GENERAL STRUCTURAL NOTES

CODE REQUIREMENTS:
CONFORM TO THE 2006 INTERNATIONAL BUILDING CODE AS AMENDED BY THE 2007 OREGON STRUCTURAL SPECIALTY CODE.

DESIGN CRITERIA:
DESIGN WAS BASED ON THE STRENGTH AND DEFLECTION CRITERIA OF THE 2006 INTERNATIONAL BUILDING CODE. IN ADDITION TO THE DEAD LOADS, THE FOLLOWING LOADS WERE USED FOR DESIGN, WITH LIVE LOADS REDUCED PER IBC:

FLOOR LIVE LOAD: 40 PSF

GROUND SNOW LOAD Pg: 25 PSF
SNOW IMPORTANCE FACTOR Ic: 1.0

'97 UBC BASIC WIND SPEED: 90 MPH, FASTEST MILE
WIND IMPORTANCE FACTOR Iw: 1
WIND EXPOSURE: d

SEISMIC IMPORTANCE FACTOR Ie: 1.0
SITE CLASS: D
SDS = .907
SD1 = .663
SEISMIC DESIGN CATEGORY: D.
BASIC SEISMIC-FORCE-RESISTING SYSTEM: WOOD DIAPHRAGM & SHEAR WALLS.
RESPONSE MODIFICATION FACTOR R: 6.5
ANALYSIS PROCEDURE USED: EQUIVALENT FORCE METHOD.

ALLOWABLE SOIL BEARING PRESSURE: 2,500 PSF PER GEOTECHNICAL INVESTIGATION BY GEOTECH SOLUTION.

SUBMITTALS:
SHOP DRAWINGS SHALL BE SUBMITTED TO THE ARCHITECT/ENGINEER PRIOR TO FABRICATION AND CONSTRUCTION REGARDING ALL STRUCTURAL ITEMS, INCLUDING THE FOLLOWING:

CONCRETE MIX DESIGNS (PROVIDE BREAK TEST DATA FOR EACH SUBMITTED MIX WITH A MINIMUM OF 30 TEST SPECIMENS PER MIX), CONCRETE STEEL REINFORCING, EMBEDDED STEEL ITEMS, STRUCTURAL STEEL, GLUED-LAMINATED BEAMS, AND PREFABRICATED WOOD JOISTS AND TRUSSES.

IF THE SHOP DRAWINGS DIFFER FROM, OR ADD TO THE DESIGN OF THE STRUCTURAL DRAWINGS, THEY SHALL BE CLEARLY IDENTIFIED. ANY CHANGES TO THE STRUCTURAL DRAWINGS SHALL BE SUBMITTED TO THE ARCHITECT/ENGINEER AND ARE SUBJECT TO REVIEW AND ACCEPTANCE BY THE ENGINEER.

DESIGN DRAWINGS, SHOP DRAWINGS, AND CALCULATIONS FOR THE DESIGN AND FABRICATION OF ITEMS THAT ARE DESIGNED BY OTHERS, INCLUDING: PREFABRICATED WOOD JOISTS, WINDOW WALL, AND ALL OTHER GLAZING SYSTEMS SHALL BEAR THE SEAL AND SIGNATURE OF A STRUCTURAL ENGINEER REGISTERED IN THE STATE OF OREGON, AND SHALL BE SUBMITTED TO THE ARCHITECT/ENGINEER PRIOR TO FABRICATION. DESIGN SHALL BE BASED ON THE REQUIREMENTS OF THE 2003 IBC.

PROVIDE NO MORE THAN THREE COPIES OF ANY SUBMITTAL TO THE ENGINEER FOR REVIEW. THESE COPIES WILL BE REVIEWED AND ANY NECESSARY CORRECTIONS/COMMENTS WILL BE NOTED ON EACH COPY. THE ENGINEER WILL RETAIN ONE COPY AND RETURN THE OTHER TWO COPIES TO THE ARCHITECT. IT IS THE RESPONSIBILITY OF THE ARCHITECT OR CONTRACTOR TO MAKE ANY ADDITIONAL REQUIRED COPIES OF THE MARKED UP SUBMITTAL.

EARTHWORK:
PROTECT INCOMPLETE WORK FROM FLOODING DURING STORMS OR OTHER CAUSES, THOROUGHLY BRACE OR OTHERWISE PROTECT ALL STRUCTURES NOT STABLE AGAINST UPLIFT DURING CONSTRUCTION. TAKE ALL NECESSARY PRECAUTIONS TO PREVENT DISTURBANCE OF AND TO PROPERLY DRAIN THE AREAS UPON WHICH CONCRETE IS TO BE POURED. DO NOT ALLOW WATER TO ACCUMULATE IN EXCAVATIONS. REMOVE WATER TO PREVENT SOFTENING OF THE BASE FOUNDATIONS. CONVEY WATER REMOVED FROM THE EXCAVATIONS AND RAINWATER TO TEMPORARY DRAINAGE DITCHES OR OTHER STRUCTURES OUTSIDE THE EXCAVATION LIMITS FOR THIS STRUCTURE. ENSURE THAT THE WATERING OPERATIONS WILL NOT ADVERSELY AFFECT FOUNDATIONS. MAINTAIN THE EXCAVATION FREE FROM GROUND WATER FOR THE TIME REQUIRED TO COMPLETE THE WORK IN A PROPER WORKMANLIKE MANNER. REMOVE LOOSE OR DISTURBED SOIL FROM THE BOTTOMS OF EXCAVATION. FOOTINGS SHALL BEAR ON UNDISTURBED NATIVE SOIL OR STRUCTURAL FILL IN ACCORDANCE WITH THE SOILS REPORT.

WHERE COMPACTED AREAS ARE DISTURBED BY CONSTRUCTION OPERATIONS OR ADVERSE WEATHER, OVER EXCAVATE AND BACKFILL WITH ¾" MINUS CRUSHED ROCK COMPACTED TO MINIMUM OF 92% OF THE DRY DENSITY AS MEASURED BY AASHTO T180.

CAST-IN-PLACE CONCRETE:
MIX DESIGN: PREPARE DESIGN MIXES FOR EACH TYPE OF CONCRETE. PROPORTION MIXES BY EITHER LABORATORY TRIAL BATCH OR FIELD EXPERIENCE METHODS, USING MATERIALS TO BE EMPLOYED ON THE WORK FOR EACH CLASS OF CONCRETE REQUIRED. FURNISH CERTIFIED REPORTS OF EACH PROPOSED MIX FOR EACH TYPE OF WORK OF THIS SECTION. THE CONTRACTOR SHALL SUBMIT CONCRETE MIX DESIGNS, ALONG WITH TEST DATA AS REQUIRED, A MINIMUM OF TWO WEEKS PRIOR TO PLACING CONCRETE.

ADMIXTURES: AIR ENTRAINING AGENT IN ACCORDANCE WITH ASTM C260 AND WATER-REDUCING ADMIXTURE CONFORMING TO ASTM 494, USED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS, MAY BE INCORPORATED IN CONCRETE DESIGN MIXES. AN AIR-ENTRAINING AGENT CONFORMING TO ASTM C260 SHALL BE USED IN CONCRETE MIXES FOR EXTERIOR HORIZONTAL SURFACES EXPOSED TO WEATHER. THE AMOUNT OF ENTRAINED AIR SHALL BE 5% - 7% BY VOLUME. FLY ASH SHALL CONFORM TO ASTM C 618 AND SHALL BE LIMITED TO A 15% MAXIMUM BY CEMENT WEIGHT.

CONCRETE WORK SHALL CONFORM TO ACI 301. CONCRETE STRENGTHS SHALL BE VERIFIED BY STANDARD 28-DAY CYLINDER TESTS PER ASTM C39, AND SHALL BE AS FOLLOWS:

FOOTINGS: f'c=3,000 PSI AT 28 DAYS: MAXIMUM SLUMP 3" PLUS OR MINUS 1".

WALLS: f'c=3,000 PSI AT 28 DAYS: MAXIMUM SLUMP 3" PLUS OR MINUS 1".

SLABS: f'c=3,000 PSI AT 28 DAYS: MAXIMUM SLUMP 3" PLUS OR MINUS 1".

SAMPLES FOR STRENGTH TESTS OF EACH CLASS OF CONCRETE PLACED EACH DAY SHALL BE TAKEN NOT LESS THAN ONCE A DAY, OR NOT LESS THAN ONCE FOR EACH 150 CUBIC YARDS OF CONCRETE, OR NOT LESS THAN ONCE FOR EACH 5,000 SQUARE FEET OF SURFACE AREA FOR SLABS OR WALLS.

SLEEVES, OPENINGS, CONDUIT, AND OTHER EMBEDDED ITEMS NOT SHOWN ON THE STRUCTURAL DRAWINGS SHALL BE APPROVED BY THE STRUCTURAL ENGINEER BEFORE POURING. CONDUITS EMBEDDED IN SLABS SHALL NOT BE LARGER THAN ONE THIRD OF THE THICKNESS OF THE SLAB AND SHALL NOT BE SPACED CLOSER THAN THREE DIAMETERS ON CENTER. PROVIDE 3/4" CHAMFERS ON ALL EXPOSED CONCRETE EDGES UNLESS NOTED OTHERWISE.

SLAB ON GRADE IS NOT DESIGNED AS A STRUCTURAL DIAPHRAGM.

CONCRETE REINFORCING STEEL:
REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 60 AND FOR DEFORMED BARS, UNLESS OTHERWISE NOTED. REINFORCING STEEL TO BE WELDED SHALL CONFORM TO ASTM A706. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A82 AND A185.

REINFORCING STEEL SHALL BE DETAILED IN ACCORDANCE WITH ACI 315-LATEST EDITION ("DETAILS AND DETAILING CONCRETE REINFORCEMENT").

UNLESS NOTED OTHERWISE ON THE DRAWINGS LAP SPLICE LENGTHS SHALL BE AS FOLLOWS:

FOR CONCRETE STRENGTH f'c = 3,000 PSI - LAP SPLICE LENGTH = 58 BAR DIAMETERS.
FOR CONCRETE STRENGTH f'c = 4,000 PSI - LAP SPLICE LENGTH = 50 BAR DIAMETERS.

ALL HORIZTONAL WALL & FOOTING REINFORCING TO HAVE 2'-6" CORNER HOOKS (U.N.O.)

REINFORCING STEEL SHALL HAVE PROTECTION AS FOLLOWS:

CONDITION:	MINIMUM COVER:
CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH:	3"
CONCRETE EXPOSED TO EARTH AND WEATHER:	
NO.6 THROUGH NO.18 BARS	2"
NO.5 BAR, W31 OR D31 WIRE AND SMALLER	1½"
CONCRETE NOT EXPOSED TO WEATHER OR IN CONTACT WITH EARTH:	
SLABS, WALLS, AND JOISTS:	
NO.14 AND NO.18 BARS	1½"
NO.11 BARS AND SMALLER	¾"
BEAMS AND COLUMNS:	
PRIMARY REINFORCEMENT, TIES, STIRRUPS AND SPIRALS	1½"

CONCRETE ACCESSORIES:
NELSON HEADED WELD STUDS SHALL BE AUTOMATICALLY WELDED WITH THE MANUFACTURER'S STANDARD EQUIPMENT IN STRICT ACCORDANCE WITH THEIR RECOMMENDATIONS.

CONCRETE EXPANSION ANCHORS SHALL BE "SIMPSON WEDGE-ALL" OR ENGINEER APPROVED EQUIVALENT. AT CMU APPLICATIONS DO NOT INSTALL ANCHORS IN OR WITHIN 1 1/4" OF ANY HEAD JOINT PER MANUFACTURER'S RECOMMENDATIONS.

CONCRETE SCREW ANCHORS SHALL BE "SIMPSON TITEN-HD" OR ENGINEER APPROVED EQUIVALENT. AT CMU APPLICATIONS DO

NOT INSTALL ANCHORS IN OR WITHIN 1 1/4" OF ANY HEAD JOINT PER MANUFACTURER'S RECOMMENDATIONS.

CONCRETE EPOXY ANCHORS SHALL BE INSTALLED WITH "SIMPSON SET" ADHESIVE OR ENGINEER APPROVED EQUIVALENT. AT CMU APPLICATIONS DO NOT INSTALL ANCHORS IN OR WITHIN 1 1/4" OF ANY HEAD JOINT PER MANUFACTURER'S RECOMMENDATIONS.

NON-SHRINK GROUT SHALL BE A PRE-MIXED COMPOUND CONSISTING OF NON-METALLIC AGGREGATE, CEMENT, WATER REDUCING AND PLASTICIZING AGENTS: CAPABLE OF DEVELOPING A MINIMUM COMPRESSIVE STRENGTH OF 2,200 PSI IN 48 HOURS AND 6,000 PSI IN 28 DAYS. GROUT SHALL BE MIXED AND APPLIED IN STRICT ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

METALS:
ALL MISCELLANEOUS STEEL: ASTM A36 (FY=36,000 PSI).
WIDE FLANGE: ASTM A992 (Fy = 50,000 PSI) OR ENGINEER APPROVED EQUAL.
SQUARE AND RECTANGULAR HSS: ASTM A500, GRADE "B" (Fy=46,000 PSI).
ALL BOLTS: ASTM A325 UNLESS NOTED OTHERWISE.
ANCHOR RODS: ASTM 1554 GRADE 36 UNLESS NOTED OTHERWISE.
THREADED RODS: ASTM A36 UNLESS NOTED OTHERWISE.
WELDING: PER AWS STANDARDS. E70XX ELECTRODE AND BY CERTIFIED WELDERS.
ALL STEEL TO HAVE SHOP COAT.
ALL EXPOSED STEEL BELOW FINISH GRADE TO BE COATED WITH ASPHALTIC PAINT PRIOR TO BACKFILLING.
ALL STEEL EXPOSED TO WEATHER SHALL BE GALVANIZED.

DESIGN, FABRICATION, AND ERECTION SHALL BE IN ACCORDANCE WITH THE "AISC SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS". WELDING SHALL CONFORM TO THE AWS CODES FOR ARC AND GAS WELDING IN BUILDING CONSTRUCTION AND SHALL BE 3/16" MINIMUM UNLESS OTHERWISE NOTED. WELDING SHALL BE BY AWS CERTIFIED WELDERS. PREQUALIFIED WELDING PROCEDURES ARE TO BE USED, UNLESS AWS QUALIFICATION IS SUBMITTED TO THE ARCHITECT/ENGINEER PRIOR TO FABRICATION.

INSTALLATION AND TIGHTENING OF ALL BOLTS SHALL BE IN ACCORDANCE WITH THE ?SPECIFICATIONS FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS?. UNLESS NOTED OTHERWISE BOLTS SHALL BE INSTALLED IN ALL HOLES OF THE CONNECTION AND BROUGHT TO A SNUG-TIGHT CONDITION. SNUG TIGHT IS DEFINED AS THE TIGHTNESS THAT EXISTS WHEN THE PLIES OF THE JOINT ARE IN FIRM CONTACT. THIS MAY BE ATTAINED BY A FEW IMPACTS OF AN IMPACT WRENCH OR THE FULL EFFORT OF A MAN USING AN ORDINARY SPUD WRENCH.

CARPENTRY:
SAWN LUMBER DESIGN IS BASED ON THE NATIONAL DESIGN SPECIFICATION, LATEST EDITION. SAWN LUMBER SHALL CONFORM TO WEST COAST LUMBER INSPECTION BUREAU OR WESTERN WOOD PRODUCTS ASSOCIATION GRADING RULES & SHALL BE DOUGLAS FIR WITH 19% MAX MOISTURE CONTENT @ TIME OF FABRICATION. ALL LUMBER SHALL BE GRADED AS FOLLOW:

A. POSTS AND BEAMS 6x AND GREATER - D.F. NO 1.
B. JOISTS, RAFTERS, POSTS, LEDGER AND BEAMS 4x SMALLER - D.F. NO 2 OR BETTER.
C. STUDS - D.F. #2 OR BETTER
D. PLATES & SILLS - D.F. #2 <u>KILN-DRIED.</u>
E. BLOCKING - UTILITY.

ALL WOOD IN PERMANENT CONTACT WITH CONCRETE OR CMU SHALL BE PRESSURE TREATED UNLESS AN APPROVED BARRIER IS PROVIDED. FRAMING ACCESSORIES AND STRUCTURAL FASTENERS SHALL BE MANUFACTURED BY SIMPSON STRONG-TIE COMPANY (OR ENGINEER APPROVED EQUAL) AND OF THE SIZE AND TYPE SHOWN ON THE DRAWINGS AND ATTACHED PER MANUFACTURER'S REQUIREMENTS AND RECOMMENDATIONS UNLESS NOTED OTHERWISE. HANGERS NOT SHOWN SHALL BE SIMPSON HU OF SIZE RECOMMENDED FOR MEMBER. ALL FRAMING NAILS SHALL BE COMMON NAILS. NO BOX NAILS ALLOWED. FASTENERS AND ACCESSORIES IN CONTACT WITH PRESERVATIVE TREATED WOOD MUST BE HOT DIPPED GALVANIZED OR HAVE ZMAX COATING.

NAIL TYPE	LENGTH	DIAMETER
8d	2-1/2"	0.131"
10d	3"	0.148"
16d	3-1/2"	0.162"

PLYWOOD PANELS SHALL CONFORM TO THE REQUIREMENTS OF VOLUNTARY PRODUCT STANDARD PS 1 OR PS 2, OR APA PRP-108 PERFORMANCE STANDARDS. UNLESS NOTED, PANELS SHALL BE APA RATED SHEATHING, EXPOSURE 1, AND THICKNESS PER DRAWINGS. ROOF SHEATHING TO BE APA 32/16, FLOOR SHEATHING TO BE APA 48/24 AND WALL SHEATHING TO BE APA 24/0. PLYWOOD INSTALLATION SHALL BE IN CONFORMANCE WITH APA RECOMMENDATIONS. ALLOW 1/8" SPACING AT PANELS ENDS AND EDGES, UNLESS OTHERWISE RECOMMENDED BY THE PANEL MANUFACTURER.

ALL ROOF SHEATHING AND SUB-FLOORING SHALL BE INSTALLED WITH FACE GRAIN PERPENDICULAR TO SUPPORTS, EXCEPT AS INDICATED ON THE DRAWINGS. ROOF SHEATHING SHALL EITHER BE BLOCKED, TONGUE-AND- GROOVE, OR HAVE EDGES SUPPORTED BY PLYCLIPS. SHEAR WALL SHEATHING SHALL BE BLOCKED WITH 2x OR 3x FRAMING AT ALL PANEL EDGES PER SCHEDULE. NAILING NOT SPECIFICALLY IDENTIFIED ON THE DRAWINGS SHALL CONFORM TO IBC TABLE 2304.9.1.

GLUED LAMINATED MEMBERS SHALL BE FABRICATED IN CONFORMANCE WITH AMERICAN INSTITUTE OF TIMBER CONSTRUCTION, AITC A190.1 AND ASTM D 3737. EACH MEMBER SHALL BEAR AN AITC OR APA-EWS IDENTIFICATION MARK AND BE ACCOMPANIED BY A CERTIFICATE OF CONFORMANCE. ONE COAT OF END SEALER SHALL BE APPLIED IMMEDIATELY AFTER TRIMMING IN EITHER SHOP OR FIELD. GLULAM HANGERS NOT SHOWN SHALL BE SIMPSON EG. BEAMS SHALL BE VISUALLY GRADED WESTERN SPECIES INDUSTRIAL GRADE, AND OF THE STRENGTH INDICATED BELOW:

DEPTH	COMBINATION SYMBOL	SPECIES	USE
ALL	24F - V4	DF/DF	(SIMPLE SPAN)
ALL	24F - V8	DF/DF	(CONTINUOUS OR CANTILEVER)
ALL	3 (GR-L2D)	DF/DF	(COLUMNS)

PREMANUFACTURED WOOD JOISTS AND OPEN WEB TRUSSES SHALL BE OF THE SIZE AND TYPE SHOWN ON THE DRAWINGS, MANUFACTURED BY THE TRUS JOIST MACMILLAN COMPANY, OR AN ENGINEER APPROVED EQUAL IN ACCORDANCE WITH ASTM D 5055. PROVIDE BRIDGING IN CONFORMANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. JOISTS AND TRUSSES SHALL BE DESIGNED FOR THE LOADS NOTED ON THE DRAWINGS. JOISTS, TRUSSES, AND BRIDGING SHALL BE CAPABLE OF RESISTING A 5 PSF MINIMUM NET WIND UPLIFT UNLESS OTHERWISE NOTED ON THE DRAWINGS. THE JOIST MANUFACTURER SHALL VISIT JOB SITE AS REQUIRED AND VERIFY THE PROPER INSTALLATION OF JOISTS IN WRITING TO THE ARCHITECT/ENGINEER. PREMANUFACTURED WOOD JOIST ALTERNATES WILL BE CONSIDERED, PROVIDED THE ALTERNATE IS COMPATIBLE WITH THE LOAD CAPACITY, STIFFNESS, DIMENSIONAL, AND FIRE RATING REQUIREMENTS OF THE PROJECT, AND IS ICC APPROVED.

METAL PLATE CONNECTED WOOD TRUSSES SHALL BE MANUFACTURED AS REQUIRED BY TRUSS PLATE INSTITUTE TPI 1, AND DESIGNED FOR THE LOADS NOTED ON THE DRAWINGS. TRUSSES AND BRIDGING SHALL BE CAPABLE OF RESISTING THE WIND UPLIFT NOTED ON THE DRAWINGS (15 PSF NET UPLIFT MINIMUM), AS WELL AS LOADS RESULTING FROM MECHANICAL UNITS AND EQUIPMENT (COORDINATE LOADING AND LOCATIONS WITH MECHANICAL SUPPLIER AND CONTRACTOR). SNOW DRIFT LOADS SHOWN ON THE PLAN ARE IN ADDITION TO THE LISTED JOIST AND TRUSS LOADS. THE TRUSS MANUFACTURER SHALL RETAIN AN APPROVED INSPECTION AGENCY TO OBSERVE ALL PHASES OF TRUSS OPERATIONS DURING FABRICATION AND DELIVERY UNLESS THE TRUSS MANUFACTURER MEETS THE REQUIREMENTS OF IBC SECTION 2303.4. TEMPORARY BRACING OF THE TRUSSES DURING CONSTRUCTION IS THE RESPONSIBILITY OF THE CONTRACTOR.

IN ADDITION TO OTHER DESIGN FORCES SPECIFIED ON THE DRAWINGS, PREMANUFACTURED WOOD JOISTS AND TRUSSES SHALL BE DESIGNED FOR AN ADDITIONAL ???? LB. POINT LOAD AT ANY POINT ALONG THE SPAN AND FOR LOADS RESULTING FROM MECHANICAL UNITS AND EQUIPMENT (COORDINATE LOADING AND LOCATIONS WITH MECHANICAL SUPPLIER AND CONTRACTOR). SNOW DRIFT LOADS SHOWN ON THE PLAN ARE IN ADDITION TO THE LISTED JOIST AND TRUSS LOADS.

JOIST DEFLECTION SHALL BE LIMITED TO THE FOLLOWING:

ROOF JOIST OR TRUSS:
L/360 DEAD + SNOW LOAD
FLOOR JOIST:
L/360 DEAD + LIVE LOAD

DRYING - PRIOR TO INSTALLATION OF GYPSUM WALL BOARD, DRY COMPLETED STRUCTURE TO A MAXIMUM MOISTURE CONTENT OF 15%.

MECHANICAL:
THE CONTRACTOR SHALL COORDINATE SEISMIC RESTRAINTS OF ELECTRICAL EQUIPMENT, MECHANICAL, PLUMBING, FIRE SPRINKLER, MACHINERY, AND ASSOCIATED PIPING WITH THE STRUCTURE. ANY CONNECTIONS TO STRUCTURE NOT CONFORMING TO SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION (SMACNA), OR SPECIFICALLY DETAILED ON THE MECHANICAL ENGINEER'S DRAWINGS, SHALL BE DESIGNED IN ACCORDANCE OF THESE GENERAL NOTES, BY AN ENGINEER REGISTERED IN THE STATE OF OREGON, AND SHALL BE SUBMITTED TO THE ARCHITECT/ENGINEER PRIOR TO FABRICATION.

GRAPHIC LEGEND

X / S	DETAIL REFERENCE
X / -	SHEAR WALL TAG PER SCHED
• OR ▬	HOLDOWN PER PLAN & SCHED
	SHEAR WALL PER SCHED
	REPRESENTS WALLS BELOW FLOOR SHEATHING @ LEVEL SHOWN.
	REPRESENTS WOOD WALLS ABOVE. (DIRECTLY PLACED OVER THE FLOOR FRAMING SHOWN)

REGISTERED PROFESSIONAL ENGINEER
16,720
OREGON
JULY 20, 1993
RALPH TURNBAUGH
EXP: 6/30/10

FLASHING AND WATERPROOFING:
ALL FLASHING AND WATERPROOFING SHALL BE BY OTHERS.

STRUCTURAL OBSERVATIONS:
STRUCTURAL OBSERVATIONS BY THE ENGINEER OF RECORD OR AN APPOINTED REPRESENTATIVE SHALL BE REQUIRED AT THE FOLLOWING TIMES DURING CONSTRUCTION:

AFTER THE WOOD FLOOR AND ROOF SHEATHING AND STRAPPING HAS BEEN INSTALLED, PRIOR TO COVERING WITH ANY MATERIALS.

THE CONTRACTOR SHALL NOTIFY THE ENGINEER (4) FOUR DAYS PRIOR TO THE COMPLETION POINT REQUIRING SITE OBSERVATION.

INSPECTION:
SPECIAL INSPECTIONS: IN ACCORDANCE WITH SECTION 1704 OF THE INTERNATIONALBUILDING CODE AND APPLICABLE SECTIONS OF THE PROJECT DRAWINGS & SPECIFICATIONS. SPECIAL INSPECTIONS ARE TO BE PERFORMED BY AN INDEPENDENT TESTING LABORATORY EMPLOYED BY THE OWNER FOR THE AREAS INDICATED IN THE SPECIAL INSPECTION PROGRAM.

THE CONTRACTOR AND SPECIAL INSPECTOR SHALL NOTIFY THE ENGINEER OF RECORD OF ANY ITEM NOT COMPLYING WITH THE PROJECT SPECIFICATIONS AND/OR APPLICABLE CODES BEFORE PROCEDING WITH ANY WORK INVOLVING THAT ITEM. THE ENGINEER OF RECORD WILL REVIEW THE ITEM AND DETERMINE ACCEPTABILITY. IF WORK INVOLVING THAT ITEM PROCEDES WITHOUT THE APPROVAL OF THE ENGINEER OF RECORD THEN THE WORK WILL BE CONSIDERED NON-COMPLIANT.

QUALITY ASSURANCE PROGRAM
SEE SECTION 1705 THRU 1707 AMENDED BY OREGON.

DEFERRED SUBMITTALS FOR STRUCTURAL COMPONENTS

UNLESS NOTED OTHERWISE, ENGINEER OF RECORD (EOR) SHALL REVIEW DEFERRED SUBMITTALS PRIOR TO SUBMITTAL TO THE BUILDING DEPARTMENT.

TYPES OF WORK	COMMENTS
PREFABRICATED I-JOIST & METAL PLATE CONNECTED TRUSSES	SHOP DRAWINGS & STRUCTURAL CALCULATIONS

PROGRAM FOOTNOTES:
1. DEFERRED SUBMITTAL ITEMS SHALL NOT BE INSTALLED OR OTHERWISE CONSTRUCTED IN PLACE WITHOUT FIRST HAVING THE PLANS OR SHOP DRAWINGS REVIEWED BY THE EOR AND THE BUILDING OFFICAL.
2. DEFERRED SUBMITTAL ITEMS TO HAVE DRAWINGS & CALCULATIONS STAMPED BY AN ENGINEER REGISTERED IN OREGON.
3. NON STRUCTURAL DEFERRED SUBMITTALS SUCH AS ARCHITECTURAL, MECHANICAL, SPRINKLER AND FIRE ALARM SHALL BE PER PROGRAM SHOWN ON ARCHITECTURAL DRAWINGS.

SPECIAL INSPECTION PROGRAM
ESTABLISHED PER 2006 IBC SECTION 109 & CHAPTER 17

ITEM	CONTINUOUS	PERIODIC	COMMENTS
GENERAL STRUCTURAL INSPECTIONS AS REQUIRED BY SECTION 109			
FOOTING AND FOUNDATION REINFORCEMENT			BY BUILDING OFFICIAL
SLAB REINFORCEMENT			BY BUILDING OFFICIAL
WOOD FRAMING			BY BUILDING OFFICIAL
FINAL INSPECTION			BY BUILDING OFFICIAL
STEEL			
MATERIAL VERIFICATION OF HIGH STRENGTH BOLTS, NUTS, AND WASHERS		X	REFERENCE APPLICABLE ASTM MATERIAL SPECIFICATIONS; AISC 360, SECTION A3.3
HIGH STRENGTH BOLTING		X	IBC 1704.3.3, AISC 360 SECTION M2.5 (CONTINUOUS INSPECTION FOR SLIP CRITICAL)
MATERIAL VERIFICATION OF STRUCTURAL STEEL			IBC 1708.4, ASTM A 6 OR ASTM A 568
COMPLIANCE OF STEEL FRAME JOINTS TO CONSTRUCTION DOCUMENT DETAILS		X	IBC 1704.3.2
WELDING: STRUCTURAL STEEL			
MATERIAL VERFICATION OF WELD FILLER MATERIALS			AISC 360, SECTION A3.5
COMPLETE AND PARTIAL PENETRATION	X		IBC 1704.3.1, AWS D1.1,
MULTIPASS FILLET WELDS	X		
SINGLE PASS FILLETS > 5/16"	X		
SINGLE PASS FILLETS ≤ 5/16"		X	
FLOOR AND ROOF DECK WELDS		X	AWS D1.3
WELDED STUDS		X	IBC 1704.3
WELDING OF STAIRS AND RAILING SYSTEMS		X	IBC 1704.3
CONCRETE			
REINFORCING SIZE AND PLACEMENT		X	IBC 1913.4, ACI 318: 3.5, 7.1-7.7
BOLTS TO BE INSTALLED PRIOR TO AND DURING CONCRETE PLACEMENT (FOR ALLOWABLE STRESS INCREASE)	X		IBC 1911.5
VERIFY USE OF REQUIRED DESIGN MIX		X	IBC 1904.2.2, 1913.2-3; ACI 318: CH. 4, 5.2-5.4
PREPERATION OF TEST SPECIMENS	X		ASTM C 172, ASTM C 31, ACI 318: 5.6, 5.8
CONCRETE & SHOTCRETE PLACEMENT	X		IBC 1913.6-8, ACI 318: 5.9, 5.10
MAINTENANCE OF SPECIFIED CURING TEMPERATURES AND TECHNIQUES		X	IBC 1913.9, ACI 318: 5.11-5.13
EPOXY OR ADHESIVE ANCHOR PLACEMENT	X		
EXPANSION OR SCREW ANCHOR PLACEMENT	X		WHERE INDICATED ON DRAWINGS
INSPECT FORMWORK FOR SHAPING LOCATION AND DIMENSIONS OF CONCRETE MEMBER BEING FORMED		X	ACI 318: 6.1.1

NOTE: THE SPECIAL INSPECTION PROGRAM FOR SOILS AND ANY PILE OR PIER FOUNDATIONS IS PER THE GEOTECHNICAL ENGINEER, REFERENCE IBC 1704.7, 1704.8, AND 1704.9.

DEFINISTIONS:
A. CONTINUOUS INSPECTION MEANS THAT THE SPECIAL INSPECTOR IS ON SITE AT ALL TIMES OBSERVING THE WORK REQUIRING SPECIAL INSPECTION.
B. PERIODIC INSPECTION MEANS THAT THE SPECIAL INSPECTOR IS ON SITE AT TIME INTERVALS NECESSARY TO CONFIRM THAT THE WORK REQUIRING SPECIAL INSPECTION IS IN CONFORMANCE WITH APPROVED PERMIT PLANS AND SPECIFICATIONS.

TMR
T.M. RIPPEY
CONSULTING ENGINEERS

S1.0

STRUCTURAL NOTES & SCHEDULES
Manzanita House
Chi Steffen Design 1524 SE Lexington Street Portland OR 97202

Scale: 1/4" = 1'-0"
Date: 2/5/10
TMR Job: 7416

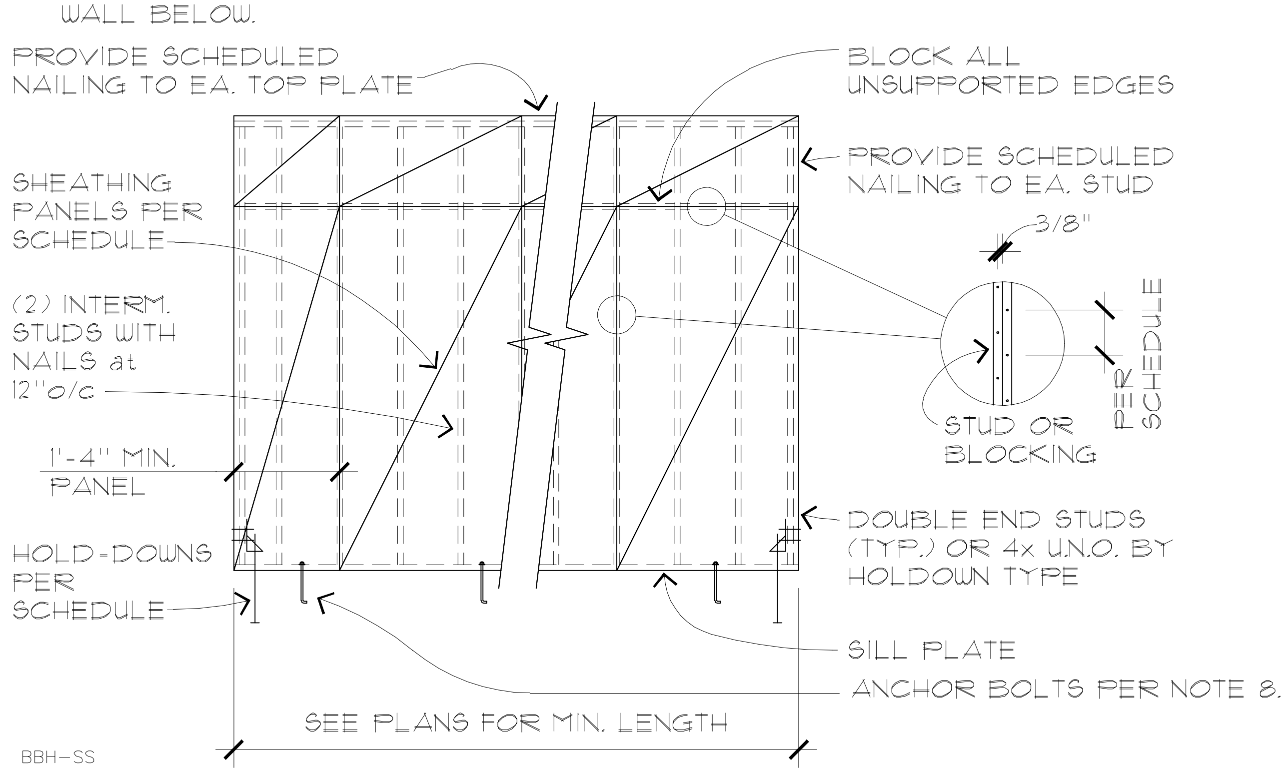
tel: 503.238.8767 email: chi-steffen@comcast.net

SHEARWALL SCHEDULE

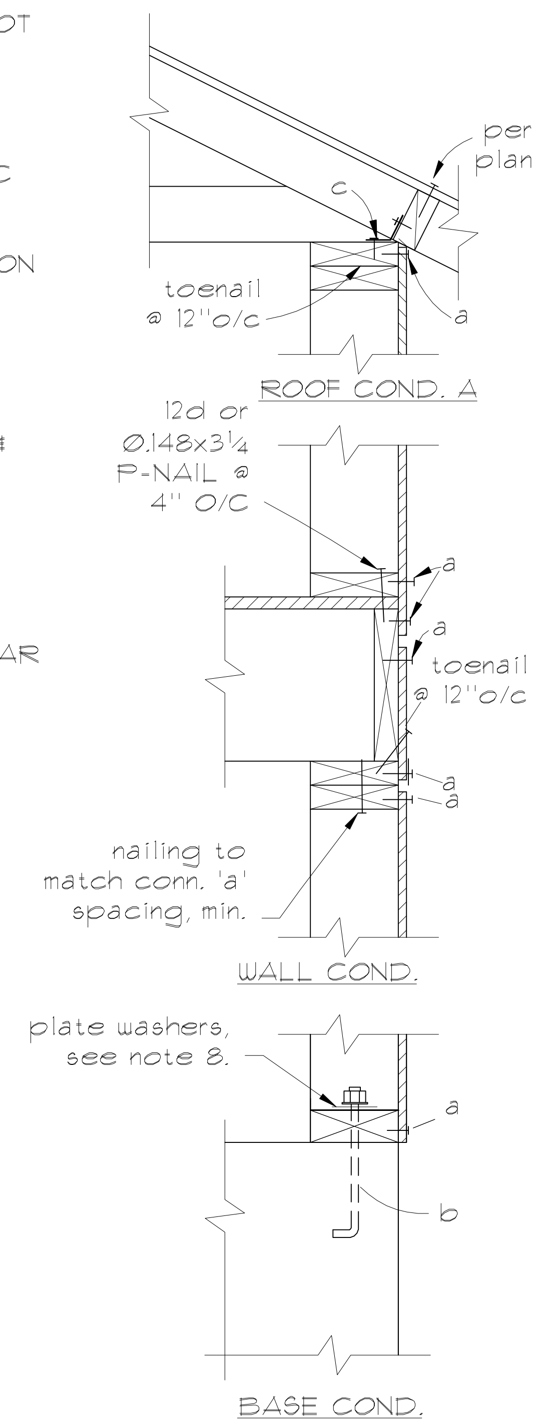
MK	Sheathing (3)	Layers	Panel Edge Studs/Blck'g. (9)	Sill Plate (6)	CONNECTORS (SEE NOTES & DETAILS @ SCHED) a (2)(9)(10)	b (8)
A	15/32"	ONE	2x	2x	8d @ 6" o/c	32" o/c
B	15/32"	ONE	3x	3x	8d @ 4" o/c	32" o/c
C	15/32"	ONE	3x	3x	8d @ 3" o/c	32" o/c
D	19/32"	ONE	3x	3x	10d @ 4" o/c	18" o/c
E	19/32"	TWO	3x	3x	10d @ 4" o/c	14" o/c
F	19/32"	TWO	3x	3x	10d @ 3" o/c	14" o/c

NOTES

1) UNLESS NOTE OTHERWISE, GYPSUM BOARD CONNECTORS TO BE 6d & 8d COOLER NAILS OR #6x1¼" SCREWS AT 5/8" MATERIAL.
2) CONNECTOR 'a' - WALL SHEATHING BOUNDARY EDGE NAILING. PLYWOOD OR OSB CONNECTORS TO BE 12d COMMON NAILS OR 0.148"dia. x2-1/2" PNEUMATIC NAILS. DO NOT PENETRATE THE SURFACE OF THE SHEATHING WITH THE HEAD OF THE FASTENER.
3) WALL SHEATHING SHALL BE CDX PLYWOOD OR OSB.
4) UNLESS NOTED OTHERWISE MAXIMUM CONNECTOR SPACING TO BE:
WOOD SOLE PLATE TO WOOD BLKG/RIM - 12d AT 4" O/C
WOOD SOLE PLATE TO CONCRETE - 5/8"dia x10" ANCHOR BOLT SPACED AT 4'-0" O/C
INT WOOD SILL PLATE TO CONCRETE - 0.145"φ POWER NAILS AT 8" O/C.
5) SOME SHEARWALL TYPES LISTED MIGHT NOT BE USED FOR THIS PROJECT.
6) WHERE 3x WOOD SILL PLATES ARE REQUIRED, IT'S A REQUIREMENT AT THE FOUNDATION LEVEL ONLY.
7) SEE STRUCTURAL DETAILS FOR INFORMATION ON THESE CONNECTOR TYPES LISTED.
8) THE HOT DIPPED GALVANIZED 5/8" x10" (12" @ 3x SILL PLATES) ANCHOR BOLT AT MUDSILL PLATE LOCATED AT FOUNDATION LEVEL. ALL SILL PLATE ANCHOR BOLTS REQUIRE 3" x 3" x 1/4" THICK HOT DIPPED GALVANIZED OR STAINLESS STEEL PLATE WASHERS. CAN USE SIMPSON 'TITAN HD' BOLTS OR EXPANSION BOLTS W/ ⅝"φ & 3¾" MINIMUM EMBEDMENT (EXPANSION BOLTS NOT ALLOWED AT EXTERIOR WALLS OR NEAR CONCRETE EDGES).
9.) WHERE WALLS ARE SPECIFIED TO HAVE 3x PANEL EDGE STUDS/BLKG, PLYWOOD JOINT AND SILL PLATE NAILING SHALL BE STAGGERED IN ALL CASES.
10) ALL CONNECTORS, BOLTS AND WASHERS IN CONTACT WITH PRESSURE TREATED MATERIAL SHALL BE HOT DIPPED GALVANIZED OR STAINLESS STEEL.
11) SIMPSON 'A35' OR 'LTP5' CONNECTOR FROM BOTTOM OF BLOCKING/RIM JOIST TO SHEAR WALL BELOW.

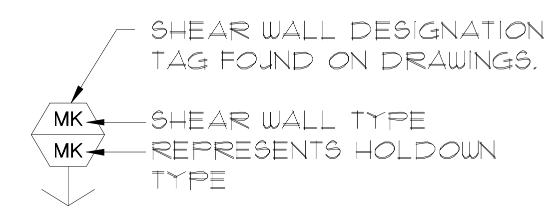


CONNECTION DETAILS



REGISTERED PROFESSIONAL ENGINEER 16,720
OREGON JULY 20, 1993 RALPH TURNBAUGH
EXP: 6/30/10

SHEAR WALL TAG INFO:



HOLDOWN SCHEDULE:

MK	HOLDOWN EACH END OF WALL	ANCHOR ROD DIAM.	MIN. POST	NOTES
-	NONE	---	---	---
1	HD8A	⅝"	DBL 2x	SEE 1/S1.3, 2/S1.2 OR 3/S1.2
2	HD10A	⅞"	DBL 2x	
3	2- HDU8-SDS25 OR 2-HD8A	⅞"	4x6	
4	2-HD10A	1"	6x6	
5	CS14	1"	6x6	SEE 2/S1.3,
6	CMSTC16	---	DBL 2x	
7	2-CMSTC16	---	DBL 2x	
8	2-CMST14	---	DBL 2x	
9	2-CMST12	---	DBL 2x	
10	HD2A	⅝"	DBL 2x	

NOTES
1) SEE GENERAL NOTES FOR ANCHOR ROD STRENGTH AND SPECIES OF WOOD POSTS.
2) REFER TO MANUFACTURER FOR INSTALLATION NOTES.
3) SOME HOLDOWNS LISTED MIGHT NOT BE USED FOR THIS PROJECT.
4) INSTALL COIL STRAPS AT INTERIOR OF BUILDING.

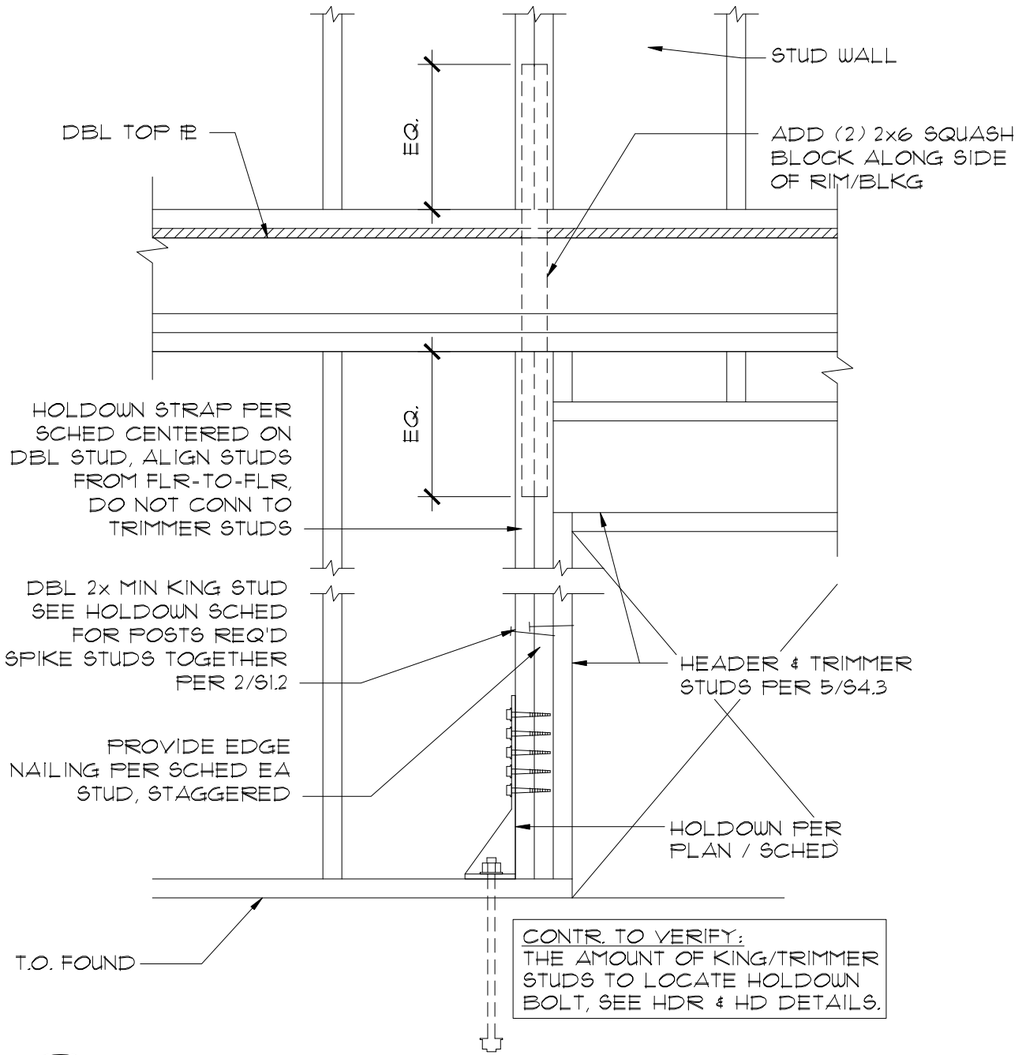
TMR T.M. RIPPEY CONSULTING ENGINEERS

S1.1

Scale: 1/4" = 1'-0"
Date: 2/5/10
TMR Job: 7416

SHEAR WALL SCHEDULES
Manzanita House

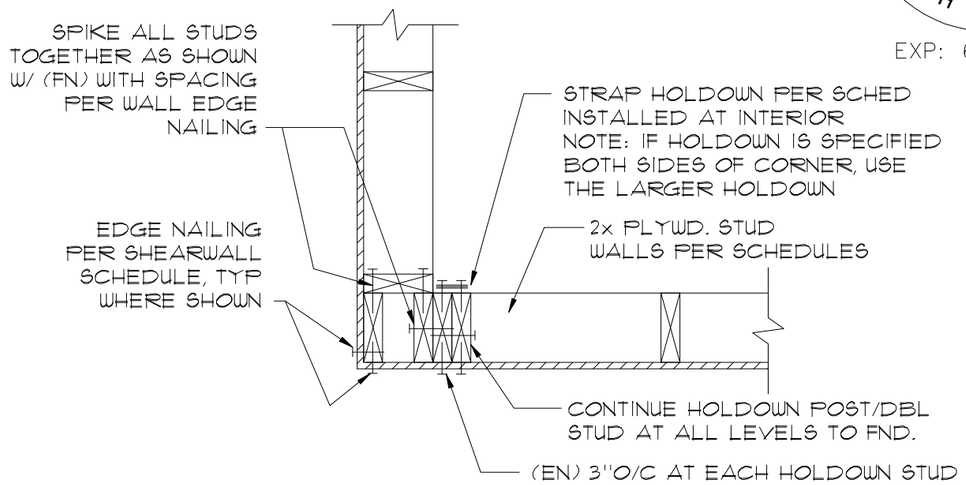
Chi Steffen Design 1524 SE Lexington Street Portland OR 97202 tel: 503.238.8767 email: chi-steffen@comcast.net



1 S1.2 TYP HOLDOWN ALIGNMENT

BBH-01

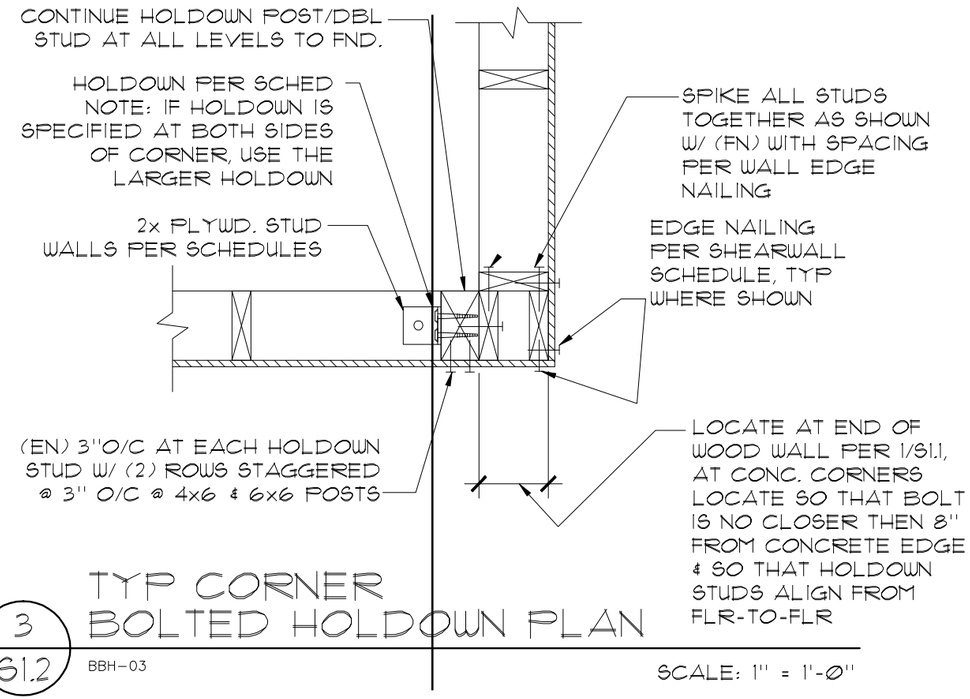
SCALE: 1" = 1'-0"



2 S1.2 TYP CORNER STRAP HOLDOWN PLAN

BBH-02

SCALE: 1" = 1'-0"



3 S1.2 TYP CORNER BOLTED HOLDOWN PLAN

BBH-03

SCALE: 1" = 1'-0"

REGISTERED PROFESSIONAL ENGINEER
16,720
OREGON
JULY 20, 1993
RALPH TURNBAUGH

EXP: 6/30/10

TMR
T.M. RIPPEY
CONSULTING ENGINEERS

S1.2

Scale: 1/4" = 1'-0"
Date: 2/5/10
TMR Job: 7416

tel: 503.238.8767 email: chi-steffen@comcast.net
97202 Portland OR 1524 SE Lexington Street
Chi Steffen Design

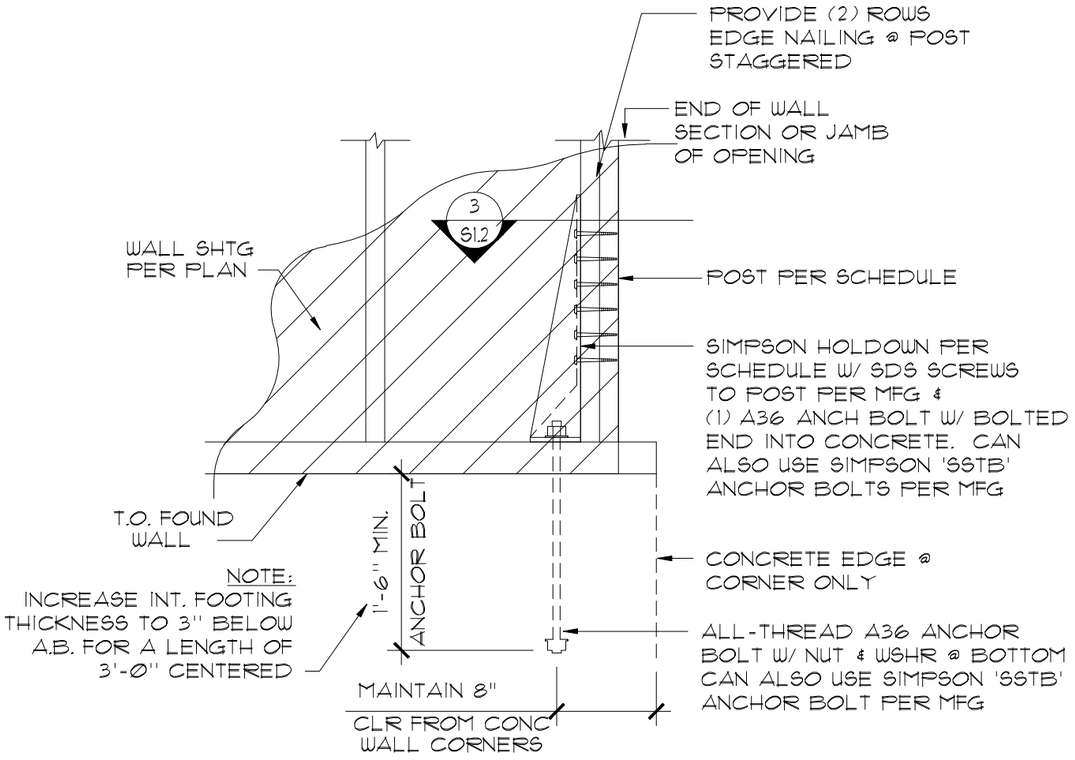
SHEAR WALL DETAILS

Manzanita House

STRAP LENGTH & NAILING

MK	Designation	Cut Length	Nails Ea. End
10	CMST14/12	Gap + 24"	(13) Ø.162"ϕx2½"
11	CMST14/18	Gap + 36"	(20) Ø.162"ϕx2½"
12	CMST14/24	Gap + 48"	(27) Ø.162"ϕx2½"

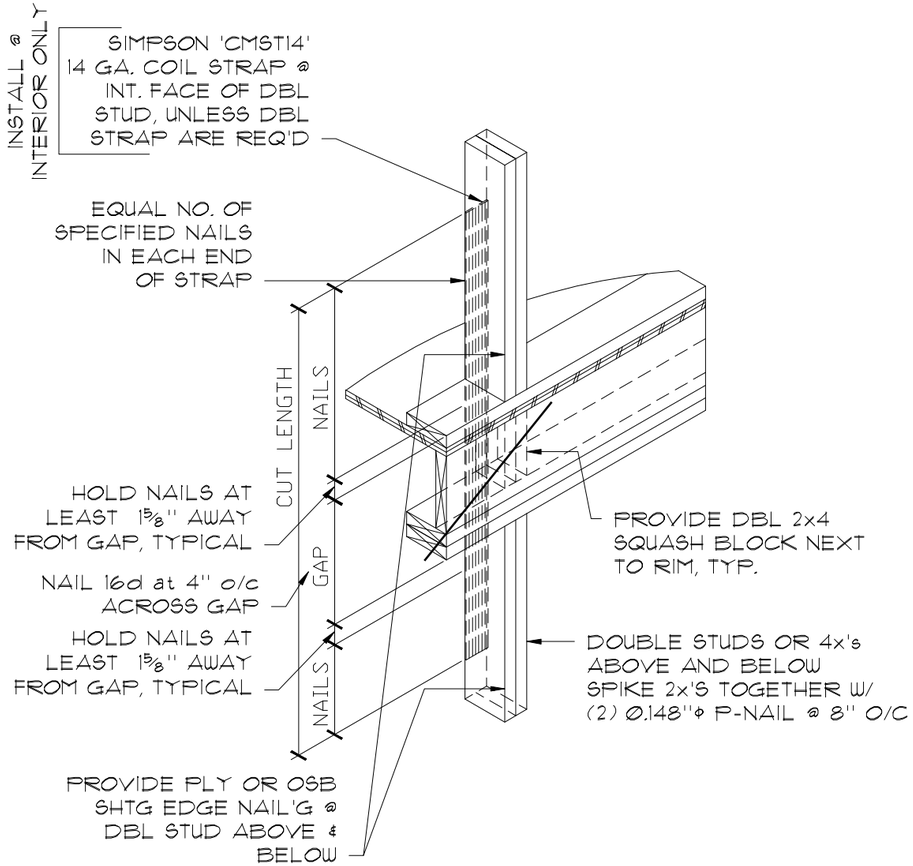
NOTES:
1) STRAP LENGTHS SHOWN ARE BASED ON INSTALLING DIRECT TO STUDS OR OVER PLY SHTG.
2) STRAP LENGTHS MAY CHANGE IF LOCATED ABOVE OPNGS. CONTINUE STRAP LENGTH TO GET REQ'D STRAP END NAILS INTO OPNG HEADER.
3) INSTALL STRAPS ONLY AFTER ROOF TRUSSES HAVE BEEN INSTALLED TO LOAD WALLS AND LIMIT STRAP BUCKLING.
4) WOOD SHRINKAGE AFTER STRAP INSTALLATION MAY CAUSE STRAP TO BUCKLE OUTWARD.
5) TOTAL NAILS FOR BOTH STRAPS AT EACH END.



1 / S1.3 TYP BOLTED HOLDOWN/CONC.

BBH-04

SCALE: 1" = 1'-Ø"



2 / S1.3 CUT STRAP HOLDOWNS

BBH-05

SCALE: N.T.S.

REGISTERED PROFESSIONAL ENGINEER
16,720
OREGON
JULY 20, 1993
RALPH TURNBAUGH
EXP: 6/30/10

TMR
T.M. RIPPEY
CONSULTING ENGINEER

S1.3

Scale: 1/4" = 1'-0"
Date: 2/5/10
TMR Job: 7416

tel: 503.238.8767 email: chl-steffen@comcast.net
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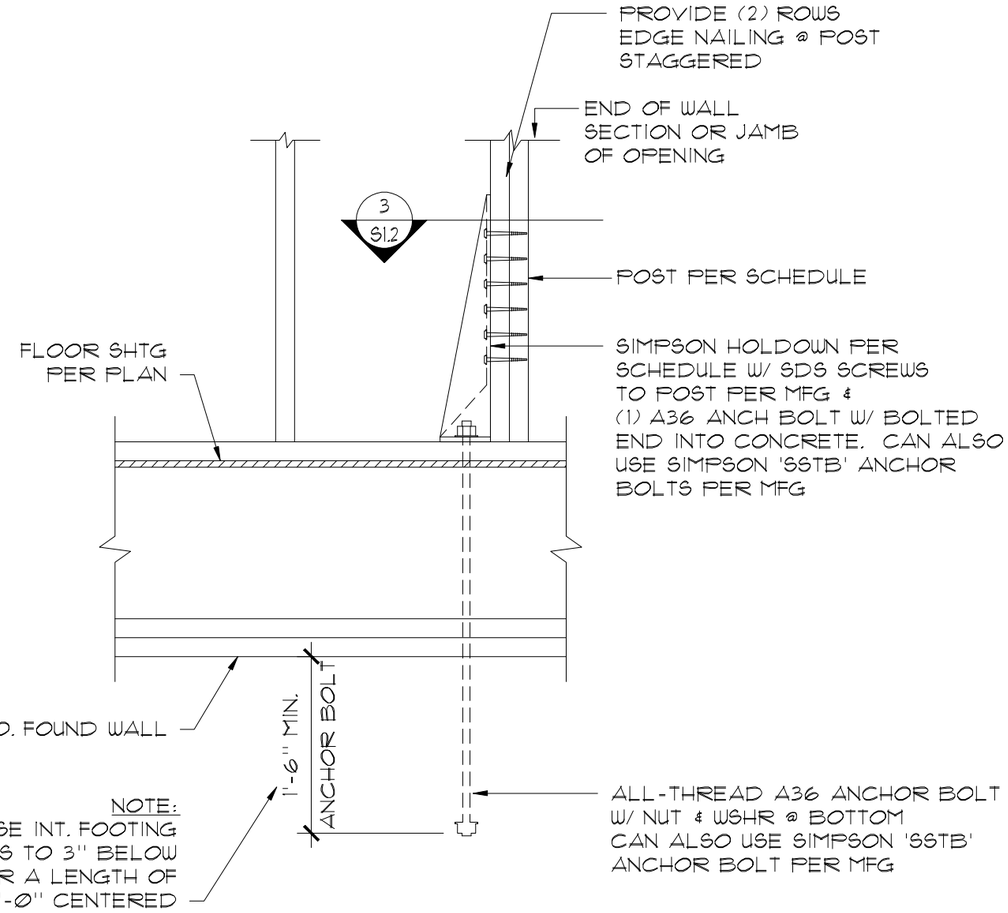
1524 SE Lexington Street
Chl Steffen Design

SHEAR WALL DETAILS

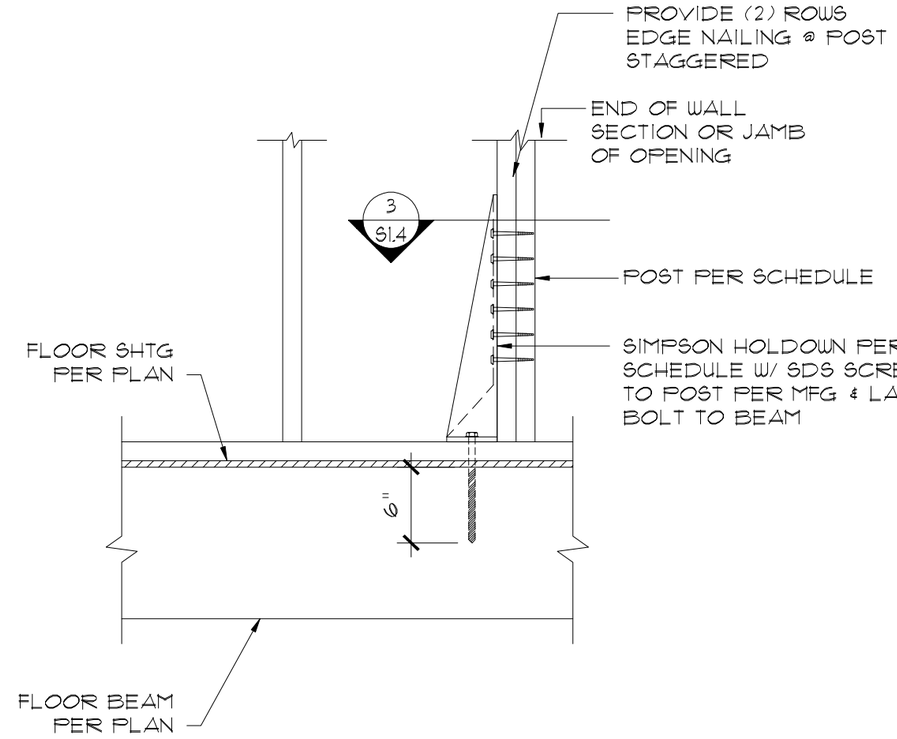
Manzanita House



1 / S1.4 TYP BOLTED HOLDOWN/CONC.

BBH-06

SCALE: 1" = 1'-0"



2 / S1.4 TYP BOLTED HOLDOWN / TO WOOD BEAM

BBH-07

SCALE: 1" = 1'-0"

REGISTERED PROFESSIONAL ENGINEER
16,720
OREGON
JULY 20, 1993
RALPH TURNBAUGH
EXP: 6/30/10

TMR
T.M. RIPPEY
CONSULTING ENGINEERS

S1.4

Scale: 1/4" = 1'-0"
Date: 2/5/10
TMR Job: 7416

tel: 503.238.8767 email: chl-steffen@comcast.net
Portland OR 97202

SHEAR WALL DETAILS

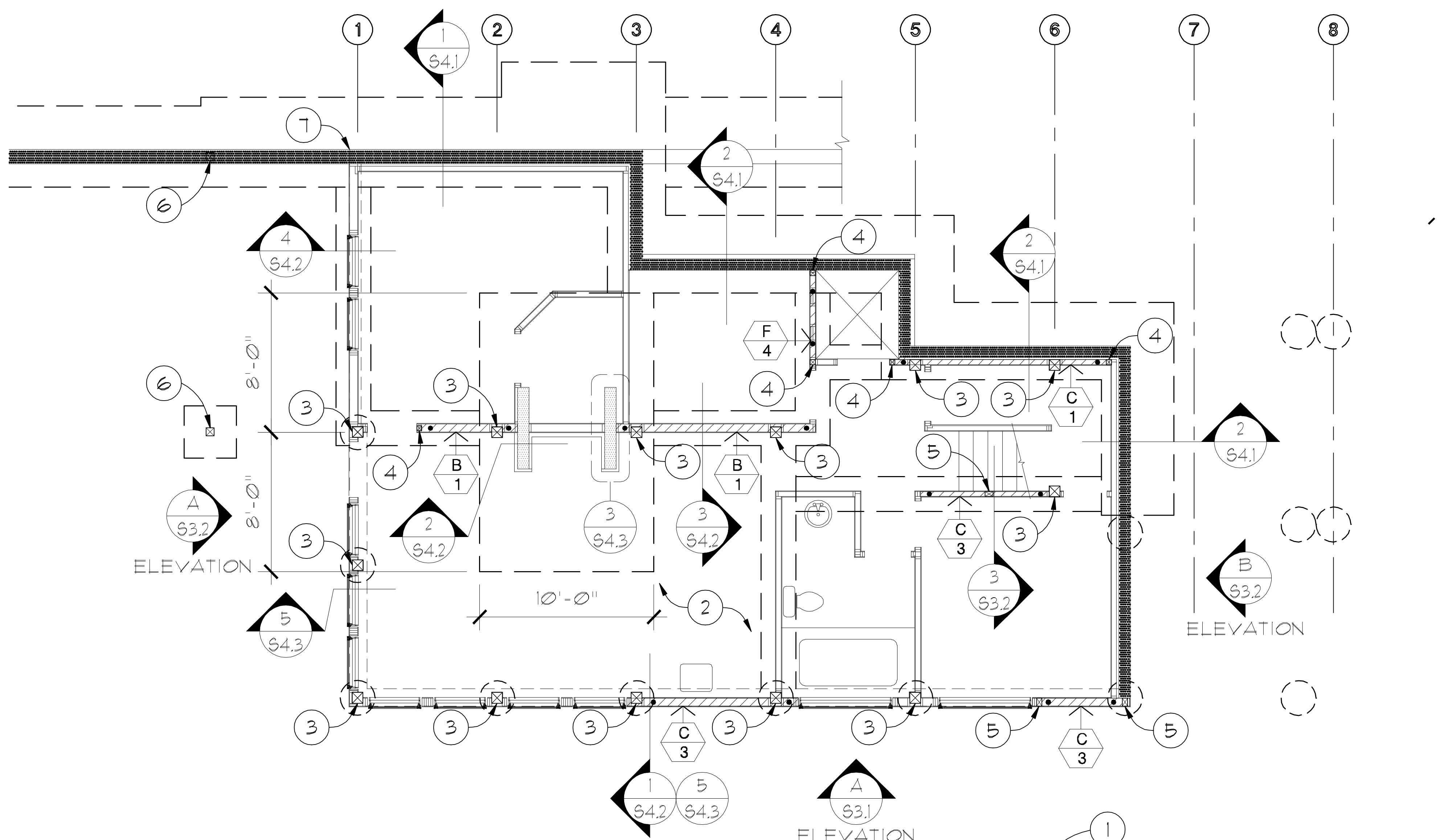
Manzanita House

Chl Steffen Design 1524 SE Lexington Street

LEVEL 1 FOUNDATION PLAN KEYNOTES:

1. VERIFY ALL DIMENSIONS AND CONDITIONS WITH ARCHITECTURAL DWGS. DIMENSIONS NOT SHOWN ARE PER APPROVED ARCH'L DWGS. RESOLVE ANY DISCREPANCIES WITH THE ARCHITECT PRIOR TO CONSTRUCTION.
2. CONCRETE SLAB-ON-GRADE SHALL BE 4-INCHES THICK W/ #3 @ 1'-6" O/C E.W. AT SLAB CENTERLINE. PLACE OVER 6-INCH CLEAN & WASHED CRUSHED ROCK & COMPACTED GRANULAR FILL PER GEOTECH. FLOOR JOINTS @ 20'-0" O/C MAX. E.W. VAPOR BARRIER PER ARCHITECT.
3. 8x8 COLUMN.
4. 4x4 COLUMN.
5. 4x6 COLUMN.
6. P.T. 6x6 COLUMN.
7. VERTICAL CONTROL JOINT.

REGISTERED PROFESSIONAL ENGINEER
16,720
OREGON
JULY 20, 1993
RALPH TURNBAUGH
EXP: 6/30/10



FOUNDATION PLAN
SCALE: 1/8"=1'-0"

LEVEL 1 FOUNDATION PLAN
Manzanita House

Chi Steffen Design 1524 SE Lexington Street Portland OR 97202

tel: 503.238.8767 email: chi-steffen@comcast.net

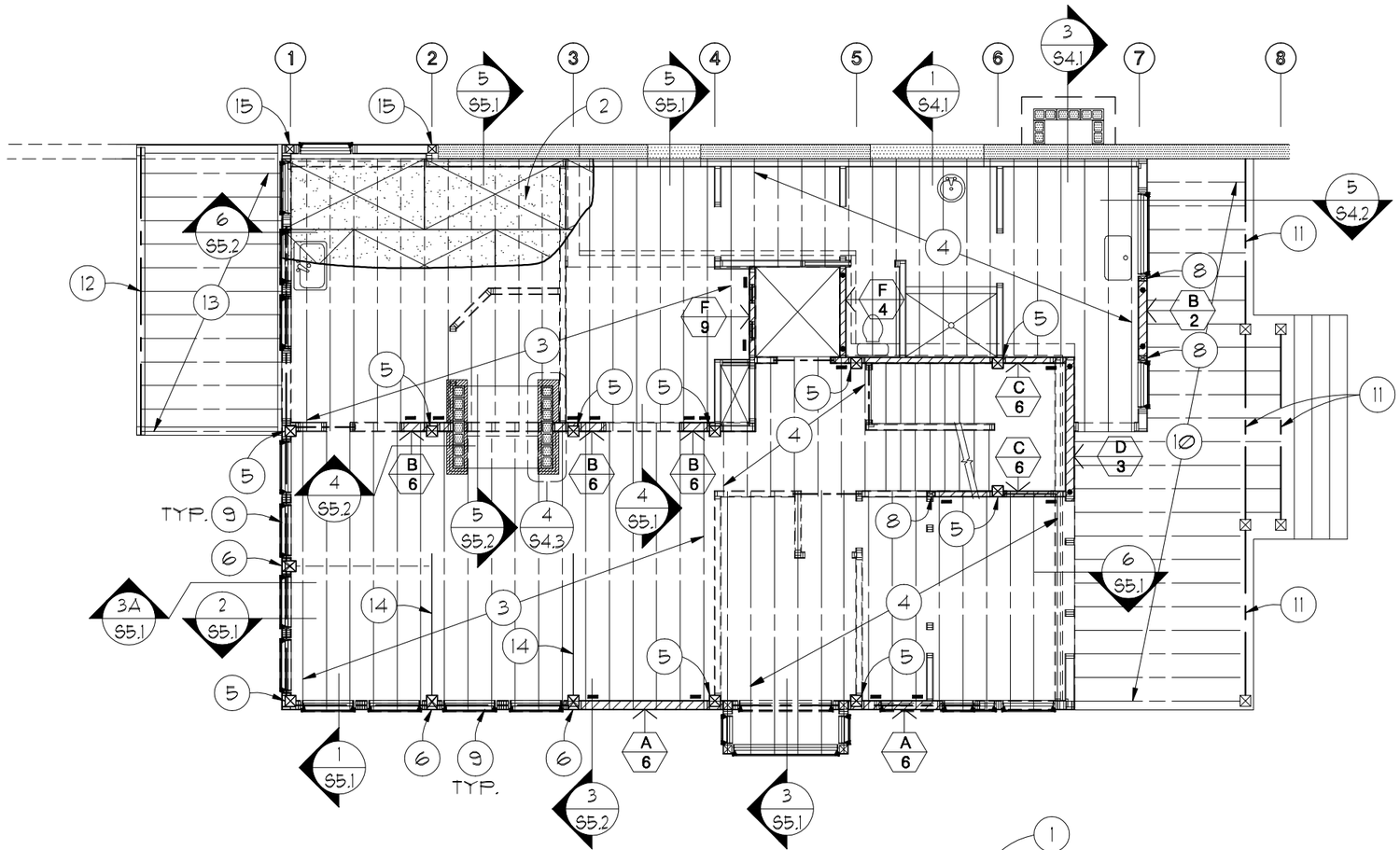
Scale: 1/4" = 1'-0"
Date: 2/5/10
TMR Job: 7416

T.M. RIPPEY

S2.1

LEVEL 2 FLOOR FRAMING KEYNOTES:

1. VERIFY ALL DIMENSIONS AND CONDITIONS WITH ARCHITECTURAL DWGS. DIMENSIONS NOT SHOWN ARE PER APPROVED ARCH'L DWGS. RESOLVE ANY DISCREPANCIES WITH THE ARCHITECT PRIOR TO CONSTRUCTION.
2. ¾'' T&G PLYWOOD OR OSB W/ GLUE & NAIL EDGES W/ Ø.148''Φ NAILS @ 6'' O/C, NAIL FIELD WITH Ø.148''Φ NAILS @ 1'-Ø'' O/C. RUN FACE PLYWOOD PERPENDICULAR TO SUPPORTS & STAGGER END JOINTS.
3. 11⅞'' TJI 110 FLOOR JOISTS @ 1'-4'' O/C.
4. 9½'' TJI 110 FLOOR JOISTS @ 1'-4'' O/C.
5. 8x8 COLUMN.
6. 8x10 COLUMN.
7. 4x4 COLUMN.
8. 4x6 COLUMN.
9. 4x8 TYPICAL WALL HEADER BEAM.
10. P.T. 2x8 @ 1'-4'' O/C.
11. P.T. 4x10 WITH SIMPSON 'LUS410' HANGER EACH END.
12. P.T. 6x10 WITH SIMPSON 'EP66' EACH END.
13. P.T. 2x6 @ 1'-4'' O/C.
14. (2) 2x14x8'-Ø'' COLLECTOR PER 3/S5.2.
15. 6x6 COLUMN.



LEVEL 2 FRAMING PLAN

SCALE: 1/8"=1'-0"

REGISTERED PROFESSIONAL ENGINEER
16,720
OREGON
JULY 20, 1993
RALPH TURNBAUGH
EXP: 6/30/10

TMR
T.M. RIPPEY
CONSULTING ENGINEERS

S2.2

Scale: 1/4" = 1'-0"
Date: 2/5/10
TMR Job: 7416

email: chi-steffen@comcast.net
tel: 503.238.8767
97202

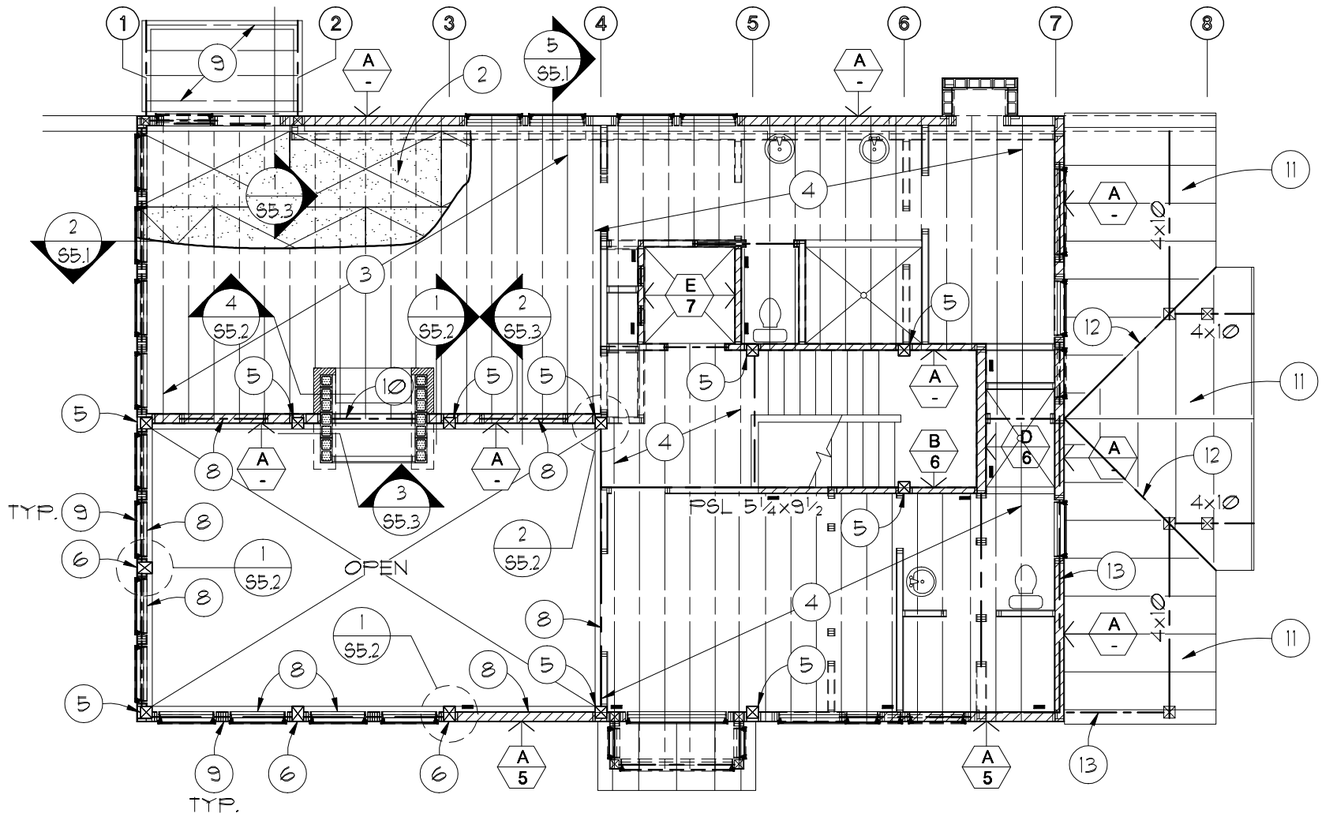
LEVEL 2 FRAMING PLAN

Manzanita House

Chi Steffen Design 1524 SE Lexington Street Portland OR 97202

LEVEL 3 FLOOR FRAMING KEYNOTES:

1. VERIFY ALL DIMENSIONS AND CONDITIONS WITH ARCHITECTURAL DWGS. DIMENSIONS NOT SHOWN ARE PER APPROVED ARCH'L DWGS. RESOLVE ANY DISCREPANCIES WITH THE ARCHITECT PRIOR TO CONSTRUCTION.
2. ¾'' T&G PLYWOOD OR OSB W/ GLUE & NAIL EDGES W/ Ø.148''Φ NAILS @ 6'' O/C, NAIL FIELD WITH Ø.148''Φ NAILS @ 1'-Ø'' O/C. RUN FACE PLYWOOD PERPENDICULAR TO SUPPORTS & STAGGER END JOINTS.
3. 11⅞'' TJI 11Ø FLOOR JOISTS @ 1'-4'' O/C.
4. 9½'' TJI 11Ø FLOOR JOISTS @ 1'-4'' O/C.
5. 8x8 COLUMN.
6. 8x1Ø COLUMN.
7. 4x8 TYPICAL WALL HEADER BEAM.
8. 8x12 BEAM.
9. P.T. 2x6 @ 1'-4'' O/C WITH SIMPSON 'LUS26' EACH END.
10. 4x12.
11. 2x8 RAFTERS @ 1'-4'' O/C.
12. 2x1Ø VALLEY.
13. PSL 5¼x9½.



LEVEL 3 FRAMING PLAN

SCALE: 1/8"=1'-0"

REGISTERED PROFESSIONAL ENGINEER
16,720
OREGON
JULY 20, 1993
RALPH TURNBAUGH
EXP: 6/30/10

TMR
T.M. RIPPEY
CONSULTING ENGINEER

S2.3

Scale: 1/4" = 1'-0"
Date: 2/5/10
TMR Job: 7416

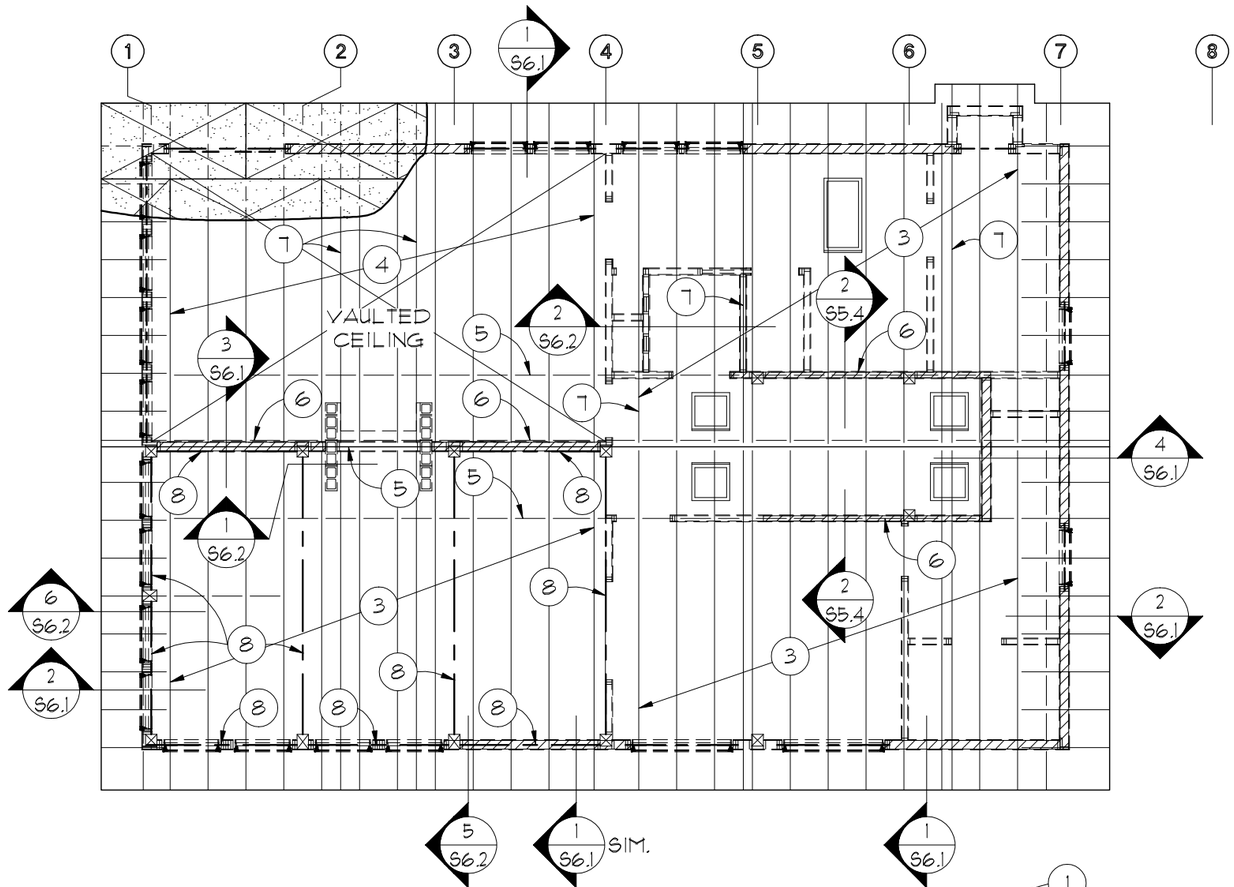
tel: 503.238.8767 email: chl-steffen@comcast.net

97202

LEVEL 3 FRAMING PLAN
Manzanita House
Chl Steffen Design 1524 SE Lexington Street Portland OR 97202

ROOF FRAMING KEYNOTES:

1. VERIFY ALL DIMENSIONS AND CONDITIONS WITH ARCHITECTURAL DWGS. DIMENSIONS NOT SHOWN ARE PER APPROVED ARCH'L DWGS. RESOLVE ANY DISCREPANCIES WITH THE ARCHITECT PRIOR TO CONSTRUCTION.
2. 5/8" PLYWOOD OR OSB NAILED W/ 10d @ 6" O/C EDGES & 1'-0" O/C FIELD. RUN FACE PLYWOOD PERPENDICULAR TO SUPPORTS & STAGGER END JOINTS.
3. PREFABRICATED ROOF TRUSSES @ 2'-0" O/C.
4. PREFABRICATED ROOF TRUSSES WITH VAULT PER 4.7 @ 2'-0" O/C.
5. SIMPSON 'CS14' OVER 2x4 BLOCKING/
6. PREFABRICATED TRUSSES BLOCKING PANELS PER 4/S6.1 OVER SHEAR WALLS.
7. PREFABRICATED DRAG TRUSS. DESIGN TOP CHORD FOR 200#/FT AND BOTTOM CHORD DRAG FORCE 3,000#.
8. 8x12 BEAM.



ROOF FRAMING PLAN

SCALE: 1/8"=1'-0"

REGISTERED PROFESSIONAL ENGINEER
16,720
OREGON
JULY 20, 1993
RALPH TURNBAUGH
EXP: 6/30/10

TMR
T.M. RIPPEY
CONSULTING ENGINEERS

S2.4

Scale: 1/4" = 1'-0"
Date: 2/5/10
TMR Job: 7416

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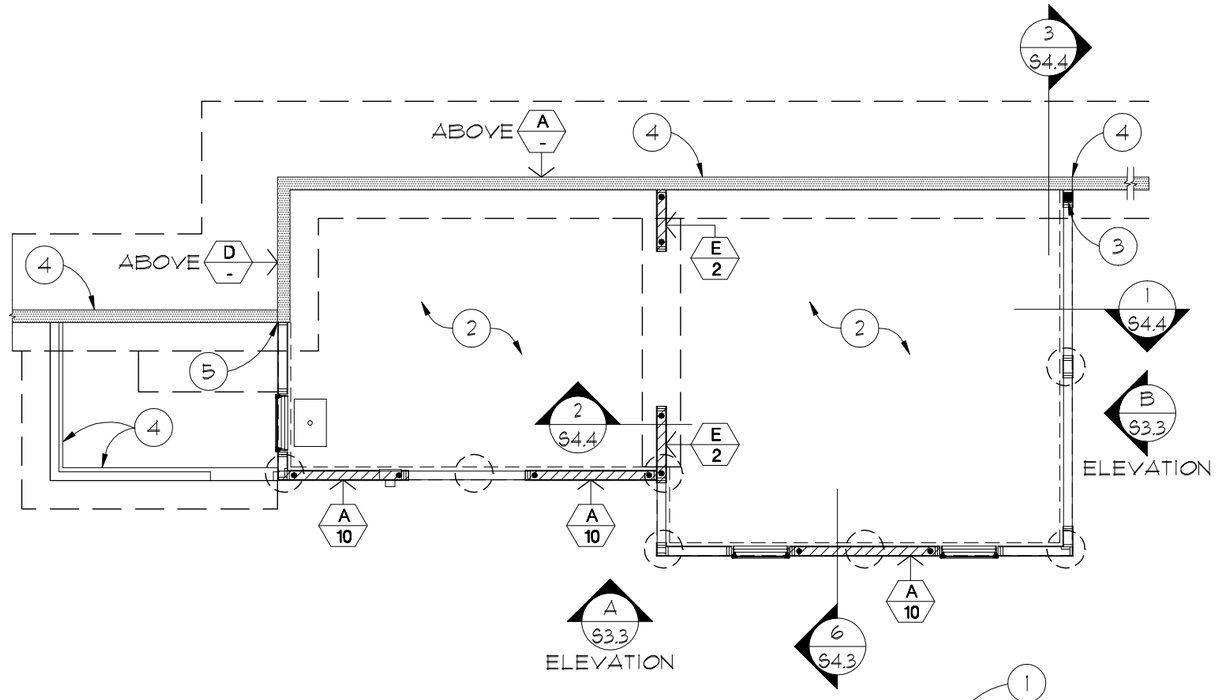
97202 Portland OR
1524 SE Lexington Street
Chi Steffen Design

ROOF FRAMING PLAN
Manzanita House

GARAGE FOUNDATION PLAN KEYNOTES:

1. VERIFY ALL DIMENSIONS AND CONDITIONS WITH ARCHITECTURAL DWGS. DIMENSIONS NOT SHOWN ARE PER APPROVED ARCH'L DWGS. RESOLVE ANY DISCREPANCIES WITH THE ARCHITECT PRIOR TO CONSTRUCTION.
2. CONCRETE SLAB-ON-GRADE SHALL BE 4-INCHES THICK W/ #3 @ 1'-6'' O/C E.W. AT SLAB CENTERLINE. PLACE OVER 6-INCH CLEAN & WASHED CRUSHED ROCK & COMPACTED GRANULAR FILL PER GEOTECH. FLOOR JOINTS @ 20'-0'' O/C MAX. E.W. PER 10/S3.2.
3. HSS 5x5x¼ COLUMN.
4. RETAINING WALL PER DETAIL 1/S4.1
5. VERTICAL CONTROL JOINT.



GARAGE FOUNDATION PLAN

SCALE: 1/8"=1'-0"

REGISTERED PROFESSIONAL ENGINEER
16,720
OREGON
JULY 20, 1993
RALPH TURNBAUGH

EXP: 6/30/10

TMR
T.M. RIPPEY
CONSULTING ENGINEERS

S2.4

Scale: 1/4" = 1'-0"
Date: 2/5/10
TMR Job: 7416

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97202 Portland OR

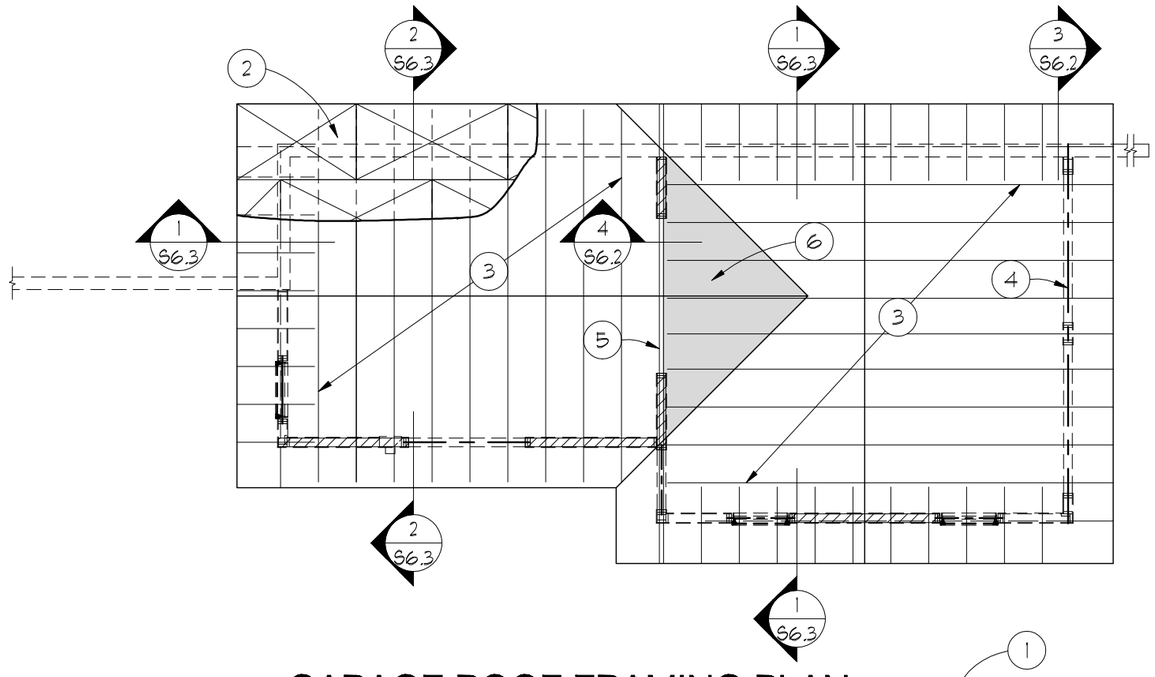
GARAGE FOUNDATION PLAN

Manzanita House

Chl Steffen Design 1524 SE Lexington Street

ROOF FRAMING KEYNOTES:

1. VERIFY ALL DIMENSIONS AND CONDITIONS WITH ARCHITECTURAL DWGS. DIMENSIONS NOT SHOWN ARE PER APPROVED ARCH'L DWGS. RESOLVE ANY DISCREPANCIES WITH THE ARCHITECT PRIOR TO CONSTRUCTION.
2. 5/8" PLYWOOD OR OSB NAILED W/ 10d @ 6" O/C EDGES & 1'-0" O/C FIELD. RUN FACE PLYWOOD PERPENDICULAR TO SUPPORTS & STAGGER END JOINTS.
3. PREFABRICATED ROOF TRUSSES @ 2'-0" O/C.
4. 6x10 CONTINUOUS.
5. PREFABRICATED GIRDER / DRAG TRUSS. DESIGN TOP CHORD FOR 335#/FT AND BOTTOM CHORD DRAG FORCE 3,500#.
6. PREFABICATED FILLER TRUSSES AT 2'-0" O/C OVER ROOF TRUSS AT ALL OVER FRAMED AREAS.



GARAGE ROOF FRAMING PLAN

SCALE: 1/8"=1'-0"

REGISTERED PROFESSIONAL ENGINEER
16,720
OREGON
JULY 20, 1993
RALPH TURNBAUGH
EXP: 6/30/10

TMR
T.M. RIPPEY
CONSULTING ENGINEER

S2.6

Scale: 1/4" = 1'-0"
Date: 2/5/10
TMR Job: 7416

tel: 503.238.8767 email: chi-steffen@comcast.net
97202

GARAGE ROOF FRAMING PLAN

Manzanita House

Chi Steffen Design 1524 SE Lexington Street Portland OR

A S3.1 ELEVATION SOUTH WALL FOUNDATION

BBH-08

SCALE: ⅛" = 1'-0"

REGISTERED PROFESSIONAL ENGINEER
16,720
OREGON
JULY 20, 1993
RALPH TURNBAUGH
EXP: 6/30/10

TMR
T.M. RIPPEY
CONSULTING ENGINEERS

S3.1

Scale: 1/4" = 1'-0"
Date: 2/5/10
TMR Job: 7416

email: chi-steffen@comcast.net
tel: 503.238.8767
Portland OR 97202
1524 SE Lexington Street
Chi Steffen Design

FOUNDATION ELEVATION
Manzanita House

A S3.2 ELEVATION WEST WALL FOUNDATION

BBH-09

SCALE: 1/8" = 1'-0"

B S3.2 ELEVATION EAST WALL FOUNDATION

BBH-10

SCALE: 1/8" = 1'-0"

REGISTERED PROFESSIONAL ENGINEER
16,720
OREGON
JULY 20, 1993
RALPH TURNBAUGH
EXP: 6/30/10

TMR
T.M. RIPPEY
CONSULTING ENGINEER

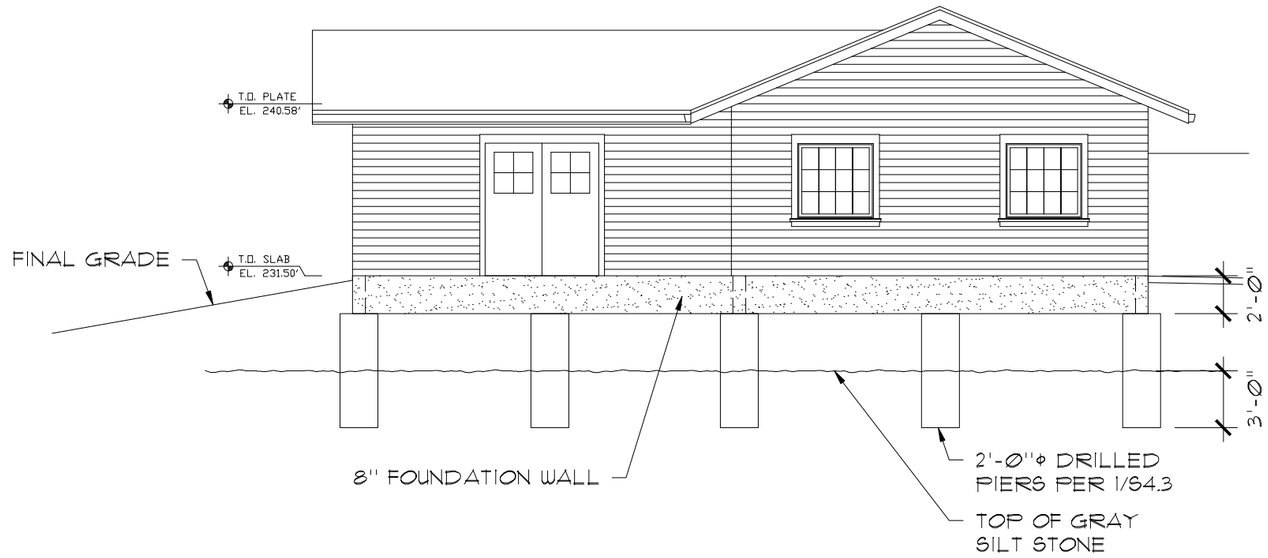
S3.2

Scale: 1/4" = 1'-0"
Date: 2/5/10
TMR Job: 7416

email: chi-steffen@comcast.net
tel: 503.238.8767
Portland OR 97202
1524 SE Lexington Street
Chi Steffen Design

FOUNDATION ELEVATION

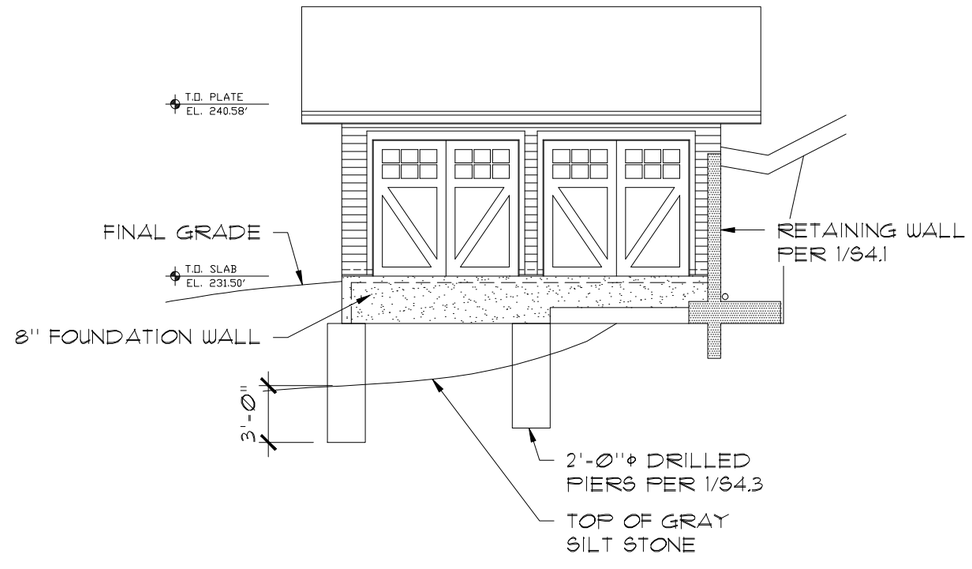
Manzanita House



A / S3.3 — ELEVATION SOUTH GARAGE FOUNDATION WALL

BBH-44

SCALE: 1/8" = 1'-Ø"



B / S3.3 — ELEVATION
EAST GARAGE FOUNDATION WALL

BBH-45

SCALE: 1/8" = 1'-Ø"

REGISTERED PROFESSIONAL ENGINEER
16,720
OREGON
JULY 20, 1993
RALPH TURNBAUGH
EXP: 6/30/10

TMR
T.M. RIPPEY
CONSULTING ENGINEERS

S3.3

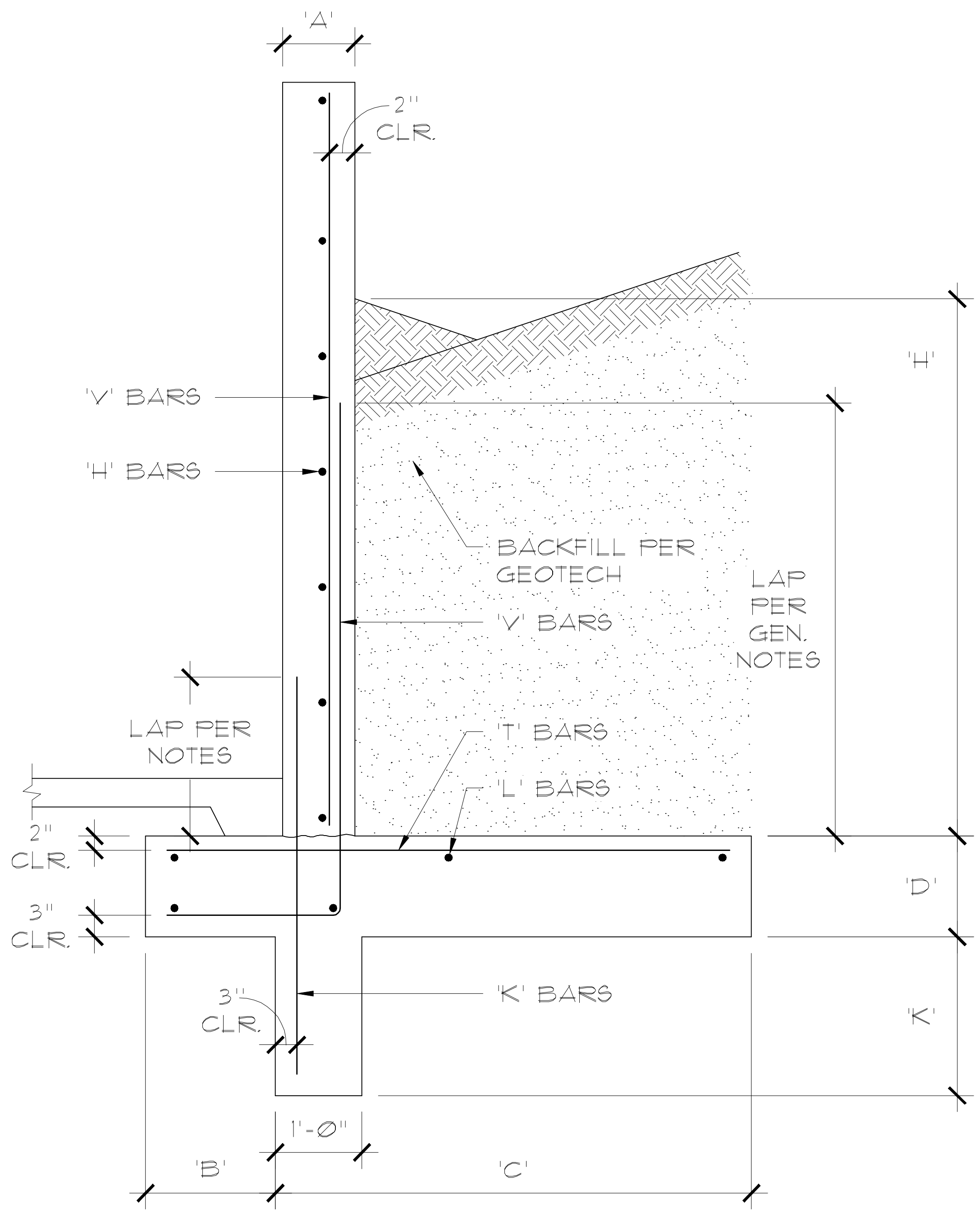
Scale: 1/4" = 1'-0"
Date: 2/5/10
TMR Job: 7416

tel: 503.238.8767 email: chi-steffen@comcast.net
Portland OR 97202

FOUNDATION ELEVATION

Manzanita House

Chi Steffen Design 1524 SE Lexington Street



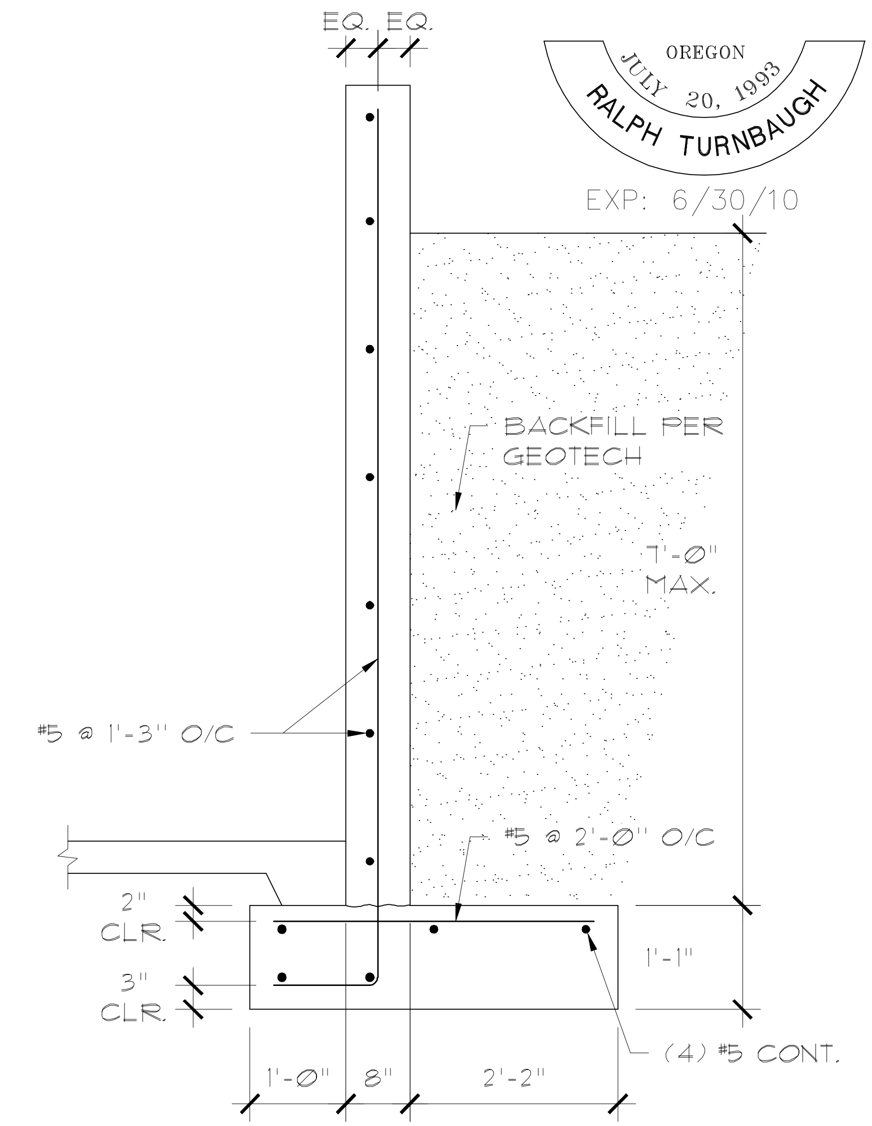
RETAINING WALL SCHEDULE										
'H'	'A'	'B'	'C'	'D'	'K'	'V' BARS	'T' BARS	'H' BARS	'K' BARS	'L' BARS
12'-0"	10"	1'-6"	8'-7"	1'-4"	1'-8"	#6 @ 6" O/C	#5 @ 7½" O/C	#5 @ 1'-4" O/C	#5 @ 1'-6" O/C	#5 @ 1'-4" O/C
11'-0"	10"	1'-6"	7'-1"	1'-4"	1'-6"	#6 @ 8" O/C	#5 @ 10" O/C	#5 @ 1'-4" O/C	#5 @ 1'-6" O/C	#5 @ 1'-4" O/C
10'-0"	10"	1'-6"	5'-10"	1'-4"	1'-4"	#6 @ 10" O/C	#5 @ 1'-1" O/C	#5 @ 1'-4" O/C	#5 @ 1'-6" O/C	#5 @ 1'-4" O/C
9'-0"	10"	1'-6"	4'-10"	1'-2"	1'-4"	#6 @ 1'-0" O/C	#5 @ 1'-3" O/C	#5 @ 1'-4" O/C	#5 @ 1'-6" O/C	#5 @ 1'-4" O/C
8'-0"	10"	1'-6"	4'-6"	1'-2"	1'-0"	#6 @ 1'-5" O/C	#5 @ 10" O/C	#5 @ 1'-4" O/C	#5 @ 1'-6" O/C	#5 @ 1'-4" O/C

1 EXTERIOR RETAINING WALL

S4.1 BBH-11

SCALE: ½" = 1'-0"

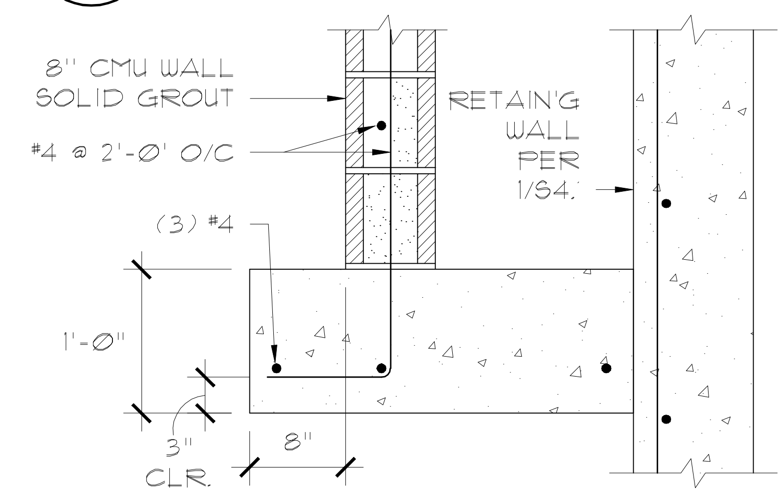
REGISTERED PROFESSIONAL ENGINEER
16,720
OREGON
JULY 20, 1993
RALPH TURNBAUGH
EXP: 6/30/10



2 INTERIOR RETAINING WALL

S4.1 BBH-12

SCALE: ½" = 1'-0"



3 CMU WALL / FOOTING

S4.1 BBH-56

SCALE: ¾" = 1'-0"

FOUNDATION DETAILS

Manzanita House

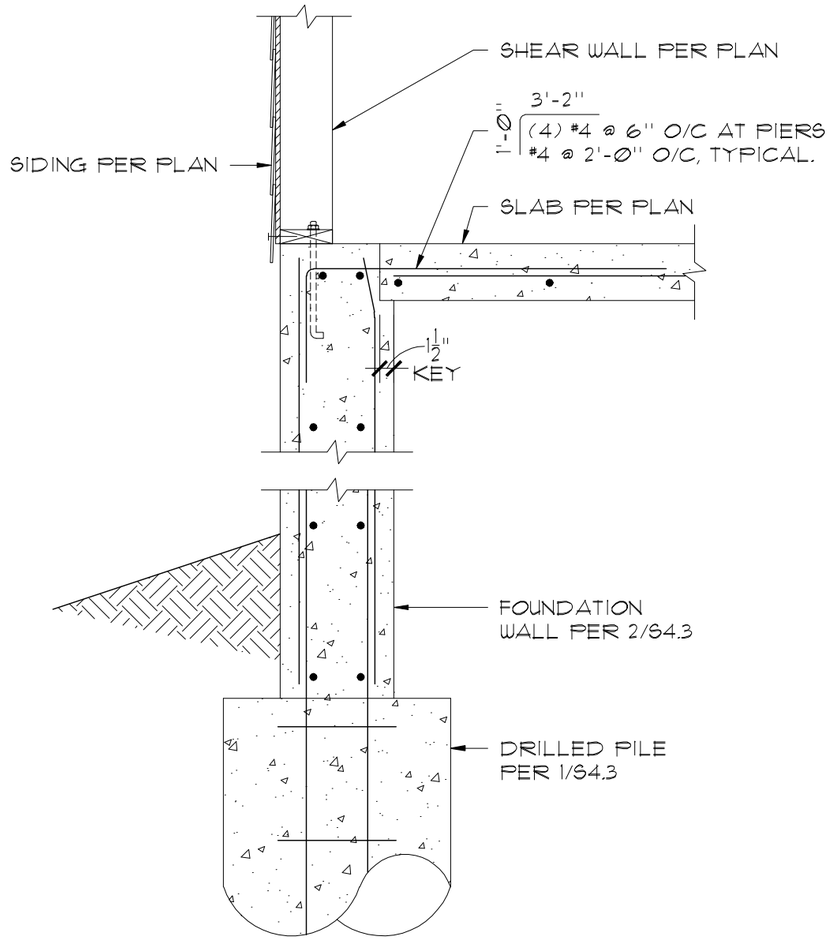
Chi Steffen Design 1524 SE Lexington Street Portland OR 97202

tel: 503.238.8767 email: chi-steffen@comcast.net

T.M. RIPPEY CONSULTING ENGINEERS

Scale: 1/4" = 1'-0"
Date: 2/5/10
TMR Job: 7416

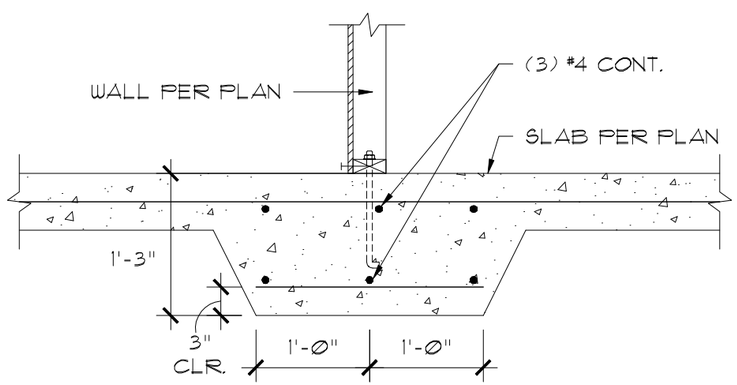
S4.1



1 S4.2 FOUNDATION WALL

BBH-13

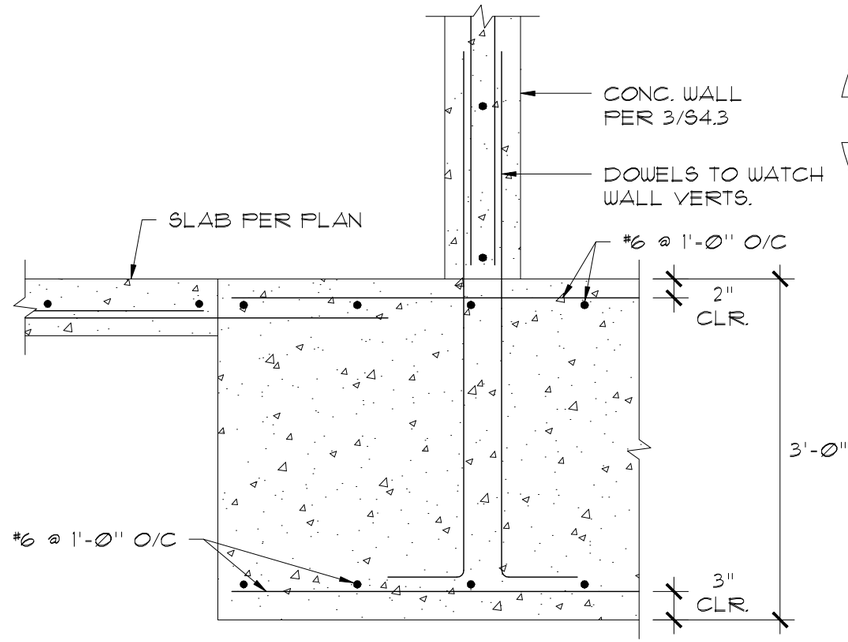
SCALE: 3/4" = 1'-Ø"



3 S4.2 SHEAR WALL / FOOTING

BBH-16

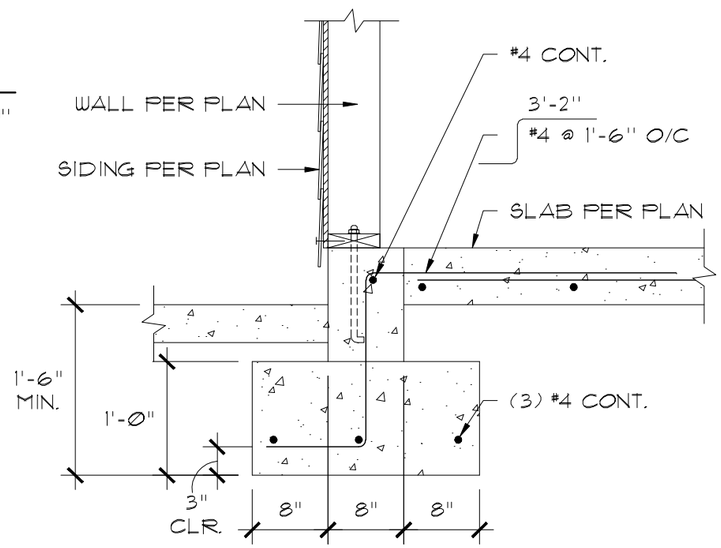
SCALE: 3/4" = 1'-Ø"



2 S4.2 SHEAR WALL / MAT FOOTING

BBH-15

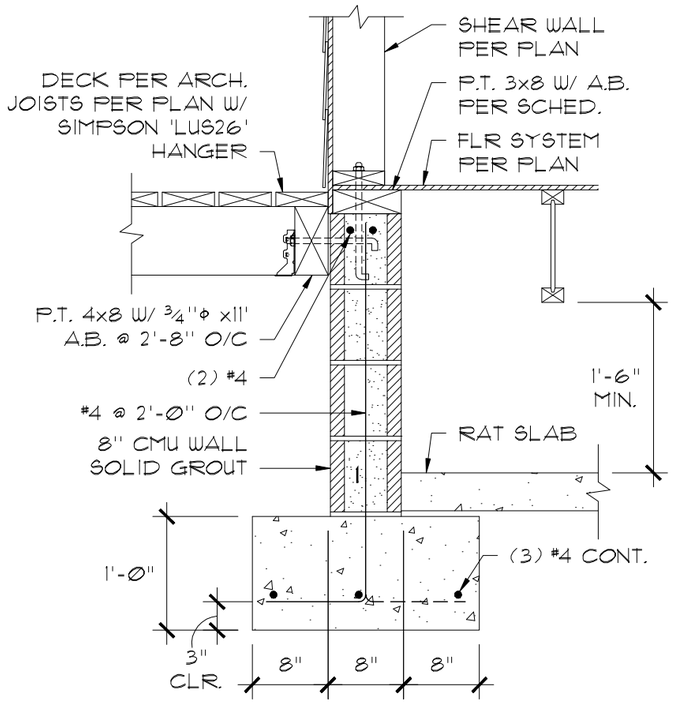
SCALE: 3/4" = 1'-Ø"



4 S4.2 FOUNDATION WALL

BBH-14

SCALE: 3/4" = 1'-Ø"



5 S4.2 CMU FOUNDATION WALL

BBH-17

SCALE: 3/4" = 1'-Ø"

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RALPH TURNBAUGH
EXP: 6/30/10

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email: chl-steffen@comcast.net

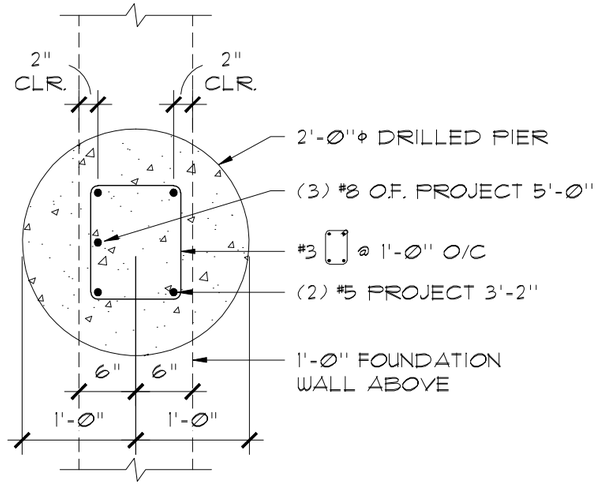
S4.2

Scale: 1/4" = 1'-0"
Date: 2/5/10
TMR Job: 7416

FOUNDATION DETAILS

Manzanita House

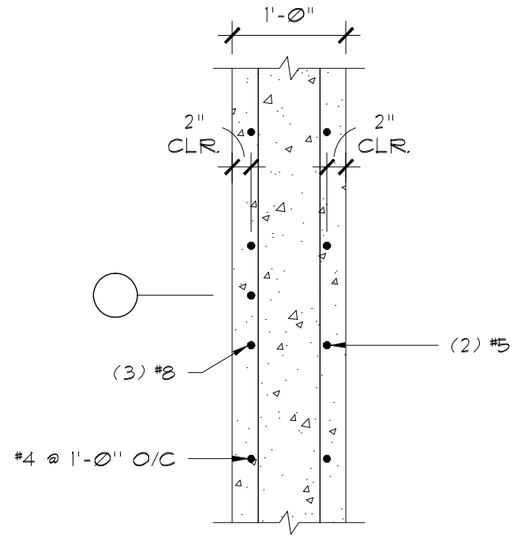
Chl Steffen Design



1 S4.3 — DRILLED PIER

BBH–18

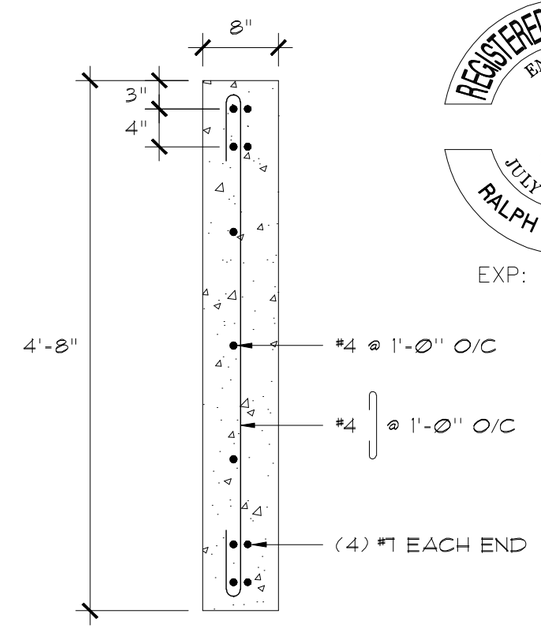
SCALE: ¾" = 1'-Ø"



2 S4.3 — FOUNDATION WALL AT PIERS

BBH–19

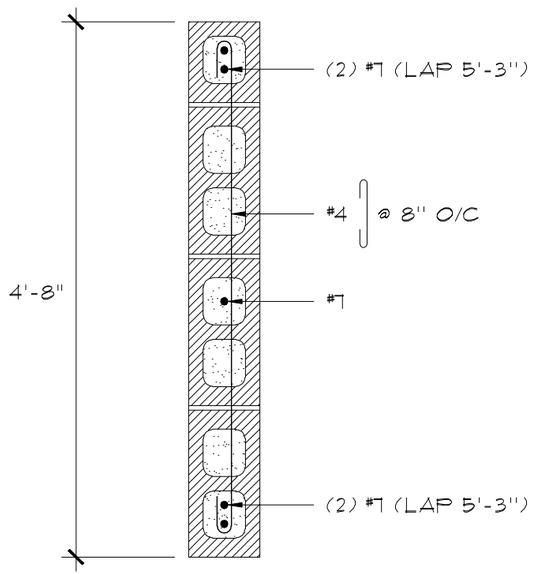
SCALE: ¾" = 1'-Ø"



3 S4.3 — CONCRETE SHEAR WALL

BBH–20

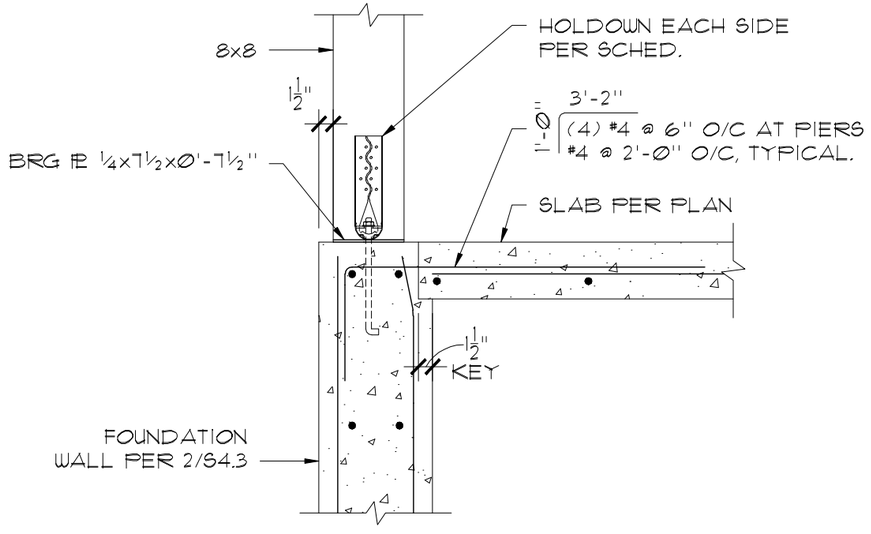
SCALE: ¾" = 1'-Ø"



4 S4.3 — CMU WALL

BBH–21

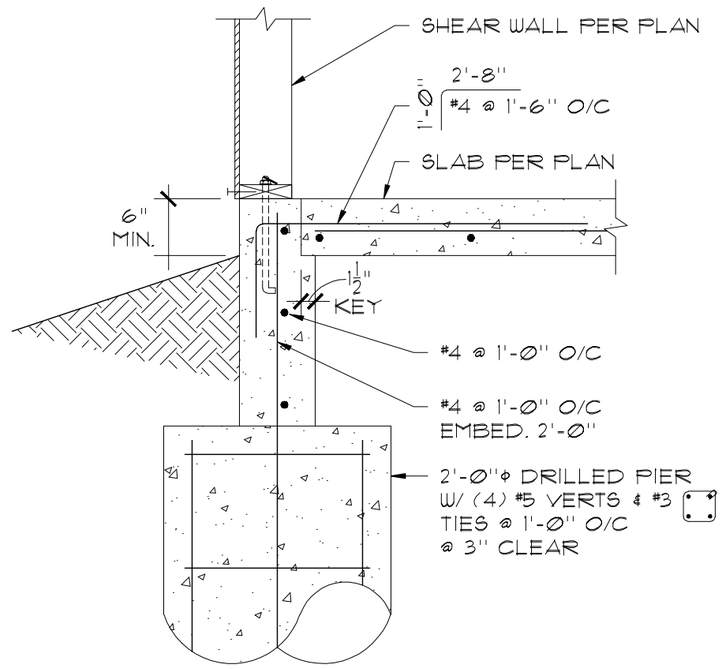
SCALE: ¾" = 1'-Ø"



5 S4.3 — 8x8 / FOUNDATION WALL

BBH–22

SCALE: ¾" = 1'-Ø"



GARAGE FLOOR / DRILLED PIERS

6 S4.3

BBH–46

SCALE: ¾" = 1'-Ø"

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OREGON
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RALPH TURNBAUGH

EXP: 6/30/10

TMR
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CONSULTING ENGINEERS

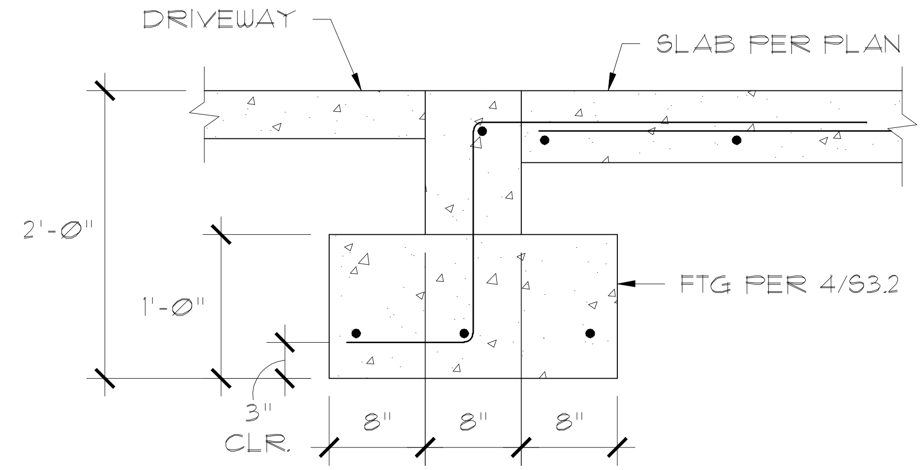
S4.3

Scale: 1/4" = 1'-0"
Date: 2/5/10
TMR Job: 7416

tel: 503.238.8767 email: chi-steffen@comcast.net
Portland OR 97202 1524 SE Lexington Street Chi Steffen Design

FOUNDATION DETAILS

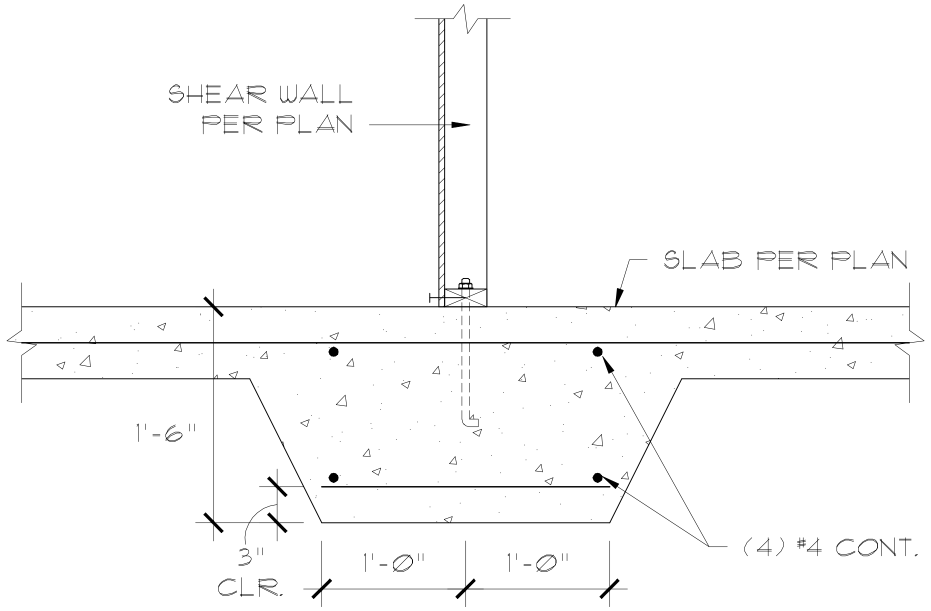
Manzanita House



1 / S4.4 FOUNDATION WALL

BBH-47

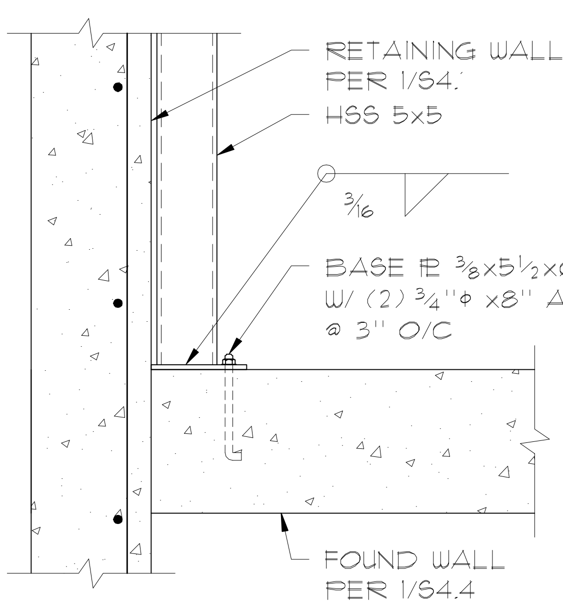
SCALE: 3/4" = 1'-0"



2 / S4.4 SHEAR WALL / FOOTING

BBH-48

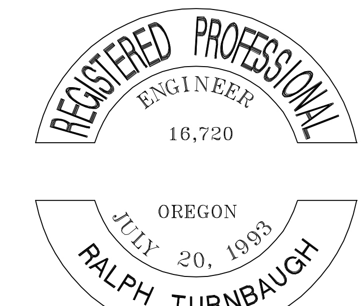
SCALE: 3/4" = 1'-0"



3 / S4.4 CMU WALL / FOOTING

BBH-57

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



EXP: 6/30/10

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CONSULTING ENGINEERS

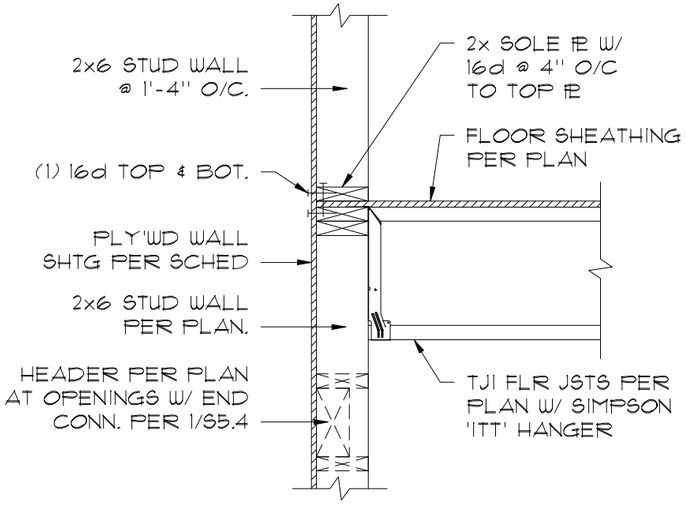
S4.4

Scale: 1/4" = 1'-0"
Date: 2/5/10
TMR Job: 7416

FOUNDATION DETAILS

Manzanita House

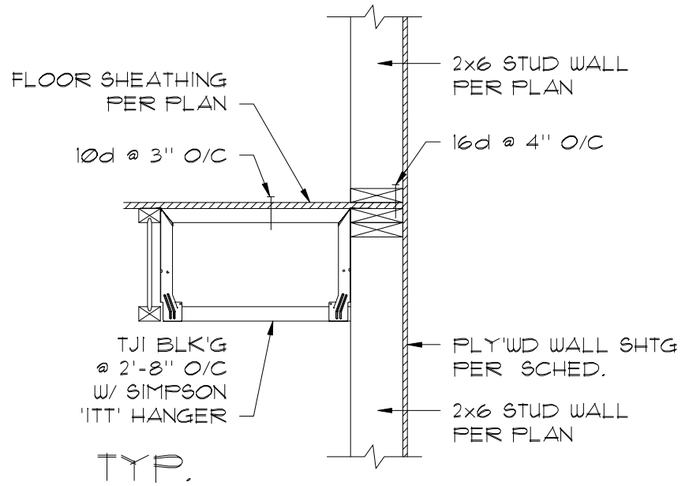
Chi Steffen Design 1524 SE Lexington Street Portland OR 97202 tel: 503.238.8767 email: chi-steffen@comcast.net



1 S5.1 — TYP FLOOR TO WALL

BBH–23

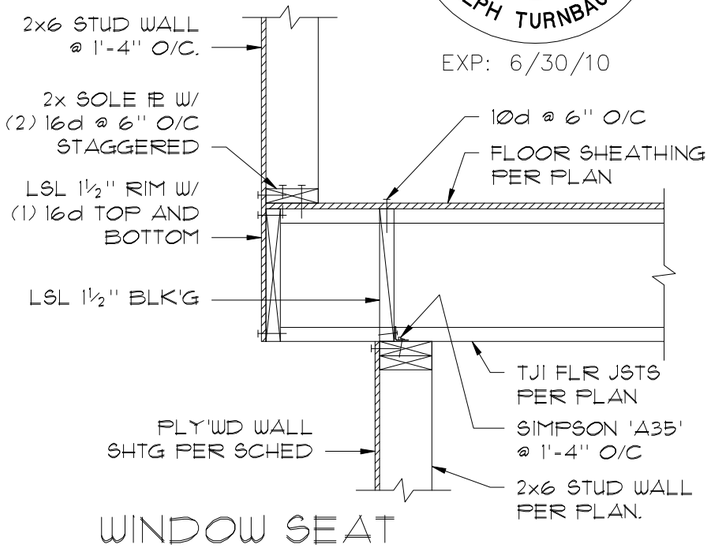
SCALE: ¾" = 1'-Ø"



2 S5.1 — TYP. PARALLEL FLOOR TO WALL

BBH–24

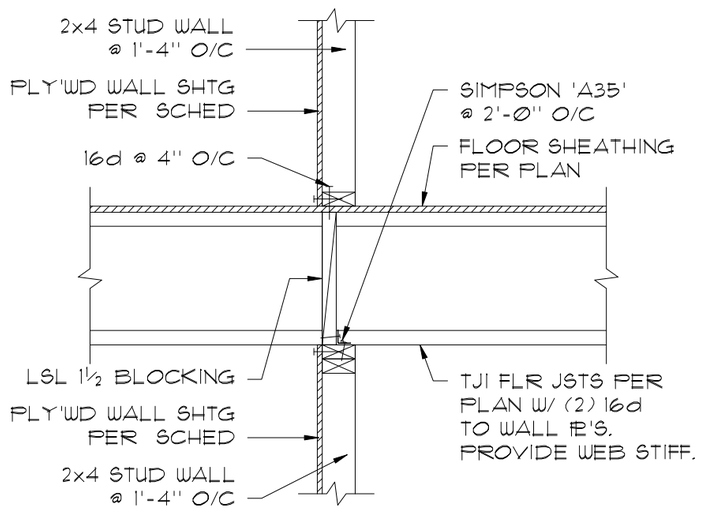
SCALE: ¾" = 1'-Ø"



3 S5.1 — WINDOW SEAT 2ND FLOOR TO WALL

BBH–25

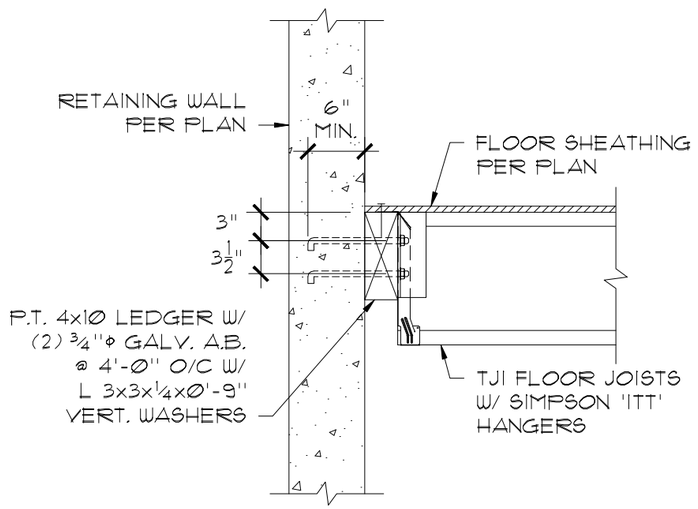
SCALE: ¾" = 1'-Ø"



4 S5.1 — FLOOR TO INT. BRG. WALL

BBH–26

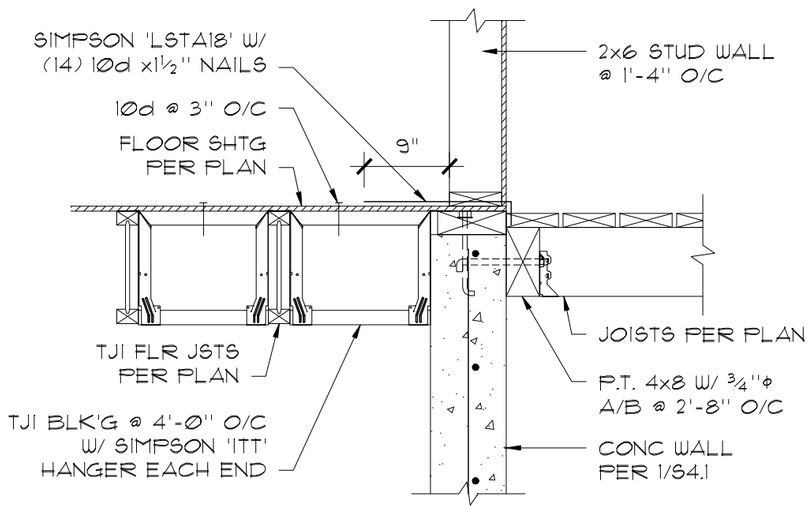
SCALE: ¾" = 1'-Ø"



5 S5.1 — FLOOR / RETAINING WALL

BBH–27

SCALE: ¾" = 1'-Ø"



6 S5.1 — FLOOR / PORCH / FOUND. WALL

BBH–28

SCALE: ¾" = 1'-Ø"

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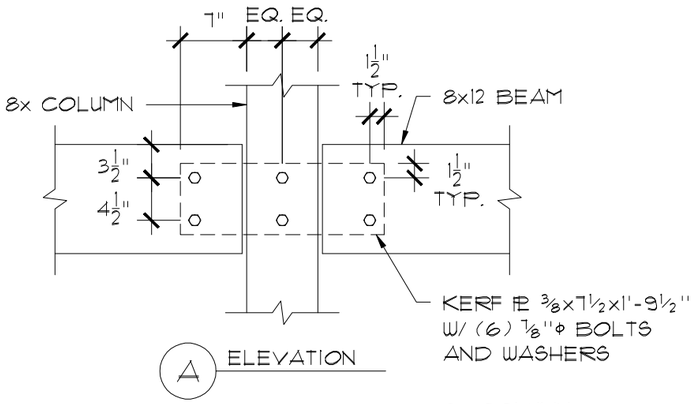
Chl Steffen Design

S5.1

Scale: 1/4" = 1'-0"
Date: 2/5/10
TMR Job: 7416

FLOOR FRAMING DETAILS

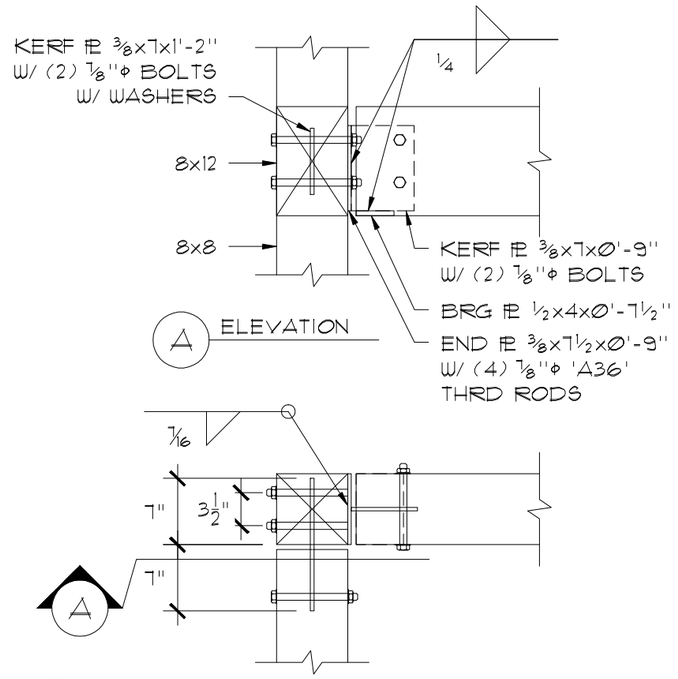
Manzanita House



1 S5.2 — 8x BEAM / 8x COLUMN

BBH-29

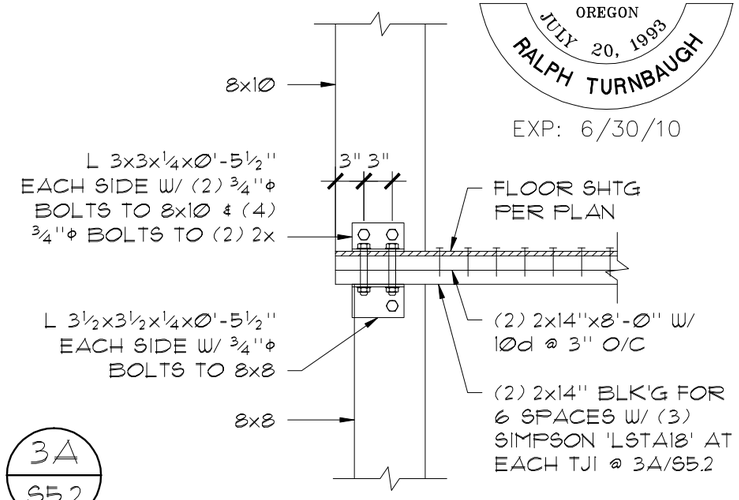
SCALE: 3/4" = 1'-0"



2 S5.2 — 8x BM / 8x CORNER COL.

BBH-30

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



3A S5.2

3 S5.2 — 8x COLUMNS / 2ND FLOOR

BBH-33

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

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RALPH TURNBAUGH
EXP: 6/30/10

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Scale: 1/4" = 1'-0"
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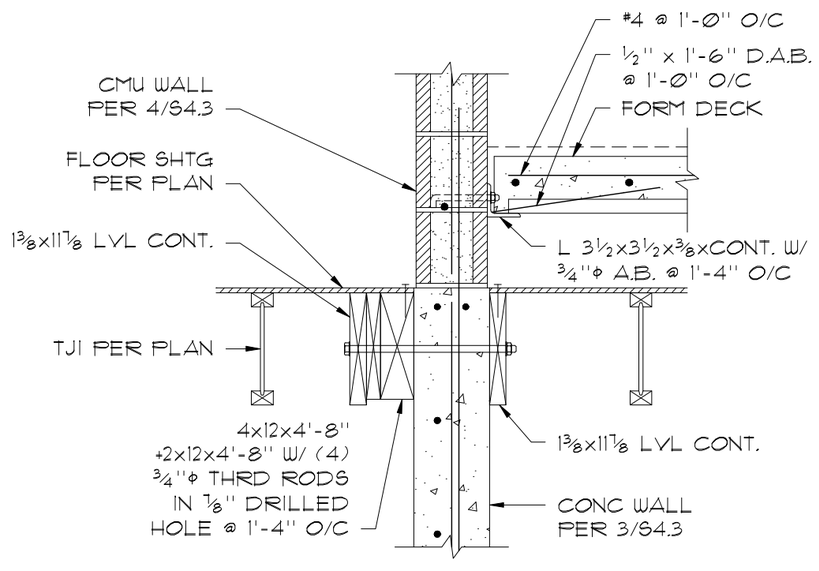
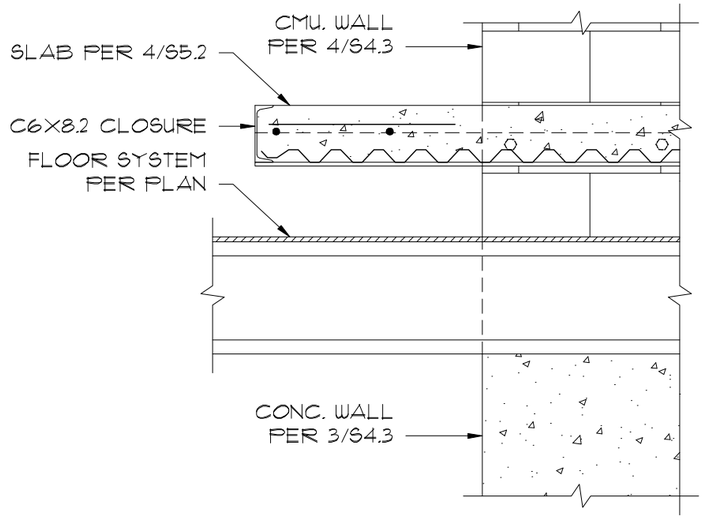
97202



4 S5.2 — 2ND FLOOR / CONCRETE WALL

BBH-31

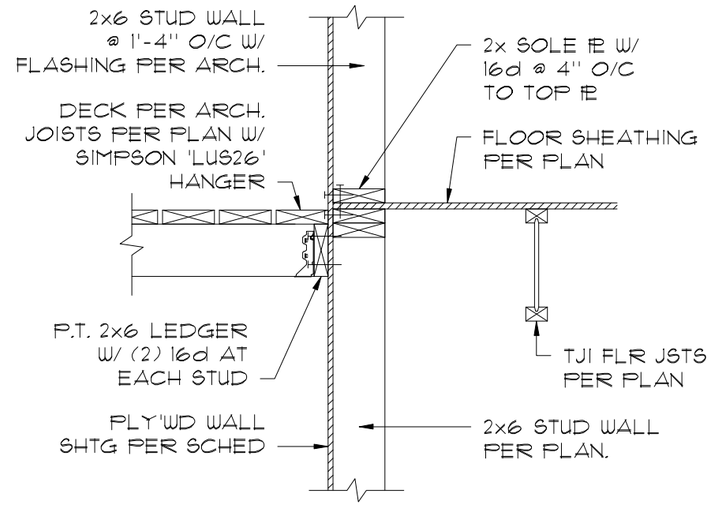
SCALE: 3/4" = 1'-0"



5 S5.2 — 2ND FLOOR / FIREPLACE

BBH-32

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



6 S5.2 — TYP FLOOR TO WALL

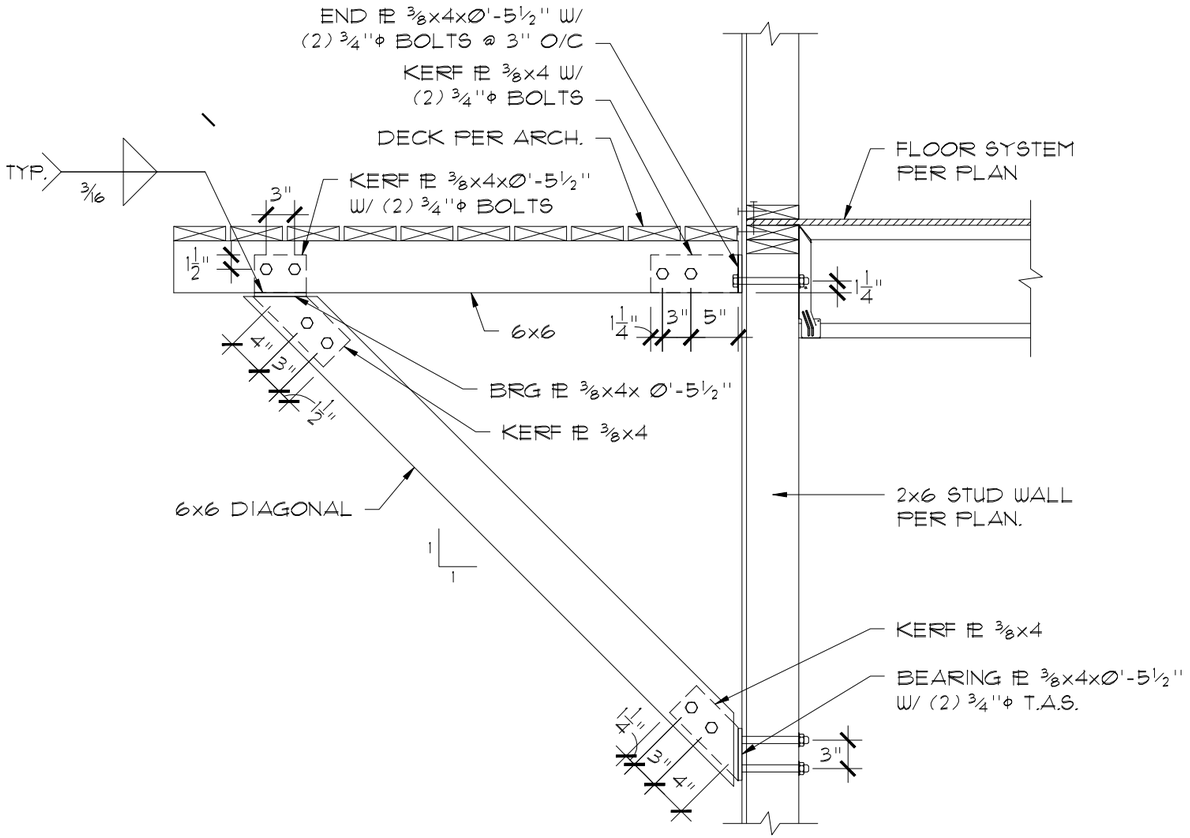
BBH-34

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

FLOOR FRAMING DETAILS

Manzanita House

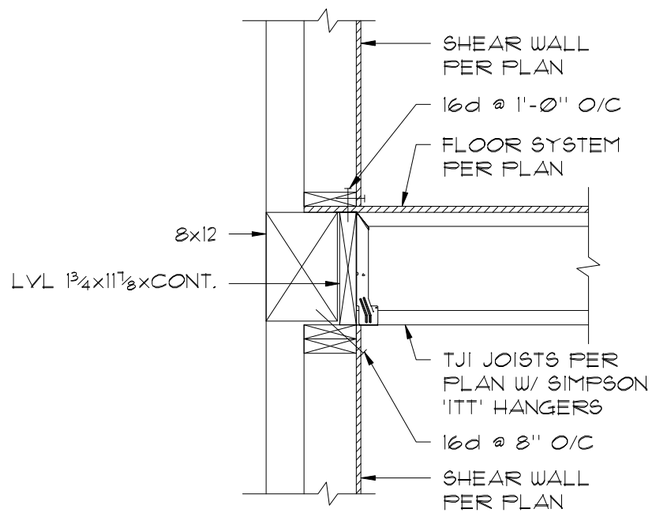
Chl Steffen Design — **1524 SE Lexington Street** — **Portland OR**



1 S5.3 DECK / NORTH WALL

BBH-35

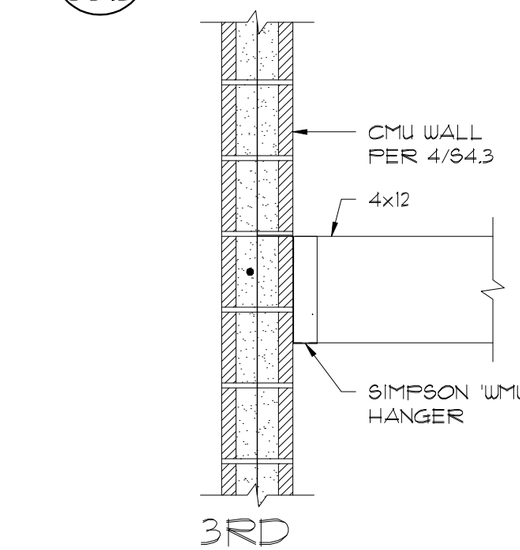
SCALE: 3/4'' = 1'-Ø''



2 S5.3 8x12 / 3RD FLOOR

BBH-36

SCALE: 3/4'' = 1'-Ø''

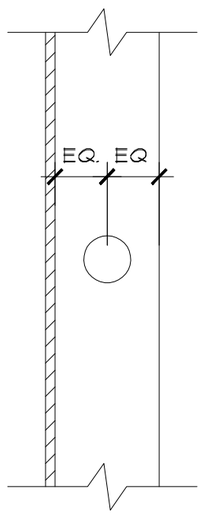


3RD

3 S5.3 FLR / CMU WALL

BBH-37

SCALE: 3/4'' = 1'-Ø''



STUD HOLE CHART (a) (b)

STUD SIZE	MAX HOLE DIAMETER, IN INCHES
SINGLE 2x4	1.25
SINGLE 2x6 OR DBL 2x4	1.5
SINGLE 3x4	1.5
DOUBLE 2x6	2.5

NOTES

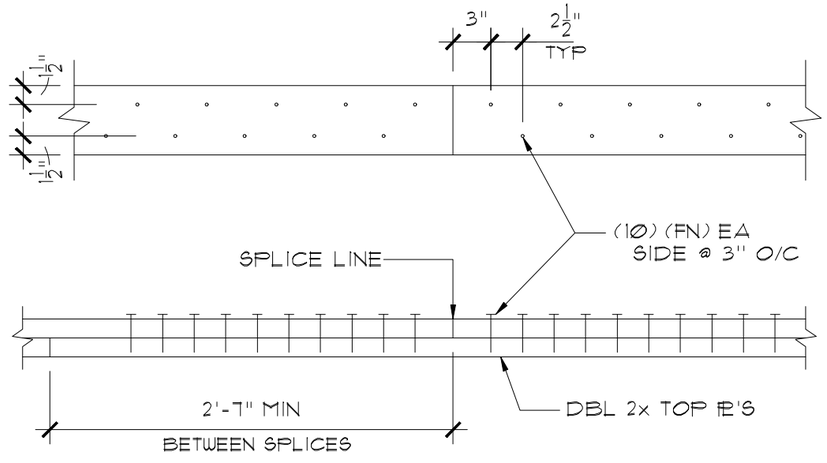
a) AT PLUMBING/MECHANICAL/ELECTRICAL LINES ADD EXTRA STUDS EQUAL TO AREA OF STUD REMOVED BY DRILLING HOLES.

b) CONTACT ENGINEER OF RECORD BEFORE DRILLING ANY HOLDOWN OR EXTERIOR WALL STUDS.

4 S5.3 SECTION

BBH-55

SCALE: 1½'' = 1'-Ø''



NOTE:
WHERE PLATE DISCONTINUITIES ARE CREATED BY BMS, PIPES, ETC., SEE DETAIL 4/S5.3

5 S5.3 TYP DBL PL SPLICE DETAIL

BBH-54

SCALE: 1'' = 1'-Ø''

REGISTERED PROFESSIONAL ENGINEER
16,720
OREGON
JULY 20, 1993
RALPH TURNBAUGH
EXP: 6/30/10

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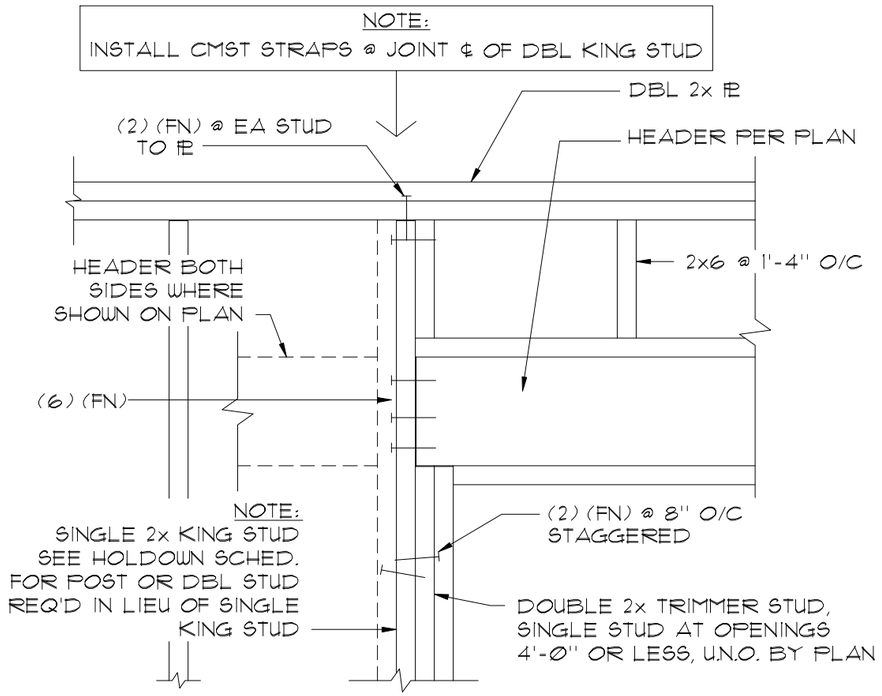
Manzanita House

FLOOR FRAMING DETAILS

Scale: 1/4" = 1'-0"
Date: 2/5/10
TMR Job: 7416

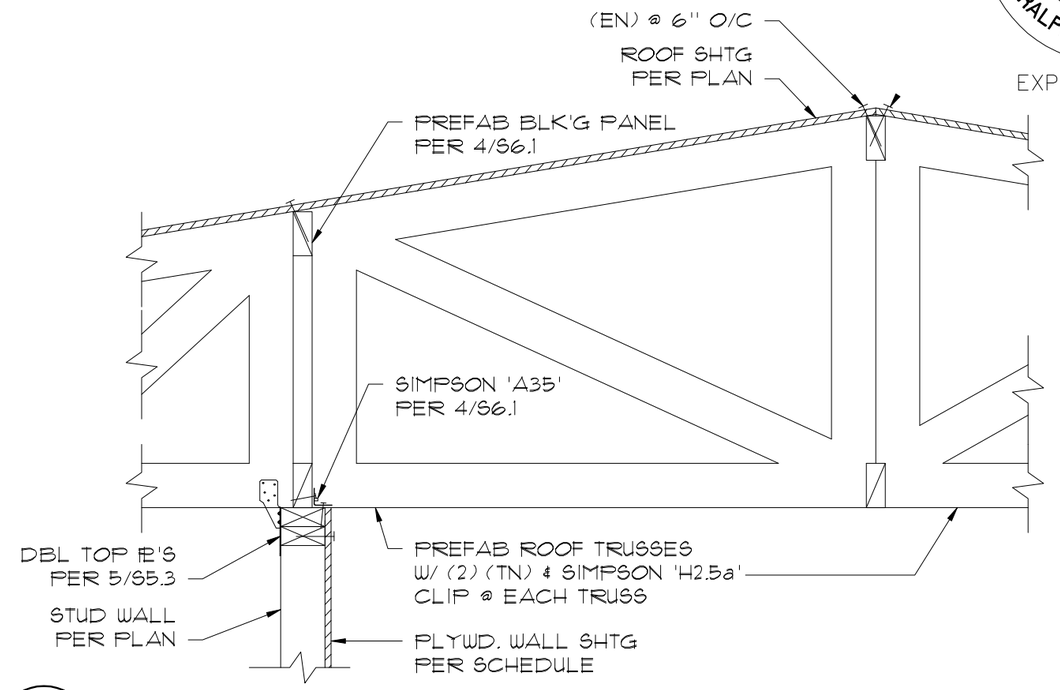
S5.3



1 S5.4 BBH-53

TYP HEADER END CONNECTION

SCALE: 1" = 1'-Ø"



2 S5.4 BBH-60

ROOF / EAST & WEST SHEAR WALL

SCALE: 1" = 1'-Ø"

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16,720
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S5.4

Scale: 1/4" = 1'-0"
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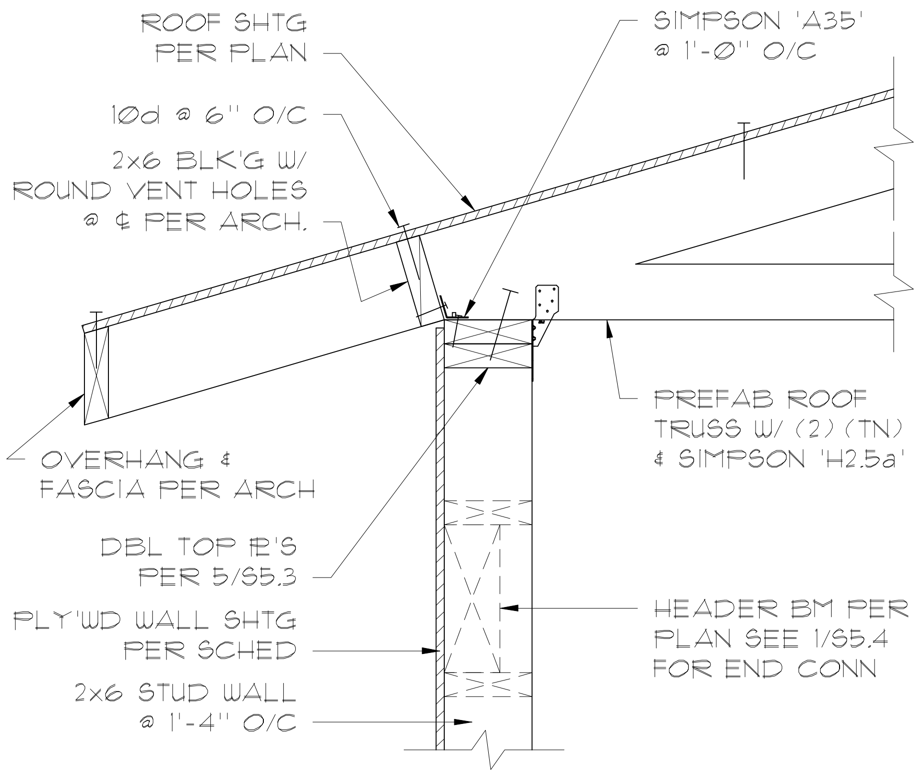
Portland OR 97202

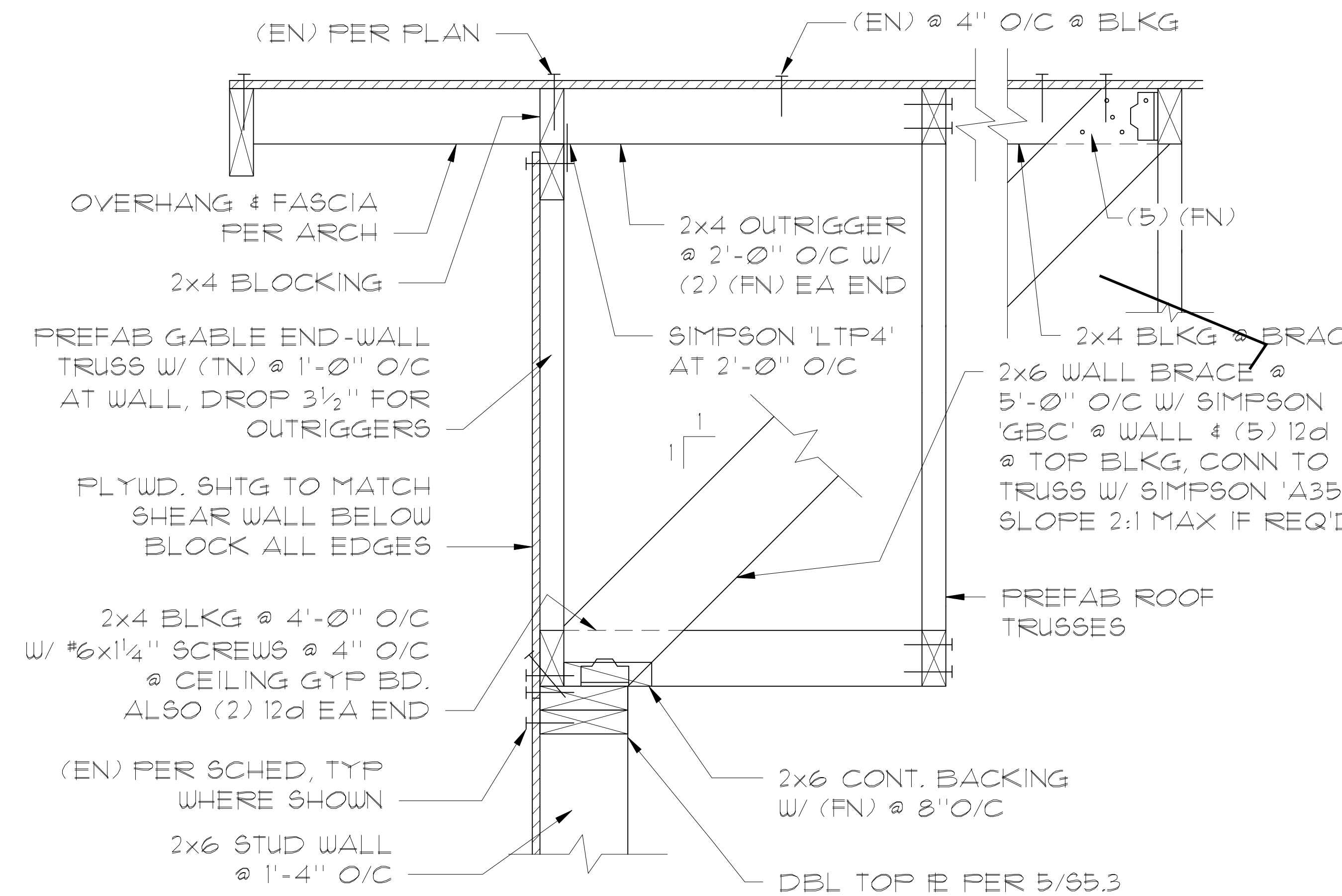
FLOOR FRAMING DETAILS

Manzanita House

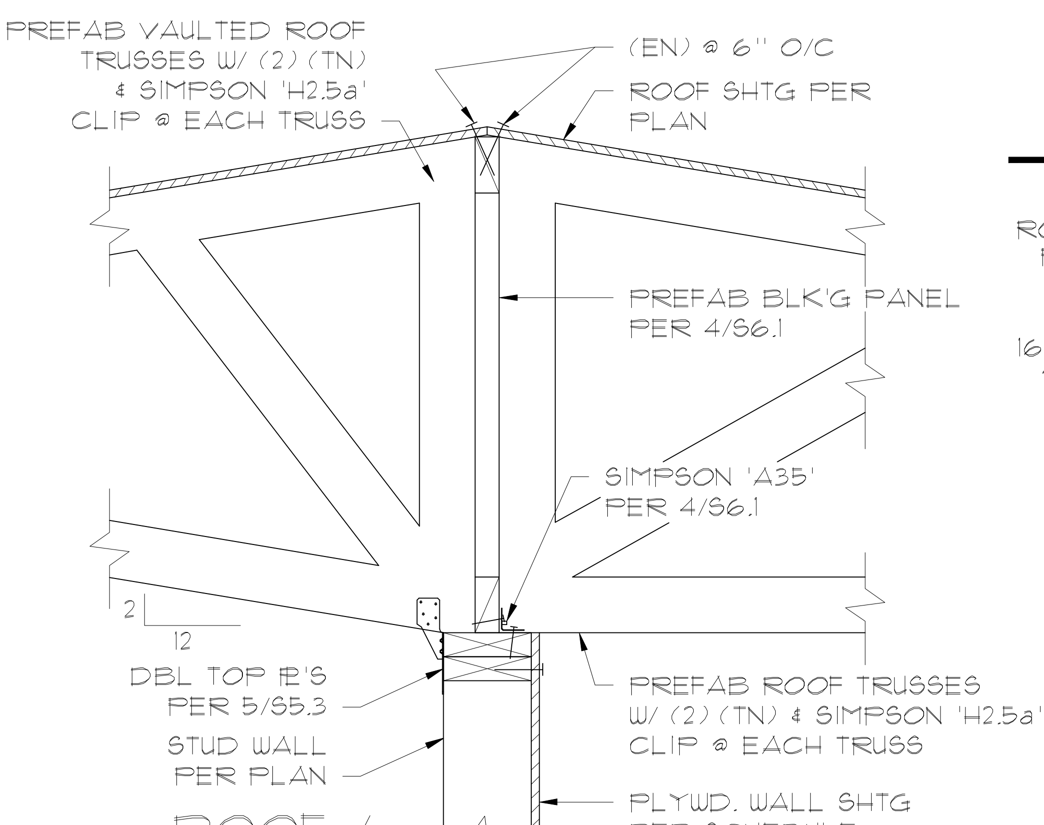
Chl Steffen Design 1524 SE Lexington Street



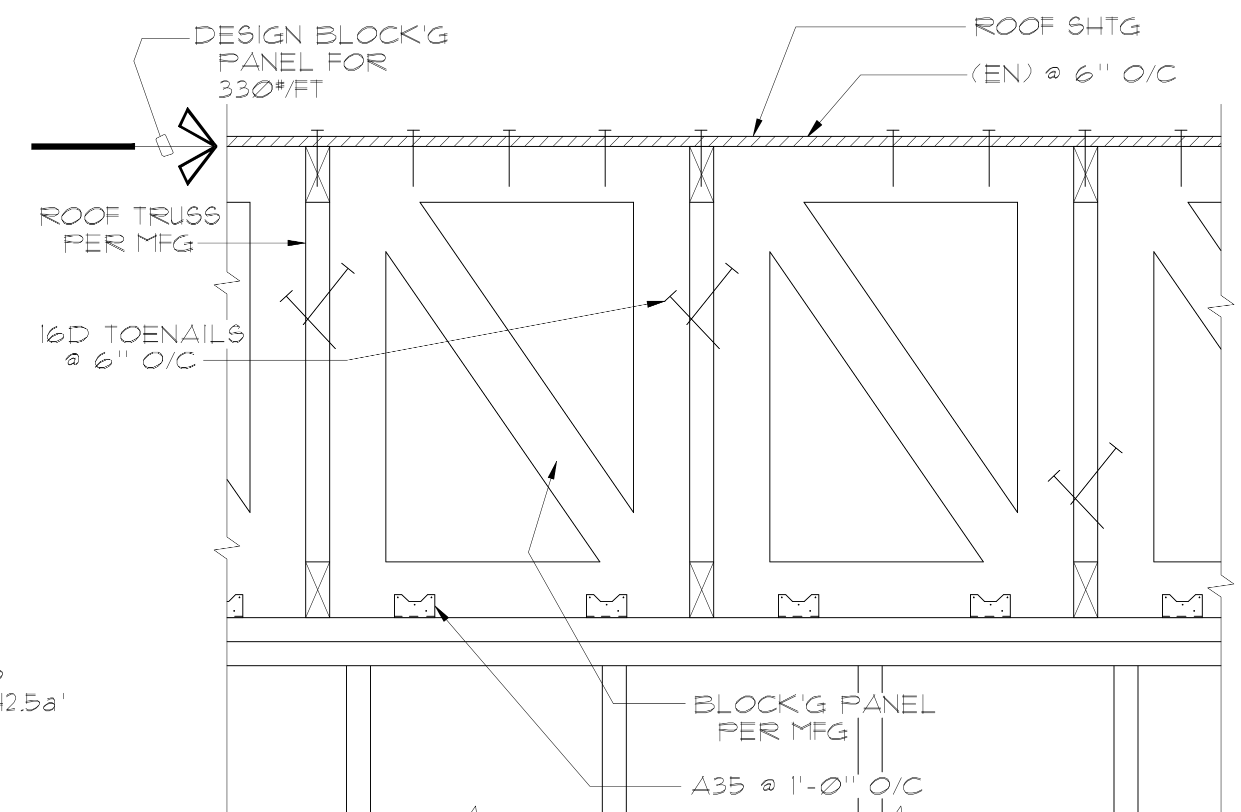
1 S6.1 ROOF FRAMING SECTION
BBH-38
SCALE: 1" = 1'-0"



2 S6.1 FRAMING SECTION
BBH-39
SCALE: 1" = 1'-0"



3 S6.1 ROOF / EAST & WEST SHEAR WALL
BBH-40
SCALE: 1" = 1'-0"



4 S6.1 TYP PREFAB BLOCK'G PANEL
BBH-41
SCALE: 1" = 1'-0"

REGISTERED PROFESSIONAL ENGINEER
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OREGON
JULY 20, 1993
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EXP: 6/30/10

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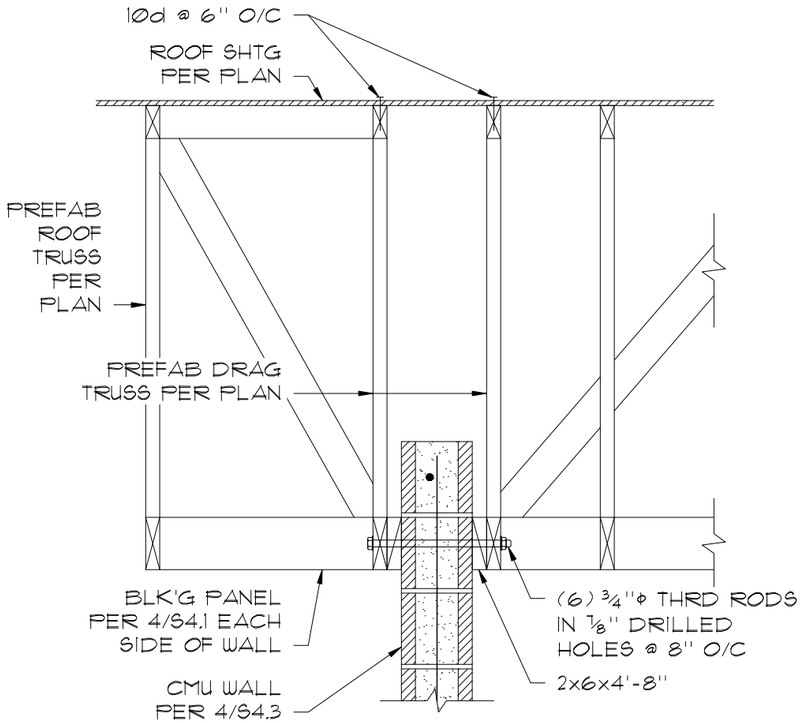
S6.1

Scale: 1/4" = 1'-0"
Date: 2/5/10
TMR Job: 7416

ROOF FRAMING DETAILS

Manzanita House

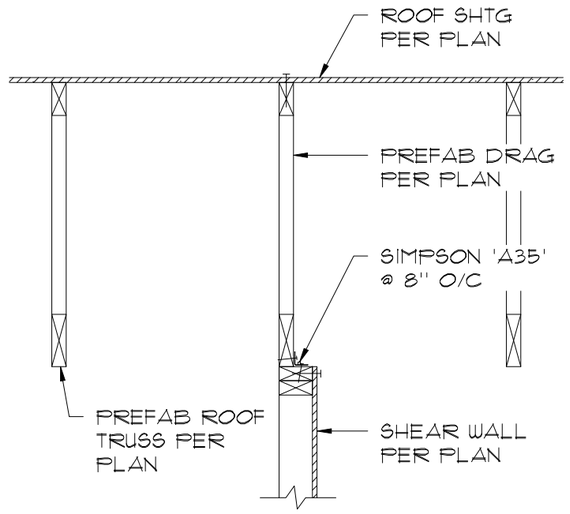
Chi Steffen Design 1524 SE Lexington Street Portland OR 97202 tel: 503.238.8767 email: chi-steffen@comcast.net



1 S6.2 — ROOF / CMU SHEAR WALL

BBH–42

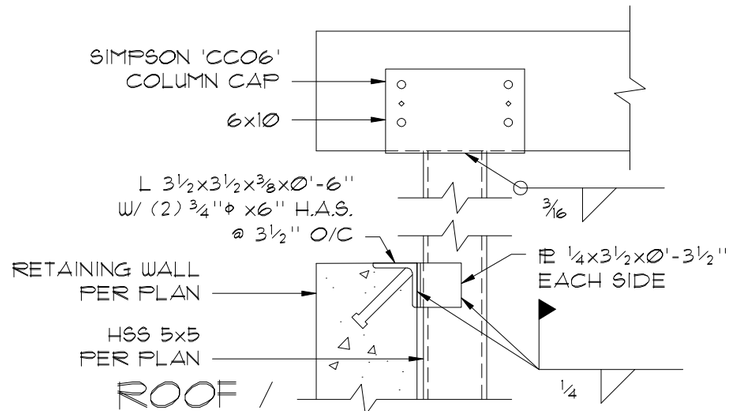
SCALE: ¾'' = 1'-Ø''



2 S6.2 — ROOF / SHEAR WALL

BBH–43

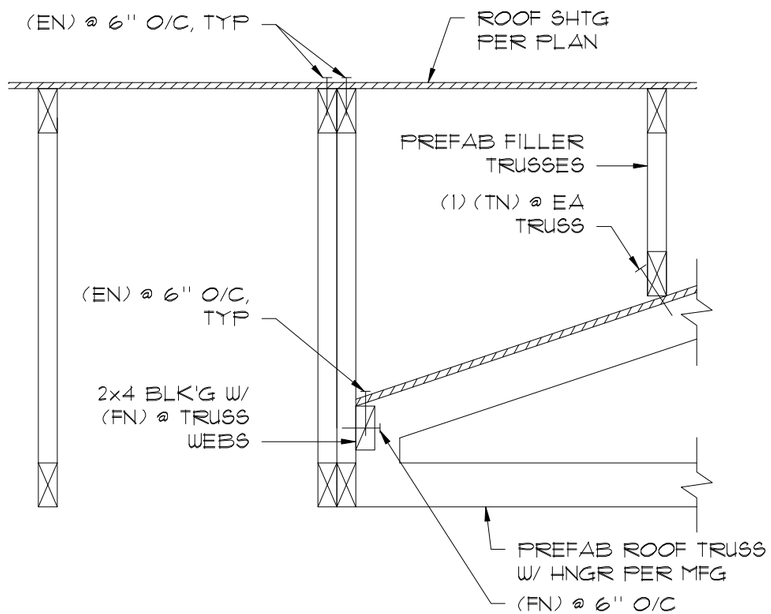
SCALE: ¾'' = 1'-Ø''



3 S6.2 — HSS 5x5 / RETAINING WALL

BBH–51

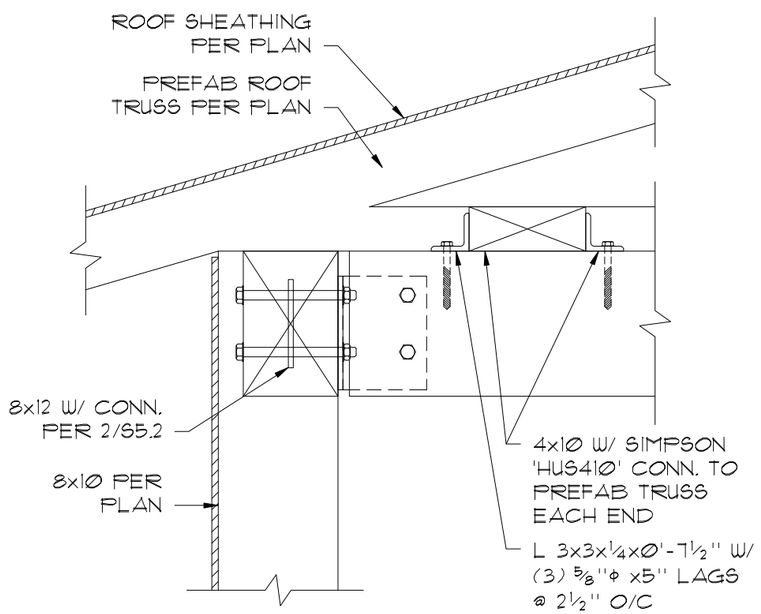
SCALE: 1'' = 1'-Ø''



4 S6.2 — FRAMING SECTION

BBH–52

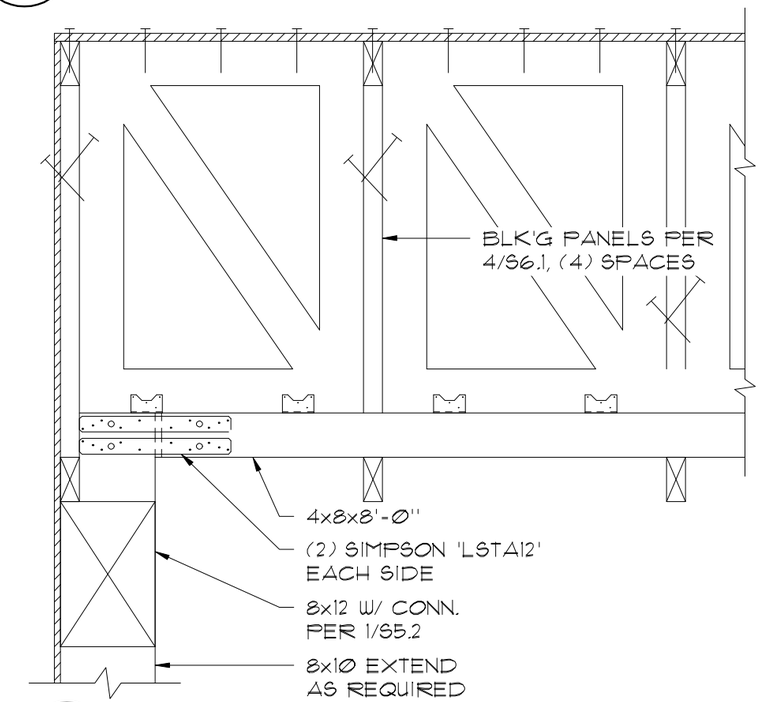
SCALE: 1'' = 1'-Ø''



5 S6.2 — ROOF 8x BM / 8x COLUMN

BBH–58

SCALE: 1'' = 1'-Ø''



6 S6.2 — 8x10 / ROOF

BBH–59

SCALE: 1'' = 1'-Ø''

REGISTERED PROFESSIONAL ENGINEER
16,720
OREGON
JULY 20, 1993
RALPH TURNBAUGH
EXP: 6/30/10

TMR
T.M. RIPPEY
CONSULTING ENGINEERS
tel: 503.238.8767
email: chl-steffen@comcast.net
Portland OR 97202
1524 SE Lexington Street

S6.2

Scale: 1/4'' = 1'-0''
Date: 2/5/10
TMR Job: 7416

ROOF FRAMING DETAILS

Manzanita House
CHI Steffen Design

1 S6.3 ROOF / NORTH WALL

BBH-50

SCALE: 1" = 1'-0"

2 S6.3 ROOF / NORTH WALL

BBH-49

SCALE: 1" = 1'-0"

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