VERTICAL

WITH WORK POINT

VERIFY IN FIELD

VERT

#### <u>GENERAL</u>

- 1. THE CONTRACTOR SHALL COORDINATE ALL STRUCTURAL DOCUMENTS WITH ALL OTHER DISCIPLINES AND REPORT ALL DISCREPANCIES TO THE ENGINEER FOR RESOLUTION. ALL DIMENSIONS ARE TO BE CHECKED AND VERIFIED WITH THE ARCHITECTURAL DRAWINGS.
- 2. DIMENSIONS REFER TO ROUGH CONCRETE SURFACES, FACE OF STUDS, FACE OF CONCRETE BLOCK, TOP OF SHEATHING, OR TOP OF SLAB UNLESS OTHERWISE NOTED. DO NOT USE SCALED DIMENSIONS. WHERE NO DIMENSION IS PROVIDED OR CAN BE DERIVED, CONSULT WITH ARCHITECT PRIOR TO CONSTRUCTION.
- 3. SEE ARCHITECTURAL AND MECHANICAL DRAWINGS AND/OR SPECIFICATIONS FOR SIZE AND LOCATION OF PIPE. VENT. DUCT. AND OTHER OPENINGS, AND ANY OTHER DETAILS NOT SHOWN ON THE STRUCTURAL DRAWINGS. SEE ARCHITECTURAL DRAWINGS FOR WATERPROOFING, DAMPPROOFING, AND DRAINAGE REQUIREMENTS. WHERE SUCH INFORMATION IS SHOWN ON THE STRUCTURAL DRAWINGS IT IS FOR INFORMATION ONLY.
- 4. SEE CIVIL AND/OR SITE DRAWINGS AND DETAILS FOR GRADING, PAVING, DRAINAGE, WATER AND SANITARY SERVICE AND OTHER CIVIL ENGINEERING ITEMS.
- 5. TYPICAL DETAILS AND NOTES SHOWN ON THESE SHEETS SHALL APPLY UNLESS SPECIFICALLY SHOWN OR NOTED OTHERWISE. CONSTRUCTION DETAILS NOT FULLY SHOWN OR NOTED SHALL BE SIMILAR TO DETAILS FOR SIMILAR CONDITIONS.
- 6. ALL WORK AND CONSTRUCTION SHALL COMPLY WITH ALL APPLICABLE BUILDING CODES, REGULATIONS, AND SAFETY REQUIREMENTS.
- 7. THE PROJECT PLANS SHOW THE COMPLETED STRUCTURE. MEANS AND METHODS OF CONSTRUCTION AND THE SAFETY OF PERSONNEL AND PROPERTY DURING CONSTRUCTION SHALL BE THE CONTRACTOR'S SOLE RESPONSIBILITY. THE CONTRACTOR SHALL DESIGN AND PROVIDE ADEQUATE SHORING, BRACING, AND FORMWORK, ETC. AS REQUIRED FOR THE PROTECTION OF LIFE AND PROPERTY DURING CONSTRUCTION. WHERE NECESSARY, THE CONTRACTOR SHALL RETAIN A CALIFORNIA LICENSED CIVIL ENGINEER TO DESIGN AND DETAIL SHORING, UNDERPINNING, BRACING, FALSEWORK, AND FORMWORK.
- 8. THE CONTRACTOR SHALL INFORM THE ENGINEER IN WRITING OF ANY DISCREPANCIES OR OMISSIONS NOTED ON THE DRAWINGS OR SPECIFICATIONS OR OF ANY VARIATIONS REQUIRED TO CONFORM WITH CODE. RULES OR REGULATIONS.
- 9. ANY DEVIATION FROM THE STRUCTURAL PLANS SHALL BE APPROVED BY THE STRUCTURAL ENGINEER PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING APPROVAL FROM THE BUILDING DEPARTMENT FOR ALL STRUCTURAL CHANGES.
- 10. AFTER ISSUANCE AND PRIOR TO CONSTRUCTION AND ORDERING OF MATERIALS, THE CONTRACTOR SHALL ATTEND A PRE-CONSTRUCTION MEETING WITH THE ARCHITECT AND ENGINEER. THE ARCHITECT AND ENGINEER SHALL BE NOTIFIED OF THE DATE OF THE MEETING TEN WORKING DAYS PRIOR.

DESIGN CODE: 2007 CALIFORNIA BUILDING CODE AS MODIFIED BY LOCAL BUILDING CODES AND PROVISIONS.

# LIVE LOADS:

- WIND LOADS:
- 3s GUST WIND SPEED: 85 MPH
- EXPOSURE FACTOR: • IMPORTANCE FACTOR: 1.0

## SEISMIC LOADS:

- SEISMIC DESIGN CATEGORY: E
- IMPORTANCE FACTOR I = 1.0 SPECTRAL RESPONSE ACCELERATIONS: Ss=1.58g S1=0.817g

6.5

# STRUCTURAL COEFF. R =

SITE CLASS:

SEISMIC COEFFICIENTS: Sds=1.054 V=0.264W (ULS)

## <u>FOUNDATIONS</u>

- 1. FOUNDATION DESIGN CRITERIA ARE TAKEN FROM THE SOILS REPORT BY JENSEN VAN LIENDEN ASSOCIATES DATED JULY 18, 2008. DESIGN VALUES USED ARE AS FOLLOWS:
- PASSIVE PRESSURE: = 300 PCF
- ALLOWABLE BEARING PRESSURE: = 1000 PSF (DL + LL)

(SEE PROJECT GEOTECH REPORT FOR ADDITIONAL SITE PREPARATION AND OTHER REQUIREMENTS.)

2. FOOTINGS SHALL EXTEND TO SUCH DEPTH AS TO BEAR ON FIRM UNDISTURBED SOIL. ALL ABANDONED FOOTINGS, UTILITIES, ETC. SHALL BE REMOVED. FOOTING DEPTHS SHOWN ON DRAWINGS ARE MINIMUM DEPTHS. UNDER NO CIRCUMSTANCES SHALL EXISTING FOOTINGS BE UNDERMINED. ADJACENT EXCAVATIONS SHALL NOT BE EXTENDED BELOW THE BOTTOM OF EXISTING FOOTINGS OR SLABS UNLESS OTHERWISE SHOWN ON THE DRAWINGS.

### <u>CONCRETE</u>

- ALL CONCRETE SHALL BE REGULAR WEIGHT, HARD-ROCK READY-MIXED CONFORMING TO ASTM C94. ALL STRUCTURAL CONCRETE SHALL USE ASTM C-150 TYPE II LOW ALKALI PORTLAND CEMENT. FLY ASH SHALL MEET ASTM C618. CLASS F DESIGNATION.
- ALL AGGREGATES SHALL BE NORMAL-WEIGHT AND SHALL CONFORM TO ASTM C-33. SLABS ON GRADE SHALL BE DESIGNED FOR LOW SHRINKAGE. ACCEPTABLE AGGREGATES FOR LOW SHRINKAGE INCLUDE KAISER CLAYTON, GRANITE ROCK, OR LIMESTONE. FINE AGGREGATES FOR LOW SHRINKAGE INCLUDE OLYMPIA OR FELTON SANDS. ALTERNATIVE AGGREGATES MAY BE SUBMITTED FOR APPROVAL PROVIDED THEY PRODUCE A CONCRETE MIX WITH A SHRINKAGE LIMITATION OF 0.04% AFTER 28 DAYS OF DRYING.
- 3. IF HIGHER SLUMP IS REQUIRED, MODIFY MIX WITH A TYPE A WATER REDUCER. DO NOT ADD WATER TO ACHIEVE A HIGHER SLUMP.
- 4. USE NC334 ACCELERATOR BY MASTER BUILDER, OR DARASET 200 BY GRACE, OR COMPARABLE,
- 5. CONCRETE SHALL HAVE THE FOLLOWING CHARACTERISTICS:
- STRENGTH @ 28 DAYS: 3000PSI MAX. SLUMP: MIN CEMENTITIOUS CONTENT: 6 SACKS w/ 50% FLY ASH
- REPLACEMENT MAX WATER/CEMENT RATIO: 0.45
- MAX AGGREGATE SIZE: 3/4"
- 6. ALL CONCRETE SHALL BE CAST-IN-PLACE. NO OTHER METHOD OF PLACEMENT SHALL BE USED WITHOUT THE EXPRESS WRITTEN APPROVAL OF THE STRUCTURAL ENGINEER. IF ANY OTHER METHOD OF PLACEMENT IS DESIRED, THE STRUCTURAL ENGINEER SHALL BE NOTIFIED 14 DAYS PRIOR TO INSTALLATION OF ANY FORMWORK OR REINFORCEMENT. THE CONTRACTOR SHALL MEET ANY ADDITIONAL REQUIREMENTS (E.G. SPECIAL INSPECTION, FORMWORK, & REINFORCEMENT) IMPOSED BY THE STRUCTURAL ENGINEER FOR ANY ALTERNATE PLACEMENT METHODS.
- 7. FORMS SHALL BE PROPERLY CONSTRUCTED CONFORMING TO THE CONCRETE SURFACE SHOWN ON THE PLANS, SUFFICIENTLY TIGHT TO PREVENT LEAKAGE, SUFFICIENTLY STRONG, AND BRACED TO MAINTAIN THEIR SHAPE AND ALIGNMENT UNTIL NO LONGER NEEDED TO SUPPORT THE CONCRETE. FORMS FOR EXPOSED CONCRETE SHALL PRODUCE A FINISHED SURFACE WHICH IS SMOOTH AND FREE FROM BLEMISHES. MOISTEN FORMS PRIOR TO PLACEMENT OF CONCRETE. FORMS AND SHORING SHALL NOT BE REMOVED UNTIL CONCRETE HAS ATTAINED SUFFICIENT STRENGTH TO WITHSTAND ALL LOADS TO BE IMPOSED WITHOUT EXCESSIVE STRESS, CREEP, OR DEFLECTION. LEAVE FORMS ON FOR MIN 7 DAYS, AND KEEP WET.
- AFTER REMOVING FORMS, COVER CONC WITH PLASTIC MIN 7 DAYS, AND KEEP FULLY WET THEN APPLY AMPLE CURING COMPOUND.
- PIPES OTHER THAN ELECTRICAL CONDUIT SHALL NOT BE EMBEDDED IN CONCRETE EXCEPT WHERE SPECIFICALLY APPROVED BY THE ENGINEER. SEE TYPICAL DETAILS FOR DETAILS OF PIPE SLEEVES EMBEDDED IN CONCRETE. ELECTRICAL CONDUIT EMBEDDED IN CONCRETE SHALL NOT BE LARGER THAN 1-1/2".
- 10. CONSTRUCTION JOINTS IN FOOTINGS SHALL BE LOCATED BY THE CONTRACTOR EXCEPT AS SHOWN SPECIFICALLY ON THE DRAWINGS. UNLESS OTHERWISE NOTED ON THE STRUCTURAL DRAWINGS, ALL JOINTS SHALL BE ROUGHENED AND KEYED AND EXISTING CONCRETE SURFACES THOROUGHLY CLEANED AND ROUGHENED TO RECEIVE NEW CONCRETE. ROUGHENED INTERFACE SHALL HAVE AN AMPLITUDE OF 1/4".
- 11. REFER TO ARCHITECTURAL PLANS AND DETAILS FOR CONCRETE FINISHES, CHAMFERS, RADII, OR OTHER FINISH FEATURES.

#### REINFORCEMENT

- ALL DEFORMED REINFORCEMENT FOR CONCRETE OR MASONRY SHALL CONFORM TO ASTM A-615 EXCEPT AS NOTED BELOW. ALL DEFORMED BARS SHALL BE 60 GRADE EXCEPT #3 AND #4 BARS MAY BE 40 GRADE. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A-185.
- UNLESS SHOWN ON THE STRUCTURAL PLANS, REINFORCEMENT SHALL NOT BE WELDED. ANY REINFORCEMENT TO BE WELDED MUST CONFORM TO ASTM A-706 GRADE 60. ALL WELDS FOR REINFORCEMENT SHALL BE PERFORMED BY A QUALIFIED WELDER AND PER PROCEDURES DEFINED IN AWS D1.4. ALL REBAR WELDING SHALL BE SUBJECT TO SPECIAL INSPECTION AS DESCRIBED IN CHAPTER 17 OF THE CALIFORNIA BUILDING CODE.
- 3. ALL REINFORCEMENT SHALL BE SECURELY TIED IN PLACE SO AS TO MAINTAIN POSITION BEFORE, DURING AND AFTER PLACEMENT OF CONCRETE. BARS AND WIRE MESH SHALL BE SUPPORTED ON WELL-CURED BLOCKS OR PLASTIC CHAIRS AND SECURELY TIED IN PLACE WITH #16 ANNEALED IRON WIRE.
- 4. ALL STRUCTURAL CONCRETE IS TO BE REINFORCED UNLESS SHOWN OTHERWISE. PROVIDE DOWELS TO MATCH ALL REINFORCEMENT AT CONSTRUCTION JOINTS UNLESS NOTED OTHERWISE.
- 5. ALL BARS WITHOUT LAP LENGTHS SHOWN SHALL BE CONTINUOUS. ALL LAP SPLICES SHALL BE CLASS B TENSION SPLICES WITH LENGTHS AS SHOWN ON THE TYPICAL DETAILS, UNLESS OTHERWISE NOTED. ALL BARS ENDING AT THE FACE OF A WALL, COLUMN, OR BEAM SHALL EXTEND TO WITHIN 2" OF THE FAR FACE AND TERMINATE IN A STANDARD HOOK, UNLESS OTHERWISE NOTED.
- 6. STANDARD HOOKS SHALL BE AS SHOWN IN THE TYPICAL DETAILS. ALL REBAR BENDS SHALL BE MADE COLD AND BARS SHALL NOT BE REBENT OR BENT AFTER A PORTION OF THE BAR IS ENCASED IN CONCRETE UNLESS APPROVED BY THE STRUCTURAL ENGINEER.
- 7. CLEAR COVER OF REINFORCEMENT SHALL BE AS FOLLOWS:
- UNFORMED SURFACES IN CONTACT WITH EARTH FORMED SURFACES IN CONTACT WITH EARTH
- COLUMNS AND BEAMS
- FORMED EXTERIOR WALL SURFACES
- FORMED INTERIOR WALL SURFACES
- SLABS

- ALL LUMBER SHALL BE FREE OF WARPING, CRACKS, CHECKS, OR OTHER IMPERFECTIONS DELETERIOUS TO THE INTENDED USE. ALL MEMBERS SHALL BE INSTALLED TRUE, SQUARE, AND/OR PLUMB AND SHALL FULLY BEAR ON ALL SUPPORTS OR CONNECTORS.
- 2. SAWN LUMBER SHALL BE S-DRY AND GRADED PER WCLIB OR WWPA RULES. LUMBER GRADES SHALL BE AS FOLLOWS, UON:
- JOISTS, BEAMS, POSTS: NO. 1 DOUGLAS FIR
- 3. PLATES, LEDGERS ON CONC. OR MASONRY: NO. 1 PRESSURE TREATED D.F. PRESSURE TREATMENT TO BE ALKALINE COPPER QUAT (ACQ)
- 4. GLUE-LAMINATED LUMBER SHALL CONFORM TO AITC STANDARD PS56 AND AITC STANDARD SPECIFICATIONS 101 THROUGH 120. ALL GLULAMS SHALL BE CBC COMBINATION 24F-V8.
- 5. ENGINEERED WOOD PRODUCTS SHALL BE MANUFACTURED BY I-LEVEL PER THE FOLLOWING GRADES:
- PSL BEAM:
- PSL COLUMNS: 1.8E
- LVL BEAMS & RAFTERS: 1.9E
- 6. GLULAMS SHALL CONFORM TO CBC COMBINATION 24F-V8, UON.
- 7. PLYWOOD SHEATHING SHALL CONFORM TO APA STANDARD PS-1 (CURRENT REVISION) 5 PLY AND SHALL USE EXTERIOR GLUE. ALL PLYWOOD SHALL BE LAID PERPENDICULAR TO SUPPORTS UNLESS OTHERWISE NOTED. IF EXPOSED TO EXTERIOR OR UNCONDITIONED SPACE, PLYWOOD SHALL BE MARINE GRADE PRESSURE TREATED.
- 8. UNLESS OTHERWISE NOTED, ALL NAILING OF FRAMING SHALL BE PER CBC TABLE 2304.9.1. ALL NAILS SHALL BE GALVANIZED OR STAINLESS STEEL COMMON NAILS, SEE NOTE 9 FOR ADDITIONAL INFO. EQUIVALENT PNEUMATICALLY DRIVEN NAILS MAY BE USED IF FASTENER MANUFACTURER PROVIDES AN ICBO APPROVED REPORT ACCORDING TO RESEARCH RECOMMENDATION REPORT #2403. FASTENERS SUBSTITUTED SHALL BE OF EQUAL OR GREATER LATERAL AND WITHDRAWAL STRENGTH AS THE COMMON NAIL SPECIFIED.
- 9. FOR EXTERIOR CONDITIONS (INCLUDING CRAWL SPACES, CRIPPLE WALLS, DECKS, ETC.) AND WHEN IN CONTACT W/ PRESSURE TREATED LUMBER, ALL BOLTS, LAGS, SCREWS, NAILS, & OTHER STEEL HARDWARE SHALL BE STAINLESS STEEL, UON. SEE CURRENT SIMPSON CATALOG FOR FURTHER REQUIREMENTS.
- 10. FOR INTERIOR CONDITIONED SPACE, ALL BOLTS SHALL BE HOT-DIP GALVANIZED AND SHALL CONFORM TO ANSI/ASME STANDARD B18.2.1 WITH MATCHING WASHERS AND NUTS UNLESS OTHERWISE NOTED. DRILLED HOLES FOR BOLTS SHALL BE 1/32 TO 1/16 GREATER DIAMETER THAN THE BOLT INSTALLED. BOLTS SHALL BE INSTALLED WITHOUT DRIVING AND SHALL BE SNUGLY TIGHTENED.
- 11. CLEARANCE HOLES: SIZE AND DEPTH OF UNTHREADED SHANK.
- 12. LEAD HOLES: 75% OF THE SIZE AND 100% OF THE DEPTH OF THE THREADED SHANK.
- 13. LAG BOLTS SHALL BE INSTALLED BY TURNING WITH A WRENCH. UNDER NO CIRCUMSTANCES SHALL A LAG BOLT BE INSTALLED BY DRIVING WITH A HAMMER.

- 14. CONNECTION HARDWARE SHOWN ON THE PLANS SHALL BE SIMPSON STRONG-TIE OR AN APPROVED EQUIVALENT. ALL HARDWARE SHALL BE INSTALLED PER MANUFACTURER'S INSTRUCTIONS AND WITH ALL NAILS OR OTHER FASTENERS. SEE ABOVE FOR MATERIAL/COATING REQUIREMENTS.
- 15. WHERE POSTS OR MULTIPLE STUDS UNDER BEAMS OR HEADERS ARE CALLED FOR ON DRAWINGS, THOSE POSTS OR MULTIPLE HEADERS SHALL BE CARRIED TO THE FOUNDATION.

## STRUCTURAL STEEL

- 1. STRUCTURAL STEEL SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH AISC "SPECIFICATIONS FOR DESIGN, FABRICATION, AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS", AND THE "CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES", LATEST EDITIONS.
- 2. UNLESS OTHERWISE NOTED, STRUCTURAL STEEL SHALL CONFORM TO THE FOLLOWING:

ALL EXPOSED STEEL AND FASTENERS TO BE STAINLESS STEEL, UON.

WIDE FLANGE SHAPES ASTM A992, GR. 50 ANGLES, CHANNELS, PLATES & BARS ASTM A36 STRUCTURAL TUBING (HSS) ASTM A500, GR. B PIPES (HSS) ASTM A500, GR. B

BOLTS AND ANCHOR BOLTS ASTM A307

HIGH-STRENGTH BOLTS ASTM A325

- 5. BOLT HOLES SHALL BE OF DIAMETER 1/16" LARGER THAN THE BOLT SIZE, UNLESS OTHERWISE NOTED.
- 6. ALL WELDING SHALL BE PERFORMED BY WELDERS CERTIFIED FOR THE WELDS TO BE MADE AND SHALL CONFORM TO AWS D1.1, LATEST EDITION. ALL WELDING ELECTRODES SHALL BE E70XX.
- WELD FILLER METAL SHALL HAVE A MINIMUM CHARPY V-NOTCH TOUGHNESS OF 20 FT-LBS AT MINUS 20 DEGREES F, AS DETERMINED BY AWS CLASSIFICATION OR MANUFACTURER CERTIFICATION.
- SHEAR STUDS SHALL BE AWS D1.1 HEADED SHEAR CONNECTOR
- MATERIALS CERTIFICATIONS AND SHOP DRAWINGS FOR STRUCTURAL STEEL SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO FABRICATION.

#### STRUCTURAL OBSERVATION

PER SECTION 1709 OF THE CALIFORNIA BUILDING CODE. THE OWNER SHALL EMPLOY THE ARCHITECT OR ENGINEER OF RECORD TO PERFORM STRUCTURAL OBSERVATION OF THE STRUCTURAL WORK FOR GENERAL CONFORMANCE WITH THE STRUCTURAL PLANS. NOTE THAT THIS REQUIREMENT DOES NOT WAIVE RESPONSIBILITY OF THE LOCAL JURISDICTION TO PROVIDE THOROUGH INSPECTION OF THE WORK.

#### SPECIAL INSPECTION

EMPLOYMENT OF SPECIAL INSPECTORS IS THE DIRECT RESPONSIBILITY OF THE OWNER OR OWNER'S REPRESENTATIVE. SPECIAL INSPECTION SHALL BE ONE OF THE FOLLOWING PRESCRIBED IN CHAPTER 17 OF THE CALIFORNIA BUILDING CODE. THE NAME OF THE SPECIAL INSPECTOR SHALL BE FURNISHED TO THE DBI DISTRICT INSPECTOR PRIOR TO THE START OF WORK FOR WHICH SPECIAL INSPECTION IS REQUIRED.

SPECIAL INSPECTION AGENCY:

THE SPECIAL INSPECTOR(S) QUALIFICATIONS SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER FOR APPROVAL 14 DAYS PRIOR TO COMMENCEMENT OF THE WORK. NO WORK REQUIRING SPECIAL INSPECTION SHALL BE PERFORMED w/o THE EXPRESS WRITTEN APPROVAL OF THE SPECIAL INSPECTOR BY THE STRUCTURAL ENGINEER.

#### SPECIAL INSPECTION IS REQUIRED FOR THE FOLLOWING WORK:

	Inspe	ection by:	Observation
		Inspection	by:
INCREATION TACK	FSE	Agency/	FSE
INSPECTION TASK	' 3L	Other	ISL
1. Concrete Placement & Sampling			
A. Spread Footings			
A. Spread Footings B. Drilled Piers		Х	
C. Retaining Walls D. Grade Beams		X	
D. Grade Beams			
E. Columns/beams			
2. Reinforcing steel and pre-stressing tendons		.,	.,
A. Placement inspection		Χ	Х
B. Stressing and grouting of tendons			
3. Bolts installed in concrete (wet set bolts)			X
4. Bolts installed in existing concrete:			
Epoxy grouted			
Pull/torque tests for SFBC Sec 1607C & 1615C			
5. Special moment—resisting concrete frame			
6. Structural masonry			
7. Shotcrete			
8. Foundations			
Shallow footing excavation		Х	
Piling, drilled piers and caissons			
Others		Х	
9. Structural welding:			
A. Periodic visual inspection			
Single pass fillet welds ≤ 5/6"		X	X
Steel deck			
Welded studs			
Cold formed studs and joists			
Stair and railing systems			
B. Continuous visual inspection and NDT except as			
noted above and on plans and details			
All welds except as listed above			
Reinforcintg steel			
Moment—resisting frames			
Others			
10. High-strength bolting			
11. Reinforced gypsum concrete			
12. Insulating concrete fill			
13. Sprayed—on fireproofing			
14. Special grading, excavation and filling (Geo. Engineered)			
15. Smoke—control system			
16. Demolition			
17. Exterior Facing			
18. Retrofit of unreinforced masonry buildings:			
Testing of mortar quality and shear tests			
Inspection of repointing operations			
Installation inspection of new shear bolts			
Pre—installation inspection for new shear bolts			
Pull/torque tests per SFBC Sec 1707C & 1615C			
19. Shear walls, proprietary shear walls, and shear diaphragms	Χ		Χ
	X		Ŷ
20. Holdowns			
21. Special cases:			
Shoring			
Underpinning			
Others:			
22. Crane safety (Apply to operation of tower cranes on			
Sec 1701.8)			
			1
23. Others: As recommended by "Professional of record"			

CITY/COUNTY INSPECTOR:

NAME: \_\_\_\_\_ TEL: \_\_\_\_\_

THE CITY/COUNTY INSPECTOR SHALL NOT GIVE APPROVAL FOR NOR SHALL THE CONTRACTOR PROCEED WITH ANY WORK WHICH WILL CLOSE ACCESS TO ANY WORK REQUIRING SPECIAL INSPECTION PRIOR TO RECEIVING WRITTEN CONFIRMATION THAT THE SPECIAL INSPECTIONS HAVE BEEN PERFORMED AND THE INSPECTED WORK APPROVED BY THE SPECIAL INSPECTOR LISTED.

**FULCRUM** STRUCTURAL ENGINEERING 665 THIRD ST, STE 333 SAN FRANCISCO, CA 94107

415 543 0161

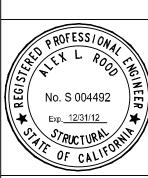
415 543 0162

DATE

REVISIONS \_\_

Inspection by: Structural

**Z** [ 4 0 



REVISED 100%

CD SET

**GENERAL** NOTES **ABBREV** 

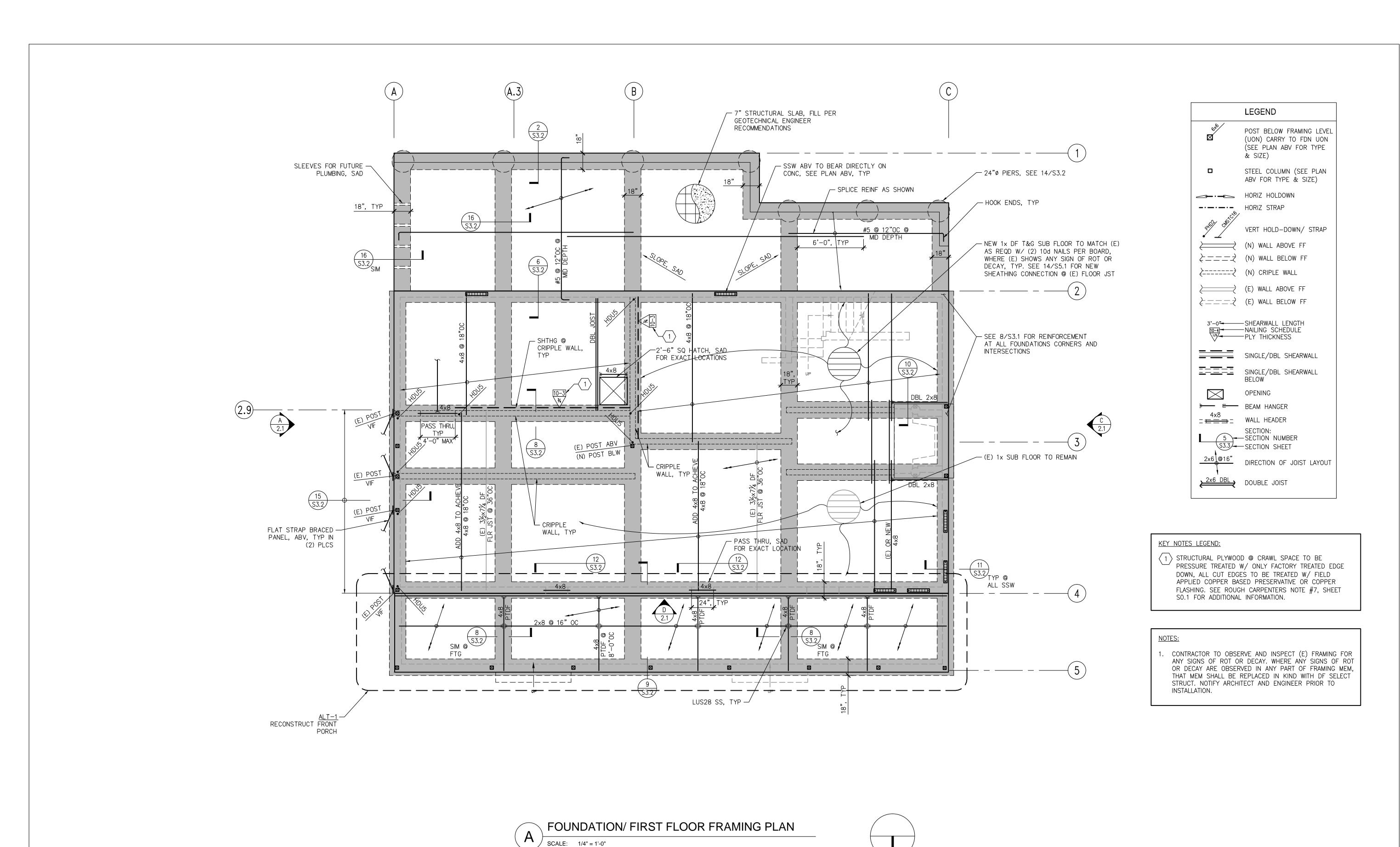
DATE May 16, 2011 SCALE AS NOTED

DRAWN JOB 08-37

SHEET

OF 10 SHEETS

FSE

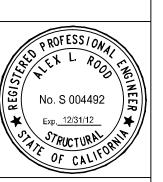


PROJECT & REAL NORTH

665 THIRD ST, STE 333 SAN FRANCISCO, CA 94107 TEL: 415.543.0161 FAX: 415.543.0162

REVISIONS DATE

NAVARRO INN
RRO RIVER REDWOODS STATE P
MENDOCINO COUNTY, CA



REVISED 100% CD SET

FOUNDATION/ **FIRST FLOOR** FRAMING PLAN

DATE May 16, 2011 SCALE AS NOTED

DRAWN FSE

JOB SHEET

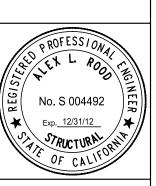
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OF 10 SHEETS

08-37

665 THIRD ST, STE 333 SAN FRANCISCO, CA 94107 TEL: 415.543.0161 FAX: 415.543.0162

REVISIONS DATE



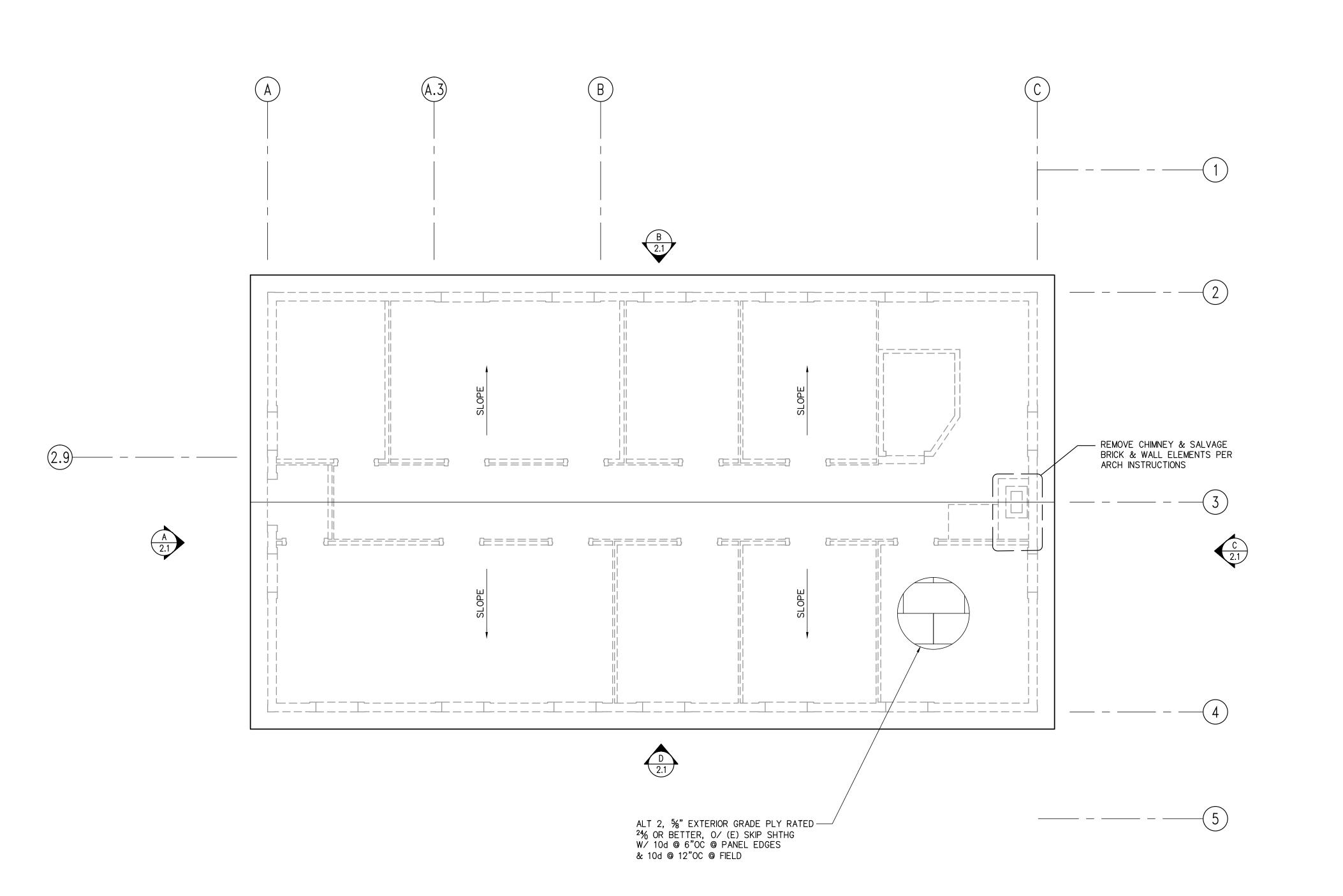
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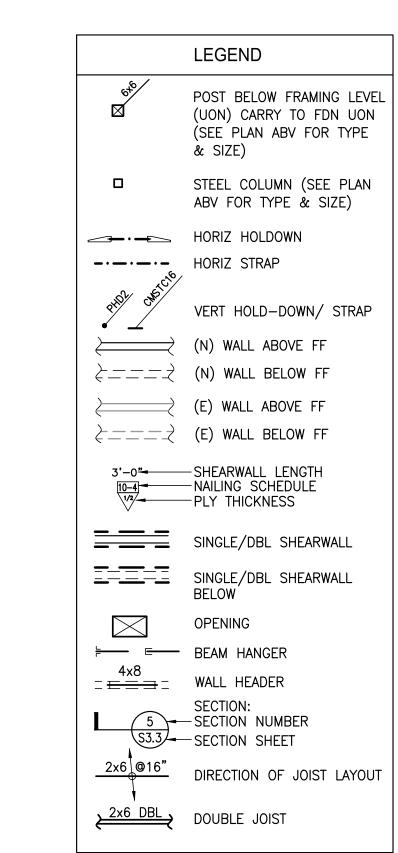
SECOND **FLOOR FRAMING** PLAN

DATE May 16, 2011 SCALE AS NOTED

DRAWN

JOB





# NOTES:

1. CONTRACTOR TO OBSERVE AND INSPECT (E) FRAMING FOR ANY SIGNS OF ROT OR DECAY. WHERE ANY SIGNS OF ROT OR DECAY ARE OBSERVED IN ANY PART OF FRAMING MEM, THAT MEM SHALL BE REPLACED IN KIND WITH DF SELECT STRUCT. NOTIFY ARCHITECT AND ENGINEER PRIOR TO INSTALLATION.

SPECIAL INSPECTION

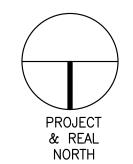
1. THE SPECIAL INSPECTOR SHALL BE APPROVED IN WRITING BY ENGINEER AND HIRED BY THE OWNER A MINIMUM OF TWO WEEKS PRIOR TO COMMENCEMENT OF CONSTRUCTION

SHOP DRAWINGS

1. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR TRUSSES AND STRUCTURAL STEEL TO THE ENGINEER FOR REVIEW AND APPROVAL A MINIMUM OF (4) WEEKS PRIOR TO FABRICATION AND TARGET DELIVERY DATE.

2. ALL APPROVED SHOP DRAWINGS SHALL BE KEPT ON—SITE AND BE MADE AVAILABLE TO THE SPECIAL INSPECTOR DURING THE INSPECTION OF RELATING STRUCTURAL ITEMS.





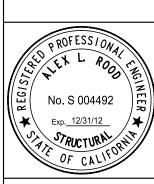
FULCRUM STRUCTURAL ENGINEERING 665 THIRD ST, STE 333 SAN FRANCISCO, CA 94107 TEL: 415.543.0161 FAX: 415.543.0162

REVISIONS DATE

NAVARRO INN

VARRO RIVER REDWOODS STATE PARK

MENDOCINO COUNTY, CA



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ROOF FRAMING PLAN

DATE May 16, 2011

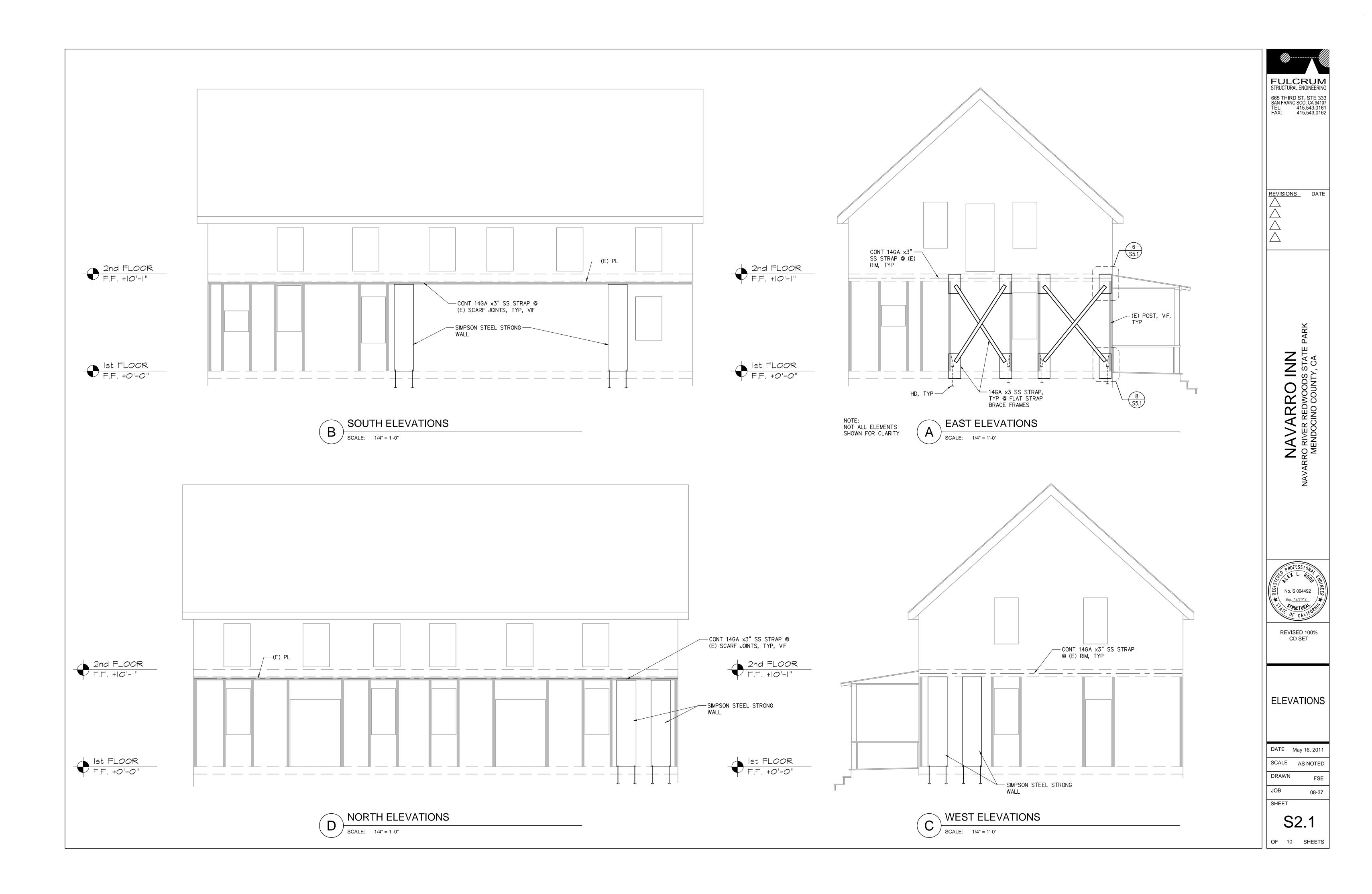
SCALE AS NOTED

DRAWN

SHEET

JOB 08-

S1.3

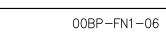


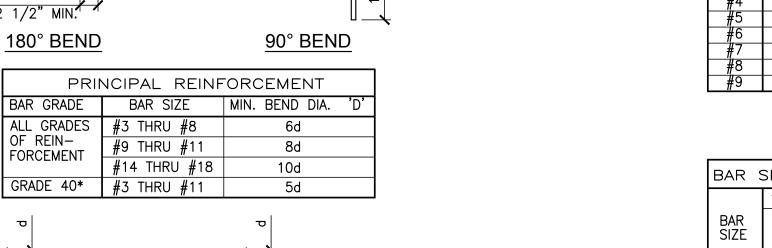
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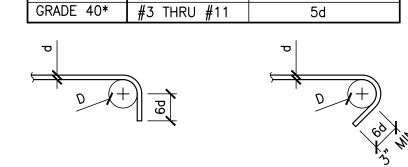
JOB 08-37 SHEET

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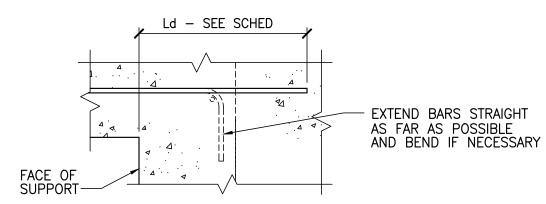
OF 10 SHEETS







90° BEND	135° BEND
STIRRUPS AN	ID TIE REINFORCEMENT
BAR SIZE	MIN. BEND DIA. 'D'
#3 THRU #5	4d
ALL OTHER BARS	SEE TABLE ABOVE



REBAR EXTENSION BEYOND FACE OF SUPPORTS

BASIC DEVELOPMENT LENGTH (Ld) (IN								
	f'c=25	00 PSI	f'c=400	00 PSI	f'c=5000 PSI			
BAR SIZE	TOP BARS	OTHER BARS	TOP BARS	OTHER BARS	TOP BARS	OTHER BARS		
#3	24	18	21	15	21	15		
#4	32	24	26	19	23	17		
#5	40	30	32	24	29	21		
#6	49	36	38	28	34	25		
#7	69	53	54	43	49	36		
#8	78	60	62	48	56	43		
#9	88	68	70	54	63	48		
·						<u> </u>		

BAR	BAR SPLICE LENGTH SCHEDULE (Ls) (IN)								
	f'c=2500 PSI f'c=4000 PSI f'c=5000 PSI								
BAR SIZE	TOP BARS	OTHER BARS	TOP BARS	OTHER BARS	TOP BARS	OTHER BARS			
#3	31	23	28	20	28	20			
#4	42	31	34	24	30	22			
#5	52	39	42	31	38	27			
#6	64	47	50	37	45	33			
#7	90	69	70	54	63	49			
#8	101	78	81	63	73	56			
#9	114	88	91	71	82	63			

- 1. THE SCHEDULES SHOWN APPLY TO NORMAL WEIGHT CONCRETE. FOR LIGHT WEIGHT CONCRETE INCREASE LENGTHS BY 30%.
- 2. TOP BARS ARE HORIZONTAL BARS PLACED WHERE MORE THAN 12" OF CONCRETE IS CAST IN THE MEMBER BELOW THE BAR.
- 3. STAGGER SPLICES WHEREVER POSSIBLE. WHERE CLASS "A" SPLICE IS SPECIFICALLY CALLED FOR IN THE DRAWINGS, STAGGER AT LEAST 50% OF THE BARS. CLASS "A" SPLICE LENGTH IS 80% OF THE CLASS "B" SPLICE SHOWN IN THE SCHEDULE.
- 4. WHEN SPLICING BARS OF DIFFERENT SIZE, THE LAP SHALL BE BASED ON THE LARGER OF:
  - a) THE SPLICE LENGTH OF THE SMALLER BAR b) THE DEVELOPMENT LENGTH OF THE LARGER BAR.
- 5. LAP LENGTH SPECIFICALLY DETAILED ON THE DRAWINGS SHALL GOVERN IN LIEU OF THE LAP LENGTH IN THE SCHEDULE.
- 6. WHERE CLEAR SPACING OF BARS IS GREATER THAN 2 x BAR DIA OR CLEAR COVER IS GREATER THAN BAR DIA, MULTIPLY DEV OR SPLICE LEN BY 1.5.

BAR BENDS & HOOKS 6

4d OR

– ADD (2) #3 ☐ ES OF PIPE/CONDUIT

MATCH SIZE & #

- PVC SLEEVE w/ ID 2"

PIPE/CONDUIT OD, 8"

OF TOP BARS

LARGER THAN

-CAULK GAP @

EACH SIDE OF

MATCH SIZE & #

- INCREASE DEPTH

AS REQD FOR MIN CONC THK REQMT'S

-ADD BARS

- BOT BARS

OF BOT BARS

MAX ÔD

FTG

NOTE: SEE ABOVE FOR

INFO NOT SHOWN OR

CALLED OUT

MATCH SIZE &# OF BOT BARS

- ADD BARS

- TOP BARS

- ADD BARS

2 1/2" MIN.

180° BEND

ALL GRADES

OF REIN-

FORCEMENT

SCALE: 3/4"= 1'-0" 00BP-FN1-05

REBAR DEVELOPMENT & SPLICE LENGTHS

PIPE OR CONDUIT -

CLR, TYP

Ld, TYP<sup>×</sup><

CLR, TYP 1

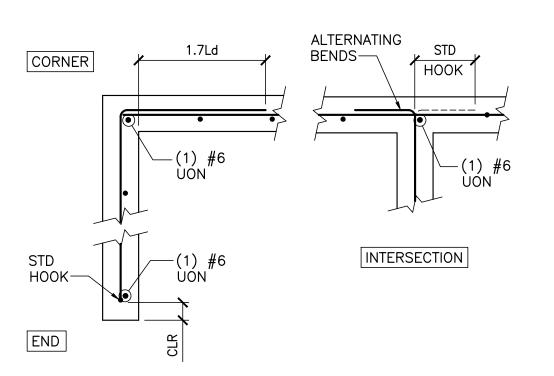
PIPE/CONDUIT THRU FDN

PIPE/CONDUIT BELOW BOT BARS

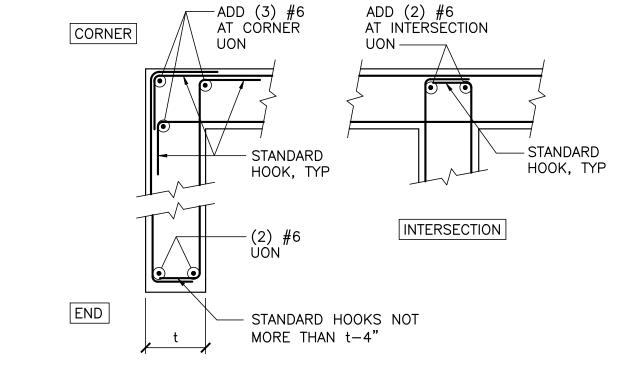
PIPES & CONDUITS THRU & BELOW CONT FTGS 00BP-FN1-11

CLEAN GRAVEL COMPACT

PIPE/CONDUIT BELOW FDN



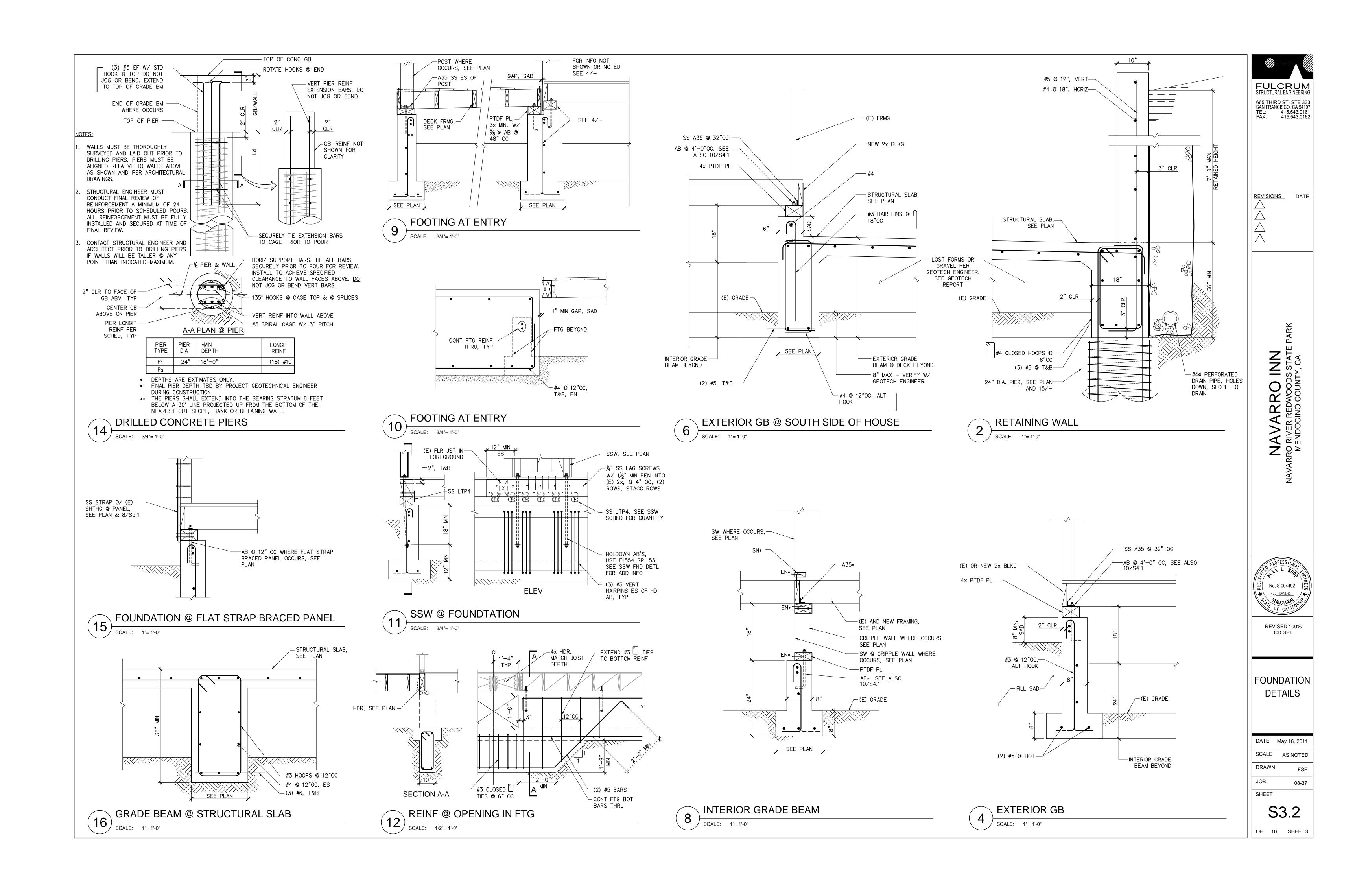
SINGLE CURTAIN



**DOUBLE CURTAIN** 

REBAR @ ENDS & INTERSECTIONS OF WALLS AND/OR FTGS

SCALE: 3/4"= 1'-0"



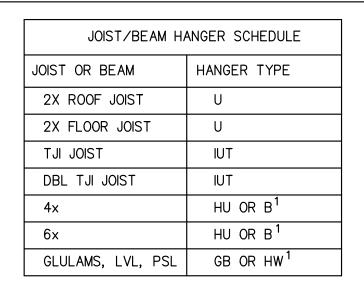
**REVISED 100%** 

CD SET

DATE May 16, 2011 SCALE AS NOTED DRAWN FSE

JOB 08-37 SHEET





HANGERS MANUFACTURED BY SIMPSON OR APPROVED EQUAL. INSTALL PER MANUF. INSTRUCTIONS UON. USE HANGERS AS SCHEDULED, UON.

USE LARGEST HANGER FOR MEMBER SIZE. USE FULL NAILING.

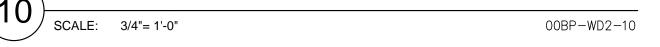
# TYP HANGER SCHEDULE

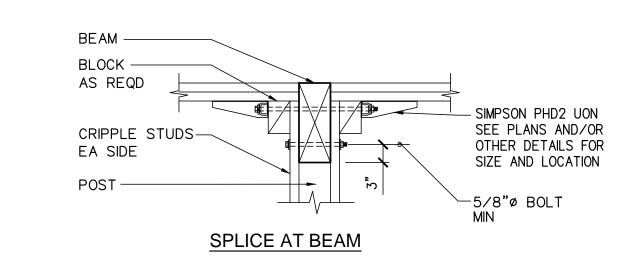
SCALE: NTS 00BP-WD2-09 -5"MIN 5/4" ANCHOR BOLTS W/ 3"x3"x1/4" 9" MAX ES WASHERS 7" MIN EMBEDMENT-DO OF JOINT NOT COUNT CURBS FOR EMBEDMENT 5" MIN 5'-0" MAX <sup>1</sup>9" MAX <sup>1</sup> SEE NOTE 1 ALL ENDS <u>ELEV</u>

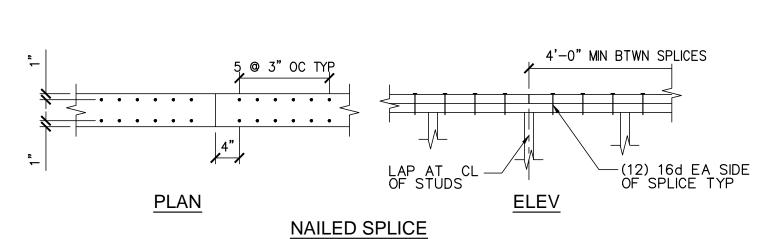
## NOTES:

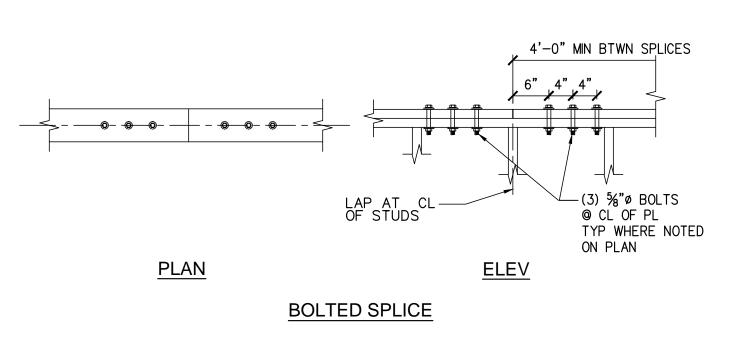
- 1. SEE PLAN & SHEARWALL SCHEDULE FOR ADDITIONAL SILL PLATE BOLTING REQUIREMENTS.
- 2. CONTRACTOR SHALL EXPOSE AND EXAMINE (E) WALLS AND ADD EPOXY ANCHOR BOLTS TO PROVIDE MINIMUM SPECIFIED BOLTING WHERE ABSENT. WHERE REQUIRED, SPECIAL INSPECTION IS REQUIRED FOR ALL EPOXY ANCHOR BOLTS. TORQUE TESTING MAY BE REQUIRED (PER LOCAL REQUIREMENTS) AS WELL.

# SILL PLATE BOLTING









TYP STUD WALL CONNECTIONS

@ CORNERS

#### LEVELS SUPPORTED ROOF + 2 FLRS ROOF + 1 FLR ROOF ONLY SPAN BRNG | KING BRNG KING BRNG | KING HDR STUDS STUDS STUDS STUDS STUDS STUDS 4x6 | 2x4 | 2x4 | (2)2x8 | 2x4 | 2x4 | 4x12 | (2)2x4 | 2x4 4x8 | 2x4 | (2)2x4 | 4x12 | (2)2x4 | (2)2x4 | 4x10P | (2)2x4 | (2)2x4 | 4×10 2×4 (2)2×4 4×10P (2)2×4 (2)2×4 4×12P (3)2×4 (2)2×4

EXTERIOR WALLS

	INTERIOR WALLS									
" <sub>W</sub> "		LEVELS SUPPORTED								
SPAN	RC	OF ONL	_Y	ROO	ROOF + 1 FLR		ROOF + 2 FLRS			
WIDTH		BRNG	KING	<u>-</u> 5	BRNG	KING	- - -	BRNG	KING	
	HDR	STUDS	STUDS	HDR	STUDS	STUDS	HDR	STUDS	STUDS	
4'	4×6	2×4	2×4	4×12	(2)2×4	2×4	4×10P	(2)2×4	2×4	
6'	4×8	(2)2×4	2×4	4×10P	(2)2×4	2×4	4×12P	(3)2×4	2×4	
8'	4×12	(2)2×4	2×4	4×12P	(2)2×4	2×4	4×14P	(4)2×4	2×4	
10'	*	(2)2×4	2×4	4×10P	(2)2×4	2×4	4×12P	(3)2×4	2×4	
12'	*	(2)2×4	2×4	4×12P	(2)2×4	2×4	4×14P	(4)2×4	2×4	
SEE PLAN										

### NOTES:

— INTERMEDIATE (FIELD) NAILING

— PLYWOOD

TYPICAL FLOOR/ROOF SHEATHING

1. EDGE DISTANCE OF NAILS IN JOISTS AND PLYWOOD SHEETS SHALL BE 3/8" MINIMUM.

2. PROVIDE EDGE BLOCKING AS SHOWN ABOVE WHERE INDICATED ON PLANS.

FLOOR/ROOF PLYWOOD NAILING

JOIST TYP w/ 10d TN TO PL EA SIDE @ 16'

2x BLOCKING

−2x4 NAILER

TYP NON-BEARING STUD WALL

w/ 16d NAILS @ 16" OC

@ FLOORS & FRAMED ROOF & CEILINGS

CLIP w/ 1/3" GAP

@ TRUSS FLOORS & ROOFS

EDGE NAILING @ —— CONTINUOUS PANEL EDGES

3X4 FLAT BLKG W/ 2-10D TOE NAILS TYP EA END

TYPICAL @ UNSUPPORTED

SCALE: NTS

(2) 16d **@** 16" OC

STUD WALL PARTITION -

16d @ 12"-

PANEL EDGES

— EDGE NAILING

STAGGER PLYWOOD

APPROX 1/2 SHEET

LENGTH, 1''-4" MIN

00BP-WD2-06

2x BLKG @ 48" W/ (2) 10d TN TO PL

—2x4 FLAT @ 24"

STUD WALL

-4x4 48" OC MIN

└(2) 16d EACH

00BP-WD2-07

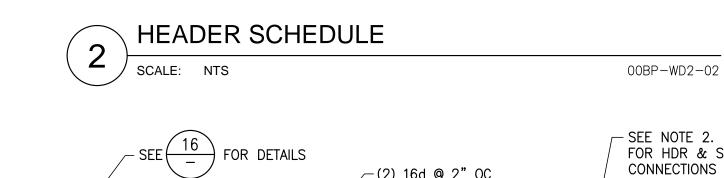
-16d @ 12" STAGGERED

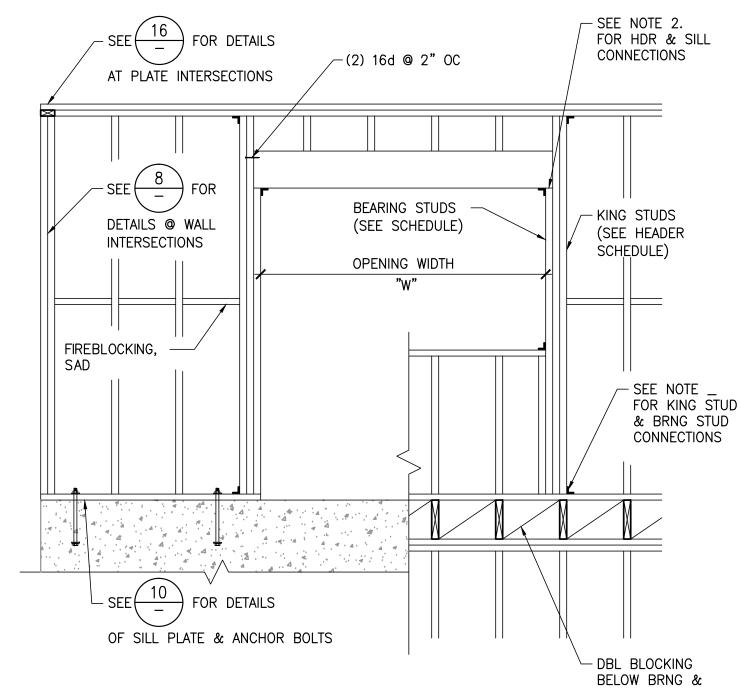
@ INTERSECTIONS

SIDE

DOUBLE TOP PLATE w/ (2) 16d NAILERS PER 2x4 FLAT

- 1. MATCH STUD WIDTH
- 2. "P" DENOTES PSL, TYP.
- 3. SEE PLAN FOR SIZES. USE LARGER HEADER SIZE OF THAT SHOWN IN SCHEDULE AND THAT SHOWN ON PLAN.



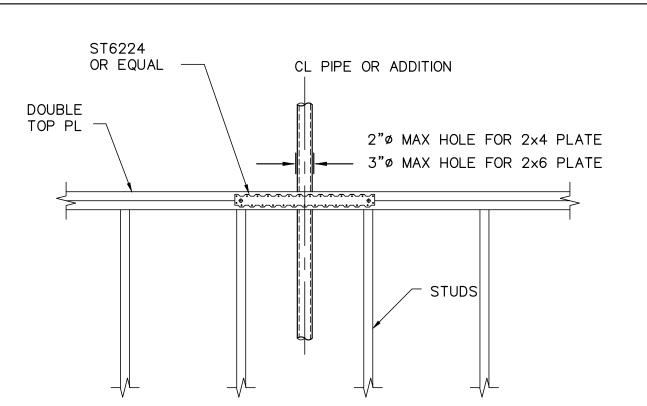




1. ALL NAILING IS PER CBC TABLES 23-II-B-1 UNLESS NOTED OTHERWISE. 2. CONNECT HEADERS & SILLS TO BEARING STUDS:  $W \le 4'-0$ " TOENAIL/END NAIL PER 23-II-B-1 W> 4'-0" A34

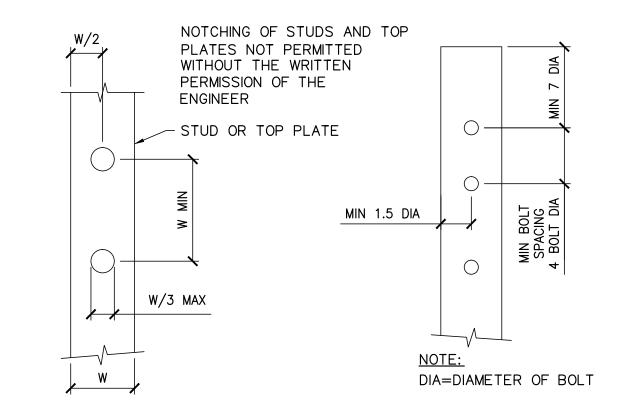
3. CONNECT KING STUDS TO SILL & TOP PLATES:  $W \le 4'-0$ " TOENAIL/END NAIL PER 23-II-B-1 W > 4'-0" ADD A34 T&B

TYPICAL STUD WALL FRAMING ELEVATION





SCALE: NTS 00BP-WD2-13



WOOD BOLT CLEARANCES

00BP-WD2-14

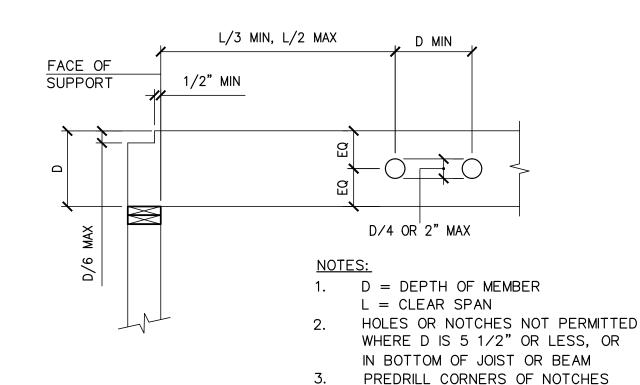
00BP-WD2-15

00BP-WD2-16

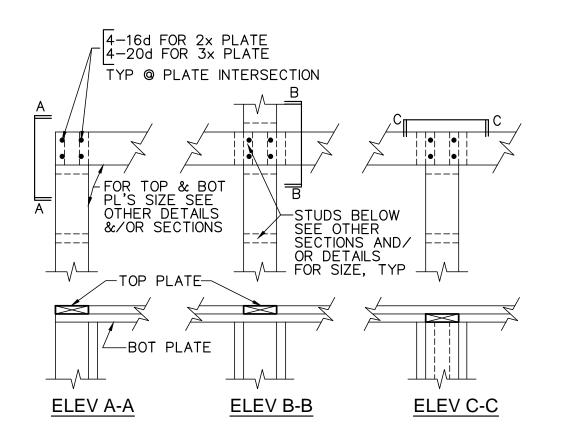
TYPICAL BOLT CLEARANCES SCALE: NTS

HOLES IN STUDS & TOP PLATES

SCALE: NTS



SEE MANUFACTURER'S REQUIREMENTS FOR TRUSS-JOIST PRODUCTS. **HOLES & NOTCHES BEAMS & JOISTS** 



TYP INTERSECTION @ PLATES SCALE: NTS

TYP TOP PLATE SPLICE OPTIONS SCALE: NTS

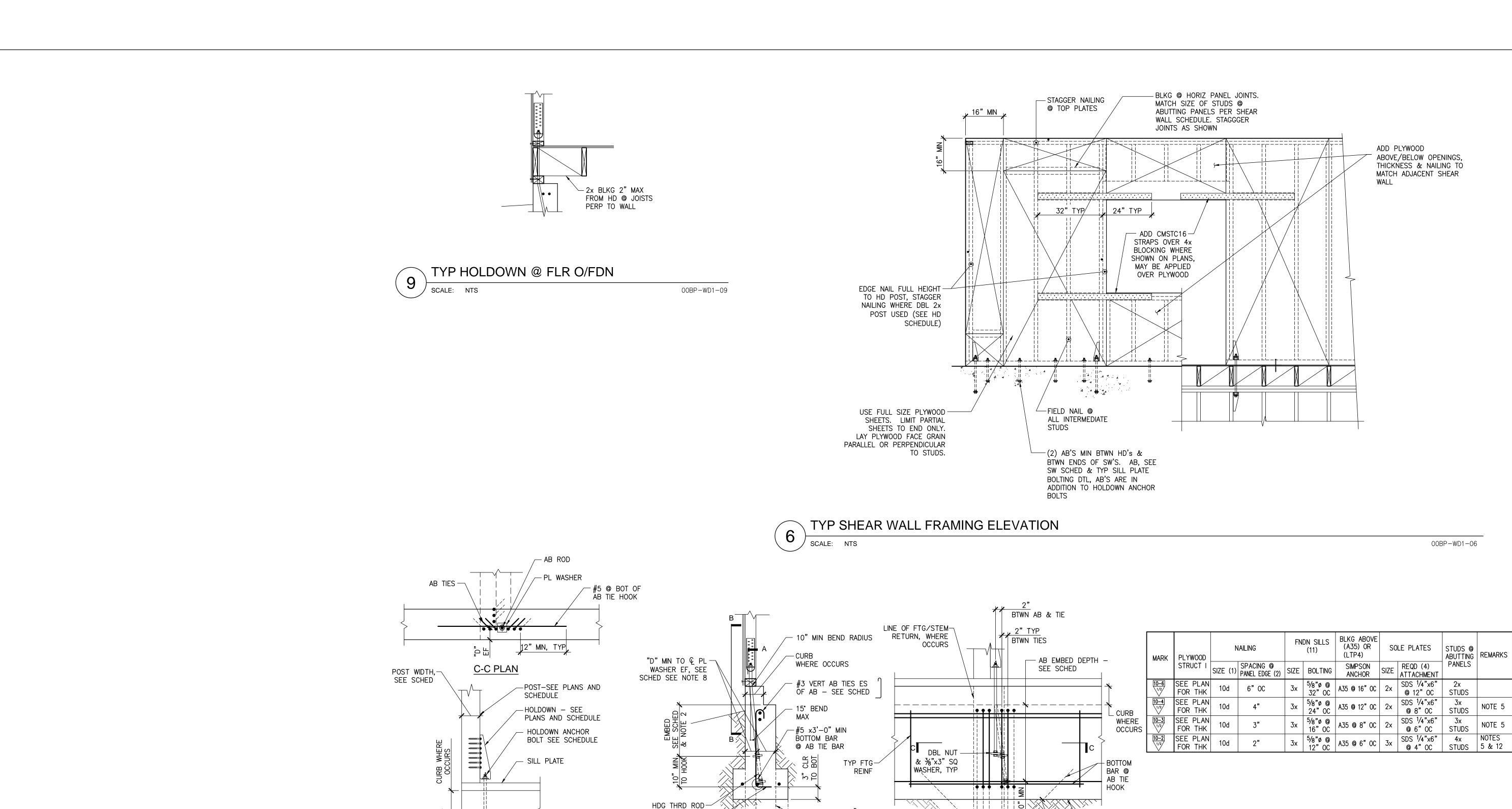
00BP-WD2-12

SCALE: NTS

00BP-WD2-08

00BP-WD2-04 OF 10 SHEETS

KING STUDS



CONC FACE @ 8" MIN

INCREASE FTG DEPTH AS

REQD TO PROVIDE REQD

SEE PLAN & SHEARWALL SCHEDULE FOR LOCATIONS OF HOLDOWNS.

3. SEE GEN NOTES FOR SPECIAL INSPECTION REQUIREMENTS.

DO NOT USE SIMPSON (OR SIM) "SSTB" BOLTS.

7. FILL ALL HOLES W/ 3" MIN SDS SCREWS.

2. BOLTS SHALL BE EMBEDDED BELOW CURBS — DO NOT COUNT CURB HEIGHT FOR

4. ALL HOLDOWN POSTS SHALL BE DF #1. USE SAME WIDTH POST AS WALL WIDTH. ALL

5. INSTALL ALL HARDWARE & ANCHOR BOLTS PER MANUFACTURER'S WRITTEN SPECIFICATIONS.

6. ANCHOR RODS SHALL BE THREADED HDG A307. SEE FDN ANCHOR BOLT DETAIL ABOVE.

8. THICKEN STEM WALLS AS NECESSARY TO ACHIEVE SCHED. SIDE DIST TO € PLATE WASHER.

NOTIFY ARCHITECT & STRUCTURAL ENGINEER PRIOR TO PLACING REINF/FORMING WHERE

HOLDOWN POSTS TO BE FULL HEIGHT. PROVIDE SHEAR WALL EDGE NAILING (AS NOTED IN

THE SHEAR WALL SCHEDULE) TO ALL STUDS & POSTS WHICH HAVE HOLDOWNS AT TOP OR

DIST FROM AB WASHER

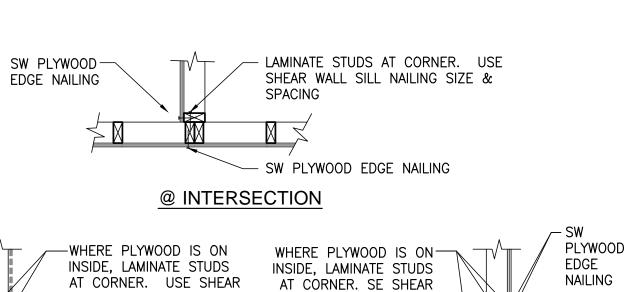
TO HOOK & COVER

STEM WALL

EMBEDMENT.

CONFLICTS EXIST.

EMBED DEPTH,



WALL SILL NAILING SIZE

& SPACING

00BP-WD1-16

@ CORNER

TYP SHEAR WALL CONNECTIONS SCALE: NTS

, WALL SILL NAILING SIZE

PLYWOOD

NAILING

TYPICAL HOLDOWN SCHEDULE (HDU)									
HOLDOWN			PL WASHER "D"			MIN POST WIDTH SIZE (4)	PULL TEST VALUE		
	ROD SIZE	OD SIZE (2) (8) —	ES	TOTAL	`				
HDU2	5%"	16"	4"	2	4	4x	7688#		
HDU4	5/8"	16"	4"	2	4	4×	11413#		
HDU5	5/8"	16"	4"	2	4	4×	14113#		
HDU8	7⁄8"	16"	4"	3	4	6x	14950#		
HDU11	1"	24"	6"	4	8	6x	23837#		
HDI 114	1"	24"	6"	1	8	8v	37313#		

TURN TIE HOOKS 45° IN-

PLAN TO FIT AS REQD

TYP FOUNDATION ANCHOR BOLT 12 SCALE: NTS

• • • !! • • •

- BOT OF TYP

FTG/SLAB

REQD COVER

- INCREASE FTG DEPTH COMMON NAILS ONLY-NO SINKERS ALLOWED. 10d (SHANK DIA=0.148"x 3" LONG) NAILS SHALL HAVE AS REQD TO PROVIDE 1. 1%" MIN PENETRATION.
  - NAIL SPACING @ INTERMEDIATE STUDS IS 12" OC, PROVIDE SOLID BLKG TO MATCH REQD STUD THICKNESS @ ALL UNSUPPORTED EDGES OF SHEATHING.
  - ALL STUDS SPACED @ 16" OC MAX. PROVIDE 3x OR 4x STUDS WHERE NOTED. PREDRILL @ 90% x NAIL DIAMETER AS REQD TO PREVENT WOOD SPLITTING.
  - WHERE PLY IS APPLIED ON BOTH FACES OF WALL STUDS & NAIL SPACING IS LESS THAN 6" OC ON EITHER SIDE, PANEL JOINTS SHALL BE OFFSET TO FALL ON DIFFERENT STUDS & NAILS SHALL BE STAGGERED.
  - 6. PLYWOOD TO BE EXPOSURE 1 (MIN) & CD SURFACED. SEE PLANS FOR FURTHUR REQUIREMENTS. BOLT SPACING IS MAXIMUM. (2) AB'S MIN @ EA SW-SEE TYPICAL SILL PLATE BOLTING DETAIL.
  - 8. WHERE AT (E) WALLS ONLY: DOUBLE 2x STUDS MAY BE USED @ ABUTTING PANEL EDGES, UNO. WHERE DOUBLE 2x STUDS ARE REQUIRED @ ABUTTING PANELS, FACE NAIL STUDS TOGETHER w/ 16d,
  - STAGGERED. SPACE @ SAME SPACING AS PLYWD PANEL EDGE NAILING. 9. PLYWOOD FOR SHEARWALLS SHALL BE 5-PLY & SHALL MEET APA STD PS-1.
  - 10. ALL FASTENERS (NAILS, BOLTS, WASHERS, A35'S, LTP'S, ETC) IN CONTACT W/ PTDF TO BE HOT-DIP GALVANIZED.
  - 11. STAGGER EDGE NAILING WHEN SPACING LESS THAN 3".



**FULCRUM** 665 THIRD ST, STE 333 SAN FRANCISCO, CA 94107 TEL: 415.543.0161 FAX: 415.543.0162

REVISIONS DATE

NO. S 004492

★ Exp. 12/31/12 STRUCTURAL

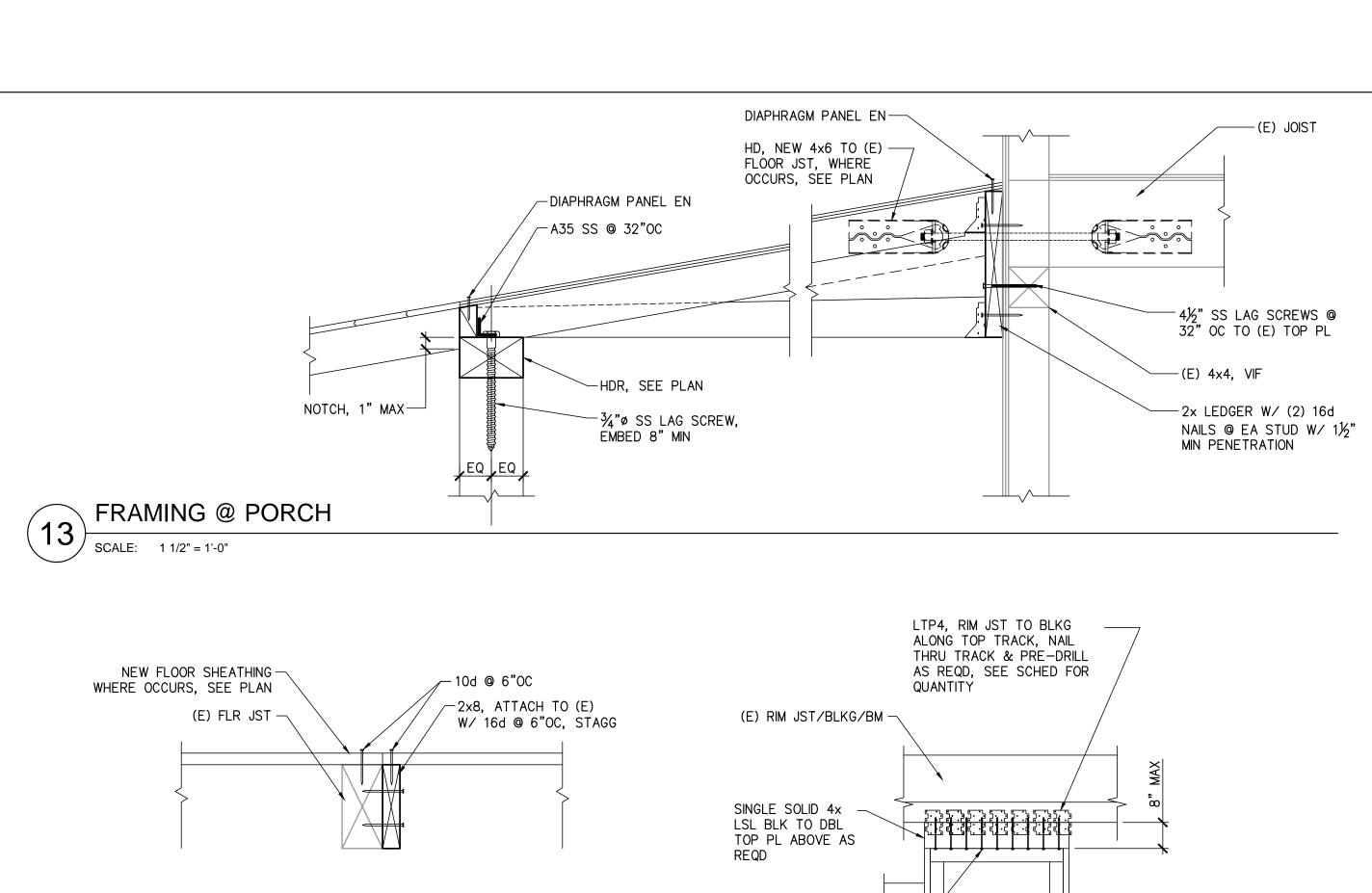
> REVISED 100% CD SET

**TYPICAL FRAMING DETAILS** 

DATE May 16, 2011

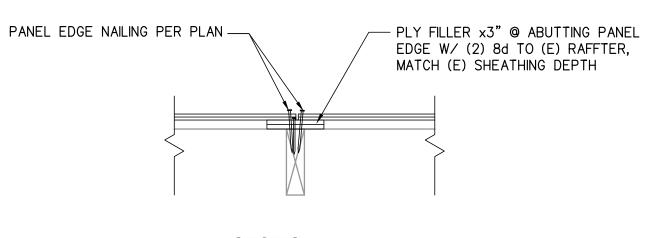
SCALE AS NOTED DRAWN FSE JOB 08-37

SHEET S4.2

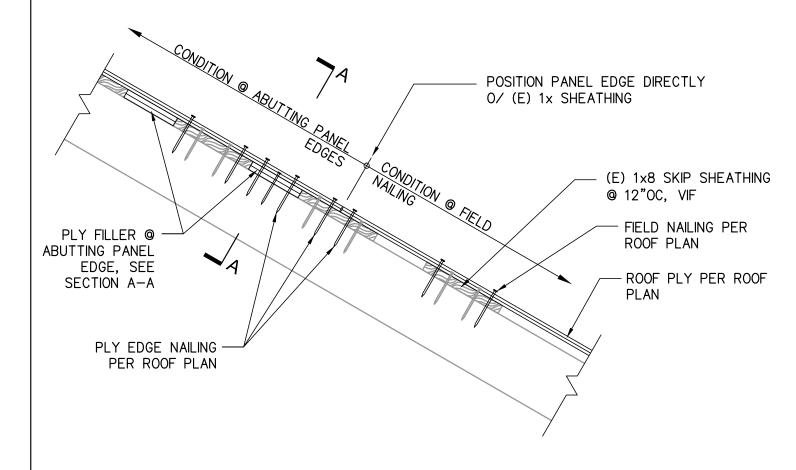


# CONNECTION @ NEW FLOOR SHEATHING

SCALE: 1 1/2"= 1'-0"

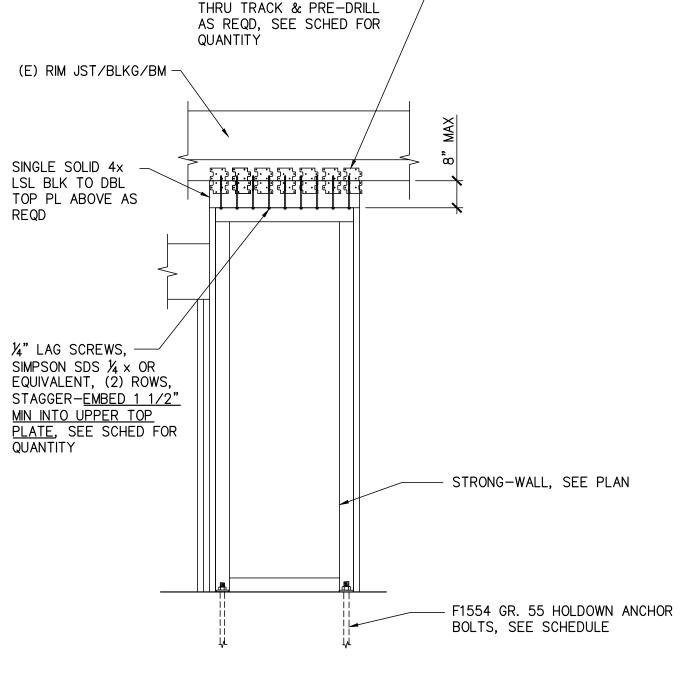


SECTION A-A



NEW PLYWOOD SHEATHING @ ROOF

SCALE: 1 1/2"= 1'-0"



## NOTES:

- 1. SEE PLANS FOR LOCATIONS & CONDITIONS
- 2. SEE STRONG-WALL SCHEDULE FOR ADDITIONAL NOTES & INFORMATION
- 3. SEE STRONG-WALL DETAILS FOR CONDITIONS ABOVE & BELOW FRAMES AS REQUIRED & CALLED OUT ON PLANS

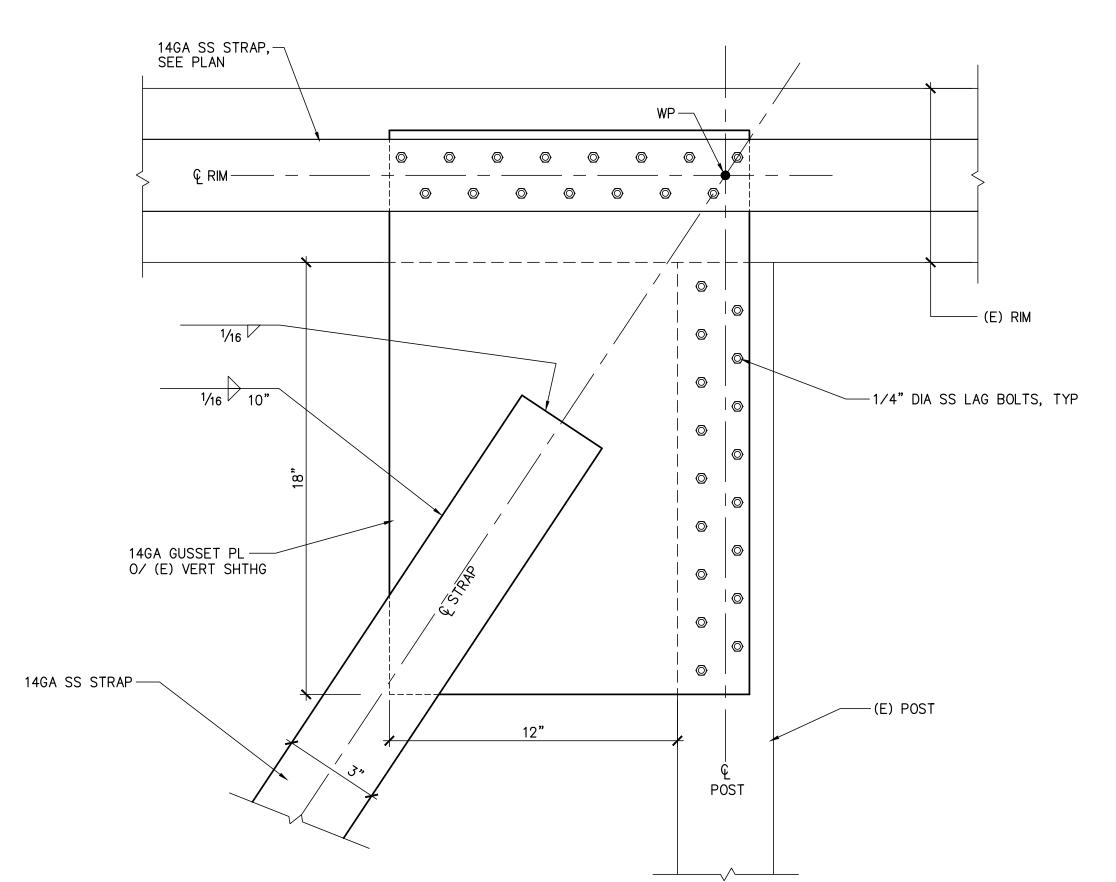
# TYP SIMPSON STEEL STRONG-WALL ELEVATION SCALE: 3/4"= 1'-0"

	STRONG-WALL SCHEDULE									
	HD BOLT QTY QTY									
FRAME TYPE	DIA	EMBED DEPTH	SCREWS BOTTOM	WOOD SCREWS @ TOP	QTY LTP4					
SSW24x9	1"	24" (3)	N/A	14	6					

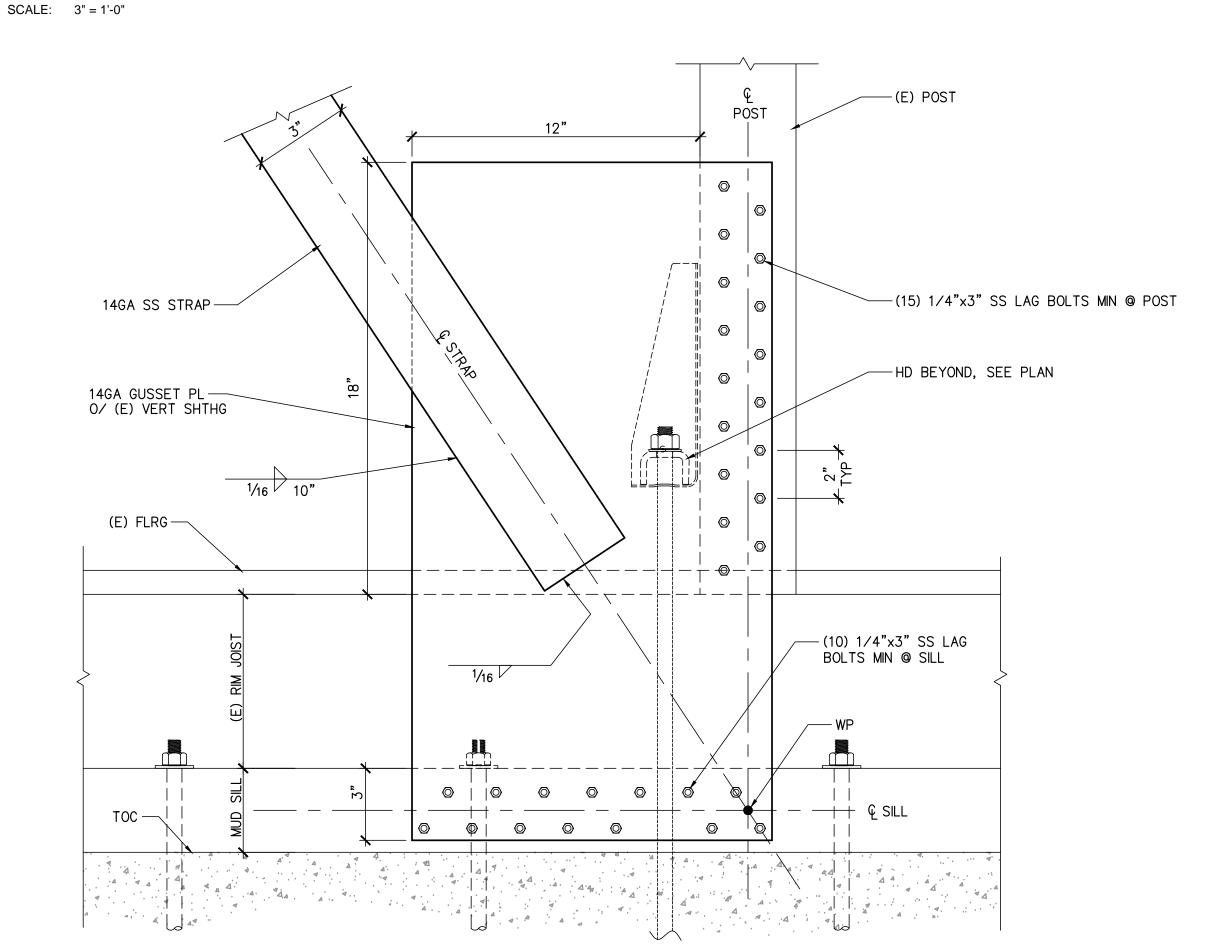
- 1. THE MANUFACTURER SHALL SUPPLY INSTALLATION HARDWARE AND DETAILS WITH ALL FRAMES. STRONG—WALLS SHALL BE HANDLED, INSTALLED AND FASTENED PER MANUFACTURER'S INSTRUCTIONS. WHERE MFR'S INSTRUCTIONS DIFFER WITH THE DRAWINGS, CONTRACTOR SHALL CONTACT THE ENGINEER FOR RESOLUTION
- 2. ANCHOR BOLTS SHALL BE TYPE F1554 GR. 55 AND SHALL BE INSTALLED PER MANUFACTURER'S INSTRUCTIONS USING THE TEMPLATES PROVIDED

# STRONG-WALL SCHEDULE

SCALE: 3/4"= 1'-0"



GUSSET PL @ DIAGONAL STRAP BRACED FRAME



8 GUSSET PL @ DIAGONAL STRAP BRACED FRAME

SCALE: 3" = 1'-0"

FULCRUM STRUCTURAL ENGINEERING 665 THIRD ST, STE 333 SAN FRANCISCO, CA 94107 TEL: 415.543.0161 FAX: 415.543.0162

REVISIONS DATE

AVAKKO INN RIVER REDWOODS STATE PARK ENDOCINO COUNTY, CA

PROFESSIONAL POOD FINE No. S 004492

Exp. 12/31/12

STAUCTURAL POOD FOR LIFE OF CALIFORNIA OF CALIFO

REVISED 100% CD SET

LATERAL FRAMING DETAILS

DATE May 16, 2011

SCALE AS NOTED

DRAWN FSE

JOB 08-37

SHEET

S5.1