

ABBREVIATIONS

A.B. ANCHOR BOLT	FLG. FLANGE	P/C. PRECAST CONCRETE
ABV. ABOVE	FLR. FLOOR	PERP. PERPENDICULAR
ADD. ADDITIONAL	F.N. FIELD/FACIAL	PL. PLATE
ADJ. ADJACENT	F.O.C. FACE OF CONCRETE	PLAM. PARALAM BEAM
ALT. ALTERNATE	F.O.M. FACE OF MASONRY	PLY. PLYWOOD
ARCH. ARCHITECT	F.O.S. FACE OF STUD	P.S.F. POUNDS PER SQUARE FOOT
ARCHL. ARCHITECTURAL	F.S. FACE OF WALL	P.S.I. POUNDS PER SQUARE INCH
BLW. BELOW	FRM. FRAME	P.T. PRESSURE TREATED
B.F. BRACED FRAME	FRM. FRAMING	P.T.D.F. PRESSURE TREATED DOUGLAS FIR
BLDG. BUILDING	F.S. FAR SIDE	PT. POSTTENSIONED
BLK. BLOCK	FTD. FOOT(FEET)	P/S. PRE-STRESSED
BLKG. BLOCKING	FT(F) FIRE-RETARDANT TREATED	QTY. QUANTITY
BLM. BEAM	FTD. DOUGLAS FIR	RAD. (R) RADIUS
B.N. BOUNDARY NAILING	FTD. FOOTING	REF. REFERENCE
B.O.F. BOTTOM OF FOOTING	GA. GAUGE	REIN. REINFORCEMENT(ING)
BR. BRACE	GALV. GALVANIZED	REQD. REQUIRED
BRG. BRIDGE(ING)	GB. GRADE BEAM	M.F. MOMENT FRAME
BRG. BEARING	GLS. GLUED LAMINATED BEAM	R.O. ROUGH OPENING
(B) BOTTOM	GRD. GRADE	RO.S. ROUGH SAWN
BTW. BETWEEN	GYP. GYPSUM WALLBOARD	R.S. RE-SAWN
C. CAMBERED	HD. HOLD DOWN	SCH. SCHEDULE
CANT. CANTILEVERED	HDR. HEADER	SHR. SHEAR
C.F. CUBIC FEET(FOOT)	HGR. HANGER	SHT. SHEET
C.G. CENTER OF GRAVITY	IE. INVERT ELEVATION	SM. SIMILAR
C.I.P. CAST IN PLACE	(H) HORIZONTAL	SKW. SKEW(ED)
C.J. CONSTRUCTION JOINT	HSS. HIGH STRENGTH BOLT	SPEC. SPECIFICATION(S)
CL. CENTER LINE	HSS. HOLLOW STRUCTURAL SECTION	SQ. SQUARE
CLG. CEILING	HT. HEIGHT	SS. SELECT STRUCTURAL
CLR. CLEAR	ID. INSIDE DIAMETER	STD. STANDARD
CMU. CONC. MASONRY UNIT	IE. INVERT ELEVATION	STR. STRONG
COL. COLUMN	IF. INSIDE FACE	STGR. STAGGERED
CONC. CONCRETE	IN.(") INCH(S)	STIFF. STIFFENER(S)
CONN. CONNECTION	INT. INTERIOR	STR. STRIRRUPI(S)
CONSTR. CONSTRUCTION	IST. JOIST	STL. STEEL
CONT. CONTINUOUS	JT. JOINT	STRUC. STRUCTURAL
CTSK. COUNTERSINK	K. KIPS (1000)	SUSP. SUSPENDED
CTR. CENTER(ED)	LAT. LATERS	SYMM. SYMMETRICAL
C.Y. CUBIC YARD	LB#(s) POUNDS	(A) TOP
d. PENNY(NALS)	LDGR. LEDGER	T & B TOP AND BOTTOM
DBL. DOUBLE	LF. LINEAL FEET(FOOT)	TEMP. TEMPERATURE
D.F. DOUGLAS FIR	LONG. LONGITUDINAL	T & G TONGUE AND GROOVE
DIAM.(Ø) DIAMETER	LGTH. LENGTH	THK. THICKNESS
DIAG. DIAGONAL	LHL. LONG LEG HORIZ.	THRD. THREADED
DIAFH. DIAPHRAGM	LLV. LONG LEG VERT.	TEMP. TEMPORARY
DIM. DIMENSION	LT. WT. LIGHT WEIGHT	T.N. TOE NAIL
DN. DOWN	L.S. LAG SCREW	T.O.C. TOP OF CONCRETE
DP.(Ø) DEEP(DPTH)	M.S. MASONRY	T.O.F. TOP OF FOOTING
DWG. DRAWING(S)	MATL. MATERIAL	T.O.P. TOP OF PARAPET
DWL. DOWEL(S)	MAX. MAXIMUM	T.O.S. TOP OF SHEATHING
E.F. EACH FACE	M.B. MACHINE BOLT	T.S. TOP OF STEEL
E.J. EXPANSION JOINT	MECH. MECHANICAL	T.O.W. TOP OF WALL
EL. ELEVATION	MEZZ. MEZZANINE	TRANS. TRANSVERSE
ELEC. ELECTRICAL	MFR. MANUFACTURER	TYP. TYPICAL
ELEV. ELEVATOR	MISC. MISCELLANEOUS	U.O.N. UNLESS OTHERWISE NOTED
EMBED. EMBEDMENT	MTL. METAL	VERT. (V) VERTICAL
E.N. EDGE NAIL	(N) NEW	VF. VERIFY IN FIELD
ENG. ENGINEER	NO.(#) NUMBER	(V) WIDTH
E.O.D. EDGE OF DECK	N.S. NEAR SIDE	WI. WITH
E.O.S. EDGE OF SLAB	N.T.S. NOT TO SCALE	WD. WOOD
EQ. EQUAL	N.WT. NORMAL WEIGHT	WF. WIDE FLANGE
EQPT. EQUIPMENT	O.C. ON CENTER	W.P. WORK POINT
EXP. EXPANSION	O.D. OUTSIDE DIAMETER	WPJ. WEAKENED PLANE JOINT
EXIST. EXISTING	O.F. OUTSIDE FACE	W.S. WOOD SCREWS
EXT. EXTERIOR	OH. OPPOSITE HAND	WT. WEIGHT
FAB. FABRICATION	OPNG. OPENING	WWF. WELDED WIRE FABRIC
FND. FOUNDATION	ORNT. ORIENTATION	X-STG. EXTRA STRONG
F.N. FINISHED	O.W.J. OPEN WEB JOISTS	XX-STG. DOUBLE EXTRA STRONG
F.F. FINISH FLOOR	P.W.J. OPEN WEB STEEL JOISTS	YD. YARD
	PAR. (I) PARALLEL	

STRUCTURAL STEEL (CBC CHAPTER 22)

- ALL WORKMANSHIP AND MATERIALS FOR THE DESIGN, FABRICATION, AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS SHALL CONFORM TO THE 15th EDITION OF THE AISC MANUAL OF STEEL CONSTRUCTION.
- MATERIALS:
 - WIDE FLANGE..... ASTM A992..... GRADE 50
 - ANGLES & RODS..... ASTM A36..... GRADE 36
 - PLATES..... ASTM A572..... GRADE 50
 - PIPE..... ASTM A53..... GRADE B (FY= 35 KSI)
 - ANCHOR BOLTS/ RODS..... ASTM F1554..... (SEE PLAN FOR GRADE)
 - NUTS..... ASTM A563..... HEAVY HEX, GRADE A
 - HARDENED WASHERS..... ASTM F436
 - NON-SHRINK GROUT..... ASTM C1107..... 7000 PSI (NON-METALLIC)
- ROLLED STRUCTURAL SHAPES SHALL BEAR MILL IDENTIFICATION MARKS IN CONFORMANCE WITH ASTM A6. HSS (TUBES AND ROUNDS) SHALL BEAR MILL IDENTIFICATION IN ACCORDANCE WITH ASTM A500 AND HSS (PIPES) IN ACCORDANCE WITH ASTM A53.
- WHEN FABRICATING BEAMS, PLACE NATURAL CAMBER UP.
- PROVIDE HARDENED WASHERS AS REQUIRED PER THE SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM 3125 GR. A325 OR GR. A490 BOLTS BY THE RESEARCH COUNCIL ON STRUCTURAL CONNECTIONS.
- BOLT HOLES:
 - A. TYPICAL STEEL TO STEEL CONNECTIONS..... BOLT DIAMETER + 1/16 INCH
 - B. ANCHOR BOLTS (RODS) & WASHERS..... PER AISC TABLE 14-2 U.O.N. ON PLANS
- ALL WELDING SHALL BE DONE BY THE FLUX-CORE PROCESS USING APPROVED ELECTRODES PER AWS SPECIFICATION E70XX (LOW HYDROGEN ELECTRODES). WELDING SHALL CONFORM TO THE LATEST EDITION OF AWS D1.1 AND AWS D1.4 AND SHALL BE PERFORMED BY CERTIFIED WELDERS QUALIFIED UNDER THE PROCEDURES CONTAINED THEREIN.
- WHERE WELD LENGTH IS NOT SHOWN, IT SHALL BE THE FULL LENGTH OF THE JOINT.
- WHERE MINIMUM AISC FILLET WELD THICKNESS REQUIREMENT EXCEEDS WELDS SHOWN ON DETAILS, PROVIDE MINIMUM AISC WELD.
- WELDS IDENTIFIED AS REQUIRING CONTINUOUS OR PERIODIC SPECIAL INSPECTION NEED NOT HAVE SPECIAL INSPECTION WHEN THE WELDING IS DONE IN AN APPROVED FABRICATOR'S SHOP. HOWEVER, THE APPROVED FABRICATOR MUST SUBMIT A CERTIFICATE OF COMPLIANCE IN ACCORDANCE WITH CBC SECTION 1704.2.5.1.
- PROVIDE COMPOSITE STEEL BEAM SHORING WHERE INDICATED. SHORING SHALL BE DESIGNED BY A CALIFORNIA REGISTERED CIVIL ENGINEER.
- STRESSES OCCURRING DURING FABRICATION, SHIPMENT, AND ERECTION SHALL BE TEMPORARY AND NOT EXCESSIVE. STRESSES AT ALL TIMES SHALL BE LESS THAN DESIGN AND ALLOWABLE STRESSES. THE FULL DESIGN AND LOAD CARRYING CAPACITY OF THE STEEL WORK SHALL NOT BE IMPAIRED DUE TO FABRICATION, SHIPMENT, OR ERECTION PROCEDURES. THROUGHOUT THE COMPLETE PROCESS, THE STABILITY OF INDIVIDUAL MEMBERS AND ASSEMBLIES SHALL BE MAINTAINED.
- ALL ADDITIONAL STEEL REQUIRED FOR ERECTION PURPOSES SHALL BE PROVIDED AT NO ADDITIONAL COST AND SHALL BE REMOVED UNLESS APPROVED BY THE OWNER IN WRITING.
- STRUCTURAL STEEL SHOP DRAWINGS SHALL BE SUBMITTED TO AND REVIEWED BY THE ENGINEER BEFORE FABRICATION.
- ALL EXTERIOR EXPOSED STEEL SHALL BE GALVANIZED G90.

METAL DECKING (CBC CHAPTER 22)

- METAL DECKING SHALL BE OF THE TYPES AND GAUGES INDICATED ON THE DRAWINGS AND SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
- ALL NECESSARY ACCESSORY ITEMS SUCH AS CLOSURES, INSULATION CLIPS, ROOF SUMP RECESSES, ETC. SHALL BE GALVANIZED, FURNISHED AND INSTALLED AS REQUIRED.
- METAL DECKING AND FLASHING SHALL BE FABRICATED AND GALVANIZED IN ACCORDANCE WITH ASTM A653 SS GRADE 33, CLASS G-60. (USE CLASS G-90 AT EXPOSED EXTERIOR SURFACES).
- WHERE THE UNDERSIDE OF DECKING IS PAINTED, IN LIEU OF GALVANIZING, PROVIDE DECKING AND CLOSURE ANGLES CONFORMING TO ASTM 611, GRADE C.
- ALL WELDING SHALL BE IN CONFORMANCE WITH THE LATEST EDITION OF AWS D1.3 USING E60XX ELECTRODES AND SHALL BE PERFORMED BY CERTIFIED LIGHT GAUGE WELDERS THOROUGHLY EXPERIENCED IN WELDING LIGHT GAUGE STRUCTURAL METAL. SPECIAL INSPECTION IS REQUIRED FOR ALL WELDING OF METAL DECKING. PINS ARE NOT AN ACCEPTABLE SUBSTITUTION FOR WELDING.
- THE EFFECTIVE AREA OF A 3/4" PLUG WELD SHALL BE NOT LESS THAN 1/2" DIAMETER.
- DELIVER DECKING TO JOB SITE FREE FROM OIL, GREASE, ETC. AND CLEAN DECKING THOROUGHLY PRIOR TO PLACING CONCRETE FILL.
- DO NOT SUSPEND PIPING, DUCTS, WORK UTILITIES OR OTHER LOADS FROM ROOF DECKING WITH THE EXCEPTION OF SUSPENDED ACOUSTICAL CEILINGS WITH INTEGRALLY SUPPORTED LIGHT FIXTURES.
- DECK SHALL BEAR AT LEAST 2 INCHES AT SUPPORTS. LAP DECKING AT OPEN WEB STEEL JOISTS & GIRDERS. CENTER LAPS OVER ONE TOP CHORD ANGLE AT OPEN-WEB STEEL JOISTS & GIRDERS.
- FLOORS SHALL BE MONITORED BY TRANSIT LEVEL OR LASER DURING CONCRETE PLACEMENT TO MAINTAIN A LEVEL SURFACE.
- PROVIDE METAL DECK SHORING WHERE INDICATED. SHORING SHALL BE DESIGNED BY A CALIFORNIA REGISTERED CIVIL ENGINEER.
- DECK SHALL BE MANUFACTURED BY VERCO, OR ENGINEER APPROVED EQUAL.
- NO CONDUIT SHALL BE PLACED IN THE CONCRETE TOPPING OVER THE STEEL DECKING.
- DECK MAY BE VENTED OR NON-VENTED UNLESS SPECIFIED ON PLANS.
- METAL DECK SHEETS SHALL BE DETAILED TO SPLICE OVER FRAMING MEMBERS AT RIDGES AND VALLEYS. SUPPLIER SHALL INCREASE GAUGE OF METAL DECK AS REQUIRED IF SPLICE LOCATIONS RESULT IN A VERTICALLY OVERSTRESSED SINGLE SPAN CONDITION.
- METAL DECK SHOP DRAWINGS SHALL BE SUBMITTED TO AND REVIEWED BY THE ENGINEER BEFORE INSTALLATION.

REINFORCING STEEL

- BAR REINFORCEMENT SHALL BE ASTM A615, GRADE 60 DEFORMED BARS.
- HEADED BARS SHALL COMPLY WITH ASTM A970 INCLUDING ANNEX A1 REQUIREMENTS FOR CLASS HA HEAD DIMENSIONS.
- BAR REINFORCEMENT THAT IS TO BE WELDED SHALL BE ASTM A706, GRADE 60. BARS TO BE WELDED CONFORMING TO ASTM A615, GRADE 60 MAY BE SUBSTITUTED PROVIDING THAT THE REINFORCEMENT MEETS THE REQUIREMENTS OF ACI 318 SECTION 20.2.2.5(b).
- WELDED WIRE REINFORCEMENT SHALL CONFORM TO ASTM A1064 AND SHALL BE LAPPED 8" MIN.
- MINIMUM LAP SPLICES OF REINFORCING BARS SHALL BE AS SPECIFIED IN THE DRAWINGS.
- VERTICAL BARS IN WALLS SHALL BE ACCURATELY POSITIONED AT THE CENTER OF THE WALL UNLESS OTHERWISE NOTED ON PLANS.
- REINFORCING DETAILING, BENDING, AND PLACING SHALL BE IN ACCORDANCE WITH ACI 315 "DETAILS AND DETAILING OF CONCRETE REINFORCEMENT".
- REINFORCING STEEL SHALL BE PROVIDED WITH THE FOLLOWING MINIMUM CONCRETE COVER FOR CAST IN PLACE CONCRETE:
 - A. CONCRETE DEPOSITED AGAINST EARTH..... 3"
 - B. CONCRETE SURFACE (FORMED) EXPOSED TO EARTH OR WEATHER:
 - #6 THROUGH #18 BARS..... 2"
 - #5 BAR AND SMALLER..... 1-1/2"
 - C. CONCRETE NOT EXPOSED TO EARTH OR WEATHER:
 - SLABS, WALLS AND JOISTS
 - #11 BAR AND SMALLER..... 1"
 - BEAMS, COLUMNS:
 - PRIMARY REINFORCEMENT, TIES, STIRRUPS, SPIRALS..... 1-1/2"
- ALL REINFORCING STEEL, ANCHOR BOLTS, DOWELS, HOLDOWN ANCHORS AND INSERTS SHALL BE WELL SECURED IN POSITION WITH WIRE POSITIONERS PRIOR TO FOUNDATION INSPECTION AND BEFORE PLACING CONCRETE OR GROUT.
- DOWELS BETWEEN FOOTINGS AND WALLS SHALL BE THE SAME GRADE, SIZE, AND SPACING AS VERTICAL WALL REINFORCING UNLESS OTHERWISE NOTED ON PLANS.
- FURNISH #3 SPACER TIES AT APPROXIMATELY 2'-6" ON CENTER IN ALL BEAMS AND FOOTINGS TO SECURE REINFORCING IN PLACE.
- WELDING OF REINFORCING BARS SHALL CONFORM TO THE LATEST EDITION OF AWS D1.4. E80XX ELECTRODES SHALL BE USED FOR BAR TO BAR & E70XX ELECTRODES SHALL BE USED FOR REINFORCING TO STRUCTURAL STEEL.
- CONTRACTOR SHALL SUBMIT REINFORCING STEEL SHOP DRAWINGS FOR REVIEW BEFORE FABRICATION AND INSTALLATION.
- WHERE HOOKS ARE ILLUSTRATED AS 90-DEGREE HOOKS, 180 DEGREE HOOKS MAY BE USED IN LIEU OF 90-DEGREE HOOKS.

REINFORCED CONCRETE (CBC CHAPTER 19)

- CEMENT SHALL CONFORM TO ASTM C150, TYPE II.
- AGGREGATES FOR NORMAL WEIGHT CONCRETE SHALL CONFORM TO ASTM C33.
- AGGREGATES FOR LIGHT WEIGHT CONCRETE SHALL CONFORM TO ASTM C330.
- READY-MIX CONCRETE SHALL BE MIXED AND DELIVERED IN ACCORDANCE WITH ASTM C94.
- CONCRETE WORK SHALL CONFORM TO ALL REQUIREMENTS OF ACI 301, "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS", EXCEPT AS MODIFIED BY THESE NOTES.
- CONCRETE SHALL BE STANDARD WEIGHT CONCRETE (145 PCF) AND HAVE A MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS AS FOLLOWS:

ELEMENT	STRENGTH	AGG	W/C RATIO (MAX)
LT. WT. CONCRETE OVER METAL DECK.....	3000 PSI	1/2"	.45
ALL OTHER CONCRETE.....	3000 PSI	1"	.57
- CONTINUOUS SPECIAL INSPECTION IS REQUIRED FOR CONCRETE DESIGN STRENGTHS EXCEEDING 2500 PSI.
- CONCRETE SHALL BE PROPORTIONED SUCH THAT THE 7 DAY STRENGTHS ARE A MINIMUM OF SEVENTY PERCENT OF THE SPECIFIED 28 DAY STRENGTH FOR ANY CONCRETE CONSTRUCTION REQUIRING SHORING, BRACING, OR TO RECEIVE CONSTRUCTION LOADS. ALSO, SLABS ON GRADE SHALL HAVE A COMPRESSION STRENGTH OF 1800 PSI MINIMUM AT 3 DAYS IF SUBJECT TO CONSTRUCTION TRAFFIC.
- ADMIXTURES MAY BE USED WITH PRIOR APPROVAL OF THE ENGINEER. ADMIXTURES SHALL COMPLY WITH ASTM C494 & C1017 AND BE OF A TYPE THAT INCREASES THE WORKABILITY OF THE CONCRETE, BUT SHALL NOT BE CONSIDERED TO REDUCE THE SPECIFIED MINIMUM CEMENT CONTENT (CALCIUM CHLORIDE SHALL NOT BE USED).
- ALL REINFORCING STEEL, ANCHOR BOLTS, DOWELS, HOLDOWN ANCHORS, AND INSERTS SHALL BE WELL SECURED IN POSITION WITH WIRE POSITIONERS PRIOR TO FOUNDATION INSPECTION AND BEFORE PLACING CONCRETE.
- NO CONDUIT PLACED IN A CONCRETE SLAB SHALL HAVE AN OUTSIDE DIAMETER GREATER THAN 1/3 THE THICKNESS OF THE SLAB. NO CONDUIT SHALL BE EMBEDDED IN A SLAB THAT IS LESS THAN 3 1/2" THICK, EXCEPT FOR LOCAL OFFSETS. MINIMUM CLEAR DISTANCE BETWEEN CONDUITS SHALL BE THREE DIAMETERS ON CENTER.
- NO CONDUIT SHALL BE PLACED IN THE CONCRETE TOPPING OVER THE STEEL DECKING.
- PROJECTING CORNERS OF SLABS, BEAMS, WALLS, COLUMNS, ETC. SHALL BE FORMED WITH A 3/4" CHAMFER.
- CONSTRUCTION JOINTS IN ALL FOUNDATIONS, WALLS, SUPPORTED SLABS, AND CONCRETE FRAMING BEAMS SHALL NOT BE SPACED FURTHER APART THAN 60 FEET IN LENGTH.
- LOCATION OF ALL CONSTRUCTION, CONTROL, AND WEAKENED PLANE JOINTS NOT SPECIFICALLY INDICATED ON THE DRAWINGS SHALL BE APPROVED BY THE ENGINEER PRIOR TO REINFORCEMENT PLACEMENT.
- ALL CONSTRUCTION JOINTS IN WALLS OR OTHER ELEMENTS NOT HAVING PREFORMED KEYS SHALL BE WIRE BRUSHED AND ROUGHENED TO A MINIMUM AMPLITUDE OF 1/4 INCH, CLEANED, AND MOISTENED IMMEDIATELY PRIOR TO PLACEMENT OF NEW CONCRETE.
- CONTRACTOR SHALL SUBMIT MIX DESIGNS FOR REVIEW BEFORE FABRICATION AND INSTALLATION. MIX DESIGNS SHALL BE DESIGNED AND SIGNED BY A CALIFORNIA REGISTERED PROFESSIONAL ENGINEER.

GENERAL NOTES

- NOTES AND DETAILS ON THE STRUCTURAL DRAWINGS TAKE PRECEDENCE OVER THESE STANDARD STRUCTURAL NOTES. TYPICAL DETAILS SHALL BE USED WHENEVER APPLICABLE. REFER TO SPECIFICATIONS FOR INFORMATION NOT COVERED BY THESE NOTES OR DRAWINGS. THESE NOTES TAKE PRECEDENCE OVER ANY OTHER BOOK SPECIFICATIONS.
- THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, ELEVATIONS, AND SITE CONDITIONS BEFORE STARTING WORK, AND THE ENGINEER/ARCHITECT SHALL BE IMMEDIATELY NOTIFIED, IN WRITING, OF ANY DISCREPANCIES. IN NO CASE SHALL DIMENSIONS BE SCALED FROM PLANS, SECTIONS, OR DETAILS ON THE STRUCTURAL DRAWINGS.
- ALL OMISSIONS AND CONFLICTS BETWEEN THE VARIOUS ELEMENTS OF THE DRAWINGS AND/OR SPECIFICATIONS SHALL BE BROUGHT TO THE ATTENTION OF, AND RESOLVED WITH, THE ENGINEER BEFORE PROCEEDING WITH ANY WORK SO INVOLVED.
- WHERE A CONSTRUCTION DETAIL IS NOT SHOWN OR NOTED, THE DETAIL SHALL BE THE SAME AS FOR OTHER SIMILAR WORK.
- THE CONTRACTOR SHALL DETERMINE THE LOCATION OF UTILITY SERVICES IN THE AREA TO BE EXCAVATED, BEFORE BEGINNING EXCAVATION.
- NO PIPES, DUCTS, SLEEVES, CHASES, ETC. SHALL BE PLACED IN SLABS, BEAMS, OR WALLS, NOR SHALL ANY STRUCTURAL MEMBER BE CUT FOR PIPES, DUCTS, ETC. THE CONTRACTOR SHALL OBTAIN PRIOR APPROVAL FOR INSTALLATION OF ANY ADDITIONAL PIPES, DUCTS, ETC.
- ALL MATERIAL AND WORKMANSHIP SHALL CONFORM TO THE REQUIREMENTS OF THE 2022 CALIFORNIA BUILDING CODE (CBC).
- THE CONTRACTOR SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY. THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS. THE CONTRACTOR SHALL DEFEND, INDEMNIFY, AND HOLD THE ENGINEER FREE AND HARMLESS FROM ALL CLAIMS, DEMANDS, AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT.
- SITE VISITS PERFORMED BY THE ENGINEER DO NOT INCLUDE INSPECTIONS OF MEANS AND METHODS OF CONSTRUCTION PERFORMED BY THE CONTRACTOR. ALSO, SITE VISITS DO NOT GUARANTEE CONTRACTOR'S PERFORMANCE AND SHALL NOT BE CONSIDERED AS SUPERVISION OF CONSTRUCTION.
- RETAIN A CALIFORNIA REGISTERED CIVIL ENGINEER TO DESIGN ALL TEMPORARY BRACING, SHORING, AND SUPPORT REQUIRED DURING CONSTRUCTION, INCLUDING CONSTRUCTION LOADS AND EQUIPMENT.
- INCLUDE ENGINEERING FEES & ENGINEERING DESIGN TIME IN THE COST OF PROPOSED MATERIAL ALTERNATES. CONTACT ENGINEER FOR FEE AMOUNT. SUBMIT MATERIAL ALTERNATE FOR REVIEW BEFORE CONSTRUCTION.
- STRUCTURAL CAD DRAWINGS SHALL NOT BE USED FOR SHOP DRAWINGS UNLESS AN AGREEMENT BETWEEN THE STRUCTURAL ENGINEER AND CONTRACTOR HAS BEEN ESTABLISHED ACCORDING TO CASE DOCUMENT. CONTACT ENGINEER FOR FEE AMOUNT.
- SHOP DRAWINGS: THE CONTRACTOR SHALL REVIEW SHOP DRAWINGS FOR COMPLETENESS AND COMPLIANCE WITH CONTRACT DOCUMENTS. CONTRACTOR SHALL STAMP SHOP DRAWINGS PRIOR TO SUBMISSION TO ARCHITECT/ENGINEER. THE ARCHITECTS/ENGINEER'S REVIEW OF THE SHOP DRAWINGS SHALL NOT BE CONSTRUED AS AN AUTHORIZATION TO DEVIATE FROM THE CONTRACT DOCUMENTS. ALSO, SHOP DRAWINGS WILL NOT BE PROCESSED DUE TO INCOMPLETENESS, LACK OF COORDINATION WITH RELEVANT PORTIONS OF CONTRACT DOCUMENTS, LACK OF CALCULATIONS WHEN REQUIRED, OR WHERE DEVIATIONS, MODIFICATIONS, OR SUBSTITUTIONS ARE INDICATED WITHOUT PRIOR WRITTEN APPROVAL FROM THE ARCHITECT/ENGINEER.
- ANY REFERENCE TO THE WORDS "APPROVED" OR "APPROVAL" IN THESE DOCUMENTS SHALL BE HERE DEFINED TO MEAN GENERAL ACCEPTANCE OR REVIEW AND SHALL NOT RELIEVE THE CONTRACTOR AND/OR SUB-CRONTACTORS OF ANY LIABILITY IN FURNISHING THE REQUIRED MATERIALS OR LABOR SPECIFIED.
- CONNECTION OF ALL ITEMS SUPPORTED BY THE STRUCTURE ARE THE RESPONSIBILITY OF THE DISCIPLINES WHO ARE MAKING THESE ATTACHMENTS, THESE ATTACHMENTS SHALL BE DESIGNED TO RESIST ALL GRAVITY, WIND, SEISMIC, THERMAL LOADS, ETC. SPRINKLER PIPING SHALL BE SUPPORTED AND BRACED PER APPLICABLE STANDARDS, SUSPENDED CEILING SYSTEMS OF ACOUSTICAL TILE OR LAY-IN PANELS SHALL BE SUPPORTED AND BRACED PER CURRENT CODE REQUIREMENTS, SEE ARCHITECTURAL DRAWINGS.

DESIGN CRITERIA

- VERTICAL LOADS:
 - A. DEAD LOADS:
 - FLOOR..... 54 PSF
 - B. LIVE LOADS: REDUCIBLE UNLESS NOTED OTHERWISE
 - FLOOR..... 100 PSF

FOUNDATION

- THE SOILS REPORT RECOMMENDATIONS SHALL BE COMPLIED WITH BY THE CONTRACTOR.
- SOILS INFORMATION:
 - SEE SOILS REPORT BY: CBC MINIMUMS
 - SOIL DESIGN PARAMETERS:
 - ALLOWABLE BEARING PRESSURE..... 1,500 PSF
 - BOTTOM OF FOOTINGS SHALL BE AT LEAST 24 INCHES BELOW LOWEST ADJACENT GRADE.
- ALL FOUNDATION WORK SHALL BE FOUNDED ON FIRM UNDISTURBED NATURAL SOILS OR APPROVED COMPACTED SOILS.
- THE FINISH EXCAVATION FOR FOUNDATIONS SHALL BE NEAT & TRUE TO LINE.
- FOUNDATION EXCAVATIONS SHALL BE KEPT FREE OF LOOSE MATERIAL AND STANDING WATER AND SHALL BE CHECKED AND APPROVED BY THE SOILS ENGINEER BEFORE THE PLACEMENT OF ANY CONCRETE.
- PROVIDE TEMPORARY SHORING FOR ALL WALLS RETAINING EARTH, PRIOR TO BACKFILLING.
- TEMPORARY SHORING FOR ALL RETAINING WALLS REQUIRING PERMANENT STRUCTURAL SUPPORT AT THE TOP OF THE WALL SHALL REMAIN IN PLACE UNTIL SUCH SUPPORTS ARE INSTALLED, AND IN THE CASE OF CONCRETE SUPPORTS, THE SHORING SHALL REMAIN IN PLACE A MINIMUM OF 7 DAYS AFTER CONCRETE PLACEMENT.

SHEAR STUD CONNECTORS

- SHEAR STUD CONNECTORS WELDED TO STEEL BEAMS OR GIRDERS SHALL BE MADE FROM COLD DRAWN BAR STOCK CONFORMING TO ASTM A108, GRADES 1010 THROUGH 1020, AND SHALL CONFORM TO THE LATEST ADDITION OF AWS D1.1.
- SHEAR STUD CONNECTORS SHALL CONFORM TO THE DIMENSIONAL TOLERANCES GIVEN IN AWS D1.1.
- SHEAR STUD CONNECTORS SHALL BE INSTALLED IN CONFORMANCE WITH THE REQUIREMENTS OF AWS D1.1, CHAPTER 7.
- THE MAXIMUM CENTER-TO-CENTER SPACING OF SHEAR STUD CONNECTORS SHALL NOT EXCEED 36 INCHES.
- ALL SHEAR STUD CONNECTORS SHALL BE UNIFORMLY SPACED BETWEEN THE LOCATIONS SHOWN ON THE DRAWINGS.
- DO NOT LAP 18 GAUGE DECKING OR THICKER WHERE SHEAR STUDS ARE TO BE ATTACHED TO SUPPORTS.

REVISIONS	BY



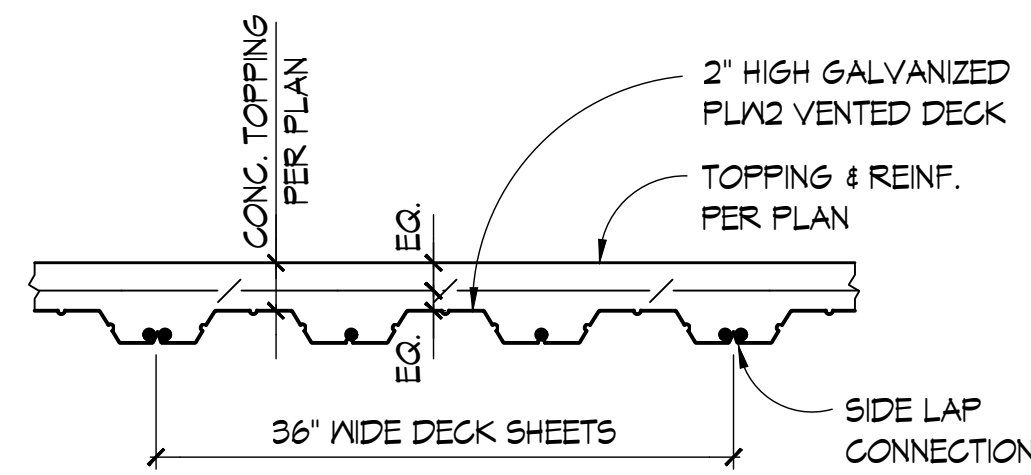
WISEMAN + ROHY
STRUCTURAL ENGINEERS

9916 MIRAMAR BLVD.
SAN DIEGO, CA 92121
TEL: 619.594.5166
WWW.WISEMANROHY.COM

GUHSD - VALHALLA HIGH SCHOOL PEDESTRIAN BRIDGE

STRUCTURAL NOTES

DRAWN Team
CHECKED S.R.
DATE LIST DATE
SCALE AS SHOWN
JOB NO. 23019.00
SHEET S1.0

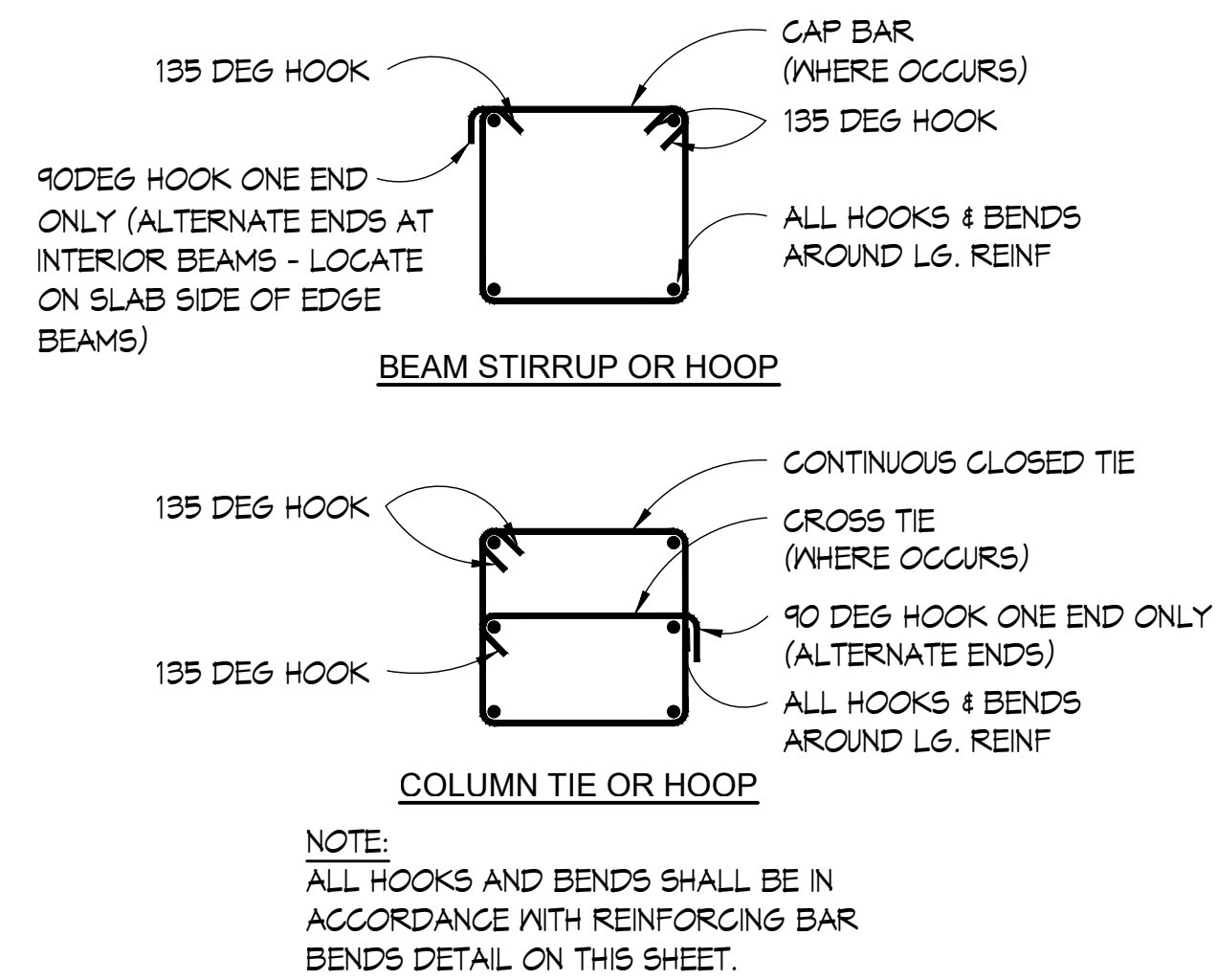


GA	1x	5x(+)	5x(-)
16	.101	.623	.638

- NOTES:
- DECK SHEETS SHALL BEAR 2" MIN.
 - SEE PLAN FOR METAL DECK ATTACHMENT REQUIREMENTS.
 - SEE PLAN FOR LOCATION OF DECK TYPE.

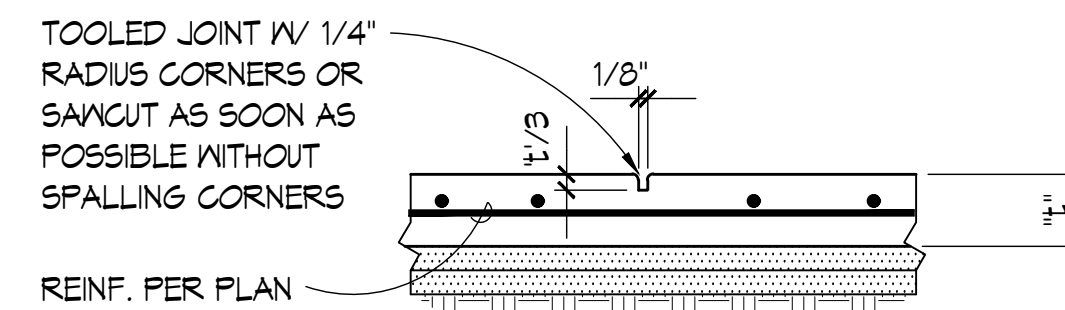
COMPOSITE PLW2 DECK

1



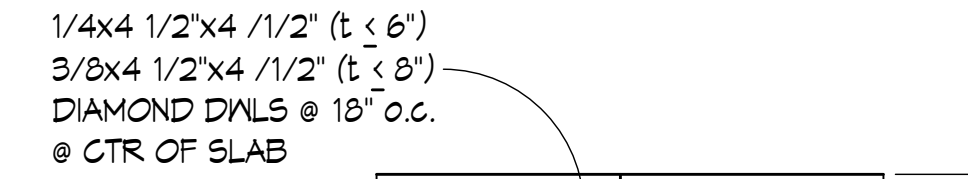
TYP. STIRRUP, TIE, HOOP OR CROSS-TIE

2



WEAKENED PLANE JOINT (W.P.J.)

SLAB JOINTS SHALL OCCUR IN A SQUARE OR RECTANGULAR PATTERN WITH 14'-0" MAX. BETWEEN JOINTS EACH WAY UNLESS OTHERWISE NOTED ON PLANS. RATIO OF SLAB SEGMENTS NOT TO EXCEED 1.5 TO 1.0.



CONSTRUCTION JOINT (C.J.)

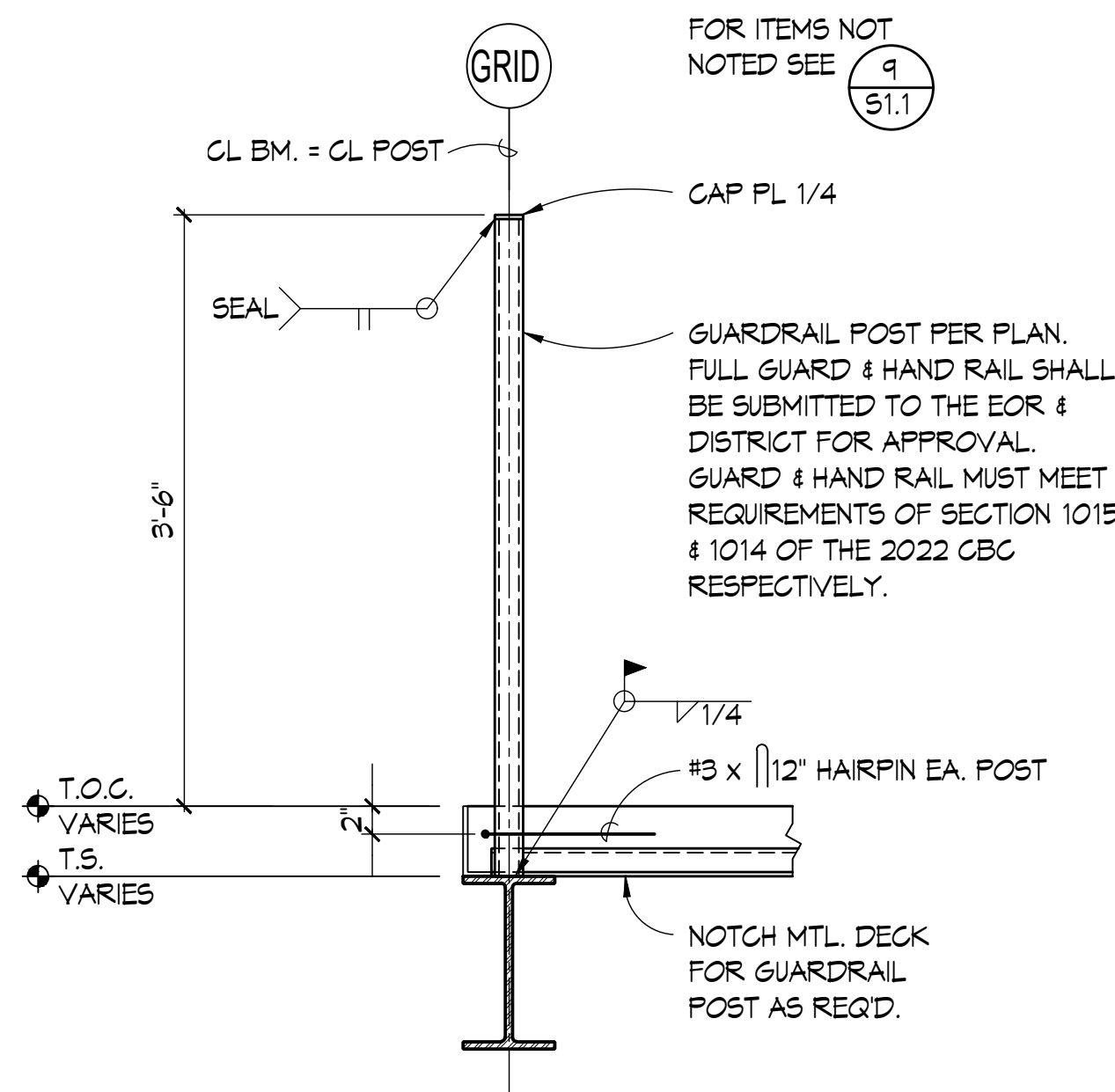
SLAB AND REINF. PER PLAN NOT CONTINUOUS THROUGH JOINT.

SLAB TO BE POURED IN A CHECKERBOARD PATTERN AS FOLLOWS:

- EACH SEGMENT RATIO NOT OVER 1.5 TO 1.0.
- EACH SEGMENT NOT OVER 16,000 SQ. FT.
- MINIMUM 3 DAY WAIT BETWEEN ADJACENT FOURS.

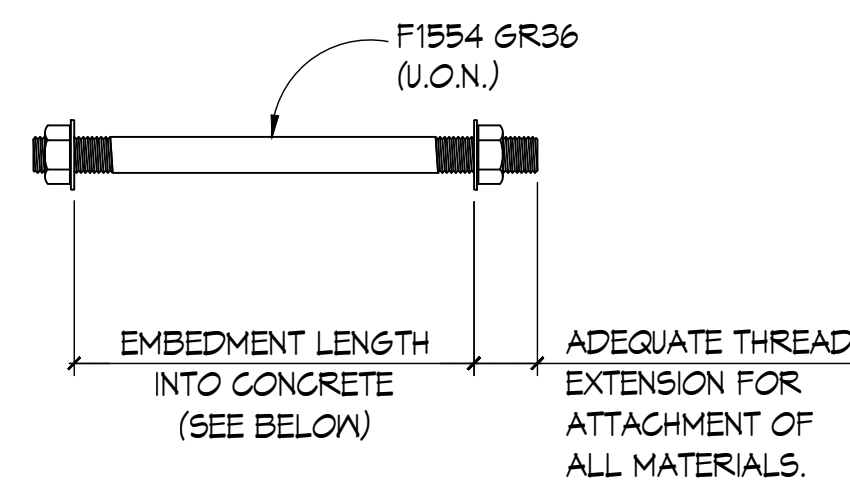
SLAB ON GRADE JOINTS & POUR PROCEDURE

4



TYPICAL GUARDRAIL POST

5



BOLT DIA. "D"	MINIMUM EMBEDMENT U.O.N.	
	HORIZONTAL ANCHOR BOLTS	VERTICAL ANCHOR BOLTS
1/2"	5"	7"
5/8"	5"	7"
3/4"	6"	7"
7/8"	7"	8"
1"	8"	9"
1 1/8"	9"	10"

TYP. CONC. ANCHOR BOLT EMBEDMENTS

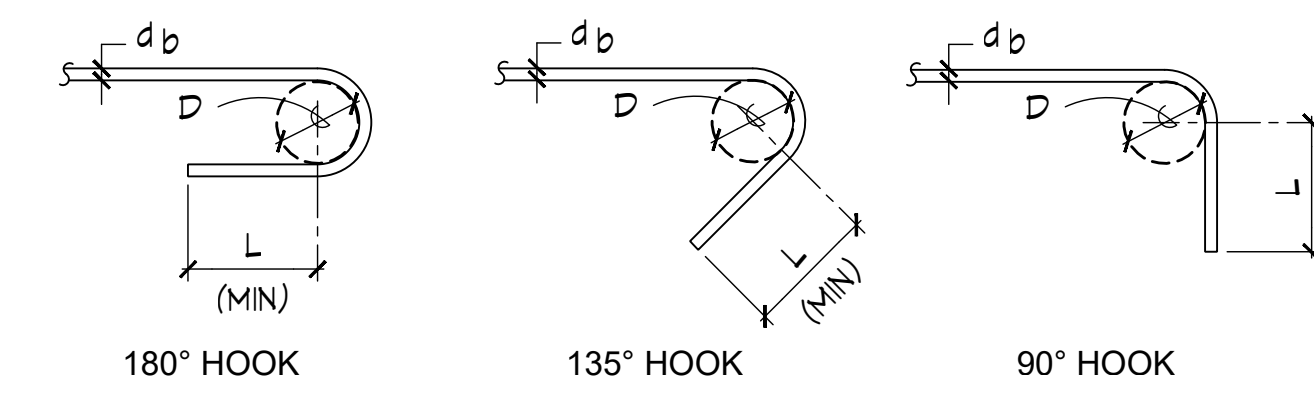
6

BAR SIZE	"D"	BARS OTHER THAN STIRRUPS, TIES, HOOPS & CROSS-TIES		
		180DEG "L"	135DEG "L"	90DEG "L"
#3	2 1/4	2 1/2	-	4 1/2
#4	3	2 1/2	-	6
#5	3 3/4	2 1/2	-	7 1/2
#6	4 1/2	3	-	9
#7	5 1/4	3 1/2	-	10 1/2
#8	6	4	-	12
#9	6 1/2	4 1/2	-	13 1/2
#10	7	5 1/4	-	15 1/4
#11	8	6	-	17
#14	10 1/4	7	-	21
#18	24	9	-	27

STIRRUPS, TIES, HOOPS & CROSS-TIES				
#3	1 1/2	-	4	4
#4	2	-	4	4
#5	2 1/2(1)	-	4	4
#6	4 1/2	-	4 1/2	9
#7	5 1/4	-	5 1/4	10 1/2
#8	6	-	6	12

(1) USE 3 3/4" IN CONC. BLK. CONSTRUCTION

NOTE: ALL DIMENSIONS GIVEN ARE IN INCHES.

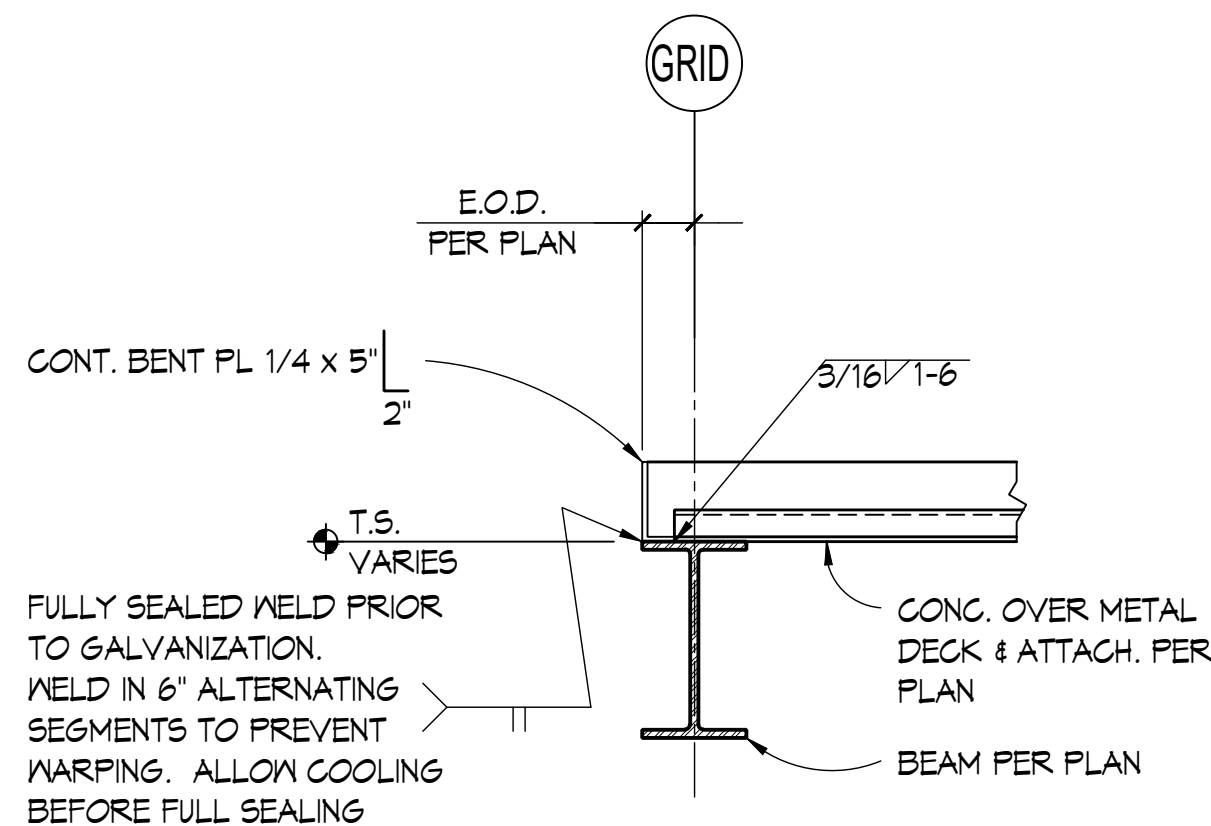


LEGEND FOR REINF. BENDS (NOT SHOWN TO SCALE)

- INDICATES 90DEG BEND IN PLANE OF DRAWING
- INDICATES 90DEG BEND PERPENDICULAR TO PLANE OF DRAWING
- INDICATES 135DEG BEND IN PLANE OF DRAWING
- INDICATES 180DEG BEND IN PLANE OF DRAWING
- INDICATES 135DEG OR 180DEG BEND PERPENDICULAR TO PLANE OF DRAWING
- INDICATES OFFSET IN PLANE OF DRAWING

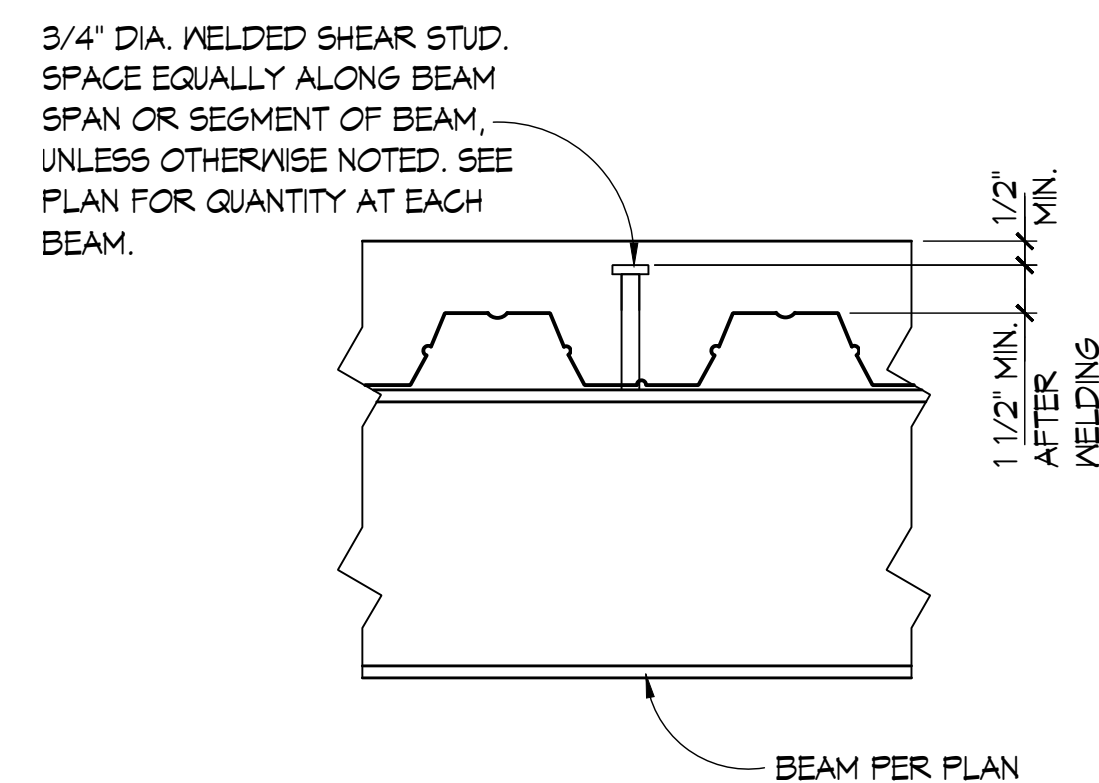
REINFORCING BAR BENDS & HOOKS

8



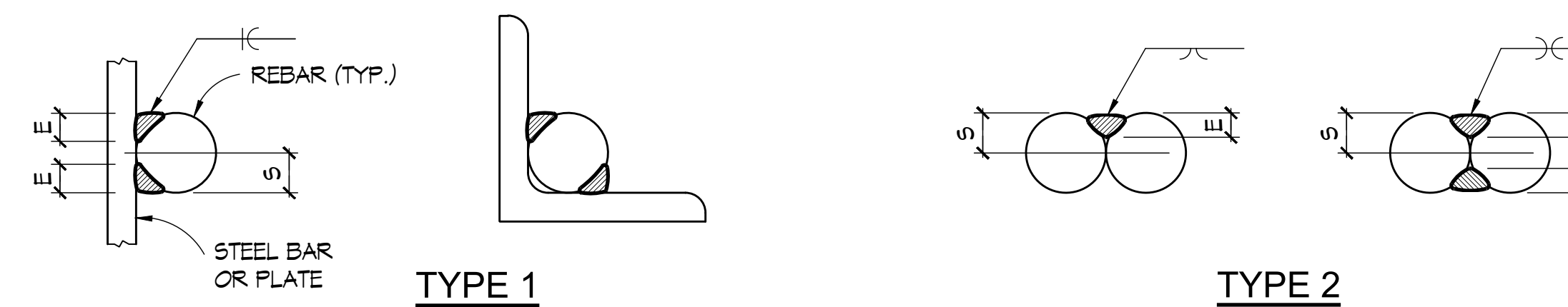
TYPICAL EDGE OF DECK

9



TYPICAL SHEAR CONNECTOR

10



BAR SIZE	MINIMUM WELD SIZES & LENGTHS					
	TYPE 1		TYPE 2		LENGTH	
	WELD SIZE	WELD 1-SIDE	WELD 2-SIDES	WELD SIZE	WELD 1-SIDE	WELD 2-SIDES
#3	1/8	4	3	1/8	3	2
#4	1/8	5	3	3/16	4	2
#5	1/8	6	3	3/16	4	2
#6	3/16	7	4	1/4	5	3
#7	3/16	9	5	5/16	6	3
#8	1/4	10	5	5/16	7	4
#9	1/4	11	6	3/8	7	4
#10	1/4	12	6	3/8	8	4

- EFFECTIVE THROAT (E)=0.4xS FOR TYPE 1 WELDS.
- EFFECTIVE THROAT (E)=0.6xS FOR TYPE 2 WELDS.
- WELDING OF REINFORCING BARS SHALL CONFORM TO AWS D1.4.
- E10XX ELECTRODES SHALL BE USED. FOR ALL TYPE 1 WELDS (REINF. TO STRUCTURAL STEEL)
- E80XX ELECTRODES SHALL BE USED FOR ALL TYPE 2 WELDS (REINF. TO REINF.)
- REINFORCING BARS SHALL MEET THE REQUIREMENTS OF ASTM A106 WITH CARBON EQUIVALENT (C.E. < 0.55%).
- REINFORCEMENT SHALL NOT BE WELDED UNTIL A CHEMICAL ANALYSIS SUFFICIENT TO DETERMINE THE CARBON EQUIVALENT IS PERFORMED. THE CARBON EQUIVALENT OF REINFORCING BAR SHALL BE CALCULATED PER AWS D1.4 (C.E. < 0.55) USING THE CHEMICAL COMPOSITION AS SHOWN IN THE MILL TEST REPORT.
- IF MILL TEST REPORTS ARE NOT AVAILABLE, A CHEMICAL ANALYSIS SHALL BE MADE OF REINFORCING BARS REPRESENTATIVE OF THE BARS TO BE WELDED OR THE BARS SHALL BE PREHEATED ACCORDING TO AWS D1.4.
- A COPY OF THE MILL TEST REPORT SHALL BE SENT TO THE STRUCTURAL ENGINEER'S OFFICE.

12

REVISIONS	BY



WISEMAN + ROHY
STRUCTURAL ENGINEERS

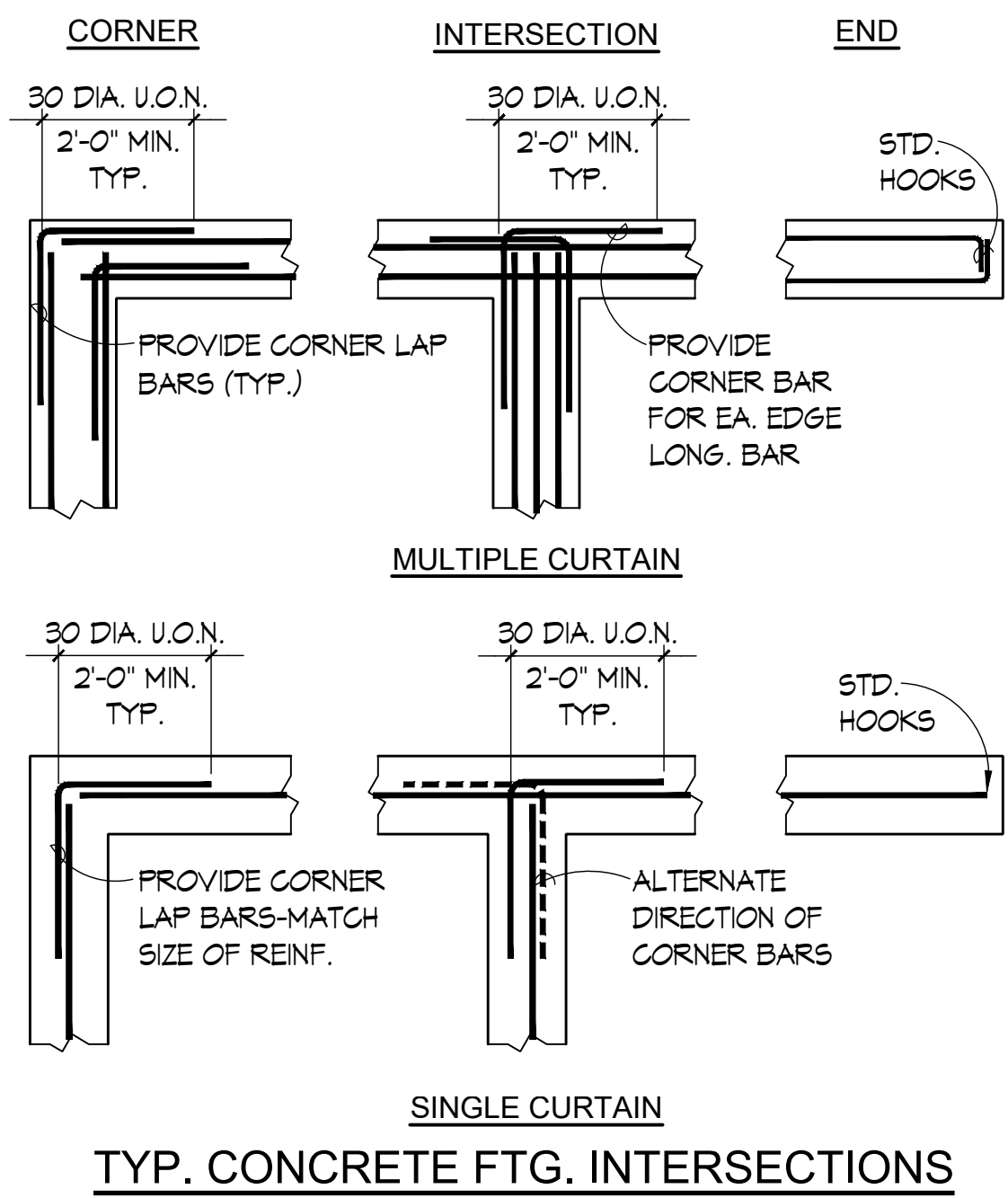
9915 MIRAMESA BLVD.
SAN DIEGO, CA 92131
TEL: 619.594.5166
WWW.WISEMANGROUP.COM

GUHSD - VALHALLA HIGH SCHOOL PEDESTRIAN BRIDGE

TYPICAL DETAILS

DRAWN	Team
CHECKED	S.R.
DATE	LIST DATE
SCALE	AS SHOWN
JOB NO.	23019.00
SHEET	S1.1

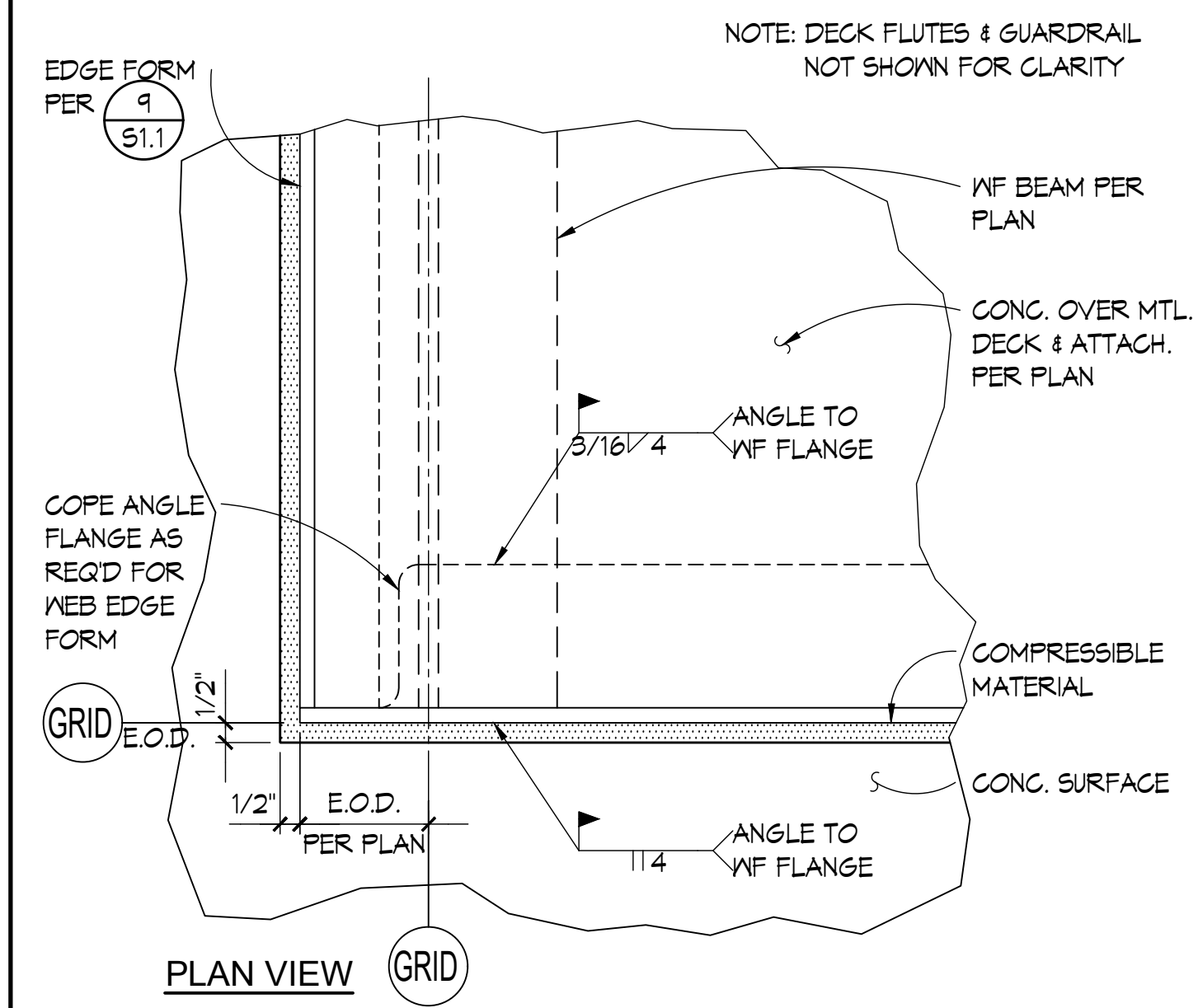
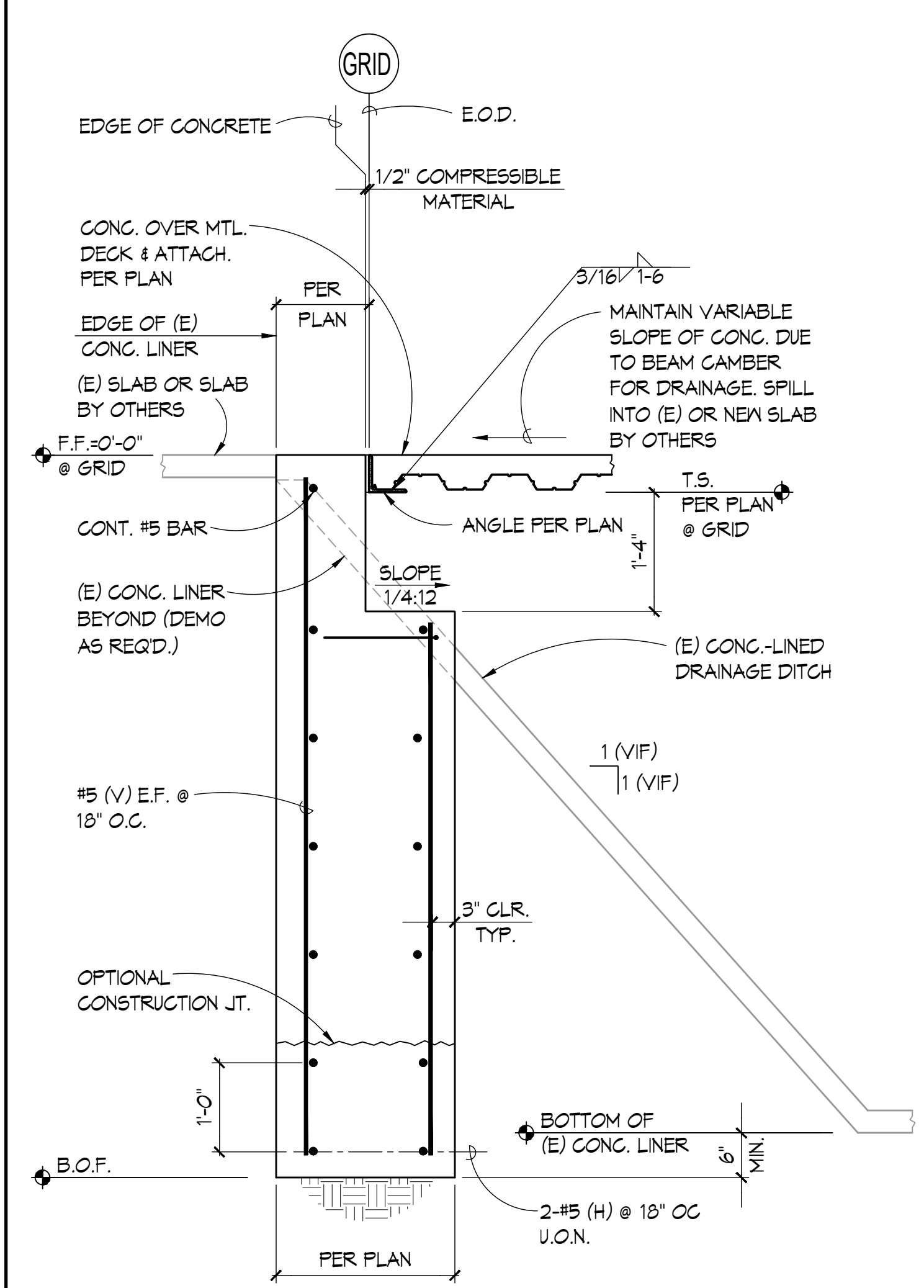
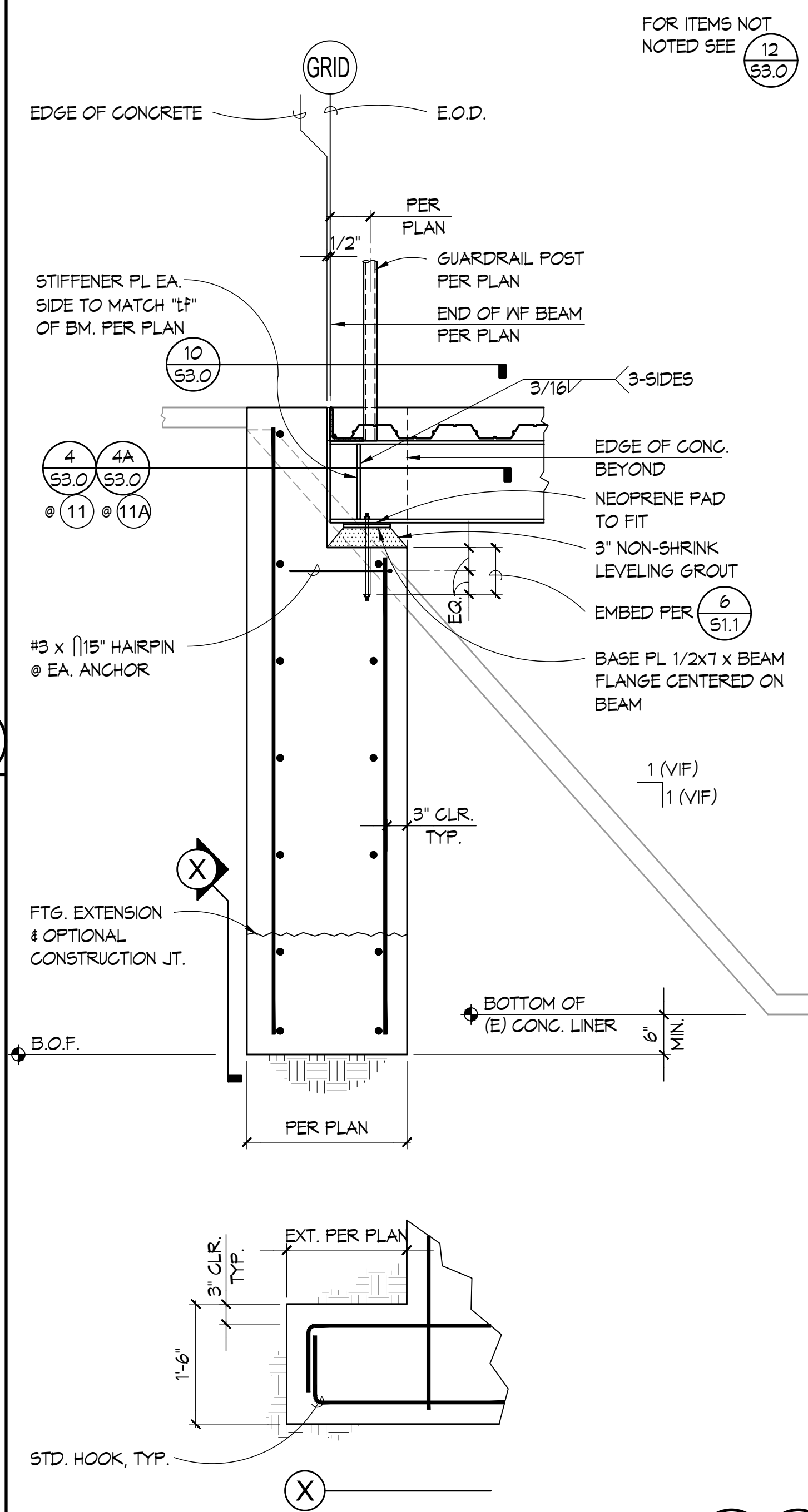
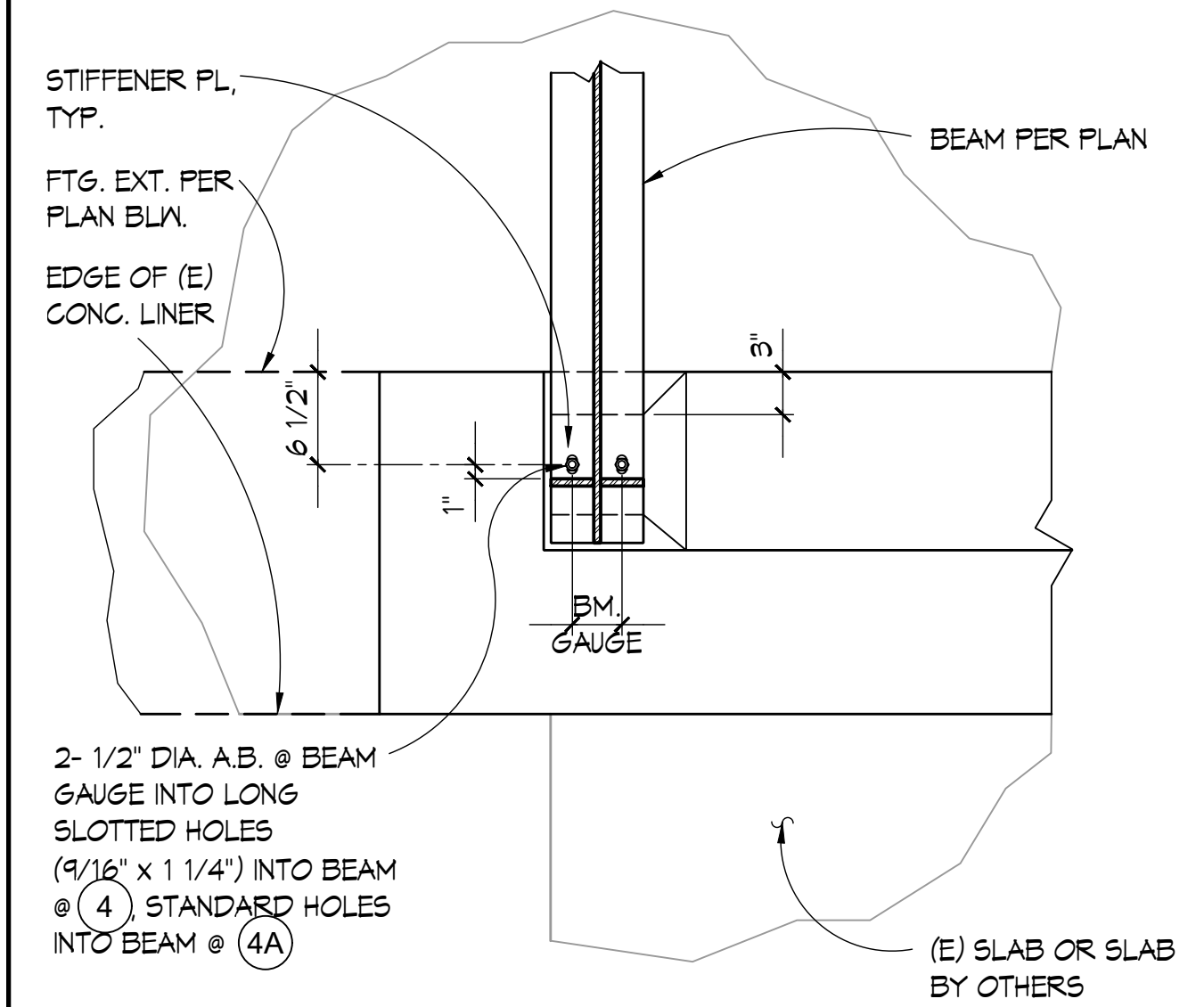
S1.1



REBAR LAP SCHEDULE (CONCRETE)

BAR SIZE	F _c =3000 PSI		F _c =4000 PSI	
	TOP BARS (N.)	OTHER BARS (N.)	TOP BARS (N.)	OTHER BARS (N.)
#3	28	22	24	19
#4	37	29	32	25
#5	47	38	40	31
#6	56	43	48	37
#7	81	63	70	54
#8	93	72	80	62
#9	105	81	91	70
#10	118	91	102	79
#11	131	101	113	87

- NOTES:**
- LAP SPLICE LENGTHS FOR GRADE 60 REINFORCING BAR.
 - LAP SPLICE LENGTHS FOR NORMAL WEIGHT CONCRETE
 - LAP SPLICE LENGTHS FOR CLASS B LAPS = 1.3 l_d.
 - TOP BARS ARE HORIZONTAL BARS WITH MORE THAN 12 INCHES OF CONCRETE CAST BELOW THE BARS.
 - LAP SPLICE LENGTHS ARE BASED ON THE TYPE OF STRUCTURAL ELEMENT AS FOLLOWS:
BEAMS OR COLUMNS: COVER AT LEAST 1.0d_b AND CENTER TO CENTER SPACING AT LEAST 2.0d_b.
ALL OTHERS: COVER AT LEAST 1.0d_b AND CENTER TO CENTER SPACING AT LEAST 3.0d_b.



ANGLE BEAM TO WIDE FLANGE
SCALE 3"=1'-0"

REVISIONS

	BY



WISEMAN + ROHY
STRUCTURAL ENGINEERS
9950 MIRAMESA BLVD.
SAN DIEGO, CA 92131
TEL: 619.594.5166
WWW.WISEMANROHY.COM

GUHSD - VALHALLA HIGH SCHOOL PEDESTRIAN BRIDGE
FOUNDATION DETAILS

DRAWN Team
CHECKED S.R.
DATE LIST DATE
SCALE AS SHOWN
JOB NO. 23019.00
SHEET

S3.0