

Diagram showing BRANCH LINE SEISMIC RESTRAINT (NFPA 13, 2016 SECTION 9.3.6.1) with various components like (E) TRUSS CHORD, 12 GA. STEEL ANGLE STRAP, SMP, SDS25112, TYP., 4 TIGHT TURNS WITHIN 1/2" WITH SPLAYED WIRE, (TYPICAL @ EA. END), TYP., 1/2" ALL THREADED ROD, CONNECT TO (E) FRAMING PER DETAIL 11 & 12/SS.3, 1" THRU 2" BRANCH LINES PER PLAN, 1/2" SPLAYED SEISMIC RESTRAINING WIRE, TYP., 2 TIGHT TURNS AROUND PIPE WITH SPLAYED WIRE FASTENED W/ (4) TURNS WITHIN 1/2", (TYP. BOTH SIDES), TOLCO FIG. 25, TOLCO FIG. 25 SURGE RESTRAINER TYPE 1 - FOR 1" AND 1-1/4" PIPE AND HANGER TYPE 2 - FOR 1-1/2" AND 2" PIPE AND HANGER.

NOTES:

1. PROVIDE END LINE RESTRAINTS AT ALL END OF BRANCHLINES WITHIN 2' OF HANGER AND AT 25'-0" INTERVALS MAXIMUM SPACING, WHERE THE UPWARD OR LATERAL MOVEMENT OF THE SYSTEM PIPING WOULD RESULT IN DAMAGE TO THE SPRINKLER THROUGH THE IMPACT AGAINST THE BUILDING STRUCTURE, EQUIPMENT OR FINISH MATERIALS.
2. NOT REQUIRED WHERE HANGER RODS ARE LESS THAN 6 INCHES PER NFPA 13, 2016 9.3.6.5.
3. THE END SPRINKLER ON A BRANCH LINE SHALL BE RESTRAINED AGAINST EXCESSIVE VERTICAL OR LATERAL MOVEMENT (NFPA 13, 2016 SECTION 9.3.6.3)

BRANCH LINE SEISMIC RESTRAINT (NFPA 13, 2016 SECTION 9.3.6.1)

PLAN SYMBOL =

Diagram showing BRANCH LINE RESTRAINT DETAIL with various components like 4x BLKG. x 10'-0", FULL DEPTH ATTACHED TO (E) TRUSS CHORDS OR ROOF JOISTS W/ (2) 1/2" THRU BOLTS @ 12" O.C., 3/4" FROM END, (E) TRUSS CHORD OR (E) ROOF JOIST, 1/2" THRU BOLT W/ WASHER, 1" PIPE BRACE PER OPM, (E) PIPE.

NOTE: SEE DETAIL 8/SS.2 FOR ADDITIONAL BRACE INFORMATION.

1 1/2" AND 2 1/2"

Diagram showing LONGITUDINAL BRACING with various components like 4x BLKG. x FULL LENGTH OF (E) TRUSS CHORD, FULL DEPTH W/ (2) 1/2" THRU BOLT @ 12" O.C., 3/4" FROM END EA. SIDE, (E) TRUSS CHORD OR (E) ROOF JOIST, 1" PIPE BRACE PER OPM, (E) PIPE, 1/2" THRU BOLT, TYP., L2x2 1/4", 1/2" THRU BOLT W/ WASHER, PIPE BRACE PER OPM.

NOTE: SEE DETAIL 8/SS.2 FOR ADDITIONAL BRACE INFORMATION.

4" PIPES

Diagram showing TRANSVERSE BRACING with various components like (E) TRUSS CHORD OR (E) ROOF JOIST, 2x FULL DEPTH BLKG., 16d NAILS, 1/2" THRU BOLT W/ WASHER, PIPE BRACE PER OPM, 2x BLKG. x 10'-0", FULL DEPTH ATTACHED TO (E) TRUSS CHORDS OR ROOF JOISTS W/ (2) 1/2" THRU BOLTS @ 12" O.C., 2" FROM END, 1" PIPE BRACE PER OPM, (E) PIPE, FIELD VERIFY, PARTIAL ELEVATION.

NOTE: SEE DETAIL 7/SS.2 FOR ADDITIONAL BRACE INFORMATION.

TRANSVERSE BRACING 1 1/2"=1'-0" 8

Diagram showing TRANSVERSE BRACING NOT ALIGNED WITH (E) FRAMING with various components like 4x FULL DEPTH BLKG. BTWN. (E) TRUSS CHORDS/ ROOF JOISTS W/ SMP, HJ HANGER EA. END, 2x BLKG. x 10'-0" LONG, FULL DEPTH W/ (2) 1/2" THRU BOLTS @ 12" O.C., 3/4" FROM END, TYP., (E) TRUSS CHORD OR (E) ROOF JOIST, 1/2" THRU BOLT W/ WASHER, PIPE BRACE PER OPM.

1 1/2", 2 1/2" AND 4" PIPES (APPLICABLE TO BOTH LATERAL AND VERTICAL PIPE BRACES)

Diagram showing LONGITUDINAL BRACING with various components like 4x BLKG. x 10'-0", FULL DEPTH ATTACHED TO (E) TRUSS CHORDS OR ROOF JOISTS W/ (2) 1/2" THRU BOLTS @ 12" O.C., 3/4" FROM END, TYP., (E) TRUSS CHORD OR (E) ROOF JOIST, 1/2" THRU BOLT W/ WASHER, PIPE BRACE PER OPM, 1" PIPE BRACE PER OPM, (E) PIPE, 1/2" THRU BOLT, TYP., L2x2 1/4", 1/2" THRU BOLT W/ WASHER, PIPE BRACE PER OPM.

NOTE: SEE DETAIL 8/SS.2 FOR ADDITIONAL BRACE INFORMATION.

4" PIPES

Diagram showing TOLCO FIG. 980 UNIVERSAL SWIVEL SWAY BRACE ATTACHMENT with various components like TIGHTEN UNTIL BREAK-OFF BOLT HEAD BREAKS OFF, 1" PIPE BRACE PER OPM, (E) PIPE, FIELD VERIFY, PARTIAL ELEVATION.

NOTE: SEE DETAIL 7/SS.2 FOR ADDITIONAL BRACE INFORMATION.

TRANSVERSE BRACING 1 1/2"=1'-0" 8

Diagram showing TOLCO FIG. 4L OR 4LA "IN-LINE" PIPE CLAMP SWAY BRACE (LOADS) (ASD) with various components like MODEL, PART DESCRIPTION, ORIENTATION, RUN PIPE NOMINAL SIZE, IN., PIPE RUN REFERENCE, COMPONENT ALLOWABLE HORIZONTAL LOAD (LBS), BRACE ANGLE MEASURED FROM HORIZONTAL, REMARKS.

NOTE: SEE DETAIL 8/SS.2 FOR ADDITIONAL BRACE INFORMATION.

TRANSVERSE BRACING 1 1/2"=1'-0" 7

Diagram showing TOLCO FIG. 4L OR 4LA "IN-LINE" PIPE CLAMP SWAY BRACE (LOADS) (ASD) with various components like MODEL, RUN PIPE NOMINAL SIZE, IN., RUN PIPE REFERENCE, LONGITUDINAL COMPONENT ALLOWABLE LOAD (LBS), LATERAL COMPONENT ALLOWABLE LOAD (LBS), BRACE ANGLE MEASURED FROM HORIZONTAL, REMARKS.

NOTE: SEE DETAIL 8/SS.2 FOR ADDITIONAL BRACE INFORMATION.

TRANSVERSE BRACING 1 1/2"=1'-0" 7

MWD OC

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PROJECT NAME

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OF ORANGE COUNTY -
ADMINISTRATIVE BUILDING

SEISMIC RETROFIT, ADA
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STATE OF CALIFORNIA

STAMP

ISSUE

REV.	DESCRIPTION	DATE
90%	CD Owner Review	08/16/2019

KEY PLAN

PROJECT NO. 18X093.00

PRINT DATE

DRAWN BY DB

CHECKED BY YR, ES

SHEET TITLE

DETAILS AND SECTIONS

SHEET NUMBER

S5.3

SHEET NO. OF

& A.B. ABV.	AT AND ANCHOR BOLT	K.P.	KING POST	1.
ADD'L. (ADDL.) ADJ. ALT. ALUM. APPRX. (APPROX.) ARCH.	ADDITIONAL ADJACENT ALTERNATE ALUMINUM APPROXIMATE(LY) ARCHITECT(URAL)	LAT. L.B. LB (#) L.F. LLH LLV LT. WT.	LATERAL LAG BOLT POUND LINEAL FEET (FOOT) LONG LEG HORIZONTAL LONG LEG VERTICAL LIGHT WEIGHT	2.
BLDG. BLKG. BLW. BM. B.N. BNDRY. B.O.C. B.O.F. BOT. (B) BRCC. BRDG. BRG. BTWN.	BUILDING BLOCKING BELOW BEAM BOUNDARY NAILING BOUNDARY BOTTOM OF CONCRETE BOTTOM OF FOOTING BOTTOM BRACING BRIDGE (ING) BEARING BEFORE	MAX. M.B. MECH. M.E.P. MEZZ. MFR. MIN. MISC. MTL. (N) NO. (#) N.S. N.T.S.	MAXIMUM MACHINE BOLT MECHANICAL MECHANICAL, ELECTRICAL AND PLUMBING MEZZANINE MANUFACTURER MINIMUM MISCELLANEOUS METAL NEW NUMBER NEAR SIDE NOT TO SCALE	
CAMB. (C) CBC CANT. C.F. C.I.P. C.I.D.H. C.J. C.L. (CL) CLG. CLR. COL. CONN. CONN. CONST. CONT. C.P. CTSK. CTR. C.Y.	CAMBER(ED) CALIFORNIA BUILDING CODE CANTILEVER(ED) CUBIC FEET (FOOT) CAST-IN-PLACE CAST-IN-DRILLED HOLE CONTROL JOINT; CONSTRUCTION JOINT CENTER LINE CEILING CLEAR COLUMN CONCRETE CONNECTION CONSTRUCTION CONTINUOUS COMPLETE-PENETRATION COUNTERSINK CENTER(ED) CUBIC YARD	O/C (O.C.) O.D. O.H. OPNG. OPP. ORTHO. O.W.J. PC PCF PCF PLYWD. P.P. P.S.F. P.S.I. PT P.T.	ON CENTER OUTSIDE DIAMETER OPPOSITE HAND OPENING OPPOSITE ORTHOGONAL OPEN WEB JOIST PILE CAP POUNDS PER CU.FT. PLATE PLYWOOD PARTIAL-PENETRATION POUNDS PER SQUARE FOOT POUNDS PER SQUARE INCH PRETENSIONED PRESSURE TREATED	
d DBA DLB. DEPT. D.F. DIA. (#) DIAG. DIAPHI. DIM. DN. DO. DWG. (DWGS.) DWL.	d PENNY NAIL DEFORMED BAR ANCHOR DOUBLE DEPARTMENT DOUGLAS FIR DIAMETER DIAGONAL DIAPHRAGM DIMENSION DOWN DITTO (REPEAT) DRAWING(S) DOWEL	QTY. RAD. (R) RBS REF. REINF. REQ'D. (REQD.) R.F. R.O. S.A.D.	QUANTITY RADIUS REDUCED BEAM SECTION REFERENCE REINFORCEMENT (ING) REQUIRED ROOF ROUGH OPENING SEE ARCHITECTURAL DRAWINGS SLIP-CRITICAL SEE CIVIL DRAWINGS SCHEDULE SEPARATION SHEET SIMILAR SKEW(ED) SLAB-ON-GRADE SPECIFICATION SQUARE SNUG-TIGHTENED STANDARD STAGER(ED) STIFFENER STIRRUP STEEL STRUCT(T). SUSP. SYMM.	
E.A. E.F. E.J. EL. ELEC. ELEV. EMB. EDGE NAIL ENG. EQ. EQPT. EQUIV. EXP. EXIST. (E) EXT.	EACH EACH FACE EXPANSION JOINT ELEVATION ELECTRICAL ELEVATOR EMBED(MENT) EDGE NAIL ENGINEER EQUAL EQUIPMENT EQUIVALENT EXPANSION EXISTING EXTERIOR	SC S.C.D. SCH. SEP. SHT. SIM. SKW. S.O.G. SPEC. STD. ST. STAGG. STIFF. STR. STL. STRUC(T). SUSP. SYMM.	SEE ARCHITECTURAL DRAWINGS SLIP-CRITICAL SEE CIVIL DRAWINGS SCHEDULE SEPARATION SHEET SIMILAR SKEW(ED) SLAB-ON-GRADE SPECIFICATION SQUARE SNUG-TIGHTENED STANDARD STAGER(ED) STIFFENER STIRRUP STEEL STRUCTURAL SUSPENDED SYMMETRICAL	
FDN. FIN. FLR. F.N. F.O.C. F.O.M. F.O.S. F.O.W. F.P. FRP F.S. FT. (') FTG. F.V.	FOUNDATION FINISH(ED) FLOOR FACE NAIL; FACE NAIL FACE OF CONCRETE FACE OF MASONRY FACE OF STUD FACE OF WALL FULL (COMPLETE) PENETRATION FIBER REINFORCED POLYMER FAR SIDE FOOT (FEET) FOOTING FIELD VERIFY	T&B T&G TEMP. T.O. T.O.C. T.O.S. T.O.W. TRANS. T.S.G. TYP. U.O.N. (U.N.O.) UTIL.	TOP AND BOTTOM TONGUE AND GROOVE TEMPORARY THICK(NESS) TOE NAIL TOP OF TOP OF CONCRETE TOP OF STEEL TOP OF SHEATHING TOP OF WALL TRANSVERSE TAPERED STEEL GIRDER TYPICAL UNLESS OTHERWISE NOTED UTILITY	
HD. HDR. HGR. HORIZ. (H) H.S. H.S.B. HT.	HOLDOWN; HAND HEADER HANGER HORIZONTAL HEADED STUD HIGH STRENGTH BOLT HEIGHT	VERT. (V) V.I.F. W/ (W) WD. W.P. WT. W.W.F.	VERTICAL VERIFY IN FIELD WITH WIDE; WIDTH WOOD WORK POINT WEIGHT WELDED WIRE FABRIC	
I.D. IN. (") INFO.	INSIDE DIAMETER INCH(ES) INFORMATION	X-STG XX-STG	EXTRA STRONG DOUBLE EXTRA STRONG	
JST. JT.	JOIST JOINT			

1. SHOP DRAWINGS ARE NOT CONTRACT DOCUMENTS AND MAY NOT BE USED AS A BASIS FOR CONSTRUCTING THE WORK IN A MANNER DIFFERENT FROM WHAT IS SHOWN IN THE CONTRACT DOCUMENTS. THE PURPOSE OF THE SHOP DRAWING REVIEW BY THE ENGINEER IS TO HELP THE CONTRACTOR UNDERSTAND AND IMPLEMENT THE DESIGN SHOWN ON THE DRAWINGS AND DESCRIBED IN THE SPECIFICATIONS. IF DEVIATIONS, DISCREPANCIES OR CONFLICTS BETWEEN THE SHOP DRAWINGS AND THE CONTRACT DOCUMENTS ARE DISCOVERED EITHER PRIOR TO OR AFTER THE SHOP DRAWINGS ARE REVIEWED BY THE ENGINEER, THE CONTRACT DOCUMENTS SHALL CONTROL AND SHALL BE FOLLOWED.

CONNECTION	FASTENING ^{a, m}	LOCATION
1. JOIST TO SILL OR GIRDER	3 – 8d COMMON (2½" x 0.131")	TOENAIL
2. BRIDGING TO JOIST	2 – 8d COMMON (2½" x 0.131")	TOENAIL EACH END
3. 1" x 6" SUBFLOOR OR LESS TO EACH JOIST	2 – 8d COMMON (2½" x 0.131")	FACE NAIL
4. WIDER THAN 1" x 6" SUBFLOOR TO EACH JOIST	3 – 8d COMMON (2½" x 0.131")	FACE NAIL
5. 2" SUBFLOOR TO JOIST OR GIRDER	2 – 16d COMMON (3½" x 0.162")	BLIND AND FACE NAIL
6. SOLE PLATE TO JOIST OR BLOCKING	16d (3½" x 0.135") AT 16" O.C.	TYPICAL FACE NAIL
SOLE PLATE TO JOIST OR BLOCKING AT PANELS BRACED WALL PANEL	3 – 16d (3½" x 0.135") AT 16" O.C.	BRACED WALL
7. TOP PLATE TO STUD	2 – 16d COMMON (3½" x 0.162")	END NAIL
8. STUD TO SOLE PLATE	4 – 8d COMMON (2½" x 0.131") 2 – 16d COMMON (3½" x 0.162")	TOENAIL END NAIL
9. DOUBLE STUDS	16d (3½" x 0.135") AT 24" O.C.	FACE NAIL
10. DOUBLE TOP PLATES DOUBLE TOP PLATES	16d (3½" x 0.135") AT 16" O.C. 8 – 16d COMMON (3½" x 0.162")	TYPICAL FACE NAIL LAP SPLICE
11. BLOCKING BETWEEN JOISTS OR RAFTERS TO TOP PLATE	3 – 8d COMMON (2½" x 0.131")	TOENAIL
12. RIM JOIST TO TOP PLATE	8d (2½" x 0.131") AT 6" O.C.	TOENAIL
13. TOP PLATES, LAPS AND INTERSECTIONS	2 – 16d COMMON (3½" x 0.162")	FACE NAIL
14. CONTINUOUS HEADER, TWO PIECES	16d COMMON (3½" x 0.162")	16" O.C. ALONG EDGE
15. CEILING JOISTS TO PLATE	3 – 8d COMMON (2½" x 0.131")	TOENAIL
16. CONTINUOUS HEADER TO STUD	4 – 8d COMMON (2½" x 0.131")	TOENAIL
17. CEILING JOISTS, LAPS OVER PARTITIONS (NOTE q.)	3 – 16d COMMON (3½" x 0.162") MINIMUM, TABLE 2308.10.4.1	FACE NAIL
18. CEILING JOISTS TO PARALLEL RAFTERS (NOTE q.)	3 – 16d COMMON (3½" x 0.162") MINIMUM, TABLE 2308.10.4.1	FACE NAIL
19. RAFTER TO PLATE (NOTE 4.)	3 – 8d COMMON (2½" x 0.131")	TOENAIL
20. 1" DIAGONAL BRACE TO EACH STUD AND PLATE	2 – 8d COMMON (2½" x 0.131")	FACE NAIL
21. 1" x 8" SHEATHING TO EACH BEARING	3 – 8d COMMON (2½" x 0.131")	FACE NAIL
22. WIDER THAN 1" x 8" SHEATHING TO EACH BEARING	3 – 8d COMMON (2½" x 0.131")	FACE NAIL
23. BUILT-UP CORNER STUDS	16d COMMON (3½" x 0.162")	24" O.C.
24. BUILT-UP GIRDER AND BEAMS	20d COMMON (4" x 0.192") AT 32" O.C. 2 – 20d COMMON (4" x 0.192")	FACE NAIL AT TOP AND BOTTOM STAGGERED ON OPPOSITE SIDES FACE NAIL AT ENDS AND AT EACH SPLICE
25. 2" PLANKS	16d COMMON (3½" x 0.162")	AT EACH BEARING
26. COLLAR TIE TO RAFTER	3 – 10d COMMON (3" x 0.148")	FACE NAIL
27. JACK RAFTER TO HIP	3 – 10d COMMON (3" x 0.148") 2 – 16d COMMON (3½" x 0.162")	TOENAIL FACE NAIL
28. ROOF RAFTER TO 2-BY RIDGE BEAM	2 – 16d COMMON (3½" x 0.162") 2 – 16d COMMON (3½" x 0.162")	TOENAIL FACE NAIL
29. JOIST TO BAND JOIST	3 – 16d COMMON (3½" x 0.162")	FACE NAIL
30. LEDGER STRIP	3 – 16d COMMON (3½" x 0.162")	FACE NAIL AT EACH JOIST
31. WOOD STRUCTURAL PANELS AND PARTICLEBOARD ^b SUBFLOOR, ROOF AND WALL SHEATHING (TO FRAMING)	½" AND LESS 6d ^{c,1} ⅜" TO ¾" 8d ^d OR 6d ^e ⅞" TO 1" 10d ^d OR 8d ^e 1⅛" TO 1¼" 10d ^d OR 8d ^e	
SINGLE FLOOR (COMBINATION SUBFLOOR – UNDERLAYMENT TO FRAMING)	¾" AND LESS 6d ^e ⅞" TO 1" 8d ^e 1⅛" TO 1¼" 10d ^e OR 8d ^e	
32. PANEL SIDING (TO FRAMING)	½" AND LESS 6d ^d ⅝" 8d ^d	
33. FIBERBOARDING SHEATHING ^g	½" 6d COMMON NAIL (2" x 0.113") ⅝" 8d COMMON NAIL (2½" x 0.131")	
34. INTERIOR PANELING	¼" 4d ^j ⅝" 6d ^e	

- a. COMMON OR BOX NAILS ARE PERMITTED TO BE USED EXCEPT WHERE OTHERWISE STATED.
- b. NAILS SPACED AT 6 INCHES ON CENTER AT EDGES, 12 INCHES AT INTERMEDIATE SUPPORTS EXCEPT 6 INCHES AT SUPPORTS WHERE SPANS ARE 48 INCHES OR MORE. FOR NAILING OF WOOD STRUCTURAL PANEL AND PARTICLE BOARD DIAGHRAMS AND SHEAR WALLS, REFER TO SECTION 2305. NAILS FOR WALL SHEATHING ARE PERMITTED TO BE COMMON, BOX OR CASING.
- c. COMMON OR DEFORMED SHANK (6d - 2" x 0.113"; 8d - 2½" x 0.131"; 10d - 3" x 0.148").
- d. COMMON (6d - 2" x 0.113"; 8d - 2½" x 0.131"; 10d - 3" x 0.148").
- e. DEFORMED SHANK (6d - 2" x 0.113"; 8d - 2½" x 0.131"; 10d - 3" x 0.148").
- f. CORROSION-RESISTANT SIDING (6d - 1⅞" x 0.106"; 8d - 2⅝" x 0.128") OR CASING (6d - 2" x 0.099"; 8d - 2½" x 0.113") NAIL.
- g. FASTENERS SPACED 3 INCHES ON CENTER AT EXTERIOR EDGES AND 6 INCHES ON CENTER AT INTERMEDIATE SUPPORTS, WHEN USED AS STRUCTURAL SHEATHING. SPACING SHALL BE 6 INCHES ON CENTER ON THE EDGES AND 12 INCHES ON CENTER AT INTERMEDIATE SUPPORTS FOR NON-STRUCTURAL APPLICATIONS.
- h. CORROSION-RESISTANT ROOFING NAILS WITH ⅞-INCH-DIAMETER HEAD AND 1½-INCH LENGTH FOR ½-INCH SHEATHING AND 1¾-INCH LENGTH FOR ⅔-INCH SHEATHING.
- i. CORROSION-RESISTANT STAPLES WITH NOMINAL ⅞-INCH CROWN OR 1-INCH CROWN AND 1½-INCH LENGTH FOR ½-INCH SHEATHING AND 1¾-INCH LENGTH FOR ⅔-INCH SHEATHING. PANEL SUPPORTS AT 16 INCHES (20 INCHES IF STRENGTH AXIS IN THE LONG DIRECTION OF THE PANEL, UNLESS OTHERWISE MARKED).
- j. CASING (1½" x 0.080") OR FINISH (1½" x 0.072") NAILS SPACED 6 INCHES ON PANEL EDGES, 12 INCHES AT INTERMEDIATE SUPPORTS.
- k. PANEL SUPPORTS AT 24 INCHES. CASING OR FINISH NAILS SPACED 6 INCHES ON PANEL EDGES, 12 INCHES AT INTERMEDIATE SUPPORTS.
- l. FOR ROOF SHEATHING APPLICATIONS, 8d NAILS (2½" x 0.113") ARE THE MINIMUM REQUIRED FOR WOOD STRUCTURAL PANELS.
- m. STAPLES SHALL HAVE A MINIMUM CROWN WIDTH OF ⅜ INCH.
- n. FOR ROOF SHEATHING APPLICATIONS, FASTENERS SPACED 4 INCHES ON CENTER AT EDGES, 8 INCHES AT INTERMEDIATE SUPPORTS.
- o. FASTENERS SPACED 4 INCHES ON CENTER AT EDGES, 8 INCHES AT INTERMEDIATE SUPPORTS FOR SUB-FLOOR AND WALL SHEATHING AND 3 INCHES ON CENTER AT EDGES, 6 INCHES AT INTERMEDIATE SUPPORTS FOR ROOF SHEATHING.
- p. FASTENERS SPACED 4 INCHES ON CENTER AT EDGES, 8 INCHES AT INTERMEDIATE SUPPORTS.
- q. CEILING JOIST AND RAFTER CONSTRUCTION SHALL BE IN ACCORDANCE WITH CBC SECTION 2308.10.

WOOD MEMBERS SHALL BE DOUGLAS FIR-LARCH PER WCLUB OR WCPUB, VUALLY GRADED DIMENSION LUMBER AND SHALL BE SURFACED DRY (19% MOISTURE CONTENT MAXIMUM). ALL LUMBER SHALL BEAR THE GRADE STAMP OF AN APPROVED TESTING AGENCY, EXCEPT EXPOSED LUMBER AT VISIBLE AREAS. STRUCTURAL FRAMING MEMBERS SHALL BE S4S AND GRADE MARKED AS No.1.

2. PLYWOOD SHEATHING SHALL MEET THE REQUIREMENTS OF THE LATEST EDITION OF U.S. PRODUCT STANDARDS PS 1-95. STRUCTURAL USE PANELS SHALL CONFORM TO NER-108 (APA-PRP-108). EACH PANEL SHALL BE IDENTIFIED WITH THE APPROPRIATE A.P.A. GRADE STAMP.

3. ROOF SHEATHING SHALL BE FIVE PLY WITH THICKNESS AND PANEL INDEX AS INDICATED ON DRAWINGS. STAGGER SHEETS PER PLAN. ROOF NAILING SHALL BE PER SCHEDULE ON DRAWINGS, OR AS INDICATED IN NOTES. INSTALL SHEETS WITH FACE GRAIN ACROSS SUPPORTS EXCEPT WHERE NOTED OTHERWISE.

4. ROOF AND FLOOR SHEATHING, AND SHEAR WALL PANELS NAILING AND INSTALLATION SHALL BE INSPECTED AND APPROVED PRIOR TO COVERING.

5. BOLTS SHALL CONFORM TO ASTM A307. ALL BOLTS THROUGH WOOD SHALL HAVE STANDARD WASHERS. BOLT HOLES SHALL BE BORED $\frac{1}{32}$ " TO $\frac{1}{16}$ " LARGER THAN THE BOLT DIAMETER UNLESS NOTED OTHERWISE. ALL BOLTS SHALL BE TIGHTENED PRIOR TO BEING COVERED.

WHERE PLATE WASHERS ARE SHOWN ON THE DRAWINGS THEY SHALL BE AS FOLLOWS:

MINIMUM SIZE FOR SQUARE PLATE WASHERS	
BOLT SIZE	PLATE SIZE
$\frac{1}{2}$ "	$\frac{3}{16}$ " x 2" x 2"
$\frac{5}{8}$ "	$\frac{1}{4}$ " x 2 $\frac{1}{2}$ " x 2 $\frac{1}{2}$ "
$\frac{3}{4}$ "	$\frac{5}{16}$ " x 2 $\frac{3}{4}$ " x 2 $\frac{3}{4}$ "
$\frac{7}{8}$ "	$\frac{3}{8}$ " x 3" x 3"
1"	$\frac{3}{8}$ " x 3 $\frac{1}{2}$ " x 3 $\frac{1}{2}$ "

6. NAILS SHALL BE COMMON WIRE NAILS (0131"x2 $\frac{1}{2}$ " FOR 8d; 0148"x3" FOR 10d; 0148"x3 $\frac{1}{4}$ " FOR 12d; 0162"x3 $\frac{3}{4}$ " FOR 16d) OR ACCESSORIES OF HARDWARE CONNECTORS. SEE CBC FOR MINIMUM NAILING SCHEDULE AT CONNECTIONS.

7. HARDWARE CONNECTORS AND ACCESSORIES SHALL BE SIMPSON STRONG-TIE CONNECTORS OR APPROVED EQUAL.

8. NONBEARING PARTITIONS SHALL BE MINIMUM 2x4 STUD AT MAXIMUM 16" ON CENTER WITH TOP AND SILL PLATES AS SHOWN IN THE APPLICABLE DETAILS UNLESS OTHERWISE NOTED.

9. PLYWOOD NAILING SHALL HAVE A MINIMUM EDGE DISTANCE OF 3/8". NAIL HEADS SHALL BE FLUSH WITH TOP SURFACE OF PLYWOOD; SINKING NAIL HEADS IS PROHIBITED.

10. PROVIDE PLYWOOD EDGE NAILING AROUND THE PLYWOOD OPENINGS AND ALONG THE FULL HEIGHT OF ALL WALL POSTS AND COLUMNS.

11. LAG SCREWS SHALL BE SCREWED, NOT DRIVEN, INTO WOOD MEMBERS WITH PRE-DRILLED HOLES. PRE-DRILLED HOLE DIAMETER IN SOFT STRUCTURAL WOODS SHALL EQUAL SCREW SHANK DIAMETER AT THE SCREW SHANK, AND SHALL BE UNDERSIZED BY 25% OF SCREW DIAMETER AT THE SCREW THREADS. FOR EXAMPLE, FOR A 3/8" SCREW, THE PRE-DRILLED HOLE SHALL BE 3/8" OVER THE LENGTH OF THE SCREW SHANK, AND SHALL BE 9/32" OVER THE LENGTH OF THE SCREW THREADS. FOR HARD WOODS USED IN A STRUCTURAL APPLICATION, PRE-DRILLED HOLE DIAMETER AT THE SHANK SHALL MATCH THE SCREW DIAMETER, AND THE HOLE DIAMETER OVER THE LENGTH OF THE SCREW THREADS SHALL BE UNDERSIZED BY 12.5% OF THE SCREW DIAMETER.

12. SILL PLATES IN DIRECT CONTACT WITH CONCRETE, MASONRY, OR EARTH, SHALL BE PRESSURE TREATED LUMBER OR APPROVED EQUAL. PRESSURE TREATED WOOD SHALL BE TREATED WITH ALKALINE COPPER QUAT (ACQ-C AND ACQ-D), CARBONATE AZOLE (CBA-A), OR COPPER AZOLE (CA-B).

13. PROVIDE DOUBLE OR 4x FLOOR JOIST UNDER PARALLEL, NON-BEARING PARTITION WALL UNLESS OTHERWISE NOTED.

14. PROVIDE LAMINATED DOUBLE STUDS UNDER EACH SUPPORT OF BEAMS UNLESS OTHERWISE NOTED.

15. SOLID BLOCKING SHALL BE PLACED BETWEEN JOISTS AT POINTS OF SUPPORT AND POINTS WHERE SHEATHING IS DISCONTINUOUS.

16. APPLY ADHESIVE TO CONTACT SURFACES BETWEEN HORIZONTAL PLYWOOD SHEATHING AND SUPPORTING WOOD MEMBER.

17. WOOD MEMBER WITH WANE SHALL NOT BE LOCATED AT PLYWOOD JOINT.

18. NO STRUCTURAL MEMBER SHALL BE CUT WITHOUT THE APPROVAL OF THE STRUCTURAL ENGINEER.

19. HARDWARE CONNECTING WOOD MEMBERS SHALL BE RECESSED WHEN REQUIRED BY ARCHITECTURAL FINISH. VERIFY WITH ARCHITECTURAL DRAWINGS.

20. 0.229"x2"x2" STEEL PLATE WASHERS (OR SIMPSON BP) SHALL BE USED FOR ALL SILL PLATE ANCHOR BOLTS AND HOLDOWN CONNECTOR BOLTS UNLESS OTHERWISE NOTED. SIMPSON BP SHALL BE PROTECTED WITH ZMAX (G185) COATING.

21. ALL BOLTS SHALL BE RE-TIGHTENED JUST PRIOR TO BEING COVERED.

22. BOLT HOLES AT WOOD MEMBERS SHALL NOT BE MORE THAN 1/16" LARGER THAN THE BOLT DIAMETER.

23. ALL HARDWARE AND FASTENERS IN CONTACT WITH TREATED WOOD SILL PLATES SHALL BE ZINC-COATED. ALL NAILS INTO TREATED SILL PLATES SHALL BE HOT-DIPPED ZINC-COATED GALVANIZED OR SIMPSON ZMAX (G185) COATED NAILS.

24. SOLID BLOCKING OR EQUIVALENT CROSS-BRIDGING SHALL BE INSTALLED BETWEEN ALL ROOF AND FLOOR JOISTS AT THE SPACING PER CODE.

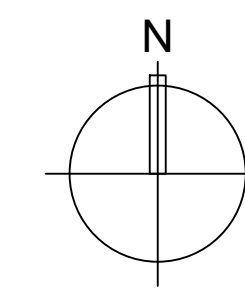
25. FIRE BLOCKING SHALL BE INSTALLED BETWEEN ALL WALL STUDS IF REQUIRED BY CODE.

1. THE OWNER SHALL EMPLOY THE ENGINEER OF RECORD REGISTERED/LICENSED IN THE STATE OF CALIFORNIA WHO IS RESPONSIBLE FOR THE STRUCTURAL DESIGN, TO DO STRUCTURAL OBSERVATION.
2. THE STRUCTURAL OBSERVATION IS REQUIRED FOR THE STRUCTURAL SYSTEM IN ACCORDANCE WITH CBC SECTION 1704. STRUCTURAL OBSERVATION IS THE VISUAL OBSERVATION OF THE ELEMENTS AND CONNECTIONS OF THE STRUCTURAL SYSTEM AT SIGNIFICANT CONSTRUCTION STAGES AND THE COMPLETE STRUCTURE FOR GENERAL CONFIRMANCE. THE APPROVED PLANS AND SPECIFICATIONS. STRUCTURAL OBSERVATION DOES NOT WAIVE THE RESPONSIBILITY FOR THE INSPECTIONS REQUIRED OF THE PROJECT INSPECTOR, DEPUTY INSPECTOR, SPECIAL INSPECTOR OR CITY INSPECTOR.
3. STRUCTURAL OBSERVER OF RECORD : SAID HILMY, S3680
4. THE STRUCTURAL OBSERVER SHALL PERFORM SITE VISITS AT THOSE STEPS IN THE PROCESS OF THE CONSTRUCTION THAT ALLOW FOR CORRECTION OF DEFICIENCIES WITHOUT SUBSTANTIAL EFFORT OR UNCOVERING OF THE WORK INVOLVED. AT A MINIMUM, THE FOLLOWING SIGNIFICANT CONSTRUCTION STAGES REQUIRE A SITE VISIT AND AN OBSERVATION REPORT FROM THE STRUCTURAL OBSERVER.

CONSTRUCTION STAGE ELEMENTS/CONNECTIONS TO BE OBSERVED:
A. FOLLOWING RETROFIT/PRIOR TO COVERING WITH FINISH.
5. OBSERVED DEFICIENCIES: ANY OBSERVED DEFICIENCIES SHALL BE DESCRIBED ON THE FORM; THE OBSERVER SHALL ALSO INDICATE WHETHER A RE-OBSERVATION IS REQUIRED TO VERIFY CORRECTIVE ACTIONS HAVE BEEN PROPERLY TAKEN OR THAT THE CORRECTIVE ACTIONS ARE DEEMED VERIFIABLE BY THE SPECIAL INSPECTOR OR CITY INSPECTOR PRIOR TO INSPECTION APPROVAL.

SHEET NUMBER	
S1.1	
SHEET NO.	OF

NOT FOR CONSTRUCTION







LEGEND:




LINE	SIZE
4	4" Ø
25	2½" Ø
15	1½" Ø


BRACE TYPE
A = LATERAL
B = LONGITUDINAL

LINE	MAXIMUM BRACE SPACING	MAXIMUM BRACE LOAD
4A	20'-0"	300 LBS
4B	40'-0"	569 LBS
25A	20'-0"	175 LBS
25B	40'-0"	230 LBS
15A	20'-0"	85 LBS
15B	40'-0"	145 LBS

 INDICATES (E) PIPE HANGER
 INDICATES (E) FIRE SPRINKLER HEAD

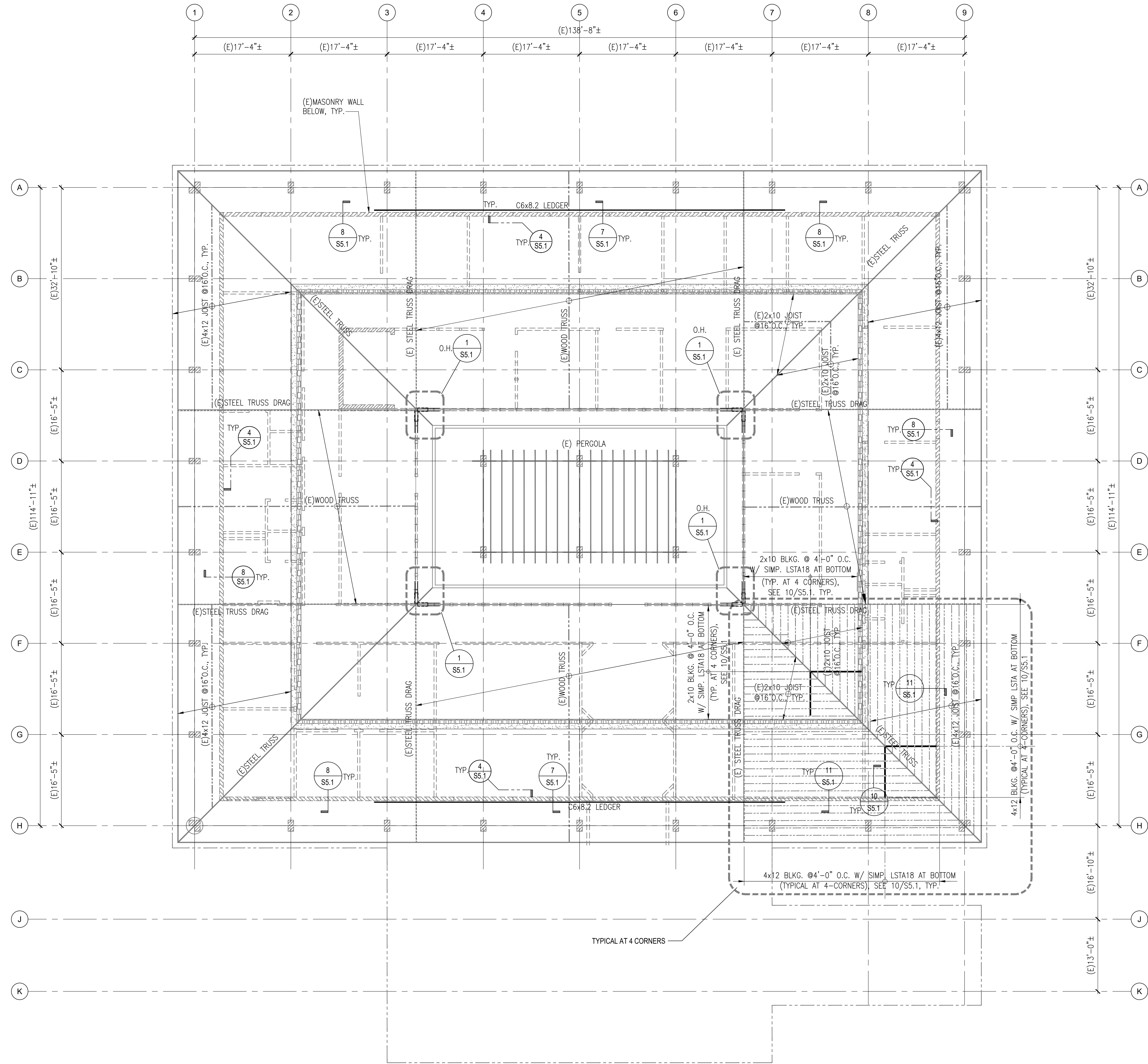
 INDICATES (E) FIRE SPRINKLER PIPE SIZE
 INDICATES (E) FIRE SPRINKLER PIPE

 INDICATES LINE SIZE
 INDICATES BRACE TYPE
 INDICATES NEW BRACE LOCATION

 INDICATES LINE RESTRAINT WITH SPLAY WIRE, SURGE RESTRAINER, RING HANGER, HANGER ROD AND BEAM CONNECTION ASSEMBLY. SEE DETAIL 15/S5.3.

EXISTING FIRE SPRINKLER PLAN	1/8"=1'-0"	1
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NOT FOR CONSTRUCTION



- NOTES:
1. GENERAL CONTRACTOR TO CONFIRM ROOF DIAPHRAGM NAILING PATTERN OF 6" AT BOUNDARIES, 6" AT PANEL EDGES AND 12" AT FIELD.
 2. GENERAL CONTRACTOR TO CONFIRM ALL EXISTING STRUCTURAL ELEMENT AND IF SIZES OF EXISTING BOLTS AND ALL EXISTING MISCELLANEOUS STEEL IS NOT AS SHOWN ON THESE DRAWINGS, GENERAL CONTRACTOR TO CONTACT SEOR,

CLIENT

18700 WARD STREET
FOUNTAIN VALLEY, CA 92708

PROJECT NAME

MUNICIPAL WATER DISTRICT
OF ORANGE COUNTY -
ADMINISTRATIVE BUILDING

SEISMIC RETROFIT, ADA
COMPLIANCE AND
TENANT IMPROVEMENT

ENGINEER/ARCHITECT

IDS GROUP

1 PETERS CANYON ROAD, SUITE 130
IRVINE, CA 92606
TEL: 949-387-8500, FAX: 949-387-0800

STAMP

STAMP

ISSUE		
REV.	DESCRIPTION	DATE
	90% CD Owner Review	08/16/2019

KEY PLAN

PROJECT NO.	18X093.00
PRINT DATE	
DRAWN BY	DB
CHECKED BY	YR, ES

SHEET TITLE

ROOF FRAMING
PLAN

SHEET NUMBER

S2.3

SHEET NO. OF

NOT FOR CONSTRUCTION

