 10'–0" HIGH, AND 5'–0" O.C. MAXIMUM FOR WALLS GREATER THAN 10'–0" HIGH. FOR AXIAL LOAD BEARING WALLS, PROVIDE BRIDGING EQUALLY SPACED AT 4'–0" MAXIMUM. IN ADDITION, BRIDGING SHALL BE PROVIDED AT ROOF LINES AND ELSEWHERE AS NOTED ON THE DRAWINGS. SOLID BLOCKING SHALL BE INSTALLED IN LIEU OF BRIDGING WHERE NOTED ON THE DRAWINGS.

STEEL STUD DETAILS AND GAGES DEPICATED ON STRUCTURAL DRAWINGS SHOW GENERAL STRUCTURAL REQUIRMENTS AND ARE FOR SCHEMATICS PURPOSE ONLY. THE CONTRACTOR SHALL BE REQUIRED TO SUBMIT SHOP DRAWINGS WITH DESIGN CALCULATIONS SEALED BY A REGISTERED ENGINEER FOR ALL STEEL STUD FRAMING AND ANY ADDITIONAL FRAMING MATERIALS REQUIRED FOR COMPLETE DESIGN SHALL BE INCORPORATED. CALCULATIONS SHALL INCLUDE DERIVATION OF WIND LOADS PER SPECIFIED BUILDING CODE.

ALL WELDING SHALL BE PERFORMED BY WELDERS EXPERIENCED IN LIGHT GAGE STRUCTURAL STEEL FRAMING WORK. DO NOT NOTCH FLANGES OF JOISTS OR STUDS. DOUBLE UP FLOOR JOISTS AND BLOCKING UNDER PARTITIONS. PROVIDE BLOCKING AT SUPPORTS OF ALL JOISTS. DOUBLE UP STUDS AT JAMBS AND AS REQUIRED UNDER BEAMS IN BEARING WALLS.

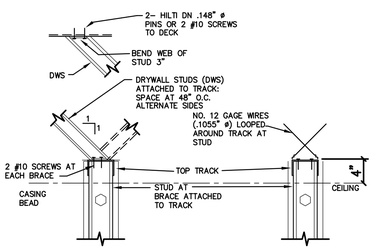
TYPICAL STUDS SHALL BE DESIGNED FOR L/360 EXCEPT STUDS SUPPORTING VENEER SHALL BE DESIGN FOR MAXIMUM DEFLECTION OF L/600.

STEEL STUD SUPPLIER SHALL DESIGN AND SUPPLY STRUCTURAL STEEL AS REQUIRED FOR COMPLETE CONSTRUCTION OF VERTICAL WALL AWNINGS, SOFFITS, WNG PLATES, FASCIA EXTENSIONS, ETC. ANY "RED METAL" OF FABRICATED STRUCTURAL STEEL REQUIRED TO COMPLETE WALL SYSTEMS SHALL BE DESIGNED AND INSTALLED BY STEEL STUD SUPPLIER.

MIN. STEEL STUD PROPERTIES GROSS								
SIZE	GAGE	DESIGNATION	Sx(IN^3)	Ix(IN^4)	Fy (KSI)	SPACING	REMARKS	
EXTERIOR							L/360	L/600
8"	12	800S200–97	2.801	11.203	50	16" O.C.	27'–7"	23'–3"
8"	16	800S200–68	2.035	8.140	50	16" O.C.	24'–10"	20'–11"
6"	12	600S200–97	1.871	5.612	50	16" O.C.	21'–11"	18'–6"
6"	16	600S200–54	1.106	3.319	50	16" O.C.	18'–5"	15'–6"
INTERIOR							L/240	L/240
6"	20–STRUCTURAL	600S162–33	0.598	1.793	33	16" O.C.	24'–0"	22'–0"
6"	20–STRUCTURAL	600S125–33	0.470	1.479	33	16" O.C.	22'–0"	20'–0"
8"	18–STRUCTURAL	800S200–43	0.816	4.096	33	16" O.C.	37'–11"	45'–10"
– ALL TRACKS SHALL BE SAME GAGE AS STUDS (18 GAGE MIN) W/ 2" FLANGE U.N.O. – PROVIDE 16 GAGE SLIP TRACK FOR ALL WALLS THAT EXTEND UP TO ROOF DECK.								

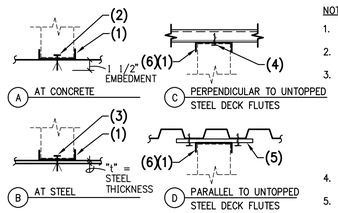
CF2 MINIMUM STEEL STUD PROPERTIES

NO SCALE



CF6 NON BEARING CEILING HEIGHT INTERIOR PARTITION BRACING TO ROOF

NO SCALE



NOTES:
1. STEEL TRACK. DEFLECTION TRACK AS OCCURS.
2. 3/8"ø SIMPSON DROP IN ANCHOR PER SCHEDULE.
3. 0.145ø HILTI X–EDNI POWDER DRIVEN PINS PER SCHEDULE. FOR "t"<1/2", FASTENERS MUST PENETRATE THRU STEEL BASE MATERIAL. FOR "t"–1/2", FASTENERS MUST PENETRATE 9/16" MIN. FOR "t">3/4", FASTENERS MUST PENETRATE 7/16" MIN.
4. #10x3/4" LONG TEKS SCREW PER SCHEDULE.
5. 12"x12x20 GAGE STEEL PLATE WITH 4 #10x 3/4" LONG TEKS SCREWS (ONE EACH CORNER). PLATE SPACING PER SCHEDULE.
6. PROVIDE 16GAGE SLIP TRACK.

GENERAL NOTES:
INSTALL HILTI POWDER DRIVEN PINS PER ICC EVALUATION REPORT #ESR–1663.

TYPICAL TRACK ATTACHMENT				
KEY	TYPE A	TYPE B	TYPE C	TYPE D
	ANCHOR SPACING	PIN SPACING	SCREW SPACING	PLATE SPACING
EXTERIOR	12" O.C.	12" O.C.	2 ROWS AT 6" O.C. (4" O.C. ROW SPACING)	12" O.C. (CONT. 12" WIDE PLATE)
INTERIOR	24" O.C.	16" O.C.	12" O.C.	48" O.C.

CF5 TYPICAL STEEL TRACK AT STRUCTURE

NO SCALE

Butler Design Group Inc.
architects & planners
5017 East Washington St. #107
Phoenix, Arizona 85034
Phone 602-957-1800

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S007

PK ASSOCIATES, LLC
6900 E. Belleview Ave. #200
Greenwood Village, Colorado 80111
Phone: (720) 799-1058
Email: cadd@pkastructural.com
Website: www.pkastructural.com

SPECIAL MASONRY WALL REINFORCING SCHEDULE

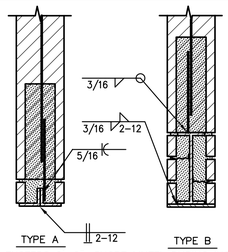
MARK	REINFORCING AND CELLS GROUTED
(1)	2– #5 VERTS PER CELL IN END 3 CELLS
(2)	2– #5 VERTS PER CELL FOR LENGTH OF PIER
(3)	2– #5 VERTS IN END CELL
(4)	2– #5 VERTS PER CELL IN EACH CELL
(5)	2– #5 VERTS PER CELL IN END 4 CELLS

NOTE: PROVIDE REINFORCING IN EACH WYTHE AS OCCURS.

MASONRY WALL REINFORCING (MW) SCHEDULE

MARK	SIZE	VERT. REINF.	HORIZ. REINF.	SOLID GROUT	REMARKS
MW1	8"	1– #5 AT 16" O.C. (CENTERED)	1– #5 AT 48" O.C.	NO	---
MW2	8"	1– #5 AT 24" O.C. (CENTERED)	1– #5 AT 48" O.C.	NO	---

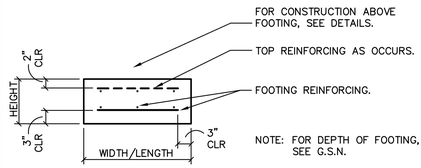
STEEL LINTEL (SL) SCHEDULE



1. WHEN SPAN EXCEEDS 6'-0", SHORE LINTEL DURING INSTALLATION.
2. WELD DOWELS TO LINTELS TO MATCH AND LAP VERTICAL REINFORCING PER G.S.N.
3. GROUT ALL CELLS SOLID TO 1'-4" MINIMUM ABOVE LINTELS.
4. AT "TYPE B" LINTELS, USE VENEER TIES AT 16" O.C. EACH SIDE OF BEAM. TACK WELD TIES TO WEB OF BEAM.
5. AT "TYPE B" LINTELS, EXTEND BOTTOM PLATE TO END OF BEAM.
6. 5" MINIMUM BEARING EACH END UNLESS NOTED OTHERWISE. INSTALL ON FRESH MORTAR BED.
7. WELD ALL LINTEL STEEL CONTINUOUS FOR LENGTH OF BEARING EACH END.

MARK	TYPE	LINTEL SIZE	REMARKS
SL1	TYPE B SIM. (SEE DETAIL 243)	W24x55	REFER TO DETAIL 241, 243

ISOLATED FOOTING (F) SCHEDULE



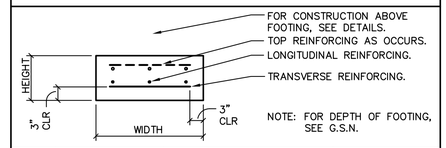
MARK	DIMENSIONS			FOOTING REINFORCING	REMARKS
	HEIGHT	WIDTH	LENGTH		
F1	20"	10'–3"	10'–3"	11– #6 EACH WAY TOP AND BOTTOM	---
F2	20"	9'–6	9'–6"	10– #6 EACH WAY TOP AND BOTTOM	---
F3	20"	8'–6"	8'–6"	8– #6 EACH WAY TOP AND BOTTOM	---
F4	20"	5'–0"	5'–0"	5– #5 EACH WAY BOTTOM	---
F5	20"	6'–6"	6'–6"	8– #6 EACH WAY TOP AND BOTTOM	---
F6	20"	3'–6"	3'–6"	#4 AT 10" O.C. EACH WAY BOTTOM	---
F7	20"	6'–0"	8'–0"	#5 AT 8" O.C. EACH WAY BOTTOM	---
F8	20"	7'–6"	7'–6"	9– #5 EACH WAY TOP AND BOTTOM	---

COLUMN (C) SCHEDULE

NOTE: FOR ANCHOR BOLT PATTERN, SEE TYPICAL DETAILS

MARK	SIZE	BASE CONNECTION (ALL ANCHOR RODS ARE ASTM F1554 GR. 36 AS A MIN.)	REMARKS
C1	HSS10x10x3/8"	1"x18"x18" STEEL BASE PLATE W/ 6– 1"ø ANCHOR RODS (MIN. 12" EMBEDMENT)	---
C2	W10x49	3/4"x16"x16" STEEL BASE PLATE WITH 4– 3/4"ø ANCHOR RODS	---
C3	HSS8x8x3/8"	1"x14"x14" STEEL BASE PLATE W/ 4– 3/4"ø ANCHOR RODS	---
C4	W12x65	SEE DETAIL 129	---
C5	HSS10x10x1/2"	1"x18"x18" STEEL BASE PLATE W/ 6– 1"ø ANCHOR RODS (MIN. EMBEDMENT = 12")	---

CONTINUOUS FOOTING (WF) SCHEDULE



MARK	DIMENSIONS		FOOTING REINFORCING		REMARKS
	HEIGHT	WIDTH	LONGITUDINAL	TRANSVERSE	
WF1	20"	4'–6"	7– #5 CONT. TOP AND BOTTOM	#5 @ 8" O.C. TOP AND BOTTOM	---
WF2	20"	4'–0"	6– #5 CONT. TOP AND BOTTOM	#5 @ 10" O.C. TOP AND BOTTOM	---
WF3	20"	7'–0"	7– #6 TOP AND BOTTOM	#5 @ 8" O.C. TOP AND BOTTOM	---
WF4	20"	2'–6"	3– #5 TOP AND BOTTOM	#4 @ 12" O.C. TOP AND BOTTOM	---
WF5	20"	6'–6"	7– #6 TOP AND BOTTOM	#5 @ 8" O.C. TOP AND BOTTOM	---

LEDGER (L) SCHEDULE

STEEL:
1. ALL LEDGERS SHALL HAVE MINIMUM OF 2 WELD PLATES OR ANCHOR BOLTS AS NOTED BELOW.
2. WELD PLATES OR ANCHOR BOLTS SHALL BE LOCATED NOT LESS THAN 6" NOR MORE THAN 1'–4" FROM END OF LEDGER OR LEDGER SPLICE.

MARK	SIZE / TYPE	CONNECTION	STEEL SPLICE PLATE SIZE	SPLICE PLATE WELD SIZE
L1	L5x3 1/2x5/16 (LLV)	SEE DETAIL 219	3/4"x4"x9"	1/4 FILLET ALL AROUND
L2	L5x3 1/2x5/16 (LLV)	SEE DETAIL 218	3/4"x4"x9"	1/4 FILLET ALL AROUND
L3	L5x3 1/2x5/16 (LLV)	SEE DETAIL 312	3/4"x4"x9"	1/4 FILLET ALL AROUND
L4	L5x3 1/2x5/16 (LLV)	SEE DETAIL 313	3/4"x4"x9"	1/4 FILLET ALL AROUND
L5	L6x6x5/8	SEE DETAIL 312	1 1/4"x4"x25" (50 KSI)	3/8 FILLET ALL AROUND
L6	L8x6x5/8 (LLV)	SEE DETAIL 312	1 1/4"x6"x25" (50 KSI)	3/8 FILLET ALL AROUND
L7	L8x8x5/8	SEE DETAIL 340	1 1/4"x6"x25" (50 KSI)	3/8 FILLET ALL AROUND

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architects & planners
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Phoenix, Arizona 85034
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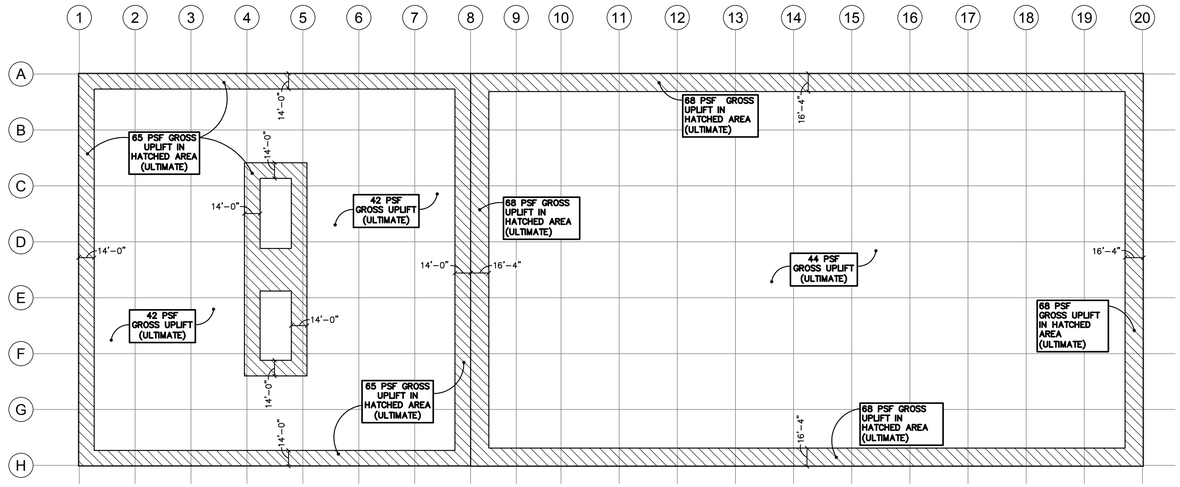
American Furniture Warehouse
Your LIFESTYLE FURNITURE Store
AMERICAN HEIGHTS & TUTT BOULEVARD
COLORADO SPRINGS, COLORADO

Case #:
Plan Check #:
Date: 10/15/2024
Revisions:

Project Number: 21002
Drawn By: PKA
Title: SCHEDULE

S008

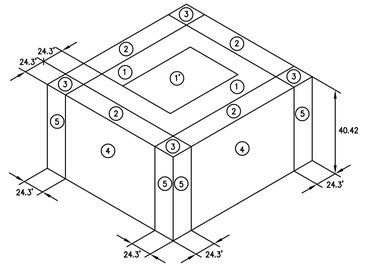


1 ROOF WIND LOAD PLAN
SCALE: 1" = 50'-0"

THE VALUES ARE WIND UPLIFT ONLY (GROSS, ULTIMATE).

COMPONENTS AND CLADDING
(WAREHOUSE)

VELOCITY PRESSURE, qz = 38.5 PSF AT h = 40.42 FT. (MEAN ROOF HEIGHT - SHOWROOM).
DESIGN WIND PRESSURES COMPONENTS AND CLADDING:



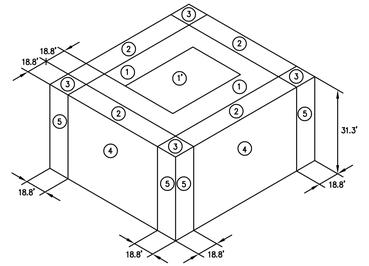
*PRESSURES SHOWN ARE ULTIMATE. MULTIPLY BY 0.6 FOR SERVICE LEVEL PRESSURES.

LOCATION	ZONE	EFFECTIVE WIND AREA (SF)	DESIGN WIND PRESSURE (PSF)*
ROOF	1'	10	+18.5 -41.5
		20	+17.3 -41.5
		50	+16.0 -41.5
		100	+16.0 -41.5
	1	10	+18.5 -72.3
		20	+17.3 -67.5
		50	+16.0 -61.2
		100	+1'6.0 -56.5
	2	10	+18.5 -95.4
		20	+17.3 -89.3
		50	+16.0 -81.1
		100	+16.0 -75.0
	3	10	+18.5 -130.0
		20	+17.3 -117.7
		50	+16.0 -101.5
		100	+16.0 -89.3
WALLS	4	10	+41.5 -45.0
		20	+39.7 -43.2
		50	+37.3 -40.7
		100	+35.4 -38.9
		500	+31.2 -34.6
	5	10	+41.5 -55.4
		20	+39.7 -51.7
		50	+37.3 -46.8
		100	+35.4 -43.2
		500	+31.2 -34.6
PARAPET	INTERIOR	10	+124.7 -73.6
		50	+105.9 -65.0
		100	+97.9 -61.3
	EXTERIOR	10	+159.8 -84.2
		50	+126.6 -71.2
		100	+112.3 -65.6

ZONE 1': INTERIOR AREA OF ROOF AWAY FROM BUILDING EXTERIOR WALLS.
ZONE 1: INTERIOR AREA OF ROOF AWAY FROM BUILDING EXTERIOR WALLS.
ZONE 2: ROOF AREAS ALONG EXTERIOR WALLS.
ZONE 3: ROOF AREAS AT BUILDING CORNERS.
ZONE 4: EXTERIOR WALLS AWAY FROM BUILDING CORNERS.
ZONE 5: EXTERIOR WALLS AT BUILDING CORNERS.
-DESIGN WIND PRESSURES - PLUS AND MINUS SIGNS SIGNIFY PRESSURE ACTING TOWARD AND AWAY FROM EXTERIOR SURFACE.
-LINEAR INTERPOLATION BETWEEN VALUES OF TRIBUTARY AREA IS PERMISSIBLE.

COMPONENTS AND CLADDING
(SHOWROOM)

VELOCITY PRESSURE, qz = 36.5 PSF AT h = 31.33 FT. (MEAN ROOF HEIGHT - SHOWROOM).
DESIGN WIND PRESSURES COMPONENTS AND CLADDING:



*PRESSURES SHOWN ARE ULTIMATE. MULTIPLY BY 0.6 FOR SERVICE LEVEL PRESSURES.

LOCATION	ZONE	EFFECTIVE WIND AREA (SF)	DESIGN WIND PRESSURE (PSF)*
ROOF	1'	10	+17.5 -39.4
		20	+16.4 -39.4
		50	+16.0 -39.4
		100	+16.0 -39.4
	1	10	+17.5 -68.5
		20	+16.4 -64.0
		50	+16.0 -58.0
		100	+16.0 -53.5
	2	10	+39.4 -90.4
		20	+37.6 -84.6
		50	+35.3 -76.9
		100	+33.6 -71.1
	3	10	+39.4 -90.4
		20	+37.6 -84.6
		50	+35.3 -76.9
		100	+33.6 -71.1
WALLS	4	10	+39.4 -42.7
		20	+37.6 -40.9
		50	+35.3 -38.6
		100	+33.6 -36.9
		500	+29.5 -32.8
	5	10	+39.4 -52.5
		20	+37.6 -49.0
		50	+35.3 -44.4
		100	+33.6 -40.9
		500	+29.5 -32.8
PARAPET	INTERIOR	10	+121.5 -71.8
		50	+103.2 -63.3
		100	+95.3 -59.7
	EXTERIOR	10	+121.5 -82.0
		50	+103.2 -69.4
		100	+95.3 -63.9

ZONE 1': INTERIOR AREA OF ROOF AWAY FROM BUILDING EXTERIOR WALLS.
ZONE 1: INTERIOR AREA OF ROOF AWAY FROM BUILDING EXTERIOR WALLS.
ZONE 2: ROOF AREAS ALONG EXTERIOR WALLS.
ZONE 3: ROOF AREAS AT BUILDING CORNERS.
ZONE 4: EXTERIOR WALLS AWAY FROM BUILDING CORNERS.
ZONE 5: EXTERIOR WALLS AT BUILDING CORNERS.
-DESIGN WIND PRESSURES - PLUS AND MINUS SIGNS SIGNIFY PRESSURE ACTING TOWARD AND AWAY FROM EXTERIOR SURFACE.
-LINEAR INTERPOLATION BETWEEN VALUES OF TRIBUTARY AREA IS PERMISSIBLE.

PK ASSOCIATES, LLC
6900 E. Belleview Ave. #200
Greenwood Village, Colorado 80111
Phone: (720) 799-1058
Email: cadd@pkastructural.com
Website: www.pkastructural.com

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Phone 602-957-1800

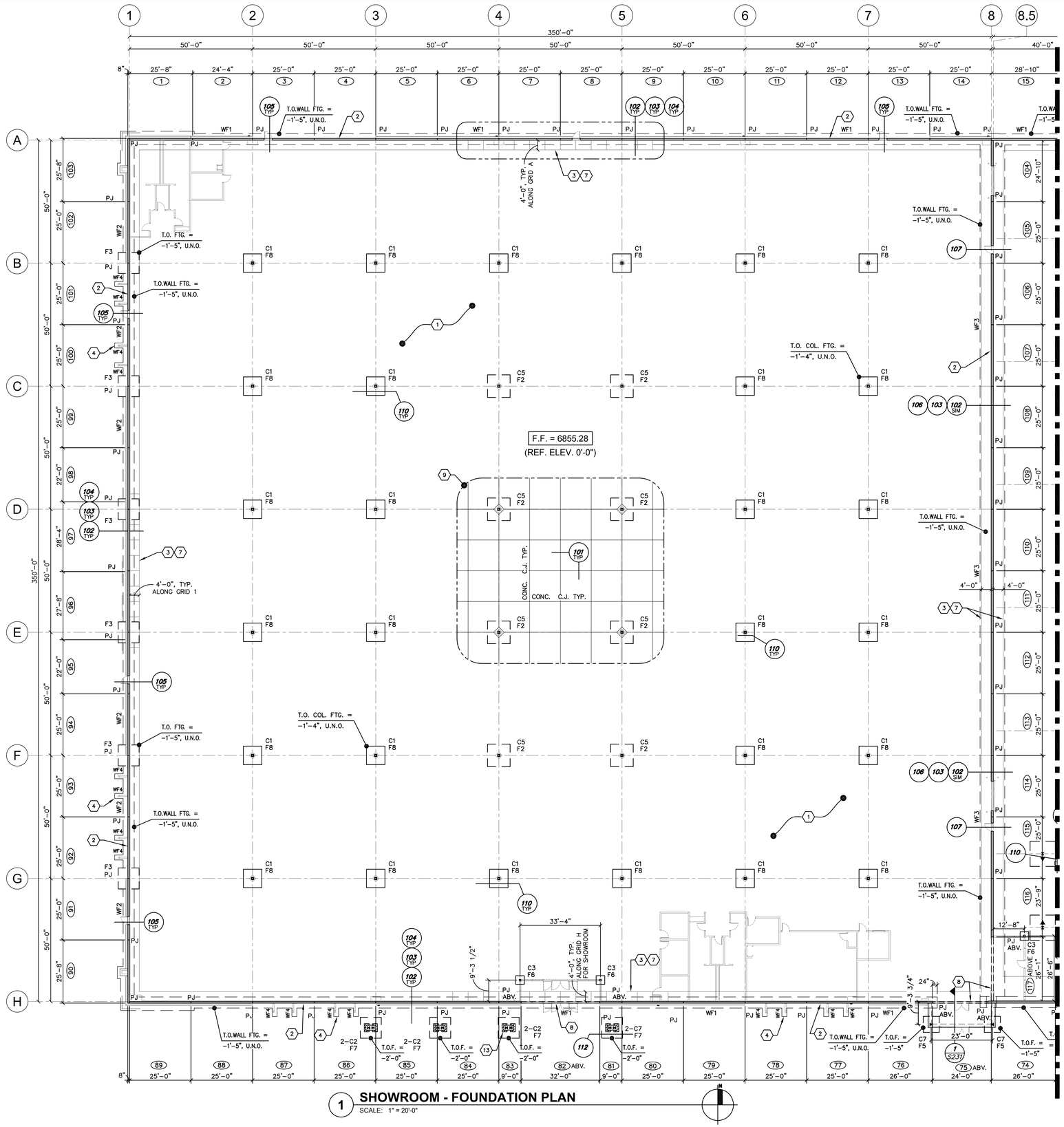
PROGRESS PRINT NOT FOR CONSTRUCTION

American Furniture Warehouse
Your LIFESTYLE FURNITURE *Store*
AMERICAN HEIGHTS & TUTT BOULEVARD
COLORADO SPRINGS, COLORADO

Case #:
Plan Check #:
Date: 10/15/2024
Revisions:

Project Number: 21002
Drawn By: PKA
Title: GENERAL STRUCTURAL NOTES

S009



1 **SHOWROOM - FOUNDATION PLAN**
SCALE: 1" = 20'-0"

PK ASSOCIATES, LLC
6900 E. Belleview Ave. #200
Greenwood Village, Colorado 80111
Phone: (720) 799-1058
Email: cadd@pkastructural.com
Website: www.pkastructural.com

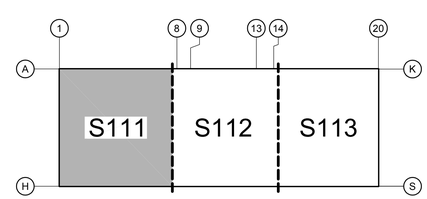
FOUNDATION PLAN NOTES:

1. FOR SHEET INDEX, SEE GENERAL STRUCTURAL NOTES.
2. VERIFY ALL DIMENSIONS WITH ARCHITECTURAL DRAWINGS. DO NOT USE "CONC C.J." AS DIMENSION LINE OR TO LOCATE BUILDING ELEMENTS.
3. SCHEDULED MARK DESIGNATIONS ARE TYPICAL TO THE PROJECT AND MAY NOT NECESSARILY BE FOUND ON THIS PLAN.
4. DEPTH OF FOOTING DIMENSIONS INDICATED ON THE PLANS ARE MINIMUMS. FOUNDATION CONTRACTOR SHALL COORDINATE WITH SOILS REPORT AND OTHER TRADES TO INSURE THAT THESE MINIMUMS ARE SUFFICIENT FOR THE WORK. SEE TYPICAL DETAILS FOR ADDITIONAL REQUIREMENTS.
5. MW1 MW2, ETC – AS SHOWN ON PLAN INDICATES MASONRY WALL. SEE SCHEDULE SHEET S008.
6. WF1, WF2, ETC – AS SHOWN ON PLAN INDICATES CONTINUOUS WALL FOOTING, SEE SCHEDULE SHEET S008.
7. CONC C.J. – AS SHOWN ON PLAN INDICATES LOCATION OF EITHER KEYED OR SAWCUT CONTROL JOINT IN SLAB ON GRADE AT CONTRACTOR'S OPTION, SEE G.S.N. AND TYPICAL DETAIL.
8. VERIFY EXACT SIZE AND LOCATION OF OPENINGS IN PRECAST CONCRETE WALL PANELS WITH ARCHITECTURAL DRAWINGS.
9. F1, F2, ETC – AS SHOWN ON PLAN INDICATES ISOLATED FOOTING, SEE SCHEDULE ON SHEET S008.
10. C1, C2, ETC – AS SHOWN ON PLAN INDICATES STEEL COLUMN, SEE SCHEDULE ON SHEET S008.
11. ①, ②, ETC – AS SHOWN ON PLAN INDICATES SPECIAL MASONRY WALL REINFORCING, SEE SCHEDULE ON SHEET S008.
11. ⊢▶ AS SHOWN ON PLAN INDICATES MOMENT CONNECTION. SEE DETAIL 126.

FOUNDATION PLAN KEYNOTES:

1. 5" CONCRETE SLAB ON GRADE WITH #3 AT 12" O.C. EACH WAY CENTERED OVER VAPOR BARRIER OVER 4" MIN. OF A.B.C. SUB-BASE. FOR SUB-GRADE PREPARATION REFER TO GEOTECH REPORT TYPICAL.
2. CONCRETE TILT UP PANEL. SEE SHEETS S301 AND S302 FOR ELEVATIONS.
3. CONCRETE CLOSURE POUR – TYPICAL.
4. TRELLIS ELEMENT PER DETAILS 128, 129 AND 130. SEE ARCH'L FOR ALL LOCATIONS
5. TRENCH DRAIN PER ARCHITECTURAL.
6. STEEL STAIRS. SEE ENLARGED PLANS ON S801.
7. CONCRETE CONTROL JOINT AT 8 EQ. SPACES EACH BAY AT CLOSURE POUR. EVERY OTHER JOINT TO LINE UP WITH SLAB CONTROL JOINTS.
8. LINE OF SPANDREL PANEL ABOVE.
9. CONTROL JOINTS AT 4 EQUAL SPACES EACH BAY. EACH DIRECTION TYPICAL U.N.O. SEE DETAILS 101 OR 119 FOR ADDITIONAL INFO.
10. 7" CONCRETE SLAB ON GRADE WITH #3 AT 12" O.C. EACH WAY CENTERED OVER 4" MIN. OF A.B.C. SUB-BASE. FOR SUB-GRADE PREPARATION REFER TO GEOTECH REPORT TYPICAL.
11. SEE ARCHITECTURAL FOR TOP OF WALL ELEVATION. PROVIDE LIGHT GAGE STEEL STUD WALL FROM TOP OF WALL TO ROOF.
12. PROVIDE 5– #5 VERTS. CENTERED UNDER STEEL BEAM BEARING ABOVE.
13. MASONRY PIER PER DETAILS 112 AND 114.
14. STEP FOOTING PER DETAILS 04, 18, 19.
15. HSS8"x6"x1/4" (LSV) FOR COILING DOOR SUPPORT AT 14'-0" A.F.F. SEE DETAIL 236.
16. BOLLARDS PER ARCHITECTURAL.

NOTE:
ALL TOP OF FOOTINGS ON THIS PLAN ARE FROM REF. ELEVATION.



KEYPLAN

Butler Design Group Inc.
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5017 East Washington St. #107
Phoenix, Arizona 85034
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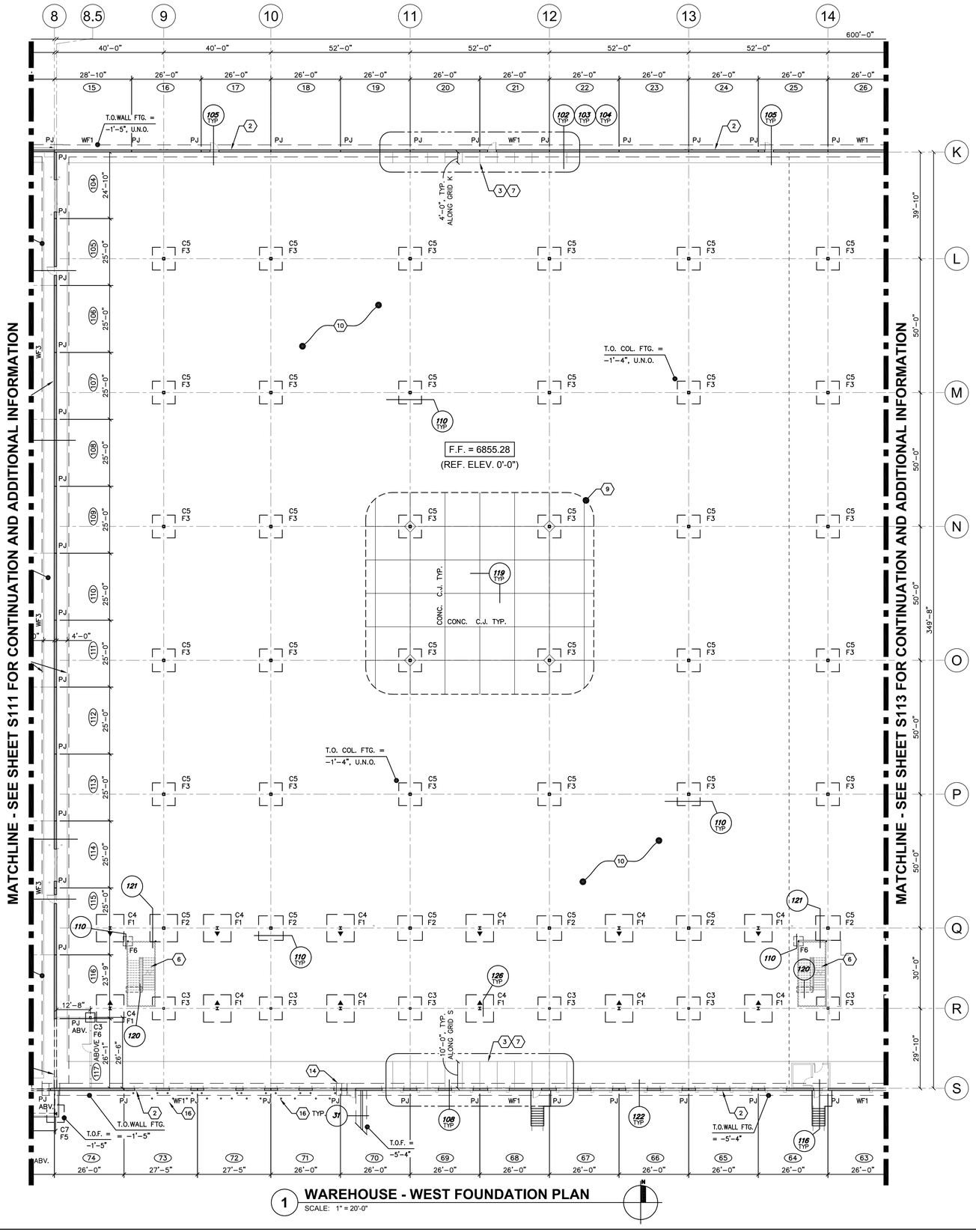
AMERICAN HEIGHTS & TUTT BOULEVARD
COLORADO SPRINGS, COLORADO

Case #:
Plan Check #:
Date: 10/15/2024
Revisions:

Project Number: 21002
Drawn By: PKA
Title: SHOWROOM - FOUNDATION PLAN

S111



1 **WAREHOUSE - WEST FOUNDATION PLAN**
SCALE: 1" = 20'-0"

PK ASSOCIATES, LLC
6900 E. Belleview Ave. #200
Greenwood Village, Colorado 80111
Phone: (720) 799-1058
Email: cadd@pkastructural.com
Website: www.pkastructural.com

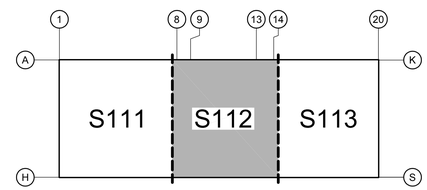
FOUNDATION PLAN NOTES:

1. FOR SHEET INDEX, SEE GENERAL STRUCTURAL NOTES.
2. VERIFY ALL DIMENSIONS WITH ARCHITECTURAL DRAWINGS. DO NOT USE "CONC C.J." AS DIMENSION LINE OR TO LOCATE BUILDING ELEMENTS.
3. SCHEDULED MARK DESIGNATIONS ARE TYPICAL TO THE PROJECT AND MAY NOT NECESSARILY BE FOUND ON THIS PLAN.
4. DEPTH OF FOOTING DIMENSIONS INDICATED ON THE PLANS ARE MINIMUMS. FOUNDATION CONTRACTOR SHALL COORDINATE WITH SOILS REPORT AND OTHER TRADES TO INSURE THAT THESE MINIMUMS ARE SUFFICIENT FOR THE WORK. SEE TYPICAL DETAILS FOR ADDITIONAL REQUIREMENTS.
5. MW1 MW2, ETC – AS SHOWN ON PLAN INDICATES MASONRY WALL. SEE SCHEDULE SHEET S008.
6. WF1, WF2, ETC – AS SHOWN ON PLAN INDICATES CONTINUOUS WALL FOOTING, SEE SCHEDULE SHEET S008.
7. CONC C.J. – AS SHOWN ON PLAN INDICATES LOCATION OF EITHER KEYED OR SAWCUT CONTROL JOINT IN SLAB ON GRADE AT CONTRACTOR'S OPTION, SEE G.S.N. AND TYPICAL DETAIL.
8. VERIFY EXACT SIZE AND LOCATION OF OPENINGS IN PRECAST CONCRETE WALL PANELS WITH ARCHITECTURAL DRAWINGS.
9. F1, F2, ETC – AS SHOWN ON PLAN INDICATES ISOLATED FOOTING, SEE SCHEDULE ON SHEET S008.
10. C1, C2, ETC – AS SHOWN ON PLAN INDICATES STEEL COLUMN, SEE SCHEDULE ON SHEET S008.
11. ①, ②, ETC – AS SHOWN ON PLAN INDICATES SPECIAL MASONRY WALL REINFORCING, SEE SCHEDULE ON SHEET S008.
11. H ▶ AS SHOWN ON PLAN INDICATES MOMENT CONNECTION. SEE DETAIL 126.

FOUNDATION PLAN KEYNOTES:

1. 5" CONCRETE SLAB ON GRADE WITH #3 AT 12" O.C. EACH WAY CENTERED OVER VAPOR BARRIER OVER 4" MIN. OF A.B.C. SUB-BASE. FOR SUB-GRADE PREPARATION REFER TO GEOTECH REPORT TYPICAL.
2. CONCRETE TILT UP PANEL. SEE SHEETS S301 AND S302 FOR ELEVATIONS.
3. CONCRETE CLOSURE POUR – TYPICAL.
4. TRELLIS ELEMENT PER DETAILS 128, 129 AND 130. SEE ARCH'L FOR ALL LOCATIONS
5. TRENCH DRAIN PER ARCHITECTURAL.
6. STEEL STAIRS. SEE ENLARGED PLANS ON S801.
7. CONCRETE CONTROL JOINT AT 8 EQ. SPACES EACH BAY AT CLOSURE POUR. EVERY OTHER JOINT TO LINE UP WITH SLAB CONTROL JOINTS.
8. LINE OF SPANDREL PANEL ABOVE.
9. CONTROL JOINTS AT 4 EQUAL SPACES EACH BAY. EACH DIRECTION TYPICAL U.N.O. SEE DETAILS 101 OR 119 FOR ADDITIONAL INFO.
10. 7" CONCRETE SLAB ON GRADE WITH #3 AT 12" O.C. EACH WAY CENTERED OVER 4" MIN. OF A.B.C. SUB-BASE. FOR SUB-GRADE PREPARATION REFER TO GEOTECH REPORT TYPICAL.
11. SEE ARCHITECTURAL FOR TOP OF WALL ELEVATION. PROVIDE LIGHT GAGE STEEL STUD WALL FROM TOP OF WALL TO ROOF.
12. PROVIDE 5- #5 VERTS. CENTERED UNDER STEEL BEAM BEARING ABOVE.
13. MASONRY PIER PER DETAILS 112 AND 114.
14. STEP FOOTING PER DETAILS 04, 18, 19.
15. HSS8"x6"x1/4" (LSV) FOR COILING DOOR SUPPORT AT 14'-0" A.F.F. SEE DETAIL 236.
16. BOLLARDS PER ARCHITECTURAL.

NOTE:
ALL TOP OF FOOTINGS ON THIS PLAN ARE FROM REF. ELEVATION.



KEYPLAN

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architects & planners
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Phoenix, Arizona 85034
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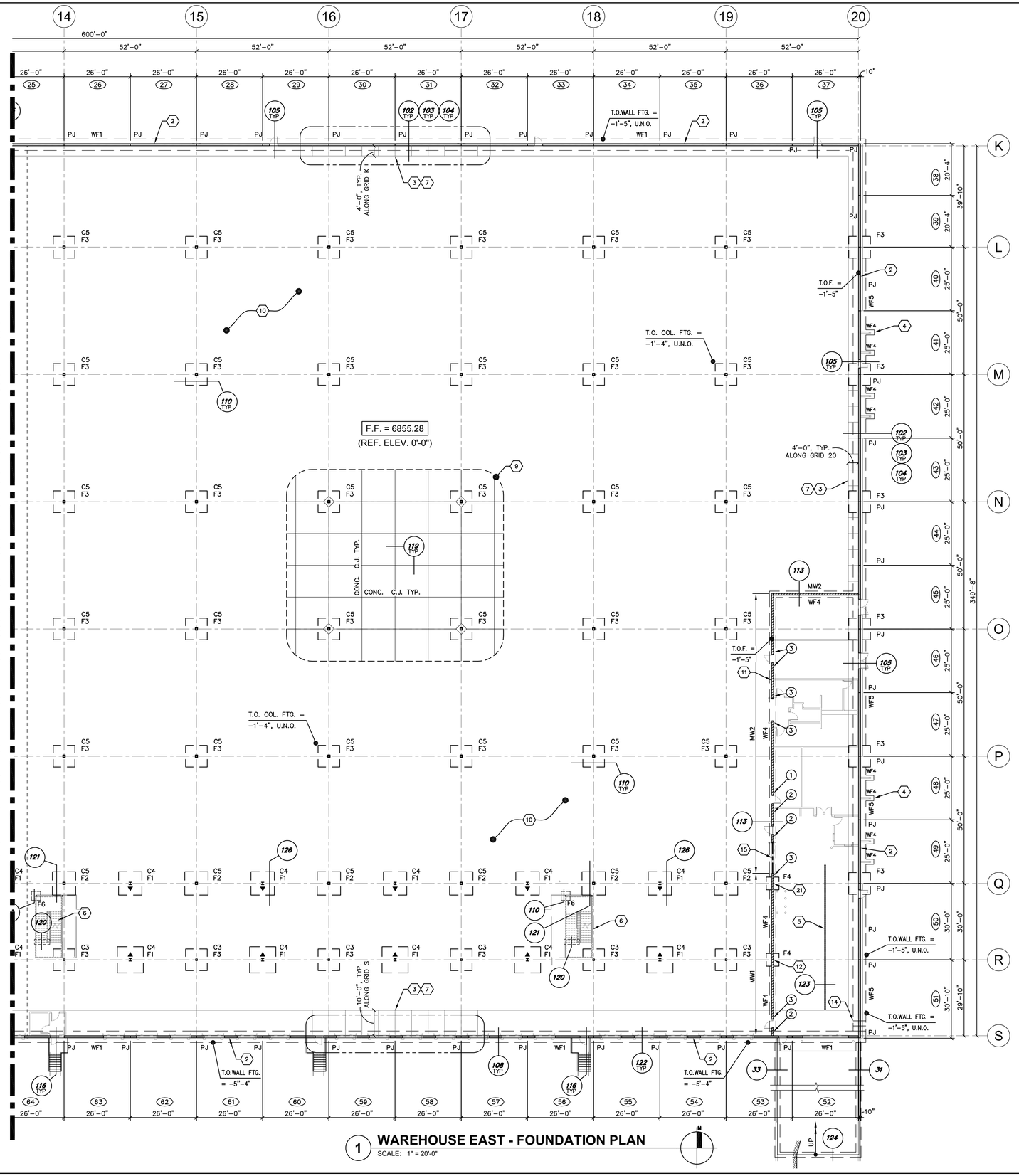
American Furniture Warehouse
Your LIFESTYLE FURNITURE *Store*
AMERICAN HEIGHTS & TUTT BOULEVARD
COLORADO SPRINGS, COLORADO

Case #:
Plan Check #:
Date: 10/15/2024
Revisions:

Project Number: 21002
Drawn By: PKA
Title: WAREHOUSE - WEST FOUNDATION PLAN

S112



1 **WAREHOUSE EAST - FOUNDATION PLAN**
SCALE: 1" = 20'-0"

PK ASSOCIATES, LLC
6900 E. Belleview Ave. #200
Greenwood Village, Colorado 80111
Phone: (720) 799-1058
Email: cadd@pkastructural.com
Website: www.pkastructural.com

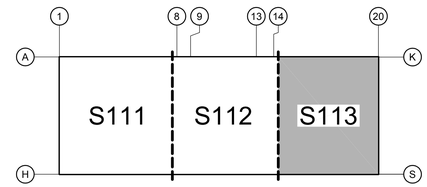
FOUNDATION PLAN NOTES:

1. FOR SHEET INDEX, SEE GENERAL STRUCTURAL NOTES.
2. VERIFY ALL DIMENSIONS WITH ARCHITECTURAL DRAWINGS. DO NOT USE "CONC C.J." AS DIMENSION LINE OR TO LOCATE BUILDING ELEMENTS.
3. SCHEDULED MARK DESIGNATIONS ARE TYPICAL TO THE PROJECT AND MAY NOT NECESSARILY BE FOUND ON THIS PLAN.
4. DEPTH OF FOOTING DIMENSIONS INDICATED ON THE PLANS ARE MINIMUMS. FOUNDATION CONTRACTOR SHALL COORDINATE WITH SOILS REPORT AND OTHER TRADES TO INSURE THAT THESE MINIMUMS ARE SUFFICIENT FOR THE WORK. SEE TYPICAL DETAILS FOR ADDITIONAL REQUIREMENTS.
5. MW1 MW2, ETC – AS SHOWN ON PLAN INDICATES MASONRY WALL. SEE SCHEDULE SHEET S008.
6. WF1, WF2, ETC – AS SHOWN ON PLAN INDICATES CONTINUOUS WALL FOOTING, SEE SCHEDULE SHEET S008.
7. CONC C.J. – AS SHOWN ON PLAN INDICATES LOCATION OF EITHER KEYED OR SAWCUT CONTROL JOINT IN SLAB ON GRADE AT CONTRACTOR'S OPTION, SEE G.S.N. AND TYPICAL DETAIL.
8. VERIFY EXACT SIZE AND LOCATION OF OPENINGS IN PRECAST CONCRETE WALL PANELS WITH ARCHITECTURAL DRAWINGS.
9. F1, F2, ETC – AS SHOWN ON PLAN INDICATES ISOLATED FOOTING, SEE SCHEDULE ON SHEET S008.
10. C1, C2, ETC – AS SHOWN ON PLAN INDICATES STEEL COLUMN, SEE SCHEDULE ON SHEET S008.
11. ①, ②, ETC – AS SHOWN ON PLAN INDICATES SPECIAL MASONRY WALL REINFORCING, SEE SCHEDULE ON SHEET S008.
11. AS SHOWN ON PLAN INDICATES MOMENT CONNECTION. SEE DETAIL 126.

FOUNDATION PLAN KEYNOTES:

1. 5" CONCRETE SLAB ON GRADE WITH #3 AT 12" O.C. EACH WAY CENTERED OVER VAPOR BARRIER OVER 4" MIN. OF A.B.C. SUB-BASE. FOR SUB-GRADE PREPARATION REFER TO GEOTECH REPORT TYPICAL.
2. CONCRETE TILT UP PANEL. SEE SHEETS S301 AND S302 FOR ELEVATIONS.
3. CONCRETE CLOSURE POUR – TYPICAL.
4. TRELLIS ELEMENT PER DETAILS 128, 129 AND 130. SEE ARCH'L FOR ALL LOCATIONS
5. TRENCH DRAIN PER ARCHITECTURAL.
6. STEEL STAIRS. SEE ENLARGED PLANS ON S801.
7. CONCRETE CONTROL JOINT AT 8 EQ. SPACES EACH BAY AT CLOSURE POUR. EVERY OTHER JOINT TO LINE UP WITH SLAB CONTROL JOINTS.
8. LINE OF SPANDREL PANEL ABOVE.
9. CONTROL JOINTS AT 4 EQUAL SPACES EACH BAY. EACH DIRECTION TYPICAL U.N.O. SEE DETAILS 101 OR 119 FOR ADDITIONAL INFO.
10. 7" CONCRETE SLAB ON GRADE WITH #3 AT 12" O.C. EACH WAY CENTERED OVER 4" MIN. OF A.B.C. SUB-BASE. FOR SUB-GRADE PREPARATION REFER TO GEOTECH REPORT TYPICAL.
11. SEE ARCHITECTURAL FOR TOP OF WALL ELEVATION. PROVIDE LIGHT GAGE STEEL STUD WALL FROM TOP OF WALL TO ROOF.
12. PROVIDE 5– #5 VERTS. CENTERED UNDER STEEL BEAM BEARING ABOVE.
13. MASONRY PIER PER DETAILS 112 AND 114.
14. STEP FOOTING PER DETAILS 04, 18, 19.
15. HSS8"x6"x1/4" (LSV) FOR COILING DOOR SUPPORT AT 14'–0" A.F.F. SEE DETAIL 236.
16. BOLLARDS PER ARCHITECTURAL.

NOTE:
ALL TOP OF FOOTINGS ON THIS PLAN ARE FROM REF. ELEVATION.



KEYPLAN

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PROGRESS PRINT NOT FOR CONSTRUCTION

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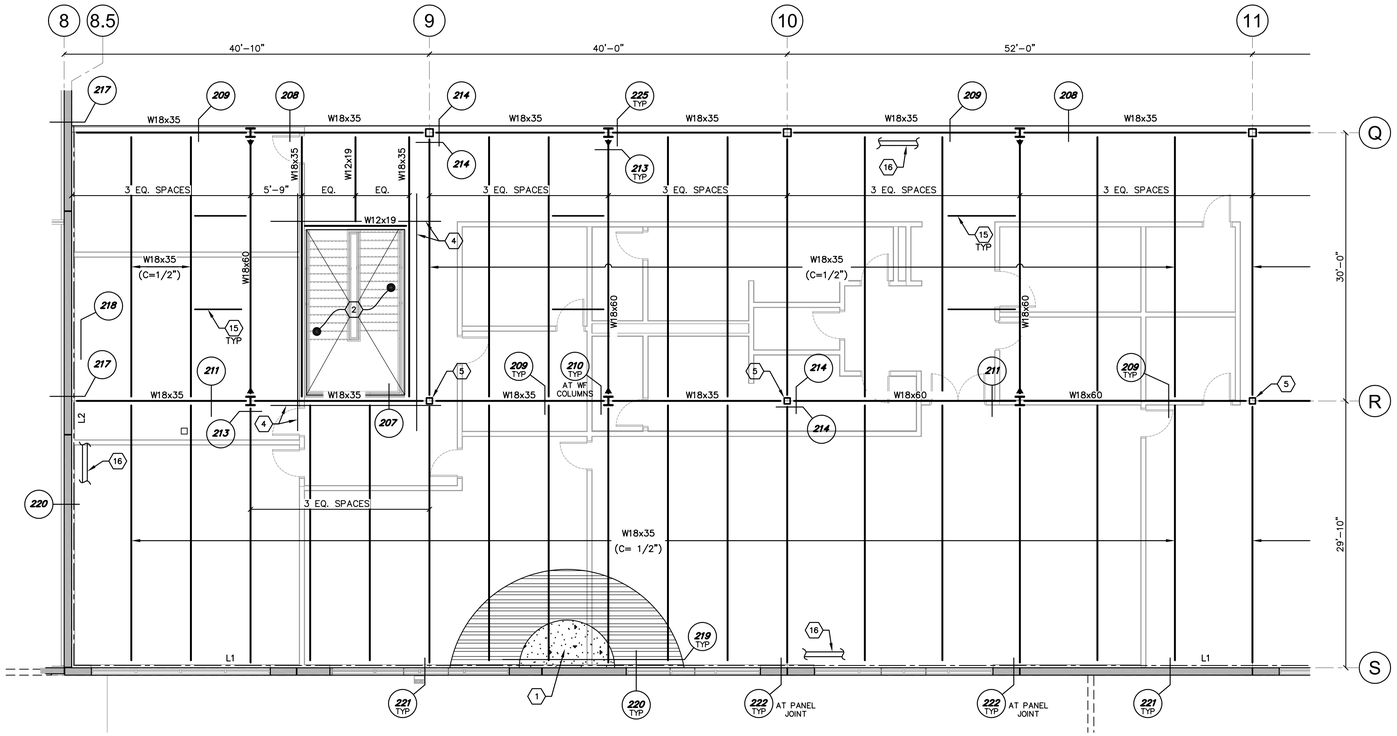
AMERICAN HEIGHTS & TUTT BOULEVARD
COLORADO SPRINGS, COLORADO

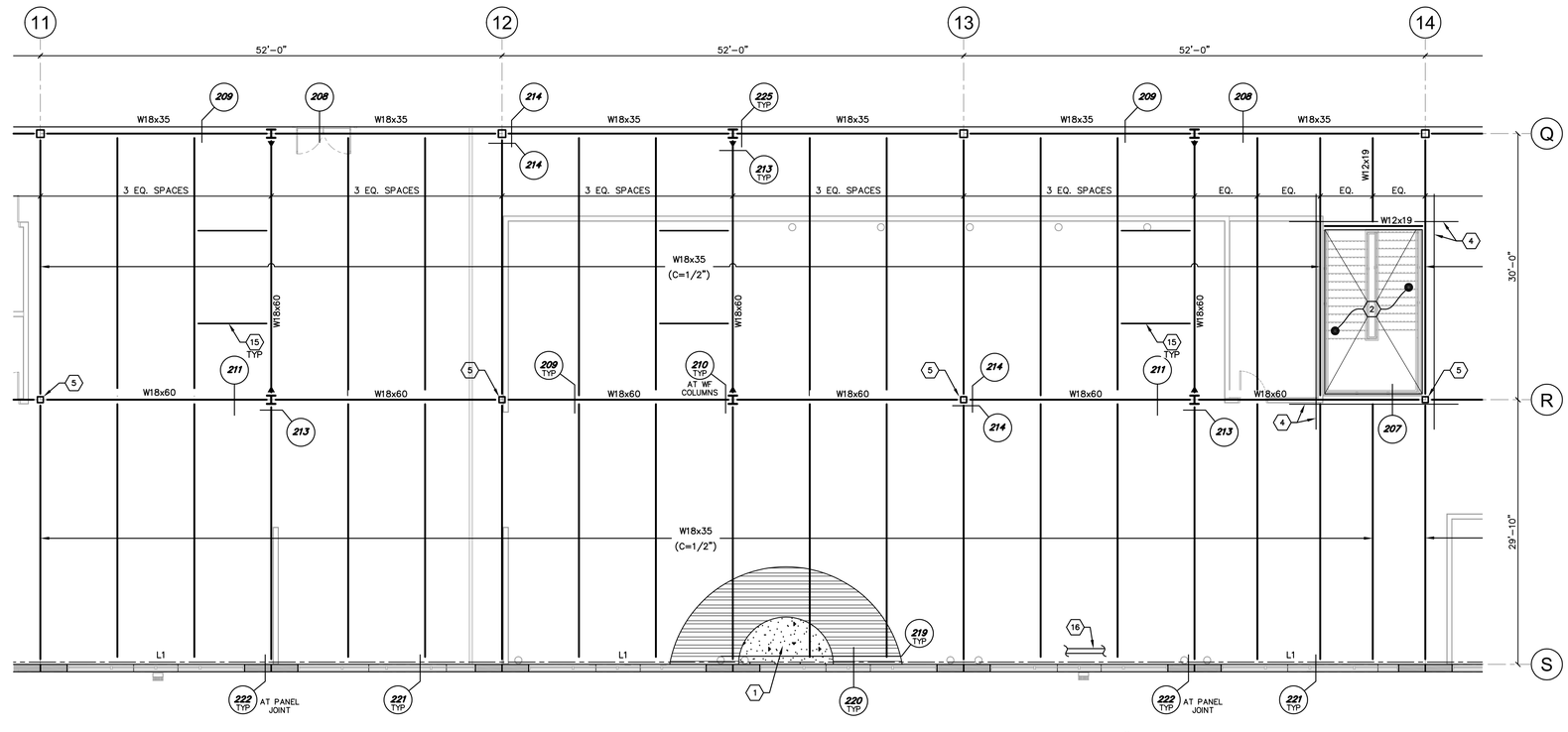
Case #:
Plan Check #:
Date: 10/15/2024
Revisions:

Project Number: 21002
Drawn By: PKA
Title: WAREHOUSE - EAST FOUNDATION PLAN

S113



1 WAREHOUSE MEZZANINE - PARTIAL FLOOR FRAMING PLAN
SCALE: 1/8" = 1'-0"



2 WAREHOUSE MEZZANINE - PARTIAL FLOOR FRAMING PLAN
SCALE: 1/8" = 1'-0"

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6900 E. Belleview Ave. #200
Greenwood Village, Colorado 80111
Phone: (720) 799–1058
Email: cadd@pkastructural.com
Website: www.pkastructural.com

FLOOR FRAMING NOTES

1. FOR SHEET INDEX, SEE GENERAL STRUCTURAL NOTES.
2. VERIFY ALL DIMENSIONS WITH ARCHITECTURAL DRAWINGS. ROOF ELEVATIONS, WHERE SHOWN, ARE TO BE PROVIDED AND VERIFIED BY THE ARCHITECT.
3. SCHEDULED MARK DESIGNATIONS ARE TYPICAL TO THE PROJECT AND MAY NOT NECESSARILY BE FOUND ON THIS PLAN.
4. L1, L2, ETC – AS SHOWN ON PLAN INDICATES LEDGER, SEE SCHEDULE SHEET S008.
5. FOR CLARITY, DETAILS MAY SHOW ONLY ONE SIDE OF FRAMING CONDITION.
6. FOR CLARITY, ALL FLOOR OPENINGS MAY NOT BE SHOWN ON FLOOR FRAMING PLAN. FOR EXACT SIZE, NUMBER AND LOCATION OF OPENINGS, SEE ARCHITECTURAL, MECHANICAL, PLUMBING AND ELECTRICAL DRAWINGS. FOR FRAMING AT OPENINGS, SEE TYPICAL DETAILS.
7. " ▶ " AS SHOWN ON PLAN INDICATES MOMENT CONNECTION.

MEZZANINE PLAN KEYNOTES

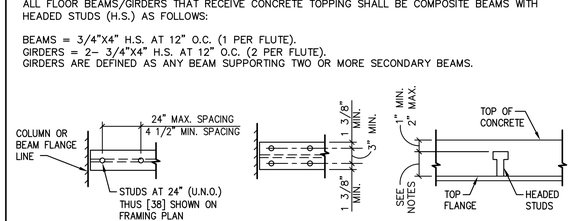
1. 3" CONCRETE OVER 2"x20GA. STEEL DECK (5" TOTAL SLAB DEPTH) WITH 6x6–W2.9xW2.9 W.W.F. SEE GSN FOR ATTACHMENT.
2. STAIR OPENING. SEE STAIR FRAMING PLAN ON S801.
3. MASONRY WALL STOPS AT 20'–0" A.F.F. PROVIDE MIN. 6" STEEL STUD WALL ON TOP MASONRY WALL UP TO ROOF DECK.
4. PLACE 2 #4 BARS AT 4" O.C. WITH 3/4" CLEARANCE FROM TOP OF CONCRETE. EXTEND 10'–0" PAST EACH END OF OPENING.
5. COLUMNS ALONG GRID R STOP AT THIS LEVEL.
6. 4" EXPANSION JOINT. PROVIDE BEAM ON EACH SIDE OF EXPANSION JOINT.
7. STEEL COLUMN. SEE FOUNDATION PLAN.
8. SUSPENDED CEILING. SEE ARCHITECTURAL DRAWINGS.
9. 1"ø STEEL TENSION ROD.
10. LINE OF SOFFIT FRAMING – REFER TO DETAIL 342.
11. 3x10 WOOD RAFTERS, TYP. (DF#2). REFER TO ARCHITECTURAL PLANS FOR LAYOUT AND SPACING.
12. 6x14 (LLV) WOOD BEAMS, TYP. (DF#2).
13. STEEL STUD WALLS PER PLANS.
14. PROVIDE 2 #5 VERT. EACH CELL FOR 6 CELLS CENTERED UNDER BEAM BEARING.
15. PROVIDE ANGLE BRACING AT 10'–0" O.C. MAX PER DETAIL 234/S504 TYP. AT MOMENT FRAMES.
16. 2– #5 CONTINUOUS AT SLAB PERIMETER. PROVIDE CLASS "B" TENSION SPLICE

GENERAL HEADED STUD NOTES

NOTES:

ALL FLOOR BEAMS/GIRDERS THAT RECEIVE CONCRETE TOPPING SHALL BE COMPOSITE BEAMS WITH HEADED STUDS (H.S.) AS FOLLOWS:

BEAMS = 3/4"X4" H.S. AT 12" O.C. (1 PER FLUTE).
GIRDERS = 2– 3/4"X4" H.S. AT 12" O.C. (2 PER FLUTE).
GIRDERS ARE DEFINED AS ANY BEAM SUPPORTING TWO OR MORE SECONDARY BEAMS.



NOTES:

1. ALL HEADED SHEAR STUDS SHALL BE 3/4" ø TOP OF ALL STUDS TO BE 1 1/2" (MIN. ABOVE TOP OF STEEL DECK (TYPICAL) SEE PLANS FOR NUMBER.
2. WHERE STUDS FILL EVERY TROUGH THEN REMAINING STUDS SHALL BE INSTALLED ON TWO OR MORE ROWS STARTING AT EACH END OF BEAM OR GIRDER.
3. CASE "A" STUDS ARE EQUALLY SPACED. IF EQUAL SPACING NOT POSSIBLE DUE TO DECK CONFIGURATION, STRUCTURAL ENGINEER MUST BE NOTIFIED.
4. AT FRAMED AREAS WHERE NUMBER OF STUDS IS NOT INDICATED PROVIDE STUDS AT 12" O.C. MAX.
5. STUDS WELDED THRU DECKING MAY BE SUBSTITUTED FOR TYPICAL PLUG WELD.
6. MAINTAIN 1" CLEARANCE AROUND ALL STUDS FOR PROPER EMBEDMENT.
7. STUDS TO EXTEND AS FAR AS STANDARD STUD LENGTHS ALLOW INTO TOPPING SLAB U.N.O.

Butler Design Group Inc.
architects & planners
5017 East Washington St. #107
Phoenix, Arizona 85034
Phone 602-957-1800

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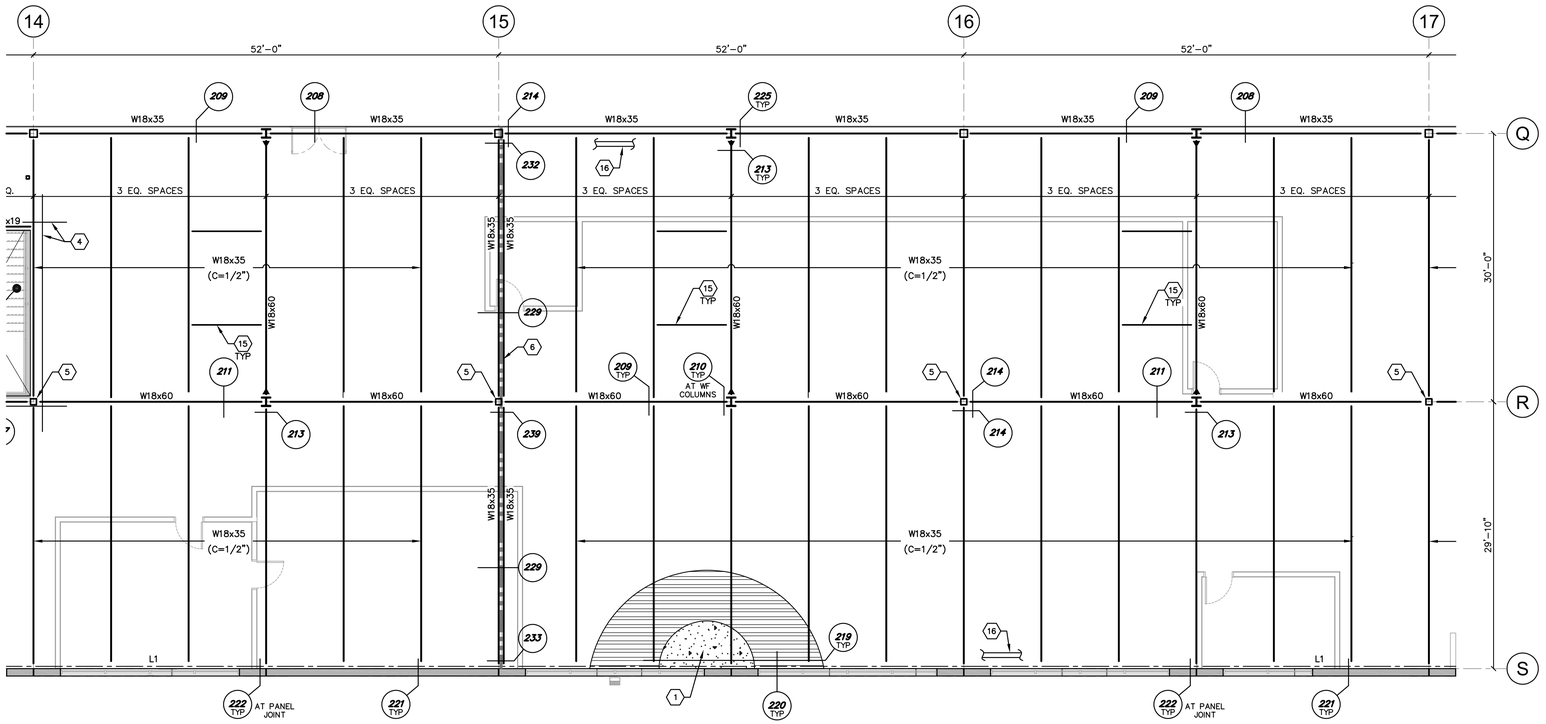
American Furniture Warehouse
Your LIFESTYLE FURNITURE Store
AMERICAN HEIGHTS & TUTT BOULEVARD
COLORADO SPRINGS, COLORADO

Case #:
Plan Check #:
Date: 10/15/2024
Revisions:

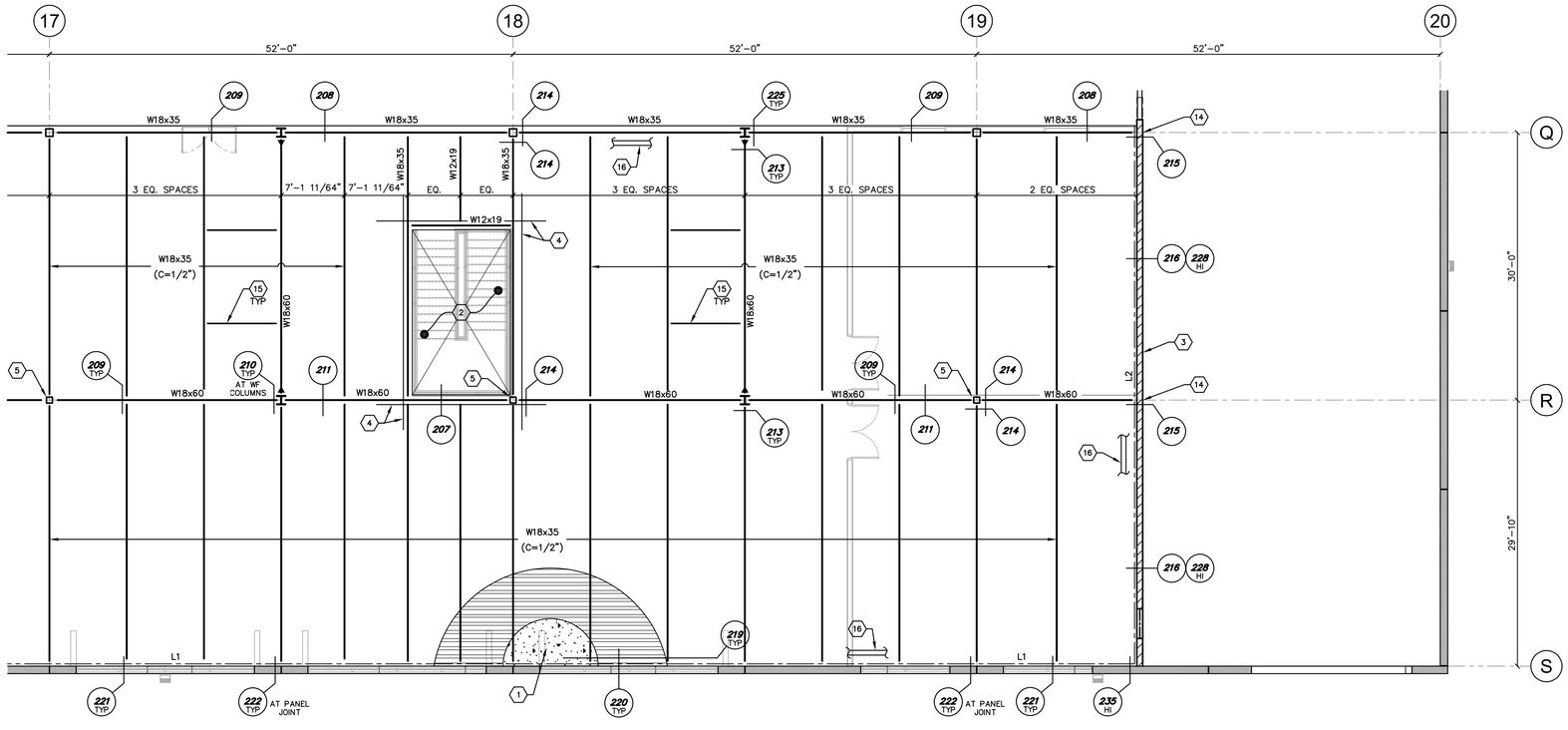
Project Number: 21002
Drawn By: PKA
Title: WAREHOUSE - PARTIAL MEZZANINE FRAMING PLAN

S121

PK ASSOCIATES, LLC
6900 E. Belleview Ave. #200
Greenwood Village, Colorado 80111
Phone: (720) 799-1058
Email: cadd@pkastructural.com
Website: www.pkastructural.com



1 WAREHOUSE MEZZANINE - PARTIAL FLOOR FRAMING PLAN
SCALE: 1/8" = 1'-0"



2 WAREHOUSE MEZZANINE - PARTIAL FLOOR FRAMING PLAN
SCALE: 1/8" = 1'-0"

FLOOR FRAMING NOTES

1. FOR SHEET INDEX, SEE GENERAL STRUCTURAL NOTES.
2. VERIFY ALL DIMENSIONS WITH ARCHITECTURAL DRAWINGS. ROOF ELEVATIONS, WHERE SHOWN, ARE TO BE PROVIDED AND VERIFIED BY THE ARCHITECT.
3. SCHEDULED MARK DESIGNATIONS ARE TYPICAL TO THE PROJECT AND MAY NOT NECESSARILY BE FOUND ON THIS PLAN.
4. L1, L2, ETC – AS SHOWN ON PLAN INDICATES LEDGER, SEE SCHEDULE SHEET S008.
5. FOR CLARITY, DETAILS MAY SHOW ONLY ONE SIDE OF FRAMING CONDITION.
6. FOR CLARITY, ALL FLOOR OPENINGS MAY NOT BE SHOWN ON FLOOR FRAMING PLAN. FOR EXACT SIZE, NUMBER AND LOCATION OF OPENINGS, SEE ARCHITECTURAL, MECHANICAL, PLUMBING AND ELECTRICAL DRAWINGS. FOR FRAMING AT OPENINGS, SEE TYPICAL DETAILS.
7. " ▶ " AS SHOWN ON PLAN INDICATES MOMENT CONNECTION.

MEZZANINE PLAN KEYNOTES

1. 3" CONCRETE OVER 2"x20GA. STEEL DECK (5" TOTAL SLAB DEPTH) WITH 6x6–W2.9xW2.9 W.W.F. SEE GSN FOR ATTACHMENT.
2. STAIR OPENING. SEE STAIR FRAMING PLAN ON S801.
3. MASONRY WALL STOPS AT 20'–0" A.F.F. PROVIDE MIN. 6" STEEL STUD WALL ON TOP MASONRY WALL UP TO ROOF DECK.
4. PLACE 2 #4 BARS AT 4" O.C. WITH 3/4" CLEARANCE FROM TOP OF CONCRETE. EXTEND 10'–0" PAST EACH END OF OPENING.
5. COLUMNS ALONG GRID R STOP AT THIS LEVEL.
6. 4" EXPANSION JOINT. PROVIDE BEAM ON EACH SIDE OF EXPANSION JOINT.
7. STEEL COLUMN. SEE FOUNDATION PLAN.
8. SUSPENDED CEILING. SEE ARCHITECTURAL DRAWINGS.
9. 1"ø STEEL TENSION ROD.
10. LINE OF SOFFIT FRAMING – REFER TO DETAIL 342.
11. 3x10 WOOD RAFTERS, TYP. (DF#2). REFER TO ARCHITECTURAL PLANS FOR LAYOUT AND SPACING.
12. 6x14 (LLV) WOOD BEAMS, TYP. (DF#2).
13. STEEL STUD WALLS PER PLANS.
14. PROVIDE 2 #5 VERT. EACH CELL FOR 6 CELLS CENTERED UNDER BEAM BEARING.
15. PROVIDE ANGLE BRACING AT 10'–0" O.C. MAX PER DETAIL 234/S504 TYP. AT MOMENT FRAMES.
16. 2– #5 CONTINUOUS AT SLAB PERIMETER. PROVIDE CLASS "B" TENSION SPLICE

GENERAL HEADED STUD NOTES

NOTES:

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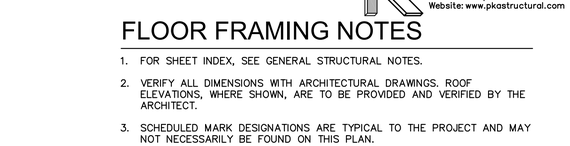
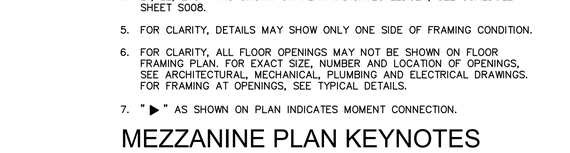
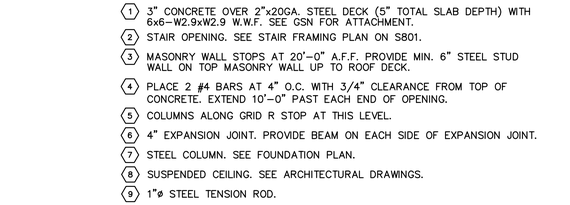




NOTE" M INDICATES EXTENT OF MULTIPLE STUDS AS REQUIRED SEE NOTE 2.



NOTES:

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2. WHERE STUDS FILL EVERY TROUGH THEN REMAINING STUDS SHALL BE INSTALLED ON TWO OR MORE ROWS STARTING AT EACH END OF BEAM OR GIRDER.
3. CASE "A" STUDS ARE EQUALLY SPACED. IF EQUAL SPACING NOT POSSIBLE DUE TO DECK CONFIGURATION, STRUCTURAL ENGINEER MUST BE NOTIFIED.
4. AT FRAMED AREAS WHERE NUMBER OF STUDS IS NOT INDICATED PROVIDE STUDS AT 12" O.C. MAX.
5. STUDS WELDED THRU DECKING MAY BE SUBSTITUTED FOR TYPICAL PLUG WELD.
6. MAINTAIN 1" CLEARANCE AROUND ALL STUDS FOR PROPER EMBEDMENT.
7. STUDS TO EXTEND AS FAR AS STANDARD STUD LENGTHS ALLOW INTO TOPPING SLAB U.N.O.

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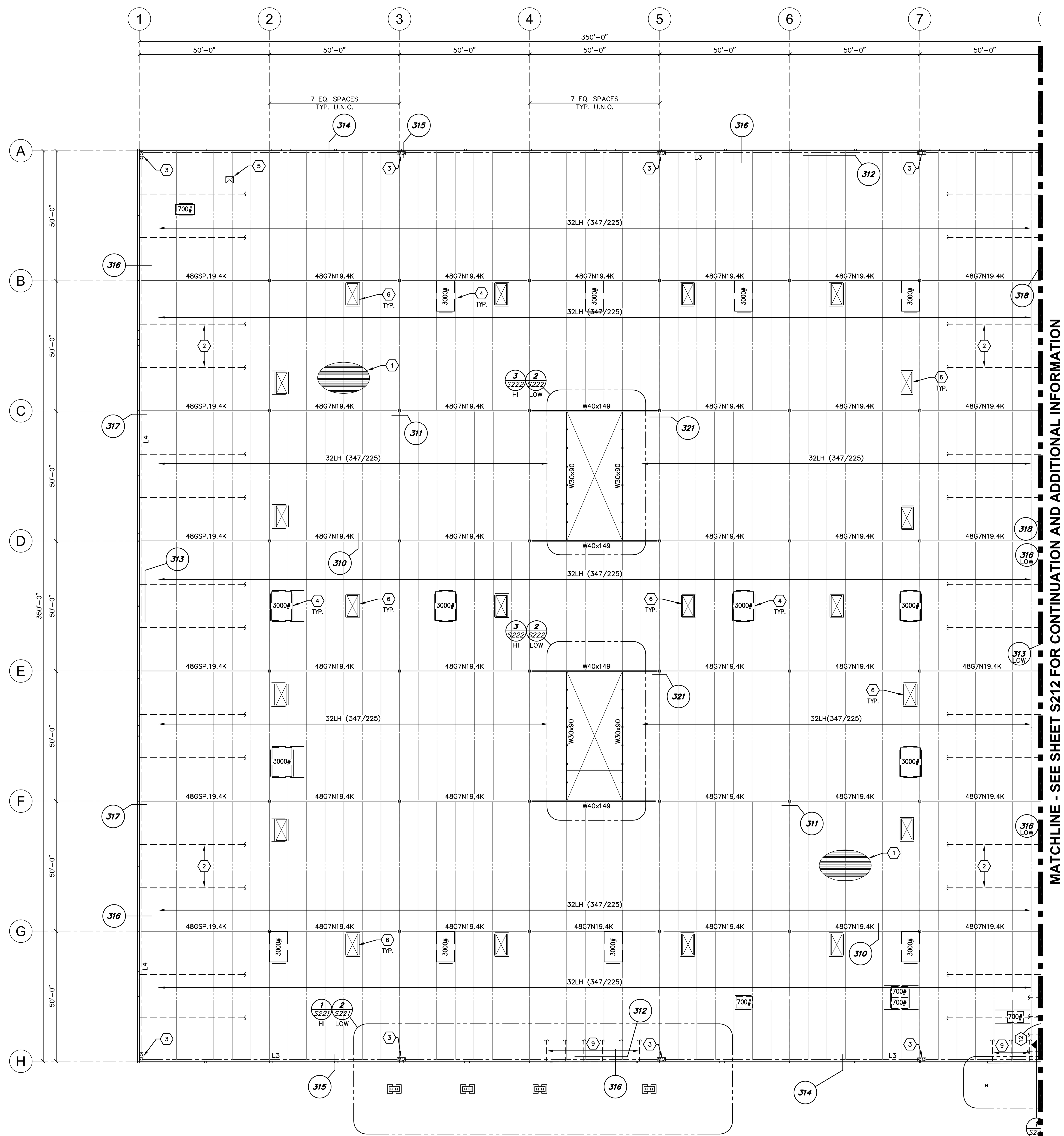
American Furniture Warehouse
Your LIFESTYLE FURNITURE Store
AMERICAN HEIGHTS & TUTT BOULEVARD
COLORADO SPRINGS, COLORADO

Case #:
Plan Check #:
Date: 10/15/2024
Revisions:

Project Number: 21002
Drawn By: PKA
Title: WAREHOUSE - PARTIAL MEZZANINE FRAMING PLAN

S122



1 SHOWROOM - ROOF FRAMING PLAN
SCALE: 1" = 20'-0"

PK ASSOCIATES, LLC
6900 E. Belleview Ave. #200
Greenwood Village, Colorado 80111
Phone: (720) 799-1058
Email: cadd@pkastructural.com
Website: www.pkastructural.com

ROOF FRAMING PLAN NOTES:

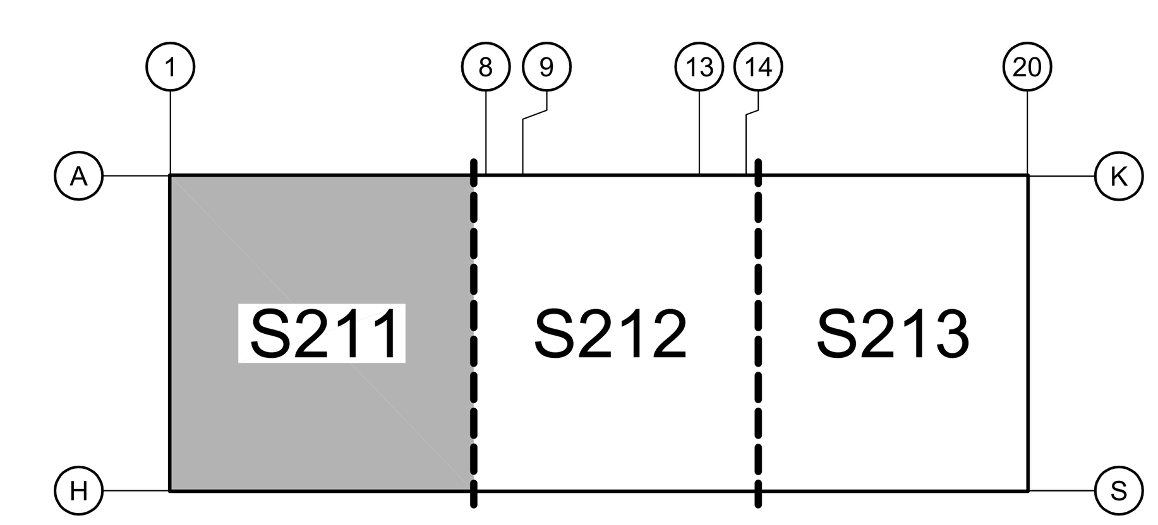
1. FOR SHEET INDEX, SEE GENERAL STRUCTURAL NOTES.
2. VERIFY ALL DIMENSIONS WITH ARCHITECTURAL DRAWINGS. ROOF ELEVATIONS, WHERE SHOWN, ARE TO BE PROVIDED AND VERIFIED BY THE ARCHITECT.
3. SCHEDULED MARK DESIGNATIONS ARE TYPICAL TO THE PROJECT AND MAY NOT NECESSARILY BE FOUND ON THIS PLAN.
4. ALL MECHANICAL UNITS ON THE ROOF TO BE STRAPPED. MECHANICAL ENGINEER TO PROVIDE DETAILS.
5. L1, L2, ETC – AS SHOWN ON PLAN INDICATES LEDGER, SEE SCHEDULE ON SHEET S008.
6. FOR CLARITY, DETAILS MAY SHOW ONLY ONE SIDE OF FRAMING CONDITION.
7. FOR CLARITY, ALL ROOF OPENINGS MAY NOT BE SHOWN ON ROOF FRAMING PLAN. FOR EXACT SIZE, NUMBER AND LOCATION OF OPENINGS, SEE ARCHITECTURAL, MECHANICAL, PLUMBING AND ELECTRICAL DRAWINGS. FOR FRAMING AT OPENINGS, SEE TYPICAL DETAILS.
8. VERIFY EXACT SIZE AND WEIGHT OF EQUIPMENT ON ROOF WITH MECHANICAL CONTRACTOR.
9. (arrow) INDICATES DRAG AXIAL TENSION OR COMPRESSION FORCE (SERVICE LOADS) ON STEEL JOIST. JOIST MFR. TO DESIGN JOIST TO TRANSFER THIS LOAD.
10. SEE G.S.N. FOR DIAPHRAGM ATTACHMENT.
11. SEE WIND UPLIFT FORCE DIAGRAM ON SHEET S009.
12. ALL BEAM ELEVATIONS ARE ABOVE FINISHED FLOOR.

ROOF FRAMING PLAN KEYNOTES:

1. 3"x20GA. GALVANIZED STEEL DECK. SEE GSN FOR ATTACHMENT.
2. JOIST MANUFACTURER TO PROVIDE BRIDGING AND BRACING PER SJI SPECIFICATIONS.
3. FRAME AROUND ROOF DRAINS PER DETAIL 301.
4. MECHANICAL UNIT BY OTHERS. SEE DETAILS 302, 305, 306 & 320. SEE DETAIL 336 FOR STRAPS AROUND UNIT.
5. ROOF HATCH PER ARCHITECTURAL. FRAME AROUND OPENING PER DETAIL 302.
6. SKYLIGHT PER ARCHITECTURAL FRAME AROUND OPENING PER DETAIL 302.
7. INTERIOR FAN PER MECHANICAL.
8. 4" EXPANSION JOINT PROVIDE ADDITIONAL JOIST NEXT TO EXPANSION JOINT.
9. DOUBLE L6"x6"x3/8" STEEL BRACE AT SPANDREL PANELS PER DETAILS 328, 329, AND 337. LOCATE BRACES ADJACENT TO EACH ROOF JOIST.
10. STEEL PLATE CHORD TIE.
11. CROSS BRIDGING PER JOIST MANUFACTURER FOR TWO BAYS ON EACH SIDE OF EXPANSION JOINT IN ADDITION TO BRIDGING REQUIRED BY SJI.
12. DOUBLE L6x6x3/8" STEEL BRACE AT 6'-0" O.C. AT SPANDREL PANELS. PER DETAILS 328, 329 AND 337.
13. HVLS FAN AND ITS ATTACHMENT BY OTHERS. JOIST MANUFACTURER TO COORDINATE ACCORDINGLY AND DESIGN THE JOISTS FOR THE LOADS, TYP. (350# MAX.)
14. JOIST MANUFACTURER TO DESIGN "K" SERIES JOIST SHOES TO MATCH "LH" SERIES JOISTS ALONG GRIDLINE L.

NOTE TO JOIST MANUFACTURER:

1. **THE SNOW LOADS NOTED ON THIS PLAN INDICATES UNIFORM SNOW LOADS ONLY.**
2. **SEE SHEET S214 FOR ADDITIONAL SNOW DRIFT LOAD AND SHEET S009 FOR ROOF WIND UPLIFT LOADS.**
3. **JOIST MANUFACTURER TO DESIGN ALL JOISTS FOR ADDITIONAL FUTURE 500# MECHANICAL LOAD AT ANY PANEL POINT ALONG JOIST TOP CHORD. SEE GSN FOR MORE INFORMATION.**



KEYPLAN

Butler Design Group Inc.
architects & planners
5017 East Washington St. #107
Phoenix, Arizona 85034
Phone 602-957-1800

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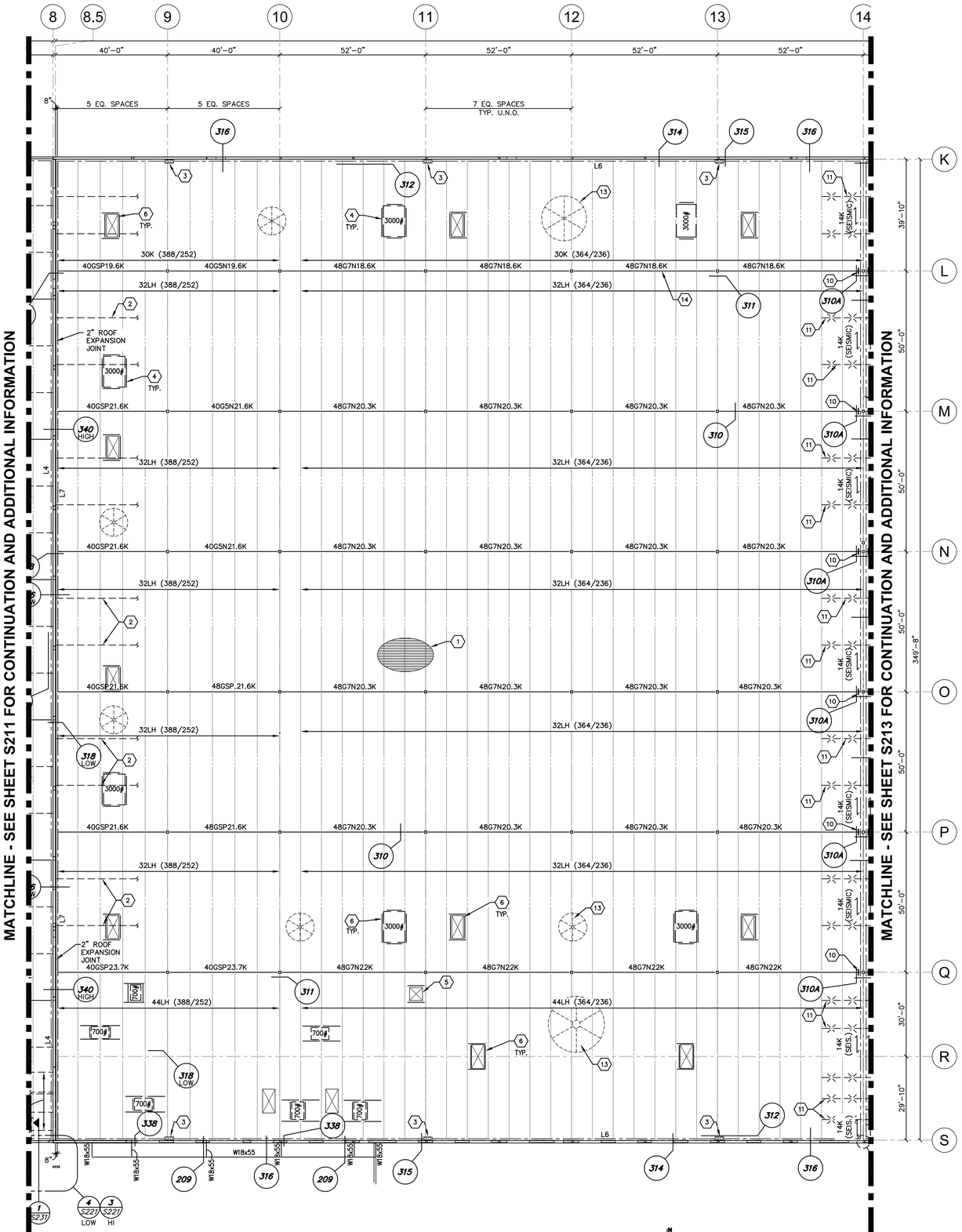
AMERICAN HEIGHTS & TUTT BOULEVARD
COLORADO SPRINGS, COLORADO

Case #:
Plan Check #:
Date: 10/15/2024
Revisions:

Project Number: 21002
Drawn By: PKA
Title: SHOWROOM - ROOF FRAMING PLAN

S211



1 **WAREHOUSE WEST - ROOF FRAMING PLAN**
SCALE: 1" = 20'-0"

PK ASSOCIATES, LLC
6900 E. Belleview Ave. #200
Greenwood Village, Colorado 80111
Phone: (720) 799-1058
Email: cadd@pkastructural.com
Website: www.pkastructural.com

ROOF FRAMING PLAN NOTES:

1. FOR SHEET INDEX, SEE GENERAL STRUCTURAL NOTES.
2. VERIFY ALL DIMENSIONS WITH ARCHITECTURAL DRAWINGS. ROOF ELEVATIONS, WHERE SHOWN, ARE TO BE PROVIDED AND VERIFIED BY THE ARCHITECT.
3. SCHEDULED MARK DESIGNATIONS ARE TYPICAL TO THE PROJECT AND MAY NOT NECESSARILY BE FOUND ON THIS PLAN.
4. ALL MECHANICAL UNITS ON THE ROOF TO BE STRAPPED. MECHANICAL ENGINEER TO PROVIDE DETAILS.
5. L1, L2, ETC – AS SHOWN ON PLAN INDICATES LEDGER, SEE SCHEDULE ON SHEET S008.
6. FOR CLARITY, DETAILS MAY SHOW ONLY ONE SIDE OF FRAMING CONDITION.
7. FOR CLARITY, ALL ROOF OPENINGS MAY NOT BE SHOWN ON ROOF FRAMING PLAN. FOR EXACT SIZE, NUMBER AND LOCATION OF OPENINGS, SEE ARCHITECTURAL, MECHANICAL, PLUMBING AND ELECTRICAL DRAWINGS. FOR FRAMING AT OPENINGS, SEE TYPICAL DETAILS.
8. VERIFY EXACT SIZE AND WEIGHT OF EQUIPMENT ON ROOF WITH MECHANICAL CONTRACTOR.
9. ⟶ INDICATES DRAG AXIAL TENSION OR COMPRESSION FORCE (SERVICE LOADS) ON STEEL JOIST. JOIST MFR. TO DESIGN JOIST TO TRANSFER THIS LOAD.
10. SEE G.S.N. FOR DIAPHRAGM ATTACHMENT.
11. SEE WIND UPLIFT FORCE DIAGRAM ON SHEET S009.
12. ALL BEAM ELEVATIONS ARE ABOVE FINISHED FLOOR.

ROOF FRAMING PLAN KEYNOTES:

1. 3"x20GA. GALVANIZED STEEL DECK. SEE GSN FOR ATTACHMENT.
2. JOIST MANUFACTURER TO PROVIDE BRIDGING AND BRACING PER SJI SPECIFICATIONS.
3. FRAME AROUND ROOF DRAINS PER DETAIL 301.
4. MECHANICAL UNIT BY OTHERS. SEE DETAILS 302, 305, 306 & 320. SEE DETAIL 336 FOR STRAPS AROUND UNIT.
5. ROOF HATCH PER ARCHITECTURAL. FRAME AROUND OPENING PER DETAIL 302.
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10. STEEL PLATE CHORD TIE.
11. CROSS BRIDGING PER JOIST MANUFACTURER FOR TWO BAYS ON EACH SIDE OF EXPANSION JOINT IN ADDITION TO BRIDGING REQUIRED BY SJI.
12. DOUBLE L6x6x3/8" STEEL BRACE AT 6'–0" O.C. AT SPANDREL PANELS. PER DETAILS 328, 329 AND 337.
13. HVLS FAN AND ITS ATTACHMENT BY OTHERS. JOIST MANUFACTURER TO COORDINATE ACCORDINGLY AND DESIGN THE JOISTS FOR THE LOADS, TYP. (350# MAX.)
14. JOIST MANUFACTURER TO DESIGN "K" SERIES JOIST SHOES TO MATCH "LH" SERIES JOISTS ALONG GRIDLINE L.

NOTE TO JOIST MANUFACTURER:

1. **THE SNOW LOADS NOTED ON THIS PLAN INDICATES UNIFORM SNOW LOADS ONLY.**
2. **SEE SHEET S214 FOR ADDITIONAL SNOW DRIFT LOAD AND SHEET S009 FOR ROOF WIND UPLIFT LOADS.**
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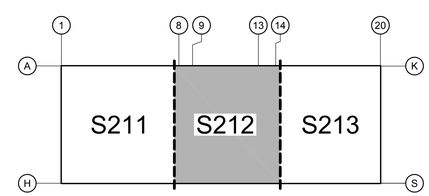

KEYPLAN

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Phoenix, Arizona 85034
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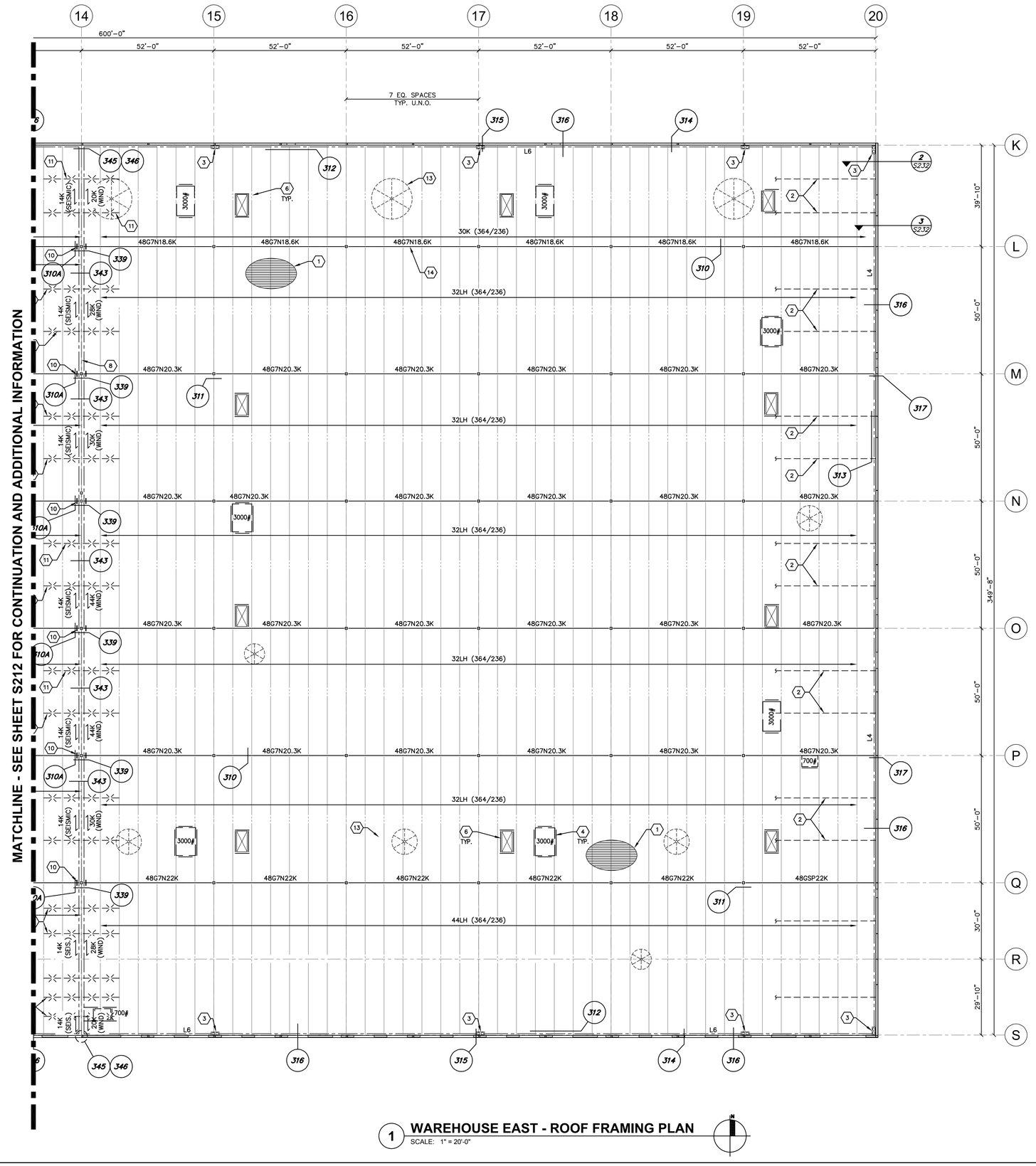
Case #:
Plan Check #:
Date: 10/15/2024
Revisions:

Project Number: 21002
Drawn By: PKA
Title: WAREHOUSE WEST - ROOF FRAMING PLAN

S212



1 **WAREHOUSE EAST - ROOF FRAMING PLAN**
SCALE: 1" = 20'-0"

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Phone: (720) 799-1058
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Website: www.pkastructural.com

ROOF FRAMING PLAN NOTES:

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12. ALL BEAM ELEVATIONS ARE ABOVE FINISHED FLOOR.

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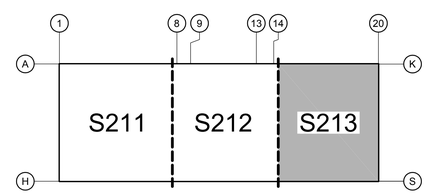

KEYPLAN

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Phoenix, Arizona 85034
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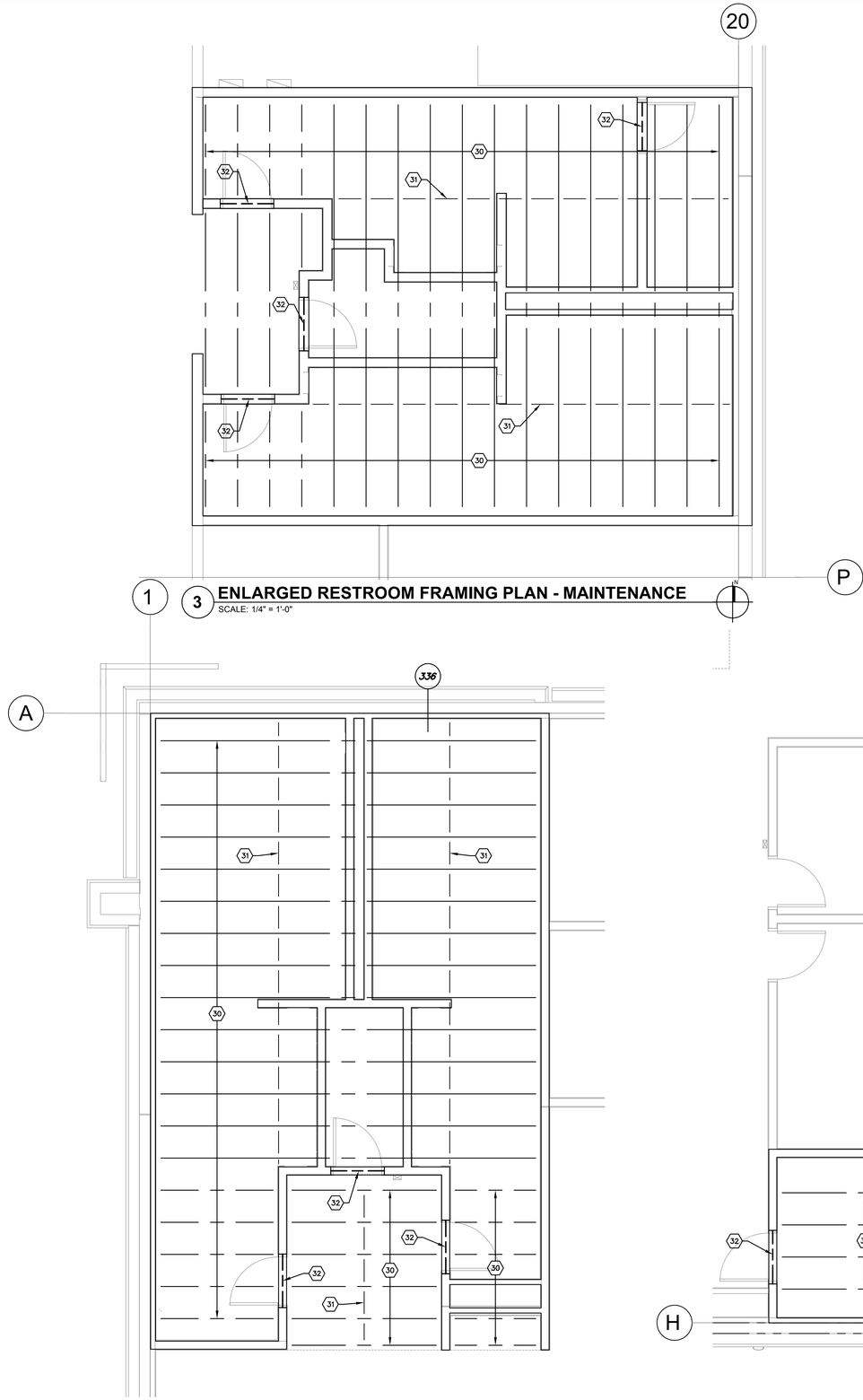
AMERICAN HEIGHTS & TUTT BOULEVARD
COLORADO SPRINGS, COLORADO

Case #:
Plan Check #:
Date: 10/15/2024
Revisions:

Project Number: 21002
Drawn By: PKA
Title: WAREHOUSE EAST - ROOF FRAMING PLAN

S213



3 **ENLARGED RESTROOM FRAMING PLAN - MAINTENANCE**
SCALE: 1/4" = 1'-0"

4 **ENLARGED RESTROOM FRAMING PLAN - MEZZANINE**
SCALE: 1/4" = 1'-0"

1 **ENLARGED RESTROOM FRAMING PLAN**
SCALE: 1/4" = 1'-0"

2 **ENLARGED RESTROOM FRAMING PLAN**
SCALE: 1/4" = 1'-0"

PK ASSOCIATES, LLC
6900 E. Belleview Ave. #200
Greenwood Village, Colorado 80111
Phone: (720) 799-1058
Email: cadd@pkastructural.com
Website: www.pkastructural.com

ROOF FRAMING PLAN NOTES:

1. FOR SHEET INDEX, SEE GENERAL STRUCTURAL NOTES.
2. VERIFY ALL DIMENSIONS WITH ARCHITECTURAL DRAWINGS. ROOF ELEVATIONS, WHERE SHOWN, ARE TO BE PROVIDED AND VERIFIED BY THE ARCHITECT.
3. SCHEDULED MARK DESIGNATIONS ARE TYPICAL TO THE PROJECT AND MAY NOT NECESSARILY BE FOUND ON THIS PLAN.
4. ALL MECHANICAL UNITS ON THE ROOF TO BE STRAPPED. MECHANICAL ENGINEER TO PROVIDE DETAILS.
5. L1, L2, ETC – AS SHOWN ON PLAN INDICATES LEDGER, SEE SCHEDULE ON SHEET S008.
6. FOR CLARITY, DETAILS MAY SHOW ONLY ONE SIDE OF FRAMING CONDITION.
7. FOR CLARITY, ALL ROOF OPENINGS MAY NOT BE SHOWN ON ROOF FRAMING PLAN. FOR EXACT SIZE, NUMBER AND LOCATION OF OPENINGS, SEE ARCHITECTURAL, MECHANICAL, PLUMBING AND ELECTRICAL DRAWINGS. FOR FRAMING AT OPENINGS, SEE TYPICAL DETAILS.
8. VERIFY EXACT SIZE AND WEIGHT OF EQUIPMENT ON ROOF WITH MECHANICAL CONTRACTOR.
9. ⟶ INDICATES DRAG AXIAL TENSION OR COMPRESSION FORCE (SERVICE LOADS) ON STEEL JOIST. JOIST MFR. TO DESIGN JOIST TO TRANSFER THIS LOAD.
10. SEE G.S.N. FOR DIAPHRAGM ATTACHMENT.
11. SEE WIND UPLIFT FORCE DIAGRAM ON SHEET S009.
12. ALL BEAM ELEVATIONS ARE ABOVE FINISHED FLOOR.

FRAMING PLAN KEYNOTES:

1. 1 1/2"x20GA. STEEL DECK. ATTACH PER GSN.
2. EXTEND JOIST AS SHOWN IN DETAIL 326.
3. HSS4"x4"x1/2" GALVANIZED STEEL POST AT EACH JOIST LOCATION.
4. SKYLIGHT FRAME BELOW.
5. TRELLIS RAFTERS PER ARCHITECTURAL.
6. LINE OF CONCRETE PANEL BELOW.
7. 6"x16GA. STEEL JOIST AT 16" O.C. AS REQUIRED FOR SOFFIT FRAMING (600S162-54).
8. W18x65 LOW.
9. HSS6x6x1/4 BRACE FROM BEAM TO PANEL AT 4'-0" MAX.
10. HSS6x6x1/2 POSTS.
11. MASONRY PIER BELOW.
12. STEEL STUD WALL.
13. HSS4x4x1/4 GALVANIZED STEEL POST AT EVERY ROOF BEAM LOCATION (8'-0" MAX.).
14. ALIGN ROOF BEAMS WITH ROOF JOISTS.
15. ROOF STEEL JOIST.
17. 6" STEEL STUD POPOUT (600S162-54 AT 16" O.C.)
18. 6" STEEL STUD BRACE PER DETAIL 344.
19. SPANDREL PANEL.
20. 2" EXPANSION JOINT.
21. MASONRY LINTEL BELOW.
22. L4x4x3/8 KICKER AT EVERY CLERESTORY POST LOCATION.
23. HSS 4"x4"x1/2" GALVANIZED STEEL POST A EACH JOIST LOCATION ALIGNED W/ CLERESTORY WINDOW FRAME.
24. LINE OF CLERESTORY ROOF ABOVE.
26. DOUBLE L6x6x5/16 AT 5'-0" O.C. FOR CONCRETE CAP SUPPORT. SEE DETAIL 230.
27. HSS8x4x1/2" POST FOR SIGN SUPPORT.
28. STEEL LINTEL BELOW. SEE DETAIL 243.
29. DO NOT ATTACH BEAM TO PANEL.
30. 6"x18 GAGE JOINTS AT 24" O.C. (600S137-43).
31. 18 GAx6" DEEP BLOCKING.
32. HEADER PER TYPICAL DETAIL.
33. 6x6x5/16" CONT. EDGE ANGLE.

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architects & planners
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COLORADO SPRINGS, COLORADO

Case #:
Plan Check #:
Date: 10/15/2024
Revisions:

Project Number: 21002
Drawn By: PKA
Title: ENLARGED RESTROOM FRAMING PLANS

S214

PK ASSOCIATES, LLC
6900 E. Belleview Ave. #200
Greenwood Village, Colorado 80111
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3. SCHEDULED MARK DESIGNATIONS ARE TYPICAL TO THE PROJECT AND MAY NOT NECESSARILY BE FOUND ON THIS PLAN.
4. ALL MECHANICAL UNITS ON THE ROOF TO BE STRAPPED. MECHANICAL ENGINEER TO PROVIDE DETAILS.
5. L1, L2, ETC – AS SHOWN ON PLAN INDICATES LEDGER, SEE SCHEDULE ON SHEET S008.
6. FOR CLARITY, DETAILS MAY SHOW ONLY ONE SIDE OF FRAMING CONDITION.
7. FOR CLARITY, ALL ROOF OPENINGS MAY NOT BE SHOWN ON ROOF FRAMING PLAN. FOR EXACT SIZE, NUMBER AND LOCATION OF OPENINGS, SEE ARCHITECTURAL, MECHANICAL, PLUMBING AND ELECTRICAL DRAWINGS. FOR FRAMING AT OPENINGS, SEE TYPICAL DETAILS.
8. VERIFY EXACT SIZE AND WEIGHT OF EQUIPMENT ON ROOF WITH MECHANICAL CONTRACTOR.
9. ◄— INDICATES DRAG AXIAL TENSION OR COMPRESSION FORCE (SERVICE LOADS) ON STEEL JOIST. JOIST MFR. TO DESIGN JOIST TO TRANSFER THIS LOAD.
10. SEE G.S.N. FOR DIAPHRAGM ATTACHMENT.
11. SEE WIND UPLIFT FORCE DIAGRAM ON SHEET S009.
12. ALL BEAM ELEVATIONS ARE ABOVE FINISHED FLOOR.

FRAMING PLAN KEYNOTES:

1. 1 1/2"x20GA. STEEL DECK. ATTACH PER GSN.
2. EXTEND JOIST AS SHOWN IN DETAIL 326.
3. HSS4"x4"x1/2" GALVANIZED STEEL POST AT EACH JOIST LOCATION.
4. SKYLIGHT FRAME BELOW.
5. TRELLIS RAFTERS PER ARCHITECTURAL.
6. LINE OF CONCRETE PANEL BELOW.
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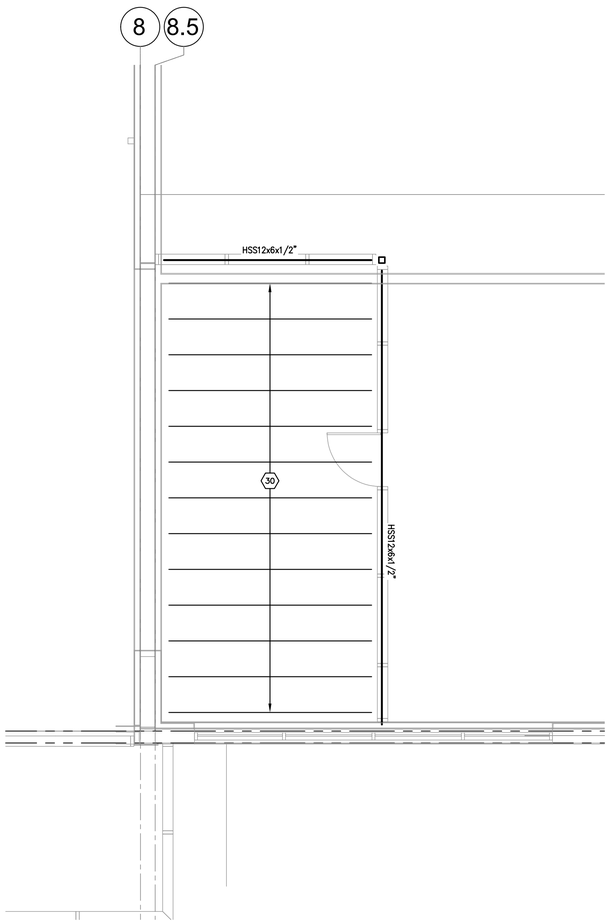
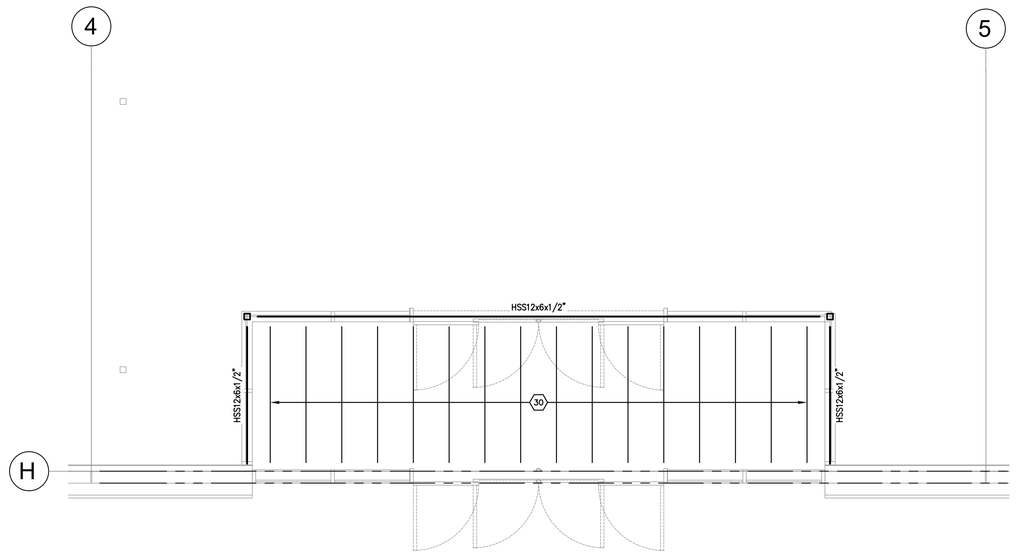
14. ALIGN ROOF BEAMS WITH ROOF JOISTS.
15. ROOF STEEL JOIST.
17. 6" STEEL STUD POPOUT (600S162-54 AT 16" O.C.)
18. 6" STEEL STUD BRACE PER DETAIL 344.
19. SPANDREL PANEL.
20. 2" EXPANSION JOINT.
21. MASONRY LINTEL BELOW.
22. L4x4x3/8 KICKER AT EVERY CLERESTORY POST LOCATION.
23. HSS 4"x4"x1/2" GALVANIZED STEEL POST A EACH JOIST LOCATION ALIGNED W/ CLERESTORY WINDOW FRAME.
24. LINE OF CLERESTORY ROOF ABOVE.
26. DOUBLE L6x6x5/16 AT 5'-0" O.C. FOR CONCRETE CAP SUPPORT. SEE DETAIL 230.
27. HSS8x4x1/2" POST FOR SIGN SUPPORT.
28. STEEL LINTEL BELOW. SEE DETAIL 243.
29. DO NOT ATTACH BEAM TO PANEL.
30. 6"x18 GAGE JOINTS AT 24" O.C. (600S137-43).
31. 18 GAx6" DEEP BLOCKING.
32. HEADER PER TYPICAL DETAIL.
33. 6x6x5/16" CONT. EDGE ANGLE.



1 **ENLARGED CUSTOMER PICK-UP FRAMING PLAN**
SCALE: 1/4" = 1'-0"



2 **ENLARGED VESTIBULE FRAMING PLAN**
SCALE: 1/4" = 1'-0"

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COLORADO SPRINGS, COLORADO

Case #:
Plan Check #:
Date: 10/15/2024
Revisions:

Project Number: 21002
Drawn By: PKA
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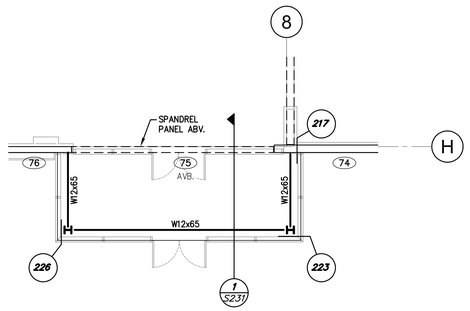
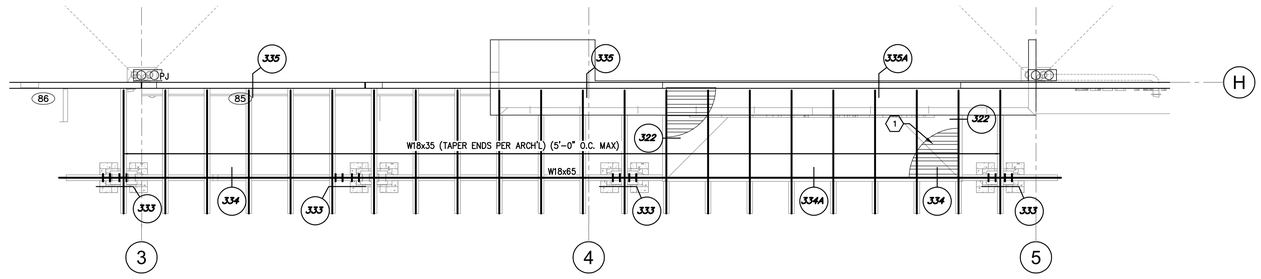
S215



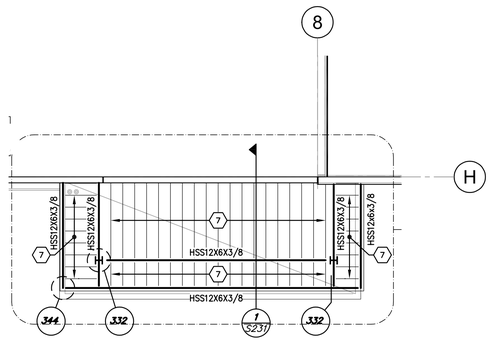
4 ENLARGED LOW ROOF FRAMING PLAN

SCALE: 1/8" = 1'-0"



1 MAIN ENTRANCE HIGH FRAMING PLAN

SCALE: 1/8" = 1'-0"



3 ENLARGED HIGH ROOF FRAMING PLAN

SCALE: 1/8" = 1'-0"

ROOF FRAMING PLAN NOTES:

1. FOR SHEET INDEX, SEE GENERAL STRUCTURAL NOTES.
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3. SCHEDULED MARK DESIGNATIONS ARE TYPICAL TO THE PROJECT AND MAY NOT NECESSARILY BE FOUND ON THIS PLAN.
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5. L1, L2, ETC – AS SHOWN ON PLAN INDICATES LEDGER, SEE SCHEDULE ON SHEET S008.
6. FOR CLARITY, DETAILS MAY SHOW ONLY ONE SIDE OF FRAMING CONDITION.
7. FOR CLARITY, ALL ROOF OPENINGS MAY NOT BE SHOWN ON ROOF FRAMING PLAN. FOR EXACT SIZE, NUMBER AND LOCATION OF OPENINGS, SEE ARCHITECTURAL, MECHANICAL, PLUMBING AND ELECTRICAL DRAWINGS. FOR FRAMING AT OPENINGS, SEE TYPICAL DETAILS.
8. VERIFY EXACT SIZE AND WEIGHT OF EQUIPMENT ON ROOF WITH MECHANICAL CONTRACTOR.
9. ➖ INDICATES DRAG AXIAL TENSION OR COMPRESSION FORCE (SERVICE LOADS) ON STEEL JOIST. JOIST MFR. TO DESIGN JOIST TO TRANSFER THIS LOAD.
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11. SEE WIND UPLIFT FORCE DIAGRAM ON SHEET S009.
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FRAMING PLAN KEYNOTES:

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3. HSS4"x4"x1/2" GALVANIZED STEEL POST AT EACH JOIST LOCATION.
4. SKYLIGHT FRAME BELOW.
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6. LINE OF CONCRETE PANEL BELOW.
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18. 6" STEEL STUD BRACE PER DETAIL 344.
19. SPANDREL PANEL.
20. 2" EXPANSION JOINT.
21. MASONRY LINTEL BELOW.
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PK ASSOCIATES, LLC
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architects & planners

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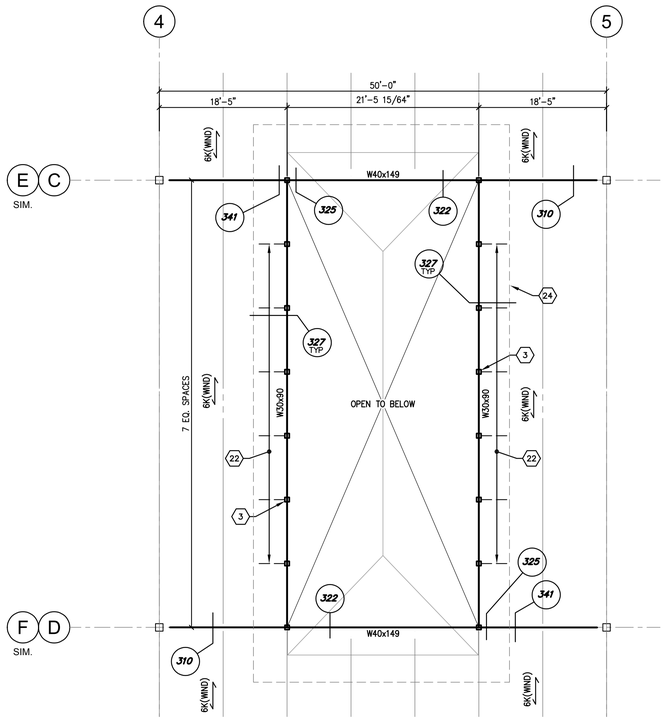
COLORADO SPRINGS, COLORADO

Case #:
Plan Check #:
Date: 10/15/2024
Revisions:

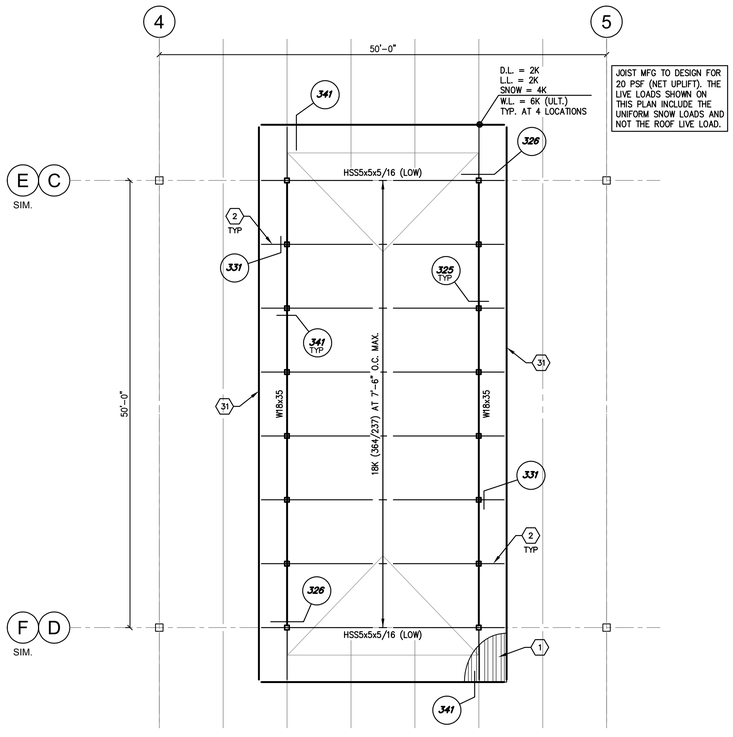
Project Number: 21002
Drawn By: PKA
Title: ENLARGED FRAMING PLANS

S221



2 LOW ROOF FRAMING AT CLERESTORY

SCALE: 1/8" = 1'-0"



3 HIGH ROOF FRAMING AT CLERESTORY

SCALE: 1/8" = 1'-0"

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COLORADO SPRINGS, COLORADO

Case #:
Plan Check #:
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Revisions:

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Drawn By: PKA
Title: ENLARGED FRAMING PLANS

S222

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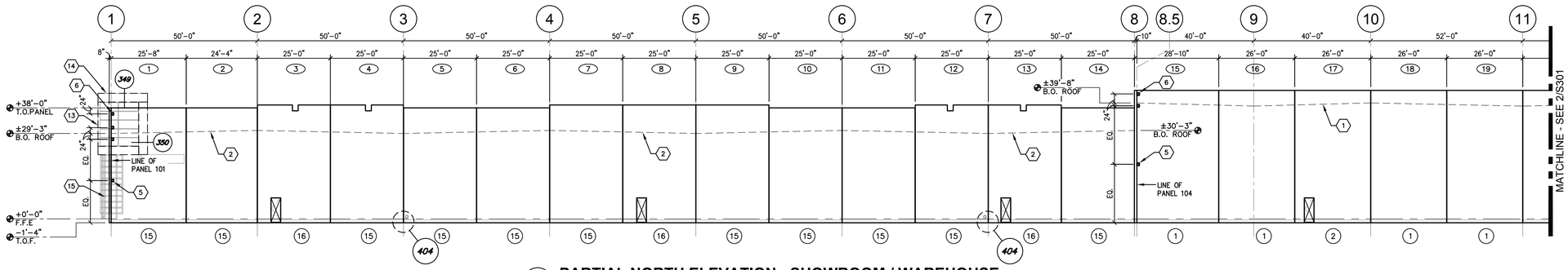
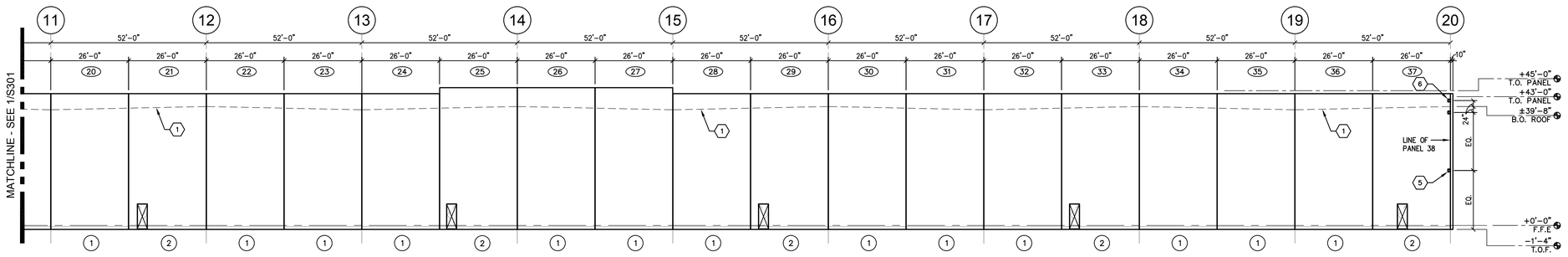
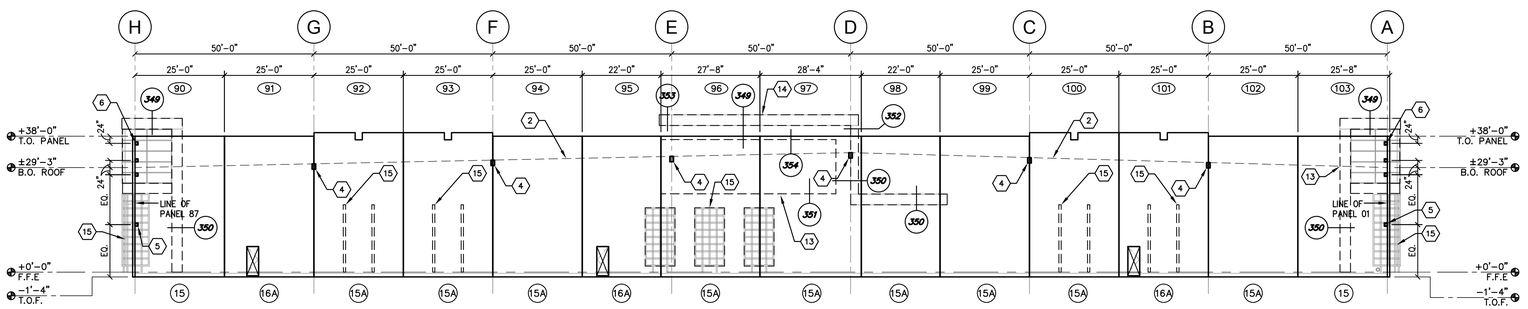


1 PARTIAL NORTH ELEVATION - SHOWROOM / WAREHOUSE
SCALE: 1" = 20'-0"



2 PARTIAL NORTH ELEVATION - WAREHOUSE
SCALE: 1" = 20'-0"



3 WEST ELEVATION - SHOWROOM
SCALE: 1" = 20'-0"

ELEVATION NOTES:

1. DIMENSION FROM BUILDING FINISHED FLOOR TO BOTTOM OF PANEL TO BE GOVERNED BY AND COORDINATED WITH FOUNDATION DETAILS CUT AT APPROPRIATE LOCATION, FOUNDATION NOTES IN G.S.N., AND FINISHED ADJACENT GRADE SHOWN ON CIVIL DRAWINGS
2. ALL EMBED PLATES MAY NOT BE SHOWN. SEE FRAMING PLANS AND DETAILS FOR ADDITIONAL PLATES.
3. DIMENSIONS SHOWN ON THIS PLAN ARE PROVIDED AS AN AID TO THE CONTRACTOR, AND ARE FOR REFERENCE ONLY. EXTREME CAUTION SHALL BE USED IN VERIFICATION OF ALL DIMENSIONS WITH ARCHITECTURAL DRAWINGS PRIOR TO THE START OF CONSTRUCTION. REPORT ANY DISCREPANCIES IMMEDIATELY TO THE ARCHITECT.
4. (1) (2), ETC. AS SHOWN INDICATES PANEL TYPE. SEE SHEET S3.2 – S3.3 FOR PANEL TYPE, REINFORCING AND CONCRETE STRENGTH.
5. (#), ETC. AS SHOWN INDICATES PANEL LABEL.

ELEVATION KEYNOTES:

1. LINE OF WAREHOUSE ROOF LEDGER. REFER TO ARCHITECTURAL FOR ELEVATION.
2. LINE OF SHOWROOM ROOF LEDGER. REFER TO ARCHITECTURAL FOR ELEVATION.
3. LINE OF MEZZANINE LEDGER.
4. JOIST GIRDER BEARING SEE DETAIL 317 OR 318.
5. EMBED PLATE CONNECTION PER DETAIL 403.
6. ALL CONNECTION ABOVE ROOF SHALL BE GALVANIZED STEEL, REPAIR GALVANIZED FINISH AFTER WELDING.
7. LINE OF SHOWROOM MEZZANINE LEDGER.
8. TILT PANELS ON EITHER SIDE OF SPANDREL SHOULD BE IN PLACE PRIOR TO PLACING SPANDREL PANELS OR SHORING MUST BE PROVIDED BY GENERAL CONTRACTOR.
9. EMBED PLATE CONNECTION PER DETAIL 329.
10. HOLDOWN PER DETAIL 118.
11. STEEL GIRDER BEARING. SEE DETAIL 217A.
12. HATCHED AREA INDICATES 2" RECESS IN PANEL AT EXTERIOR FACE.
13. ACM PANEL. SEE ARCH'L.
14. ACM FRAMING PER DETAIL.
15. TRELLIS FEATURE BEYOND.
16. STEEL BEAM BEARINGS, SEE DETAIL 217.
17. BEAM BEARINGS, TYP. SEE DETAILS 212 & 222.
18. EXPANSION JOINT PER PLAN.

NOTE: SEE ARCHITECTURAL PLANS FOR ALL TOP OF PANEL ELEVATIONS.

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Case #:
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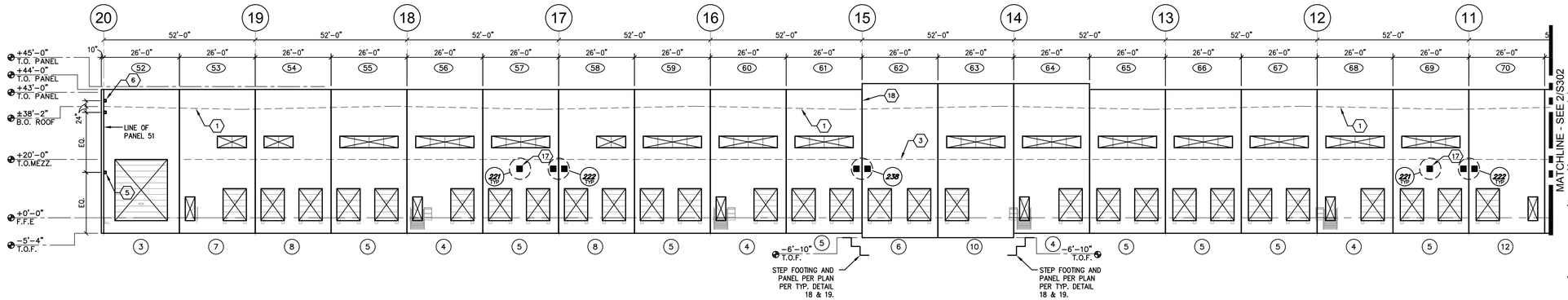
Date: 10/15/2024
Revisions:

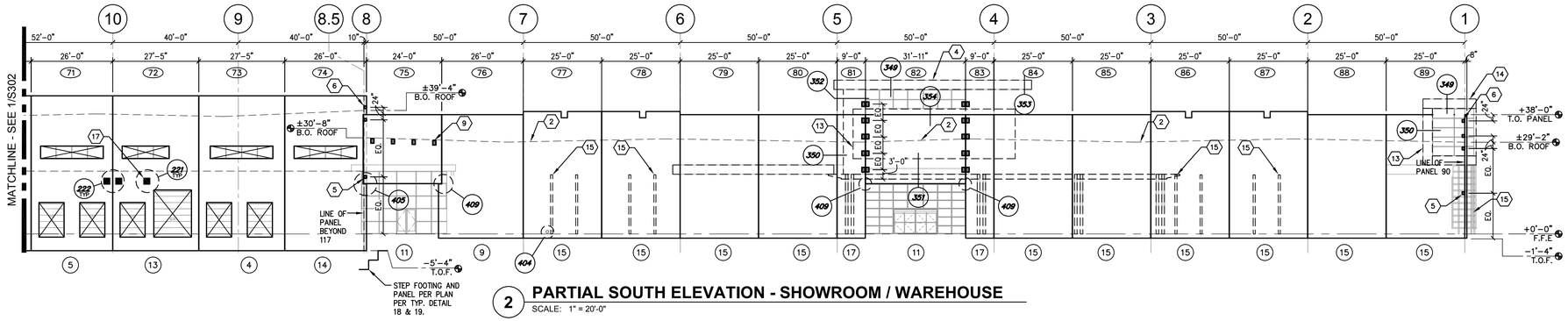
Project Number: 21002
Drawn By: PKA
Title: TILT PANEL ELEVATIONS

S301



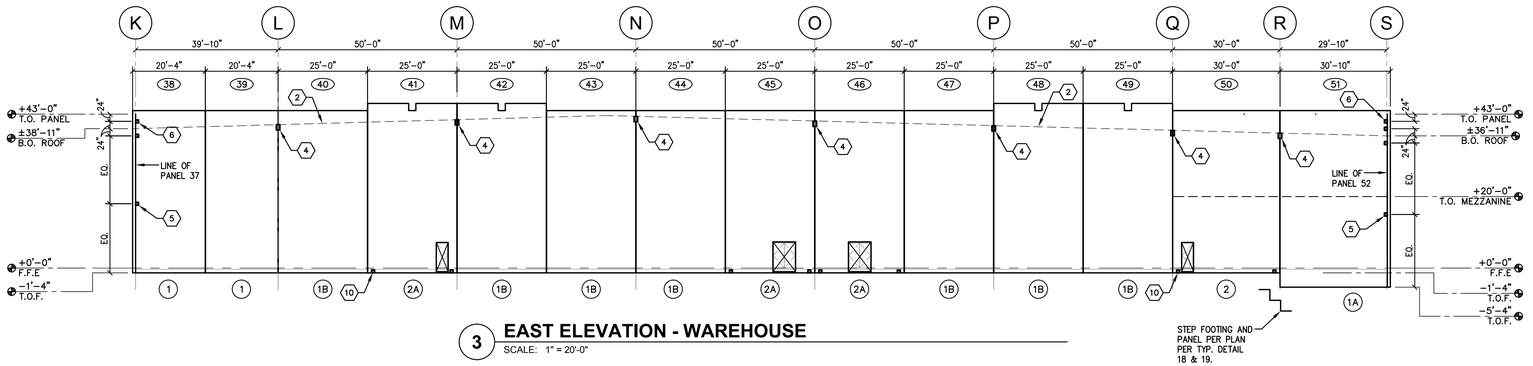
1 PARTIAL SOUTH ELEVATION - WAREHOUSE

SCALE: 1" = 20'-0"



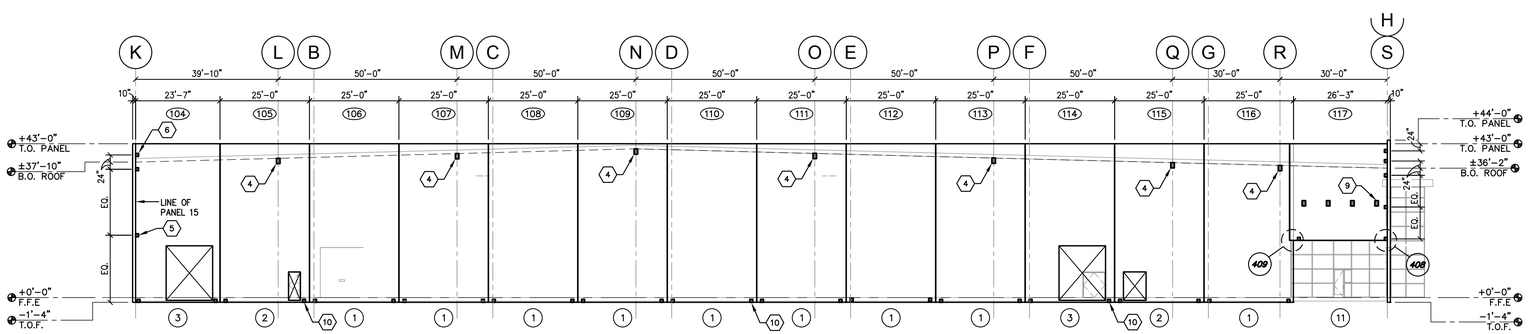
2 PARTIAL SOUTH ELEVATION - SHOWROOM / WAREHOUSE

SCALE: 1" = 20'-0"



3 EAST ELEVATION - WAREHOUSE

SCALE: 1" = 20'-0"



4 INTERIOR WEST ELEVATION - WAREHOUSE

SCALE: 1" = 20'-0"

ELEVATION NOTES:

1. DIMENSION FROM BUILDING FINISHED FLOOR TO BOTTOM OF PANEL TO BE GOVERNED BY AND COORDINATED WITH FOUNDATION DETAILS CUT AT APPROPRIATE LOCATION, FOUNDATION NOTES IN G.S.N., AND FINISHED ADJACENT GRADE SHOWN ON CIVIL DRAWINGS
2. ALL EMBED PLATES MAY NOT BE SHOWN. SEE FRAMING PLANS AND DETAILS FOR ADDITIONAL PLATES.
3. DIMENSIONS SHOWN ON THIS PLAN ARE PROVIDED AS AN AID TO THE CONTRACTOR, AND ARE FOR REFERENCE ONLY. EXTREME CAUTION SHALL BE USED IN VERIFICATION OF ALL DIMENSIONS WITH ARCHITECTURAL DRAWINGS PRIOR TO THE START OF CONSTRUCTION. REPORT ANY DISCREPANCIES IMMEDIATELY TO THE ARCHITECT.
4. (1)(2), ETC. AS SHOWN INDICATES PANEL TYPE. SEE SHEET S3.2 – S3.3 FOR PANEL TYPE, REINFORCING AND CONCRETE STRENGTH.
5. (#), ETC. AS SHOWN INDICATES PANEL LABEL.

ELEVATION KEYNOTES:

1. LINE OF WAREHOUSE ROOF LEDGER. REFER TO ARCHITECTURAL FOR ELEVATION.
2. LINE OF SHOWROOM ROOF LEDGER. REFER TO ARCHITECTURAL FOR ELEVATION.
3. LINE OF MEZZANINE LEDGER.
4. JOIST GIRDER BEARING SEE DETAIL 317 OR 318.
5. EMBED PLATE CONNECTION PER DETAIL 403.
6. ALL CONNECTION ABOVE ROOF SHALL BE GALVANIZED STEEL, REPAIR GALVANIZED FINISH AFTER WELDING.
7. LINE OF SHOWROOM MEZZANINE LEDGER.
8. TILT PANELS ON EITHER SIDE OF SPANDREL SHOULD BE IN PLACE PRIOR TO PLACING SPANDREL PANELS OR SHORING MUST BE PROVIDED BY GENERAL CONTRACTOR.
9. EMBED PLATE CONNECTION PER DETAIL 329.
10. HOLDOWN PER DETAIL 118.
11. STEEL GIRDER BEARING. SEE DETAIL 217A.
12. HATCHED AREA INDICATES 2" RECESS IN PANEL AT EXTERIOR FACE.
13. ACM PANEL. SEE ARCH'L.
14. ACM FRAMING PER DETAIL.
15. TRELLIS FEATURE BEYOND.
16. STEEL BEAM BEARINGS, SEE DETAIL 217.
17. BEAM BEARINGS, TYP. SEE DETAILS 212 & 222.
18. EXPANSION JOINT PER PLAN.

NOTE: SEE ARCHITECTURAL PLANS FOR ALL TOP OF PANEL ELEVATIONS.

PK ASSOCIATES, LLC
6900 E. Belleview Ave. #200
Greenwood Village, Colorado 80111
Phone: (720) 799-1058
Email: cadd@pkastructural.com
Website: www.pkastructural.com

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architects & planners
5017 East Washington St. #107
Phoenix, Arizona 85034
Phone 602-957-1800

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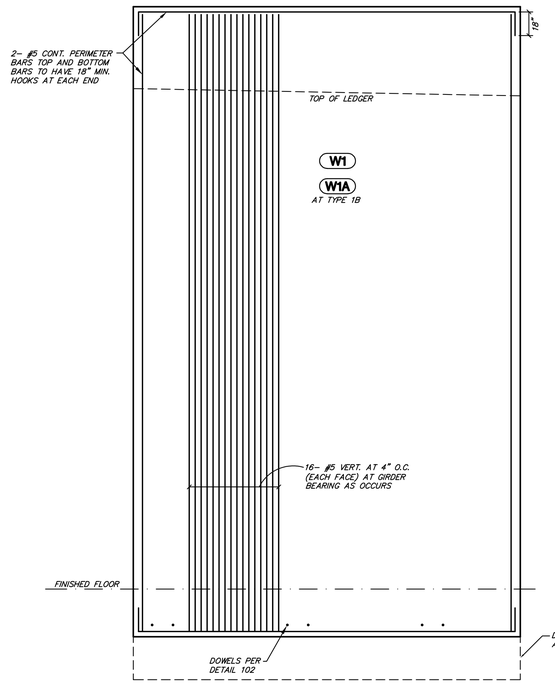
AMERICAN HEIGHTS & TUTT BOULEVARD
COLORADO SPRINGS, COLORADO

Case #:
Plan Check #:
Date: 10/15/2024
Revisions:

Project Number: 21002
Drawn By: PKA
Title: TILT PANEL ELEVATIONS

S302



TYPE 1/1A/1B
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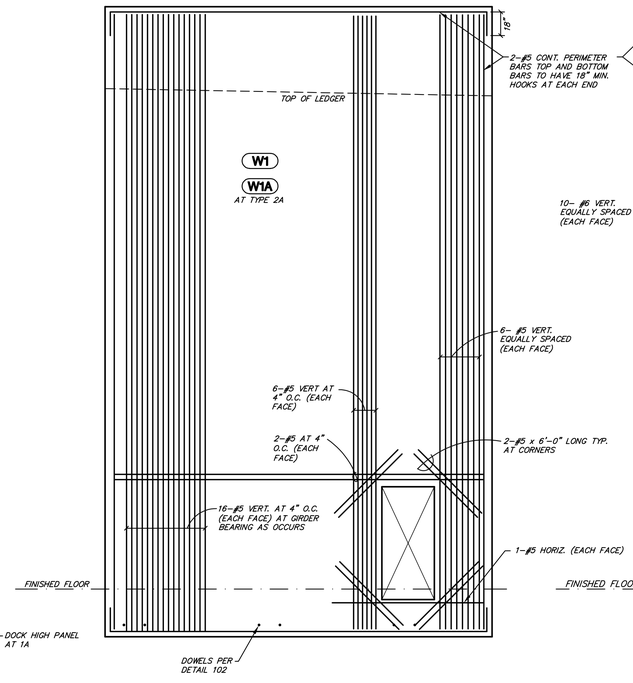

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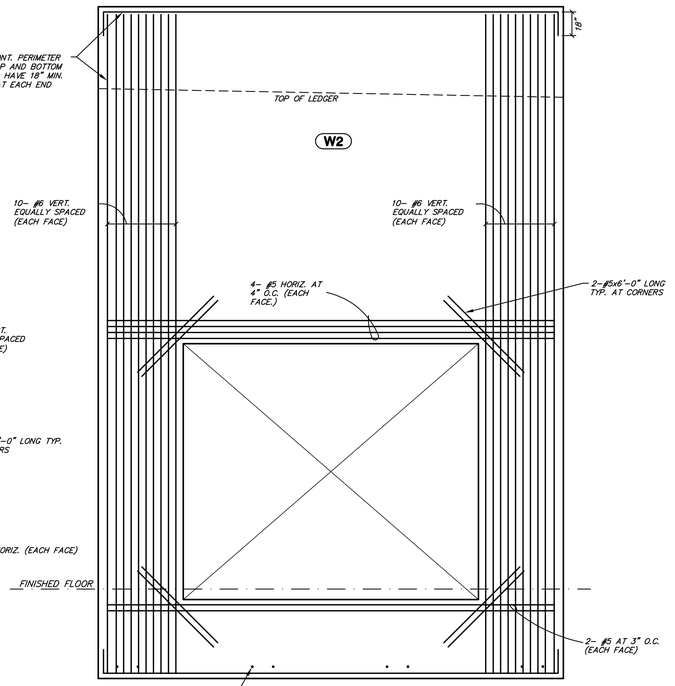

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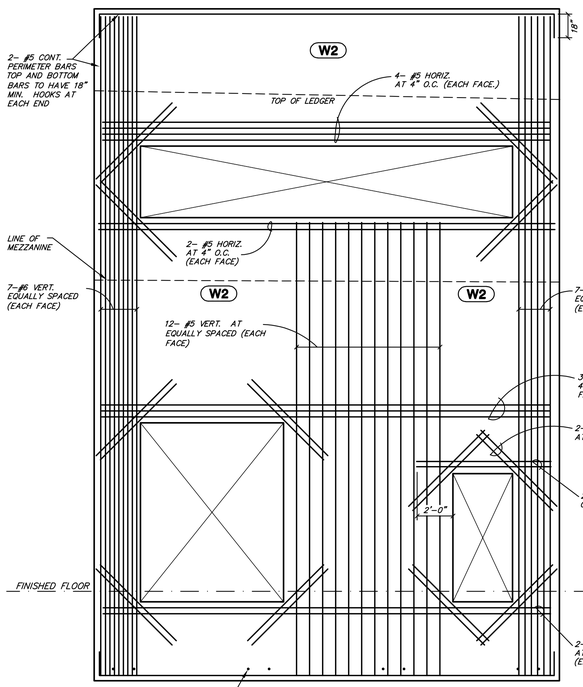

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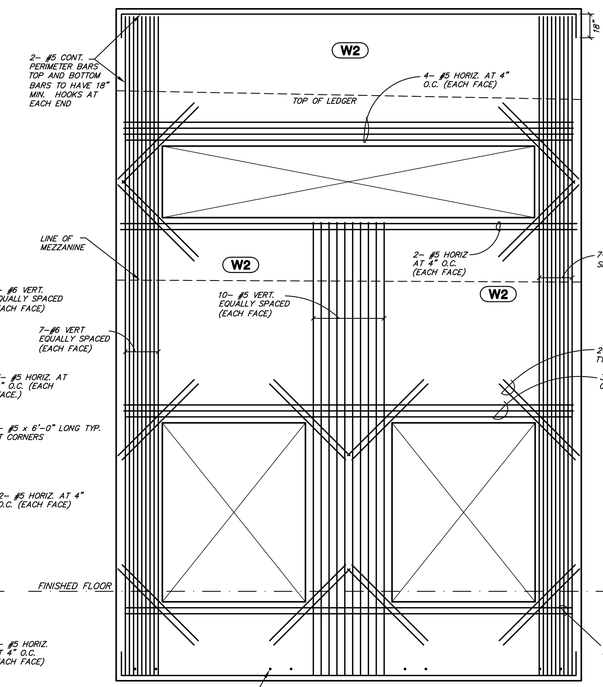

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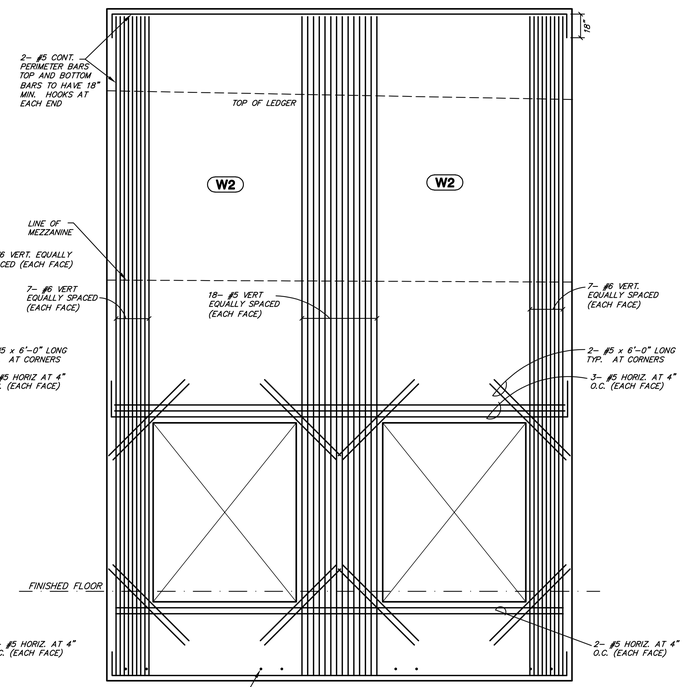

TYPE 6
(f'c = 5000psi) NO SCALE

PK ASSOCIATES, LLC
6900 E. Belleview Ave. #200
Greenwood Village, Colorado 80111
Phone: (720) 799–1058
Email: cadd@pkastructural.com
Website: www.pkastructural.com

TILT–UP CONCRETE PANEL NOTES:

1. PANEL ELEVATIONS ARE BY TYPE REFERENCE OR REINFORCING REQUIRED AND SHOWING ONLY PARTIAL LISTING OF EMBEDMENTS AND EXTREME CAUTION SHALL BE EXERCISED BY THE CONTRAC–TOR TO LAY OUT PANELS TO PROPER DIMENSIONS WITH REQUIRED REINFORCING, OPENINGS AND EMBEDMENTS REQUIRED FOR EACH PANEL.
2. ALL PANEL ELEVATIONS ARE AS VIEWED FROM THE INTERIOR SIDE OF THE BUILDING EXCEPT WHERE NOTED OTHERWISE. SEE ARCHITECTURAL EXTERIOR ELEVATIONS FOR LOCATIONS AND TYPES OF TEX–TURES AND REVEALS.
3. DO NOT SCALE ANY PANEL ELEVATIONS SHOWN HEREIN. REFER TO PLANS AND PANEL ELEVATIONS FOR ALL DIMENSIONS. WHERE DIMENSIONS ARE SHOWN, IT IS INTENDED ONLY AS AN AID TO THE CONTRACTOR IN PROVIDING SHOP DRAWINGS. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFI–CATION OF ALL DIMENSIONS WITH ARCHITECTURAL DRAWINGS PRIOR TO START OF CONSTRUCTION. RESOLVE ANY DISCREPANCY WITH ARCHITECT.
4. DIMENSIONS FROM BUILDING FINISHED FLOORS TO BOTTOM OF PANEL TO BE GOVERNED BY THE APPROPRIATELY FLAGGED FOUNDATION DETAIL FOR EACH PARTICULAR LOCATION, USED IN CONJUNC–TION WITH FINISHED GRADES ADJACENT TO BUILD–INGS SHOWN ON CIVIL ENGINEERING DRAWINGS. VERIFY WITH FLAGGED DETAILS ON ARCHITECTURAL DRAWINGS.
5. ALL PANEL OPENINGS MAY NOT BE SHOWN ON THE ELEVATIONS. FOR EXACT SIZE, NUMBER AND LOCA–TION OF OPENINGS, SEE ARCHITECTURAL, MECHAN–ICAL, PLUMBING AND ELECTRICAL DRAWINGS. RESOLVE ANY DISCREPANCY THRU THE ARCHITECT.
6. SEE PLANS, ELEVATIONS, SECTIONS, NOTES AND/OR DETAILS FOR ALL HEIGHTS, OPENINGS, EMBEDDED ITEMS, ETC.
7. PROVIDE 1/2" X 1/2" CHAMFERS AT ALL EXPOSED PANEL EDGES AND CORNERS, UNLESS NOTED OTHERWISE.
8. REINFORCING SHOWN IS FOR IN–PLACE CONDITION. CONTRACTOR SHALL BE RESPONSIBLE FOR PICK UP POINT INSERTS AND LOCATIONS, SPECIAL PICK UP REINFORCING AND STRONG BACKS, AND ALL PICK UP PLACING OPERATIONS.
9. ALL "TYPICAL REINFORCING" SHALL BE TYPICAL THRU–OUT PANEL WITH OTHER REINFORCING SHOWN IN ADDITION TO TYPICAL REINFORCING, UNLESS OTHERWISE NOTED.
10. ALL REINFORCING TO BE CENTERED IN DESIGN PANEL THICKNESS. ALL PERIMETER REINFORCING AND REINFORCING AT PERIMETERS OF OPENINGS IN PANELS TO BE 1 1/2" IN FROM EDGE.
11. ALL TOP AND BOTTOM PANEL PERIMETER BARS TO HAVE 18" HOOK AT EACH END. ALL OPENINGS SIDE PERIMETER BARS TO HAVE 6" HOOK AT BOTTOM. ALL HORIZONTAL REINFORCING AT TOP OF OPENINGS TO EXTEND 2'–0" BEYOND EACH OPENINGS, UNLESS OTHERWISE SHOWN. SEE TYPICAL OPENING IN PRECAST CONCRETE PANEL DETAIL FOR ADDITIONAL INFORMATION.
12. PANEL CHORD TIES, IF INDICATED SHALL BE LOCATED WITHIN 2'–0" BELOW TOP OF LEDGERS, UNLESS NOTED OTHERWISE.
13. FOR WELDING OF ASTM A706–GRADE 60 REINFORC–ING BARS, USE E90 SERIES LOW HYDROGEN RODS.
14. ALL PANEL JOINTS TO BE 1/2" AND SEALED WITH BUTYL ROD AND THIOKOL CAULKING ON INTERIOR AND EXTERIOR FACES, U.N.O. IN ARCHITECTURAL SPECIFICATIONS.
15. ALL PANELS REQUIRED TO HAVE A ONE HOUR FIRE RATING SHALL HAVE 1 1/2" MINIMUM CLEAR COVER TO REINFORCING IN LIEU OF 1" CLEAR WHICH IS TYPICALLY DETAILED ON THESE DRAWINGS. NOTIFY ENGINEER IMMEDIATELY IF CONFLICT EXISTS.

TYPICAL REINFORCING
AT WAREHOUSE PANELS (15–74, 104–117) U.N.O.

OVERALL THICKNESS	10"
DESIGN THICKNESS	9 1/2"
VERTICAL BARS	SEE PANEL TYPES
HORIZONTAL BARS	SEE PANEL TYPES
PANEL PERIMETER BARS	2 #5
OPENING PERIMETER BARS	2 #5

TYPICAL REINFORCING
AT SHOWROOM PANELS (1–14, 75–103) U.N.O.

OVERALL THICKNESS	8"
DESIGN THICKNESS	7 1/2"
VERTICAL BARS	SEE PANEL TYPES
HORIZONTAL BARS	SEE PANEL TYPES
PANEL PERIMETER BARS	2 #5
OPENING PERIMETER BARS	2 #5

WALL REINFORCING SCHEDULE

MARK	REINFORCING
W1 W1A	#5 VERT. AT 16" O.C. EACH FACE #5 VERT. AT 14" O.C. EACH FACE AT W1A #4 HORIZ. AT 16" O.C. EACH FACE
W2	#4 VERT. AT 16" O.C. EACH FACE #4 HORIZ. AT 16" O.C. EACH FACE
W3 W3A	#5 VERT. AT 8" O.C. CENTERED #5 VERT. AT 6" O.C. CENTERED AT W3A #4 HORIZ. AT 12" O.C. CENTERED

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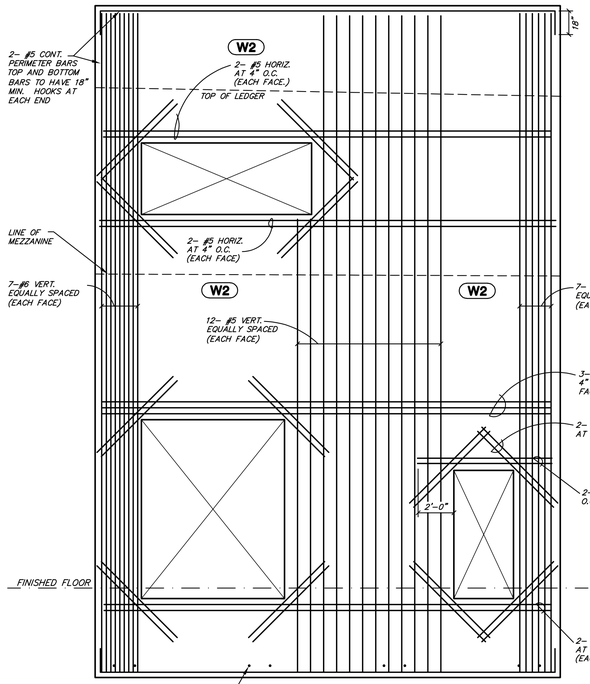
Title: PANEL TYPES

S303



TYPE 7
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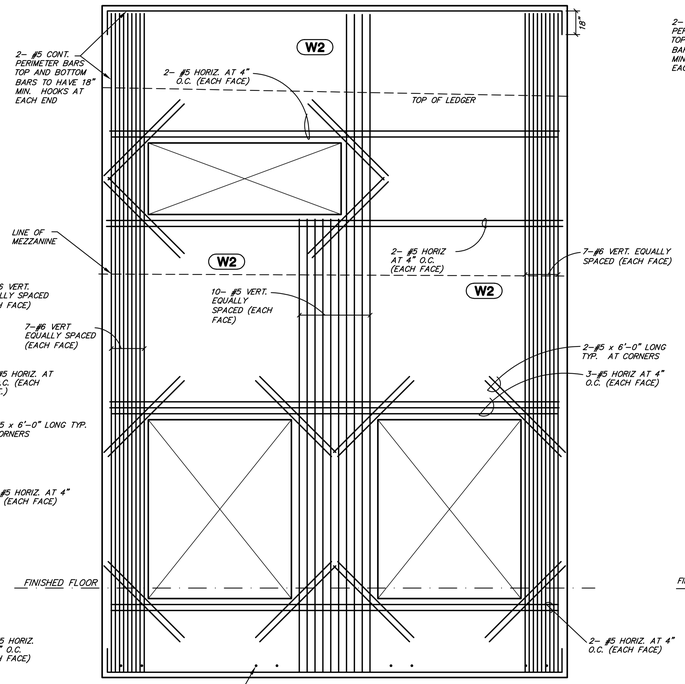

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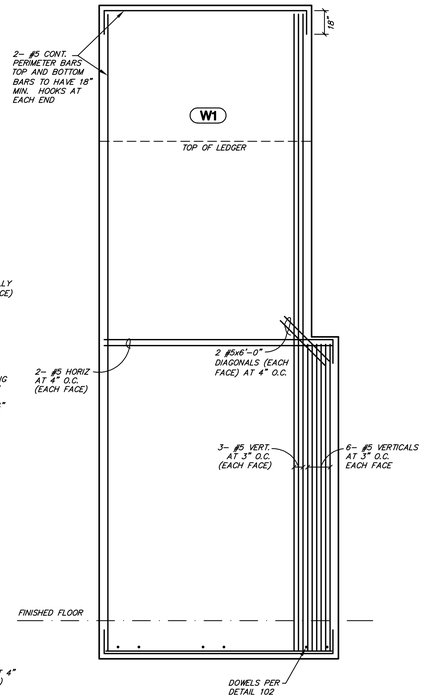

TYPE 9
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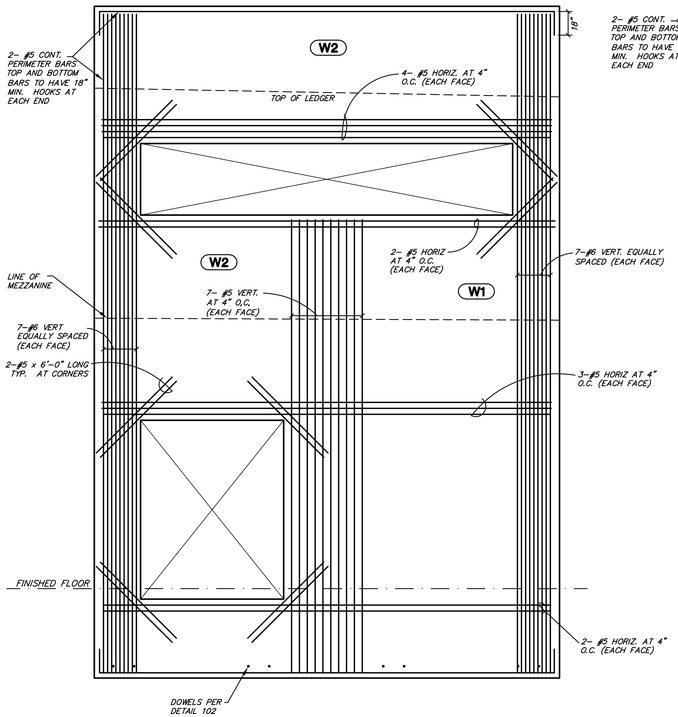

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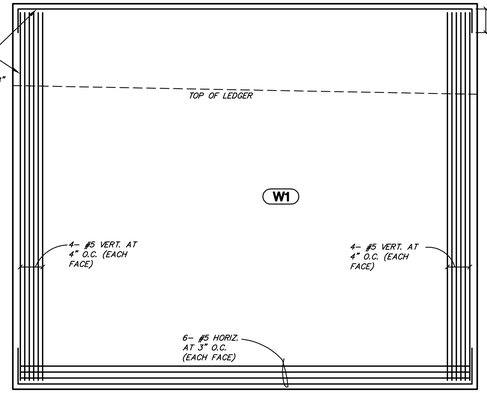

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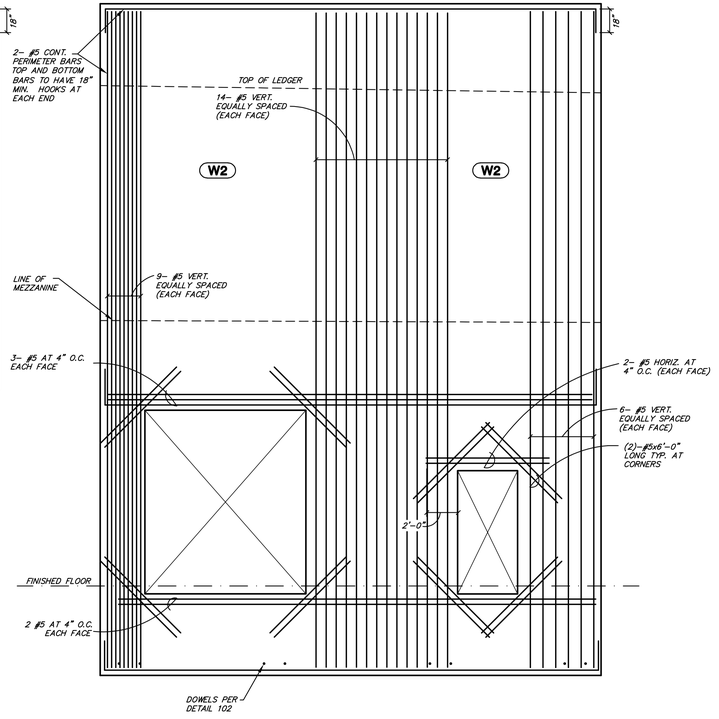

TYPE 12
(f'c = 5000psi) NO SCALE

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6. SEE PLANS, ELEVATIONS, SECTIONS, NOTES AND/OR DETAILS FOR ALL HEIGHTS, OPENINGS, EMBEDDED ITEMS, ETC.
7. PROVIDE 1/2" X 1/2" CHAMFERS AT ALL EXPOSED PANEL EDGES AND CORNERS, UNLESS NOTED OTHERWISE.
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9. ALL "TYPICAL REINFORCING" SHALL BE TYPICAL THRU–OUT PANEL WITH OTHER REINFORCING SHOWN IN ADDITION TO TYPICAL REINFORCING, UNLESS OTHERWISE NOTED.
10. ALL REINFORCING TO BE CENTERED IN DESIGN PANEL THICKNESS. ALL PERIMETER REINFORCING AND REINFORCING AT PERIMETERS OF OPENINGS IN PANELS TO BE 1 1/2" IN FROM EDGE.
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12. PANEL CHORD TIES, IF INDICATED SHALL BE LOCATED WITHIN 2'–0" BELOW TOP OF LEDGERS, UNLESS NOTED OTHERWISE.
13. FOR WELDING OF ASTM A706–GRADE 60 REINFORC–ING BARS, USE E90 SERIES LOW HYDROGEN RODS.
14. ALL PANEL JOINTS TO BE 1/2" AND SEALED WITH BUTYL ROD AND THIOKOL CAULKING ON INTERIOR AND EXTERIOR FACES, U.N.O. IN ARCHITECTURAL SPECIFICATIONS.
15. ALL PANELS REQUIRED TO HAVE A ONE HOUR FIRE RATING SHALL HAVE 1 1/2" MINIMUM CLEAR COVER TO REINFORCING IN LIEU OF 1" CLEAR WHICH IS TYPICALLY DETAILED ON THESE DRAWINGS. NOTIFY ENGINEER IMMEDIATELY IF CONFLICT EXISTS.

TYPICAL REINFORCING
AT WAREHOUSE PANELS (15–74, 104–117) U.N.O.

OVERALL THICKNESS	10"
DESIGN THICKNESS	9 1/2"
VERTICAL BARS	SEE PANEL TYPES
HORIZONTAL BARS	SEE PANEL TYPES
PANEL PERIMETER BARS	2 #5
OPENING PERIMETER BARS	2 #5

TYPICAL REINFORCING
AT SHOWROOM PANELS (1–14, 75–103) U.N.O.

OVERALL THICKNESS	8"
DESIGN THICKNESS	7 1/2"
VERTICAL BARS	SEE PANEL TYPES
HORIZONTAL BARS	SEE PANEL TYPES
PANEL PERIMETER BARS	2 #5
OPENING PERIMETER BARS	2 #5

WALL REINFORCING SCHEDULE

MARK	REINFORCING
W1 W1A	#5 VERT. AT 16" O.C. EACH FACE #5 VERT. AT 14" O.C. EACH FACE AT W1A #4 HORIZ. AT 16" O.C. EACH FACE
W2	#4 VERT. AT 16" O.C. EACH FACE #4 HORIZ. AT 16" O.C. EACH FACE
W3 W3A	#5 VERT. AT 8" O.C. CENTERED #5 VERT. AT 6" O.C. CENTERED AT W3A #4 HORIZ. AT 12" O.C. CENTERED

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Project Number: 21002
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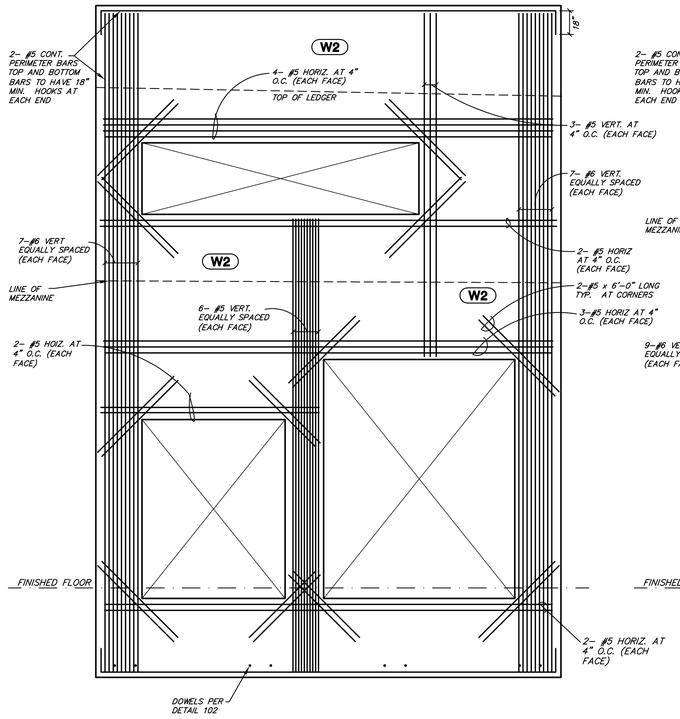
S304



TYPE 13
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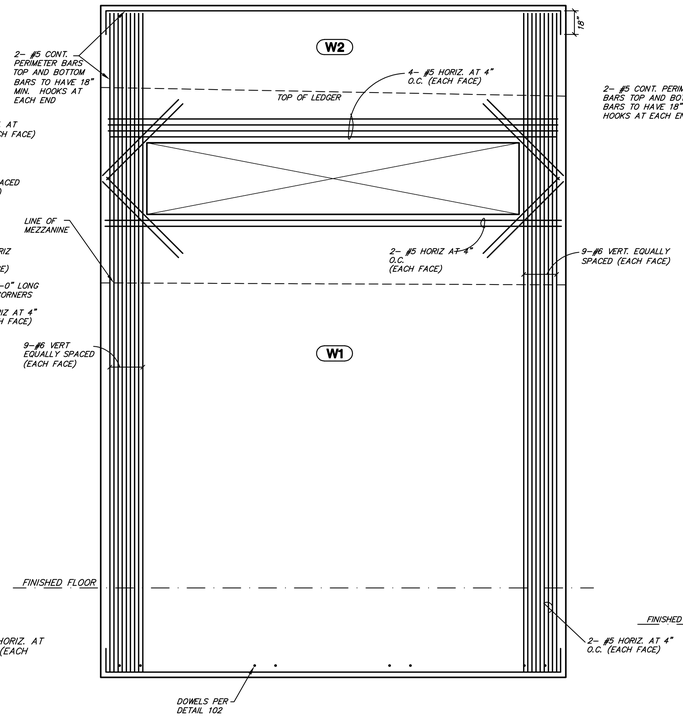

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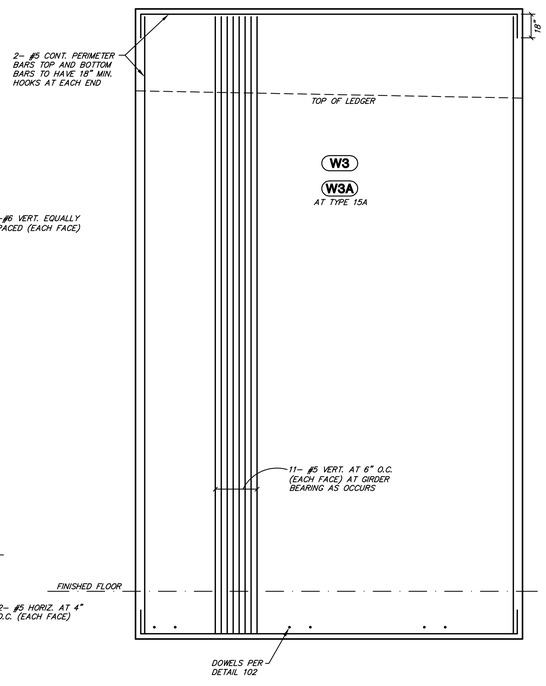

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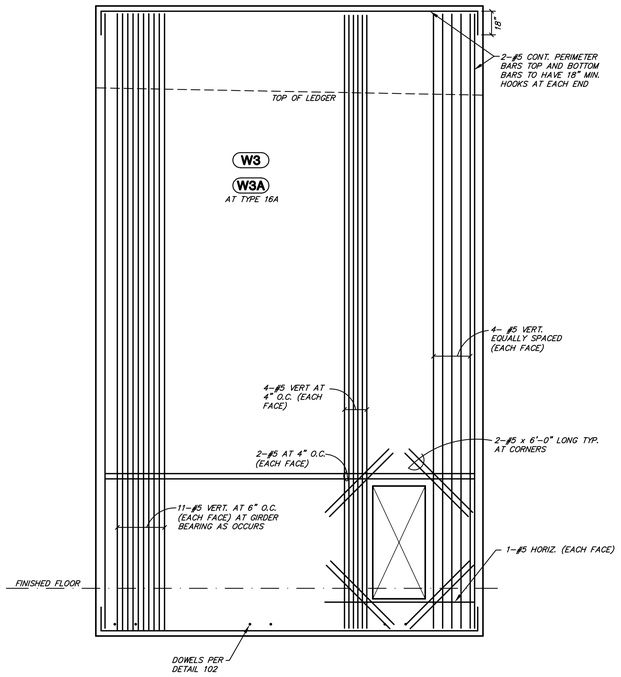

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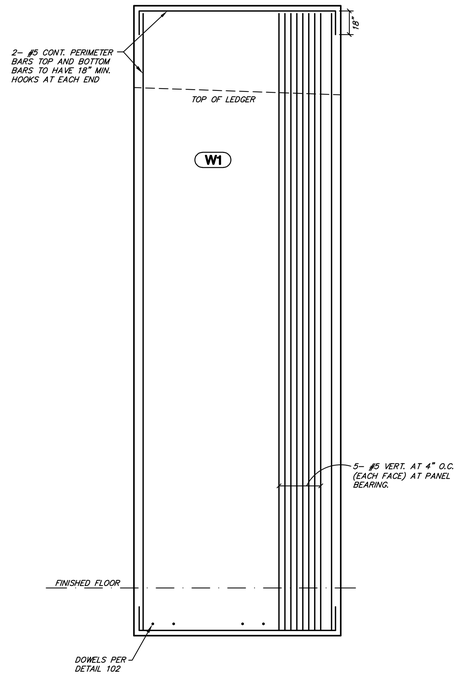

TYPE 17
(f'c = 4500psi) NO SCALE

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2. ALL PANEL ELEVATIONS ARE AS VIEWED FROM THE INTERIOR SIDE OF THE BUILDING EXCEPT WHERE NOTED OTHERWISE. SEE ARCHITECTURAL EXTERIOR ELEVATIONS FOR LOCATIONS AND TYPES OF TEXTURES AND REVEALS.
3. DO NOT SCALE ANY PANEL ELEVATIONS SHOWN HEREIN. REFER TO PLANS AND PANEL ELEVATIONS FOR ALL DIMENSIONS. WHERE DIMENSIONS ARE SHOWN, IT IS INTENDED ONLY AS AN AID TO THE CONTRACTOR IN PROVIDING SHOP DRAWINGS. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF ALL DIMENSIONS WITH ARCHITECTURAL DRAWINGS PRIOR TO START OF CONSTRUCTION. RESOLVE ANY DISCREPANCY WITH ARCHITECT.
4. DIMENSIONS FROM BUILDING FINISHED FLOORS TO BOTTOM OF PANEL TO BE GOVERNED BY THE APPROPRIATELY FLAGGED FOUNDATION DETAIL FOR EACH PARTICULAR LOCATION, USED IN CONJUNCTION WITH FINISHED GRADES ADJACENT TO BUILDINGS SHOWN ON CIVIL ENGINEERING DRAWINGS. VERIFY WITH FLAGGED DETAILS ON ARCHITECTURAL DRAWINGS.
5. ALL PANEL OPENINGS MAY NOT BE SHOWN ON THE ELEVATIONS. FOR EXACT SIZE, NUMBER AND LOCATION OF OPENINGS, SEE ARCHITECTURAL, MECHANICAL, PLUMBING AND ELECTRICAL DRAWINGS. RESOLVE ANY DISCREPANCY THRU THE ARCHITECT.
6. SEE PLANS, ELEVATIONS, SECTIONS, NOTES AND/OR DETAILS FOR ALL HEIGHTS, OPENINGS, EMBEDDED ITEMS, ETC.
7. PROVIDE 1/2" X 1/2" CHAMFERS AT ALL EXPOSED PANEL EDGES AND CORNERS, UNLESS NOTED OTHERWISE.
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11. ALL TOP AND BOTTOM PANEL PERIMETER BARS TO HAVE 18" HOOK AT EACH END. ALL OPENINGS SIDE PERIMETER BARS TO HAVE 6" HOOK AT BOTTOM. ALL HORIZONTAL REINFORCING AT TOP OF OPENINGS TO EXTEND 2'–0" BEYOND EACH OPENINGS, UNLESS OTHERWISE SHOWN. SEE TYPICAL OPENING IN PRECAST CONCRETE PANEL DETAIL FOR ADDITIONAL INFORMATION.
12. PANEL CHORD TIES, IF INDICATED SHALL BE LOCATED WITHIN 2'–0" BELOW TOP OF LEDGERS, UNLESS NOTED OTHERWISE.
13. FOR WELDING OF ASTM A706–GRADE 60 REINFORCING BARS, USE E90 SERIES LOW HYDROGEN RODS.
14. ALL PANEL JOINTS TO BE 1/2" AND SEALED WITH BUTYL ROD AND THIOKOL CAULKING ON INTERIOR AND EXTERIOR FACES, U.N.O. IN ARCHITECTURAL SPECIFICATIONS.
15. ALL PANELS REQUIRED TO HAVE A ONE HOUR FIRE RATING SHALL HAVE 1 1/2" MINIMUM CLEAR COVER TO REINFORCING IN LIEU OF 1" CLEAR WHICH IS TYPICALLY DETAILED ON THESE DRAWINGS. NOTIFY ENGINEER IMMEDIATELY IF CONFLICT EXISTS.

TYPICAL REINFORCING
AT WAREHOUSE PANELS (15–74, 104–117) U.N.O.

OVERALL THICKNESS	10"
DESIGN THICKNESS	9 1/2"
VERTICAL BARS	SEE PANEL TYPES
HORIZONTAL BARS	SEE PANEL TYPES
PANEL PERIMETER BARS	2 #5
OPENING PERIMETER BARS	2 #5

TYPICAL REINFORCING
AT SHOWROOM PANELS (1–14, 75–103) U.N.O.

OVERALL THICKNESS	8"
DESIGN THICKNESS	7 1/2"
VERTICAL BARS	SEE PANEL TYPES
HORIZONTAL BARS	SEE PANEL TYPES
PANEL PERIMETER BARS	2 #5
OPENING PERIMETER BARS	2 #5

WALL REINFORCING SCHEDULE

MARK	REINFORCING
W1 W1A	#5 VERT. AT 16" O.C. EACH FACE #5 VERT. AT 14" O.C. EACH FACE AT W1A #4 HORIZ. AT 16" O.C. EACH FACE
W2	#4 VERT. AT 16" O.C. EACH FACE #4 HORIZ. AT 16" O.C. EACH FACE
W3 W3A	#5 VERT. AT 8" O.C. CENTERED #5 VERT. AT 6" O.C. CENTERED AT W3A #4 HORIZ. AT 12" O.C. CENTERED

PK ASSOCIATES, LLC
6900 E. Belleview Ave. #200
Greenwood Village, Colorado 80111
Phone: (720) 799–1058
Email: cadd@pkastructural.com
Website: www.pkastructural.com

Butler Design Group Inc.
architects & planners
5017 East Washington St. #107
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Case #:
Plan Check #:
Date: 10/15/2024
Revisions:

Project Number: 21002
Drawn By: PKA
Title: PANEL TYPES

S305

PK ASSOCIATES, LLC
6900 E. Belleview Ave. #200
Greenwood Village, Colorado 80111
Phone: (720) 799-1058
Email: cadd@pkastructural.com
Website: www.pkastructural.com

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architects & planners
5017 East Washington St. #107
Phoenix, Arizona 85034
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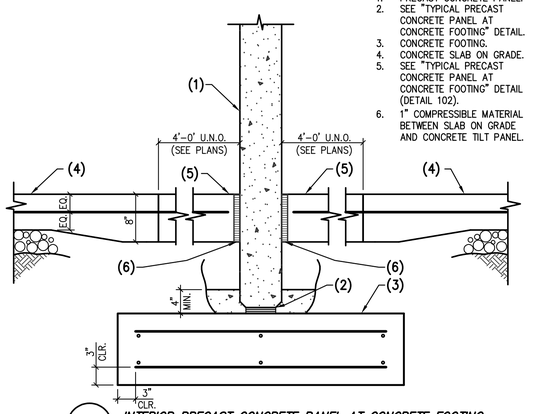
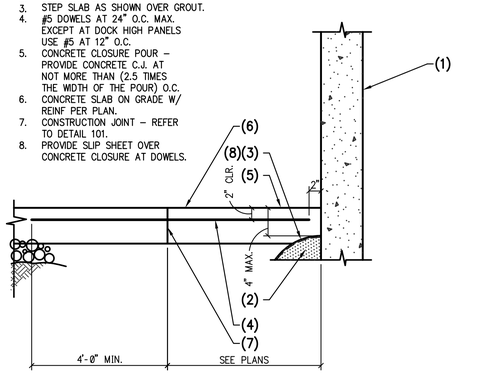


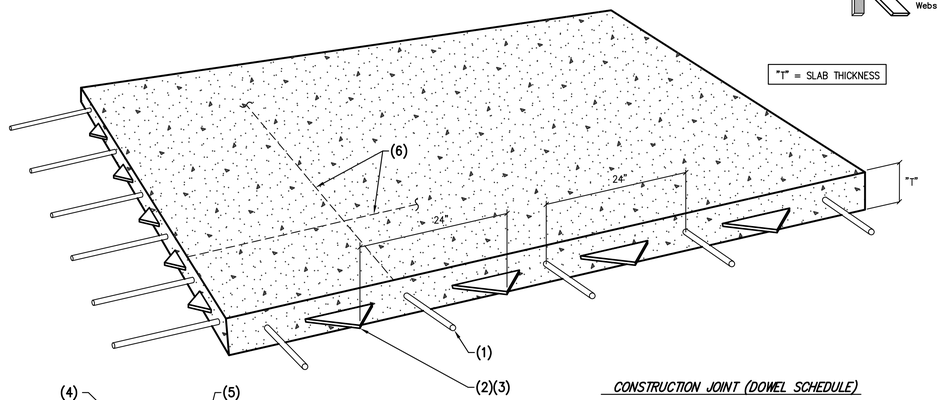
NOTES:
1. PRECAST CONCRETE PANEL.
2. SEE "TYPICAL PRECAST CONCRETE PANEL AT CONCRETE FOOTING" DETAIL.
3. CONCRETE FOOTING.
4. CONCRETE SLAB ON GRADE.
5. SEE "TYPICAL PRECAST CONCRETE PANEL AT CONCRETE FOOTING" DETAIL (DETAIL 102).
6. 1" COMPRESSIBLE MATERIAL BETWEEN SLAB ON GRADE AND CONCRETE TILT PANEL.

106 INTERIOR PRECAST CONCRETE PANEL AT CONCRETE FOOTING
NO SCALE

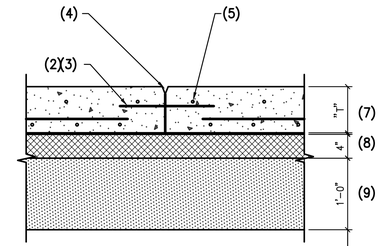


NOTES:
1. PRECAST CONCRETE PANEL.
2. CONCRETE GROUT.
3. STEP SLAB AS SHOWN OVER GROUT.
4. #5 DOWELS AT 24" O.C. MAX. EXCEPT AT DOCK HIGH PANELS USE #5 AT 12" O.C.
5. CONCRETE CLOSURE POUR – PROVIDE CONCRETE C.J. AT NOT MORE THAN (2.5 TIMES THE WIDTH OF THE POUR) O.C.
6. CONCRETE SLAB ON GRADE W/ REINF PER PLAN.
7. CONSTRUCTION JOINT – REFER TO DETAIL 101.
8. PROVIDE SLIP SHEET OVER CONCRETE CLOSURE AT DOWELS.

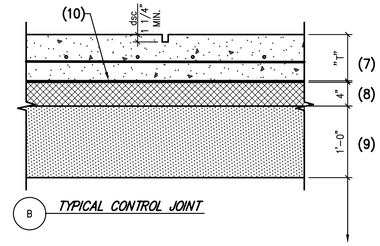
103 TYPICAL CONCRETE CLOSURE POUR AT PRECAST CONCRETE PANEL
NO SCALE



CONSTRUCTION JOINT (DOWEL SCHEDULE)



A CONSTRUCTION JOINT



B TYPICAL CONTROL JOINT

GENERAL DETAIL NOTES:
–CONTROL JOINTS TO BE PERPENDICULAR TO CONSTRUCTION JOINTS AND SPACING IN EACH DIRECTION BETWEEN JOINTS SHALL NOT EXCEED 15 FT. SEE GSN PLAN FOR TYPICAL JOINT SPACING.

–THIS ENGINEER RECOMMENDS FILLING ALL JOINTS WITH AN EPOXY JOINT FILLER IF HARD WHEEL EQUIPMENT IS TO BE USED.

–LAP SPLICE SHOULD BE LOCATED AWAY FROM ALL CONTROL JOINTS.

–WELDED WIRE REINFORCEMENT SHALL BE DEFORMED BARS CONFORMING TO ASTM A1064 (GRADE 80). WIRE SPLICES MINIMUM 13" TYP.

–COVER IS FROM TOP OF SLAB.

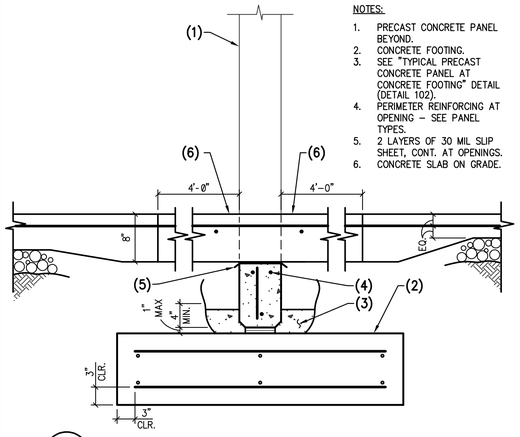
–dsc = DENOTES REQUIRED DEPTH OF SAWCUT. CUT SHALL BE MADE SOON ENOUGH TO PREVENT SHRINKAGE CRACKING, BUT NOT SO SOON AS TO CAUSE SPALLING OF THE CONCRETE WHILE SAWING. WORK MUST BE ACCOMPLISHED WITHIN 24 HOURS OF CONCRETE PLACEMENT.

–BACKFILL COMPACTED PER SOIL REPORT.
(FILL MATERIAL AND COMPACTION CRITERIA).

SLAB THICKNESS	COVER	dsc
5"	2"	1 1/4"
6"	2 1/2"	1 1/2"
7"	2 3/4"	1 3/4"
8"	3"	2"

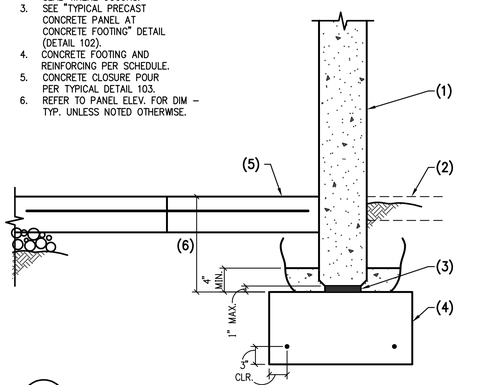
NOTES:
1. #3x36" AT 24" O.C.
2. T = 5", 1/4"x4–1/2" PNA DIAMOND DOWELS AT 24" O.C.
3. T = 8", 3/8"x4–1/2" PNA DIAMOND DOWELS AT 24" O.C.
4. 1/8" TOOLED EDGES EDGES, EDGES THE 2ND SLAB PLACEMENT EDGE WITH TIGHT RADIUS TOOL (APPROX 1/16" RADIUS). AFTER COMPLETION OF CURING, SAW CUT THE CONSTRUCTION JOINT 1" DEP, REMOVING RADIUS.
5. DOWELS TO BE HORIZONTAL AT CENTER OF SLAB.
6. CONTROL JOINTS AS OCCUR PER PLAN.
7. CONCRETE SLAB SEE FOUNDATION PLAN.
8. 4" PROPERLY COMPACTED CRUSH MISC. BASE(CMB) PER SOIL REPORT.
9. 12" MIN. COMPACTED (95%) PER SOIL REPORT. SEE SOILS REPORT FOR COMPACTION REQUIREMENT.
10. VAPOR BARRIER SEE ARCH'L WHERE OCCURS.

101 CONSTRUCTION AND CONTROL JOINTS
NO SCALE



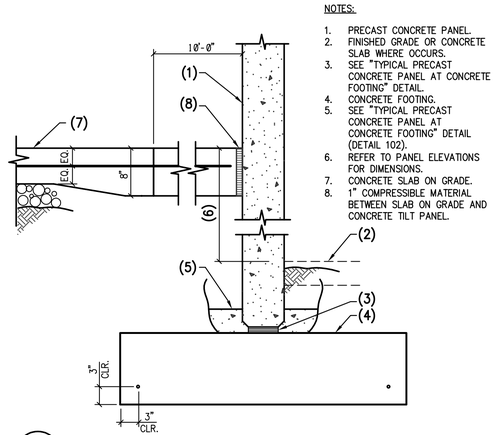
NOTES:
1. PRECAST CONCRETE PANEL BEYOND.
2. CONCRETE FOOTING.
3. SEE "TYPICAL PRECAST CONCRETE PANEL AT CONCRETE FOOTING" DETAIL (DETAIL 102).
4. PERIMETER REINFORCING AT OPENING – SEE PANEL TYPES.
5. 2 LAYERS OF 30 MIL SLIP SHEET, CONT. AT OPENINGS.
6. CONCRETE SLAB ON GRADE.

107 OPENING AT INTERIOR PRECAST CONCRETE PANEL
NO SCALE



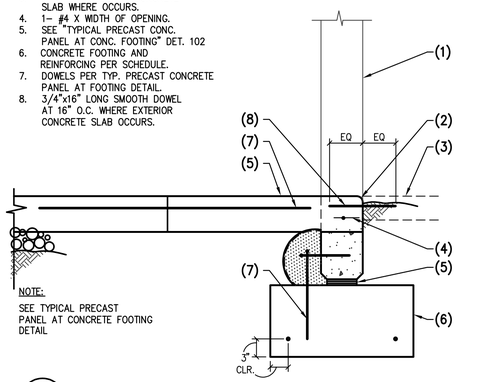
NOTES:
1. PRECAST CONCRETE PANEL.
2. FINISHED GRADE OR CONCRETE SLAB WHERE OCCURS.
3. SEE "TYPICAL PRECAST CONCRETE PANEL AT CONCRETE FOOTING" DETAIL (DETAIL 102).
4. CONCRETE FOOTING AND REINFORCING PER SCHEDULE.
5. CONCRETE CLOSURE POUR PER TYPICAL DETAIL 103.
6. REFER TO PANEL ELEV. FOR DIM – TYP. UNLESS NOTED OTHERWISE.

104 EXTERIOR PRECAST CONCRETE PANEL AT CONCRETE FOOTING
NO SCALE



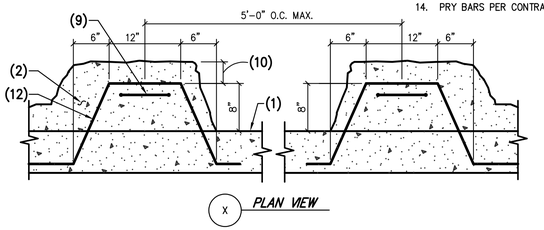
NOTES:
1. PRECAST CONCRETE PANEL.
2. FINISHED GRADE OR CONCRETE SLAB WHERE OCCURS.
3. SEE "TYPICAL PRECAST CONCRETE PANEL AT CONCRETE FOOTING" DETAIL (DETAIL 102).
4. CONCRETE FOOTING.
5. SEE "TYPICAL PRECAST CONCRETE PANEL AT CONCRETE FOOTING" DETAIL (DETAIL 102).
6. REFER TO PANEL ELEVATIONS FOR DIMENSIONS.
7. CONCRETE SLAB ON GRADE.
8. 1" COMPRESSIBLE MATERIAL BETWEEN SLAB ON GRADE AND CONCRETE TILT PANEL.

108 PRECAST CONCRETE PANEL AT CONCRETE FOOTING
NO SCALE

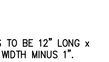


NOTE:
SEE TYPICAL PRECAST PANEL AT CONCRETE FOOTING DETAIL

105 OPENING AT EXTERIOR PRECAST CONCRETE PANEL AT FOOTING
NO SCALE



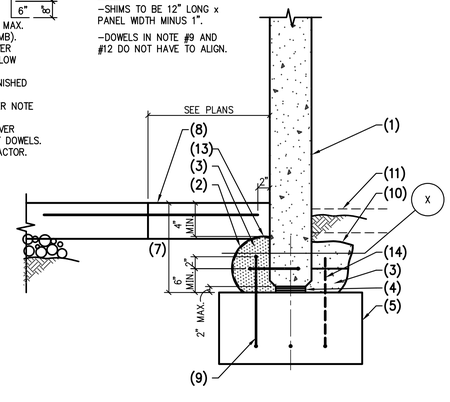
X PLAN VIEW

NOTES:
1. PRECAST CONCRETE PANEL.
2. MINIMUM 5,000 PSI CONCRETE WET GROUT – VIBRATE TO ENSURE FULL GROUTING UNDER PANEL AND AROUND DOWELS AS SHOWN.
3. LINE OF GROUT FLOW AROUND PANEL BEYOND. SEE EXTERIOR PANEL AT CONCRETE FOOTING DET.
4. SHIMS AS REQUIRED AT EACH END OF PANEL– LOCATE 24" FROM PANELS JOINT – INSTALL ADD'L. INTERMEDIATE PLATE (3 PER PANEL) FOR PANELS WEIGHING OVER 90,000#.
5. CONCRETE FOOTING.
6. C.L. OF PANEL AND FOOTING – TYP. U.N.O.
7. REFR TO PANEL ELEV. FOR DIM – TYP. U.N.O.
8. FINISHED FLOOR.
9. #4 DOWELS X


SPACED AT 5'–0" O.C. MAX. (MIN. 2 PER PANEL JAMB).
10. 3" MIN. CONCRETE COVER AROUND ALL STEEL BELOW GRADE.
11. CONCRETE SLAB OR FINISHED GRADE AS OCCURS.
12. #4 DOWELS SPACED PER NOTE 9 DOWELS.
13. PROVIDE SLIP SHEET OVER CONCRETE CLOSURE AT DOWELS.
14. PRY BARS PER CONTRACTOR.

NOTE:
–SHIMS TO BE 12" LONG x PANEL WIDTH MINUS 1".

–DOWELS IN NOTE #9 AND #12 DO NOT HAVE TO ALIGN.



102 TYPICAL PRECAST CONCRETE PANEL AT CONCRETE FOOTING
NO SCALE

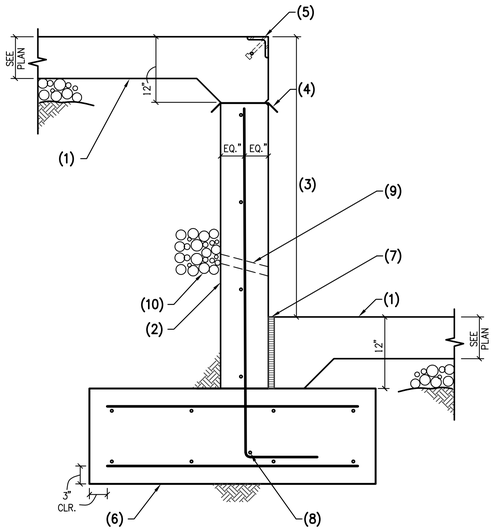
Case #:
Plan Check #:
Date: 10/15/2024
Revisions:

Project Number: 21002
Drawn By: PKA
Title: FOUNDATION DETAILS

S401

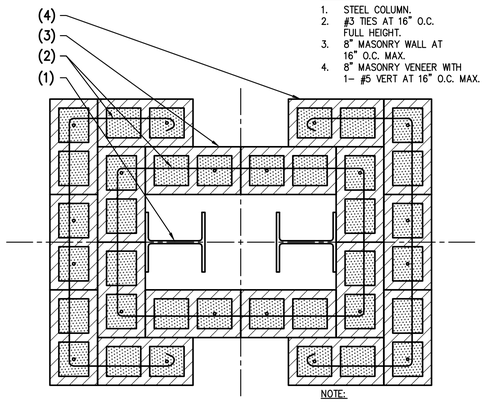
PK ASSOCIATES, LLC
6900 E. Belleview Ave. #200
Greenwood Village, Colorado 80111
Phone: (720) 799-1058
Email: cadd@pkastructural.com
Website: www.pkastructural.com

NOTES:
1. CONCRETE SLAB ON GRADE.
2. 8" CONCRETE WALL W/ #5 HORIZONTALS AT 12" O.C. AND #6 AT 12" O.C. VERTS. CENTERED.
3. 4'-0" MAXIMUM.
4. 2 LAYERS OF 30 MIL SLIP SHEET, CONT. AT OPENINGS.
5. CONT STEEL ANGLE 4x4x1/4" W/ 1/2"ø x4" LONG HEADED STUDS AT 24" O.C.
6. CONCRETE FOOTING AS OCCURS.
7. 1" COMPRESSIBLE MATERIAL MATERIAL BETWEEN SLAB ON GRADE AND CONCRETE TILT PANEL.
8. 1– #4 CONTINUOUS.
9. 1" DIA. WEEP HOLES AT 32" O.C.
10. 1 1/2" DIA. ROCK IN 12" X 12" X CONTINUOUS ROCK POCKET.



117 CONCRETE FOOTING AT STEP IN LOADING AREA
NO SCALE

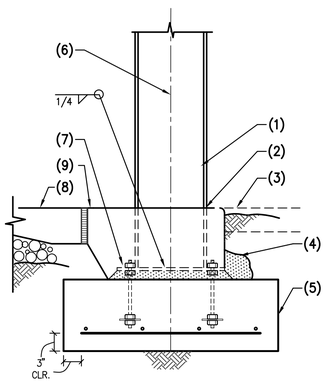
NOTES:
1. STEEL COLUMN.
2. #3 TIES AT 16" O.C. FULL HEIGHT.
3. 8" MASONRY WALL AT 16" O.C. MAX.
4. 8" MASONRY VENEER WITH 1– #5 VERT AT 16" O.C. MAX.



NOTE:
– SEE DETAIL 112 FOR MORE INFO.

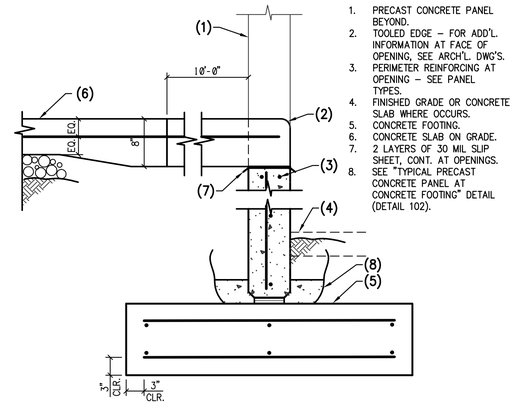
114 PLAN – STEEL COLUMNS IN MASONRY PIER
NO SCALE

NOTES:
1. STEEL COLUMN – FOR DIRECTION OF WEB, SEE PLAN.
2. CONCRETE CLOSURE POUR – SEE TYPICAL DETAIL.
3. FINISHED GRADE OR CONCRETE SLAB WHERE OCCURS.
4. 3" MINIMUM CONCRETE COVER AROUND ALL STEEL BELOW GRADE.
5. CONCRETE FOOTING.
6. CENTERLINE OF COLUMN AND FOOTING.
7. STEEL BASE PLATE WITH DOUBLE NUTS OVER 1 1/2"± DRYPACK.
8. CONCRETE SLAB ON GRADE.
9. 1" COMPRESSIBLE MATERIAL BETWEEN SLAB ON GRADE AND CONCRETE CLOSURE POUR.



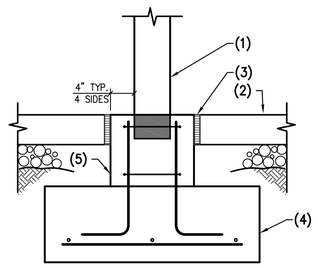
111 EXTERIOR STEEL COLUMN AT CONCRETE FOOTING
NO SCALE

NOTES:
1. PRECAST CONCRETE PANEL BEYOND.
2. TOOLED EDGE – FOR ADD'L. INFORMATION AT FACE OF OPENING, SEE ARCH'L. DWG'S.
3. PERIMETER REINFORCING AT OPENING – SEE PANEL TYPES.
4. FINISHED GRADE OR CONCRETE SLAB WHERE OCCURS.
5. CONCRETE FOOTING.
6. CONCRETE SLAB ON GRADE.
7. 2 LAYERS OF 30 MIL SLIP SHEET, CONT. AT OPENINGS.
8. SEE "TYPICAL PRECAST CONCRETE PANEL AT CONCRETE FOOTING" DETAIL (DETAIL 102).



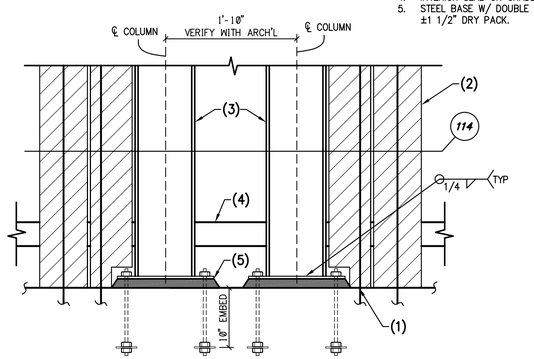
109 OPENING AT EXTERIOR PRECAST CONCRETE PANEL
NO SCALE

NOTES:
1. WOOD POST AND BASE CONNECTION PER SCHEDULE.
2. CONCRETE SLAB ON GRADE.
3. 1" COMPRESSIBLE MATERIAL BETWEEN SLAB ON GRADE AND FOOTING.
4. CONCRETE FOOTING.
5. CONCRETE PILASTER W/ 4– #5 VERTS. AND #3 TIES AT 12" O.C. REBARS TO HAVE 90° HOOK IN FOOTING CONCRETE PILASTER.



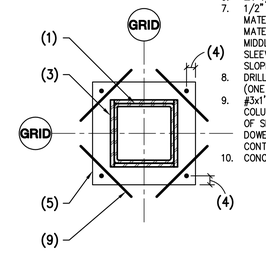
115 WOOD POST AT CONCRETE FOOTING
NO SCALE

NOTES:
1. LINE OF FOOTING.
2. MASONRY SITE WALL PER TYPICAL DETAILS.
3. STEEL COLUMN PER PLAN.
4. INTERIOR SLAB ON GRADE.
5. STEEL BASE W/ DOUBLE NUTS OVER ±1 1/2" DRY PACK.

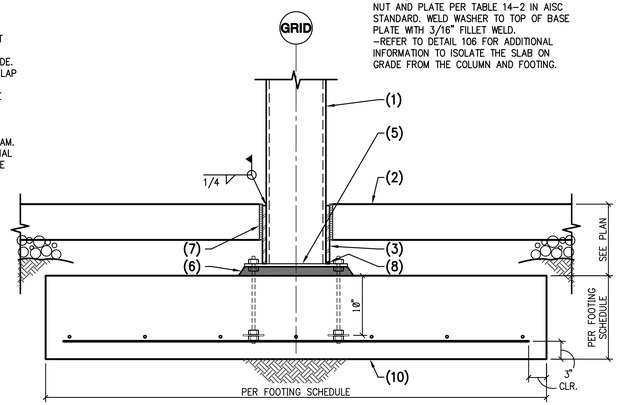


112 DOUBLE COLUMN AT EXTERIOR FOOTING
NO SCALE

NOTES:
1. HSS COLUMN PER PLAN.
2. CONCRETE SLAB ON GRADE PER PLAN.
3. 5/8" PLATE (4 SIDES) – HOLD DOWN 1/4" FROM FINISHED FLOOR.
4. SEE TYPICAL DETAILS.
5. BASE PLATE AND ANCHOR RODS PER SCHEDULE.
6. ±1 1/2" DRYPACK.
7. 1/2" COMPRESSIBLE MATERIAL. ENSURE MATERIAL LAPS IN THE MIDDLE OF THE COLUMN SLEEVE AND IS NOT SLOPING AT CORNERS.
8. DRILL 1/4"ø DRAIN HOLE (ONE SIDE ONLY).
9. #3x1'-0" LONG AT ALL COLUMNS AT 2" FROM TOP OF SLAB. ENCLOSURE DOWELS DO NOT CROSS CONTROL JOINTS.
10. CONCRETE FOOTING.

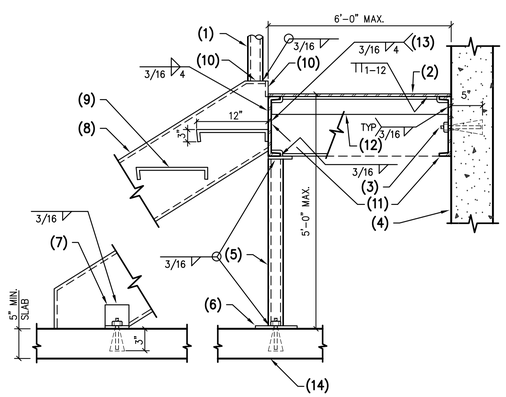


NOTES:
–FOR STANDARD SIZE HOLES, PROVIDE ASTM F844 (USS STANDARD) WASHERS. FOR HOLES THAT ARE MORE THAN 5/16" LARGER THAN ANCHOR ROD DIAMETER, PROVIDE PLATE WASHERS BETWEEN NUT AND PLATE PER TABLE 14–2 IN AISC STANDARD.
–FOR ANCHOR RODS 1" DIAMETER AND LARGER, PROVIDE PLATE WASHERS BETWEEN NUT AND PLATE PER TABLE 14–2 IN AISC STANDARD. WELD WASHER TO TOP OF BASE PLATE WITH 3/16" FILLET WELD.
–REFER TO DETAIL 106 FOR ADDITIONAL INFORMATION TO ISOLATE THE SLAB ON GRADE FROM THE COLUMN AND FOOTING.



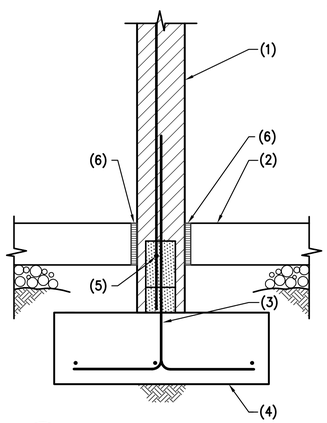
110 TYPICAL ANCHOR ROD AND BASE PLATE DETAIL WITH SLEEVE
NO SCALE

NOTES:
1. HANDRAIL TUBE PER ARCH'L.
2. 12 GAGE STEEL PLATE.
3. 3/4"ø EXPANSION BOLTS AT 48" O.C. (3 MIN.) VERIFY WITH PRECASTER PRIOR TO DRILLING.
4. PRECAST CONCRETE WALL.
5. TS 3x3x1/4, WITH 4"x4"x3/8" CAP PLATE (OFFSET), LOCATE AT EACH CORNER. BOTH STRINGERS.
6. STEEL PLATE 3/4"x7"x12" WITH 2– 3/4"ø EXP. BOLTS AT 9" O.C.
7. STEEL CLIP ANGLE 4"x4"x3/8"x4" LONG WITH 1–3/4"ø EXPANSION BOLT.
8. MC12x10.6.
9. 12 GAGE STEEL TREAD – MAX. SPAN 5'-0".
10. 1/4" STEEL CLOSURE PLATE. WELD ALL AROUND.
11. STEEL CHANNEL C10x15.3 – 4 SIDES.
12. STEEL ANGLE 3x3x1/4 AT 24" O.C.
13. CHANNEL TO CHANNEL AT CORNERS.
14. SLAB ON GRADE PER CIVIL PLANS.



116 STEEL STAIR AT PRECAST CONCRETE WALL
NO SCALE

NOTES:
1. MASONRY WALL – GROUT SOLID BELOW GRADE.
2. CONCRETE SLAB ON GRADE.
3. DOWELS TO MATCH AND LAP VERT. WALL REINFORCING PER G.S.N. – ALTERNATE BENDS.
4. CONCRETE FOOTING.
5. 1 #4 CONTINUOUS IN 8" DEEP GROUTED BOND BEAM.
6. 1" COMPRESSIBLE MATERIAL BETWEEN SLAB ON GRADE AND CONCRETE WALL.



113 INTERIOR MASONRY WALL FOOTING
NO SCALE

Butler Design Group Inc.
architects & planners
5017 East Washington St. #107
Phoenix, Arizona 85034
Phone 602-957-1800

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PK ASSOCIATES, LLC
6900 E. Belleview Ave. #200
Greenwood Village, Colorado 80111
Phone: (720) 799-1058
Email: cadd@pkastructural.com
Website: www.pkastructural.com

Butler Design Group Inc.
architects & planners
5017 East Washington St. #107
Phoenix, Arizona 85034
Phone 602-957-1800

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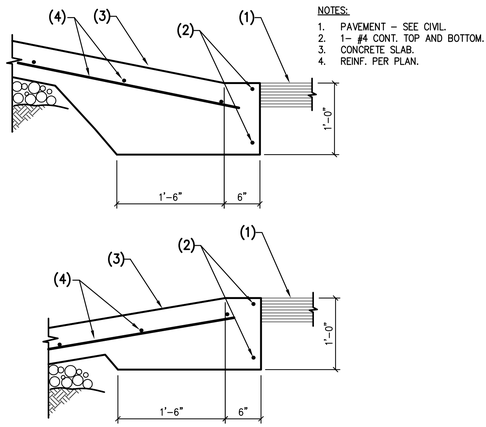
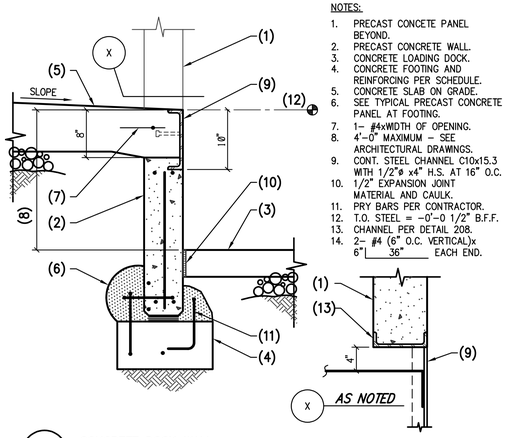


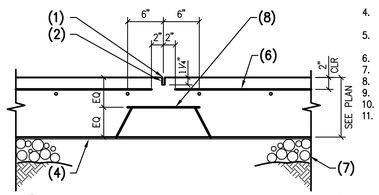
NOTES:
1. PAVEMENT – SEE CIVIL.
2. 1– #4 CONT. TOP AND BOTTOM.
3. CONCRETE SLAB.
4. REINF. PER PLAN.

124 *SLAB EDGE AT RAMP*
NO SCALE



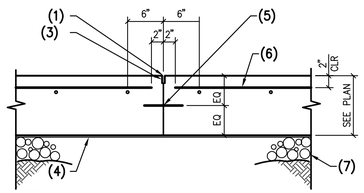
NOTES:
1. PRECAST CONCETE PANEL BEYOND.
2. PRECAST CONCRETE WALL.
3. CONCRETE LOADING DOCK.
4. CONCRETE FOOTING AND REINFORCING PER SCHEDULE.
5. CONCRETE SLAB ON GRADE.
6. SEE TYPICAL PRECAST CONCRETE PANEL AT FOOTING.
7. 1– #4xWIDTH OF OPENING.
8. 4'–0" MAXIMUM – SEE ARCHITECTURAL DRAWINGS.
9. CONT. STEEL CHANNEL C10x15.3 WITH 1/2"ø x4" H.S. AT 16" O.C.
10. 1/2" EXPANSION JOINT MATERIAL AND CAULK.
11. PRY BARS PER CONTRACTOR.
12. T.O. STEEL = –0'–0 1/2" B.F.F.
13. CHANNEL PER DETAIL 208.
14. 2– #4 (6" O.C. VERTICAL)x 6" [36" EACH END.

122 *CONCRETE DOCK WALL*
NO SCALE



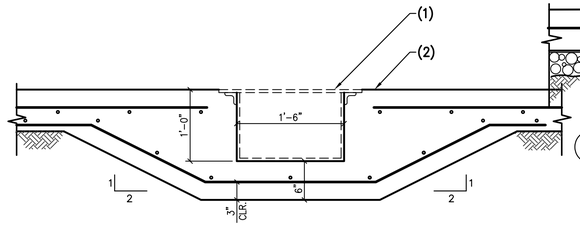
A *DOWEL BASKET DET. AT CONTROL JOINTS AT 7" SLAB AT SPEED BAYS (MAX 13'–0"x13'–0" SPACING)*

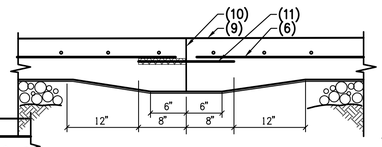
NOTES:
1. FILL JOINT WITH SEMI–RIGID JOINT FILLER FULL DEPTH – SEE ARCH'L. SPECS.
2. SAWCUT CONTROL JOINT WITH EARLY ENTRY SAW.
3. 3/8"x1 1/4" DEEP PRE–FORMED JOINT – FILL WITH SEMI–RIGID JOINT FILLER FULL DEPTH – SEE ARCH'L SPECS.
4. VAPOR RETARDER PER ARCH'L SPECS.
5. DIAMOND DOWELS, SEE PLANS FOR SIZE/SPACING.
6. REINF. PER PLANS.
7. A.B.C. FILL PER PLAN
8. DOWEL BASKETS PER PLAN.
9. CONCRETE SLAB ON GRADE.
10. CONSTRUCTION JOINT.
11. 1/2"ø x16" LONG SMOOTH DOWEL AT 12" O.C. – DOWELS MUST BE CAREFULLY ALIGNED AND SUPPORTED DURING CONCRETE OPERATION. MISALIGNED DOWELS CAUSE CRACKING.



B *TYP. CONSTRUCTION JOINT DETAIL AT WAREHOUSE – DIAMOND DOWELS*

NOTES:
1. PRECAST POLYDRAIN PER ARCH'L.
2. CONCRETE SLAB.



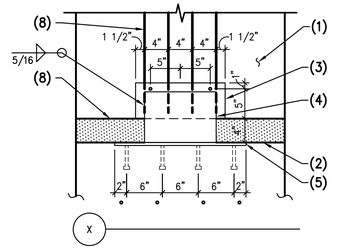


C *TYP. CONTROL JOINTS AT NON SPEED BAYS*

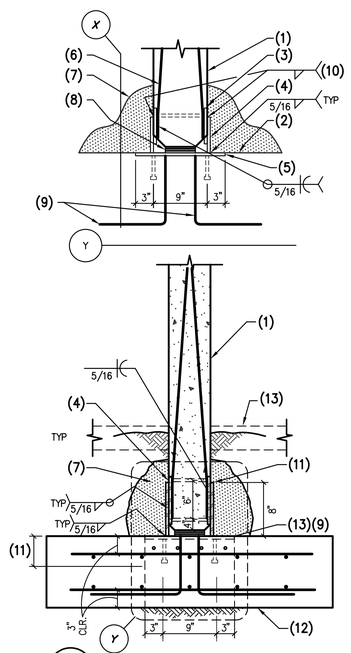
NOTE:
– CONSTRUCTION JOINTS NEED ONLY OCCUR AT EXPOSED EDGES DURING PLACEMENT UNLESS SPECIFICALLY NOTED ON THE PLANS.
– SLAB'S REINFORCEMENT TO BE LOCATED AT THE TOP 1/3 OF SLAB THICKNESS WHERE VAPOR BARRIER SPECIFIED ON PLANS OTHERWISE CENTER BAR IN SLAB.

123 *TRENCH DRAIN AT NEW CONCRETE SLAB*
NO SCALE

119 *TYPICAL JOINT DETAIL AT SLAB ON GRADE – WAREHOUSE AND LOADING DOCK RAMPS*
NO SCALE

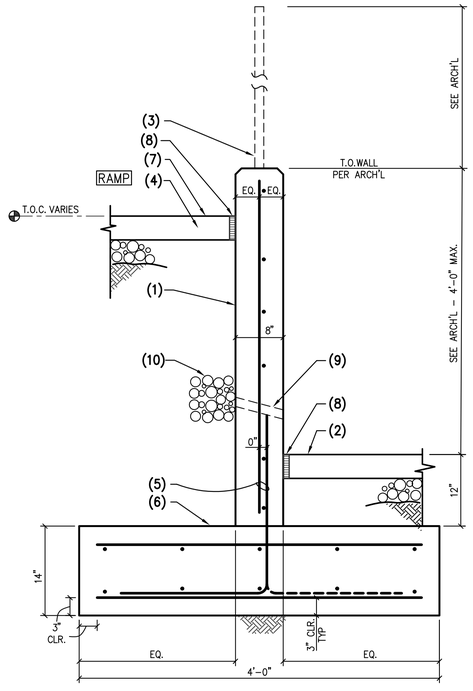


NOTES:
1. CONCRETE TILT–UP WALL.
2. TOP OF FOOTING.
3. STEEL PLATE 1/2"x6"x15".
4. STEEL PLATE 3/8"x8"x12".
5. STEEL PLATE 1"x15"x22" W/ 8– 1"ø x12" HEADED STUDS.
6. 4– #5x 4 36 3" A706 EACH PLATE.
7. MIN. 3" CONCRETE COVER.
8. SEE TYPICAL WALL AT FOOTING DETAIL.
9. 4– #5 A706 W/ STANDARD HOOK.
10. 2" RETURNS – TYPICAL.
11. 8" TO CENTER LINE OF PLATE WASHER.
12. CONCRETE FOOTING.
13. CONCRETE SLAB ON GRADE OR FINISHED GRADE AS OCCURS.

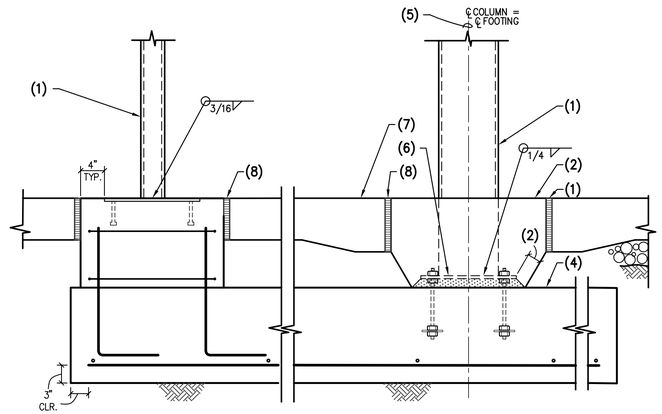


118 *SHEAR WALL AT CONCRETE FOOTING*
NO SCALE

NOTES:
1. 8" CONCRETE WALL WITH #5 VERT. BARS AT 12" O.C. AND AND #4 HORIZONTAL BARS AT 12" O.C. (CENTERED).
2. CONCRETE SLAB ON GRADE.
3. GUARDRAIL PER ARCHITECTURAL.
4. #5 SLAB DOWELS 12"x24" (SLV) AT 16" O.C. MAX.
5. DOWELS TO MATCH AND LAP VERTICAL WALL REINFORCING.
6. CONCRETE FOOTING WITH 5– #5 LONG AND #5 AT 12" O.C. TRANS. TOP AND BOTTOM.
7. RAMP CONCRETE SLAB.
8. 1" COMPRESSIBLE MATERIAL BETWEEN SLAB ON GRADE AND CONCRETE WALL.
9. 1" DIA. WEEP HOLES AT 32" O.C.
10. 1 1/2" DIA. ROCK IN 12" X 12" X CONTINUOUS ROCK POCKET.

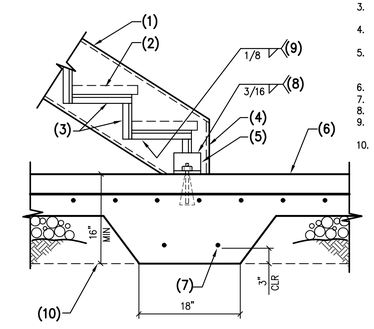


125 *CONCRETE WALL AT RAMP*
NO SCALE



NOTES:
1. STEEL COLUMN.
2. CONCRETE CLOSURE POUR – SEE TYPICAL DETAIL.
3. 3" MINIMUM CONCRETE COVER AROUND ALL STEEL BELOW GRADE.
4. CONCRETE FOOTING.
5. CENTERLINE OF COLUMN AND FOOTING.
6. STEEL BASE PLATE WITH DOUBLE NUTS OVER 1 1/2"± DRYPACK.
7. CONCRETE SLAB ON GRADE.
8. 1" COMPRESSIBLE MATERIAL. BETWEEN SLAB ON GRADE AND CLOSURE POUR.

121 *STEEL COLUMNS AT CONCRETE FOOTING*
NO SCALE



NOTES:
1. STEEL STAIR BEAM.
2. FOR TREADS AND RISERS, SEE ARCH'L DRAWINGS.
3. STEEL ANGLE 1 1/4"x1 1/4"x 3/16" – TYPICAL.
4. 3/16" CLOSURE PLATE – BUTT WELD ALL AROUND.
5. STEEL ANGLE 4"x3"x1/4" (SLV) x 3" LONG WITH 1 – 3/4" DIA. EXPANSION BOLT.
6. CONCRETE SLAB ON GRADE.
7. 2– #5 CONTINUOUS.
8. 3 SIDES.
9. EACH END OF EACH ANGLE – TYP.
10. LINE OF TOP OF CONCRETE FOOTING AS OCCURS.

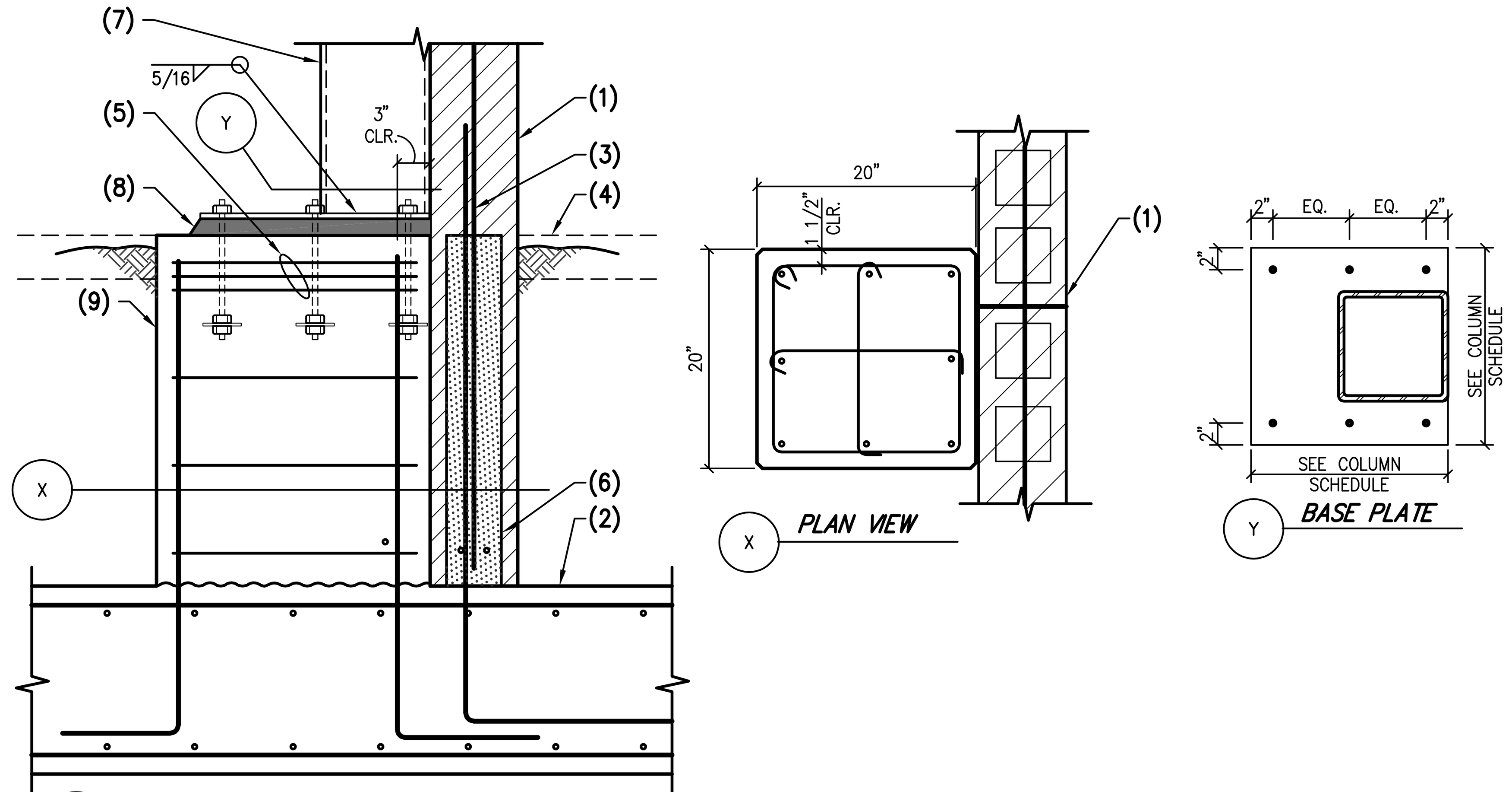
120 *STEEL PAN STAIRS AT SLAB ON GRADE*
NO SCALE

American Furniture Warehouse
Your LIFESTYLE FURNITURE Store
AMERICAN HEIGHTS & TUTT BOULEVARD
COLORADO SPRINGS, COLORADO

Case #:
Plan Check #:
Date: 10/15/2024
Revisions:

Project Number: 21002
Drawn By: PKA
Title: FOUNDATION DETAILS

S403



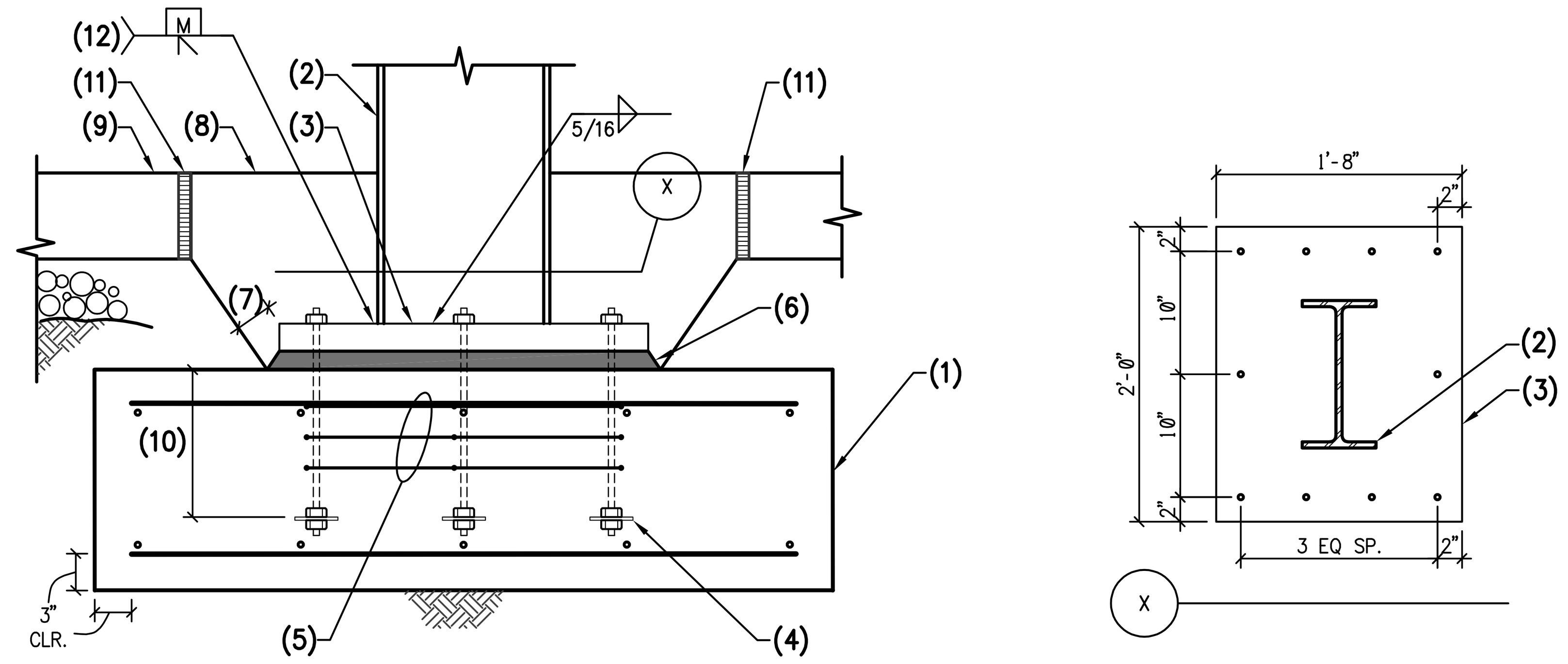
NOTES:

1. MASONRY WALL GROUT SOLID BELOW GRADE.
2. CONCRETE FOOTING.
3. DOWELS TO MATCH AND LAP VERTICAL REINFORCEMENT.
4. CONCRETE SLAB ON GRADE OR FINISHED GROUND AS OCCURS.
5. 3 TIES IN TOP 5".
6. CONTINUOUS BOND BEAM PER GSN.
7. STEEL COLUMN AND BASE PLATE PER SCHEDULE.
8. ±1 1/2" DRYPACK.
9. 20"x20" CONCRETE PILASTER W/ 8– #7 VERTICALS AND #3 TIES AT 12" O.C. REBARS TO HAVE 90° HOOKS BOLT IN CONCRETE FOOTING AND PILASTER.

131 *MASONRY WALL AND STEEL COLUMN AT CONCRETE FOOTING*

NO SCALE

PK ASSOCIATES, LLC
6900 E. Belleview Ave. #200
Greenwood Village, Colorado 80111
Phone: (720) 799–1058
Email: cadd@pkastructural.com
Website: www.pkastructural.com



NOTES:

1. CONCRETE FOOTING.
2. STEEL COLUMN.
3. 1 1/2" STEEL BASE PLATE (50 KSI) W/ 8– 1"ø F1554 GR 55 ANCHOR RODS.
4. 3"x3"x3/8" PLATE WASHER W/ DOUBLE NUTS.
5. 3 #3 TIES AT 4" O.C. AROUND ANCHOR BOLTS.
6. DOUBLE NUTS OVER 1 1/2"± DRYPACK.
7. 3" MIN. CONCRETE COVER AROUND ALL STEEL BELOW GRADE.
8. CONCRETE CLOSURE POUR AROUND COLUMN.
9. CONCRETE SLAB ON GRADE.
10. 12" EMBED.
11. 1" COMPRESSIBLE MATERIAL BETWEEN SLAB ON GRADE AND CLOSURE POUR.
12. EACH FLANGE.

NOTES:

– REMOVE BACKER PLATE AND BACK GOUGE PER GSN.

126 *MOMENT FRAME BASE CONNECTION*

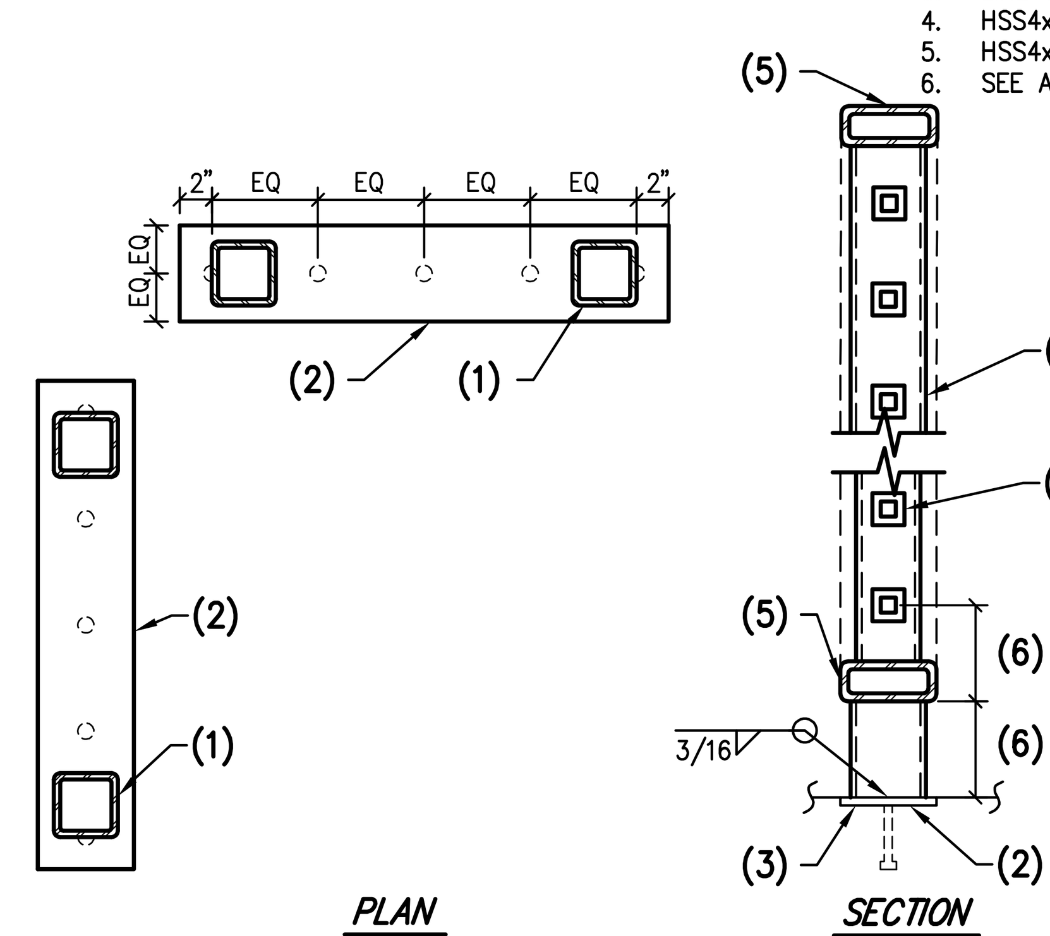
NO SCALE

NOTE:

GRIND ALL WELDS SMOOTH.

NOTES:

1. HSS4x4x5/16" POST (TYPICAL OF 4).
2. 1/2"x LENGTH REQUIRED x 6" WIDE STEEL EMBED PLATE.
3. LINE OF FOOTING.
4. HSS4x4x3/16".
5. HSS4x4x3/16" TYPICAL AT PERIMETER.
6. SEE ARCH'L DRAWINGS

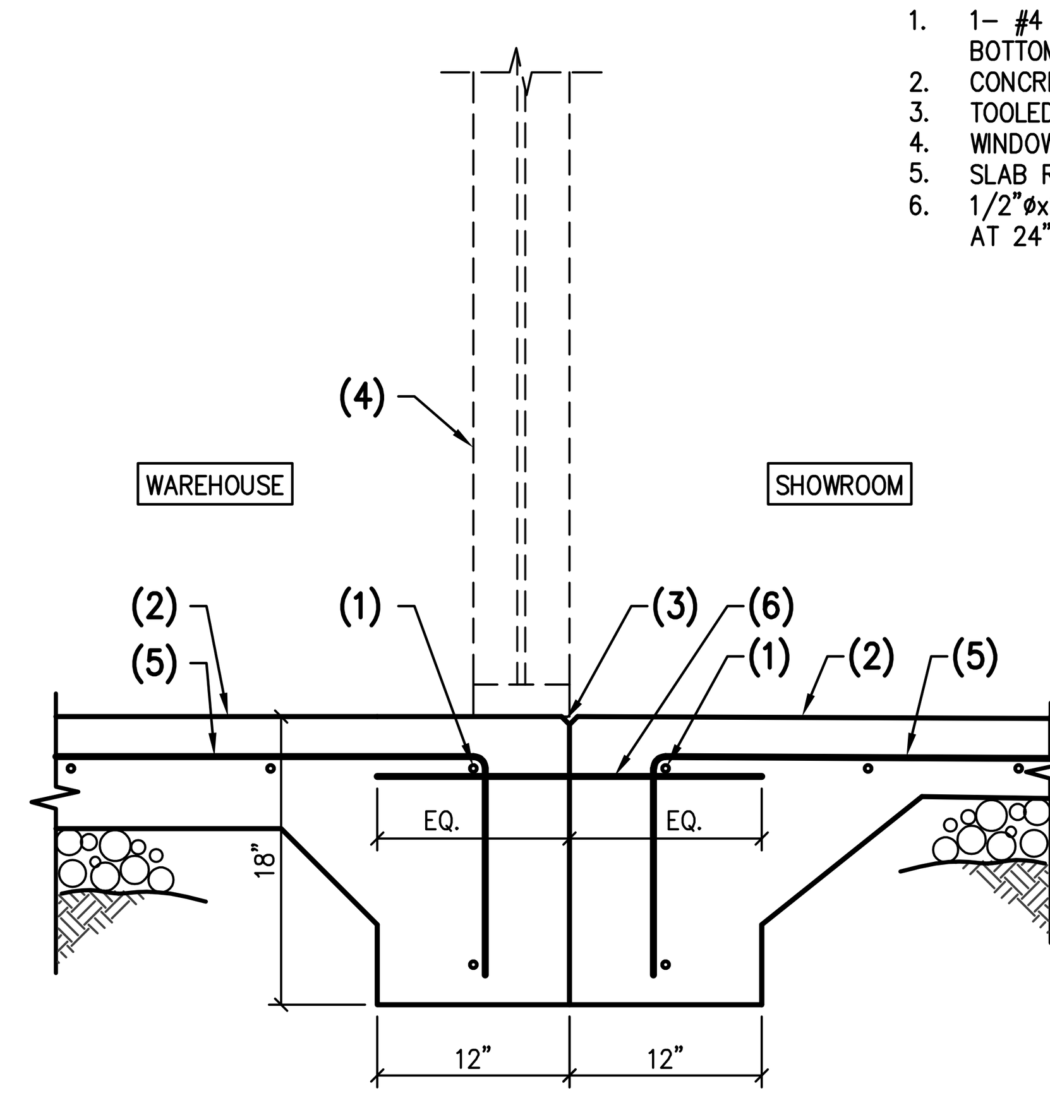


129 *TRELLIS AT CORNER*

NO SCALE

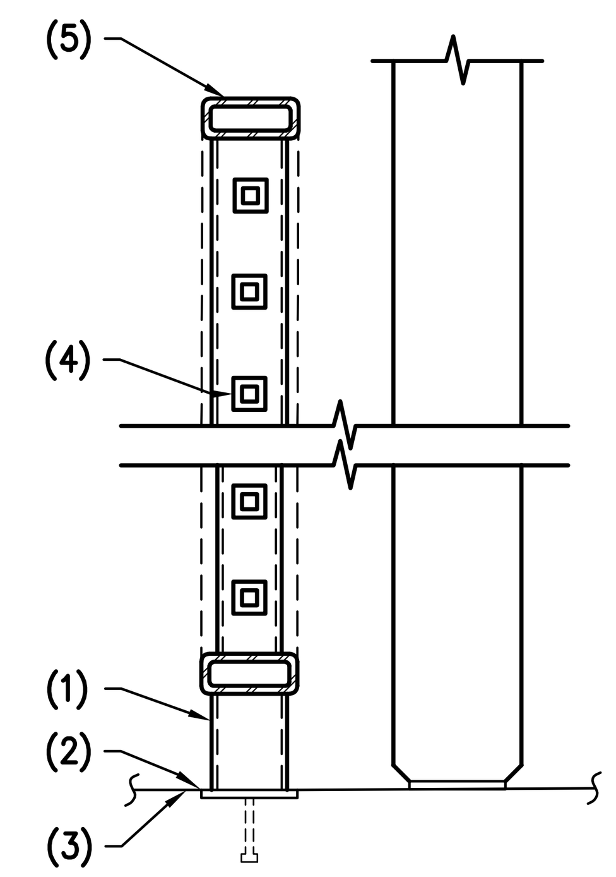
NOTES:

1. 1– #4 CONTINUOUS TOP AND BOTTOM.
2. CONCRETE SLAB ON GRADE.
3. TOOLED EDGES.
4. WINDOW SYSTEM BY OTHERS.
5. SLAB REINFORCING PER PLAN.
6. 1/2"ø x24" SMOOTH DOWELS AT 24" O.C.



127 *CONCRETE SLAB ON GRADE AT CONCRETE SLAB ON GRADE*

NO SCALE



NOTES:

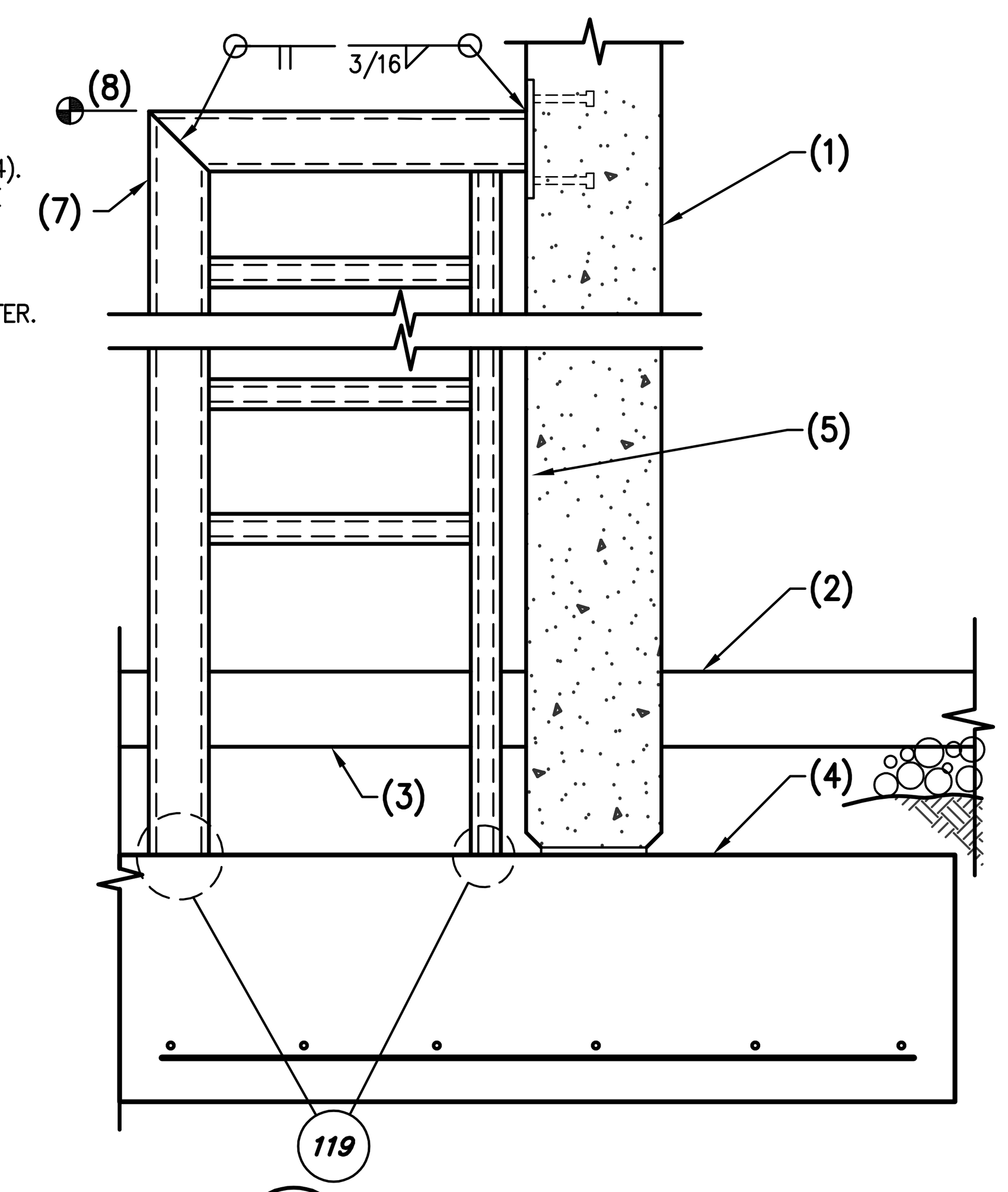
1. HSS4x4x5/16" POST (TYPICAL OF 4).
2. 1/2"x LENGTH REQUIRED x 6" WIDE STEEL EMBED PLATE.
3. LINE OF FOOTING.
4. HSS4x4x3/16".
5. HSS4x4x3/16" TYPICAL AT PERIMETER.

NOTE:

GRIND ALL WELDS SMOOTH.

130 *TRELLIS PARALLEL TO TILT PANEL*

NO SCALE



NOTES:

1. CONCRETE TILT PANEL.
2. SLAB ON GRADE. STEEL EMBED PLATE.
3. EXTERIOR SLAB OR GRADE AS OCCURS
4. CONCRETE FOOTING.
5. 12"x12"x3/8" STEEL EMBED PLATE W/ 4– 3/4"ø H.S. AT 16" O.C. MAX.
6. HSS6x8x3/16".

NOTE:

–GRIND ALL WELDS SMOOTH
–SEE DETAIL 102 FOR MORE INFORMATION

128 *TRELLIS PERPENDICULAR TO TILT PANEL*

NO SCALE

Butler Design Group Inc.
architects & planners
5017 East Washington St. #107
Phoenix, Arizona 85034
Phone 602-957-1800

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6900 E. Belleview Ave. #200
Greenwood Village, Colorado 80111
Phone: (720) 799-1058
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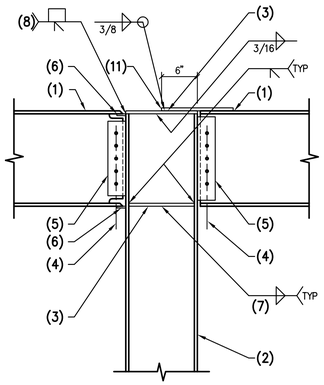
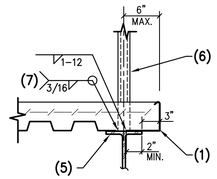
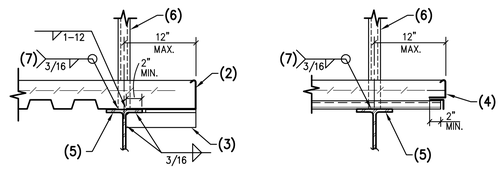


NOTES:
1. STEEL BEAM.
2. STEEL COLUMN.
3. STEEL CONTINUITY PLATE. THICKNESS TO MATCH COLUMN FLANGE (1/2" MIN; 50KSI).
4. FOR SIZE, TYPE AND NUMBER OF BOLTS, SEE TYPICAL BOLT SCHEDULE.
5. SHEAR PLATE PER TYPICAL CONNECTION DETAIL.
6. STEEL BACKER PLATE.
7. WELD TO MATCH COLUMN WEB THICKNESS LESS 1/16" (1/4" MIN).
8. TYPICAL TOP AND BOTTOM FLANGE.
9. 3/4"x5"x16" STEEL PLATE. (FY = 50KSI).

210 *STEEL BEAM MOMENT CONNECTION AT STEEL COLUMN*
NO SCALE

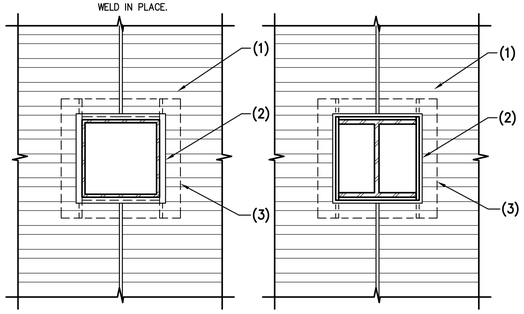


NOTES:
1. GAGE OF CLOSURE PLATE PER MANUFACTURER RECOMMENDATIONS FOR SIZE OF OVERHANG.
2. 12 GAGE CONTINUOUS CLOSURE PLATE.
3. 2 1/2"x2 1/2"x1/4" STEEL ANGLE AT 2'-0" O.C.
4. 16 GAGE CLOSURE PLATE.
5. TOP FLANGE OF STEEL BEAM.
6. GUARD RAIL PER ARCHITECTURAL.
7. GUARDRAIL POST TO STEEL BEAM.



207 *TYPICAL INTERIOR SLAB EDGE CONDITION*
NO SCALE

NOTES:
1. STEEL DECK – FOR DIRECTION OF DECK, SEE PLAN.
2. FIELD CUT STEEL DECK TO CLEAR COLUMN – PROVIDE AND INSTALL SHEET METAL FILLERS FLASHING CLOSURES, ETC. AS REQUIRED. TACK WELD IN PLACE.
3. ANGLE 3"x3"x1/4" WELDED TO COLUMN AND BEAM AS REQUIRED TO SUPPORT STEEL DECK RIBS. COPE ANGLES AS REQ'D. ROLL ANGLES AS REQ'D AT ROUND COLUMNS.



TUBE STEEL COLUMN *WIDE FLANGE COLUMN*

204 *PLAN VIEW – STEEL DECK AT STEEL COLUMN*
NO SCALE

NOMINAL BEAM DEPTH "D"	NUMBER OF 1" DIA. ASTM, A325N BOLTS
UP TO 7"	2
8" – 11"	2
12" – 14"	3
15" – 17"	4
18" – 20"	5
21" – 23"	6
24" – 29"	7
30" – 32"	8

FRAMING NOTES:
1. THE TYPICAL STEEL BEAM TO STEEL COLUMN OR STEEL BEAM TO STEEL BEAM CONNECTION CONSISTS OF 3/8" SINGLE SHEAR PLATES WITH 1" DIA. ASTM A325N BOLTS. USE 5/8" SHEAR PLATES WHERE "D" = 27" OR GREATER.
2. ALL BOLTS SHALL BE INSTALLED USING SHORT SLOTTED HOLES IN EITHER THE BEAM WEB OR THE SHEAR PLATE PER LATEST AISC SPECIFICATIONS.
3. CONNECTIONS REQUIRING DOUBLE PLATE REQUIRED FOR THE FOLLOWING MEMBERS (AND HEAVIER) –
W16X57
W18x65
W21x83
W24x94
W27X102
W30x116

201 *BOLT SCHEDULE FOR TYPICAL STEEL CONNECTIONS*
NO SCALE

NOTES:
1. STEEL BEAM.
2. 3/8" STEEL SHEAR PLATE – USE 5/8" STEEL SHEAR PLATE WHERE "D" = 27" OR GREATER.
3. FOR SIZE, TYPE AND NUMBER OF BOLTS, SEE TYPICAL BOLT SCHEDULE.
4. #3x6'-0" LONG AT 12" O.C. ALONG THE GIRDER.
5. WELD 3 SIDES TYPICAL – USE SAME CONNECTION AT STIFFENER PLATES WHEN REQUIRED.
6. DRAPE MESH OVER #3 BARS AT ALL INTERIOR BEAMS SPANNING COLUMN TO COLUMN. PROVIDE 3/4" COVER OVER MESH.
7. CONCRETE OVER STEEL DECK SEE PLAN FOR DIRECTION.
8. CONTINUOUS #3 BAR TACK WELD OR TIE OFF TO STUDS AS REQ'D. TO SUPPORT MESH.

211 *TYPICAL WELDED WIRE FABRIC AT INTERIOR STEEL GIRDER*
NO SCALE

NOTES:
1. 1/4" CONTINUOUS BENT STEEL PLATE.
2. STEEL BEAM.
3. 4" TYPICAL.
4. 0" TO 12" ADD #4 REIN. AT 12" O.C. 12" TO 18" ADD #5 REINF. AT 12" O.C.
5. 2'-0" MINIMUM.
6. REINFORCING AS REQUIRED.
7. CONCRETE OVER STEEL DECK – FOR DIRECTION OF DECK, SEE PLANS.
8. WELD ANGLE TO BEAM – TYP.
9. 1 1/2"ø STD. PIPE POST AND RAILS.
10. EXTENDED EDGE ANGLE.
11. 2– #5 CONTINUOUS PER PLAN.

NOTE:
WHEN 1/4" BENT PLATE EXCEEDS 6" IN LENGTH, PLATE MUST BE SHORED UNTIL CONCRETE REACHES DESIGN STRENGTH.

208 *TYPICAL MEZZANINE SLAB EDGE CONDITION*
NO SCALE

NOTES:
1. LOCATION OF HEADED STUDS WHERE TWO STUDS ARE USED.
2. CONCRETE OVER STEEL DECK – FOR DIRECTION OF DECK, SEE PLANS – STEEL DECK MAY BE SPLIT AS REQUIRED.
3. WELDED WIRE FABRIC.
4. STEEL BEAM.
5. HEADED STUD – CENTER OVER BEAM WEB WHERE ONE STUD IS REQUIRED.
6. SEE G.S.N., PLANS, AND TYPICAL "WELDED STUD LAYOUT" DETAIL FOR PLACEMENT, DIAMETER, HEIGHT, SPACING, ETC. OF STUDS.

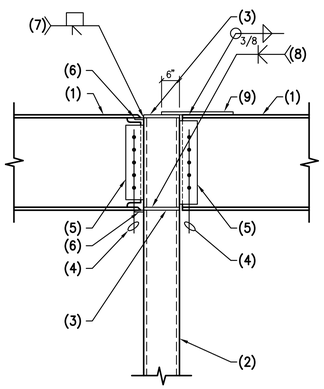
NOTE:
TOP FLANGE OF BEAM MUST BE FREE OF PAINT, DIRT, RUST AND OIL – TYPICAL.

205 *TYPICAL SHEAR CONNECTORS TO COMPOSITE STEEL BEAM*
NO SCALE

NOTES:
1. CONCRETE OVER STEEL DECK – FOR DIRECTION OF DECK, SEE PLAN.
2. WELDED WIRE FABRIC – CONTINUOUS THRU CONTROL JOINT.
3. SAW CUT SHALL BE MADE SOON ENOUGH TO PREVENT CRACKING, BUT NOT SO SOON AS TO CAUSE SPALLING OF THE CONCRETE WHILE SAWING.
4. STEEL DECK.
5. WOOD BLOCK WITH 3/4" CHAMFER AS SHOWN (TO BE REMOVED).

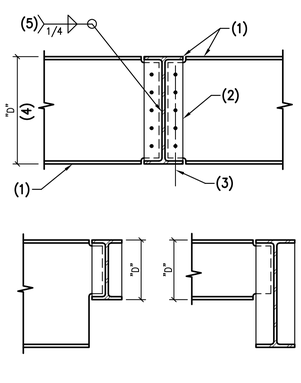
NOTE:
WHERE JOINT PARALLELS A BEAM, THE JOINT SHOULD BE 48" FROM CENTERLINE OF BEAM.

202 *CONTROL JOINTS IN CONCRETE OVER STEEL DECK*
NO SCALE



NOTES:
1. STEEL BEAM.
2. STEEL COLUMN.
3. STEEL CONTINUITY PLATE. THICKNESS TO MATCH BEAM FLANGE. WIDTH TO MATCH BEAM WIDTH OR COLUMN WIDTH, WHICHEVER IF GREATER.
4. FOR SIZE, TYPE AND NUMBER OF BOLTS, SEE TYPICAL BOLT SCHEDULE.
5. SHEAR PLATE PER TYPICAL CONNECTION DETAIL.
6. STEEL BACKER PLATE.
7. TYPICAL TOP AND BOTTOM FLANGE.
8. CUT COLUMN AT LOCATION OF CONTINUITY PLATE. WELD AS NOTED.
9. 3/4"x5"x16" STEEL PLATE (Fy = 50KSI).

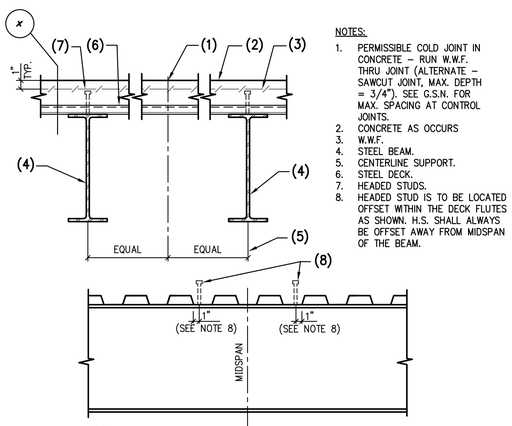
212 *STEEL BEAMS AT STEEL COLUMN*
NO SCALE



NOTES:
1. STEEL BEAM.
2. 3/8" STEEL SHEAR PLATE –USE 5/8" STEEL SHEAR PLATE WHERE "D" = 27" OR GREATER.
3. FOR SIZE, TYPE & NUMBER OF BOLTS, SEE TYPICAL BOLT SCHEDULE.
4. "D" = LESSER OF BEAM DEPTHS AS OCCURS.
5. WELD 3 SIDES TYPICAL – USE SAME CONNECTION AT STIFFENER PLATES WHEN REQUIRED.

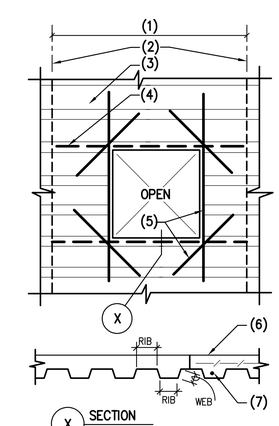
NOTE:
AT ONE SIDED CONNECTIONS, INSTALL 3/8" STIFFENER PLATE OPPOSITE SHEAR PLATE.

209 *TYPICAL CONNECTION WIDE FLANGE BEAM TO BEAM*
NO SCALE



NOTES:
1. PERMISSIBLE COLD JOINT IN CONCRETE – RUN W.W.F. THRU JOINT (ALTERNATE – SAWCUT JOINT, MAX. DEPTH = 3/4"). SEE G.S.N. FOR MAX. SPACING AT CONTROL JOINTS.
2. CONCRETE AS OCCURS
3. W.W.F.
4. STEEL BEAM.
5. CENTERLINE SUPPORT.
6. STEEL DECK.
7. HEADED STUDS.
8. HEADED STUD IS TO BE LOCATED OFFSET WITHIN THE DECK FLUTES AS SHOWN. H.S. SHALL ALWAYS BE OFFSET AWAY FROM MIDSPAN OF THE BEAM.

206 *TYPICAL STEEL DECK CONTINUOUS OVER STEEL BEAM*
NO SCALE



NOTES:
1. SPACING OF SUPPORT MEMBER.
2. CENTERLINE OF SUPPORT MEMBER.
3. STEEL DECK.
4. 1– #5 EACH SIDE OF OPENING.
5. #4 x 3'-0" – TYPICAL.
6. BLOCK OUT CONCRETE FOR OPENING. DO NOT CUT DECK UNTIL ADJACENT CONCRETE HAS REACHED DESIGN STRENGTH.
7. 1– #5 CONTINUOUS BETWEEN SUPPORT.

NOTES:
– WHEN ONE RIB IS CUT NO REINFORCING IS REQUIRED.
– WHEN TWO RIBS ARE CUT AND ADJACENT OPENINGS ARE GREATER THAN 4'-0" O.C., REINFORCE SLAB AS SHOWN.
– WHEN MORE THAN TWO RIBS ARE CUT OR OPENINGS ARE CLOSER THAN 4'-0" O.C., FRAME OPENING WITH TYPICAL DETAIL USING STEEL ANGLES.

203 *TYPICAL SMALL OPENING IN CONCRETE OVER STEEL DECK*
NO SCALE

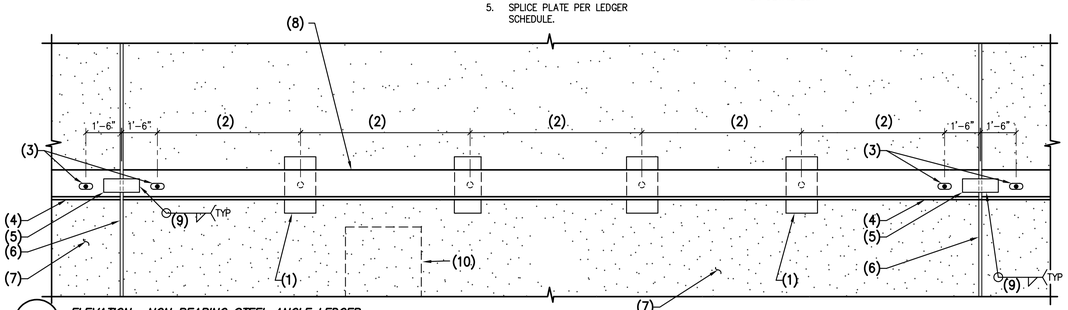
Case #:
Plan Check #:
Date: 10/15/2024
Revisions:

Project Number: 21002
Drawn By: PKA
Title: FRAMING DETAILS

S501

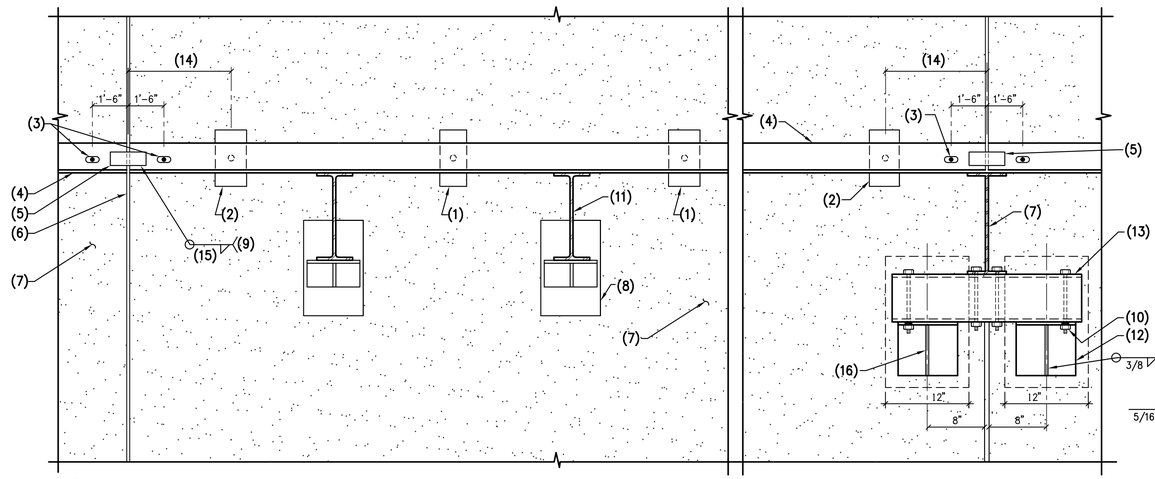
PK ASSOCIATES, LLC
6900 E. Belleview Ave. #200
Greenwood Village, Colorado 80111
Phone: (720) 799-1058
Email: cadd@pkastructural.com
Website: www.pkastructural.com

NOTES:
1. WELD PLATES (OR 3/4"ø HEADED STUDS AT OPTION) PER DETAIL 227.
2. EQUAL SPACES @ 4'-0" O.C. MAX. U.N.O. ON PLANS.
3. 3/4"ø ANCHOR BOLT IN 1 1/2" LONG SLOTTED HOLE EXPANSION BOLTS MAY BE USED AT CONTRACTOR'S OPTION.
4. CONT. STEEL LEDGER.
5. SPLICE PLATE PER LEDGER SCHEDULE.
6. PANEL JOINT.
7. PRECAST WALL PANEL.
8. STEEL LEDGER PER SCHEDULE.
9. WELD SIZE PER LEDGER SCHEDULE.
10. STEEL BEAM BEARING PLATE PER DETAIL 221.



218 ELEVATION –NON BEARING STEEL ANGLE LEDGER
NO SCALE

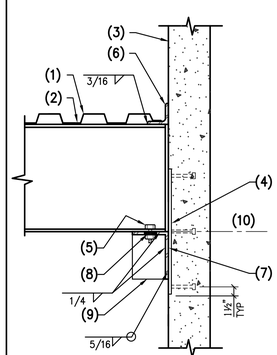
NOTES:
1. WELD PLATES MIDWAY BETWEEN BEAM PER DETAIL 220.
2. WELD PLATE PER DETAIL 220 WHERE DISTANCE BETWEEN PANEL JOINTS AND JOIST IS GREATER THAN 4'-0".
3. 3/4"ø ANCHOR BOLT IN 1 1/2" LONG SLOTTED HOLE EXPANSION BOLTS CONT. STEEL LEDGER.
4. MAY BE USED AT CONTRACTOR'S OPTION.
5. SPLICE PLATE PER LEDGER SCHEDULE.
6. PANEL JOINT.
7. PRECAST WALL PANEL.
8. EMBED AND BEARING ANGLE PER DETAIL 221 – TYPICAL.
9. STEEL PLATE TO STEEL LEDGER.
10. 3/4"ø THRU BOLTS IN 1 1/2" LONG SLOTTED HOLE, PARALLEL TO WALL.
11. STEEL BEAM.
12. STEEL ANGLE 8"x6"x1/2" (LLV).
13. TS 8x6x5/16"x 2'-5" LONG (LSV).
14. 5'-0" TYPICAL/ MAX.
15. WELD SIZE PER LEDGER SCHEDULE.
16. 3/8" STEEL STIFFENER PLATE.



219 ELEVATION –BEARING STEEL ANGLE LEDGER AT FLOOR
NO SCALE

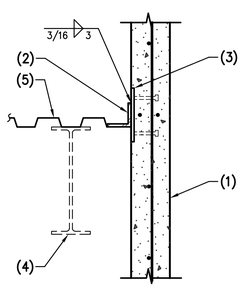
NOTES:
1. STEEL DECK.
2. STEEL BEAM.
3. PRECAST CONCRETE WALL.
4. STEEL EMBED PLATE 1/2"x12"x21" WITH 6– 3/4"ø x6" H.S. AT 9" O.C.
5. 3/4"ø THRU–BOLT.
6. CONT. STEEL LEDGER.
7. STEEL ANGLE 8"x6"x1/2"x10" LONG, ALIGN WITH MIDDLE ROW OF HEADED STUDS.
8. 1 1/2" LONG HORIZONTAL SLOTTED HOLE (PERPENDICULAR TO WALL).
9. 3/8" STEEL STIFFENER PLATE.
10. TOP OF ANGLE = C.L. OF EMBED PLATE.

NOTES:
USE DETAIL 217 WHEN SEAT INTERFERES WITH WINDOW.



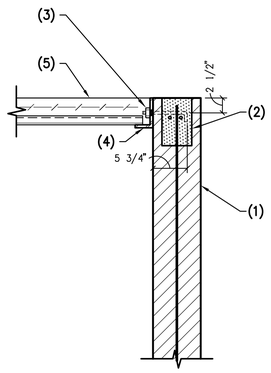
221 STEEL BEAM AT CONCRETE WALL
NO SCALE

NOTES:
1. PRECAST CONCRETE WALL.
2. CONTINUOUS STEEL LEDGER
3. 3/8"x4"x16" EMBED PLATE WITH 3– 3/4"ø x 5" LONG HEADED STUDS AT 6" O.C.
4. STEEL BEAM OR STEEL JOIST AS OCCURS WHERE SHOWN ON PLANS.
5. STEEL DECK.



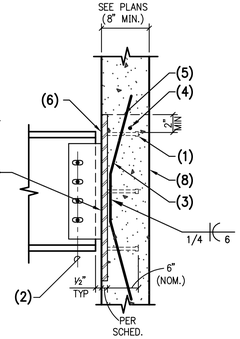
220 STEEL DECK AT PRECAST CONCRETE WALL
NO SCALE

NOTES:
1. MASONRY WALL.
2. BOND BEAM PER GSN.
3. 3/4"ø ANCHOR BOLTS AT 24" O.C. IN 2" HORIZONTAL SLOTTED HOLE (SLOTS PARALLEL TO WALL). CENTER BOLTS IN HOLE.
4. STEEL LEDGER PER PLAN.
5. CONCRETE OVER STEEL DECK.



216 CONCRETE OVER STEEL DECK AT MASONRY WALL
NO SCALE

NOTES:
1. 3/4"ø x6" (NOM.) HEADED STUDS (TYPICAL U.N.O.).
2. SHEAR PLATE AND BOLTS PER TYP. BOLT SCHEDULE. PLATE ON INSIDE FACE OF BEAM.
3. 2 #6 x 4'–0" | 6" | 4'–0" | 5" WELDABLE BARS.
4. #4x2'–6" AT EACH PLATE.
5. LINE OF TOP OF WALL – AS OCCURS.
6. EMBED PLATE PER SCHEDULE.
7. STEEL BEAM.
8. CONCRETE WALL PER PLAN.



TYPICAL SECTION

BEAM SIZE	PLATE
W8x	P1
W10x	P1
W12x	P1
W14x	P2
W16x	P2
W18x	P2
W24x	P3

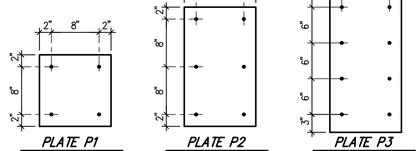
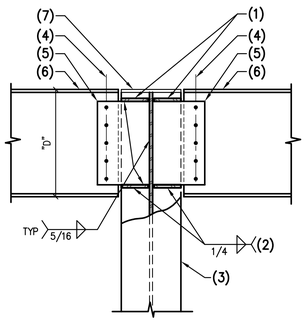


PLATE P1
1/2" x12"x1'-0" WITH 4–HEADED STUDS.

PLATE P2
1/2" x12"x1'–8" WITH 6–HEADED STUDS.

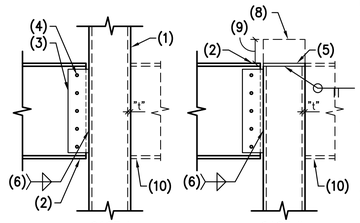
PLATE P3
3/4" x12"x24" WITH 8–HEADED STUDS.

217 TYPICAL EMBED PLATE DETAIL AT CONCRETE WALL
NO SCALE



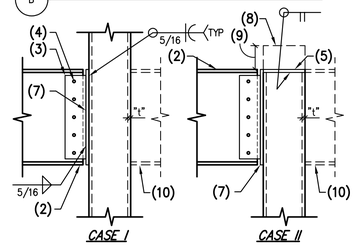
NOTES:
1. 1/2" THICK HORIZONTAL STIFFENER PLATE TOP AND BOTTOM OF SHEAR PLATE – TYPICAL.
2. WELD 1/2" PLATE TO COLUMN FLANGE – TYPICAL.
3. STEEL COLUMN.
4. FOR SIZE, TYPE AND NUMBER OF BOLTS, SEE TYPICAL BOLT SCHEDULE.
5. 3/8" STEEL SHEAR PLATE – 5/8" STEEL SHEAR PLATE WHERE "D" = 27" OR GREATER.
6. STEEL BEAM.
7. 1/2" CAP PLATE.

213 TYPICAL SHEAR CONNECTION – STEEL BEAM TO STEEL COLUMN
NO SCALE



NOTES:
1. HSS SQUARE OR RECTANGULAR COLUMN.
2. STEEL BEAM.
3. STEEL SHEAR PLATE. SEE TYP. BOLT SCHEDULE.
4. FOR SIZE, TYPE, AND NUMBER OF BOLTS, REFER TO TYP. BOLT SCHEDULE.
5. 1/2" STEEL CAP PLATE.
6. AT t ≤ 1/4" USE FILLET WELD SIZE TO MATCH "t". AT t > 1/4" USE 5/16" FILLET.
7. 1/2" STEEL BACKER PLATE x BEAM DEPTH x WIDTH OF COLUMN LESS 1".
8. TOP OF COLUMN AS OCCURS.
9. DEPTH TO MATCH JOIST SHOE.
10. BEAM BOTH SIDES WHERE OCCURS.

B SHEAR PLATE TO COLUMN



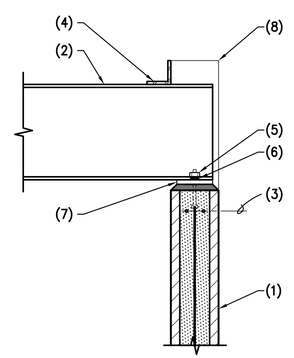
A SHEAR PLATE TO BACKER PLATE TO COLUMN

MINIMUM COLUMN FLANGE THICKNESS FOR DETAIL B	
HSS MEMBER	THICKNESS ("t")
4x4	1/4"
5x5	1/4"
6x6	1/4"
7x7	1/4"
8x8	5/16"
9x9	5/16"
10x10	3/8"
12x12	3/8"
14x14	1/2"
16x16	1/2"

NOTES:
–DETAIL A MAY BE USED TYP. U.N.O.
–DETAIL B MAY BE USED AT CONTRACTOR'S OPTION WHERE HSS MIN. FLANGE THICKNESSES ARE MET PER SCHEDULE.
–WHERE COLUMNS ARE RECTANGULAR IN LIEU OF SQUARE, THE GREATER FLANGE LENGTH (I.E. WORST CASE) APPLIES PER SCHEDULE.
–CONTRACTOR MAY INCREASE PLAN COLUMN THICKNESS AT THEIR OPTION.

214 TYPICAL BEAM TO HSS STEEL COLUMN
NO SCALE

NOTES:
1. MASONRY WALL.
2. STEEL BEAM.
3. 2– #5x3'–6" LONG IN 8" DEEP x 4'–0" GROUTED BOND BEAM.
4. CONTINUOUS LEDGER ANGLE.
5. 2– 3/4"ø AUTOMATIC WELDED THREADED STUDS ON BEAM GAGE (TIGHTEN NUTS FINGERTIGHT).
6. 1 1/2" LONG HORIZONTALLY SLOTTED HOLE ON BEAM GAGE – EACH SIDE OF WEB.
7. 3/4"x6"x20" STEEL BEARING PLATE WITH 3– 3/4"ø ANCHORS OVER ±1" DRYPACK.
8. LINE OF MASONRY WALL BEYOND.



215 STEEL GIRDER AT MASONRY WALL
NO SCALE

Butler Design Group Inc.
architects & planners
5017 East Washington St. #107
Phoenix, Arizona 85034
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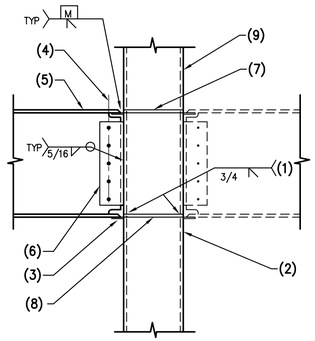
Case #:
Plan Check #:
Date: 10/15/2024
Revisions:

Project Number: 21002
Drawn By: PKA
Title: FRAMING DETAILS

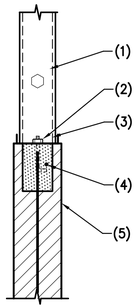
S502

PK ASSOCIATES, LLC
6900 E. Belleview Ave. #200
Greenwood Village, Colorado 80111
Phone: (720) 799-1058
Email: cadd@pkastructural.com
Website: www.pkastructural.com



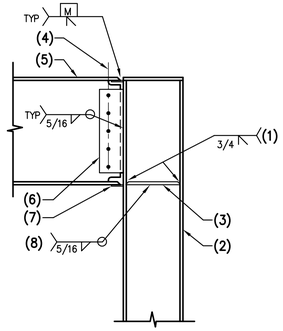
NOTES:
1. WELD EACH PLATE.
2. STEEL COLUMN.
3. STEEL BACKER PLATE.
4. FOR SIZE, TYPE AND NUMBER OF BOLTS, SEE TYPICAL BOLT SCHEDULE.
5. STEEL BEAM.
6. SHEAR PLATE PER TYPICAL CONNECTION DETAIL.
7. STEEL PLATE TO MATCH BEAM FLANGE THICKNESS– TOP AND BOTTOM.
8. WELD 3 SIDES TYPICAL.
9. NO COLUMN AT 231A.

231 *TYPICAL MOMENT CONNECTION – STEEL BEAM TO STEEL COLUMN*
231A *AS NOTED*
NO SCALE



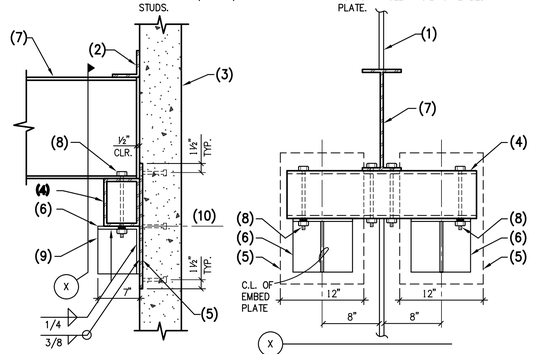
NOTES:
1. STEEL STUD WALL.
2. 1/2" DIA. ANCHOR BOLTS AT 48" O.C.
3. CONTINUOUS STUD TRACK.
4. BOND BEAM PER G.S.N.
5. MASONRY WALL.

228 *STEEL STUD WALL AT MASONRY WALL*
NO SCALE



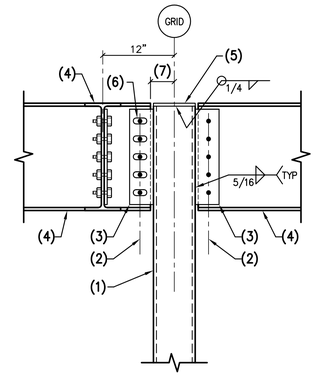
NOTES:
1. WELD EACH PLATE.
2. STEEL COLUMN.
3. STEEL PLATE TO MATCH BEAM FLANGE THICKNESS, Fy=50 KSI (1/2" MIN.) TOP AND BOTTOM BOTH SIDES.
4. FOR SIZE, TYPE AND NUMBER OF BOLTS, SEE TYPICAL BOLT SCHEDULE.
5. STEEL BEAM.
6. SHEAR PLATE PER TYPICAL CONNECTION DETAIL.
7. STEEL BACKER PLATE.
8. WELD 3 SIDES TYPICAL.

225 *MOMENT CONNECTION – STEEL BEAM TO CONTINUOUS STEEL COLUMN*
NO SCALE



NOTES:
1. PANEL JOINT.
2. **CONTINUOUS STEEL LEDGER.**
3. PRECAST CONCRETE WALL.
4. **TS 8"x6"x5/16"x2'-5"** LONG (LSV).
5. **STEEL EMBED PLATE 1'-2"x12"x2'-1"** AT 9" O.C. W/ 6– 3/4"ø HEADED STUDS.
6. **STEEL ANGLE 5"x5"x1/2"x10" LONG** (LLV).
7. STEEL BEAM.
8. 3/4"ø THRU BOLTS IN 1 1/2" LONG SLOTTED HOLE, PARALLEL TO WALL.
9. 3/8" STEEL STIFFENER PLATE.
10. TOP OF ANGLE = C.L. OF EMBED PLATE.

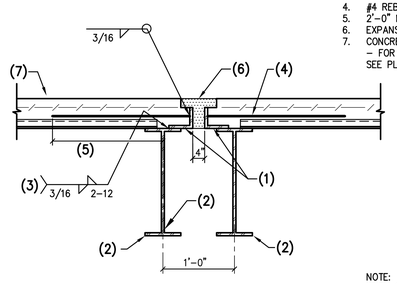
222 *STEEL FLOOR BEAM TO PRECAST WALL AT PANEL JOINT*
NO SCALE



NOTES:
1. STEEL COLUMN.
2. FOR SIZE, TYPE AND NUMBER OF BOLTS, SEE TYPICAL BOLT SCHEDULE.
3. SHEAR TAB PER DETAIL 201.
4. STEEL BEAM.
5. 1/2" CAP PLATE.
6. 1 1/2" HORIZONTALLY SLOTTED HOLES.
7. 4" EXPANSION JOINT.

NOTES:
DECK AND BEAM FRAMING INTO COLUMN NOT SHOWN FOR CLARITY.

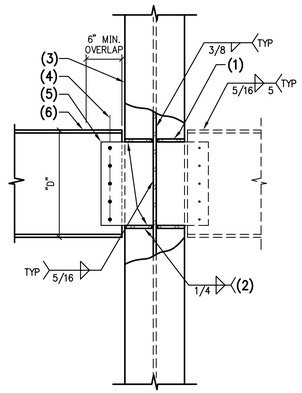
232 *STEEL BEAM AT STEEL COLUMN AT EXPANSION JOINT*
NO SCALE



NOTES:
1. 3/8" CONTINUOUS BENT STEEL PLATE.
2. STEEL BEAM.
3. WELD ANGLE TO BEAM – TYP.
4. #4 REBAR AT 12" O.C.
5. 2'–0" MINIMUM.
6. EXPANSION JOINT MATERIAL.
7. CONCRETE OVER STEEL DECK – FOR DIRECTION OF DECK, SEE PLANS.

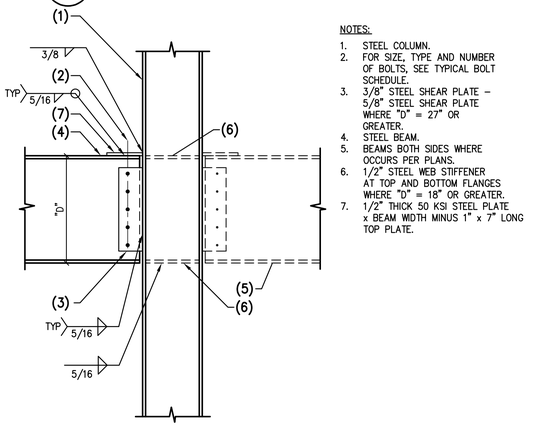
NOTE:
WHEN 1/4" BENT PLATE EXCEEDS 6" IN LENGTH, PLATE MUST BE SHORED UNTIL CONCRETE REACHES DESIGN STRENGTH.

229 *EXPANSION JOINT AT CONCRETE OVER STEEL DECK*
NO SCALE



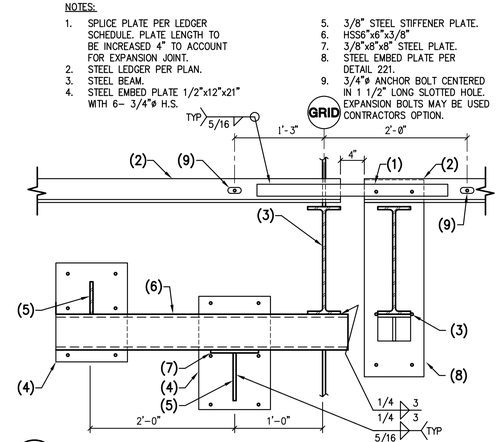
NOTES:
1. 1/2" THICK HORIZONTAL STIFFENER PLATE TOP AND BOTTOM OF SHEAR PLATE – TYPICAL.
2. WELD 1/2" PLATE TO COLUMN FLANGE – TYPICAL.
3. STEEL COLUMN.
4. FOR SIZE, TYPE AND NUMBER OF BOLTS, SEE TYPICAL BOLT SCHEDULE.
5. 3/8" STEEL SHEAR PLATE – 5/8" STEEL SHEAR PLATE WHERE "D" = 27" OR GREATER.
6. STEEL BEAM.

226 *STEEL BEAM TO STEEL COLUMN*
NO SCALE



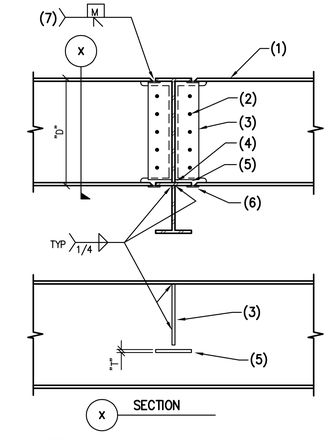
NOTES:
1. STEEL COLUMN.
2. FOR SIZE, TYPE AND NUMBER OF BOLTS, SEE TYPICAL BOLT SCHEDULE.
3. 3/8" STEEL SHEAR PLATE – 5/8" STEEL SHEAR PLATE WHERE "D" = 27" OR GREATER.
4. STEEL BEAM.
5. BEAMS BOTH SIDES WHERE OCCURS PER PLANS.
6. 1/2" STEEL WEB STIFFENER AT TOP AND BOTTOM FLANGES WHERE "D" = 18" OR GREATER.
7. 1/2" THICK 50 KSI STEEL PLATE x BEAM WIDTH MINUS 1" x 7" LONG TOP PLATE.

223 *TYPICAL SHEAR CONNECTION – STEEL BEAM TO STEEL COLUMN*
NO SCALE



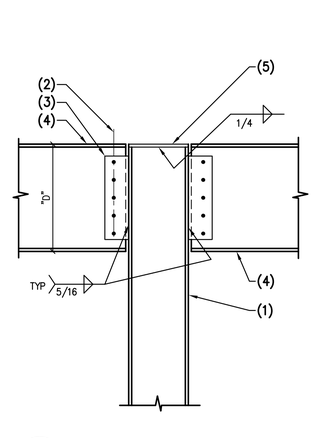
NOTES:
1. SPLICE PLATE PER LEDGER SCHEDULE. PLATE LENGTH TO BE INCREASED 4" TO ACCOUNT FOR EXPANSION JOINT.
2. STEEL LEDGER PER PLAN.
3. STEEL BEAM.
4. STEEL EMBED PLATE 1/2"x12"x21" WITH 6– 3/4"ø H.S.
5. 3/8" STEEL STIFFENER PLATE.
6. HSS6"x6"x3/8"
7. 3/8"x8"x8" STEEL PLATE.
8. STEEL EMBED PLATE PER DETAIL 221.
9. 3/4"ø ANCHOR BOLT CENTERED IN 1 1/2" LONG SLOTTED HOLE. EXPANSION BOLTS MAY BE USED CONTRACTORS OPTION.

233 *STEEL BEAMS AT CONCRETE PANEL JOINT AT EXPANSION JOINT*
NO SCALE



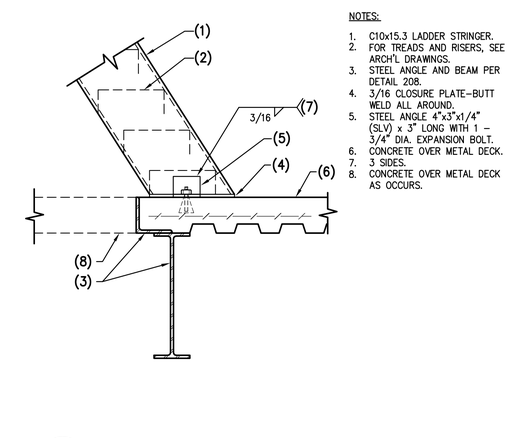
NOTES:
1. STEEL BEAM.
2. FOR SIZE, TYPE AND NUMBER OF BOLTS, SEE TYPICAL BOLT SCHEDULE.
3. 3/8" STEEL SHEAR PLATE – 5/8" STEEL SHEAR PLATE WHERE "D" = 27" OR GREATER.
4. SLOT BEAM WEB.
5. 50 KSI STEEL PLATE TO MATCH BEAM FLANGE THICKNESS x WIDTH OF BEAM FLANGE.
6. 1/8" STEEL BACKER PLATE.
7. WELD TOP AND BOTTOM FLANGE – TYPICAL.

230 *TYPICAL MOMENT CONNECTION – WIDE FLANGE BEAM TO BEAM*
NO SCALE



NOTES:
1. STEEL COLUMN.
2. FOR SIZE, TYPE AND NUMBER OF BOLTS, SEE TYPICAL BOLT SCHEDULE.
3. 3/8" STEEL SHEAR PLATE – 5/8" STEEL SHEAR PLATE WHERE "D" = 27" OR GREATER.
4. STEEL BEAM.
5. 1/2" CAP PLATE.

227 *TYPICAL SHEAR CONNECTION – STEEL BEAM TO STEEL COLUMN*
NO SCALE



NOTES:
1. C10x15.3 LADDER STRINGER.
2. FOR TREADS AND RISERS, SEE ARCH'L DRAWINGS.
3. STEEL ANGLE AND BEAM PER DETAIL 208.
4. 3/16 CLOSURE PLATE–BUTT WELD ALL AROUND.
5. STEEL ANGLE 4"x3"x1/4" (SLV) x 3" LONG WITH 1 – 3/4" DIA. EXPANSION BOLT.
6. CONCRETE OVER METAL DECK.
7. 3 SIDES.
8. CONCRETE OVER METAL DECK AS OCCURS.

224 *STEEL STRINGER AT CONCRETE OVER METAL DECK*
NO SCALE

Butler Design Group Inc.
architects & planners
5017 East Washington St. #107
Phoenix, Arizona 85034
Phone 602-957-1800

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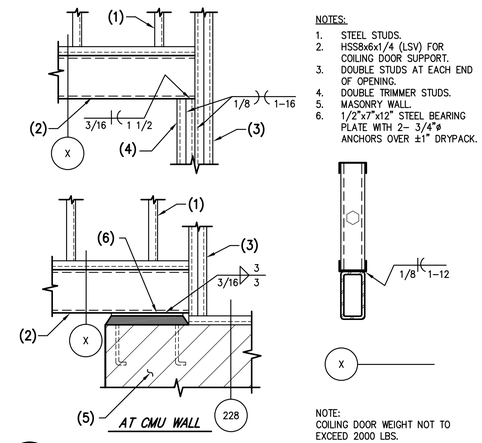
Case #:
Plan Check #:
Date: 10/15/2024
Revisions:

Project Number: 21002
Drawn By: PKA
Title: FRAMING DETAILS

S503



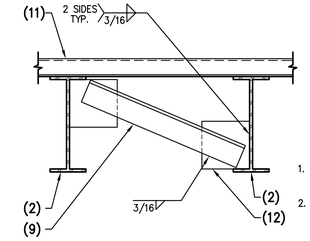
NOTES:

1. STEEL STUDS.
2. HSS8x6x1/4 (LSV) FOR COILING DOOR SUPPORT.
3. DOUBLE STUDS AT EACH END OF OPENING.
4. DOUBLE TRIMMER STUDS.
5. MASONRY WALL.
6. 1/2"x7"x12" STEEL BEARING PLATE WITH 2- 3/4"ø ANCHORS OVER ±1" DRYPACK.

NOTE:
COILING DOOR WEIGHT NOT TO EXCEED 2000 LBS.

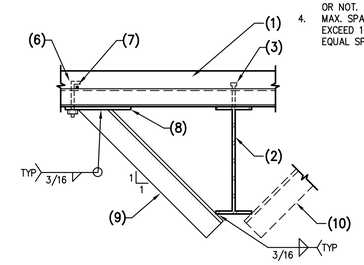
236 *STEEL HEADER AT STEEL STUD WALL*

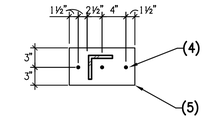
NO SCALE



CONSTRUCTION NOTES:

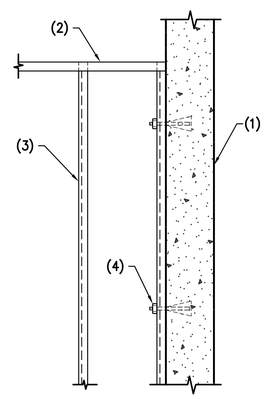
1. ANGLE MAY BE ROTATED ±15° TO ALLOW ANCHOR BOLT TO BE PLACED IN DECK VALLEY.
2. ALTERNATE BRACES EACH SIDE OF BEAM. WHERE THIS IS NOT POSSIBLE DUE TO DUCTWORK, ETC. BRACES ON ONE SIDE OF BEAM ONLY.
3. THIS DETAIL TO OCCUR AT ALL MOMENT FRAMES BEAMS WHERE NOTED ON PLANS OR NOT.
4. MAX. SPACING OF BRACES SHALL NOT EXCEED 10'-0" O.C. LOCATE BRACES AT EQUAL SPACES.





234 *TYPICAL BRACING DETAIL AT MOMENT FRAME BEAMS*

NO SCALE



NOTES:

1. CONCRETE TILT PANEL.
2. STEEL STUD TRACK.
3 STEEL STUD WALL.
4. 3/4"ø x5" LONG EXPANSION BOLTS AT 48" O.C.

235 *STEEL STUD WALL AT CONCRETE PANEL*

NO SCALE

PK ASSOCIATES, LLC
6900 E. Belleview Ave. #200
Greenwood Village, Colorado 80111
Phone: (720) 799-1058
Email: cadd@pkastructural.com
Website: www.pkastructural.com

NOTES:

1. CONCRETE OVER STEEL DECK– FOR DIRECTION OF DECK, SEE PLAN.
2. STEEL BEAM.
3. HEADED STUD.
4. ALTERNATE BOLT LOCATIONS.
5. 1/4" PLATE.
6. 5/8" ø ANCHOR BOLT – 5" MIN. EMBEDMENT.
7. #5 CONTINUOUS.
8. 1/4" PLATE – SEE PLAN VIEW.
9. ANGLE 4" x 4" x 1/4" PERPENDICULAR TO STEEL BEAM.
10. ALTERNATE SIDES WHERE POSSIBLE.
11. STEEL DECK.
12. 1/2"x6"x8" STEEL PLATE.

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architects & planners
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Phoenix, Arizona 85034
Phone 602-957-1800

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Project Number: 21002
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Title: FRAMING DETAILS

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PK ASSOCIATES, LLC
6900 E. Belleview Ave. #200
Greenwood Village, Colorado 80111
Phone: (720) 799-1058
Email: cadd@pkastructural.com
Website: www.pkastructural.com

Butler Design Group Inc.
architects & planners
5017 East Washington St. #107
Phoenix, Arizona 85034
Phone 602-957-1800

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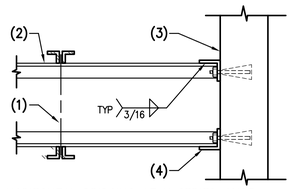
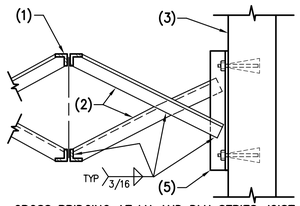


HORIZONTAL BRIDGING AT K SERIES JOIST

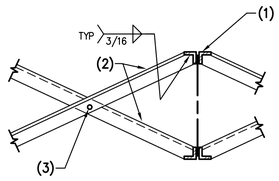


CROSS BRIDGING AT LH AND DLH SERIES JOIST

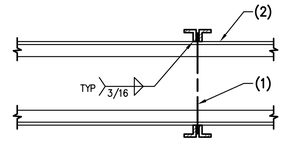
NOTES:
1. STEEL JOIST.
2. BRIDGING AS REQUIRED BY JOIST MANUFACTURER.
3. WALL – FOR SIZE AND TYPE, SEE PLAN.
4. STEEL ANGLE 3"x3"x1/4"x 4" LONG WITH 1– 5/8" ø EXPANSION BOLT (IN GROUTED CELL AT MASONRY WALL).
5. STEEL ANGLE 3"x3"x1/4"x AS REQUIRED WITH 2– 5/8"ø EXPANSION BOLTS (IN GROUTED CELL AT MASONRY WALL).

NOTE:
CROSS BRIDGING DETAIL SHALL APPLY FOR K SERIES JOISTS WHERE REQUIRED BY MFR.

309 *TYPICAL STEEL JOIST BRIDGING TO WALL*
NO SCALE



CROSS BRIDGING

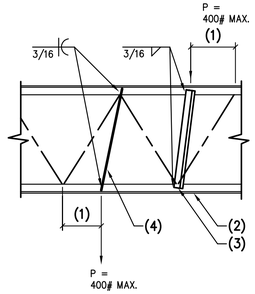


HORIZONTAL BRIDGING

NOTES:
1. STEEL JOISTS.
2. BRIDGING SIZE PER MFR. RECOMMENDATIONS.
3. 1/2" DIA. BOLT.

NOTE:
FOR CLARITY, STEEL DECK OMMITTED. FOR ADDITIONAL INFORMATION, SEE PLAN AND G.S.N.

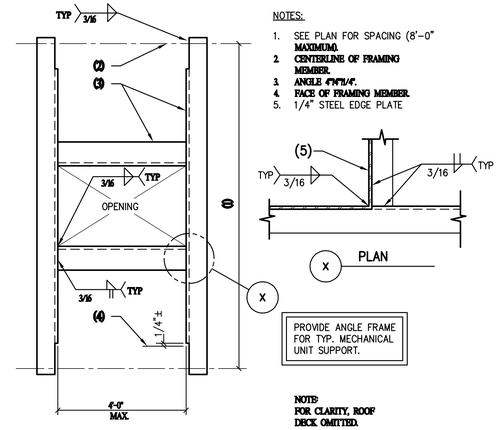
307 *TYPICAL BRIDGING AT STEEL JOISTS*
NO SCALE



NOTES:
1. ADDITIONAL MEMBER WHEN LOAD IS MORE THAN 4" FROM PANEL POINT.
2. STEEL JOIST.
3. STEEL ANGLE 2 1/2"x 2 1/2"x1/4" FROM TOP CHORD TO NEAREST BOTTOM CHORD PANEL POINT.
4. 1/2" DIA. ROD FROM BOTTOM CHORD TO NEAREST TOP CHORD PANEL POINT – FOR CONCENTRATED LOAD AT BOTTOM CHORD.

NOTE:
PROVIDE THIS DETAIL WHEN CONCENTRATED LOAD EXCEEDS 200 LBS. – NOTIFY ENGINEER WHEN LOAD EXCEEDS 700 LBS.

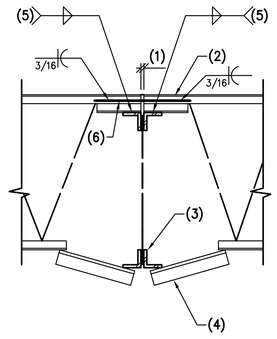
304 *ADDITIONAL WEB MEMBERS FOR CONCENTRATED LOAD OCCURING AWAY FROM JOIST PANEL POINT – TYPICAL*
NO SCALE



NOTES:
1. SEE PLAN FOR SPACING (8'–0" MAXIMUM.
2. CENTERLINE OF FRAMING MEMBER.
3. ANGLE 4"x4"x1/4".
4. FACE OF FRAMING MEMBER.
5. 1/4" STEEL EDGE PLATE

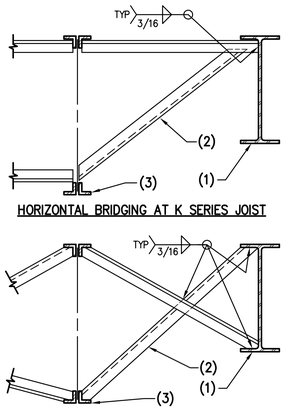
NOTE:
FOR CLARITY, ROOF DECK OMITTED.

301 *PLAN – TYPICAL OPENING IN FRAMING*
NO SCALE



NOTES:
1. 1/2" MAXIMUM.
2. STEEL JOIST.
3. STEEL JOIST GIRDER.
4. STEEL ANGLE BRACE AS REQUIRED BY GIRDER MANUFACTURER. SEE ERECTION DRAWINGS FOR SIZE, LOCATION, QUANTITY, AND ATTACHMENT.
5. 1/8"x3" EACH SIDE AT K JOISTS, 1/4"x3" EACH SIDE AT LH JOISTS.
6. 1"ø x16" (Fy = 50 ksi) LONG WELDABLE STEEL BAR EACH SIDE OF JOIST AT 310A.

310 *STEEL JOIST AT STEEL JOIST GIRDER*
310A *AS NOTED*
NO SCALE



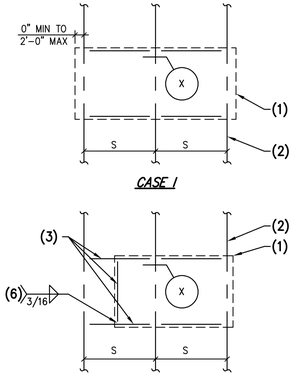
HORIZONTAL BRIDGING AT K SERIES JOIST

CROSS BRIDGE AT LH, DLH, AND SLH SERIES JOIST

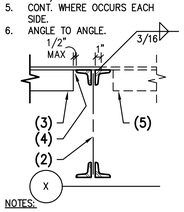
JOIST MFR SHALL PROVIDE CROSS BRIDGING AT ALL END BAYS.

NOTES:
1. STEEL BEAM OR JOIST AS OCCURS.
2. BRIDGING PER MFR'S RECOMMENDATIONS.
3. STEEL JOIST.

308 *TYPICAL BRACE CONNECTION STEEL JOIST TO STEEL BEAM*
NO SCALE

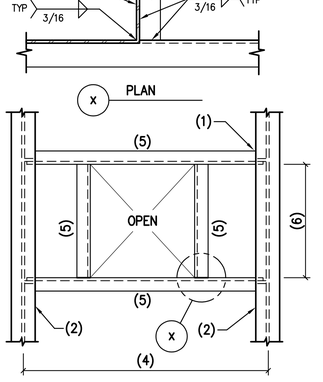


NOTES:
1. LINE OF MECH'L. UNIT AND CURB AS OCCURS.
2. STRUCTURAL ROOF MEMBER.
3. ADD'L. SUPPORTING ANGLES:
   S ≤ 6'–3" (4x4x3/8")
   6'–3" < S ≤ 8'–0" (5x5x3/8")
4. MAX COPING OF TOP FLANGE = THICKNESS OF VERT. LEG (i.e. MIN. HORIZ. FLANGE = 4"–3/8" FOR < 4x4.
5. CONT. WHERE OCCURS EACH SIDE.
6. ANGLE TO ANGLE.



NOTES:
–IF MECH'L CURB PROVIDED BY CONTRACTOR STRUCTURALLY SPANS BETWEEN ROOF MEMBER, NO SUPPORTING ANGLES ARE REQ'D. AT CASE I.
–IF NO STRUCTURAL CURB IS PROVIDED, SUPPORTING ANGLES REQ'D. BOTH CASES.
–MAX. MECH'L. WEIGHT ≤200LB/FT/CURB.
–SEE TYP. DET. 202 FOR DUCT OPENING FRAMING AS REQ'D.

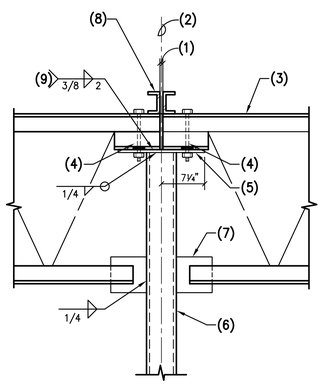
305 *TYPICAL FRAMING AT MECHANICAL UNIT ≤750 LBS.*
NO SCALE



NOTES:
1. CONNECTION PER TYPICAL STEEL BEAM TO BEAM DETAIL.
2. STEEL BEAM OR JOIST SUPPORT.
3. 1/4" STEEL EDGE PLATE AROUND OPENING – TYPICAL.
4. 12'–6" MAXIMUM.
5. C8x11.5 STEEL BEAM.
6. 6'–0" MAXIMUM.

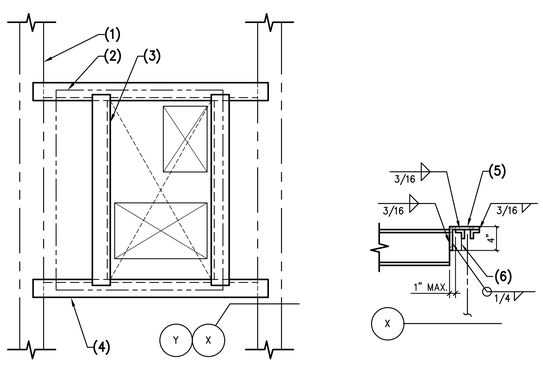
NOTE:
FOR CLARITY, STEEL DECK AND CONCRETE NOT SHOWN.

302 *PLAN VIEW – TYPICAL FRAME OPENING AT LARGE OPENING*
NO SCALE

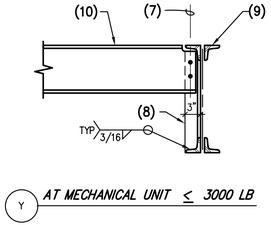


NOTES:
1. 1/2" CLEAR.
2. CENTERLINE OF STEEL COLUMN.
3. STEEL JOIST GIRDER.
4. 2– 3/4"ø THRU–BOLTS IN 1 1/2" LONG HORIZ. SLOTTED HOLES EACH END OF GIRDER – TIGHTEN NUTS FINGERTIGHT.
5. PLATE 1 1/4" x GIRDER SEAT WIDTH PLUS 1" WITH 4– 3/4"ø BOLTS.
6. STEEL COLUMN.
7. 3/4"x6"x6" STEEL STABILIZER PLATE.
8. STEEL JOIST BEARING ON JOIST GIRDER.
9. WELD ONE END OF GIRDER ONLY. DO NOT WELD OTHER END OF GIRDER. OF GIRDER.

311 *STEEL JOIST GIRDERS AT STEEL COLUMN*
NO SCALE

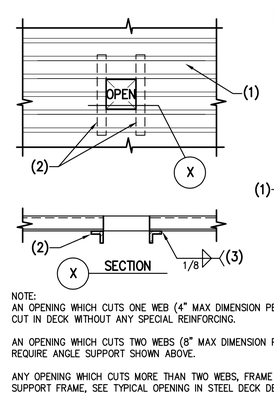


NOTES:
1. STRUCTURAL ROOF MEMBER.
2. MECHANICAL CURB – TYPICAL ALL 4 SIDES OF UNIT – UNIT NOT TO EXCEED 1,100 lbs.
3. 4x4 ANGLES AROUND DECK OPENINGS PER TYPICAL DETAIL.
4. C6x8.5.
5. 3/8"x1'–0" STEEL BENT PLATE.
6. 1/4" GUSSET PLATE.
7. FOR SIZE, TYPE AND NUMBER OF BOLTS SEE TYPICAL BOLT SCHEDULE.
8. STEEL ANGLE 3x2x1/4".
9. STEEL JOIST.
10. C8x11.5 STEEL CHANNEL.



AT MECHANICAL UNIT ≤ 3000 LB

306 *TYPICAL FRAMING AT MECHANICAL UNIT >750 LBS.*
NO SCALE



NOTES:
1. STEEL DECK.
2. ANGLE SUPPORT 2"x2"x 3/16" BELOW DECK – ANGLE MAY BE PLACE ON TOP OF DECK WITH PRIOR APPROVAL OF ARCHITECT.
3. WELD 2" AT EACH RIB – TYPICAL.

NOTE:
AN OPENING WHICH CUTS ONE WEB (4" MAX DIMENSION PERPENDICULAR TO RIBS), MAY BE CUT IN DECK WITHOUT ANY SPECIAL REINFORCING.

AN OPENING WHICH CUTS TWO WEBS (8" MAX DIMENSION PERPENDICULAR TO RIBS), WILL REQUIRE ANGLE SUPPORT SHOWN ABOVE.

ANY OPENING WHICH CUTS MORE THAN TWO WEBS, FRAME OPENING WITH TYPICAL ANGLE SUPPORT FRAME, SEE TYPICAL OPENING IN STEEL DECK DETAIL.

303 *TYPICAL SMALL OPENING IN STEEL DECK*
NO SCALE

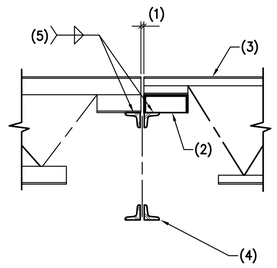
Case #:
Plan Check #:
Date: 10/15/2024
Revisions:

Project Number: 21002
Drawn By: PKA
Title: ROOF FRAMING DETAILS

S601

PK ASSOCIATES, LLC
6900 E. Belleview Ave. #200
Greenwood Village, Colorado 80111
Phone: (720) 799-1058
Email: cadd@pkastructural.com
Website: www.pkastructural.com

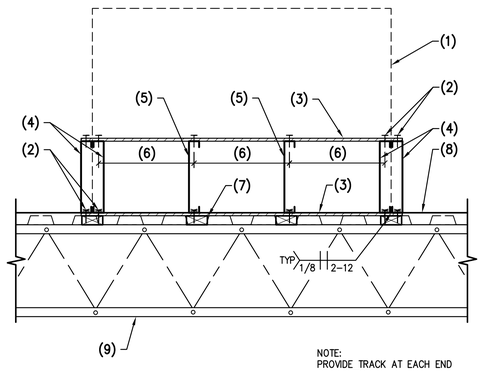
NOTES:
1. 1/2" MAXIMUM.
2. MODIFY JOIST SHOE TO MATCH LH JOIST.
3. "K" JOISTS.
4. STEEL JOIST GIRDER.
5. 1/4"x3" AT LH JOISTS, 1/8"x2" AT K JOISTS. U.N.O. FOR UPLIFT.



NOTE:
STEEL DECK NOT SHOWN FOR CLARITY.

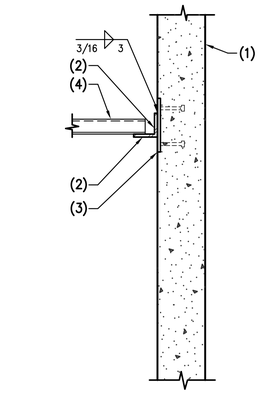
319 STEEL JOISTS AT JOIST GIRDER
NO SCALE

NOTES:
1. LINE OF MECH'L UNIT BY OTHERS.
2. DOUBLE EDGE NAILING.
3. 1/2" PLYWOOD SHEATHING.
4. DOUBLE 1200S162-68 STEEL PURLIN FROM JOIST TO JOIST.
5. 1200S162-68 STEEL PURLIN. FROM JOIST TO JOIST.
6. 16" MAX.
7. WOOD SHIM BELOW PURLIN AS OCCURS.
8. STEEL DECK PER PLAN.
9. STEEL JOIST.



NOTE:
PROVIDE TRACK AT EACH END OF PLATFORM.

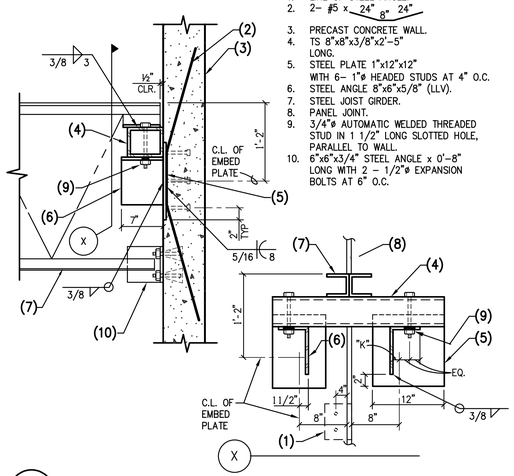
320 MECHANICAL UNIT PLATFORM
NO SCALE



NOTES:
1. CONCRETE WALL.
2. CONTINUOUS STEEL ANGLE LEDGER FOR ANGLE SIZE AND CONNECTION SEE LEDGER SCHEDULE.
3. 1/2"x8"x10" EMBED PLATE WITH 2- 3/4"ø x 5" LONG HEADED STUDS AT 6" O.C.
4. STEEL DECK - FOR DIRECTION OF DECK, SEE PLAN.

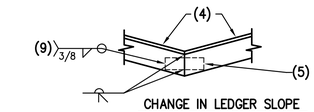
NOTE:
FOR DIRECTION OF STEEL DECK SEE FRAMING PLAN

316 STEEL DECK AT CONCRETE WALL
NO SCALE



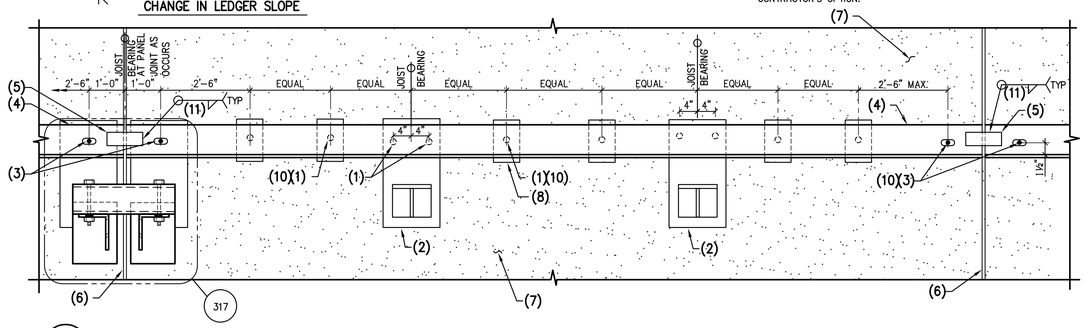
NOTES:
1. LINE OF STEEL ANGLE.
2. 2- #5 x 24" 8" 24"
3. PRECAST CONCRETE WALL.
4. TS 8"x8"x3/8"x2'-5" LONG.
5. STEEL PLATE 1"x12"x12" WITH 6- 1"ø HEADED STUDS AT 4" O.C.
6. STEEL ANGLE 8"x6"x5/8" (LLV).
7. STEEL JOIST GIRDER.
8. PANEL JOINT.
9. 3/4"ø AUTOMATIC WELDED THREADED STUD IN 1 1/2" LONG SLOTTED HOLE, PARALLEL TO WALL.
10. 6"x6"x3/4" STEEL ANGLE x 0'-8" LONG WITH 2 - 1/2"ø EXPANSION BOLTS AT 6" O.C.

317 STEEL JOIST GIRDER TO PRECAST WALL AT PANEL JOINT
NO SCALE

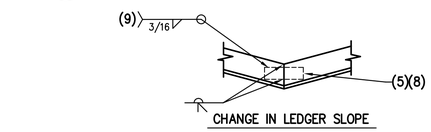


CHANGE IN LEDGER SLOPE

NOTES:
1. 3/4"ø HEADED STUDS WHERE SHOWN.
2. EMBED PLATE PER DETAIL 314.
3. 3/4"ø ANCHOR BOLT CENTERED IN 1 1/2" LONG SLOTTED HOLE.
4. CONT. STEEL LEDGER ANGLE.
5. SPLICE PLATE PER LEDGER SCHEDULE.
6. PANEL JOINT.
7. TILT UP WALL PANEL.
8. STEEL EMBED PLATE PER DETAIL 316 IN LIEU OF HEADED STUDS AT CONTRACTOR'S OPTION.
9. STEEL PLATE TO STEEL LEDGER.
10. 3/4"ø EXPANSION BOLTS AT CONTRACTOR'S OPTION.
11. WELD SIZE PER LEDGER SCHEDULE.

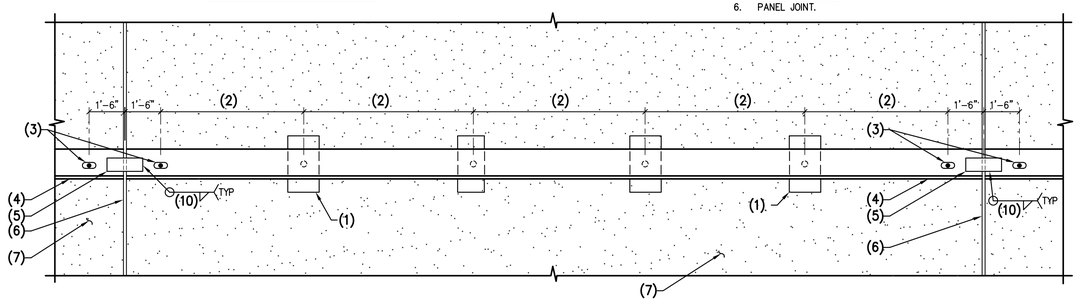


312 ELEVATION - STEEL BEARING LEDGER
NO SCALE

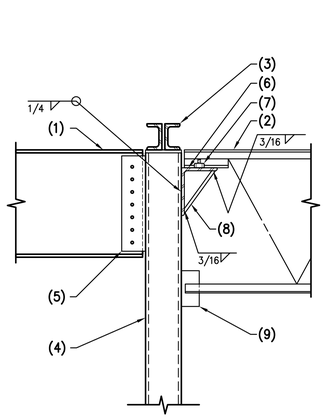


CHANGE IN LEDGER SLOPE

NOTES:
1. WELD PLATES PER DETAIL 316.
2. EQUAL SPACES -3'-0" O.C. MAX.
3. 3/4"ø ANCHOR BOLT CENTERED IN 1 1/2" LONG SLOTTED HOLE EXPANSION BOLTS MAY BE USED AT CONTRACTOR'S OPTION.
4. CONT. STEEL LEDGER.
5. SPLICE PLATE PER LEDGER SCHEDULE.
6. PANEL JOINT.
7. CONCRETE WALL PANEL.
8. SPLICE PLATE PER NOTE 5 MAY BE USED AT CONTRACTOR'S OPTION.
9. STEEL PLATE TO STEEL LEDGER.
10. WELD SIZE PER LEDGER SCHEDULE.

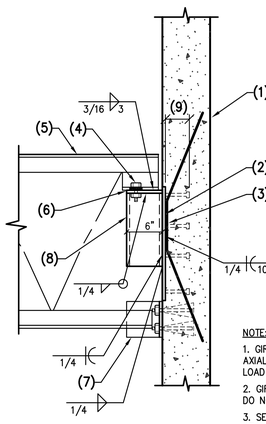


313 ELEVATION -NON BEARING STEEL ANGLE LEDGER
NO SCALE



NOTES:
1. STEEL BEAM.
2. STEEL JOIST GIRDER.
3. STEEL JOIST.
4. STEEL COLUMN.
5. SHEAR CONNECTION PER TYPICAL DETAIL.
6. STEEL ANGLE 8x6x1/2" (SLV). EXTEND 1" PAST FACE OF COLUMN.
7. 2- 3/4"ø AUTOMATICALLY WELDED REDUCED BASE THREADED STUDS IN 1 1/2" LONG HORIZONTALLY SLOTTED HOLES - TIGHTEN NUTS FINGERTIGHT.
8. 3/8" STIFFENER PLATE.
9. 3/4"x6"x6" STABILIZER PLATE.

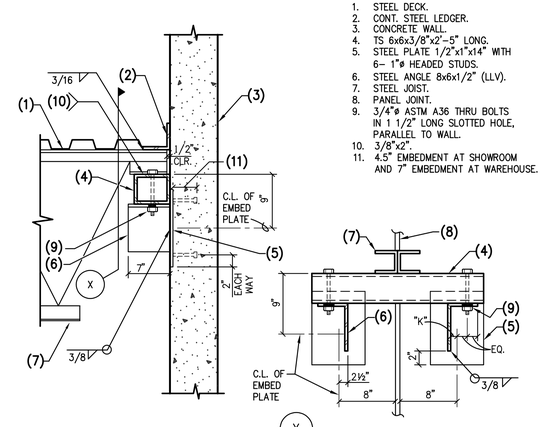
321 STEEL GIRDER JOIST GIRDER AND BEAM AT STEEL COLUMN
NO SCALE



NOTES:
1. PRECAST CONCRETE WALL.
2. STEEL PLATE 1"x14"x25" WITH 8 - 1"ø HEADED STUDS AT 10" O.C. HORIZONTAL, 7" O.C. VERTICAL.
3. 2- #5 x 24" 10" 24" 4" AT 8" O.C.
4. 3/4"ø THRU BOLT IN 1 1/2" LONG SLOTTED HOLES.
5. STEEL JOIST GIRDER.
6. 1" CAP PLATE.
7. STEEL ANGLE 6"x6"x3/4"x 0'-8" LONG WITH 2 - 1/2"ø EXPANSION BOLTS AT 6" O.C.
8. T.S. 10x8x3/8"x 1'-6" LONG.
9. 4.5" EMBEDMENT AT SHOWROOM AND 7" EMBEDMENT AT WAREHOUSE.

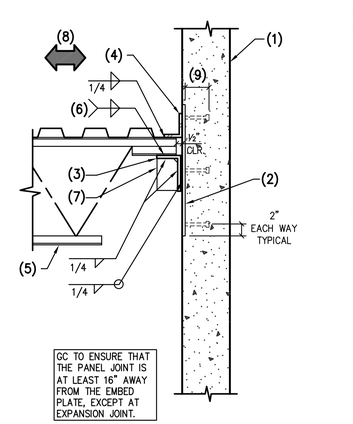
NOTE:
1. GIRDER SHALL BE DESIGNED FOR TOP CHORD AXIAL TENSION OR COMPRESSION (WIND/PER PLAN). LOAD MUST BE TRANSFERRED THROUGH GIRDER SEAT.
2. GIRDER SHALL BE WELDED AT WALL END ONLY. DO NOT WELD AT COLUMN
3. SEE DETAIL 317 WHEN CONNECTION OCCURS. AT A PANEL JOINT.

318 STEEL JOIST GIRDER TO PRECAST CONCRETE WALL
NO SCALE



NOTES:
1. STEEL DECK.
2. CONT. STEEL LEDGER.
3. CONCRETE WALL.
4. TS 6x6x3/8"x2'-5" LONG.
5. STEEL PLATE 1/2"x1"x14" WITH 6- 1"ø HEADED STUDS.
6. STEEL ANGLE 8x6x1/2" (LLV).
7. STEEL JOIST.
8. PANEL JOINT.
9. 3/4"ø ASTM A36 THRU BOLTS IN 1 1/2" LONG SLOTTED HOLE, PARALLEL TO WALL.
10. 3/8"x2".
11. 4.5" EMBEDMENT AT SHOWROOM AND 7" EMBEDMENT AT WAREHOUSE.

315 STEEL JOIST TO CONCRETE WALL AT PANEL JOINT
NO SCALE



GC TO ENSURE THAT THE PANEL JOINT IS AT LEAST 16" AWAY FROM THE EMBED PLATE, EXCEPT AT EXPANSION JOINT.

NOTES:
1. PRECAST CONCRETE WALL.
2. STEEL PLATE 1"x12"x24" WITH 6 - 1" ø HEADED STUDS.
3. STEEL ANGLE 6"x6"x1/2"x 0'-8" LONG (LLV). AT K JOISTS, USE 8"x8"x1/2"x0'-8" LONG (LLV) STEEL ANGLE AT LH JOISTS.
4. CONTINUOUS STEEL LEDGER
5. STEEL JOIST.
6. 3/8"x2".
7. 5/16" STEEL STIFFENER AT K JOISTS 3/8" STEEL STIFFENER AT LH JOISTS.
8. JOIST MFG TO DESIGN JOIST FOR 7K (SERVICE, WIND/ SEISMIC AT WAREHOUSE) AND 6K (SERVICE, WIND/ SEISMIC AT SHOWROOM). LOAD TO TRANSFER THROUGH JOIST SEAT.
9. 4.5" EMBEDMENT AT SHOWROOM AND 7" EMBEDMENT AT WAREHOUSE.

314 STEEL JOIST TO PRECAST CONCRETE WALL
NO SCALE

Butler Design Group Inc.
architects & planners
5017 East Washington St. #107
Phoenix, Arizona 85034
Phone 602-957-1800

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COLORADO SPRINGS, COLORADO

Case #:
Plan Check #:
Date: 10/15/2024
Revisions:

Project Number: 21002
Drawn By: PKA
Title: ROOF FRAMING DETAILS

S602

PK ASSOCIATES, LLC
6900 E. Belleview Ave. #200
Greenwood Village, Colorado 80111
Phone: (720) 799-1058
Email: cadd@pkastructural.com
Website: www.pkastructural.com

Butler Design Group Inc.
architects & planners
5017 East Washington St. #107
Phoenix, Arizona 85034
Phone 602-957-1800

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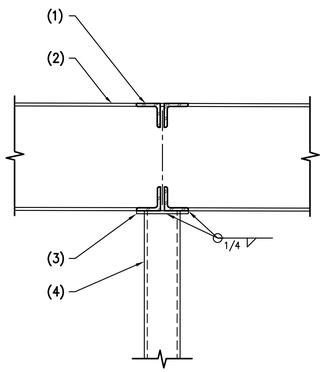
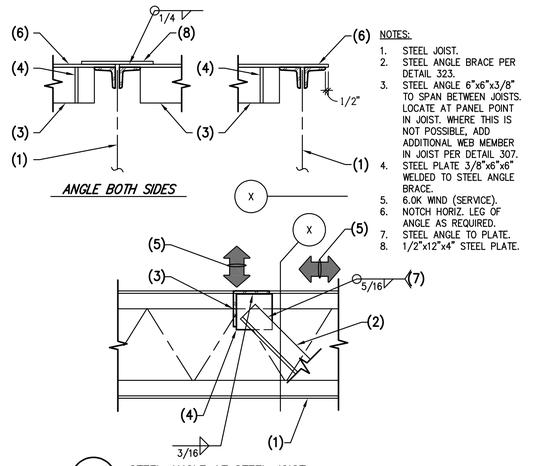
NOTES:
1. STEEL JOIST.
2. STEEL BEAM.
3. 1/2" CAP PLATE.
4. POST PER PLAN



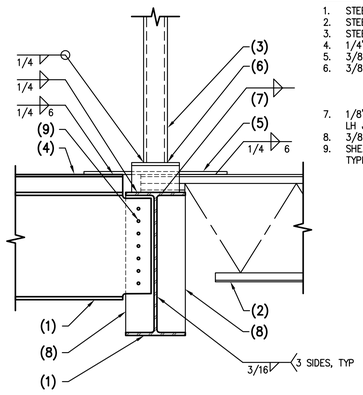
331 STEEL JOISTS AT STEEL COLUMN
NO SCALE

NOTES:
1. STEEL JOIST.
2. STEEL ANGLE BRACE PER DETAIL 323.
3. STEEL ANGLE 6"x6"x3/8" TO SPAN BETWEEN JOISTS. LOCATE AT PANEL POINT IN JOIST. WHERE THIS IS NOT POSSIBLE, ADD ADDITIONAL WEB MEMBER IN JOIST PER DETAIL 307.
4. STEEL PLATE 3/8"x6"x6" WELDED TO STEEL ANGLE BRACE.
5. 6.0K WIND (SERVICE).
6. NOTCH HORIZ. LEG OF ANGLE AS REQUIRED.
7. STEEL ANGLE TO PLATE.
8. 1/2"x12"x4" STEEL PLATE.



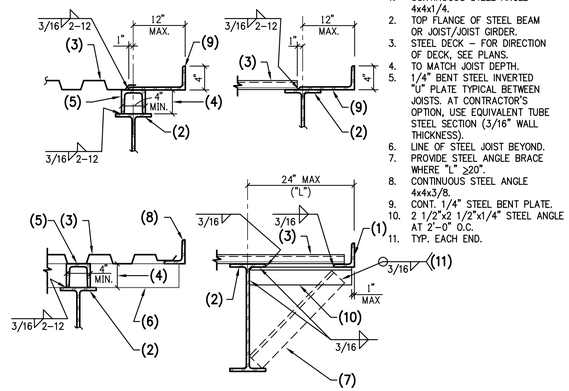
328 STEEL ANGLE AT STEEL JOIST
NO SCALE

NOTES:
1. STEEL BEAM.
2. STEEL JOIST.
3. STEEL POST.
4. 1/4" BENT U STEEL PLATE.
5. 3/8"x4" WIDE STEEL PLATE.
6. 3/8" STEEL BENT PLATE
   8" / 5" / 5"
7. 1/8" AT K JOISTS; 1/4" AT LH JOISTS.
8. 3/8" STIFFENER PLATE.
9. SHEAR CONNECTION PER TYPICAL DETAIL.



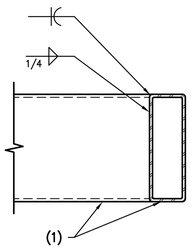
325 STEEL JOIST AND STEEL BEAM AT STEEL GIRDER
NO SCALE

NOTES:
1. CONTINUOUS STEEL ANGLE 4x4x1/4.
2. TOP FLANGE OF STEEL BEAM OR JOIST/JOIST GIRDER.
3. STEEL DECK – FOR DIRECTION OF DECK, SEE PLANS.
4. TO MATCH JOIST DEPTH.
5. 1/4" BENT STEEL INVERTED "U" PLATE TYPICAL BETWEEN JOISTS. AT CONTRACTOR'S OPTION, USE EQUIVALENT TUBE STEEL SECTION (3/16" WALL THICKNESS).
6. LINE OF STEEL JOIST BEYOND.
7. PROVIDE STEEL ANGLE BRACE WHERE "L" ≥20".
8. CONTINUOUS STEEL ANGLE 4x4x3/8.
9. CONT. 1/4" STEEL BENT PLATE.
10. 2 1/2"x2 1/2"x1/4" STEEL ANGLE AT 2'–0" O.C.
11. TYP. EACH END.



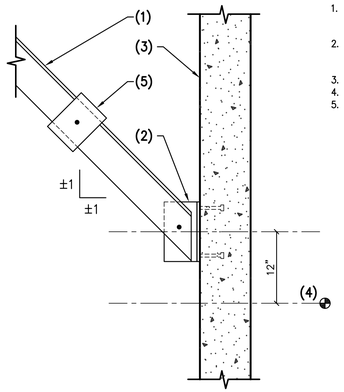
322 TYPICAL DECK EDGE AT ROOF
NO SCALE

NOTES:
1. STEEL BEAM.
2. 1/4" THICK STEEL END CAP – TYPICAL AT OPEN ENDS.



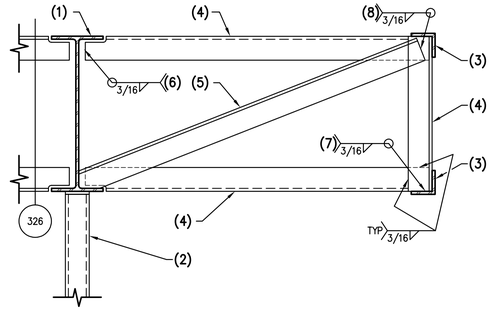
332 STEEL BEAM TO STEEL BEAM
NO SCALE

NOTES:
1. 2– STEEL ANGLES 6"x6"x3/8" BRACE WITH 1– 1"ø BOLT AT EACH END.
2. STEEL ANGLE 3/8"x6"x6"x16" LONG WITH 2– 3/4"ø ANCHORS AT 7" O.C.
3. CONCRETE TILT UP PANEL.
4. BUILDING CLEAR HEIGHT
5. 3/8"x8"x6" STEEL PLATE WITH 1– 1"ø THROUGH BOLT. LOCATE PLATES AT 10'–0" O.C. MAX.



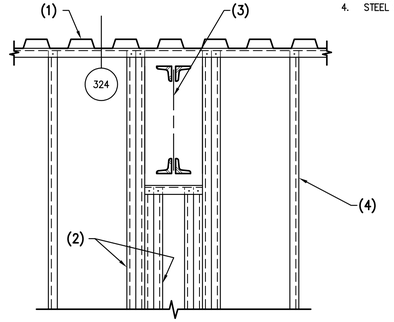
329 STEEL ANGLE BRACE AT CONCRETE TILT UP WALL
NO SCALE

NOTES:
1. STEEL BEAM.
2. STEEL POST.
3. CONT. L4"x4"x1/4"
4. L4"x4"x1/4".
5. L3"x3"x1/4" STEEL BRACE.
6. HORIZ. ANGLE TO JOIST, TYP.
7. VERT. ANGLE TO CONT. ANGLE, TYP.
8. ANGLE BRACE TO VERT. ANGLE, TYP.



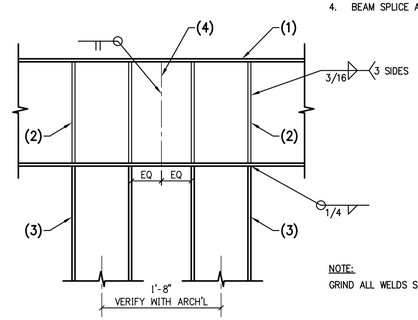
326 CLOSURE ANGLES AT CLERESTORY
NO SCALE

NOTES:
1. STEEL DECK PER PLAN. ATTACH PER GSN.
2. DOUBLE STUDS AT EACH END OF OPENING.
3. STEEL JOIST OR JOIST GIRDER AS OCCURS.
4. STEEL STUD WALL PER PLAN.



323 NON–BEARING STEEL STUD WALL AT STEEL JOIST OR JOIST GIRDER
NO SCALE

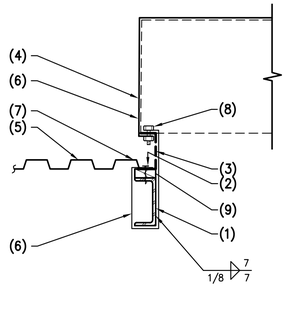
NOTES:
1. STEEL BEAM.
2. 3/8" STEEL STIFFENER PLATE EACH SIDE OF BEAM WEB.
3. STEEL COLUMN.
4. BEAM SPLICE AS REQUIRED.



NOTE:
GRIND ALL WELDS SMOOTH.

333 STEEL BEAM TO STEEL COLUMNS
NO SCALE

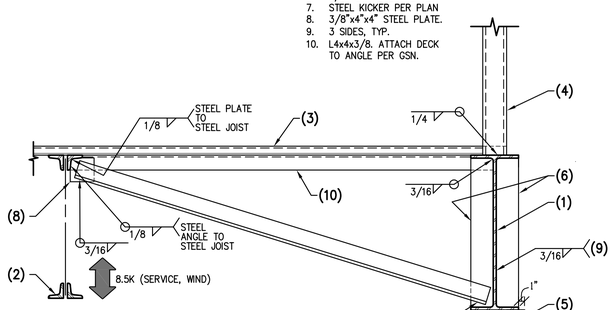
NOTES:
1. STEEL CHANNEL FOR MECHANICAL UNIT SUPPORT PER OR DETAIL 306.
2. #12 SCREWS AT 6" O.C.
3. CURB FOR MECHANICAL UNIT BY OTHERS.
4. MECHANICAL UNIT BY OTHERS.
5. STEEL DECK PER PLAN.
6. 2"x20GA STRAPS. WRAP AROUND UNIT AND DOWN AROUND STEEL CHANNEL. MINIMUM 2 PER SIDE PER UNIT (MIN. 4 TOTAL).
7. PROVIDE A SLOT IN THE DECK TO ALLOW STRAP TO GO THROUGH.
8. 3/8" BOLT WITH LOCK NUT AND FENDER WASHER TO CONNECT STRAPS TO BASE RAIL.
9. WOOD SHIM AS REQUIRED BETWEEN CURB AND STEEL CHANNEL.



NOTE:
STRAP CAPACITY EACH = 1,650 LBS. (SERVICE); 2,500 LBS. (ULTIMATE).

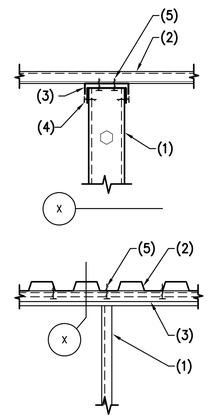
330 MECHANICAL EQUIPMENT TIE DOWN
NO SCALE

NOTES:
1. STEEL BEAM.
2. STEEL JOIST.
3. STEEL DECK.
4. STEEL POST.
5. L3x3x1/4" CONTINUOUS.
6. 3/8" STIFFENER PLATE.
7. STEEL KICKER PER PLAN
8. 3/8"x4"x4" STEEL PLATE.
9. 3 SIDES, TYP.
10. L4x4x3/8. ATTACH DECK TO ANGLE PER GSN.



327 STEEL POST AT STEEL BEAM
NO SCALE

NOTES:
1. STEEL STUD WALL.
2. STEEL DECK PER PLAN.
3. DEFLECTION TRACK TO ALLOW VERTICAL MOVEMENT – USE 2– 16GA TRACKS. BOTTOM TRACKS TO HAVE 2– LEGS (ALLOW 3/4" DEFLECTION).
4. #10 x3/4" LONG SELF–TAPPING SCREW EACH SIDE.
5. 2– #10 SCREWS AT 12" O.C.



324 STEEL STUD WALL AT ROOF
NO SCALE

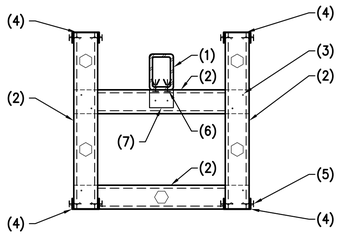
Case #:
Plan Check #:
Date: 10/15/2024
Revisions:

Project Number: 21002
Drawn By: PKA
Title: ROOF FRAMING DETAILS

S603

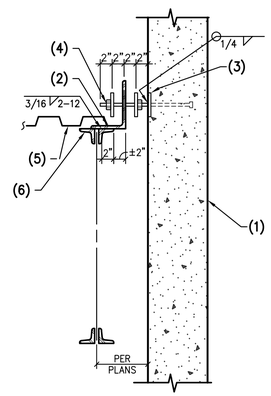
PK ASSOCIATES, LLC
6900 E. Belleview Ave. #200
Greenwood Village, Colorado 80111
Phone: (720) 799-1058
Email: cadd@pkastructural.com
Website: www.pkastructural.com

NOTES:
1. STEEL BEAM.
2. 3625162-43 STEEL STUDS AT 16" O.C.
3. 2- #10 SCREWS, TYPICAL.
4. CONTINUOUS STEEL TRACK, SIZE AND GUAGE TO MATCH STUD.
5. #10 SCREW EACH SIDE AT EVERY STUD.
6. 2 HILTI XU PIN AT EVERY STUD.
7. 3"x3"x14 GA. SLIP ANGLE AT EACH STUD.



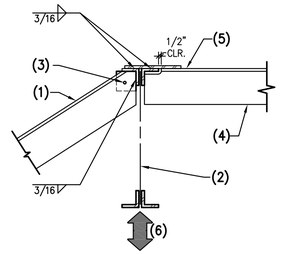
342 STEEL STUDS AT STEEL BEAM
NO SCALE

NOTES:
1. PRECAST CONCRETE WALL.
2. CONTINUOUS STEEL LEDGER PER PLANS.
3. 1/2"x4"x12" STEEL EMBED PLATE WITH 2- 1"ø x 7" EMBEDMENT HEADED STUDS AT 8" O.C. LOCATE EMBED PLATES AT 3'-0" O.C.
4. 2- 1 1/2"ø F1554 THREADED RODS WITH PLATE WASHERS ON EACH SIDE IN 5" VERTICALLY SLOTTED HOLES. LOCATE TWO RODS AT EACH EMBED (3'-0" O.C.) W/ 6" ROD SPACING ON EMBED.
5. STEEL DECK. SEE PLAN FOR DIRECTION.
6. STEEL JOIST.



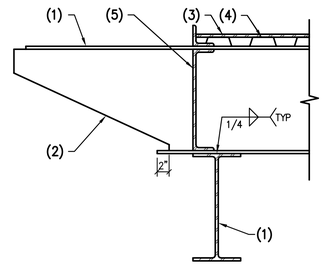
340 STEEL JOIST AT EXPANSION JOINT
NO SCALE

NOTES:
1. STEEL ANGLE BRACE.
2. STEEL JOIST.
3. 6"x6"x1/2" STEEL PLATES WITH 1- 3/4"ø BOLT.
4. STEEL ANGLE 4"x6"x1/4" AT EACH BRACE.
5. ATTACH DECK TO ANGLE PER G.S.N.
6. 4.0k WIND (SERVICE) AT EACH BRACE.



337 STEEL ANGLE BRACE AT STEEL JOIST
NO SCALE

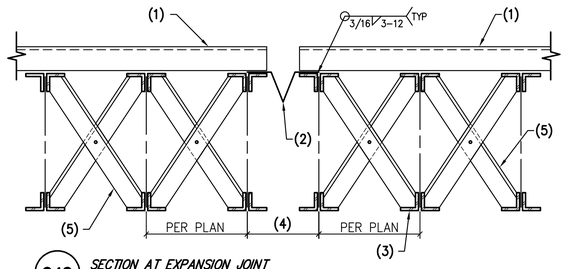
NOTES:
1. STEEL BEAM.
2. TAPER STEEL BEAM PER ARCH'L.
3. 3/4" PLYWOOD AT 339A.
4. STEEL DECK AT 339A.
5. 44" BENT PLATE BETWEEN BEAMS AT 334A.



334 STEEL CANOPY BEAM AT BEAM
334A AS NOTED
NO SCALE

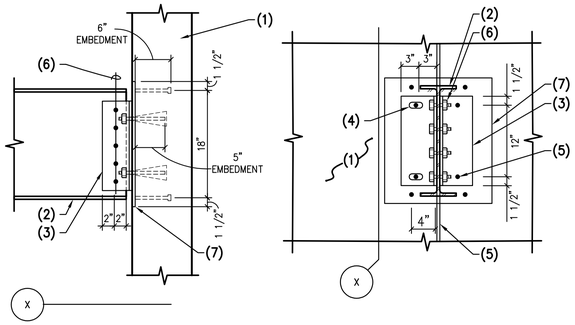
NOTES:
1. STEEL DECK. ATTACH PER GSN.
2. CONT. 12 GA EXPANSION PLATE

W/ 1/8" FILLER WELD MIN.
3. STEEL JOIST.
4. ±10" JOIST MFR. TO VERIFY 4" MIN. CLEARANCE IS MET.
5. CROSS BRIDGING PER JOIST MFR. FOR TWO BAYS ON EACH SIDE OF EXPANSION JOINT.



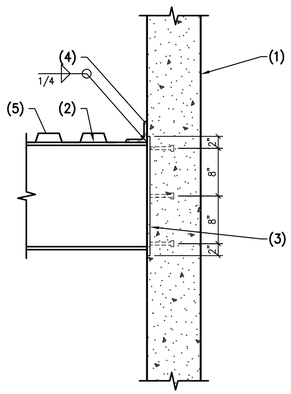
343 SECTION AT EXPANSION JOINT
NO SCALE

NOTES:
1. CONCRETE WALL.
2. STEEL BEAM.
3. 2- 5/16" BENT STEEL PLATE (1 EACH, SIDE OF PANEL JOINT).
4. 2- 3/4"ø EXPANSION ANCHORS IN 1 1/2" HORIZ. SLOTTED HOLES
5. 2- 3/4"ø EXPANSION ANCHOR.
6. FOR SIZE, TYPE AND NUMBER OF BOLTS, SEE TYP. BOLT SCHEDULE.
7. 3/4" STEEL EMBED PLATE W/ 4- 1"ø AUTOMATIC WELDED HEADED STUDS.
8. PANEL JOINT.



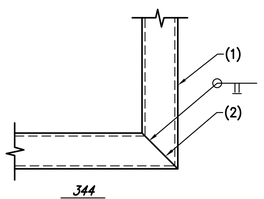
338 CANTILEVERED STEEL BEAM AT CONCRETE TILT PANEL
NO SCALE

NOTES:
1. CONCRETE WALL.
2. STEEL BEAM.
3. 1/2"x20" TALLx8" WIDE WITH 3- 3/4"ø HEADED STUDS.
4. CONTINUOUS L4x2x1/4" AT 337A.
5. STEEL DECK AT 335A.

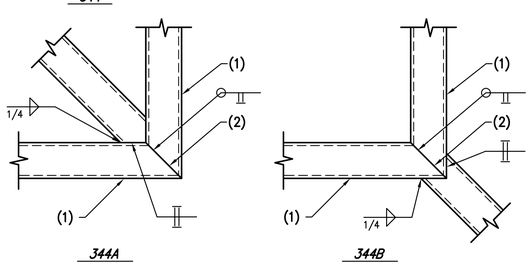


NOTE:
GRIND ALL WELDS SMOOTH.

335 STEEL BEAM AT CONCRETE WALL
335A AS NOTED
NO SCALE

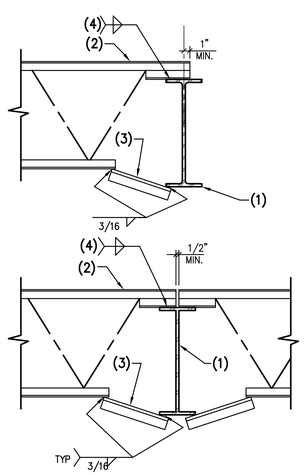


NOTES:
1. STEEL BEAM PER PLAN.
2. MITERED JOINT.



344 MITERED JOINT AT STEEL STAIR
344A 344B AS NOTED
NO SCALE

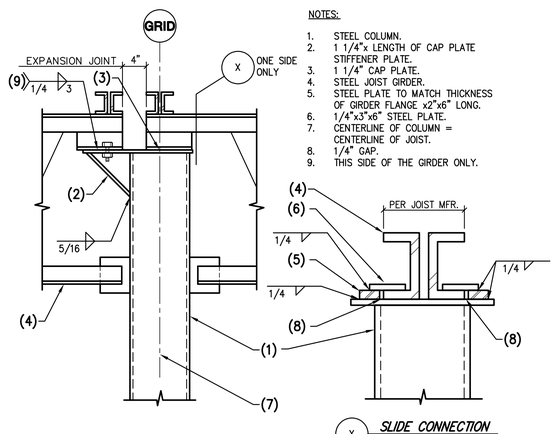
NOTES:
1. STEEL BEAM OR JOIST GIRDER AS OCCURS,
2. STEEL JOIST.
3. STEEL ANGLE BRACE 2 1/2"x 2 1/2"x1/4" AT MIDSPAN OF INTERIOR BEAM AND AT EACH JOIST ALONG PERIMETER.
4. 1/8"x2" AT K JOISTS 1/4"x2" AT LH JOISTS.



NOTE:
STEEL DECK NOT SHOWN FOR CLARITY.

341 STEEL JOISTS AT STEEL BEAM
NO SCALE

NOTES:
1. STEEL COLUMN.
2. 1 1/4"x LENGTH OF CAP PLATE STIFFENER PLATE.
3. 1 1/4" CAP PLATE.
4. STEEL JOIST GIRDER.
5. STEEL PLATE TO MATCH THICKNESS OF GIRDER FLANGE x2"x6" LONG.
6. 1/4"x3"x6" STEEL PLATE.
7. CENTERLINE OF COLUMN = CENTERLINE OF JOIST.
8. 1/4" GAP.
9. THIS SIDE OF THE GIRDER ONLY.



339 EXPANSION JOINT AT STEEL COLUMN
NO SCALE

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architects & planners
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Phoenix, Arizona 85034
Phone 602-957-1800

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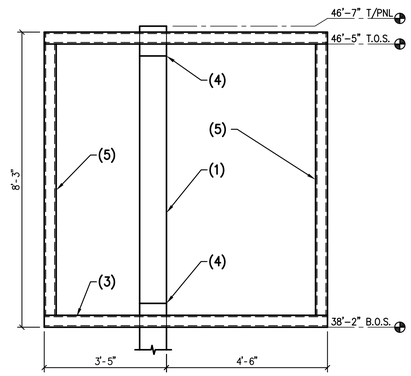
Your LIFESTYLE FURNITURE Store
AMERICAN HEIGHTS & TUTT BOULEVARD
COLORADO SPRINGS, COLORADO

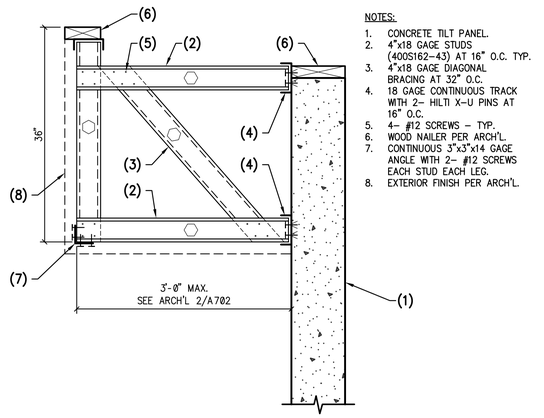
Case #:
Plan Check #:
Date: 10/15/2024
Revisions:

Project Number: 21002
Drawn By: PKA
Title: ROOF FRAMING DETAILS

S604

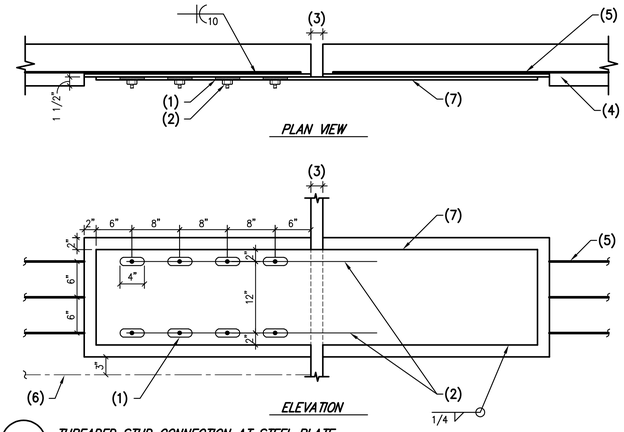
PK ASSOCIATES, LLC
6900 E. Belleview Ave. #200
Greenwood Village, Colorado 80111
Phone: (720) 799-1058
Email: cadd@pkastructural.com
Website: www.pkastructural.com





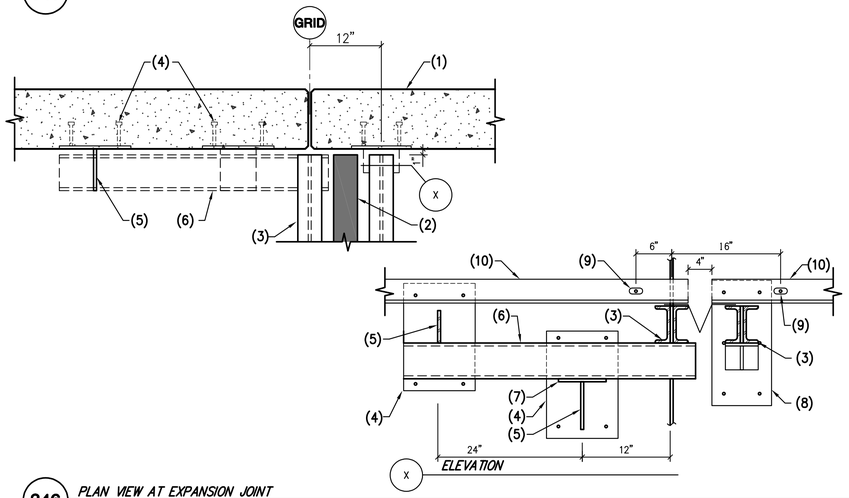
NOTES:
1. CONCRETE TILT PANEL.
2. 4"x18 GAGE STUDS (400S162-43) AT 16" O.C. TYP.
3. 4"x18 GAGE DIAGONAL BRACING AT 32" O.C.
4. 18 GAGE CONTINUOUS TRACK WITH 2- HILTI X-U PINS AT 16" O.C.
5. 4- #12 SCREWS - TYP.
6. WOOD NAILER PER ARCH'L.
7. CONTINUOUS 3"x3"x14 GAGE ANGLE WITH 2- #12 SCREWS EACH STUD EACH LEG.
8. EXTERIOR FINISH PER ARCH'L.

349 BOX BEAM SECTION
NO SCALE



NOTES:
1. 4" LONG SLOTTED HOLES.
2. 2 ROWS OF 4- 1"ø AUTOMATIC WELDED THREADED STUDS.
3. EXPANSION JOINT DIMENSION BY OTHERS.
4. WRAP 6" WITH Z MASTIC.
5. 3- #9x8'-0" AT 6" O.C.
6. TOP OF DECK.
7. 3/4" STEEL PLATE.

345 THREADED STUD CONNECTION AT STEEL PLATE
NO SCALE



NOTES:
1. CONCRETE TILT PANEL WALL.
2. 4" EXPANSION JOINT.
3. STEEL JOIST.
4. STEEL EMBED PLATE 1/2"x12"x18" WITH 4- 3/4"ø H.S.
5. 3/8" STEEL STIFFENER PLATE.
6. HSS 6"x6"x3/8"
7. 3/8"x8"x8".
8. STEEL EMBED PLATE PER DETAIL 314.
9. 3/4"ø ANCHOR BOLT CENTERED IN 1 1/2" LONG SLOTTED HOLE. EXPANSION BOLTS MAY BE USED CONTRACTORS OPTION.
10. STEEL LEDGER PER PLAN.

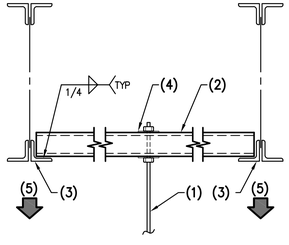
346 PLAN VIEW AT EXPANSION JOINT
NO SCALE

NOTES:
1. CONCRETE PANEL.
2. SEE DETAIL 333.
3. HSS 8x4x1/4" TOP AND BOTTOM OF FIN.
4. 1/2"x12" TALLxWIDTH OF PANEL EMBED PLATE W/ 2- 3/4"ø H.S. AT 9" O.C.
5. HSS6x4x1/4" EMBED PLATE W/ 2- 3/4"ø H.S. AT 9" O.C.

351 ACM SUPPORT AT HIGH CANTILEVERED FIN
NO SCALE

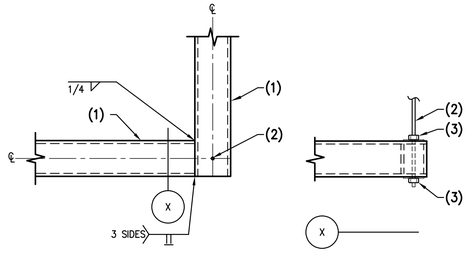
NOTES:
1. CONCRETE TILT PANEL.
2. HSS8x6x1/4"(LSV) AT 6'-0" O.C.
3. 6"x18 GAGE STUDS AT 16" O.C.
4. 18 GAGE CONTINUOUS TRACK WITH 2- HILTI X-U PINS AT 16" O.C.
5. 1/2"x12"x12" STEEL EMBED PLATE WITH 4- 3/4"ø HEADED STUDS AT 9" O.C.
6. CONTINUOUS HSS8x6x1/4"(LSV).

350 HSS SUPPORT AT EIFS POPOUT
NO SCALE



NOTES:
1. 1"ø STEEL TENSION ROD.
2. HSS 4"x3"x3/8" (LSH).
3. STEEL JOIST. PROVIDE ADDITIONAL SUPPORT PER DETAIL 304 AS REQUIRED.
4. 1/4"x3"x3" PLATE WASHER AND LOCK NUT.
5. 2K (DEAD + LIVE).

348 STEEL TENSION ROD AT STEEL JOIST
NO SCALE



NOTES:
1. STEEL BEAM.
2. 1"ø STEEL TENSION ROD.
3. 1/4"x3"x3" PLATE WASHER AND LOCK NUT.

347 PLAN VIEW- STEEL TENSION RODS AT STEEL BEAM
NO SCALE

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architects & planners
5017 East Washington St. #107
Phoenix, Arizona 85034
Phone 602-957-1800

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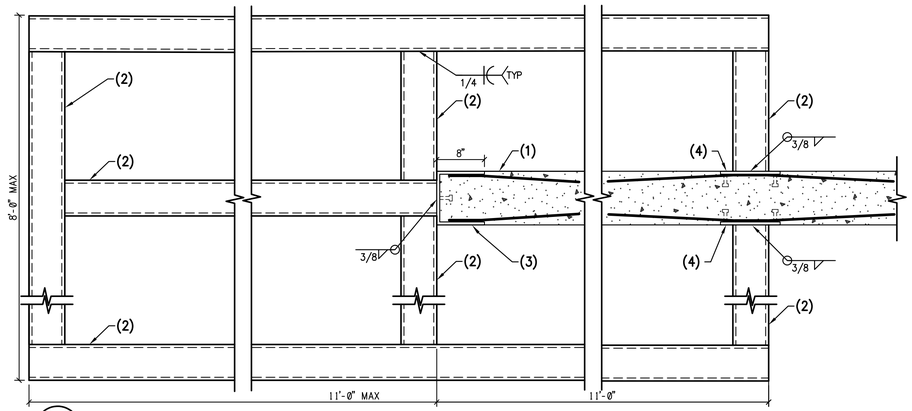
Title: ROOF FRAMING DETAILS

S605

PK ASSOCIATES, LLC
6900 E. Belleview Ave. #200
Greenwood Village, Colorado 80111
Phone: (720) 799-1058
Email: cadd@pkastructural.com
Website: www.pkastructural.com



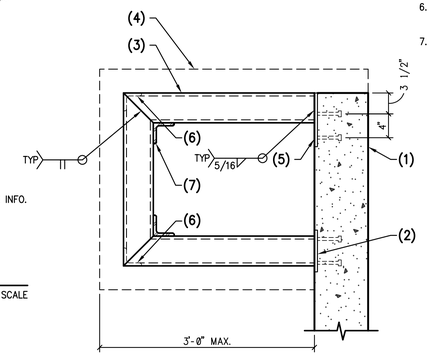
NOTES:
1. CONCRETE TILT PANEL.
2. HSS12x4x3/8" TYP.
3. 1/2"x18" TALL STEEL "U" SHAPED PLATE WITH 2– #6x 8 36 3" BARS AT 8" O.C. EACH 3– 3/4"ø H.S. AT 7" O.C.
4. 1/2"x12"x12" STEEL EMBED PLATE WITH 4– 3/4"ø H.S. AT 9" O.C. AND 2– #6x 8 36 36 3" DOWELS AT 6" O.C.

NOTE:
– SEE 1/A702 FOR MORE INFO.

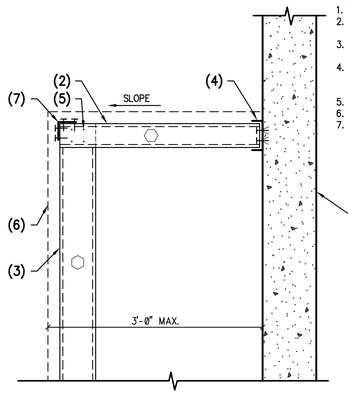
353 PLAN – HSS FRAME AT CANTILEVER SECTION

NO SCALE

NOTES:
1. CONCRETE TILT PANEL.
2. 1/2"x7"x7" STEEL PLATE WITH 4– 3/4"ø HEADED STUDS AT 4" O.C.
3. HSS4x4x1/4 FRAME AT 8'–0" O.C.
4. ACM PANEL AND ATTACHMENT PER ARCH'L.
5. 1/2"x9"x7" STEEL PLATE WITH 4– 3/4"ø HEADED STUDS AT 4" O.C.
6. L3x3x1/4 BETWEEN FRAMES. 3/16" FILLET WELD ALL AROUND.
7. L3x3x1/4 CONTINUOUS.



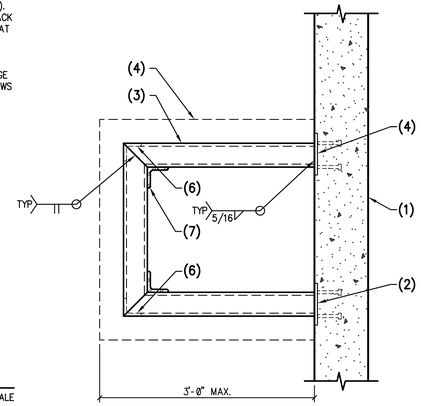
SECTION – HORIZONTAL ACM FRAME SUPPORT AT TOP OF PANEL



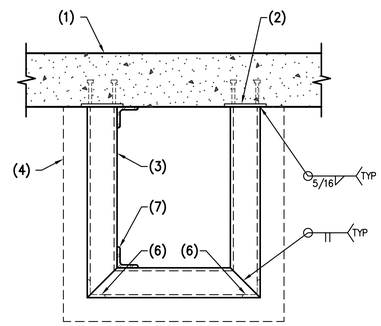
NOTES:
1. CONCRETE TILT PANEL.
2. 4"x18 GAGE STUDS (400S162-43) AT 16" O.C.
3. 6"x18 GAGE STEEL STUDS AT 16" O.C. (600S162-43).
4. 18 GAGE CONTINUOUS TRACK WITH 2– HILTI X-U PINS AT 16" O.C.
5. 4– #12 SCREWS – TYP.
6. FINISH PER ARCH'L.
7. CONTINUOUS 3"x3"x14 GAGE ANGLE WITH 2– #12 SCREWS EACH STUD EACH LEG.

354 STUD FRAMING AT TILT PANEL

NO SCALE



SECTION – HORIZONTAL ACM FRAME SUPPORT



PLAN – VERTICAL ACM FRAME SUPPORT

352 ACM FRAMING SUPPORTS

NO SCALE

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architects & planners
5017 East Washington St. #107
Phoenix, Arizona 85034
Phone 602-957-1800

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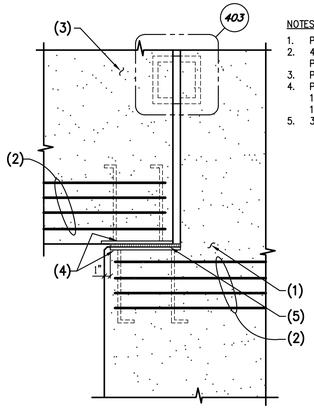
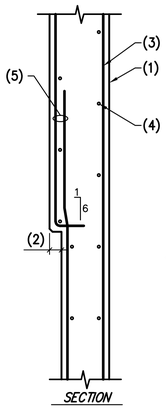
PK ASSOCIATES, LLC
6900 E. Belleview Ave. #200
Greenwood Village, Colorado 80111
Phone: (720) 799-1058
Email: cadd@pkastructural.com
Website: www.pkastructural.com

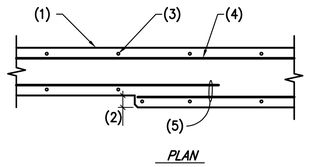


NOTES:
1. PRECAST CONCRETE WALL.
2. 4– #3 AT 3" O.C. AT BEARING PLATE AROUND BOTH BENT BARS.
3. PRECAST CONCRETE LINTEL PANEL.
4. PLATE 1/2" x PANEL THICKNESS x 12" LONG WITH 2– 3/4"ø x 12" LONG ANCHORS AT 6" O.C.
5. 3/4" ELASTOMERIC BEARING PAD.

409 *PRECAST SPANDREL PANEL TO PRECAST WALL PANEL*
NO SCALE



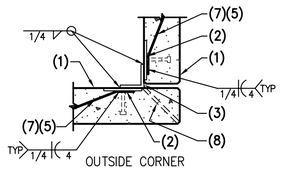
SECTION



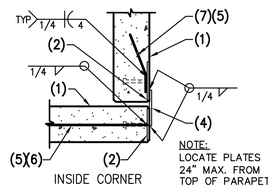
PLAN

NOTES:
1. PRECAST CONCRETE PANEL.
2. 2" RECESS IN PANEL.
3. VERTICAL REINFORCING PER PANEL TYPES.
4. HORIZONTALLY REINFORCED PER PLAN TYPES.
5. LAP PER TYP. DETAIL.

406 *RECESS IN CONCRETE PANEL*
NO SCALE

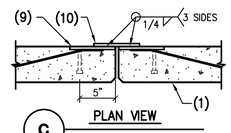


OUTSIDE CORNER
A *PLAN VIEW*



INSIDE CORNER
B *PLAN VIEW*

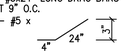
NOTE:
LOCATE PLATES 24" MAX. FROM TOP OF PARAPET, 18" BELOW ROOF LINE, AND AT MID–HEIGHT OF PANEL – TYP. U.N.O.



C *PLAN VIEW*

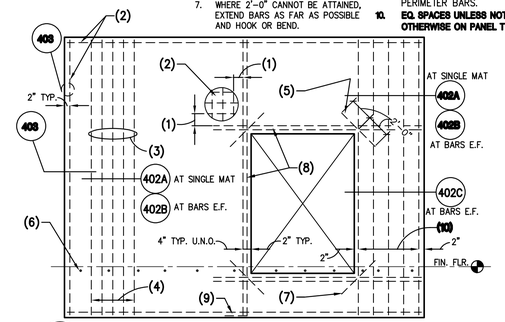
403 *TYPICAL – PRECAST PANEL TO PANEL CONNECTION*
NO SCALE

NOTES:
1. PRECAST CONCRETE PANEL.
2. STEEL EMBED 3/8"x6"x12" WITH 2– 3/4"ø HEADED STUDS AT 7" O.C.
3. STEEL ANGLE 4"x4"x5/16"x8" LONG.
4. STEEL PLATE 3/8"x7"x10" (LLH).
5. NOT REQ'D ABOVE ROOF LINE.
6. 2–#5x24" LONG DRAG BARS AT 9" O.C.
7. 2– #5 x



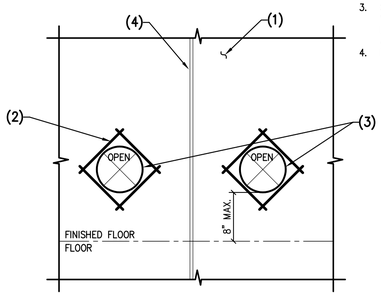
DRAG BARS AT 9" O.C.
8. MITERED CORNER WHERE SHOWN ON PANEL ELEV.
9. STEEL PLATE 3/8"x6"x10" WITH 3 #6 DOWELS x 36" LONG AT 4" O.C. & 2– 3/4"øx6" LONG HEADED STUDS, LOCATE AT 18" MAX. BELOW ROOF AND AT MIDHEIGHT OF PANEL U.N.O. ON PANEL ELEVATIONS.
10. STEEL PLATE 1/4"x8"x8".

NOTES:
1. TYPICAL MAT SPACING OR LESS.
2. TYPICAL MAT REINF. SEE PANEL ELEVATION – MAY BE OMITTED WHERE SPECIAL REINF. IS SPECIFIED ON PANEL TYPE.
3. ADDITIONAL VERT. REINF. – SEE PANEL ELEVATIONS.
4. SEE PANEL TYPES FOR SPACING.
5. 1– #5 x 4'–0" LONG CORNER BAR – INSTALL IN CENTER OF PANEL. (USE 2– #4x6'–0" WHERE OPENING WIDTH IS GREATER THAN 10'–0" AND 2– #5x8'–0" AT OPENINGS GREATER THAN 16'–0").
6. SLAB DOWELS PER DETAIL 103. 2 MIN FROM EDGE TO OPENING. FIRST DOWEL 6" FROM JAMB OR EDGE.
7. WHERE 2'–0" CANNOT BE ATTAINED, EXTEND BARS AS FAR AS POSSIBLE AND HOOK OR BEND.
8. TYPICAL OPENING PERIMETER BARS 2 #5 (1 EACH FACE).
9. 6" HOOK AT OPENING PERIMETER BARS.
10. **EQ. SPACES UNLESS NOTED OTHERWISE ON PANEL TYPES.**



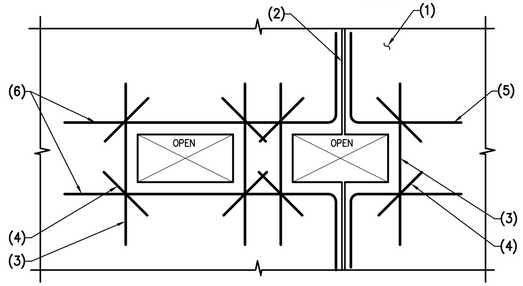
401 *TYPICAL TILT PANEL REINFORCING PLACEMENT*
NO SCALE

NOTES:
1. PRECAST CONCRETE PANEL.
2. 4– #4 x 2'–0" DIAGONAL BARS – CENTERED.
3. OPENING FOR ROOF DRAIN – VERIFY EXACT SIZE AND LOCATION REQ'D WITH PLUMBING AND ARCH'L DRAWINGS.
4. PANEL JOINT.



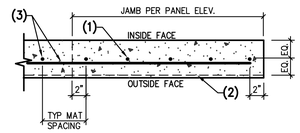
404 *TYPICAL REINFORCING AROUND SMALL OPENING IN PANEL*
NO SCALE

NOTES:
1. PRECAST CONCRETE PANEL.
2. PANEL JOINT.
3. 1– #4 x 4'–0" LONG.
4. 1– #4 x 2'–0" LONG CORNER BAR.
5. PERIMETER BAR BENT TO EXTEND 1'–6" BEYOND OPENING (OR 2" SHORT OF ADJACENT OPENING AS OCCURS).
6. 1– #4 EXTEND 1'–6" MIN. BEYOND OPENING.



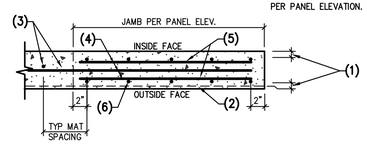
407 *TYPICAL REINFORCING AT SCUPPER OPENING AT PANEL JOINT*
NO SCALE

NOTES:
1. VERTICAL REINFORCING PER PANEL ELEVATION.
2. 1/2" REVEAL – SEE ARCH'L.
3. TYPICAL MAT REINFORCING.



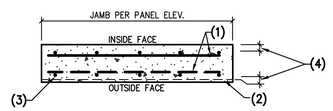
A *SINGLE MAT REINFORCING PLACEMENT DIAGRAM*
JAMB CONDITION SHOWN – INTERIOR SIMILAR
NO SCALE

NOTES:
1. 1" CLEAR FOR #8 BARS AND SMALLER 1 1/2" CLEAR FOR #9 BARS.
2. 1/2" REVEAL – SEE ARCH'L.
3. TYPICAL MAT REINFORCING.
4. STAGGER LOCATIONS OF ALL HORIZONTAL REINFORCING.
5. #4 BOLSTER BARS AT 4'–0" O.C. EACH LAYER.
6. VERTICAL REINFORCING EACH FACE PER PANEL ELEVATION.



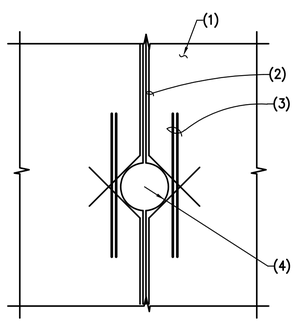
B *DOUBLE MAT REINFORCING PLACEMENT DIAGRAM*
JAMB CONDITION SHOWN – INTERIOR CONDITION SIMILAR
NO SCALE

NOTES:
1. DOUBLE ROW OF TYPICAL HORIZONTAL REINFORCING STAGGERED EACH FACE – TYP.
2. 1/2" REVEAL – SEE ARCH'L.
3. VERTICAL REINFORCING EACH FACE PER PANEL ELEVATION.
4. 1" CLEAR FOR #8 BARS AND SMALLER 1 1/2" CLEAR FOR #9 BARS.



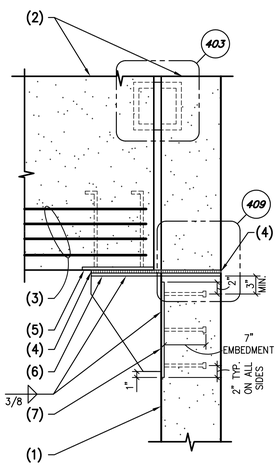
C *DOUBLE MAT REINFORCING PLACEMENT DIAGRAM*
JAMB CONDITION SHOWN INTERIOR CONDITION SIMILAR
NO SCALE

402 *TYPICAL MAT REINFORCING DETAILS*
NO SCALE



NOTES:
1. PRECAST CONCRETE PANEL.
2. PERIMETER BAR PER PANEL ELEVATION.
3. 2– #4 x 2'–0" LONG.
4. 4" RADIUS.

405 *TYPICAL REINFORCING AROUND SMALL OPENING IN PANEL*
NO SCALE



NOTES:
1. CONCRETE TILT PANEL .
2. SPANDREL PANEL. SEE PANEL ELEVATIONS.
3. 4– #3 AT 3" O.C. AT BEARING PLATE AROUND BOTH BENT BARS.
4. 3/4" ELASTOMERIC BEARING
5. PLATE 1/2" x PANEL THICKNESS x 12" LONG W/ 2– 3/4"ø x 12" LONG ANCHORS AT 6" O.C.
6. 3/4" THICK x PANEL WIDTH x 13" LONG STEEL PLATE W/ 3– 1" THICK GUSSETS SPACED AT 5" O.C.
   3/4" THICK x PANEL WIDTH x 13" LONG STEEL PLATE W/ 3– 1"
7. 1"x16"x24" STEEL EMBED PLATE W/ 6– 1"ø HEADED STUDS.

408 *CONCRETE SPANDREL PANEL CONCRETE PANEL*
NO SCALE

Butler Design Group Inc.
architects & planners
5017 East Washington St. #107
Phoenix, Arizona 85034
Phone 602-957-1800

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Case #:
Plan Check #:
Date: 10/15/2024
Revisions:

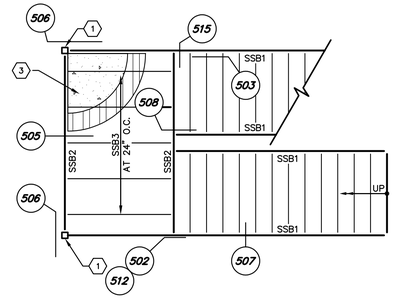
Project Number: 21002
Drawn By: PKA
Title: TILT PANEL DETAILS

S701

PLAN KEYNOTES:

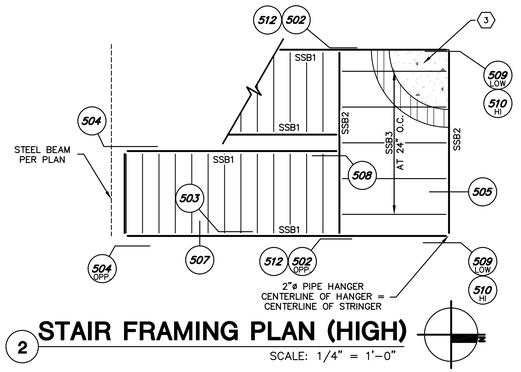
1. HSS 4x4x5/16 STEEL COLUMN.
2. FLOOR BEAM.
3. 2" CONCRETE TOPPING (f'c = 3500 PSI) OVER 1 1/2"x20 GA. STEEL DECK (3 1/2 TOTAL DEPTH) – ATTACH PER GSN.
4. MEZZANINE FLOOR PER PLANS.

PK ASSOCIATES, LLC
6900 E. Belleview Ave. #200
Greenwood Village, Colorado 80111
Phone: (720) 799–1058
Email: cadd@pkastructural.com
Website: www.pkastructural.com



1 STAIR FRAMING PLAN (LOW)

SCALE: 1/4" = 1'–0"



2 STAIR FRAMING PLAN (HIGH)

SCALE: 1/4" = 1'–0"

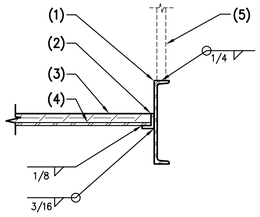
STEEL STAIR BEAM (SSB) SCHEDULE	
MARK	BEAM SIZE
SSB1	CHANNEL C12 X 20.7
SSB2	CHANNEL C8 X 18.75
SSB3	ANGLE 4" X 4" X 1/4"

PERFORMANCE SPECIFICATIONS FOR STAIRS:

1. STAIRS SHALL BE DESIGNED FOR SELF WEIGHT PLUS A LIVE LOAD EQUAL TO 100 PSF. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS WITH DESIGN CALCULATIONS SEALED BY A REGISTERED ENGINEER FOR REVIEW PRIOR TO MFR.
2. LANDING PANS SHALL BE 12 GAGE MINIMUM. TREAD PANS SHALL BE 14 GAGE MINIMUM. CONCRETE FILL SHALL BE REINFORCED WITH 6x6 – W1.4 x W1.4 W.W.F.
3. FOR ACTUAL LANDING AND STAIR PAN CONFIGURATIONS, SEE ARCHITECTURAL DRAWINGS.

501 TYPICAL STEEL STAIR BEAM SCHEDULE AND NOTES

NO SCALE

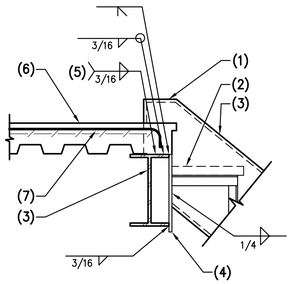


NOTES:

1. STEEL STAIR BEAM.
2. 2x2x1/4" STEEL ANGLE.
3. CONCRETE TOPPING.
4. STEEL PAN.
5. GUARDRAIL PER ARCHITECTURAL.

507 STEEL PAN TO STEEL BEAM

NO SCALE

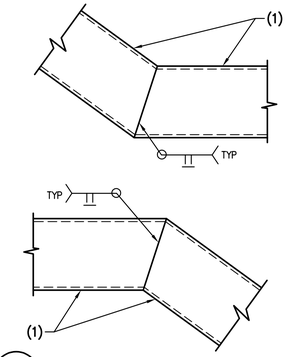


NOTES:

1. 3/16" END PLATES – BUTT WELD ALL AROUND.
2. FOR TREADS AND RISERS, SEE ARCH'L. DRAWINGS.
3. STEEL BEAM.
4. PLATE 3/8"x6".
5. BEAM TO BEAM.
6. CONCRETE OVER STEEL DECK FOR DIRECTION OF DECK – SEE PLAN.
7. #4 x 24" x AS REQUIRED AT 24" O.C.

504 STEEL BEAM TO STEEL BEAM AT CONCRETE LANDING

NO SCALE



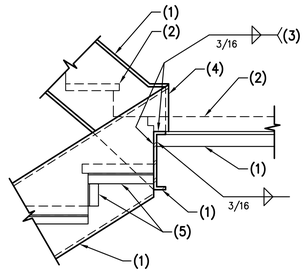
NOTES:

1. STEEL STAIR BEAM.

NOTE:
FOR CLARITY, STAIR TREADS, RISERS AND LANDING NOT SHOWN.

502 TYPICAL SPLICE AT STEEL BEAM

NO SCALE

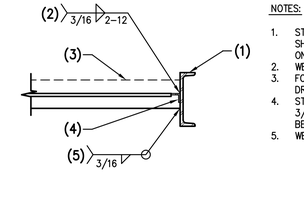


NOTES:

1. STEEL STAIR BEAM.
2. FOR TREADS, RISERS AND LANDING, SEE ARCH'L.
3. AT UP BEAM ALSO.
4. 3/16" CLOSURE PLATES BETWEEN BEAMS AND AT EXPOSED ENDS.
5. ANGLE 1 1/4"x1 1/4"x 3/16" – TYP.

508 STEEL BEAM CONNECTION AT LANDING

NO SCALE

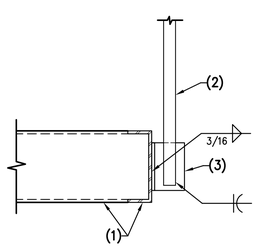


NOTES:

1. STEEL STAIR BEAM (CHANNEL SHOWN, USE T.S. WHERE SHOWN ON STAIR PLANS).
2. WELD ANGLE TO BEAM.
3. FOR LANDING, SEE ARCH'L DRAWINGS.
4. STEEL ANGLE 1 1/4"x1 1/4"x 3/16" TYPICAL BETWEEN BEAMS.
5. WELD BEAM TO BEAM.

505 STAIR LANDING AT STEEL BEAM

NO SCALE

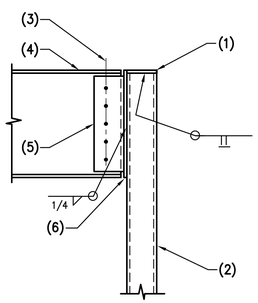


NOTES:

1. STEEL STAIR BEAM.
2. 2"ø PIPE HANGER.
3. 5 1/2"x5 1/2"x1/2" X 8" LONG STEEL ANGLE.

509 STEEL CHANNEL AT PIPE HANGER

NO SCALE

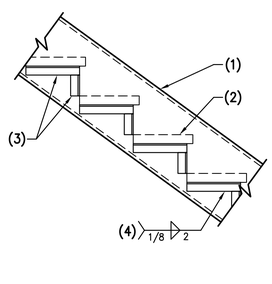


NOTES:

1. 1/2" CAP PLATE.
2. STEEL COLUMN.
3. FOR SIZE, TYPE AND NUMBER OF BOLTS, SEE TYPICAL BOLT SCHEDULE.
4. STEEL BEAM.
5. 3/8" STEEL SHEAR PLATE.
6. 1/2" THICK STEEL PLATE x BEAM DEPTH x 1/2" LESS THAN COLUMN WIDTH.

506 STEEL BEAM TO STEEL COLUMN CONNECTION

NO SCALE



NOTES:

1. STEEL STAIR BEAM.
2. FOR TREADS AND RISERS, SEE ARCHITECTURAL DWGS.
3. ANGLE 1 1/4"x1 1/4"x3/16" TYPICAL.
4. WELD EACH END OF EACH ANGLE – TYPICAL.

503 TYPICAL STEEL PANS TO STEEL BEAM

NO SCALE

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Phoenix, Arizona 85034
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Case #:
Plan Check #:
Date: 10/15/2024
Revisions:

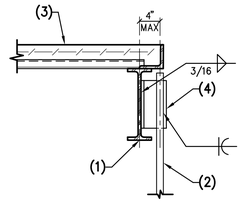
Project Number: 21002
Drawn By: PKA
Title: STAIR FRAMING PLANS & DETAILS

S801

PK ASSOCIATES, LLC
6900 E. Belleview Ave. #200
Greenwood Village, Colorado 80111
Phone: (720) 799-1058
Email: cadd@pkastructural.com
Website: www.pkastructural.com

NOTES:

1. STEEL BEAM.
2. 2"ø PIPE HANGER.
3. CONCRETE SLAB OVER STEEL DECK. FOR DIRECTION OF DECK SEE PLANS.
4. 5 1/2"x5 1/2"x1/2"x8" LONG STEEL ANGLE.

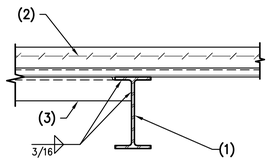


510 *STEEL BEAM AT PIPE HANGER*

NO SCALE

NOTES:

1. STEEL BEAM.
2. CONCRETE OVER STEEL DECK FOR DIRECTION OF DECK SEE PLAN.
3. STEEL ANGLE.

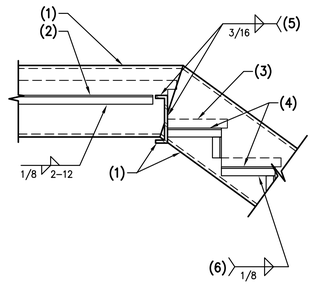


511 *STEEL ANGLE TO STEEL BEAM*

NO SCALE

NOTES:

1. STEEL STAIR BEAM.
2. STEEL ANGLE.
3. FOR TREADS, RISERS AND LANDING, SEE ARCHITECTURAL DRAWINGS.
4. ANGLE 1 1/4"x1 1/4"x3/16" – TYPICAL.
5. WELD BEAM TO BEAM.
6. WELD EACH END OF EACH ANGLE – TYPICAL.



512 *STEEL BEAM AT STEEL LANDING PAN*

NO SCALE

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Phoenix, Arizona 85034
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S802