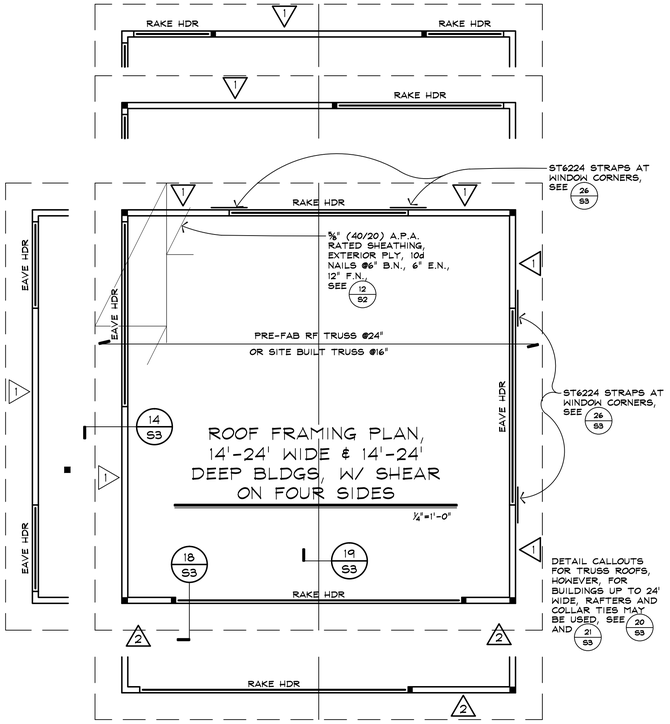
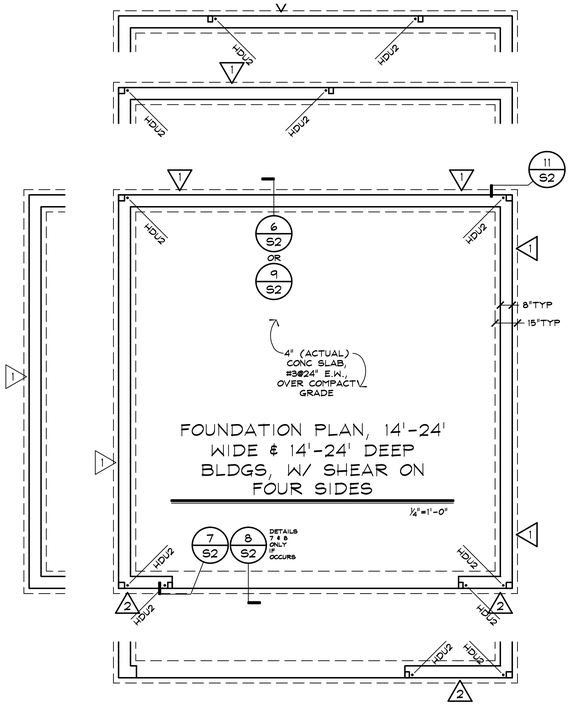


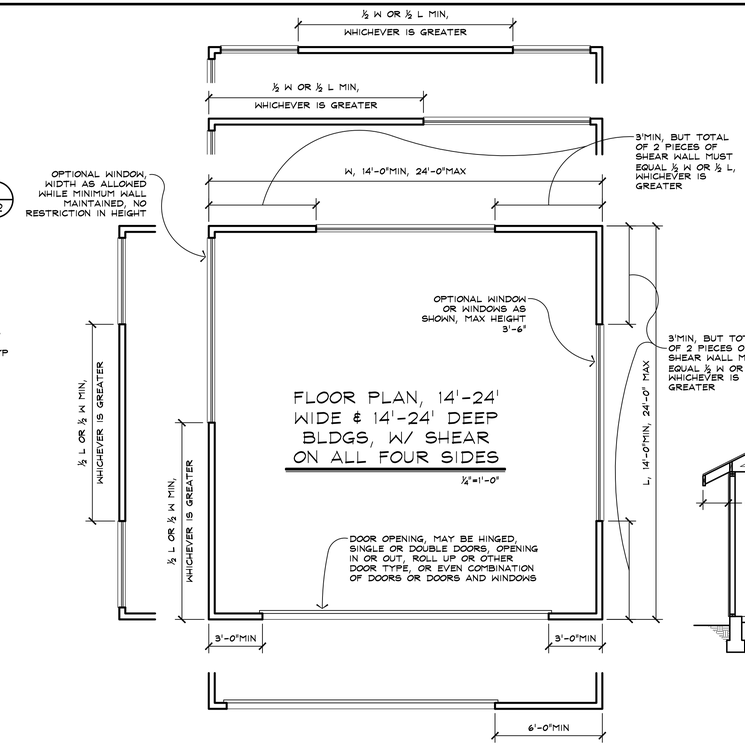
ROOF FRAMING PLAN, 14'-24' WIDE & 14'-24' DEEP BLDGS, W/ SHEAR ON FOUR SIDES

¼"=1'-0"



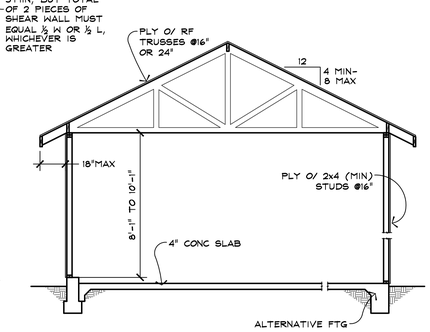
FOUNDATION PLAN, 14'-24' WIDE & 14'-24' DEEP BLDGS, W/ SHEAR ON FOUR SIDES

¼"=1'-0"



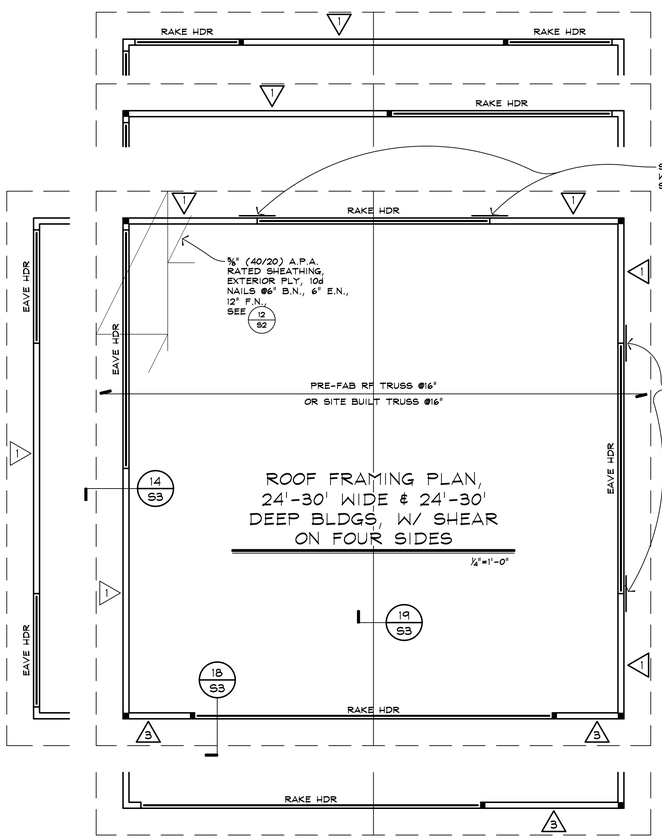
FLOOR PLAN, 14'-24' WIDE & 14'-24' DEEP BLDGS, W/ SHEAR ON ALL FOUR SIDES

¼"=1'-0"



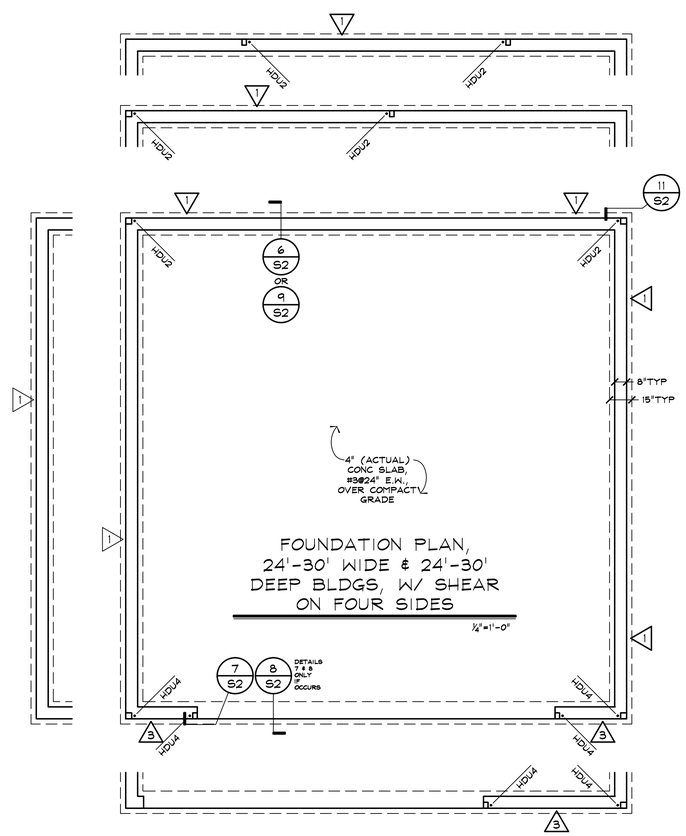
SECTION A, 14'-30' WIDE BLDGS

¼"=1'-0"



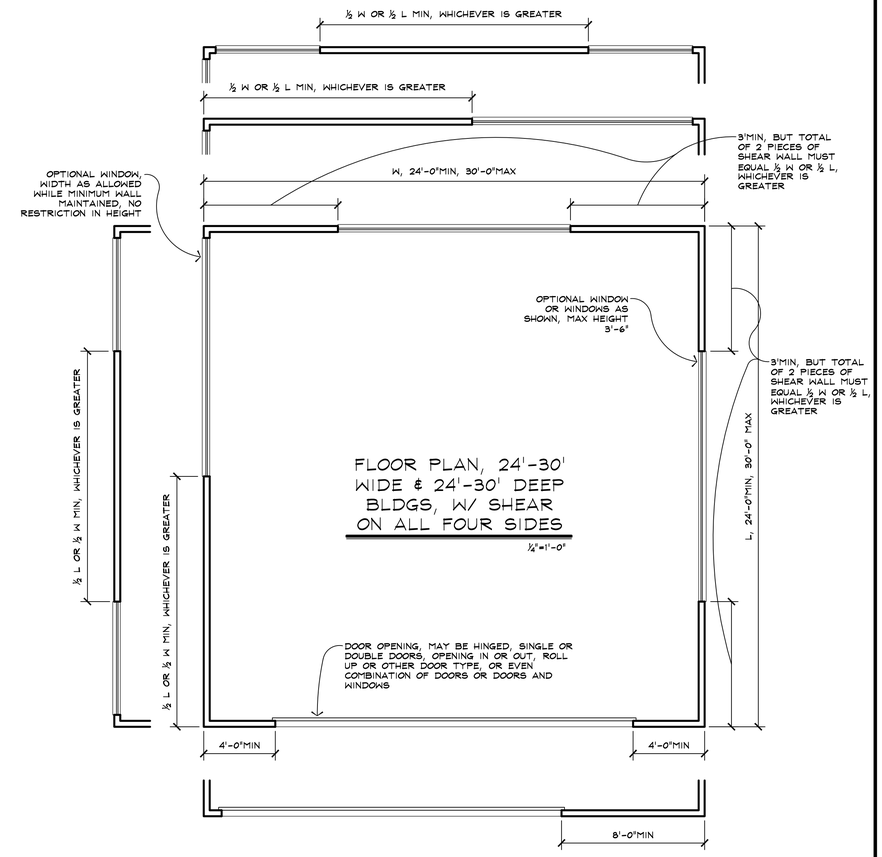
ROOF FRAMING PLAN, 24'-30' WIDE & 24'-30' DEEP BLDGS, W/ SHEAR ON FOUR SIDES

¼"=1'-0"



FOUNDATION PLAN, 24'-30' WIDE & 24'-30' DEEP BLDGS, W/ SHEAR ON FOUR SIDES

¼"=1'-0"



FLOOR PLAN, 24'-30' WIDE & 24'-30' DEEP BLDGS, W/ SHEAR ON ALL FOUR SIDES

¼"=1'-0"

MONO COUNTY PROVIDES THESE PLANS TO THE PUBLIC AS A COURTESY AND WITHOUT ANY WARRANTIES, EXPRESS OR IMPLIED, REGARDING THEIR FITNESS FOR ANY PARTICULAR APPLICATION. AMONG OTHER THINGS, MONO COUNTY DOES NOT REPRESENT OR WARRANT THAT THE DESIGNS WITHIN SAID PLANS ARE FREE FROM FLAWS OR DEFECTS. ANYONE UTILIZING THESE PLANS DOES SO AT THEIR OWN RISK AND WAIVES ANY CLAIMS AGAINST MONO COUNTY ARISING FROM SUCH USE.

REVISIONS	BY

STANDARD STRUCTURAL REQUIREMENTS, LARGE OUTBUILDINGS WITH SHEAR ON 4 SIDES AND 81 PSF SNOW LOAD, MONO COUNTY, CALIFORNIA

COUNTY OF MONO
COMMUNITY DEVELOPMENT DEPARTMENT
BUILDING DIVISION

P.O. BOX 8
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MAMMOTH LAKES, CA 93546
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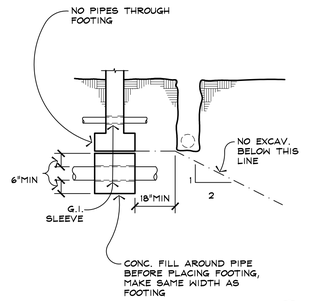
comdev@mono.ca.gov
www.monocounty.ca.gov

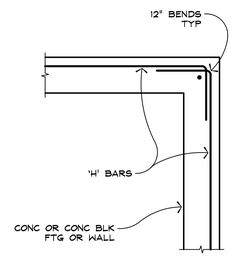
DATE	
SCALE	AS NOTED
DRAWN	
JOB	
SHEET	S1
OF	4 SHEETS



3/8"=1'-0"

1

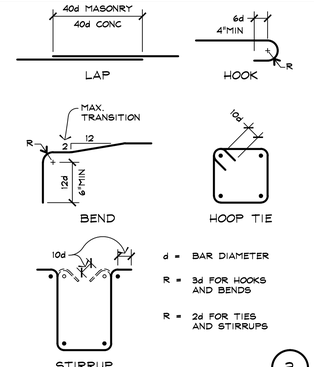
FDN-GEN_TFTG-PIPE_X_S_C01



TYPICAL CORNER REINFORCEMENT

2

FDN-GEN_CONCWL-CORNER_REINF_P_C01



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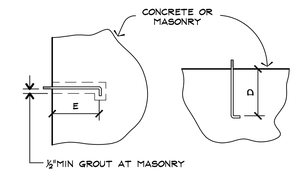
FDN-GEN_REINF_X_X_C01

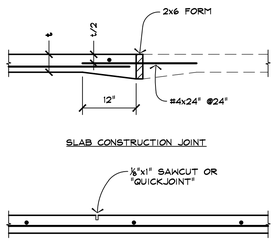


MIN BOLT EMBEDMENT

BOLT SIZE	HORIZ E	VERT D
1/2"Φ	4"	7"
5/8"Φ	4"	7"
3/4"Φ	5"	8"
7/8"Φ	6"	9"
1"Φ	7"	10"
1 1/8"Φ	8"	12"
1 1/4"Φ	9"	14"

4

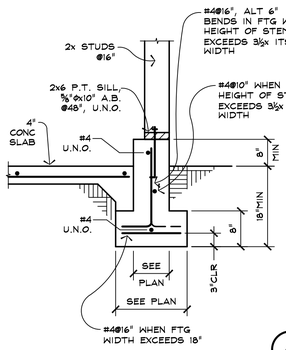
FDN-GEN_ABOLT_X_X_C01



PROVIDE CRACK CONTROL JOINT OR CONSTRUCTION JOINT NO FARTHER THAN 15 FT APART EACH WAY.

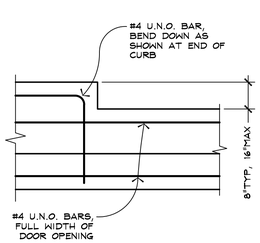
5

FDN-GEN_SLAB_JOINTS_S-S_C01



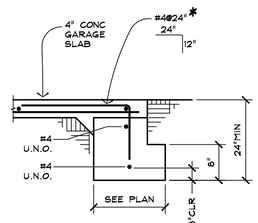
6

FDN-EXT_STUD-SLAB-TFTG_1@4T&B-@4@16V-@4@10H_S_C02



7

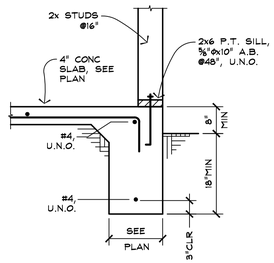
FDN-GEN_CURB-TFTG_1@4T&B_E_C01



*MAY BE OMITTED IF MONOLITHIC POUR

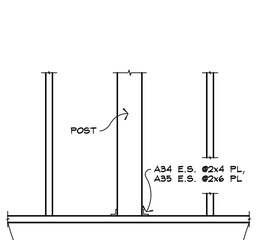
8

FDN-EXT_SLAB-TFTG_#@24-1@4T&B_S_C01



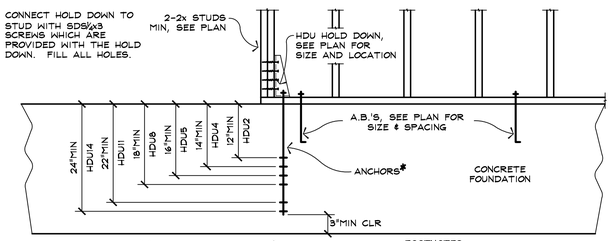
9

FDN-EXT_STUD-SLAB-IFTG_1@4T&B_S_C02



10

WL_STUD-PST-BPL-CONTFTG_A_E_C01



HOLD DOWN	ANCHOR [1,4]	ADD REINFORCEMENT [2]	ALLOWABLE (LBS)
HDU2	5/8"Φ	NONE	3,075
HDU4	5/8"Φ	1-#4 T&Bx10'MIN	4,565
HDU5	5/8"Φ	2-#4 T&Bx10'MIN	5,645
HDU8	7/8"Φ	2-#5 T&Bx10'MIN [3]	7,870
HDU11	1"Φ	2-#6 T&Bx10'MIN [3]	11,175
HDU14	1"Φ	2-#7 T&Bx10'MIN [3]	14,925

MIN ANCHOR EMBEDMENT MUST BE IN FOOTING IF FOOTING PLACED PRIOR TO SLAB ON GRADE

* ANCHORS ARE HEX HEAD BOLTS OR THREADED ROD WITH TWO HEX NUTS TIGHTENED AGAINST EACH OTHER. ROD SHALL EXTEND 1/2 ANCHOR Φ BEYOND BOTTOM NUT.

FOOTNOTES:

[1] PROVIDE 1 1/2"MIN CLR TO EDGE OF CONC @5/8"Φ A.B.'S, 2"MIN CLR @ ALL OTHERS

[2] CENTER ADDED BARS @HDU ANCHORS

[3] #3 TIES ☐ @6", 12", 12", E.S. HDU ANCHORS

[4] SIMPSON SSTB ANCHOR BOLTS MAY BE SUBSTITUTED, SEE CATALOG FOR EMBEDMENTS.

11

WL_STUD-BPL-CONTFTG_HDU-1@4T&B_E_C01

HEADER SPANS, EAVE WALLS, 14'-20' WIDE OUTBUILDINGS, 81 PSF SNOWLOAD	
HEADER SIZE	MAXIMUM ROUGH OPENING WIDTH	# OF TRIMMERS E.S.
4x6	3'-0"	1-2x4
4x8	4'-0"	1-2x4
4x10	5'-0"	1-2x4
4x12	5'-6"	2-2x4
3 1/2x9 1/2 PARALLAM	8'-6"	2-2x4
3 1/2x11 7/8 PARALLAM	11'-0"	2-2x4
6x6	4'-0"	1-2x6
6x8	6'-0"	1-2x6
6x10	7'-6"	1-2x6
6x12	9'-6"	2-2x6
5 1/2x11 7/8 PARALLAM	12'-6"	2-2x6
5 1/2x14 PARALLAM	15'-0"	2-2x6
5 1/2x16 PARALLAM	17'-0"	2-2x6
5 1/2x18 PARALLAM	20'-0"	3-2x6

HEADER SPANS, EAVE WALLS, 20'-24' WIDE OUTBUILDINGS, 81 PSF SNOWLOAD	
HEADER SIZE	MAXIMUM ROUGH OPENING WIDTH	# OF TRIMMERS E.S.
4x8	3'-6"	1-2x4
4x10	4'-6"	1-2x4
4x12	5'-0"	2-2x4
3 1/2x9 1/2 PARALLAM	8'-0"	2-2x4
3 1/2x11 7/8 PARALLAM	10'-6"	3-2x4
6x6	3'-6"	1-2x6
6x8	5'-6"	1-2x6
6x10	7'-0"	1-2x6
6x12	8'-6"	2-2x6
5 1/2x11 7/8 PARALLAM	12'-0"	2-2x6
5 1/2x14 PARALLAM	14'-0"	2-2x6
5 1/2x16 PARALLAM	16'-0"	3-2x6
5 1/2x18 PARALLAM	18'-6"	3-2x6

HEADER SPANS, EAVE WALLS, 24'-30' WIDE OUTBUILDINGS, 81 PSF SNOWLOAD	
HEADER SIZE	MAXIMUM ROUGH OPENING WIDTH	# OF TRIMMERS E.S.
4x8	3'-0"	1-2x4
4x10	4'-0"	2-2x4
4x12	4'-6"	2-2x4
3 1/2x9 1/2 PARALLAM	7'-6"	3-2x4
3 1/2x11 7/8 PARALLAM	9'-6"	3-2x4
6x6	3'-6"	1-2x6
6x8	5'-0"	1-2x6
6x10	6'-0"	1-2x6
6x12	7'-6"	2-2x6
5 1/2x11 7/8 PARALLAM	11'-0"	2-2x6
5 1/2x14 PARALLAM	13'-0"	3-2x6
5 1/2x16 PARALLAM	15'-0"	3-2x6
5 1/2x18 PARALLAM	17'-0"	3-2x6

HEADER SPANS, RAKE WALLS, 14'-30' WIDE OUTBUILDINGS, 81 PSF SNOWLOAD	
HEADER SIZE	MAXIMUM ROUGH OPENING WIDTH
4x6	6'-0"
4x8	8'-0"
4x10	10'-0"
4x12	11'-6"
3 1/2x9 1/2 PARALLAM	17'-6"
6x6	8'-6"
6x8	12'-0"
6x10	15'-0"
6x12	18'-6"
5 1/2x11 7/8 PARALLAM	20'-0"
5 1/2x14 PARALLAM	23'-6"

SINGLE TRIMMERS E.S.

NOTES TO SUBMITTER

THESE PRESCRIPTIVE DESIGNS ARE INTENDED TO APPLY TO THE MOST COMMON SITUATIONS ENCOUNTERED IN MONO COUNTY. HOWEVER, UNIQUE SITE CONDITIONS OR SUBSTANTIAL DEVIATIONS FROM THESE DESIGNS AS DETERMINED BY THE BUILDING OFFICIAL MAY WARRANT ADDITIONAL ARCHITECTURAL OR STRUCTURAL DESIGN REQUIREMENTS.

THESE PLANS ARE PRIMARILY FOR THE STRUCTURAL REQUIREMENTS OF OUTBUILDINGS. THE SUBMITTER IS RESPONSIBLE FOR PREPARING AN ARCHITECTURAL PLAN, SHOWING THE ACTUAL LAYOUT OF THE OUTBUILDING. THE PLAN SHALL ALSO SHOW A STRUCTURAL LAYOUT BASED UPON THE REQUIREMENTS OF THESE PLANS. NOTE THAT THE CALIFORNIA RESIDENTIAL CODE REFERS TO ACCESSORY STRUCTURES, AND GENERALLY, THESE OUTBUILDINGS WILL BE ACCESSORY STRUCTURES, SUBJECT TO ANY REQUIREMENTS AND EXCEPTIONS DESIGNATED FOR ACCESSORY STRUCTURES.

LASTLY THE SUBMITTER IS RESPONSIBLE FOR ALL SITE SPECIFIC REQUIREMENTS, INCLUDING FLOOD PLAIN ZONES, CAL-FIRE WILDLAND URBAN INTERFACE REQUIREMENTS, LAHONTAN EROSION CONTROL REQUIREMENTS AND ANY SIMILAR REQUIREMENTS.

WHILE SUBMITTER IS RESPONSIBLE FOR ARCHITECTURAL REQUIREMENTS, A FEW KEY REQUIREMENTS ARE HIGHLIGHTED BELOW. THESE NOTES ARE NOT EXHAUSTIVE, AND THE SUBMITTER IS STILL RESPONSIBLE FOR ANY ARCHITECTURAL ISSUES NOT ADDRESSED ON THESE PLANS.

ADDITIONAL ARCHITECTURAL AND SITE SPECIFIC REQUIREMENTS

IF A PROPOSED OUTBUILDING IS WITHIN 5' OF A PROPERTY LINE, ADDITIONAL FIRE PROTECTION REQUIREMENTS WILL NEED TO BE ADDRESSED. THESE REQUIREMENTS ARE BEYOND THE SCOPE OF THESE PLANS AND NEED TO BE ADDRESSED BY THE SUBMITTER.

THERE IS A HIGH LIKELIHOOD THAT THESE STRUCTURES WILL NEED TO COMPLY WITH CALIFORNIA WILDLAND URBAN INTERFACE REQUIREMENTS AND OTHER REQUIREMENTS FOR FIRE RESISTIVE CONSTRUCTION. THESE REQUIREMENTS ARE DEFINED IN C.B.C. CHAPTER 7A AND C.R.C SECTION R327. THERE ARE POSSIBLE EXCEPTIONS FOR OUTBUILDINGS THAT MAY APPLY. THE SUBMITTER IS ULTIMATELY RESPONSIBLE FOR SELECTING MATERIALS AND METHODS THAT MEET THESE REQUIREMENTS, OR SHOWING THAT THIS STRUCTURE IS EXEMPT UNDER ONE OF THE LISTED EXCEPTIONS.

IF THE OUTBUILDING IS TO HAVE A CEILING UNDER THE TRUSS OR COLLAR TIES, FORMING AN ATTIC, THE FOLLOWING ATTIC REQUIREMENTS SHALL BE MET. THE ATTIC MUST HAVE A NET VENTILATION OF 1 SQUARE FOOT PER 150 SQUARE FOOT OF AREA. IF THE ATTIC AREA EXCEEDS 30 SQUARE FEET AND HAS A CLEAR HEIGHT OF OVER 30", AN OPENING OF 20"X30" SHALL BE PROVIDED. 30" MINIMUM CLEAR HEADROOM SHALL BE PROVIDED AT OR ABOVE THE ACCESS OPENING.

ACCESSORY STRUCTURES PLACED ADJACENT TO DESCENDING SLOPES STEEPER THAN 1:3 SHALL BE SET BACK FROM THE SLOPE A DISTANCE EQUAL TO THE HEIGHT OF THE SLOPE DIVIDED BY 3, BUT NOT TO EXCEED 40'. IF THESE REQUIREMENTS CANNOT BE MET, AN ENGINEERED SOLUTION MAY NEED TO BE PROVIDED.

ACCESSORY STRUCTURES PLACED ADJACENT TO ASCENDING SLOPES STEEPER THAN 1:3 SHALL BE SET BACK FROM THE SLOPE A DISTANCE EQUAL TO THE HEIGHT OF THE SLOPE DIVIDED BY 2, BUT NEED NOT EXCEED 15'. IF THESE REQUIREMENTS CANNOT BE MET, AN ENGINEERED SOLUTION MAY NEED TO BE PROVIDED.

ACCESSORY STRUCTURES WITH ELECTRICAL SERVICE IS BEYOND THE SCOPE OF THESE PLANS. WHERE ELECTRICAL SERVICE IS REQUESTED, PLANS FOR OUTLET AND LIGHTING LOCATIONS, WIRE, CONDUIT SIZES, ETC SHALL BE SUBMITTED WITH THE PERMIT APPLICATION. THE ELECTRICAL PLANS SHALL INDICATE SIZE OF THE ELECTRICAL SERVICE PANEL AND THE MAIN SOURCE OF THE POWER.

REQUIRED UPGRADES TO HAZARD DETECTORS

IN EXISTING RESIDENCES WHERE THE COST OF ALTERATIONS, REPAIRS OR ADDITIONS (INCLUDING OUTBUILDINGS/ACCESSORY STRUCTURES) EXCEEDS $1,000 SMOKE DETECTORS MUST BE BROUGHT UP TO CODE AND CARBON MONOXIDE DETECTORS MUST BE INSTALLED.

INSTALL SMOKE DETECTORS AS REQUIRED BY SECTION 314 OF THE 2010 C.R.C. BATTERY OPERATED NON-INTERCONNECTED, SMOKE DETECTORS ARE PERMITTED IN PORTIONS OF THE RESIDENCE WHERE WALLS ARE NOT BEING FRAMED OR REFRAMED (AS SHOULD BE THE CASE FOR A DECK ADDITION). SMOKE DETECTORS MUST BE PROVIDED FOR THE ENTIRE RESIDENCE, AT CENTRAL LOCATIONS OUTSIDE SLEEPING AREAS AND ONE PER SLEEPING ROOM. THERE MUST ALSO BE AT LEAST ONE SMOKE DETECTOR ON EVERY LEVEL, REGARDLESS OF WHETHER THERE ARE SLEEPING ROOMS ON THAT LEVEL. EXISTING SMOKE DETECTORS MUST MEET THE STANDARDS SPELLED OUT IN THE C.R.C. OR MUST BE UPGRADED.

INSTALL CARBON MONOXIDE DETECTORS AS REQUIRED BY SECTION R315 OF THE 2010 C.R.C. (REQUIRED IF THE RESIDENCE HAS ANY FUEL BURNING APPLIANCES OR AN ATTACHED GARAGE) BATTERY OPERATED NON-INTERCONNECTED, CARBON MONOXIDE DETECTORS ARE PERMITTED IN PORTIONS OF THE RESIDENCE WHERE WALLS ARE NOT BEING FRAMED OR REFRAMED (AS SHOULD BE THE CASE FOR A DECK ADDITION). ONE CARBON MONOXIDE DETECTOR IS REQUIRED PER UNIT AT A CENTRAL LOCATION NEAR SLEEPING ROOMS, AND ONE IS REQUIRED ON EVERY LEVEL, REGARDLESS WHETHER THERE ARE SLEEPING ROOMS ON THAT LEVEL.

NOTES ABOUT THESE PLANS

LAYOUTS ARE SHOWN TO ILLUSTRATE POTENTIAL SITUATIONS, PRIMARILY OPENINGS NEAR THE CENTER OF WALLS, OPENINGS NEAR THE EDGES OF 1 WALL OR OPENINGS NEAR EDGES OF 2 WALLS. ALL OF THESE OPENINGS ARE OPTIONAL, AND AN OUTBUILDING CAN HAVE AS LITTLE AS ONE DOOR FOR AN OPENING.

OPENINGS CENTERED IN WALLS, SHOWN WITH ST6224 STRAPS AT THE CORNERS CAN ONLY BE WINDOWS. OPENINGS NEAR EDGES OF WALLS CAN BE WINDOWS OR DOORS. WITHIN A SPACE DESIGNATED FOR WINDOWS, THE OPENING CAN CONSIST OF ONE, OR MULTIPLE OPENINGS.

FOR PURPOSES OF THESE PLANS, THE WALL WITH THE MAIN DOOR SHALL BE CONSIDERED THE FRONT, THE WALL OPPOSITE THE MAIN DOOR SHALL BE CONSIDERED THE BACK, AND THE OTHER TWO WALLS SHALL BE CONSIDERED THE SIDE WALLS. NOTE THAT MORE THAN ONE WALL CAN HAVE A LARGE DOOR, AND IF SO, MUST MEET THE REQUIREMENTS SPELLED OUT IN THESE PLANS FOR THE FRONT WALL.

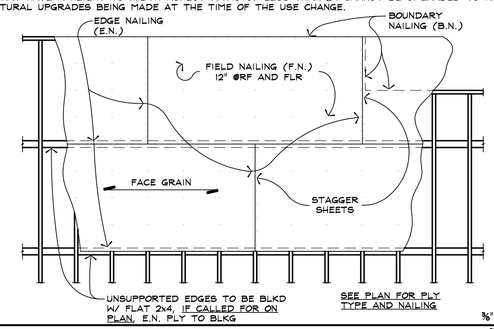
PLANS ASSUME GABLE ROOFS. EAVE WALL LINES ARE THE WALLS THAT ARE BELOW THE BOTTOM OF THE SLOPE OF THE ROOF (THE EAVE). RAKE WALLS ARE WALLS THAT ARE AT THE ENDS OF THE GABLES, (ALSO SOMETIMES REFERRED TO AS GABLE END WALLS). ALTERNATIVELY, A TRUSS HIP ROOF CAN BE USED (DESIGNED BY A TRUSS MANUFACTURER). IN THIS CASE CONSIDER ALL WALLS EAVE WALLS.

PRE-MANUFACTURED TRUSSES ARE RECOMMENDED, AND SHOULD USE DETAILS 14/S3, 18/S3, AND 19/S3. HOWEVER, RAFTERS AND COLLAR TIES ARE ALLOWED FOR BUILDINGS UP TO 24' WIDE, AND USE DETAILS 20/S3 AND 21/S3. NOTE THAT RAKE WALLS ARE TO BE BALLOON FRAMED TO BOTTOM OF RAFTERS. BUILDINGS 24'-30' MUST USE PRE-MANUFACTURED ROOF TRUSSES.

THE RAKE WALLS ARE SHOWN AS THE FRONT AND BACK WALLS. HOWEVER THE ROOF CAN BE TURNED 90 DEGREES, WITH THE RAKE WALLS AS THE SIDE WALLS. BE SURE AND USE EAVE HEADERS AT THE FRONT IN BACK IN THIS CASE. SIDE WALLS MUST MEET THE REQUIREMENTS FOR SHEAR AND HOLDDOWNS OF THE BACK WALL (AND THE BACK WALL CAN INSTEAD BE A SIDE WALL) FOR BUILDINGS WITH NO OPEN SIDES. FOR BUILDINGS WITH ONE OPEN SIDE, ALL THREE WALLS ARE TO BE TREATED AS BACK WALLS IN REGARDS TO SHEAR PANELING AND HOLDDOWNS.

BUILDINGS WITH ONE OPEN SIDE ARE BUILDINGS WHERE ONE SIDE IS DOMINATED BY A DOOR, A SERIES OF DOORS, OR A COMBINATION OF DOORS AND WINDOWS. BUILDINGS WITH ONE OPEN SIDE ARE NOT ADDRESSED IN THESE PLANS BUT ARE ADDRESSED IN OTHER PLANS ON FILE WITH MONO COUNTY. BUILDINGS WITH AND OPEN SIDE CANNOT EXCEED 24'x24'.

THESE ARE INTENDED AS NON-HABITABLE OUTBUILDINGS. SHOULD ANY BUILDING BE IN THE FUTURE UPGRADED TO HABITABLE SPACE, THIS WILL REQUIRE A NEW BUILDING PERMIT FROM MONO COUNTY FOR THAT UPGRADE. NOTE THAT BUILDINGS WITH WITH SHEAR WALLS THAT HAVE A HEIGHT TO WIDTH ASPECT RATIO OF LESS THAN 2:1 CANNOT BE UPGRADED TO HABITABLE SPACE WITHOUT STRUCTURAL UPGRADES BEING MADE AT THE TIME OF THE USE CHANGE.



SEE PLAN FOR PLY TYPE AND NAILING

3/8"=1'-0"

12

CON_DIAPH_BLK_P_C01

PROJECT SHALL COMPLY WITH THE 2010 CALIFORNIA CODES, WHICH ARE BASED UPON THE 2009 INTERNATIONAL BUILDING CODE, THE 2009 INTERNATIONAL RESIDENTIAL CODE, THE 2009 UNIFORM PLUMBING CODE, THE 2009 UNIFORM MECHANICAL CODE, THE 2008 NATIONAL ELECTRICAL CODE, AND THE 2008 TITLE 24 ENERGY STANDARDS.

SOIL BEARING ALLOWABLE ASSUMED TO BE 2000 PSF. ALL EXTERIOR FOOTINGS SHALL HAVE 18" MIN EMBEDMENT. MINIMUM FOOTING REINFORCEMENT IS 1-#4 AT TOP AND BOTTOM OF CONTINUOUS FOOTING.

ALL FOOTINGS SHALL ALSO BE EMBEDDED DEEP ENOUGH THAT A 5' MIN HORIZONTAL DISTANCE TO DAYLIGHT IS ATTAINED.

SEE 1/- FOR PIPES UNDER FOOTINGS.

SEE 2/- FOR TYPICAL REINFORCEMENT AT CORNERS OF FOOTINGS.

SEE 3/- FOR LAPS AND BENDS IN REINFORCING STEEL

SEE 4/- FOR EMBEDMENT OF ANCHOR BOLTS.

SEE 5/- FOR JOINTS IN CONCRETE.

SILL ANCHOR BOLTS ARE 5/8"Φx10" @48" WITH 0.229"THK x 3" SQ PLATE WASHERS UNLESS NOTED OTHERWISE (SEE SHEAR PANEL SCHEDULE A/- FOR EXCEPTIONS).

HD, ST, ETC ARE SIMPSON STRONG-TIE HARDWARE. REFER TO SIMPSON CATALOG C-2009 FOR INSTALLATION INFORMATION. USE EXACT TYPE, SIZE, AND NUMBER OF FASTENERS SPECIFIED IN CATALOG.

HOLDDOWN ANCHORS SHALL BE SECURED IN PLACE PRIOR TO FOUNDATION INSPECTION.

SEE 25/S3 FOR SPECIAL FOOTING REINFORCEMENT AT HOLDDOWNS

MINIMUM HOLDDOWN STUDS
HDU2 2-2x
HDU4 2-2x
HDU5 2-2x

10/- TYPICAL ALL POSTS, U.N.O.

WHEN DOUBLE OR TRIPLE HEADERS ARE INDICATED IN THE HEADER SCHEDULE, SEE 24/S3

ℓ/# 'S ARE SHEAR PANELS, WHERE # IS THE SHEAR PANEL MARK AND ℓ IS SHEAR PANEL LENGTH, SEE A/-

SHEAR PANELS EXTEND FROM CONCRETE TO ROOF SHEATHING, U.N.O.

SHEAR TRANSFER CONNECTIONS SHOWN IN DETAILS ARE MINIMUM. SEE A/- FOR SHEAR TRANSFER CONNECTIONS AT PLY SHEAR WALLS.

SHEAR PANEL SYMBOL # INDICATES THAT ENTIRE LENGTH OF WALL IS SHEATHED WITH THAT SHEAR PANEL, NOT JUST THE SECTION OF WALL IMMEDIATELY IN FRONT OF THE SYMBOL.

WHERE THERE IS A REQUIREMENT FOR TWO HOLDDOWN POSTS FOR TWO WALLS AT A CORNER, THE CORNER CAN BE FRAMED FROM A SOLID MEMBER, WITH PLYWOOD FROM BOTH WALL PLANES TERMINATING ON THE CORNER, AND ONLY ONE HOLDDOWN IS REQUIRED

EXTERIOR WALLS ARE REQUIRED TO BE FRAMED WITH 2x4 STUDS @16", U.N.O., HOWEVER THEY CAN BE UPGRADED TO 2x6 STUDS @16", EITHER TO ACCOMMODATE LARGER HEADERS OR INSULATION

TOP PLATE SPLICES SHALL LAP 4'-0" MIN, 4-16d E.S. FOR WALLS UP TO 24', SEE 13/S3. IF PLATES DO NOT LAP, USE ST6215.

TOP PLATE SPLICES SHALL LAP 4'-0" MIN, 6-16d E.S. FOR WALLS UP TO 24'-30', SEE 17/S3 IF PLATES DO NOT LAP, USE ST6224.

NON-LOAD BEARING INTERIOR PARTITION WALLS MAY BE ADDED, SEE 22/S3 AND 23/S3 FOR ATTACHMENT

5 1/2x, 6 3/4x, ETC ARE 24f, DF-L GLULAM BEAMS, SPECIFY 24F-V4 PER 2010 C.B.C.

P-L ARE PARALLAM PSL BEAMS BY ILEVEL TRUS JOIST BY WEYERHAEUSER, OR EQUIVALENT (ESR-1387)

IF ENGINEERED WOOD PRODUCTS ARE SUPPLIED BY A MANUFACTURER OTHER THAN BY ILEVEL TRUS JOIST BY WEYERHAEUSER, THE SUBMITTER SHALL SUBMIT DOCUMENTATION SHOWING THAT THE PRODUCT IS OF EQUIVALENT STRUCTURAL PROPERTIES TO MONO COUNTY BUILDING DIVISION STAFF AND OBTAIN THEIR APPROVAL.

◇ ARE REFERENCES TO MEMBER CALCULATIONS. SEE CALCULATIONS PACKAGE.

DETAILS ON ACCOMPANYING DETAIL SHEETS ARE DRAWN TO THE SCALE NOTED IN THE TITLE BLOCK OF THE SHEET, U.N.O. HOWEVER, THE SIZE OF EACH SCALED ELEMENT SHOWN ON THE DETAILS DOES NOT NECESSARILY REPRESENT THE SIZE OF THE MEMBERS CALLED OUT ON THE PLAN, OR EXISTING IN THE STRUCTURE.

PRE-FAB ROOF TRUSSES @24" UP TO 24' WIDE BLDGS, & @16" FOR 24'-30' WIDE BLDGS, ENGINEERED BY OTHERS FOR:
TOP CHORD SNOW LOAD, 41-81 PSF
TOP CHORD DEAD LOAD, 10 PSF
BOTTOM CHORD DEAD LOAD, 5 PSF
I.C.B.O. APPROVED FABRICATOR IS REQUIRED.
STRESS INCREASE FOR DURATION IS NOT ALLOWED.

SHOP DRAWINGS FOR THE ROOF TRUSSES SHALL BE SUBMITTED TO THE BUILDING DEPARTMENT FOR REVIEW AND APPROVAL PRIOR TO FABRICATION OF THE TRUSSES. SUBMITTALS SHALL INCLUDE STRUCTURAL CALCULATIONS AND SHALL SHOW LAYOUT, INDIVIDUAL TRUSS DESIGN AND ALL OTHER ELEMENTS AS REQUIRED IN C.R.C. SECTION 802.10. SUBMITTALS SHALL BE SIGNED BY THE CALIFORNIA REGISTERED ARCHITECT OR ENGINEER RESPONSIBLE FOR THEIR DESIGN.

SCHEDULE
SHEAR PANELS

MARK	MATERIAL	EDGE NAILING	FIELD NAILING	2x SILL ANCHORS	3x SILL ANCHORS	STUDS & BLKG @ PANEL JOINTS	BOT PL CONN.	TOP PL CONN. AT FLOOR & ROOF	VALUE (LBS/FT)
1	5/8" (24/0) STR 1 PLY, 1 SIDE	8d @6"	8d @12"	5/8"Φx10" @48"	-	2x	16d @7"	A35 @16" OR LTP4 @28"	280
2	3/8" (24/0) STR 1 PLY, 1 SIDE	8d @4"	8d @12"	5/8"Φx10" @17"	5/8"Φx12" @42"	3x	16d @4"	A35 @12" OR LTP4 @18"	430
3	3/8" (24/0) STR 1 PLY, 1 SIDE	8d @3"	8d @12"	5/8"Φx10" @13"	5/8"Φx12" @33"	3x	16d @3"	A35 @9" OR LTP4 @14"	550

5/8" T1-11 PLYWOOD SIDING MAY BE SUBSITUTED FOR 3/8" STR 1 PLY, BUT 10d NAILS SHOULD REPLACE 8d NAILS AT THE SAME SPACING

SEE 15/S3 FOR INSTALLATION OF SHEAR PANELS.

ALL PANEL EDGES BACKED WITH 2" NOMINAL OR WIDER FRAMING. PANELS INSTALLED EITHER HORIZONTALLY OR VERTICALLY OVER STUDS AT 16". SPACE NAILS AT 12" ON CENTER ALONG INTERMEDIATE FRAMING MEMBERS.

WHERE PANELS ARE APPLIED ON BOTH FACES OF A WALL AND NAIL SPACING IS LESS THAN 6" ON CENTER ON EITHER SIDE, PANEL JOINTS SHALL BE OFFSET TO FALL ON DIFFERENT FRAMING MEMBERS OR FRAMING SHALL BE 3" NOMINAL OR THICKER AND NAILS ON EACH SIDE SHALL BE STAGGERED.

IN SDC E ALL SILL ANCHOR BOLTS SHALL BE 5/8"Φ MIN. EACH ANCHOR BOLT SHALL HAVE A MINIMUM OF 3"x3"x0.229" THICK PLATE WASHER.

IN SDC D AND E, WHERE ALLOWABLE SHEAR VALUES EXCEED 350 POUNDS PER FOOT, FOUNDATION SILL PLATES AND ALL FRAMING MEMBERS RECEIVING EDGE NAILING FROM ABUTTING PANELS SHALL NOT BE LESS THAN A SINGLE 3-INCH NOMINAL MEMBER AND FOUNDATION SILL PLATES SHALL NOT BE LESS THAN A SINGLE 3-INCH NOMINAL MEMBER. IN SHEAR WALLS WHERE TOTAL WALL DESIGN SHEAR DOES NOT EXCEED 600 POUNDS PER FOOT A SINGLE 2-INCH NOMINAL SILL PLATE MAY BE USED, PROVIDED ANCHOR BOLTS ARE DESIGNED FOR A LOAD CAPACITY OF 50 PERCENT OR LESS OF THE ALLOWABLE CAPACITY AND BOLTS HAVE A MINIMUM OF 3"x3"x0.229" THICK PLATE WASHERS. PLYWOOD JOINT AND SILL PLATE NAILING SHALL BE STAGGERED IN ALL CASES.

SQUARE WASHERS ARE PERMITTED TO HAVE A DIAGONALLY SLOTTED HOLE NOT MORE THAN 3/16" LARGER THAN THE BOLT DIAMETER AND SLOT LENGTH NOT TO EXCEED 1 3/4". IF SLOTTED, A STANDARD CUT WASHER IS REQUIRED BETWEEN THE PLATE WASHER AND THE NUT..

SPACINGS FOR TOP AND BOTTOM PLATE CONNECTIONS AND SILL ANCHORS ARE MAXIMUMS. CONTRACTOR MAY USE CLOSER, MORE CONVENIENT SPACINGS.

WHERE A35 TOP PLATE CONNECTIONS ARE CLOSER THAN 6" ON CENTER, A35'S SHOULD BE PLACED ON ONE SIDE AND LTP4'S ON THE OTHER SIDE OF THE BLOCKING OR RIM AND SHOULD BE STAGGERED.

A

12-008SC1

REVISIONS	BY

STANDARD STRUCTURAL REQUIREMENTS, LARGE OUTBUILDINGS WITH SHEAR ON 4 SIDES AND 81 PSF SNOW LOAD, MONO COUNTY, CALIFORNIA

COUNTY OF MONO
COMMUNITY DEVELOPMENT DEPARTMENT
BUILDING DIVISION
P.O. BOX 8
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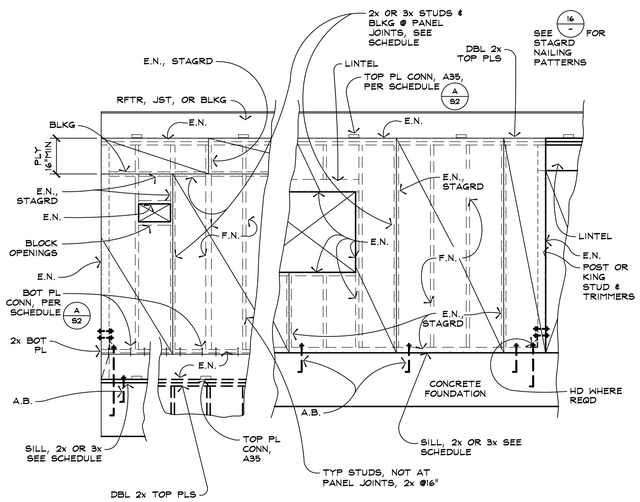
www.monocounty.ca.gov

DATE
SCALE 3/4"=1'-0"
DRAWN
JOB
SHEET S2
OF 4 SHEETS



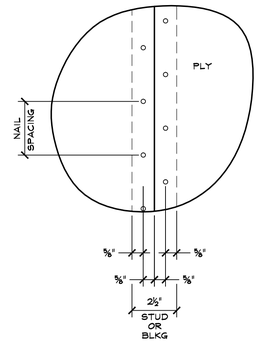
ALTERNATE INSTALLATION WITH PLY EDGES NOT NAILED TO COMMON MEMBERS

REFER TO SHEAR PANEL SCHEDULE A S2

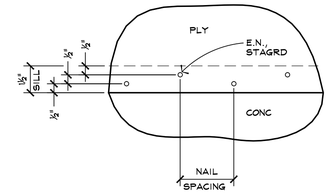
3/8"=1'-0"

15

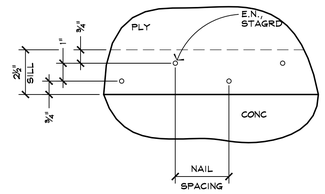
WL_SHR_X_E_C05



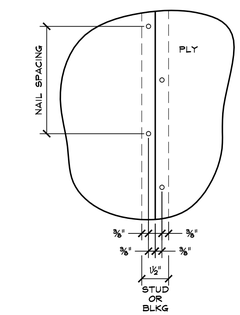
STAGRD EDGE NAILING TO 3x STUD OR BLKG



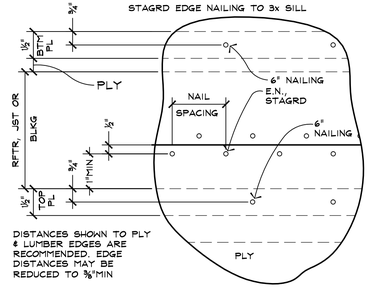
STAGRD EDGE NAILING TO 2x SILL



STAGRD EDGE NAILING TO 3x SILL



STAGRD EDGE NAILING TO 2x STUD OR 2x BLOCKING



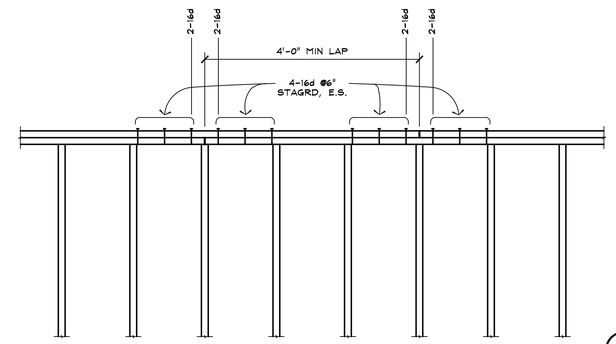
DISTANCES SHOWN TO PLY & LUMBER EDGES ARE RECOMMENDED. EDGE DISTANCES MAY BE REDUCED TO ⅜"MIN

STAGRD EDGE NAILING TO RAFTER, JOIST OR BLKG

3"=1'-0"

16

WL_SHR-STAG-NAIL_X_E_C01



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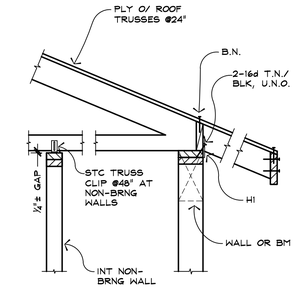
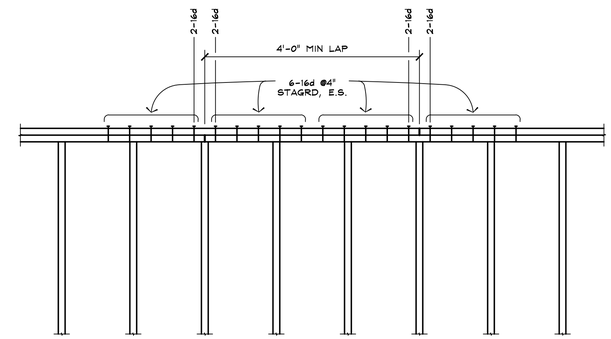
WL_TPL-TPL-STUD_4-16d_E_C01



14

RF-EAV_TRUS-STUD-STUD_STC-HI_S-PERP_C04



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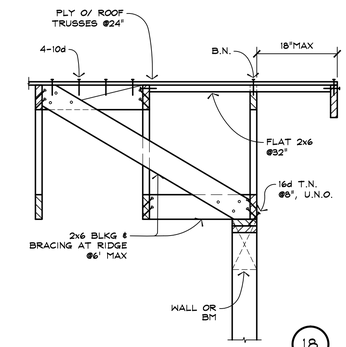
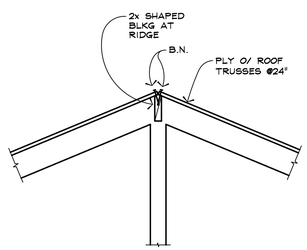
WL_TPL-TPL-STUD_6-16d_E_C01



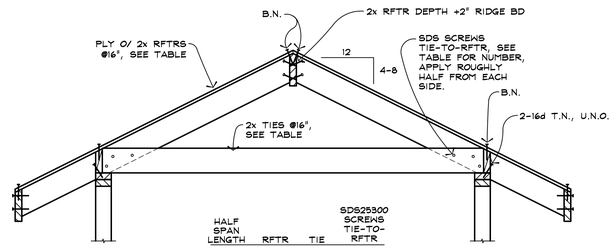
18

RF-RAK_TRUSL-BRCE-FLAT2x-STUD_X_S-PARL_C04



19

RF-RDG_TRUS_X_S-PERP_C02

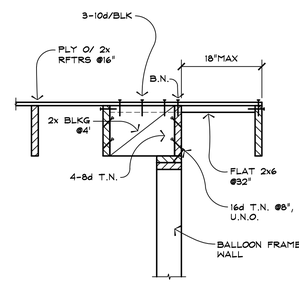


HALF SPAN LENGTH	RFTR	TIE	SDS25300 SCREWS TIE-TO-RFTR
0-7 FT	2x8	2x6	5
10	2x10	2x6	7
12	2x12	2x8	9

NOTE THAT THIS DETAIL IS ONLY AVAILABLE FOR BUILDINGS UP TO 24' WIDE

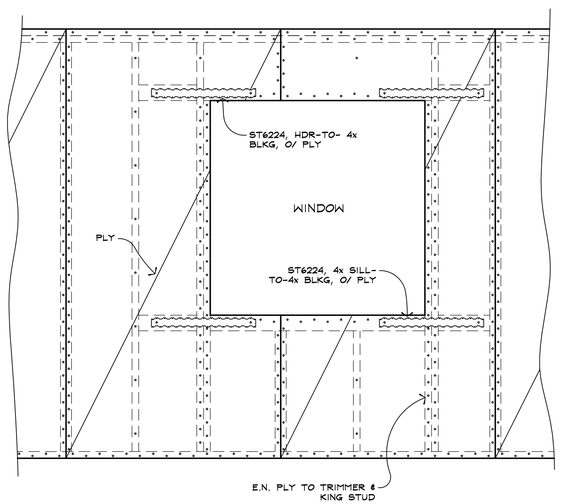
20

RF_RFTRL-RFTRRR-TIE_4-8IN12_S-PERP_C05



21

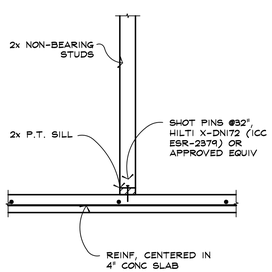
RF-RAK_RFTRL-FLAT2x-STUD_X_S-PARL_C02



SPECIAL FRAMING AT WINDOWS IN DESIGNATED SHEAR WALLS

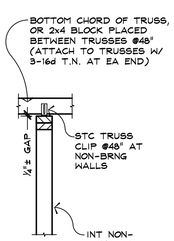
26

WL_SHR-WNDW_ST6224_E_C01



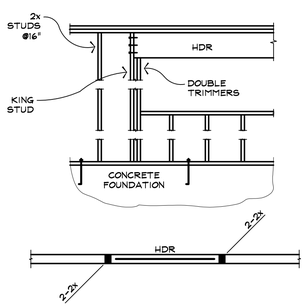
22

FDN-INT_STUD-SLAB_SHTPN_S_C01



23

RF-INT_TRUS-STUD_STC_S-PERP_C01

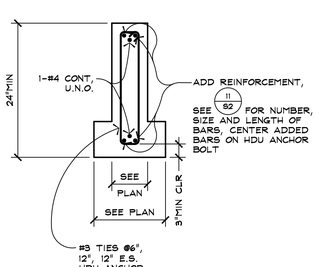


EXAMPLE OF HOW DOUBLE TRIMMERS ARE SHOWN ON PLAN

3/8"=1'-0"

24

WL-GEN_TRIMMERS_X_E_C02



25

FDN-GEN_TFTG_HD REINF-1#4TAB_S_C01

REVISIONS | BY

STANDARD STRUCTURAL REQUIREMENTS, LARGE OUTBUILDINGS WITH SHEAR ON 4 SIDES AND 81 PSF SNOW LOAD, MONO COUNTY, CALIFORNIA

COUNTY OF MONO
COMMUNITY DEVELOPMENT DEPARTMENT
BUILDING DIVISION
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comdev@mono.ca.gov
www.monocounty.ca.gov

DATE
SCALE 3/4"=1'-0"
DRAWN
JOB
SHEET S3
OF 4 SHEETS

SPECIFICATIONS AND GENERAL CONSTRUCTION NOTES

GENERAL REQUIREMENTS:

1. CODES AND REFERENCES

   A. ALL MATERIALS AND WORKMANSHIP SHALL CONFORM TO THE REQUIREMENTS OF THE 2010 CALIFORNIA BUILDING CODE (C.B.C.) AND 2010 CALIFORNIA RESIDENTIAL CODE (C.R.C.) BASED UPON THE 2009 INTERNATIONAL BUILDING CODE (I.B.C.) AND 2009 INTERNATIONAL RESIDENTIAL CODE (I.R.C.)

   B. A THOROUGH PLANCHECK SHALL BE MADE BY A QUALIFIED REPRESENTATIVE OF THE BUILDING DEPARTMENT PRIOR TO THE ISSUANCE OF A BUILDING PERMIT. CORRECTIONS, IS ANY, SHALL BE MADE ONLY BY THE SUBMITTER OR HIS REPRESENTATIVE. ONCE THE BUILDING PERMIT HAS BEEN ISSUED NO CHANGES OR DEVIATIONS SHALL BE MADE WITHOUT THE WRITTEN APPROVAL OF THE SUBMITTER, LEST AN UNSAFE OF UNLAWFUL CONDITION BE CREATED. CONTRACTOR SHALL COMPLY WITH ANY CODE OR LEGAL VIOLATION WHICH MIGHT BE POINTED OUT BY THE BUILDING INSPECTOR.

   C. WHERE REFERENCE IS MADE TO VARIOUS TEST STANDARDS FOR MATERIALS, SUCH STANDARDS SHALL BE THE LATEST EDITION, AND/OR ADDENDUM. THESE STANDARDS WILL BE REFERRED TO IN ABBREVIATED FROM AS LISTED BELOW:

ACI	AMERICAN CONCRETE INSTITUTE
AFPA	AMERICAN FOREST AND PAPER ASSOCIATION
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION
AITC	AMERICAN INSTITUTE OF TIMBER CONSTRUCTION
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
APA	AMERICAN PLYWOOD ASSOCIATION
ASTM	AMERICAN SOCIETY OF TESTING MATERIALS
AWS	AMERICAN WELDING SOCIETY
ICC	INTERNATIONAL CODE COUNCIL
WCLIB	WEST COAST LUMBER INSPECTION BUREAU
WWPA	WESTERN WOOD PRODUCTS ASSOCIATION

   D. CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS AND CONDITIONS ON THE JOB SITE AND REPORT ANY ERRORS, OMISSIONS, OR POSSIBLE DISCREPANCIES TO THE SUBMITTER PRIOR TO PROCEEDING WITH THE WORK. SPECIAL CARE SHALL BE GIVEN SITE AND BUILDING LAYOUT THEREUPON.

   E. TYPICAL DETAILS AND NOTES SHALL APPLY UNLESS SHOWN OTHERWISE ON THE PLANS.

2. SPECIAL INSPECTION

   WHERE "SPECIAL INSPECTION" IS REQUIRED ON THE PLANS, A REGISTERED DEPUTY INSPECTOR APPROVED BY, AND RESPONSIBLE TO, THE OWNER AND THE BUILDING DEPARTMENT, SHALL BE EMPLOYED BY THE OWNER. SPECIAL INSPECTION IS REQUIRED FOR:

   A. PLACING OF ALL CONCRETE WITH AND f'_c IN EXCESS OF 2500 PSI.

   B. ALL FIELD WELDING, OR WELDING PERFORMED IN AN UNLICENSED FABRICATING SHOP.

   C. ALL CERTIFIED COMPACTED FILL.

   D. SUCH OTHER ITEMS AS MAY BE REQUIRED BY CHAPTER 17 OF THE C.B.C. OR BY THE LOCAL BUILDING DEPARTMENT.

3. TEMPORARY BRACING

   THE CONTRACTOR SHALL PROVIDE SAFE AND ADEQUATE BRACES AND CONNECTIONS TO SUPPORT THE COMPONENT PARTS OF THE STRUCTURE UNTIL THE STRUCTURE ITSELF (INCLUDING THE FLOOR AND ROOF DIAPHRAGMS) IS COMPLETE ENOUGH TO ADEQUATELY SUPPORT ITSELF. CONCRETE OR MASONRY WALLS ARE NOTED IN PARTICULAR.

4. SHOP (OR FABRICATION) DRAWINGS, DESIGNS

   A. WE RECOMMEND THE SUBMITTER REVIEW ALL REQUIRED SHOP DRAWINGS AS TO THEIR GENERAL CONFORMANCE TO THE DESIGN CONCEPT. CONTRACTOR SHALL BE RESPONSIBLE, NONETHELESS, FOR COMPLIANCE AND DIMENSIONS AND SHALL SUBMIT SHOP DRAWINGS, IF APPLICABLE, FOR THE FOLLOWING: (REBAR PLACING DRAWINGS NOT REQUIRED)

      1. GLULAM BEAMS AND PANELIZED ROOF FRAMING.
      2. STRUCTURAL STEEL AND TAPERED STEEL GIRDERS.
      3. ERECTION BRACING AND SEQUENCE.
      4. PRECAST CONCRETE ELEMENTS, INCLUDING PICKUP POINTS, STRONG BACKS AND BRACING, ALL CERTIFIED BY A REGISTERED CIVIL OR STRUCTURAL ENGINEER.
      5. CONCRETE POURING SEQUENCE, SHORING DETAILS AND SPECIAL CONSTRUCTION TECHNIQUES (ARCHITECT OR CIVIL OR STRUCTURAL ENGINEER'S CERTIFICATION MAY BE REQUIRED).
      6. SUCH OTHER ITEMS AS MAY BE REQUIRED ON PLANS.

      CONTRACTOR SHALL SUBMIT SHOP DRAWINGS AND COMPLIANCE CERTIFICATES TO THE BUILDING DEPARTMENT WHEN REVIEWED.

   B. WHERE DESIGN AND DETAILS OF PLATE GIRDERS, TRUSSES, etc, ARE TO BE PROVIDED BY FABRICATOR, CONTRACTOR SHALL SUBMIT CALCULATIONS AND DRAWINGS PREPARED AND CERTIFIED BY AN ARCHITECT, OR A CIVIL OR STRUCTURAL ENGINEER TO THE SUBMITTER AND TO THE BUILDING DEPARTMENT FOR REVIEW PRIOR TO FABRICATION.

5. OPTIONS AND SUBSTITUTIONS

   A. OPTIONS, IF PROVIDED HEREIN, ARE BOTH FOR CONTRACTOR'S CONVENIENCE AND THE OWNER'S ADVANTAGE. "SUBSTITUTIONS," IF SUGGESTED BY THE CONTRACTOR, MUST BE APPROVED BY BOTH THE SUBMITTER AND THE OWNER (IF DIFFERENT) AND SHALL NOT DIMINISH THE DEGREE OF QUALITY INTENDED ON THE PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CHANGES NECESSARY, SHALL COORDINATE ALL DETAILS, AND SHALL OBTAIN ALL REQUIRED APPROVALS.

6. PROTECTION BY CONTRACTOR

   A. CONTRACTOR SHALL LOCATE ALL EXISTING UTILITIES WHETHER OR NOT SHOWN ON THE DRAWINGS AND PROTECT THEM FROM DAMAGE.

   B. HE SHALL COMPLY WITH ALL LAWS AND REGULATIONS REGARDING PROTECTION OF THE PUBLIC AND THE WORKMEN DURING CONSTRUCTION.

   C. HE SHALL BEAR ALL EXPENSE OF REPAIR OR REPLACEMENT RELATIVE TO THE PROSECUTION OF THIS WORK.

FOUNDATION (C.B.C. CHAPTER 18):

1. SEE FOUNDATION PLAN FOR COMPLETE DATA: DESIGN SOIL PRESSURE, FOUNDATION DEPTH etc. IF A SOIL REPORT EXISTS FOR A PROPERTY AND PROJECT, IT SHALL BE A PART OF THESE PLANS AND ALL OF ITS REQUIREMENTS AND RECOMMENDATIONS SHALL BE PERFORMED BY THE CONTRACTOR WHO SHALL OBTAIN A COPY OF SAID REPORT. IN ABSENCE OF SOIL REPORT AND INSPECTION BY SOIL ENGINEER, CONTRACTOR SHALL NOTIFY OWNER IF HE ENCOUNTERS ANY UNUSUAL SOIL CONDITIONS (SOFT OR UNSTABLE SOIL, WET SOIL, etc).

2. SLABS ON GRADE: PROVIDE CONSTRUCTION OR CRACK-CONTROL JOINTS SPACED NO FARTHER THAN 15' APART. SLAB AREAS PLACED SHALL NOT EXCEED 225 SQUARE FEET. FILL MATERIAL SHALL BE FREE OF VEGETATION AND FOREIGN MATERIAL. FILL SHALL BE COMPACTED TO ASSURE UNIFORM SUPPORT FOR THE SLAB. EXCEPT WHERE APPROVED, THE FILL DEPTHS SHALL NOT EXCEED 24" FOR CLEAN SAND OR GRAVEL AND 8" FOR EARTH. A BASE COURSE OF 4 INCHES, CONSISTING OF CLEAN GRADED SAND, GRAVE OR CRUSHED STONE PASSING A 2 INCH SIEVE SHALL BE PLACED ON THE PREPARED SUBGRADE WHEN THE SLAB IS BELOW GRADE, UNLESS THE EXISTING SOIL IS A WELL-DRANED OR SAND-GRAVEL MIXTURE CLASSIFIED AS GROUP I ACCORDING TO THE UNITED SOL CLASSIFICATION SYSTEM. A 6 MIL POLYETHYLENE OR OTHER APPROVED VAPOR RETARDER WITH JOINTS LAPPED NOT LESS THAN 6" SHALL BE PLACED BETWEEN THE CONCRETE FLOOR SLAB AND THE BASE COURSE OR PREPARED SUBGRADE. VAPOR RETARDER MAY BE OMITTED FOR DETACHED, UNHEATED ACCESSORY STRUCTURES, FROM EXTERIOR FLATWORK AND AS APPROVED BY THE BUILDING OFFICIAL.

CONCRETE AND EMBEDDED ITEMS (C.B.C. CHAPTER 19):

1. ALL CONCRETE SHALL BE MIXED, FORMED AND PLACED ACCORDING TO THE AMERICAN CONCRETE INSTITUTE (ACI) BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE, ACI 318-08.
2. CONCRETE SHALL HAVE A MINIMUM ULTIMATE COMPRESSIVE STRENGTH OF 2500 PSI AT 28 DAYS. USE 6 SACKS OF CEMENT (MINIMUM) PER YARD OF CONCRETE FOR WEATHER DURABILITY. EXCEPTIONS SHALL BE NOTED HEREIN OR ON PLANS.
3. CEMENT FOR CONCRETE SHALL BE A STANDARD BRAND "PORTLAND CEMENT," MEETING THE REQUIREMENTS OF ASTM C150, TYPE I OR II, LOW ALKALI.
4. AGGREGATES FOR CONCRETE SHALL MEET THE REQUIREMENTS OF ASTM C33.
5. CONCRETE SHALL BE MACHINE-MIXED USING A MAXIMUM OF 7½ GALLONS OF WATER PER SACK OF CEMENT. READYMIX CONCRETE SHALL BE MIXED AND DELIVERED IN ACCORDANCE WITH ASTM C94.
6. CONTRACTOR MAY USE A WATER REDUCING ADMIXTURE CONFORMING TO ASTM C494, PROVIDED OWNER IS NOTIFIED IN WRITING IN ADVANCE AND APPROVES OF ITS USE.
7. ALL REINFORCING STEEL, ANCHOR BOLTS, DOWELS EMBEDDED PIPES AND CONDUIT SHALL BE SECURELY FASTENED IN THE FORMS BEFORE CONCRETE IS POURED. ADEQUATE CLEANOUTS SHALL BE PROVIDED IN THE BOTTOM OF THE CONCRETE FORMS FOR PROPER CLEANING AND INSPECTION.
8. SLABS POURED ON GRADE SHALL BE LEVEL (OR PLANAR) TO WITHIN ⅛" IN 8'-0" IN ANY DIRECTION EXCEPT AS NOTED OTHERWISE ON PLANS. WALLS SHALL BE SIMILARLY ACCURATE, AS SHALL OTHER SLABS SUPPORTED ON FORMS.
9. AT ALL OPENINGS IN CONCRETE PROVIDE TWO #4 BARS, UNLESS NOTED OTHERWISE, AT JAMBS, HEAD AND SILL, EXTENDING 2'-0" BEYOND EDGES OF OPENING.
10. MINIMUM EMBEDMENT OF ANCHOR BOLTS (A.B.) SHALL BE 7" IN HORIZONTAL CONCRETE SURFACES (FOOTINGS, etc) AND 4" INTO VERTICAL CONCRETE SURFACES (WALLS, etc). ALL BOLTS SHALL HAVE A 4 DIAMETER, 90° BEND AT EMBEDDED END. ANCHOR BOLTS SHALL BE SPACED 12 DIAMETERS, MINIMUM.
11. EXPANSION BOLTS, ITW RAMSET/"RED HEAD," etc, MAY BE USED IN LIEU OF CAST-IN-PLACE BOLTS WHERE SPECIAL CONDITIONS WARRANT THEIR USE, IF APPROVED BY THE LOCAL BUILDING DEPARTMENT
12. FOOTING DOWELS SHALL MATCH VERTICAL WALL STEEL. LAP 36 DIAMETERS, MINIMUM.
13. CEMENT GROUT AND DRY-PACK GROUT SHALL CONSIST OF 1 PART CEMENT TO 2½ PARTS FINE AGGREGATE BY VOLUME. ADD SUFFICIENT WATER TO MAKE THE MIXTURE FLOW UNDER ITS OWN WEIGHT. FOR USE AS DRY-PACK CONCRETE (HAND-PLACED BELOW METAL OR WOOD PLATES) ADD WATER TO MAKE A STIFF MIXTURE WHICH CAN BE MOLDED INTO A SPHERE. GROUT SHALL ATTAIN A MINIMUM ULTIMATE COMPRESSIVE STRENGTH OF 2500 PSI AT 28 DAYS.
14. RETAINING WALLS SHALL NOT BE BACKFILLED UNTIL 7 DAYS AFTER PLACEMENT OF CONCRETE.

REINFORCING STEEL (C.B.C. CHAPTER 19):

1. ALL REINFORCING STEEL SHALL MEET THE REQUIREMENTS OF, AND BE PLACED IN ACCORDANCE WITH, THE AMERICAN CONCRETE INSTITUTE (ACI) BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE, ACI 318-08.
2. REINFORCING STEEL SHALL BE INTERMEDIATE GRADE DEFORMED U.N.O. (EXCEPT #2 TIES OR STIRRUPS) BARS CONFORMING TO ASTM A615, GRADE 40 TYPICALLY. LAP BARS A MINIMUM OF 30 DIAMETERS. WHERE GRADE 60 (HARD GRADE) IS REQUIRED ON PLANS, LAP 36 DIAMETERS. STAGGER LAPS WHERE PERMISSIBLE.
3. ALL WELDED REBAR TO BE GRADE A706.
4. WIRE MESH SHALL CONFORM TO ASTM A185. LAP 8" MINIMUM.
5. LOW HYDROGEN, E70 SERIES, WELDING RODS SHALL BE USED FOR ALL WELDING OF REINFORCING BARS COMPLYING WITH AWS D1.4.
6. PROVIDE DOWELS IN FOOTINGS AND/OR GRADE BEAMS THE SAME SIZE AND NUMBER AS VERTICAL WALL REINFORCING. PROJECT DOWELS EQUAL TO STANDARD LAP SPLICE AND WIRE TO VERTICAL STEEL.
7. #5 OR LARGER REBAR SHALL NOT BE RE-BENT WITHOUT APPROVAL.
8. MINIMUM CONCRETE COVER SHALL BE:

3"	CONCRETE POURED AGAINST EARTH, BOTTOM AND SIDES.
2"	FORMED CONCRETE WHICH WILL REMAIN IN CONTACT WITH EARTH, INCLUDING STEEL IN TOP SURFACES OF FOOTINGS AND WALL SURFACES IN CONTACT WITH EARTH.
1½"	BEAMS, MEASURED TO MAIN STEEL; COLUMNS, MEASURED TO TIES OR SPIRALS; EXPOSED FACES OF WALLS ABOVE GRADE OR THEIR SURFACES NOT IN CONTACT WITH EARTH.
1"	TOP SURFACES OF SLABS DIRECTLY EXPOSED TO THE ELEMENTS.
¾"	INTERIOR SLABS; INSIDE FACES OF WALLS.

WOOD CONSTRUCTION (C.B.C. CHAPTER 23):

1. STRUCTURAL LUMBER SHALL BE GRADE-MARKED DOUGLAS FIR-LARCH (Df-L) PER STANDARD GRADING RULES NO. 17, WCLIB, AND STANDARD GRADING RULES, WWPA.

	GRADE
JOISTS, BEAMS, PURLINS AND POSTS 4" AND WIDER	NO. 1
JOISTS AND SUB-PURLINS 2" WIDE, 2x6 OR DEEPER STUDS, TOP PLATES, SILL PLATES AT BEARING WALLS, AND LEDGERS OF ALL WIDTHS	NO. 2
2x4 AND 3x4 STUDS	STUD
BLOCKING, NON-BEARING SILL PLATES AND MISC.	NO. 3

2. COMMON NAILS SHALL BE USED. BOX NAILS, IF INCREASED IN NUMBER BY 33%, MAY ALSO BE USED.
3. SILLS OR PLATES BEARING ON CONCRETE OR MASONRY WHICH IS WITHIN 48" OF EARTH SHALL BE PRESSURE TREATED (P.T.). SILLS SHALL BE BOLTED TO THE FOUNDATION WITH ⅝" DIAMETER x 10" BOLTS AT 4'-0" O.C., 12" MIN, FROM ENDS, OR 2 BOLTS MIN PER PIECE, U.N.O.
4. FIREBLOCKING, 2" THICK, SHALL BE PLACED IN STUD WALLS AT CEILING AND FLOOR LEVELS, AT EACH 10' HEIGHT OF STUDS, AND BETWEEN STAIR STRINGERS AT SUPPORTS.
5. JOISTS AND RAFTERS SHALL BE BLOCKED AT SUPPORTS AND BRIDGED OR BLOCKED AT INTERVALS OF 8' WHERE JOISTS ARE 2x12'S OR DEEPER.
6. JOISTS UNDER BEARING PARTITIONS (ONE STORY ABOVE) SHALL BE DOUBLED; TRIPLED FOR TWO STORIES ABOVE.
7. PLYWOOD SHALL BE PER APA PS 1-07. PROVIDE A ⅛" SPACE BETWEEN ALL JOINTS.
8. LAGBOLTS (AND SCREWS) SHALL BE PRE-DRILLED 1/16" LESS THAN SHANK DIAMETER TO FULL DEPTH AND SCREWED (NOT DRIVEN) INTO PLACE.
9. CUT WASHERS SHALL BE PLACED UNDER HEADS AND NUTS OF ALL BOLTS AND UNDER HEADS OF LAGBOLTS. CUT WASHER SHALL BE USED FOR BOLTS CONNECTING WOOD LEDGERS TO CONCRETE OR MASONRY WALLS.
10. WHERE REQUIRED IN ALL CONDITIONS EXCEPT SILL PLATE ANCHOR BOLTS, MALLEABLE IRON (M.I.WA.) OR PLATE (PL.WA.) WASHERS SHALL BE SIZED AS FOLLOWS:

BOLT ø	M.I.WA.	PL.WA.
½"	1¼"x2½"ø	3/16"x2" SQ
⅝"	3/16"x2¾"	1/4"x2½"
¾"	7/16"x3"	5/16"x2¾"
⅞"	7/16"x3½"	5/16"x3"
1"	½"x3¾"	⅜"x3½"

11. SEE NOTES BELOW SHEAR PANEL SCHEDULE FOR REQUIREMENTS FOR WASHERS AT SILL PLATE ANCHOR BOLTS.
12. ALL STRUCTURAL PLYWOOD NAILING (ROOF, FLOOR AND WALLS) SHALL BE INSPECTED BY THE BUILDING INSPECTOR PRIOR TO COVERING.
13. STUDS IN BEARING WALLS SHALL NOT BE NOTCHED UNLESS SPECIFICALLY DETAILED BY IN THESE PLANS, OR BY A LICENSED ARCHITECT OR PROFESSIONAL ENGINEEER.
14. FRAMING HARDWARE SHALL BE SIMPSON STRONG-TIE®. REFER TO SIMPSON CATALOG C-2013 FOR INSTALLATION INFORMATION. USE EXACT TYPE, SIZE AND NUMBER OF FASTENERS SPECIFIED IN CATALOG.
15. REFER TO THE FOLLOWING ICC REPORTS FOR SIMPSON CONNECTORS

ER4935-	SSTB, HCA, MSTC
ER4945-	EPOXY TIE ANCHORING SYSTEMS WITH ET, ETF, AND ETR ANCHORING ADHESIVES
ER5090-	ANCHOR TIEDOWN SYSTEMS
ER5952-	CBSQ-SDS2 AND CBQ-SDS2 COLUMN BASE CONNECTORS AND ECCQ/CCQ-SDS2 COLUMN CAP CONNECTORS
NER393-	ETA/TSS, MAB, HIT, JB/LB, PF, LU, LUP, LTT/LTTI, HA/H2/H2.5/H3/H4/H5, AB, EPB, LCB/CB, PA/PAI/PAT/PATM/PAR/PARP, MPAI, HPA, HPAT28/35
NER432-	ABE, CBA, EPB44T, H2.5, H10-2, H15, H15-2, HGT-2, HGT-3, HGT-4, LSSU, LTHMA, LTHJ, LTP4, LTT131, MSC, RSP4, SP, SS, THG2A, TWB
ESR-1056-	TITEN HD
ESR-1267-	STRONG-WALL SHEAR PANELS
ESR-1396-	WEDGE-ALL ANCHORS
ESR-1472-	QUICK DRIVE WSNTL WOOD SCREWS
ESR-1679-	STEEL STRONG-WALL SHEAR PANELS
ESR-1771-	STRONG-BOLT WEDGE ANCHOR
ESR-1772-	SET EPOXY
ESR-1886-	LBV, B, HB, AND BA SERIES JOIST HANGERS
ESR-2105-	TIE STRAPS
ESR-2138-	POWDER-ACTUATED FASTENERS
ESR-2236-	STRONG-DRIVE SDS SERIES WOOD SCREWS
ESR-2320-	COUPLING TAKE-UP DEVICE (CTUD) AND TAKE-UP DEVICE (TUD AND ATUD)
ESR-2508-	HOLD-DOWN CONNECTORS
ESR-2523-	SET-XP EPOXY ADHESIVE ANCHORS FOR CRACKED AND UNCRACKED CONCRETE
ESR-2549-	FACE-MOUNT HANGERS FOR WOOD FRAMING
ESR-2551-	ADJUSTABLE HANGERS AND HIP CONNECTORS FOR WOOD FRAMING
ESR-2552-	FACE-MOUNT HANGERS SUPPORTING STRUCTURAL COMPOSITE LUMBER (SCL) AND PREFABRICATED WOOD I-JOISTS (ENGINEERED WOOD PRODUCTS).
ESR-2553-	TOP-FLANGE HANGERS FOR SAWN LUMBER.
ESR-2554-	MULTIPLE TRUSS HANGERS.
ESR-2555-	MASA/MASAP CAST-IN-PLACE FOUNDATION ANCHOR STRAPS.
ESR-2604-	COLUMN CAPS FOR WOOD CONSTRUCTION.
ESR-2605-	CONNECTORS FOR METAL PLATE CONNECTED WOOD TRUSS CONSTRUCTION.
ESR-2606-	STRUCTURAL ANGLES, CLIPS, AND PLATES FOR WOOD FRAMING.
ESR-2607-	CONNECTORS FOR PANELIZED ROOF CONSTRUCTION.
ESR-2608-	STUD SHOES, PLATE TIES, WALL BRACING, AND JOIST BRIDGING FOR WOOD CONSTRUCTION.
ESR-2611-	STUD SHOES, PLATE TIES, WALL BRACING, AND JOIST BRIDGING FOR WOOD CONSTRUCTION.
ESR-2613-	SSTB SERIES AND SB SERIES CAST-IN-PLACE ANCHOR BOLTS.
ESR-2614-	MISCELLANEOUS CONNECTORS.
ESR-2615-	TOP-FLANGE HANGERS FOR ENGINEERED WOOD PRODUCTS (EWP).
ESR-2616-	CONNECTORS FOR WOOD MEMBERS SUPPORTED BY CONCRETE OR MASONRY CONSTRUCTION.
ESR-2713-	TITEN HD SCREW ANCHOR AND TITEN HD ROD HANGER FOR CRACKED AND UNCRACKED CONCRETE.
ESR-2811-	GDB AND GDPS GAS-ACTUATED FASTENERS.
ESR-2877-	WOOD FRAMING CONNECTORS FOR MASONRY CONSTRUCTION.
ESR-2920-	CAST-IN-PLACE STRAP STYLE HOLDDOWNS (STHD'S)
ESR-2992-	PUNCHING SHEAR RESISTOR RAILS (PSRR)
ESR-3006-	QUIK DRIVE X SERIES SELF-DRILLING TAPPING SCREWS.
ESR-3037-	STRONG-BOLT 2 WEDGE ANCHORS.
ESR-3046-	STRONG-DRIVE SD SCREWS FOR STRUCTURAL CONNECTORS.
ESR-3096-	CONNECTORS USING SD-SERIES SCREWS.

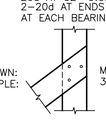
NAILING SCHEDULE, MINIMUM (TABLE 2304.9.1, 2010 C.B.C.):

1. JOIST TO SILL OR GIRDER, TOENAIL	3-8d
2. BRIDGING TO JOIST, TOENAIL EACH END	2-8d
3. 1"x6" SUBFLOOR OR LESS TO EACH JOIST, FACE NAIL	2-8d
4. WIDER THAT 1"x6" SUBFLOOR TO EACH JOIST, FACE NAIL	3-8d
5. 2" SUBFLOOR TO JOIST OR GIRDER, BLIND AND FACE NAIL	2-16d
6. SOLE PLATE TO JOIST OR BLOCKING, TYPICAL FACE NAIL	16d AT 16" O.C.
SOLE PLATE TO JOIST OR BLOCKING, AT BRACED WALL PANELS	3-16d PER 16"
7. TOP PLATE TO STUD, END NAIL	2-16d
8. STUD TO SOLE PLATE	4-8d, TOENAIL OR 2-16d, END NAIL
9. DOUBLED STUDS, FACE NAIL	16d AT 24" O.C.
10. DOUBLED TOP PLATES, FACE NAIL	16d AT 16" O.C.
DOUBLED TOP PLATES, LAP SPLICE	8-16d
11. BLOCKING BETWEEN JOISTS OR RAFTERS TO TOP PLATE, TOENAIL	3-8d
12. RIM JOIST TO TOP PLATE, TOENAIL	8d AT 6" O.C.
13. TOP PLATES, LAPS AND INTERSECTIONS, FACE NAIL	2-16d
14. CONTINUOUS HEADER, TWO PIECES	16d AT 16" O.C. ALONG EACH EDGE
15. CEILING JOISTS TO PLATE, TOENAIL	3-8d
16. CONTINUOUS HEADER TO STUD, TOENAIL	4-8d
17. CEILING JOISTS, LAPS OVER PARTITIONS, FACE NAIL	3-16d
18. CEILING JOISTS TO PARALLEL RAFTERS, FACE NAIL	3-16d
19. RAFTER TO PLATE, TOENAIL	3-8d
20. 1" BRACE TO EACH STUD AND PLATE, FACE NAIL	2-8d
21. 1"x8" SHEATHING OR LESS TO EACH BEARING, FACE NAIL	2-8d
22. WIDER THAN 1"x8" SHEATHING TO EACH BEARING, FACE NAIL	3-8d
23. BUILT-UP CORNER STUDS	16d AT 24" O.C.
24. BUILT-UP GIRDER AND BEAMS	20d AT 32" O.C. AT TOP & BOTTOM AND STAGGERED
25. 2" PLANKS	2-20d AT ENDS AND AT EACH SPLICE 2-16d AT EACH BEARING

SUPPLEMENTAL NAILING NOTES:

1. ALL NAILS TO BE COMMON WIRE NAILS. WHERE BOX NAILS ARE USED, THERE NUMBER MUST BE INCREASED BY 33%.
2. WHERE 2" MEMBER IS DETAILED USE THE NUMBER OF 16d SHOWN:

FOR EXAMPLE:



MEANS 3-16d

ABBREVIATIONS:

A.B.	ANCHOR BOLT
ALT	ALTERNATE(ING)
ARCHL	ARCHITECTURAL
B, BOT	BOTTOM
B.C.	BOTTOM CHORD
B.N.	BOUNDARY NAILING
BLK	BLOCK
BLKD	BLOCKED
BLKG	BLOCKING
BM	BEAM
BRNG	BEARING
C.B.C.	CALIFORNIA BUILDING CODE
CLR	CLEAR
COL	COLUMN
CONC	CONCRETE
CONT	CONTINUOUS
CONST	CONSTRUCTION
CSK	COUNTERSUNK
DBL	DOUBLE
DET	DETAIL
DIAM, ø	DIAMETER
DIM	DIMENSION
DKG	DECKING
do	DITTO
Df-L	DOUGLAS FIR-LARCH
DWG	DRAWING
EA	EACH
E.F.	EACH FACE
E.N.	EDGE NAILING
E.S.	EACH SIDE
E.W.	EACH WAY
EMBED	EMBEDMENT
ETC	ET CETERA
EQ	EQUAL
EX, EXIST	EXISTING
EXT	EXTERIOR
FLG	FLANGE
F.F.	FINISH FLOOR
F.G.	FINISH GRADE
F.J.	FLOOR JOIST
F.N.	FIELD NAILING
FLR	FLOOR
FT	FOOT
G.I.	GALVANIZED IRON
GA	GAUGE
GLB	GLUE-LAMINATED BEAM
GLULAM	GLUE-LAMINATED
GRD	GRADE
HDR	HEADER
HGR	HANGER
HT	HEIGHT
H, HOR	HORIZONTAL
I.D.	INSIDE DIAMETER
INT	INTERIOR
JST	JOIST
K.S.	KING STUD
L	ANGLE SHAPE
LAG	LAGBOLT
LAM	LAMINATED
LDGR	LEDGER
LG	LONG
M.B.	MACHINE BOLT
MAX	MAXIMUM
MIN	MINIMUM
MISC	MISCELLANEOUS
N.T.S.	NOT TO SCALE
O/	OVER
O.C.	ON CENTER
O.D.	OUTSIDE DIAMETER
OK	OKAY
OPT	OPTIONAL
PARTN	PARTITION
PLAS	PLASTER
P.C.	PIPE COLUMN OR PORTLAND CEMENT
PEN	PENETRATION
PL	PLATE
PLY	PLYWOOD
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
P.T.	PRESSURE TREATED
R, RAD	RADIUS
REQD	REQUIRED
RFTR	RAFTER
REINF	REINFORCE(ING)
RET	RETAINING
S.E.	SPACED EQUALLY
S.E.E.W.	SPACED EQUALLY EACH WAY
S.S.	SELECT STRUCTURAL
SHT	SHEET
SIM	SIMILAR
SPECS	SPECIFICATIONS
SQ	SQUARE
STAGRD	STAGGERED
STD	STANDARD
STL	STEEL
STR	STRUCTURAL
SYM	SYMMETRICAL
T	TOP
T.B.	TOP OF BEAM
T.C.	TOP CHORD
THK	THICK
T & B	TOP AND BOTTOM
T & G	TONGUE AND GROOVED
TS	STRUCTURAL TUBE
TYP	TYPICAL
U.N.O.	UNLESS NOTED OTHERWISE
V, VERT	VERTICAL
W	WIDE FLANGE SHAPE
W/	WITH
W/O	WITHOUT
WD	WOOD

REVISIONS	BY

STANDARD OUTBUILDING STRUCTURAL REQUIREMENTS, LARGE SNOW LOADINGS WITH SHEAR ON 4 SIDES AND 81 PSF

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DATE

SCALE 3/4"=1'-0"

DRAWN

JOB

SHEET S4

OF 4 SHEETS