

TYPICAL DETAILS & GENERAL NOTES

All construction shall conform with all applicable Building Codes & Regulations. Details & Notes on this sheet are typical & shall apply unless otherwise shown or noted. Details of construction not fully shown shall be of the same nature as shown for similar condition. Verify all dimensions, elevations, property lines, etc. on the job. Should any discrepancies occur, notify Engineer for instructions before proceeding. It shall be the responsibility of the Contractor to provide adequate shoring, bracing, etc. as required to safely complete the structure & protect against bodily injury. FOUNDATIONS

- Notify Structural Engineer 24 hours before pouring foundations.
- Bearing soil is classified as \_\_\_\_\_ with an estimated allowable soil pressure of \_\_\_\_\_ psf D.L. \_\_\_\_\_ psf D+L or Finish Floor line.
- Footings shall bear on firm dry undisturbed natural ground with a minimum penetration of 18" inches.
- Elevations indicated to bottom of footings are intended for estimating purposes only.
- All foundations shall be formed unless specifically approved by the Struct. Engr.

No field supervision is implied or intended to be performed by the Struct. Engr. unless specifically requested in writing.

WOOD

- All Structural Wood shall conform with the following Specifications. Douglas Fir Coast Region - WCLIB #16 or WnPA Plywood - P.S. 1-74 Glued Laminated Beams - P.S. 56-73 D.F. 10 year guarantee to replace if defective.

Redwood Inspection Service

- Minimum Wood Grades shall be:
  - Structural Framing - D.F. - E.O.H.C. - No. 1 2x may be No. 2 if better.
  - Structural Plywood - APA Std. 5 ply C-DeXterior Glue Group-1
  - Glued Laminated Wood - 24 F, 14-128 moisture, End Seal, Loos Wrap, Ext. Glue
  - Redwood - Foundation Grout
- Provide 2x blocking of all changes in ceiling level.
- Cutting of wood joists shall be limited to cuts & bored holes not deeper than 1/5 the joist depth from the top & located not farther from the end than three times the joist depth.
- Pipes exceeding 1/2" shall not be placed in shear or bearing walls, where allowed, pipes shall be placed in the center of 2x using a neat hole. Notching of studs or 2x shall not be done.
- Holes for bolts in wood & steel shall be bolt diameter + 1/16".
- Holes in wood for lag screws shall be first bored to the same diameter & lag screws shall be placed in the thinnest portion shall be bored no larger than the root diameter of the thread.
- Lag screws & wood screws shall be screwed & not driven into place.
- All bolts, threaded rods & lag screws shall be tightened on installation & retightened before closing in or @ completion of job.
- All bolts & lag screws shall be provided with metal washers under heads & nuts which bear on wood. Use the following washers:
 

Bolt Size	M.I. Washer	Steel Flat Washer
1/2"	2 1/4" x 1 1/4"	2" x 2" x 1/4"
3/8"	2 1/4" x 5/16"	2 1/2" x 2 1/2" x 3/8"
1/2"	3" x 7/16"	3" x 3" x 1/4"
3/4"	3 1/2" x 7/16"	3 1/2" x 3 1/2" x 3/8"
1"	4" x 1"	4 1/2" x 3 1/2" x 3/8"
- Use cut washers under carriage bolt heads. Use bolt diameter + 1/16" washer size.
- Lay all roof & floor sheathing with face grain across supports.
- Block all wall unsupported plywood edges with 2x blocking.
- Splice plywood on 2" min. member with 3/8" nail edge distance.
- All wall sheathing members on wood shall be beams, ribbons, or be supported in Simpson joist hangers or equal.
- Joists under & parallel to partitions shall be doubled & spiked together or separated by solid blocking @ 48" c.c.
- All nails for structural work shall be common wire nails. Holes shall be sub-drilled, where necessary to prevent splitting of wood. Nailing not noted below or on plans shall be as follows:
 

NAILING SCHEDULE (Common Nails)	Edges of each sheet	10d @ 4" c.c.
a. Plywood S.P.	Interior bearings each sheet (floors) 10d @ 12" c.c.	10d @ 12" c.c.
b. Studs to bearings	Between studs ea. end	2-10d toe nails or 2-16d toe nails ea. side ea. end
c. Blocking	to joist or rafter bearings toe nails ea. side	2-10d toe nails ea. side ea. end
d. Joists or Rafters	to studs	2-10d toe nails ea. side ea. end
e. Cross bridging between joists or rafters	to joists or rafters	2-10d toe nails ea. side ea. end
f. Ceiling stripping	1 x 4 ea. bearing 1-s/straight 1-s/lant	2-8d toe nails ea. side ea. end
g. Ribbons to studs	2 x 4 ea. bearing 1-s/straight 1-s/lant	2-8d toe nails ea. side ea. end
h. Double top 2x	2" ribbon ea. bearing	2-8d toe nails ea. side ea. end
i. Multiple Studs	lower 2x to top of stud	2-20d toe nails ea. side ea. end
l. Built up beams	upper 2x to lower 2x staggered	16d @ 18" c.c.
m. Double joists under partitions	stagger for width more than 10"	16d @ 18" c.c.
	10" or less in depth staggered	16d @ 18" c.c.
	more than 10" in depth staggered - 1/2" bolts @ 24" c.c.	16d @ 18" c.c.
	ea. block ea. side	16d @ 18" c.c.
	where not blocked apart staggered	16d @ 18" c.c.
	Double 2x & double studs shall be considered as one bearing.	16d @ 18" c.c.
	Increase nailing by 33% for box nails.	

CONCRETE & REINFORCING

- All concrete shall:
  - test not less than  $f_c = 3000$  psi @ 28 days.
  - contain an approved water reducing admixture.
  - contain not less than 5.0 sacks of cement per cubic yd.
  - maximum slump shall be 4" & maximum aggregate size shall be compatible with pouring, placing, & finishing conditions.
- All cement shall conform to ASTM C-150 Type-2.
- All concrete aggregates shall be well graded & conform to ASTM C39.
- All reinforcing shall be continuous & conform to ASTM A-615-40.
- Consolidate all concrete with mechanical vibrator.
- All wire fabric shall conform to ASTM A-185.
- All dimensions shown for location of reinforcing are to the face of main bars & denote clear coverage. For beams & tied coils, dimensions are to main bars. Concrete coverage shall be as follows:
 

Concrete is deposited directly against ground (except slabs)	3"
Concrete is exposed to ground but placed in forms	2"
For main bars of tied coils	2"
For main bars of beams except top bars which shall be 1 1/2"	2"
For concrete joists	1 1/2"
To face of reinforcement	1 1/2"
For wall bars 2" for exterior face	1 1/2"
For interior face	1 1/2"
For bars in slabs on forms 3/4"	2"
For slabs on ground	2"
- Splices in continuous reinforcement shall lap 32 bar diameters. Splices in adjacent bars shall be not less than 5" apart. Splice bars in spandrels, wall beams, grade beams & slabs as follows:
 

For 2x	12" min.
For 3x	18" min.
For 4x	24" min.
- Construction joints shall be made rough after all laitance has been removed from the surface. Concrete may be roughened by chipping the entire surface, sand blasting, or hosing the surface & to 6 hours after the pour with a fine spray. Remove all debris from the form before pouring any concrete. Drill thru all steel coils, & beams to pass continuous reinforcing.
- Maximum free fall of concrete shall be 4'-0".
- All reinforcing, dowels, bolts, anchors, sleeves, pipes, etc. to be embedded in concrete shall be securely positioned before pouring concrete.
- Walls shall be reinforced in horizontal layers @ 24" maximum depth.
- Horizontal wall bars in double layer wall shall be staggered.
- Concrete in walls, piers, or coils shall set at least 8-hours before pouring concrete in beams, spandrels, or slabs supported thereon.
- Reinforce all slabs on ground with 3" x 3" x 1/2" steel reinforcement.
- Cure all concrete by keeping it moist for the first 7-days after placing by an approved method.
- Extend all vertical reinforcing from 3" above the bottom of footings to within 2" of top of concrete.
- \* 15% of portland cement may be replaced by Flyash ASTM C68F by weight.

STRUCTURAL STEEL

- Submit shop drawings for Engr's approval.
- Fabrication, erection & painting shall conform to the AISC Specification for the Design, Fabrication, & Erection of Structural Steel for Buildings.
- Use ASTM A-36 for all Structural Steel. Tubing A500 Gr. B, 5/16" x 1/2".
- All welding shall be done by the electric arc process in accordance with AWS standards. Use only certified welders.
- Use low hydrogen rods when welding structural steels.
- Use AISC "Usual gage" & pitch for bolts & Standard 3/4" type connections with ASTM A-325N high strength bolts.
- Wrap structural steel embedded in concrete with 6"x6" E.W.F. Minimum wood to steel connection of 1/2" bolts @ 24" c.c. studs, 1/2" etc.
- Place base R drypack before adding any vertical load - cement.
- Use E70XX welding electrode. E60XX for steel deck.
- Typ bolting of 3/4" bolts @ 3" c.c. 1/2" edge.

CONCRETE BLOCK OR BRICK BLOCK

- Concrete block units shall conform to ASTM C-90 Grade-N, Type-I Brick.
- Brick units shall conform to ASTM C-216-SW-HBA.
- Reinforcing steel shall be the same as in concrete & reinforcing. Grout shall be by volume 1- portland cement, 2- to 3- sand, 3- sunomem SA.
- 2- pea gravel may be used where the least clear cell dimension is 1". Not more than 5% of the pea gravel shall pass the No. 8 sieve & 100% shall pass the 3/8" sieve. 3 sacks cement/yd<sup>3</sup>
- Mortar shall be by volume 1- portland cement, 1/4 to 1/2 hydrated lime or lime putty, 2 1/4 to 3 times volume of cement & lime of damp loose aggregate.
- Place in addition to all other reinforcing 2- #5 horiz., 2- #5 vert. ea. side of ea. opening & extend 32" beyond ea. corner of ea. opening. See Detail T) this sheet. Extend all vert bars within 2" of top of wall. Lap all bars 40 bar diameters in walls, around corners, & intersecting walls. Drill thru steel coils & bms. & lap bars with equivalent area of steel. Stagger horiz bar splices 24" min.
- Dowels from the footings shall be straight & be centered in the cell & be lapped with the vertical reinforcing steel. Wire tie vert splices.
- Thoroughly clean the concrete surface on which the block is to be placed of all laitance & loose material per line-9 of Concrete & Reinforcing.
- All block masonry shall be built to preserve the unobstructed vertical continuity of the cells. Walls & cross webs forming such cells shall be full bedded in mortar. All head or end joints shall be solidly filled with mortar. Bond shall be provided by lapping successive vertical courses or by equivalent mechanical anchorage.
- Vertical cells shall have vertical alignment sufficient to maintain a clear unobstructed continuous vertical cell measuring not less than 2" x 3". Cleanout openings shall be closed at the bottoms of all cells at 1/2" or top of grout where such lift or pour of grout is in excess of 4'-0" in height. All overhanging mortar or other obstructions or debris shall be removed from cells. Cleanouts shall be sealed before grouting, after inspection.
- Vertical reinforcement shall be held in position at top & bot. & @ intervals not exceeding 18" bar diameters of the reinforcing steel.
- Cells containing reinforcement shall be filled solidly with grout not exceeding 8'-0" in height.
- When grouting is stopped for 1-hr. or longer, stop the pour of grout 1/2" below the top of the uppermost unit.
- At corners place 1- #5 vertical in the corner cell & in ea. cell adjacent to the corner cell.
- All wall intersections place 1- #5 vert in the end cell of the intersecting wall & also 1- #5 vert. in the closest cell of the continuous wall.
- Use metal lath to close off cells that are not to be filled.
- Thoroughly clean all cells & bond bms. before grouting.
- In all parapet walls use 1- #2 vert @ 16" c.c. with a 12" bend into bond bm unit @ top of wall. Use 1- #4 horiz @ top of wall.
- All grout shall be consolidated @ time of pouring by puddling or vibrating & then reconsolidated by again puddling later, before plasticity is lost.
- All mortar & grout proportions shall be measured by accurate measuring devices. Do not use shovel proportions.
- Testing of mortar & grout shall conform to U.B.C. Std. 24-25-70 unless otherwise noted on wall section.
- All block units shall be open end units. Grout all cells solid.
- Place 2- #4 horiz within 12" of each finish floor level.

TESTS & INSPECTIONS

The following Tests & Inspections shall be performed by an approved Independent Testing Laboratory. Submit reports to the Structural Engr. on the checked items.

All testing & inspection costs will be paid by the owner but will be deducted from the total bid price.

- Engineered Fill Compaction Tests.
- Structural Steel Shop Welding
- Structural Steel Field Welding & Steel Deck Welding
- Structural Steel High Strength Bolting
- Glued Laminated Timber Fabrication AITC Cert. of Conformance
- Concrete  $f_c = 3000$  psi submit mix designs for approval for ea. mix. Cast 1 set of 3 specimens for ea. days work ea. mix used for 10000 @ 7-day concrete for ea. mortar & ea. grout mix 1-set of 3 specimens ea. mix ea. day for 1 of 3 days then every 3 days
- Special Masonry Inspection
- Field inspect bot. fig. elev.

CONSTRUCTION TOLERANCE

For Wood, Concrete, Masonry, Steel Construction

Maximum deviation from a 10'-0" long straight edge shall be 1/8" in any direction for Walls, Roofs, & Floors. Any other not conforming to these requirements shall be considered defective work & shall be replaced with non-defective const. @ no cost to owner.

ABBREVIATIONS & SYMBOLS

bot - bottom	FHW3 - flat head wood screw	TN - toe nail
bld - blocking	FS - face of studs	TR - top of rafter
B.B. - bottom of panel	GB - glued laminated beam	TS - top of slab
C.B. - carriage bolt	GB - hollow concrete block	or steel
cip - cast in place	HSB - high strength bolt	TU - tilt-up
C.J. - construction joint	horiz - horizontal	TW - top of wall
cl - clear	max - maximum	vert - vertical
cont - continuous	min - minimum	WF - wide flange
DF - Douglas Fir	RHW3 - round head wood screw	W - wide
ea. - each	rwd - redwood	cont wood
EWF - electric welded fabric	SP - structural plywood	in section
FB - face of block	step - step	wood bldg
FC - face of concrete	TC - top of concrete	moment conn.

If there is any conflict between any of the drawings & any of the Specifications, the most expensive method or materials shall be the correct interpretation.

STRUCTURAL PLYWOOD-S.P.	CEILING JOIST SCHEDULE	
5-ply min. Group-1	Size & Spacing	Span Limits
Thickness	Ident Index	
5/8"	32/16	0'-0" to 8'-0"
3/4"	42/20	8'-0" to 12'-0"
7/8"	48/24	12'-0" to 16'-0"
1"	2-10 @ 16" c.c.	16'-1" to 20'-0"

End gap 1/16" ea. panel  
Side gap 1/8" ea. panel

Use ptyclips @ 24" c.c. For 5/8" S.P. roof

PARTICLE BOARD - ANSI Z39.1-1979-EXT 2-M-45 #1/2 density  
stgr joints 6" min. from S.P. joints 8d x 1 1/2" nails @ 10" c.c. ea. way 1" edge. Gap all edges 6" min.

