Planning & Building Agency
Building Safety Division
20 Civic Center Plaza
P.O. Box 1988 (M-19)
Santa Ana, CA 92702
(714) 647-5800
www.santa-ana.org

RESIDENTIAL PLAN CHECK COMMENTS

PLAN CHECK NO: 10172158
PROJECT ADDRESS: 717 E Third St
PLAN CHECK ENGINEER: Ahangian, Kathy **TEL: 714** 647-5812
FAX: 714 647-5897

TYPE OF CONSTRUCTION: V B
OCCUPANCY CLASSIFICATION(S): R-3, U

PLAN CHECK DATES:
APPLICATION 8/9/2011
INITIAL REVIEW 8/11/2011
EXPIRATION 2/5/2012
RECHECKS: 1. 10-21-11
2.
3.

REMARKS/RECHECK ITEMS:

PROJECT APPLICANT CONTACT PERSON: Pat Alberstadt
TEL: (714)235-4261
FAX:
EMAIL: Pata@habitatatoc.org

VALUATION: $146,496.00

FLOOD ZONE: X-0602320276J

Note: Numbers in parenthesis (unless otherwise noted) refer to code sections of the 2010 California Residential Code (CRC); 2010 California Building Code (CBC); CMC = 2010 California Mechanical Code; CPC = 2010 California Plumbing Code; CEC = 2010 California Electrical Code; T = Table; ICC = International Code Council.

1. All items noted on this plan check report must be addressed. If you feel that an item is not applicable to your project, note "N/A" and discuss the reason with the plan checker. NA

2. Please indicate the sheet number and detail to the right of each correction, or note the number on the plans where the correction is made. Resubmit marked original, calculations and this correction sheet. A separate sheet for response may be used. NA

3. Resubmit 3 corrected sets of plans. NA

4. Meetings between the project applicant/designer and the plan reviewer shall be by appointment only. Please call (714) 647-5812 for an appointment. NA

13. List all deferred submittals on cover sheet, include truss drawings, (CRC R106.3.3) T-1

14. Provide design criteria from soils report on the drawings.

15. Provide and show on the plans, house street number visible and legible from street. (Minimum 4"High x 1" Wide) CRC R319 A1.4

16. Show all property lines of record on Site Plan. Buildings shall not be constructed over any property line. A1.1

17. Show the North arrow on the plans and centerline of labeled street(s) and alley. A1.1

Precise Grading Plan (PGP) (Provide a Copy)

18. Provide existing and proposed contours/spot elevations to indicate general site slope and drainage pattern. (CBC 107) PGP 2 of 2

19. Lots shall be graded to drain surface water away from foundation walls. The grade shall fall a minimum of 6 inches within the first 10 feet. (CRC R401.3) (Provide a Copy) PGP 2 of 2

20. Basements, habitable attics, and every sleeping room in dwelling units must have a window or exterior door for an emergency exit, sill height not more than **44 inches above** the floor, 5.7 square feet of openable area, 24 inches clear opening height, 20 inches clear opening width and shall open directly into a public street, alley, yard, or exit court. Windows _____ do not comply. (CRC R310.1-R310.1.3) A1.2

21. Provide minimum class B roofing material. weight of roof material A1.4

22. Window in bathroom # 2 shall be tempered. A1.2

23. Show 30-inch clear width for water closet compartments and 24-inch clearance in front of a water closet. A1.2

24. Carbon monoxide alarms combined with smoke alarms shall comply with both sections R314 and section R315, all applicable standards, and requirements for listing and approval by the Office of the State Fire Marshal, for smoke alarms. A1.6

25. All new construction, interior or exterior alterations, repairs, or additions requiring a permit and having a valuation in excess of $1,000, or when one or more sleeping rooms are added or created, the entire dwelling shall be provided with smoke detectors located as required for a new dwelling. (CRC R314.3) Smoke alarms shall be installed in the following locations: A1.6

- In each sleeping room.
- Outside each separate sleeping area in the immediate vicinity of the bedrooms.
- On each additional story of the dwelling, including basements and habitable attics but not including crawl spaces and uninhabitable attics. In dwellings or dwelling units with split levels and without an intervening door between the adjacent levels, a smoke alarm installed on the upper level shall suffice for the adjacent lower level provided that the lower level is less than one full story below the upper level.

Planning & Building Agency
Building Safety Division
20 Civic Center Plaza
P.O. Box 1988 (M-19)
Santa Ana, CA 92702
(714) 647-5800
www.santa-ana.org

RESIDENTIAL PLAN CHECK COMMENTS

PLAN CHECK NO: 10172158
PROJECT ADDRESS: 717 E Third St
PLAN CHECK ENGINEER: Ahangian, Kathy **TEL: 714** 647-5812
FAX: 714 647-5897

TYPE OF CONSTRUCTION: V B
OCCUPANCY CLASSIFICATION(S): R-3, U

PLAN CHECK DATES:
APPLICATION 8/9/2011
INITIAL REVIEW 8/11/2011
EXPIRATION 2/5/2012
RECHECKS: 1. 10-21-11
2.
3.

REMARKS/RECHECK ITEMS:

PROJECT APPLICANT CONTACT PERSON:
Pat Alberstadt
TEL: (714)235-4261
FAX:
EMAIL: Pata@habitatatoc.org

VALUATION: $146,496.00
FLOOD ZONE: X-0602320276J

Note: Numbers in parenthesis (unless otherwise noted) refer to code sections of the 2010 California Residential Code (CRC); 2010 California Building Code (CBC); CMC = 2010 California Mechanical Code; CPC = 2010 California Plumbing Code; CEC = 2010 California Electrical Code; T = Table; ICC = International Code Council.

1. All items noted on this plan check report must be addressed. If you feel that an item is not applicable to your project, note "N/A" and discuss the reason with the plan checker. NA
2. Please indicate the sheet number and detail to the right of each correction, or note the number on the plans where the correction is made. Resubmit marked original, calculations and this correction sheet. A separate sheet for response may be used. NA
3. Resubmit 3 corrected sets of plans. NA
4. Meetings between the project applicant/designer and the plan reviewer shall be by appointment only. Please call (714) 647-5812 for an appointment. NA

5. Please see corrections on submitted plans. Red marked set must be returned with revised plans. Plans resubmitted without the red markup set may result in delayed review time and additional plan check fees. NA

10-21-11

6. All drawings and supporting documents shall be prepared, stamped, and signed by a California licensed architect or registered professional engineer. (CRC R301.1.3, CBC 107.1 and 107.3.4.1). NA

7. This review does not include mechanical, plumbing or electrical work. Separate plans, applications, fees, plan checks, and permits are required for mechanical, plumbing, and electrical work. Call 647-5800 for information. NA

8. The applicant shall obtain clearances/approvals for the following, prior to building permit issuance: NA

   - Planning Division approval on the corrected/final set of drawings (647-5804). Previously approved plans should be submitted to expedite the process.
   - Fire Department approval on the corrected/final set of drawings (~~647-5839~~ or 647-5700).
   - Police Department approval on the corrected/final set of drawings (647-5840).
   - Public Works Agency approval (647-5039).
   - Proof of Worker's Compensation Insurance shall be required at the time of permit issuance.
   - School District Compliance Certificate; and a copy of the building permit application, signed by the plan check engineer, shall be required by the School District to verify the scope of the work.
   - Grading Permit. Application is made through the Building Safety Division (647-5800) and the plan review is by the Public Works Agency (647-5039).

9. In addition to other fees, a "Park Acquisition and Development Fee" in the amount shown below shall be required pursuant to a resolution of the City Council for the Recreation and Community Services Agency; net addition of _____ bedroom(s). NA

11-10-11

Amount of $4,922.71; net addition of 3 bedrooms

Pending 10-21-11

Attached to these Sheets

10. Provide a fully dimensioned Site Plan on the drawings and on a separate 8-1/2" x 11" sheet of paper. NA

10-21-11

Pending OK

11. **New one- and two-family dwellings and townhouses shall have an automatic fire sprinkler system installed in accordance with CRC Section R313.3 or NFPA 13D. Contact the Santa Ana Fire Department for fire sprinkler permit requirements (714) 647-5839. (CRC R313)** NA

12. Provide building information on plans: T-1

10-21-11

- Occupancy type: R3 / U
- Fire sprinklered: Yes / No

13. List all deferred submittals on cover sheet, include truss drawings, (CRC R106.3.3) T-1

14. Provide design criteria from soils report on the drawings.

15. Provide and show on the plans, house street number visible and legible from street. (Minimum 4"High x 1" Wide) CRC R319 A1.4

16. Show all property lines of record on Site Plan. Buildings shall not be constructed over any property line. A1.1

17. Show the North arrow on the plans and centerline of labeled street(s) and alley. A1.1

Precise Grading Plan (PGP) (provide a copy) Grading 1 & 2

18. Provide existing and proposed contours/spot elevations to indicate general site slope and drainage pattern. (CBC 107) PGP 2 of 2

Grading 1 & 2

19. Lots shall be graded to drain surface water away from foundation walls. The grade shall fall a minimum of 6 inches within the first 10 feet. (CRC R401.3) (provide a copy) PGP 2 of 2

20. Basements, habitable attics, and every sleeping room in dwelling units must have a window or exterior door for an emergency exit, sill height not more than **44 inches above** the floor, 5.7 square feet of openable area, 24 inches clear opening height, 20 inches clear opening width and shall open directly into a public street, alley, yard, or exit court. Windows _____ do not comply. (CRC R310.1-R310.1.3) A1.2

weight of roof material

21. Provide minimum class B roofing material. A1.4 51.2

22. Window in bathroom # 2 shall be tempered. A1.2

23. Show 30-inch clear width for water closet compartments and 24-inch clearance in front of a water closet. A1.2

24. Carbon monoxide alarms combined with smoke alarms shall comply with both sections R314 and section R315, all applicable standards, and requirements for listing and approval by the Office of the State Fire Marshal, for smoke alarms. A1.6

25. All new construction, interior or exterior alterations, repairs, or additions requiring a permit and having a valuation in excess of $1,000, or when one or more sleeping rooms are added or created, the entire dwelling shall be provided with smoke detectors located as required for a new dwelling. (CRC R314.3) Smoke alarms shall be installed in the following locations: A1.6

- In each sleeping room.
- Outside each separate sleeping area in the immediate vicinity of the bedrooms.
- On each additional story of the dwelling, including basements and habitable attics but not including crawl spaces and uninhabitable attics. In dwellings or dwelling units with split levels and without an intervening door between the adjacent levels, a smoke alarm installed on the upper level shall suffice for the adjacent lower level provided that the lower level is less than one full story below the upper level.

- When more than one smoke alarm is required to be installed within an individual dwelling unit the alarm devices shall be interconnected in such a manner that the actuation of one alarm will activate all of the alarms in the individual unit.

Pending 10-21-11

26. All new construction, Interior or exterior alterations, repairs, or additions requiring a permit and having a valuation in excess of $1,000,, an approved carbon monoxide alarm shall be installed in dwelling units and in sleeping units within which fuel-burning appliances are installed and in dwelling units that have attached garages shall be provided with carbon monoxide alarms (CRC R315) A1.6

- Carbon monoxide alarms shall only be required in the specific dwelling unit or sleeping unit for which the permit was obtained. Carbon monoxide alarms required by Sections R315.1 and R315.2 shall be installed in the following locations: _____.

- Outside of each separate dwelling unit sleeping area in the immediate vicinity of the bedroom(s).

- On every level of a dwelling unit including basements.

- Where more than one carbon monoxide alarm is required to be installed within the dwelling unit or within a sleeping unit the alarm shall be interconnected in a manner that activation of one alarm shall activate all of the alarms in the individual unit.

Exception:
Interconnection is not required in existing dwelling units where repairs do not result in the removal of wall and ceiling finishes, there is no access by means of attic, basement or crawl space, and no previous method for interconnection existed.

10-21-11

27. Shower compartments and walls above bathtubs with shower heads installed shall be finished with a smooth, nonabsorbent surface to a height of not less than 72" above the floor. (CRC R307.2) A1.2

10-21-11

28. Access shall be provided to all under-floor spaces. The floor access shall be a minimum 18" by 24" and openings through a perimeter wall shall be not less than 16" by 24". (CRC R408.4) A1.2

10-21-11 Pending Not Found.

29. Bathrooms, laundry rooms, water closet compartments and similar rooms shall be mechanically ventilated in accordance with the CMC. A1.2

OK

10-21-11

30. Glazing in swinging, sliding, and bifold doors 9 square feet or less shall be a minimum category classification of I (CPSC 16 CFR 1201) and II (CPSC 16 CFR 1201) when more than 9 square feet or sliding. (Table R308.3.1 (1), R308.3 (1)) **(Sliding doors)** A1.2

10-21-11

31. Provide a section of stairway showing a maximum rise of 7.75 inches and a minimum run width of 10 inches for straight stairways. The maximum difference between the stair risers and treads shall not be greater than 3/8". (CRC R311.7.4) D-2

10-21-11

32. The total net free ventilating area shall not be less than 1/150 or 1/300 when a Class I or II vapor barrier is installed on the warm-in-winter side of the ceiling. (CRC R806.2) A1.4

10-21-11

33. On the drawings, provide Nailing Schedule in conformance with CRC Table R602.3(1). SN.1

10-21-11

34. Add note on foundation plan: All hold downs must be tied in place prior to foundation inspection. S1.1

35. CBC Section 1803.6 Reports. The soil classification and design load-bearing capacity shall be shown on the construction document. Where required by the building official, a written report of the investigation shall be submitted that includes, but need not be limited to, the following information: SN.1

- Pile and pier foundation information in accordance with Section 1810.
- Special design and construction provisions for footings or foundations founded on expansive soils, as necessary.
- Compacted fill material properties and testing in accordance with Section 1804.5.

36. The geotechnical report requires foundation excavations to be reviewed by a geotechnical engineer. Note on the foundation plan "Prior to requesting a Building Safety Division foundation inspection, the geotechnical engineer shall inspect and approve the foundation excavations." (1803) S1.1

37. Have the consulting geotechnical engineer review and approve the foundation plans. (1803) S1.1

38. Note on the Foundation Plan(s): "Prior to calling for Foundation Inspection, the building corners shall be surveyed and staked by a California licensed Land Surveyor or qualified Civil Engineer. The survey and staking must be documented and bear the stamp and signature of the person responsible for the survey and staking. The certification document must be submitted to the Building Inspector at the time of Foundation Inspection." S1.1

39. Specify that foundation sills shall be pressure-treated or foundation grade Redwood. (2304.11.2.2) SN.2

40. Show location of underfloor access crawl hole (18 x 24 inches). (CRC R408.4) A1.2 S1.2

41. Revise structural calculations to show compliance with AF&PA SDPWS T4.3.4 for shear wall ratio of 2:1. For design to resist seismic forces, shear wall height-width ratios greater than 2:1, but not exceeding 3½:1. are permitted provided the allowable shear values in T4.3.4 are multiplied by $2b_s/h$. Note 1

42. Sill plates supporting shear walls with lateral loads greater than 350 pounds/foot require a 3-inch nominal or greater member. (T2306.3, Footnote i) Note 2

43. Clearly identify all design assumptions & load criteria on the plans. As a minimum: SN.1

- Dead Loads of roof/ceiling, floors, exterior/interior walls (R301.2.2.2.1);
- Live Loads for roof, attics with limited storage, attics without storage, habitable attics and attics served with fixed stairs, floors, and balconies/decks, and stairs per Tables R301.5 & R301.6;
- Wind Loads per Section R301.2.1and wind exposures per Section R301.2.1.5;
- Seismic Loads per Section R301.2.2;
- Local Jurisdiction Design Criteria per Table R301.2(1)

S1.2

44. Provide manufactured roof truss profiles, layout plan and calculations from truss manufacturer. Deferred

45. Indicate on the plans the design dead and live load for which the trusses are to be designed. The weight and location of all mechanical equipment shall be indicated on the roof framing plans. Drag loads of drag trusses shall be indicated on plans. Note on the plans "Trusses are a deferred submittal item. Truss plans and calculations shall be submitted to the engineer of record for review and to the building department for approval. The engineer of record shall indicate that the design has been reviewed before submitting to the building department. The truss design shall be approved by the building department before the trusses are installed." S1.2

10-21-11

46. Detail connection of the top of interior non-bearing walls to manufactured trusses. SD.1

10-21-11

47. Provide a 1/2" min deflection space or the deflection specified by the truss design engineer. SD.1

10-21-11

48. Show blocking at ends of rafters and trusses at exterior walls, at supports of floor joists and at the ridge line of truss roofs. CRC R802.8 SD.2 SN.2

49. Minimum width of braced wall is 2'-8" for 9' or less high panel, or 2'-10" for 10' panel with 1,800 lbs capacity holdown for 1 story building or 3,000 lbs capacity holdown for first story of two-story buildings. CRC Table R602.10.3.2 Note 3

10-21-11

50. The soils report requires foundation excavations to be reviewed by soils engineer. Note on the foundation plan "Prior to requesting a Building Department foundation inspection, the soils engineer shall inspect and approve the foundation excavations". S1.1

10-21-11

51. Identify numbers on foundation plan. S1.1

10-21-11

52. Show thickness of the continuous footing on the drawings. S1.1

10-21-11

53. Show Girder size on the drawings. S1.1

10-21-11

54. Provide shear wall at the front of the garage. Note 4

10-21-11

55. Provide anchor bolt spacing on the shear wall schedule. S1.1

10-21-11

56. The end of wood girders entering exterior masonry or concrete walls shall be protected with a 1/2" air space or provide pressure treated lumber. CBC 2304.11.2.5. Note 5

10-21-11

57. Note on the drawings, ventilation heating and air conditioning system shall have MERV 6 filters or better. D-2

10-21-11

58. Provide continuous operating exhaust fan in the bathroom with required ventilation rate per Section 150-o, Table 4-7 of 2008 Residential Compliance Manual. Ventilation air must come directly from the outdoors and not from attic or crawl spaces. A1.6

10-21-11

59. Drawings show raised floor, please revise the energy calcs to show raised floor , not slab on grade. T-24.1

10-21-11

60. Identify size of the water heater on energy calcs and drawings. A1.2

10-21-11 Not Found 10-21-11

61. Show size of the A/C unit on the drawings. D-2

10-21-11

62. Show insulation and radiant barrier on the full height cross section. A1.3

10-21-11

10-21-11

63. Identify each window with it's ShGC and U-factor. A1.2

64. The construction documents shall provide sufficient clarify to indicate the location, nature, and scope of the proposed green building features. CGBC 102.2 All Sheets

65. Plans shall indicate method of verification of compliance with all CALGreen requirements. Third party or other methods shall demonstrate satisfactory conformance with mandatory measures. Include City's Mandatory Measures Checklist copies onto plans. T-1

66. Storm Water Drainage and Retention. Submit storm water drainage plans for projects < 1 ac. Plans shall indicate how to manage storm water drainage during construction utilizing one or more of the following measures: 1. Use of retention basins of sufficient size to retain storm water on-site; 2. By filtering storm water with a barrier system, wattle, or other approved method when storm water is conveyed to a public drainage system, collection point, gutter, or similar disposal method; 3. By complying with a lawfully enacted storm water management Ordinance. CGBC 4.106.2 PGP 2 of 2

67. Surface drainage. Submit surface drainage plans to indicate how surface water shall not enter buildings. Examples of methods to manage surface water include: 1. Swales; 2. Water collection; 3. French Drains; 4. Water retention gardens; 5. Other water measures which keep surface water away from buildings and aid in groundwater recharge. CGBC 4106.3 PGP 2 of 2

68. Provide documentation to indicate the project meets the requirements of State mandatory energy efficiency standards. CGBC 4201.1 T-24.1

69. Illustrate that potable water use is reduced by at least 20 percent. CGBC 4303.1 Indicate the method of compliance, either prescriptive or performance. Note: Residential reduction not required until July 1, 2010. A1.6

70. Provide "Baseline Water Use" document (WS-I) A1.6

71. Provide 20% Reduction Water Use document (WS-2) A1.6

72. Both WS-I and WS-2 shall be submitted as part of the plan check approval process. A1.6

73. Indicate on plans method of showing field verification either by installer or third party. T-1

74. Plumbing fixtures and fittings shall meet the standards referenced in CGBC Table 4.303.3. CGBC 4303.3 T-1

75. Sec. 4.304 Irrigation controllers shall meet the requirements of CGBC 4.304.1. Landscape 1 of 1
    - Indicate on the plans the type of controllers and the location.
    - Note: Field verify controller installation when the controllers are installed by the contractor at time of building final.

76. Seal openings in the building envelope in compliance with the California Energy Code (CEC). Annular spaces around pipes, electric cables, conduits or other openings in plates at exterior walls shall be protected by closing such openings with cement mortar, concrete masonry, or a similar method acceptable to the enforcing agency. CGBC 4.406.1 T-1

OK Not Found

77. Indicate on the plans that a construction waste management plan and documentation demonstrating compliance with the plan shall be submitted that: T-1

Pending show what type of material

T-1 CGBS #24

- Identifies the materials to be diverted from disposal by recycling, reuse on the project or salvage for future use or sale.
- Specifies if materials will be sorted on-site or mixed for transportation to a diversion facility.
- Identifies the diversion facility where the material collection will be taken.
- Identifies construction methods employed to reduce the amount of waste generated.
- Specifies that the amount of materials diverted shall be calculated by weight or volume, but not by both. CGBC 4.408.2, 4.408.2.1

10-21-11

78. All duct openings and other air distribution component openings shall be protected during storage on the construction site until final start-up with tape, plastic, sheet metal, or other acceptable methods to reduce the amount of dust and debris which may collect in the system. CGBC 4.504.1 T-1

10-21-11

79. Finish materials shall comply with COBC 4.504.2. T-1

10-21-11

80. Adhesives, adhesive bonding primers, adhesive primers, sealants, sealant primers, and caulks shall comply with local or regional air pollution control or air quality management district rules where applicable, or meet the requirement of SCAQMD Rule 1168 VOC limits and prohibition on the use of certain toxic chemicals, except per subsection 2. COBC 4.504.2.1, subsection 1 T-1

10-21-11

81. Note on the plans that aerosol adhesives, smaller unit sizes of adhesives, and sealant or caulking compounds (in units of product, less packing, which do not weigh more than 1 pound and do not consist of more than 16 fluid ounces shall comply with statewide VOC standards and other requirements, including prohibitions on the use of certain toxic compounds, of CCR, Title 17, commencing with Section 94507. 4 CGBC.504.2.1, subsection 2 T-1

10-21-11

82. Verification of compliance with finish materials shall be provided at the request of the enforcing agency. Documents may include, but not limited to the following:
    - Manufacturer's product specification.
    - Field verification of on-site product containers.
    - Other methods approved by the local jurisdiction.

    T-1

10-21-11

83. Carpets shall meet one of the following: 1. Carpet and Rug Institute's Green label plus program, 2. California Department of Public Health Standard Practice for the testing of VOCs (Specification 01350), 3. NSF/ANSI 140 at the Gold Level. 4. Scientific Certifications Systems Indoor AdvantageTM Gold. CGBC 4.504.3 T-1

10-21-11

84. Carpet cushion shall meet the requirements of the Carpet and Rug Institute Green Label Program, carpet adhesive shall meet the requirements of CGBC Table 4.504.1. CGBC 4.504.3.1,4.504.3.2 T-1

10-21-11

85. Hardwood plywood, particleboard, and medium density fiberboard composite wood products shall meet the requirements for Formaldehyde Limits in CGBC Table 4.504.5. T-1

10-21-11

86. Note on the plans that documentation shall be provided to indicate compliance with CGBC 4.504 and shall include at least one of the following: Product certifications and specifications, chain of custody certifications, or other methods acceptable to the enforcing agency. CGBC 4.504.5.1 T-1

87. Add a note to plans the building materials with visible signs of water damage shall not be installed. CGBC 4.505.3 T-1

88. Moisture content of Building Materials, and verification, shall meet the requirements of CGBC 4.505.3. T-1

89. Bathroom exhaust fans shall be ENERGY STAR compliant, ducted to terminate outside the building, and controlled by a humidistat capable of being adjusted between the relative humidity range of 50 to 80 percent. CGBC 4.506 T-1

90. Covers for whole house exhaust fans shall have a minimum insulation value of R-4.2 and close when the fan is off. CGBC 4.507.1 NA

91. Heating and air-conditioning system design shall be sized, designed and have their equipment selected using the following methods: CGBC 4.507.2 T-1

- Heat loss and heat gain is established according to ACCA Manual J, ASHRAE handbooks or other equivalent design software or methods.
- Duct systems are sized according to ACCA 29-D Manual D, ASHRAE handbooks or other equivalent design software or methods.
- Select heating and cooling equipment according to ACCA 36-S Manual S or other equivalent design software or methods.

92. Specify that inspections are required for certification of all CALGreen features in the plans and listed on Mandatory Measures Lists. Submit the name and qualifications of the person or persons anticipated to perform the inspections. T-1
- The following credentials are required _____
- An oral and written exam is required to obtain the special inspection credential

93. Submit the following forms/worksheets:
- WS-1, Baseline Water Use A1.6
- WS-2, 20 Percent Reduction Water Use
- Construction Waste Management Plan T-1
- Construction Waste Management Worksheet
- Construction Waste Management Acknowledgment

94. Provide anchorage details for FAU units. (CMC 303.4) D-2

95. Revise plans to indicate how separate combustion air is provided for FAU located in attic. (CMC 701.3) A1.4

96. The maximum length of a dryer vent is 14 feet with two bends. Two feet shall be decreased for each bend more than two, unless approved by the Building Official. (CMC 504.3.2.2) T-1

97. Note on the plans: "An approved backwater valve is required for drainage piping serving fixtures located below the elevation of the next upstream manhole cover. Fixtures above such elevation shall not discharge through the backwater valve. Clean outs for drains that pass through a back T-1

water valve shall be clearly identified with a permanent label stating "backwater valve downstream." (CPC 710.1)

98. All hose bibs must be protected by an anti siphon device. (CPC 603.1)

T-1

10-21-11

-provide right [illegible] on Site plan.

Note 1

Shear wall capacities have been reduced in relation to the ratio presented of 2b/h.

Note 2

The anchor bolt spacing may be calculated as a 50% ratio of capacity when using a 2X sill plate for shear wall design loads of 350 to 600 plf and have been adjusted accordingly.

Note 3

No panels violate these requirements

Note 4

The isolated garage structure is allowed to be resisted using a rotation analysis increasing the transfer on the sides and doubling the load to the rear wall. Refer to the calculations for additional information.

Note 5

The girders are supported using GH Girder Hangers from Simpson Strong Tie and satisfy the end distance requirement.

3354

CERTIFICATE OF COMPLIANCE
PAYMENT OF SCHOOL FACILITY FEES
SANTA ANA UNIFIED SCHOOL DISTRICT

Applicant: Habitat for Humanity of Orange County

Address: 2200 South Rifchay

Telephone Number: 714.434.6200 Ext 240

Tract/Parcel Number: Tract 52 Lot 17 P/N 398-481-13

Location of Project: 717 East 3rd Street (Tract 52)

Description of Project: 1 story single family residence

Level II

Number of Square Feet of Residential Space 1,344 x $ 4.75 Total $ 6,384.00

Number of Square Feet of Commercial and Industrial Space _____ x $_____ Total $ _____

The above representations as to square footage are true. Applicant agrees that if it is later determined that such representations are not true, then this certificate shall automatically terminate, and the appropriate City/County shall be notified. Applicant is hereby noticed that any party filing a protest regarding the imposition of fees pursuant to Government Code Section 53080 must do so within 90 days from the payment of the fee.

Norbert Albersfadt for Habitat for Humanity of O.C. 11.17.11
Applicant Name (Please Print) Date

Signature

This certifies that the above-named Applicant has paid school facility fees in compliance with all existing and applicable sections of the Government Code and Education Code.

Santa Ana Unified School District Authorized Representative 11/17/11
Date

DISTRIBUTION
White – City/County
Canary – Applicant
Pink – Accounting
Goldenrod – Facilities

10172158-59

717 East 3rd Street Home

Santa Ana
Climate Zone #8

2008 Energy Code Compliance

HEG Project No.: 11036

Habitat for Humanity O.C.
Ritner Group

Heritage Energy Group, LLC
May 11, 2011
Title 24 Energy Calculations
Tel: (949) 789-7221 / Fax: (949) 789-7222

Project Title..... Single Family Home Date..05/11/11 22:24:33
Project Address..... 717 3rd Street ******
Santa Ana, CA *v8.1*
Documentation Author... Sam Maimone ******
Heritage Energy Group, LLC
470 Wald
Irvine, CA 92618
(949) 789-7221
Climate Zone..... 08
Compliance Method..... MICROPAS8 v8.1 for 2008 CEC Standards (r03)

Building Permit #

Plan Check / Date

Field Check/ Date

MICROPAS8 v8.1 File-11036 Wth-CTZ08S08
User#-MP0940 User-Heritage Energy Group, LL Run-

MICROPAS8 ENERGY USE SUMMARY

Energy Use (kTDV/sf-yr)	Standard Design	Proposed Design	Compliance Margin	Percent Improvement
Space Heating.....	9.20	6.48	2.72	29.6%
Space Cooling.....	11.43	7.55	3.88	34.0%
Ventilation Fans.....	1.33	1.33	0.00	0.0%
Water Heating.....	22.92	14.89	8.03	35.0%
Total	44.88	30.25	14.63	32.6%

*** Building complies with Computer Performance ***
*** HERS Verification Required for Compliance ***

GENERAL INFORMATION

HERS Verification..... Required
Conditioned Floor Area..... 1344 sf
Building Type..... Single Family Detached
Construction Type ..... New
Natural Gas at Site ..... Yes
Building Front Orientation. Front Facing 180 deg (S)
Number of Dwelling Units... 1
Number of Building Stories. 1
Weather Data Type..... FullYear

Floor Construction Type.... Slab On Grade
Number of Building Zones... 1
Conditioned Volume..... 10752 cf
Slab-On-Grade Area..... 1344 sf
Glazing Percentage..... 15.5 % of floor area
Average Glazing U-factor... 0.31 Btu/hr-sf-F
Average Glazing SHGC..... 0.28
Average Ceiling Height..... 8 ft

BUILDING ZONE INFORMATION

Zone Type	Floor Area (sf)	Volume (cf)	# of Dwell Units	# of Peop-le	Cond-it-ioned	Thermo-stat Type	Vent Height (ft)	Vent Area (sf)	Verified Leakage or Housewrap
Residence	1344	10752	1.00	6.0	Yes	Setback	2.0	Standard	3 SLA

ATTIC AND ROOF DETAILS

Roof Type	Roof Mass (lb/sqft)	Roof Rise	Re-flect-ance	Emiss-ivity	Frame Depth (in.)	Frame Spac-ing (in.)	R-Value Above Deck	R-Value Below Deck	Vent Area Ratio	Vent High
Asphalt	Light	5:12	0.08	0.85	3.5	24 oc	0.00	0.00	1/300	0.00

OPAQUE SURFACES

Surface	Frame Type	Area (sf)	U-fact-or	Cavity R-val	Sheath-ing R-val	Act Azm	Tilt	Solar Gains	Appendix JA4 Reference	Location/ Comments
1 Wall	Wood	195	0.074	19	0	0	90	Yes	4.3.1 A5	
2 Wall	Wood	349	0.074	19	0	90	90	Yes	4.3.1 A5	
3 Wall	Wood	198	0.074	19	0	180	90	Yes	4.3.1 A5	
4 Wall	Wood	330	0.074	19	0	270	90	Yes	4.3.1 A5	
5 AtticRad	Wood	1344	0.031	30	0	n/a	0	Yes	4.2.1 A20	

PERIMETER LOSSES

Surface	Length (ft)	F2 Factor	Insul R-val	Solar Gains	Appendix JA4 Reference	Location/ Comments
6 SlabEdge	160	0.730	R-0/0in	No	4.4.7 A1	Standard Slab Edge

FENESTRATION SURFACES

Orientation		Area (sf)	U-factor	SHGC	Act Azm	Tilt	Exterior Shade Type	Location/Comments
1 Wind Back	(N)	45.0	0.310	0.290	0	90	Standard	1
2 Wind Right	(E)	51.0	0.310	0.290	90	90	Standard	4
3 Wind Front	(S)	30.0	0.290	0.220	180	90	Standard	7
4 Wind Front	(S)	12.5	0.290	0.220	180	90	Standard	8
5 Door Left	(W)	40.0	0.310	0.290	270	90	Standard	10
6 Wind Left	(W)	30.0	0.310	0.290	270	90	Standard	11

OVERHANGS

Surface	Area (sf)	Window Width	Window Height	Overhang Depth	Overhang Height	Overhang Left Extension	Overhang Right Extension
2 Window	51.0	n/a	5	1	1	n/a	n/a
3 Window	30.0	n/a	5	7	1	n/a	n/a
5 Door	40.0	n/a	5	1	1	n/a	n/a
6 Window	30.0	n/a	5	1	1	n/a	n/a

SLAB SURFACES

Slab Type	Area (sf)
Standard Slab	1344

HVAC SYSTEMS

System Type	Number of Systems	Minimum Efficiency	Verified HighEff EER	Verified Refrig Charge or CID	Verified Cooling Coil Airflow	Verified Fan Watt Draw	Verified Maximum Total Rated Cooling Capacity
Furnace	1	0.800 AFUE	n/a	n/a	n/a	n/a	n/a
ACSplit	1	13.00 SEER	11	No	No	No	No

HVAC SIZING

System Type	Total Heating Load (Btu/hr)	Sensible Cooling Load (Btu/hr)	Design Cooling Capacity (Btu/hr)	Verified Maximum Cooling Capacity (Btu/hr)
Furnace	17019	n/a	n/a	n/a
ACSplit	n/a	11442	13243	n/a

Sizing Location..... SANTA ANA FS
Winter Outside Design..... 33 F
Winter Inside Design..... 70 F
Summer Outside Design..... 89 F
Summer Inside Design..... 75 F
Summer Range..... 26 F

DUCT SYSTEMS

System Type	Duct Location	Duct R-value	Verified Duct Leakage	Verified Surface Area	Verified Buried Ducts
Furnace	Attic	R-4.2	Yes	No	No
ACSplit	Attic	R-4.2	Yes	No	No

INFILTRATION TESTING DETAILS

Blower Door Leakage Target (CFM50h/SLA)	Blower Door Leakage Minimum (CFM50h/SLA)
1056 / 3.0	528 / 1.5

FAN SYSTEMS

System Type	Flow (cfm)	Power (W/cfm)
Standard	58.44	.25

WATER HEATING SYSTEMS

	Tank Type	Heater Type	Distribution Type	Number in System	Energy Factor	Tank Size (gal)	External Insulation R-value
1	SmallTankless	Gas	Standard	1	0.84	n/a	R-n/a

SPECIAL FEATURES AND MODELING ASSUMPTIONS

*** Items in this section should be documented on the plans, ***
*** installed to manufacturer and CEC specifications, and ***
*** verified during plan check and field inspection. ***

This building incorporates a Radiant Barrier.

This building incorporates a non-standard Water Heating System.

HERS REQUIRED VERIFICATION

*** Items in this section require field testing and/or ***
*** verification by a certified home energy rater under ***
*** the supervision of a CEC-approved HERS provider using ***
*** CEC approved testing and/or verification methods and ***
*** must be reported on the CF-4R installation certificate. ***

HERS REQUIRED VERIFICATION

This building incorporates HERS verified High Quality Insulation Installation.

This building incorporates HERS verified Building Envelope Sealing. Target and Minimum CFM values measured at 50 pascals are shown in INFILTRATION TESTING DETAILS above. If the measured CFM50h is above the target, then corrective action must be taken to reduce the infiltration and then retest. Alternatively, the compliance calculations could be redone without infiltration testing.

This building incorporates HERS verified High Energy Efficiency Ratio (EER).

This building incorporates HERS verified Duct Leakage. Target leakage is calculated and documented on the CF-4R. If the measured CFM is above the target, then corrective action must be taken to reduce the duct leakage and then must be retested. Alternatively, the compliance calculations could be redone without duct testing. If ducts are not installed, then HERS verification is not necessary.

REMARKS

COMPLIANCE STATEMENT

This certificate of compliance lists the building features and performance specifications needed to comply with Title-24, Parts 1 and 6 of the California Code of Regulations, and the administrative regulations to implement them. This certificate has been signed by the individual with overall design responsibility.

DESIGNER or OWNER		DOCUMENTATION AUTHOR	
Name....	M KORANDO SR. V.P.	Name....	Sam Maimone
Company.	Habitat for Humanity	Company.	Heritage Energy Group, LLC
Address.	2165 S. Grand Avenue Santa Ana, CA 92705	Address.	470 Wald Irvine, CA 92618
Phone...	714-434-6200	Phone...	(949) 789-7221
License.	N/A OWNER		
Signed..	5-10-11 (date)	Signed..	(date)

ENFORCEMENT AGENCY

Name.... _____
Title... _____
Agency.. _____
Phone... _____
Signed.. _____ (date)

Electronically Signed at CalCERTS.com by Pat Alberstadt (Habitat for Humanity - Orange County) 5/12/2011

Electronically Filed by Sam Maimone and Authenticated at CalCERTS.com - 5/12/2011
Reg: 211-N0022896A-000000000-0000 Registration Date/Time: 2011/05/12 01:32:09 HERS Provider: CalCERTS, Inc

Mandatory Measures Summary — MF-1R

Residential —

Site Address:	Enforcement Agency:	Date:

NOTE: Low-rise residential buildings subject to the Standards must comply with all applicable mandatory measures listed, regardless of the compliance approach used. More stringent energy measures listed on the Certificate of Compliance (CF-1R, CF-1R-ADD, or CF-1R-ALT Form) shall supersede the items marked with an asterisk (*) below. This Mandatory Measures Summary shall be incorporated into the permit documents and the applicable features shall be considered by all parties as minimum component performance specifications whether they are shown elsewhere in the documents or in this summary. Submit all applicable sections of the MF-1R Form with plans.

DESCRIPTION

Building Envelope Measures:

§116(a)1: Doors and windows between conditioned and unconditioned spaces are manufactured to limit air leakage.

§116(a)4: Fenestration products (except field-fabricated windows) have a label listing the certified U-Factor, certified Solar Heat Gain Coefficient (SHGC), and infiltration that meets the requirements of §10-111(a).

§117: Exterior doors and windows are weather-stripped; all joints and penetrations are caulked and sealed.

§118(a): Insulation specified or installed meets Standards for Insulating Material. Indicate type and include on CF-6R Form.

§118(i): The thermal emittance and solar reflectance values of the cool roofing material meets the requirements of §118(i) when the installation of a Cool Roof is specified on the CF-1R Form.

*§150(a): Minimum R-19 insulation in wood-frame ceiling or equivalent U-factor.

§150(b): Loose fill insulation shall conform with manufacturer's installed design labeled R-Value.

*§150(c): Minimum R-13 insulation in wood-frame wall or equivalent U-factor.

*§150(d): Minimum R-13 insulation in raised wood-frame floor or equivalent U-factor.

§150(f): Air retarding wrap is tested, labeled, and installed according to ASTM E1677-95(2000) when specified on the CF-1R Form.

§150(g): Mandatory Vapor barrier installed in Climate Zones 14 or 16.

§150(l): Water absorption rate for slab edge insulation material alone without facings is no greater than 0.3%; water vapor permeance rate is no greater than 2.0 perm/inch and shall be protected from physical damage and UV light deterioration.

Fireplaces, Decorative Gas Appliances and Gas Log Measures:

§150(e)1A: Masonry or factory-built fireplaces have a closable metal or glass door covering the entire opening of the firebox.

§150(e)1B: Masonry or factory-built fireplaces have a combustion outside air intake, which is at least six square inches in area and is equipped with a with a readily accessible, operable, and tight-fitting damper and or a combustion-air control device.

§150(e)2: Continuous burning pilot lights and the use of indoor air for cooling a firebox jacket, when that indoor air is vented to the outside of the building, are prohibited.

Space Conditioning, Water Heating and Plumbing System Measures:

§110-§113: HVAC equipment, water heaters, showerheads, faucets and all other regulated appliances are certified by the Energy Commission.

§113(c)5: Water heating recirculation loops serving multiple dwelling units and High-Rise residential occupancies meet the air release valve, backflow prevention, pump isolation valve, and recirculation loop connection requirements of §113(c)5.

§115: Continuously burning pilot lights are prohibited for natural gas: fan-type central furnaces, household cooking appliances (appliances with an electrical supply voltage connection with pilot lights that consume less than 150 Btu/hr are exempt), and pool and spa heaters.

§150(h): Heating and/or cooling loads are calculated in accordance with ASHRAE, SMACNA or ACCA.

§150(i): Heating systems are equipped with thermostats that meet the setback requirements of Section 112(c).

§150(j)1A: Storage gas water heaters rated with an Energy Factor no greater than the federal minimal standard are externally wrapped with insulation having an installed thermal resistance of R-12 or greater.

§150(j)1B: Unfired storage tanks, such as storage tanks or backup tanks for solar water-heating system, or other indirect hot water tanks have R-12 external insulation or R-16 internal insulation where the internal insulation R-value is indicated on the exterior of the tank.

§150(j)2: First 5 feet of hot and cold water pipes closest to water heater tank, non-recirculating systems, and entire length of recirculating sections of hot water pipes are insulated per Standards Table 150-B.

§150(j)2: Cooling system piping (suction, chilled water, or brine lines),and piping insulated between heating source and indirect hot water tank shall be insulated to Table 150-B and Equation 150-A.

§150(j)2: Pipe insulation for steam hydronic heating systems or hot water systems >15 psi, meets the requirements of Standards Table 123-A.

§150(j)3A: Insulation is protected from damage, including that due to sunlight, moisture, equipment maintenance, and wind.

§150(j)3A: Insulation for chilled water piping and refrigerant suction lines includes a vapor retardant or is enclosed entirely in conditioned space.

§150(j)4: Solar water-heating systems and/or collectors are certified by the Solar Rating and Certification Corporation.

Ducts and Fans Measures:

§150(m)1: All air-distribution system ducts and plenums installed, are sealed and insulated to meet the requirements of CMC Sections 601, 602, 603, 604, 605 and Standard 6-5; supply-air and return-air ducts and plenums are insulated to a minimum installed level of R-4.2 or enclosed entirely in conditioned space. Openings shall be sealed with mastic, tape or other duct-closure system that meets the applicable requirements of UL 181, UL 181A, or UL 181B or aerosol sealant that meets the requirements of UL 723. If mastic or tape is used to seal openings greater than 1/4 inch, the combination of mastic and either mesh or tape shall be used

§150(m)1: Building cavities, support platforms for air handlers, and plenums defined or constructed with materials other than sealed sheet metal, duct board or flexible duct shall not be used for conveying conditioned air. Building cavities and support platforms may contain ducts. Ducts installed in cavities and support platforms shall not be compressed to cause reductions in the cross-sectional area of the ducts.

§150(m)2D: Joints and seams of duct systems and their components shall not be sealed with cloth back rubber adhesive duct tapes unless such tape is used in combination with mastic and draw bands.

§150(m)7: Exhaust fan systems have back draft or automatic dampers.

§150(m)8: Gravity ventilating systems serving conditioned space have either automatic or readily accessible, manually operated dampers.

§150(m)9: Insulation shall be protected from damage, including that due to sunlight, moisture, equipment maintenance, and wind. Cellular foam insulation shall be protected as above or painted with a coating that is water retardant and provides shielding from solar radiation that can cause degradation of the material.

§150(m)10: Flexible ducts cannot have porous inner cores.

§150(o): All dwelling units shall meet the requirements of ANSI/ASHRAE Standard 62.2-2007 Ventilation and Acceptable Indoor Air Quality in Low-Rise Residential Buildings. Window operation is not a permissible method of providing the Whole Building Ventilation required in Section 4 of that Standard.

Pool and Spa Heating Systems and Equipment Measures:

§114(a): Any pool or spa heating system shall be certified to have: a thermal efficiency that complies with the Appliance Efficiency Regulations; an on-off switch mounted outside of the heater; a permanent weatherproof plate or card with operating instructions; and shall not use electric resistance heating or a pilot light.

§114(b)1: Any pool or spa heating equipment shall be installed with at least 36" of pipe between filter and heater, or dedicated suction and return lines, or built-up connections for future solar heating

§114(b)2: Outdoor pools or spas that have a heat pump or gas heater shall have a cover.

§114(b)3: Pools shall have directional inlets that adequately mix the pool water, and a time switch that will allow all pumps to be set or programmed to run only during off-peak electric demand periods.

§150(p): Residential pool systems or equipment meet the pump sizing, flow rate, piping, filters, and valve requirements of §150(p).

Residential Lighting Measures:

§150(k)1: High efficacy luminaires or LED Light Engine with Integral Heat Sink has an efficacy that is no lower than the efficacies contained in Table 150-C and is not a low efficacy luminaire as specified by §150(k)2.

§150(k)3: The wattage of permanently installed luminaires shall be determined as specified by §130(d).

§150(k)4: Ballasts for fluorescent lamps rated 13 Watts or greater shall be electronic and shall have an output frequency no less than 20 kHz.

§150(k)5: Permanently installed night lights and night lights integral to a permanently installed luminaire or exhaust fan shall contain only high efficacy lamps meeting the minimum efficacies contained in Table 150-C and shall not contain a line-voltage socket or line-voltage lamp holder; OR shall be rated to consume no more than five watts of power as determined by §130(d), and shall not contain a medium screw-base socket.

§150(k)6: Lighting integral to exhaust fans, in rooms other than kitchens, shall meet the applicable requirements of §150(k).

§150(k)7: All switching devices and controls shall meet the requirements of §150(k)7.

§150(k)8: A minimum of 50 percent of the total rated wattage of permanently installed lighting in kitchens shall be high efficacy.

EXCEPTION: Up to 50 watts for dwelling units less than or equal to 2,500 ft^2 or 100 watts for dwelling units larger than 2,500 ft^2 may be exempt from the 50% high efficacy requirement when: all low efficacy luminaires in the kitchen are controlled by a manual on occupant sensor, dimmer, energy management system (EMCS), or a multi-scene programmable control system; and all permanently installed luminaries in garages, laundry rooms, closets greater than 70 square feet, and utility rooms are high efficacy and controlled by a manual-on occupant sensor.

§150(k)9: Permanently installed lighting that is internal to cabinets shall use no more than 20 watts of power per linear foot of illuminated cabinet.

§150(k)10: Permanently installed luminaires in bathrooms, attached and detached garages, laundry rooms, closets and utility rooms shall be high efficacy.

	EXCEPTION 1: Permanently installed low efficacy luminaires shall be allowed provided that they are controlled by a manual-on occupant sensor certified to comply with the applicable requirements of §119. EXCEPTION 2: Permanently installed low efficacy luminaires in closets less than 70 square feet are not required to be controlled by a manual-on occupant sensor.
§150(k)11:	Permanently installed luminaires located in rooms or areas other than in kitchens, bathrooms, garages, laundry rooms, closets, and utility rooms shall be high efficacy luimnaires. EXCEPTION 1: Permanently installed low efficacy luminaires shall be allowed provided they are controlled by either a dimmer switch that complies with the applicable requirements of §119, or by a manual-on occupant sensor that complies with the applicable requirements of §119. EXCEPTION 2: Lighting in detached storage building less than 1000 square feet located on a residential site is not required to comply with §150(k)11.
§150(k)12:	Luminaires recessed into insulated ceilings shall be listed for zero clearance insulation contact (IC) by Underwriters Laboratories or other nationally recognized testing/rating laboratory; and have a label that certifies the lumiunaire is airtight with air leakage less then 2.0 CFM at 75 Pascals when tested in accordance with ASTM E283; and be sealed with a gasket or caulk between the luminaire housing and ceiling.
§150(k)13:	Luminaires providing outdoor lighting, including lighting for private patios in low-rise residential buildings with four or more dwelling units, entrances, balconies, and porches, which are permanently mounted to a residential building or to other buildings on the same lot shall be high efficacy. EXCEPTION 1: Permanently installed outdoor low efficacy luminaires shall be allowed provided that they are controlled by a manual on/off switch, a motion sensor not having an override or bypass switch that disables the motion sensor, and one of the following controls: a photocontrol not having an override or bypass switch that disables the photocontrol; OR an astronomical time clock not having an override or bypass switch that disables the astronomical time clock; OR an energy management control system (EMCS) not having an override or bypass switch that allows the luminaire to be always on EXCEPTION 2: Outdoor luminaires used to comply with Exception1 to §150(k)13 may be controlled by a temporary override switch which bypasses the motion sensing function provided that the motion sensor is automatically reactivated within six hours. EXCEPTION 3: Permanently installed luminaires in or around swimming pool, water features, or other location subject to Article 680 of the California Electric Code need not be high efficacy luminaires.
§150(k)14:	Internally illuminated address signs shall comply with Section 148; OR not contain a screw-base socket, and consume no more than five watts of power as determined according to §130(d).
§150(k)15:	Lighting for parking lots and carports with a total of for 8 or more vehicles per site shall comply with the applicable requirements in Sections 130, 132, 134, and 147. Lighting for parking garages for 8 or more vehicles shall comply with the applicable requirements of Sections 130, 131, 134, and 146
§150(k)16:	Permanently installed lighting in the enclosed, non-dwelling spaces of low-rise residential buildings with four or more dwelling units shall be high efficacy luminaires. EXCEPTION: Permanently installed low efficacy luminaires shall be allowed provided that they are controlled by an occupant sensor(s) certified to comply with the applicable requirements of §119.

CALIFORNIA TRUSFRAME
23665 Cajalco Road
Perris, CA 92570
(909) 657-7491

STRUCTURAL TRUSS CALCULATIONS

Habitat for Humanity

3rd Street

Santa Ana, Ca.

The bound truss design drawings having an electronic seal and signature printed on each page have been reviewed and approved by the truss design engineer as indicated by the engineer's seal and wet signature on this cover page. This review and approval applies solely to the attached truss design drawing pages that are bound together.

COMPUTRUS, INC.
31945 Corydon Rd., Lake Elsinore, CA. 92530

CTF California TrusFrame LLC

Building Components for a Greener Future

TRUSS PLACEMENT PLAN
AND
CALCULATIONS

PROJECT: 3rd Street

LOCATION: Santa Ana, CA

DEVELOPER: Habitat for Humanity

CUSTOMER: Habitat for Humanity

Project No. M12536

23665 Cajalco Road, Perris, CA 92570
(951) 657-7491 phone / (951) 657-0486 fax

PRINT DATE: 08/18/2011

ICC-ES Evaluation Report

ESR-1988

Reissued June 1, 2010

This report is subject to re-examination in two years.

www.icc-es.org | (800) 423-6587 | (562) 699-0543 *A Subsidiary of the International Code Council®*

DIVISION: 06 00 00—WOOD, PLASTICS AND COMPOSITES
Section: 06 17 53—Shop-Fabricated Wood Trusses

REPORT HOLDER:

MITEK INDUSTRIES, INC.
14515 NORTH OUTER FORTY, SUITE 300
CHESTERFIELD, MISSOURI 63017
www.mii.com

EVALUATION SUBJECT:

MiTek® TRUSS CONNECTOR PLATES: TL18, MT18, MT18HS™, TL20 and MT20

1.0 EVALUATION SCOPE

Compliance with the following codes:

- 2009 *International Building Code®* (2009 IBC)
- 2009 *International Residential Code®* (2009 IRC)
- 2006 *International Building Code®* (2006 IBC)
- 2006 *International Residential Code®* (2006 IRC)
- 1997 *Uniform Building Code™* (UBC)

Property evaluated:

Structural

2.0 USES

MiTek® metal truss connector plates are used as joint connector components of light wood-frame trusses.

3.0 DESCRIPTION

3.1 MiTek® TL18 and MT18:

Models TL18 and MT18 metal truss connector plates are manufactured from minimum No. 18 gage [0.0466 inch total thickness (1.18 mm)], ASTM A 653 SS, Grade 40 steel, with a G60 galvanization coating [0.0005 inch thickness on each side (0.013 mm)] and having a base-metal thickness of 0.0456 inch (1.16 mm). The plates have teeth $^3/_8$ inch (9.5 mm) long, punched in pairs formed at right angles to the face of the parent metal so that two teeth per hole occur along the length. The spacing along the longitudinal direction of each punched slot is 1 inch (25.4 mm) on center. The transverse centerlines of adjacent slots are staggered 0.10 inch (2.54 mm). The distance between longitudinal centerlines of the slots is 0.25 inch (6.35 mm). There are eight teeth per square inch (645 mm^2) of surface area. Plates are available in $^1/_2$-inch (12.7 mm) width increments, up to 12 inches (304.8 mm), and lengthwise in 1-inch (25.4 mm) multiples. See Figure 1 for details.

3.2 MiTek® MT18HS™:

Model MT18HS™ metal truss connector plates are manufactured from minimum No. 18 gage [0.0466 inch total thickness (1.18 mm)], ASTM A 653, Grade 60, high-strength, low-alloy steel (HSLAS) with a G60 galvanization coating [0.0005 inch thickness on each side (0.013 mm)] and having a base-metal thickness of 0.0456 inch (1.16 mm). The plate has teeth $^3/_8$ inch (9.5 mm) long, punched in pairs formed at right angles to the face of the parent metal so that two teeth per hole occur along the length. The spacing along the longitudinal direction of each punched slot is 1 inch (25.4 mm) on center. The transverse centerlines of adjacent slots are staggered 0.10 inch (2.54 mm). The distance between longitudinal centerlines of the slots is 0.25 inch (6.35 mm). There are eight teeth per square inch (645 mm^2) of surface area. Plates are available in $^1/_2$-inch (12.7 mm) width increments, up to 12 inches (304.8 mm), and lengthwise in 1-inch (25.4 mm) multiples. See Figure 1 for details.

3.3 MiTek® TL20 and MT20™:

Models TL20 and MT20™ metal truss connector plates are manufactured from minimum No. 20 gage [0.0356 inch total thickness (0.9 mm)], ASTM A 653 SS, Grade 40 steel, with a G60 galvanization coating [0.0005 inch thickness on each side (0.013 mm)] and having a base-metal thickness of 0.0346 inch (0.88 mm). The plates have teeth $^3/_8$ inch (9.5 mm) long, punched in pairs formed at right angles to the face of the parent metal so that two teeth per hole occur along the length. The spacing along the longitudinal direction of each punched slot is 1 inch (25.4 mm) on center. The transverse centerlines of adjacent slots are staggered 0.10 inch (2.54 mm). The distance between longitudinal centerlines of the slots is 0.25 inch (6.35 mm). There are eight teeth per square inch (645 mm^2) of surface area. Plates are available in $^1/_2$-inch width (12.7 mm) increments, up to 12 inches (304.8 mm), and lengthwise in 1-inch (25.4 mm) multiples. See Figure 1 for details.

4.0 DESIGN AND INSTALLATION

4.1 General:

All truss plates are pressed into the wood for the full depth of their teeth by hydraulic-platen embedment presses, multiple roller presses that use partial embedment followed by full-embedment rollers, or combinations of partial embedment roller presses and hydraulic-platen presses that feed trusses into a stationary finish roller press. Trusses must be assembled within the tolerances provided by the Truss Plate Institute's Quality Criteria for Metal Plate Connected Wood Trusses, shown as Section 4 in ANSI/TPI 1 National Design Standard for Metal Plate Connected Wood Truss Construction.

4.2 Allowable Design Values:

Allowable design values for MiTek® metal truss connector plates to be used in the design of metal plate connected wood roof and floor trusses are shown in Tables 1 and 2. Allowable design values are applicable when the connection is made with identical plates on opposite sides of the joint. This evaluation report is limited to the evaluation of connection capacity of the MiTek® metal truss connector plates listed in this report. The design, manufacture, and installation of trusses employing the truss plates have not been evaluated.

5.0 CONDITIONS OF USE

The MiTek® Industries metal truss connector plates described in this report comply with, or are suitable alternatives to what is specified in, those codes listed in Section 1.0 of this report, subject to the following conditions:

5.1 This evaluation report and the manufacturer's published installation instructions, when required by the code official, must be submitted at the time of permit application. In the event of a conflict between the manufacturer's published installation instructions and this document, the instructions in this document govern.

5.2 Each application for a building permit, using these truss plate connectors, must be accompanied by documentation showing that the design, manufacture, and proposed installation conform with the requirements of the applicable code.

5.3 This report establishes plate design values only. For items not covered by this report, such as truss design, fabrication, quality assurance and special inspection, refer to ANSI/TPI 1, engineering drawings and the applicable code.

5.4 The design values (lateral resistance values, effective tension strength ratios, and effective shear resistance ratios) used in the design of trusses, using MiTek® Industries metal truss connector plates, must not exceed those listed in Tables 1 and 2 of this report. Load combination reductions must be in accordance with the applicable code.

5.5 All lumber used in the fabrication of trusses using MiTek® Industries metal truss connector plates must be graded in compliance with the applicable building code, and must have a moisture content not exceeding 19 percent at the time of assembly. Wet service factors from ANSI/TPI 1 Section 6.4.5 must be applied to the table values when the lumber moisture content exceeds 19 percent. Allowable values shown in the tables of this report are not applicable to metal connector plates embedded in either fire-retardant-treated lumber or preservative-treated lumber.

5.6 Metal truss connector plates must be installed in pairs on opposite faces of truss members.

5.7 Galvanized G60 metal truss plate connectors subject to corrosive environments must be protected in accordance with Section 6.5 of ANSI/TPI 1.

5.8 MiTek® metal truss connector plates are manufactured in St. Charles, Missouri; Phoenix, Arizona; Tampa, Florida; Edenton, North Carolina; and Bradford, Ontario, Canada.

6.0 EVIDENCE SUBMITTED

6.1 Data in accordance with the National Design Standard for Metal Plate Connected Wood Truss Construction, ANSI/TPI 1- 2007.

6.2 Manufacturer's descriptive literature.

6.3 A quality control manual.

7.0 IDENTIFICATION

The MiTek® connectors are identified by an imprint of the plate name embossed into the surface of the plate (for example, the MT20™ plate is embossed "MT20"). Additionally, boxes containing the connector plates must be labeled with the MiTek® Industries name, the metal connector plate model, and the evaluation report number (ESR-1988).

TABLE 1—ALLOWABLE LATERAL RESISTANCE VALUES, HYDRAULIC-PLATEN EMBEDMENT[3] (lb/in²/PLATE)

LUMBER SPECIES	SG	AA	EA	AE	EE
TL18, MT18, MT18HS™, TL20 and MT20™					
Douglas fir–larch	0.49	248	203	170	171
Hem-fir	0.43	188	159	133	141
Spruce-pine-fir	0.42	206	162	125	122
Southern pine	0.55	244	192	171	178

For SI: 1lb/in² = 6.9 kPa.

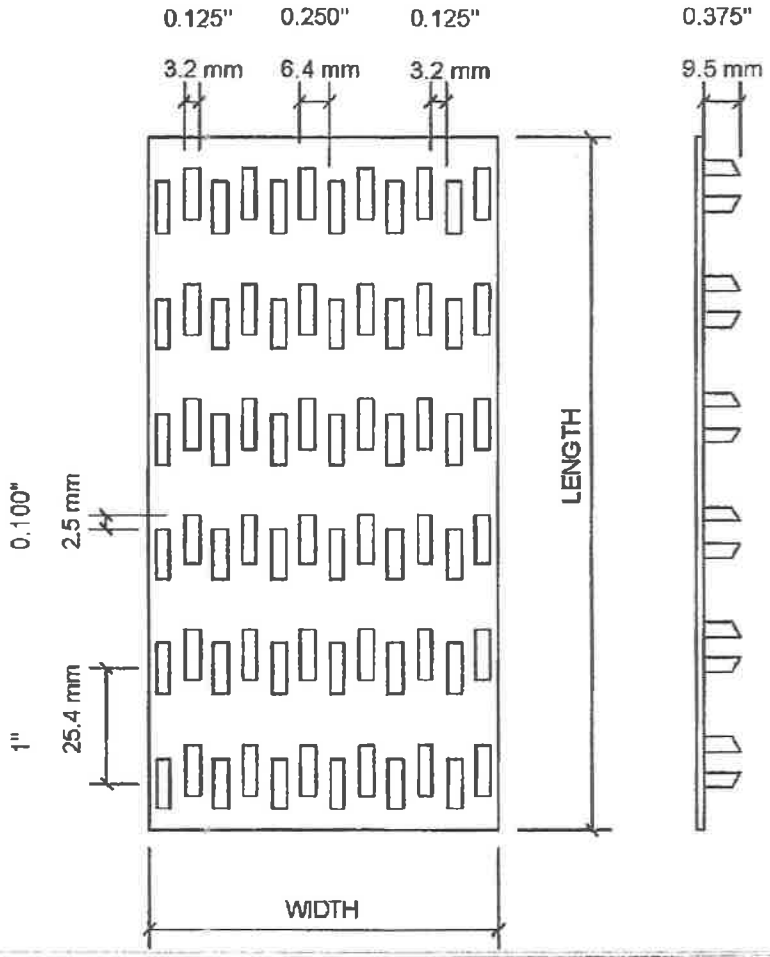
NOTES:
[1]Tooth-holding units = psi for a single plate (double for plates on both faces when applying to area on only one face). To achieve values, plates must be installed on opposite sides of joint.
[2]AA = Plate parallel to load, wood grain parallel to load.
EA = Plate perpendicular to load, wood grain parallel to load.
AE = Plate parallel to load, wood grain perpendicular to load.
EE = Plate perpendicular to load, wood grain perpendicular to load.
[3]All truss plates are pressed into the wood for the full depth of their teeth by hydraulic-platen embedment presses, multiple roller presses that use partial embedment followed by full-embedment rollers, or combinations of partial-embedment roller presses and hydraulic-platen presses that feed trusses into a stationary finish roller press.

TABLE 2—EFFECTIVE TENSION AND SHEAR RESISTANCE ALLOWABLE DESIGN VALUES[1]

PROPERTY FORCE DIRECTION	TL18 AND MT18		MT18HS™		TL20 AND MT20™	
	Efficiency	Pounds/ Inch/Pair of Connector Plates	Efficiency	Pounds/ Inch/Pair of Connector Plates	Efficiency	Pounds/ Inch/Pair of Connector Plates
Tension values in accordance with Section 5.4.4.2 of TPI-1 (Minimum Net Section over the joint)[2]						
Tension @ 0°	0.5	1149	0.48	1596	0.49	857
Tension @ 90°	0.52	1208	0.5	1671	0.49	854
Tension values in accordance with TPI-1 with a deviation [see Section 5.4.9 (e) 1] (Maximum Net Section Occurs over the joint[3])						
Tension @ 0°	0.59	1349	0.59	1975	0.59	1035
Tension @ 90°	0.53	1214	0.51	1727	0.49	861
Shear Values						
Shear @ 0°	0.56	874	0.55	1099	0.51	604
Shear @ 30°	0.66	1023	0.57	1153	0.74	876
Shear @ 60°	0.83	1283	0.74	1492	0.82	970
Shear @ 90°	0.49	757	0.52	1052	0.58	686
Shear @ 120°	0.39	608	0.4	802	0.42	498
Shear @ 150°	0.45	702	0.37	745	0.5	592

For SI: 1 lb/inch = 0.175 N/mm, 1 inch = 25.4 mm.

NOTES:
[1]Minimum coated thickness is 0.0356 inch (0.904 mm) for 20 gage, or 0.0466 inch (1.184 mm) for 18 gage in accordance with Section 4.3.4 of ANSI/TPI 1. Minimum coating thickness for G60 is 0.0010 inch (0.025 mm) total for both sides in accordance with Section 4.3.6 of ANSI/TPI 1.
[2]Minimum Net Section – A line through the plate's tooth pattern with the minimum amount of steel for a specified orientation. For these plates, this line passes through a line of holes.
[3]Maximum Net Section – A line through the plate's tooth pattern with the maximum amount of steel for a specified orientation. For these plates, this line passes through a section of the plate with no holes.



MT18, TL18, MT18HS, MT20, TL20

FIGURE 1—APPROXIMATE DIMENSIONS OF MITEK CONNECTOR PLATES (Inches) (1 Inch = 25.4 mm)

TIMBER PRODUCTS INSPECTION, INC.
dba
GENERAL TESTING AND INSPECTION AGENCY

105 SE 124TH AVENUE
VANCOUVER, WA 98684

Timber Products Inspection (TP) and General Testing and Inspection (GTI) are code recognized by the International Conference of Building Officials (ICBO E.S.) which as of January 1, 2003 became the International Accreditation Service, Inc (IAS) with the new assigned number of AA-664.

This is to verify that:

CALIFORNIA TRUSS
23665 CAJALCO ROAD
PERRIS, CA 92370

Is currently an active member in good standing in the TP Third Party Truss Auditing Program and has been since

APRIL 1996

Brian Hensley

BRIAN HENSLEY
TRUSS MANAGER -
WESTERN DIVISION

CompuTrus, Inc.

Custom Software Engineering Manufacturing

WARNINGS:

1. Builder and erection contractor should be advised of all General Notes and Warnings before construction commences.
2. 2x4 compression web bracing must be installed where shown+.
3. All lateral force resisting elements such as temporary and permanent stability bracing must be designed by designer of complete structure. CompuTrus assumes no responsibility for such bracing.
4. No load should be applied to any component until after all bracing and fasteners are complete and at no time should any loads greater than design loads be applied to any component.
5. CompuTrus has no control over and assumes no responsibility for the fabrication, handling, shipment and installation of components.
6. This design is furnished subject to the limitations set forth by TPI/WTCA in BCSI, copies of which will be furnished upon request.

GENERAL NOTES, unless otherwise noted:

1. This truss design is adequate for the design parameters shown. Review and approval is the responsibility of the building designer, not the truss designer or truss engineer.
2. Design assumes the top and bottom chords to be laterally braced at 2' and 10' o.c respectively unless braced throughout their length by continuous sheathing such as plywood sheathing (TC) and/or drywall (BC).
3. 2x Impact bridging or lateral bracing required where shown + +.
4. Installation of truss is the responsibility of the respective contractor.
5. Design assumes trusses are to be used in a non-corrosive environment, and are for "dry condition" of use.
6. Design assumes full bearing at all supports shown. Shim or wedge if necessary.
7. Design assumes adequate drainage is provided.
8. Plates shall be located on both faces of truss, and placed so their center lines coincide with joint center lines.
9. Digits indicate size of plate in inches.
10. For basic design values of the CompuTrus Plate see ESR-2529 (CompuTrus) and/or ESR-1311, ESR-1988(MiTek).

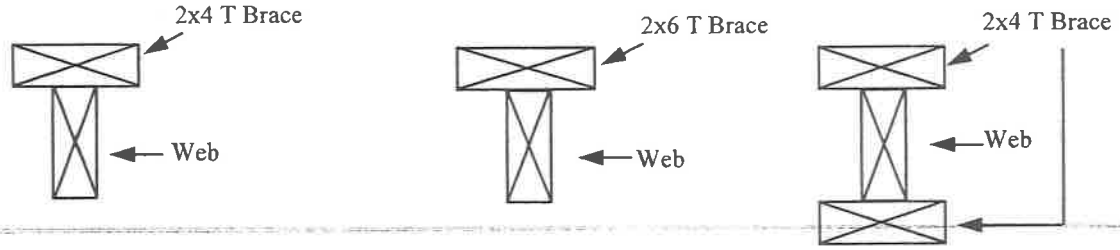
CompuTrus, Inc.
31945 Corydon Rd. Lake Elsinore, CA 92530 (951) 245-9525 Fax (951) 245-9805

Compression web bracing shown on CompuTrus designs is to resist buckling of those webs. An alternate method to brace 2x4 bracing shown on a single member truss is to attach "T" bracing.

T bracing is a 2x member placed flat on the web as shown in the figures.

1-2x4 Brace Required
See appropriate CompuTrus Engineering

2 or 3-2x4 Braces Shown
See appropriate CompuTrus Engineering



The T brace must be at least 80% of the web length and is attached with 8d nails at 3" o.c. throughout.

If a 2x4 or 2x6 web requires a single brace, a 2x4 T brace may be substituted. If a 2x4 or 2x6 web requires 2 or 3 braces, a single 2x6 T brace or a 2x4 T brace attached to the top and bottom of the web may be substituted. The T brace(s) must be of equal or better material than the web.

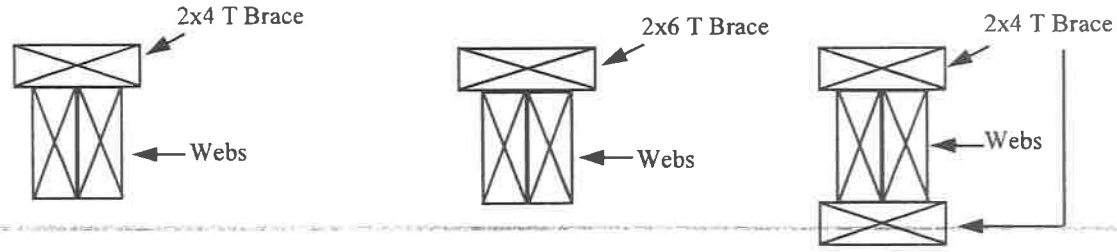
CompuTrus, Inc.
31945 Corydon Rd. Lake Elsinore, CA 92530 (951) 245-9525 Fax (951) 245-9805

Compression web bracing shown on CompuTrus designs is to resist buckling of those webs. An alternate method to brace 2x4 bracing shown on a double member truss is to attach "T" bracing.

T bracing is a 2x member placed flat on the web as shown in the figures.

1-2x4 Brace Required
See appropriate CompuTrus Engineering

2 or 3-2x4 Braces Shown
See appropriate CompuTrus Engineering



The T brace must be at least 80% of the web length and is attached with 8d nails at 3" o.c. throughout.

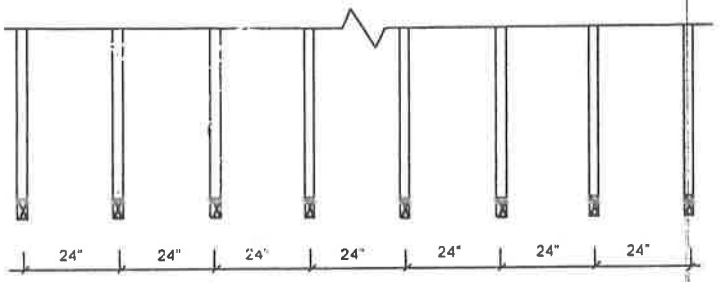
If a 2x4 or 2x6 web requires a single brace, a 2x4 T brace may be substituted. If a 2x4 or 2x6 web requires 2 or 3 braces, a single 2x6 T brace or a 2x4 T brace attached to the top and bottom of the web may be substituted. The T brace(s) must be of equal or better material than the web.

ComputTrus, Inc.

Custom Software Engineering Manufacturing

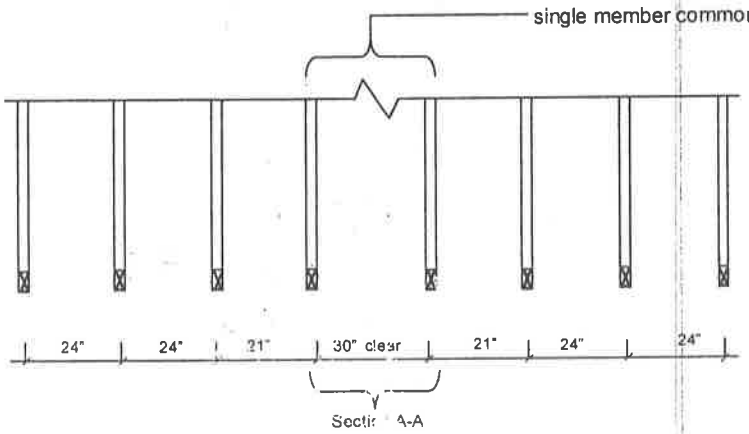
ALTERNATE FRAMING DETAIL AROUND 30" ACCESS

TYPICAL ROOF TRUSS LAYOUT

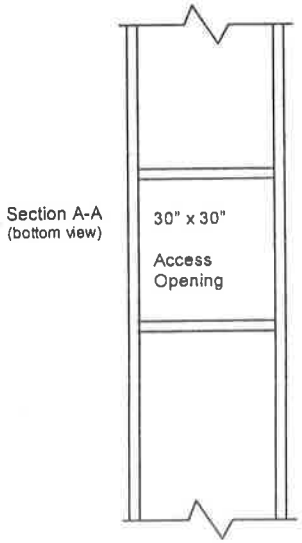


NOTE: REFER TO APPROPRIATE ENGINEERING DETAIL FOR TRUSS TYPES DESIGNED FOR OVERSPACING.

ADJUSTED ROOF TRUSS LAYOUT



Ladder Frame
Between trusses with 2x4 at 48" o.c.



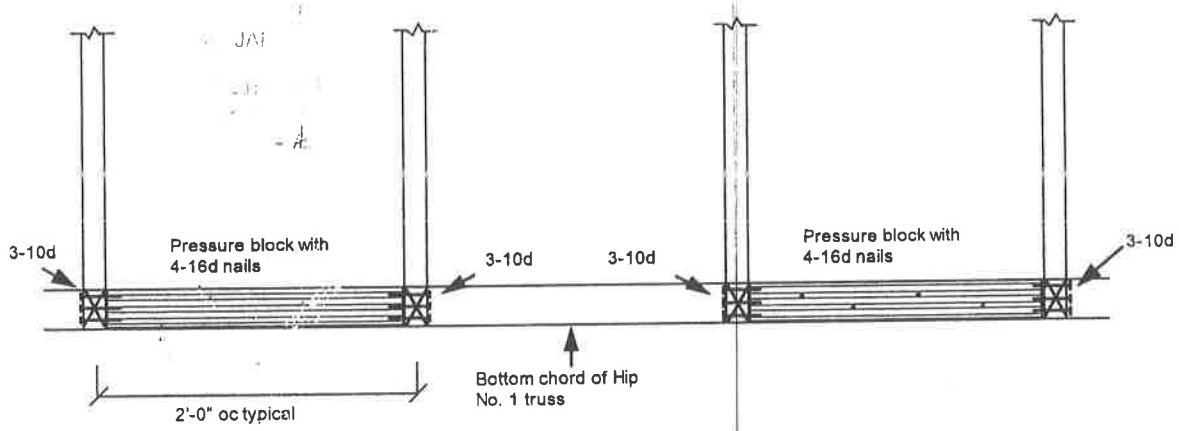
REGISTERED PROFESSIONAL ENGINEER
SCOTT R. CARROLL
EXP. 3/31/13
CIVIL ENGINEER
STATE OF CALIFORNIA

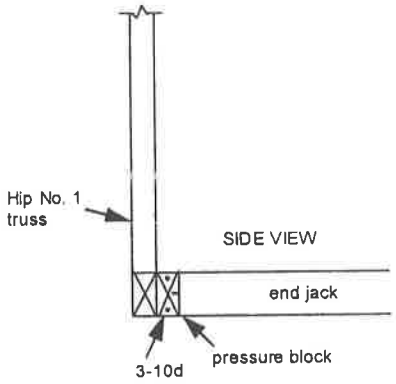
FILE NO:	30" ATTIC ACCESS
DATE:	07/23/08
REF:	25-1 DES: JAB
IBC 2009 / CBC 2010	

ComputTrus, Inc.

Custom Software Engineering, Manufacturing

PRESSURE BLOCKING DETAIL FOR END JACK BOTTOM CHORD UP TO 8'-0" AT HIP NO. 1 WITH CEILING LOAD OF 10psf





NOTE: Attach 2x4 Doug Fir pressure block to bottom chord of hip no. 1 with 4-16d nails. Bottom chords of end joints are attached with 3-10d nails at each end of the pressure block.

REGISTERED PROFESSIONAL ENGINEER
SCOTT R. CARROLL
EXP. 3/31/13
CIVIL ENGINEER
STATE OF CALIFORNIA

FILE NO: PRESSURE BLOCKING
DATE: 01/20/08
REF: 15, 25-1 DES: SC
IBC 2009 / CBC 2010

This design prepared from computer input by
CALIFORNIA TRUSS CO [ERIC R]

LUMBER SPECIFICATIONS
TC: 2x4 DF #1&BTR
BC: 2x4 DF #1&BTR
WEBS: 2x3 DF STD/STUD

TC LATERAL SUPPORT <= 12"OC. UON.
BC LATERAL SUPPORT <= 12"OC. UON.

OVERHANGS: 27.3" 27.3"

M-1.5x3 or equal at non-structural vertical members (uon).

Connector plate prefix designators:
C,CN,C18,CN18 (or no prefix) = CompuTrus, Inc
M,M20HS,M18HS,M16 = MiTek MT series

TRUSS SPAN 21'- 0.0"
LOAD DURATION INCREASE = 1.25
SPACED 24.0" O.C.

LOADING
LL(20.0)+DL(15.0) ON TOP CHORD = 35.0 PSF
DL ON BOTTOM CHORD = 7.0 PSF
TOTAL LOAD = 42.0 PSF

LIMITED STORAGE DOES NOT APPLY DUE TO THE SPATIAL REQUIREMENTS OF IRC 2009 AND IBC 2009 NOT BEING MET.

BOTTOM CHORD CHECKED FOR 10PSF LIVE LOAD, TOP AND BOTTOM CHORD LIVE LOADS ACT NON-CONCURRENTLY.

Truss designed for 4x2 outlookers, 2x4 let-ins of the same size and grade as structural top chord. Insure tight fit at each end of let-in. Connect with M-3x5 at each end and M-1.5x3 at center of board (u.o.n.). Refer to Seq No 056943 for plate placement detail. Outlookers must be cut with care and are permissible at inlet board areas only.

CBC2010/IBC2009 MAX MEMBER FORCES 4WR/GDF/Cq=1.00

1- 2=(-18) 59	2- 8=(-186) 1673	3- 8=(-487) 36
2- 3=(-1669) 0	8- 6=(-186) 1673	8- 4=(0) 593
3- 4=(-1197) 0		8- 5=(-487) 36
4- 5=(-1197) 0		
5- 6=(-1669) 0		
6- 7=(-18) 59		

BEARING LOCATIONS	MAX VERT REACTIONS	MAX HORZ REACTIONS	BRG SIZE	REQUIRED BRG AREA SQ.IN.	(SPECIES)
0'- 0.0"	0/ 1038V	-1500/ 1500H	3.50"	1.66	DF (625)
21'- 0.0"	0/ 1038V	-1500/ 1500H	3.50"	1.66	DF (625)

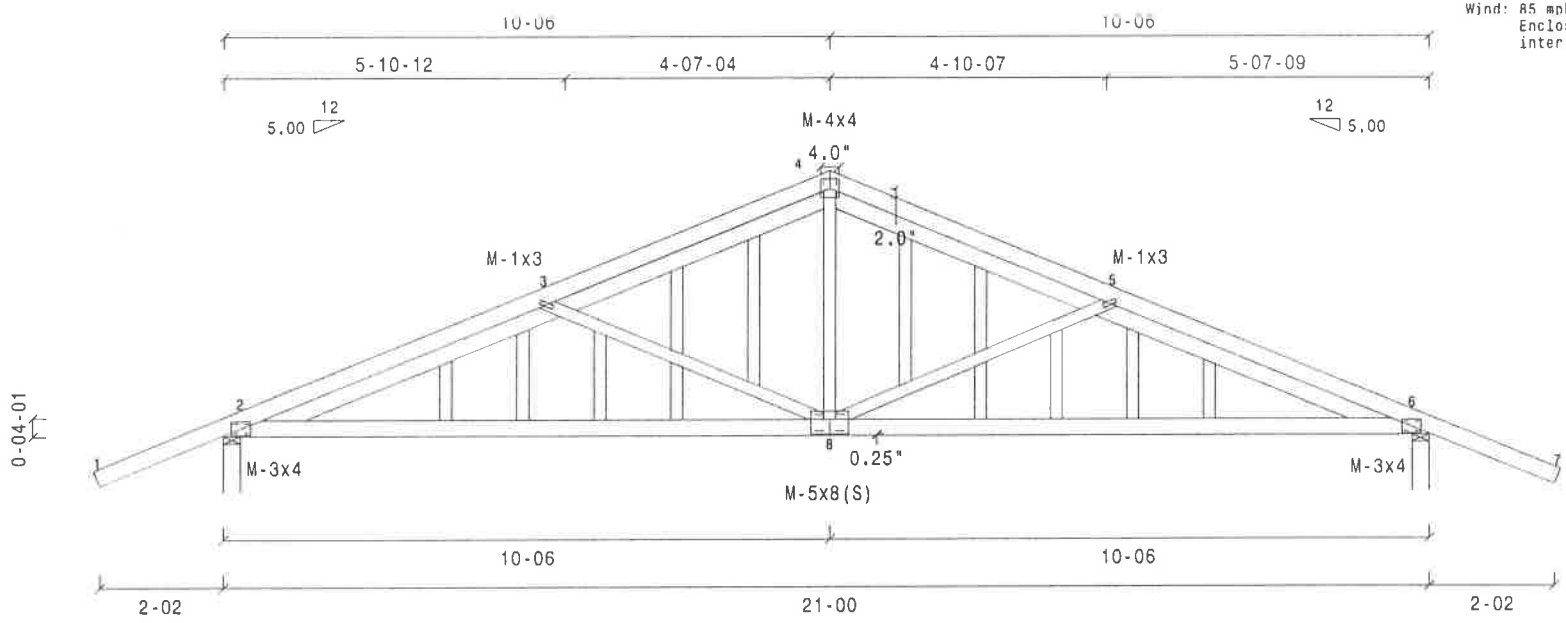
VERTICAL DEFLECTION LIMITS: LL=L/360, TL=L/240
MAX LL DEFL = -0.022" @ -2'- 2.7" Allowed = 0.152"
MAX TL DEFL = -0.038" @ -2'- 2.7" Allowed = 0.228"
MAX LL DEFL = -0.046" @ 10'- 6.0" Allowed = 0.681"
MAX TL CREEP DEFL = -0.121" @ 10'- 6.0" Allowed = 1.021"
MAX LL DEFL = -0.022" @ 23'- 2.7" Allowed = 0.152"
MAX TL DEFL = -0.038" @ 23'- 2.7" Allowed = 0.228"
RECOMMENDED CAMBER (BASED ON DL DEFL)= 0.075"

MAX HORIZ. LL DEFL = 0.019" @ 20'- 8.5"
MAX HORIZ. TL DEFL = 0.039" @ 20'- 8.5"

COND. 2: 1500.00 LBS DRAG LOAD.

Wind: 85 mph, h=15ft, TCDL=9.0 BCDL=4.2, ASCE 7-05
Enclosed, Cat.2, Exp.C, MWFRS,
interior zone, load duration factor=1.6

Max CSI: TC:0.34 BC:0.77 Web:0.38



JOB NAME:

Scale: 0.2970

Truss: AA01
DES. BY: MJ
DATE: 8/18/2011
SEQ.: 4924699
TRANS ID: 318814

WARNINGS:
1. Builder and erection contractor should be advised of all General Notes and Warnings before construction commences.
2. 2x4 compression web bracing must be installed where shown +.
3. All lateral force resisting elements such as temporary and permanent stability bracing must be designed by designer of complete structure. CompuTrus assumes no responsibility for such bracing.
4. No load should be applied to any component until after all bracing and fasteners are complete and at no time should any loads greater than design loads be applied to any component.
5. CompuTrus has no control over and assumes no responsibility for the fabrication, handling, shipment and installation of components.
6. This design is furnished subject to the limitations set forth by TPI/WTCA in BCSI, copies of which will be furnished upon request.

CompuTrus, Inc. Software 7.6.1A(1L)-E

GENERAL NOTES, unless otherwise noted:
1. This truss design is adequate for the design parameters shown. Review and approval is the responsibility of the building designer, not the truss designer or truss engineer.
2. Design assumes the top and bottom chords to be laterally braced at 2' o.c. and at 10' o.c. respectively unless braced throughout their length by continuous sheathing such as plywood sheathing(TC) and/or drywall(BC).
3. 2x Impact bridging or lateral bracing required where shown + +
4. Installation of truss is the responsibility of the respective contractor.
5. Design assumes trusses are to be used in a non-corrosive environment and are for "dry condition" of use.
6. Design assumes full bearing at all supports shown. Shim or wedge if necessary.
7. Design assumes adequate drainage is provided.
8. Plates shall be located on both faces of truss, and placed so their center lines coincide with joint center lines.
9. Digits indicate size of plate in inches.
10. For basic connector plate design values see ESR-2529 (CompuTrus) and/or ESR-1311, ESR-1988 (MiTek).

REGISTERED PROFESSIONAL ENGINEER
SCOTT R. CARROLL
EXP. 3/31/13
CIVIL ENGINEER
STATE OF CALIFORNIA

This design prepared from computer input by
CALIFORNIA TRUSS CO [ERIC R]

LUMBER SPECIFICATIONS
TC: 2x4 DF #1&BTR
BC: 2x4 DF #1&BTR
WEBS: 2x3 DF STD/STUD

TC LATERAL SUPPORT <= 12"OC, UON.
BC LATERAL SUPPORT <= 12"OC, UON.

OVERHANGS: 27.3" 27.3"

Connector plate prefix designators:
C,CN,C18,CN18 (or no prefix) = CompuTrus, Inc
M,M20HS,M18HS,M16 = MiTek MT series

TRUSS SPAN 21'- 0.0"
LOAD DURATION INCREASE = 1.25
SPACED 24.0" O.C.

LOADING
LL(20.0)+DL(15.0) ON TOP CHORD = 35.0 PSF
DL ON BOTTOM CHORD = 7.0 PSF
TOTAL LOAD = 42.0 PSF

LIMITED STORAGE DOES NOT APPLY DUE TO THE SPATIAL REQUIREMENTS OF IRC 2009 AND IBC 2009 NOT BEING MET.

BOTTOM CHORD CHECKED FOR 10PSF LIVE LOAD, TOP AND BOTTOM CHORD LIVE LOADS ACT NON-CONCURRENTLY.

CBC2010/IBC2009 MAX MEMBER FORCES 4WR/GDF/Cq=1.00

1- 2=(-18)	59	2- 8=(0)	1470	3- 8=(-487)	36
2- 3=(-1669)	0	8- 6=(0)	1470	8- 4=(0)	593
3- 4=(-1197)	0			8- 5=(-487)	36
4- 5=(-1197)	0				
5- 6=(-1669)	0				
6- 7=(-18)	59				

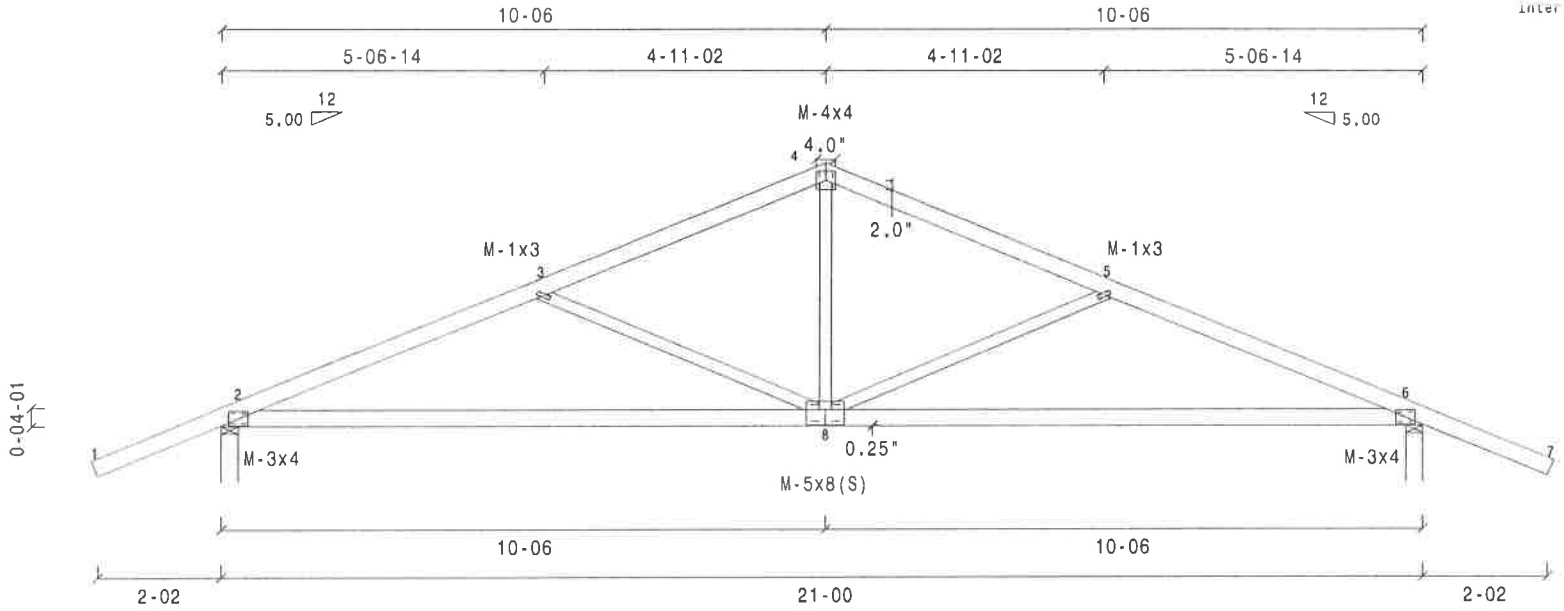
BEARING LOCATIONS	MAX VERT REACTIONS		MAX HORZ REACTIONS		BRG SIZE	REQUIRED BRG AREA SQ.IN.	(SPECIES)
0'- 0.0"	0/ 1038V	-114/	114H		3.50"	1.66	DF (625)
21'- 0.0"	0/ 1038V	-114/	114H		3.50"	1.66	DF (625)

VERTICAL DEFLECTION LIMITS: LL=L/360, TL=L/240
MAX LL DEFL = -0.022" @ -2'- 2.7" Allowed = 0.152"
MAX TL DEFL = -0.038" @ -2'- 2.7" Allowed = 0.228"
MAX LL DEFL = -0.046" @ 10'- 6.0" Allowed = 0.681"
MAX TL CREEP DEFL = -0.121" @ 10'- 6.0" Allowed = 1.021"
MAX LL DEFL = -0.022" @ 23'- 2.7" Allowed = 0.152"
MAX TL DEFL = -0.038" @ 23'- 2.7" Allowed = 0.228"
RECOMMENDED CAMBER (BASED ON DL DEFL)= 0.075"

MAX HORIZ. LL DEFL = 0.019" @ 20'- 8.5"
MAX HORIZ. TL DEFL = 0.038" @ 20'- 8.5"

Wind: 85 mph, h=15ft, TCDL=9.0,BCDL=4.2, ASCE 7-05, Enclosed, Cat.2, Exp.C, MWFRS, Interior Zone, Load duration factor=1.6

Max CSI: TC:0.34 BC:0.77 Web:0.38



JOB NAME:

Scale: 0.2960

Truss: AA02
DES. BY: MJ
DATE: 8/18/2011
SEQ.: 4924700
TRANS ID: 318814

WARNINGS:
1. Builder and erection contractor should be advised of all General Notes and Warnings before construction commences.
2. 2x4 compression web bracing must be installed where shown +.
3. All lateral force resisting elements such as temporary and permanent stability bracing must be designed by designer of complete structure. CompuTrus assumes no responsibility for such bracing.
4. No load should be applied to any component until after all bracing and fasteners are complete and at no time should any loads greater than design loads be applied to any component.
5. CompuTrus has no control over and assumes no responsibility for the fabrication, handling, shipment and installation of components.
6. This design is furnished subject to the limitations set forth by TPI/WTCA in BCSI, copies of which will be furnished upon request.

CompuTrus, Inc. Software 7.6.1A(1L)-E

GENERAL NOTES, unless otherwise noted:
1. This truss design is adequate for the design parameters shown. Review and approval is the responsibility of the building designer, not the truss designer or truss engineer.
2. Design assumes the top and bottom chords to be laterally braced at 2' o.c. and at 10' o.c. respectively unless braced throughout their length by continuous sheathing such as plywood sheathing(TC) and/or drywall(BC).
3. 2x Impact bridging or lateral bracing required where shown + +
4. Installation of truss is the responsibility of the respective contractor.
5. Design assumes trusses are to be used in a non-corrosive environment, and are for "dry condition" of use.
6. Design assumes full bearing at all supports shown. Shim or wedge if necessary.
7. Design assumes adequate drainage is provided.
8. Plates shall be located on both faces of truss, and placed so their center lines coincide with joint center lines.
9. Digits indicate size of plate in inches.
10. For basic connector plate design values see ESR-2529 (CompuTrus) and/or ESR-1311, ESR-1988 (MiTek).

REGISTERED PROFESSIONAL ENGINEER
SCOTT R. CARROLL
No. 29017
EXP. 3/31/13
CIVIL ENGINEER
STATE OF CALIFORNIA

LUMBER SPECIFICATIONS
TC: 2x4 DF #1&BTR
BC: 2x4 DF #1&BTR
WEBS: 2x4 DF STD/STUD

TC LATERAL SUPPORT <= 12"OC, UON.
BC LATERAL SUPPORT <= 12"OC, UON.

OVERHANGS: 27.3" 27.3"

M-1.5x3 or equal at non-structural vertical members (uon).

Connector plate prefix designators:
C,CN,C18,CN18 (or no prefix) = CompuTrus, Inc
M,M2OHS,M18HS,M16 = MiTek MT series

TRUSS SPAN 26'- 0.0"
LOAD DURATION INCREASE = 1.25
SPACED 24.0" O.C.

LOADING
LL(20.0)+DL(15.0) ON TOP CHORD = 35.0 PSF
DL ON BOTTOM CHORD = 7.0 PSF
TOTAL LOAD = 42.0 PSF

LIMITED STORAGE DOES NOT APPLY DUE TO THE SPATIAL REQUIREMENTS OF CBC 2010 NOT BEING MET.

BOTTOM CHORD CHECKED FOR 10PSF LIVE LOAD, TOP AND BOTTOM CHORD LIVE LOADS ACT NON-CONCURRENTLY.

CBC2010/IBC2009
1- 2=(-18) 59
2- 3=(-2154) 0
3- 4=(-1862) 0
4- 5=(-1862) 0
5- 6=(-2154) 0
6- 7=(-18) 59

MAX MEMBER FORCES
2- 8=(-1254) 3222
8- 9=(-1152) 2445
9- 6=(-1254) 3222

4WR/GDF/Cq=1.00
3- 8=(-570) 171
8- 4=(-12) 736
4- 9=(-12) 736
9- 5=(-570) 171

BEARING LOCATIONS	MAX VERT REACTIONS	MAX HORZ REACTIONS	BRG SIZE	REQUIRED BRG AREA SQ.IN.	(SPECIES)
0'- 0.0"	0/ 1248V	-3600/ 3600H	3.50"	2.00	DF (625)
26'- 0.0"	0/ 1248V	-3600/ 3600H	3.50"	2.00	DF (625)

VERTICAL DEFLECTION LIMITS: LL=L/360, TL=L/240
MAX LL DEFL = -0.022" @ -2'- 2.7" Allowed = 0.152"
MAX TL DEFL = -0.038" @ -2'- 2.7" Allowed = 0.228"
MAX LL DEFL = -0.071" @ 8'- 10.6" Allowed = 0.847"
MAX TL CREEP DEFL = -0.189" @ 8'- 10.6" Allowed = 1.271"
MAX LL DEFL = -0.022" @ 28'- 2.7" Allowed = 0.152"
MAX TL DEFL = -0.038" @ 28'- 2.7" Allowed = 0.228"
RECOMMENDED CAMBER (BASED ON DL DEFL)= 0.118"

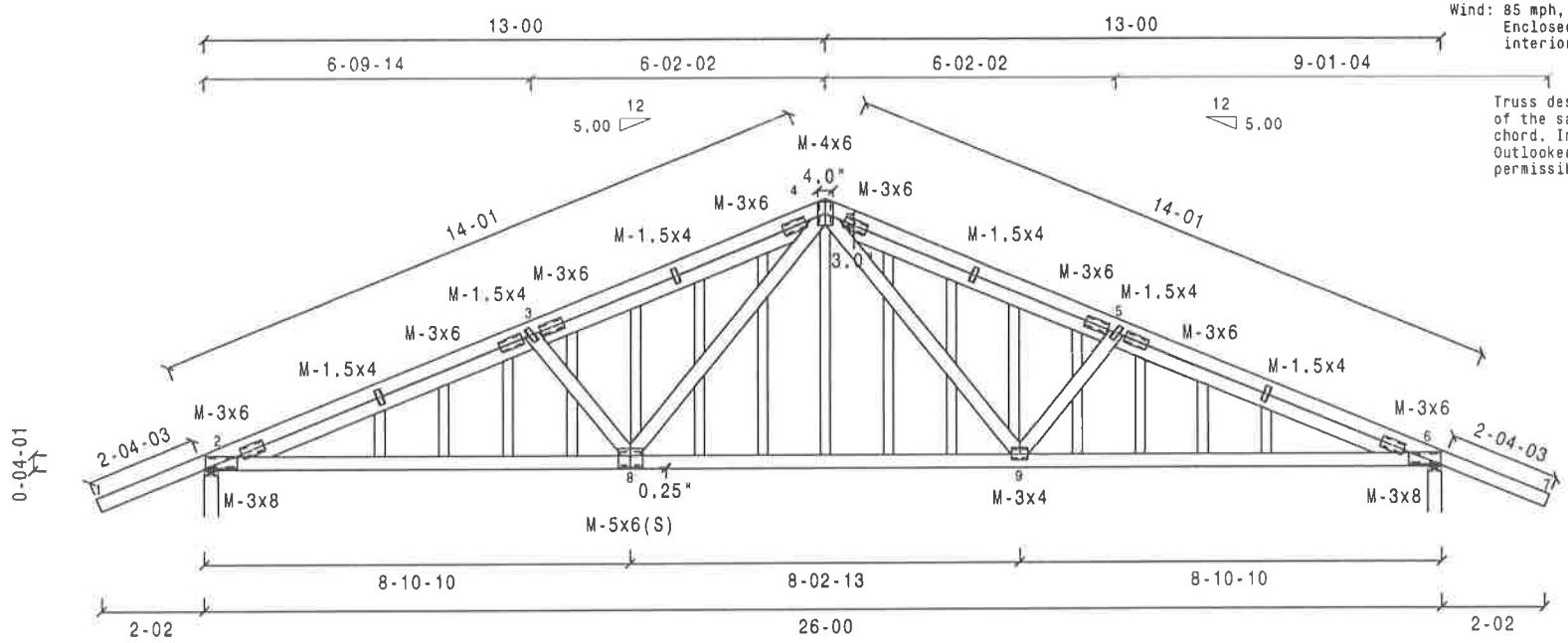
MAX HORIZ. LL DEFL = 0.058" @ 0'- 3.5"
MAX HORIZ. TL DEFL = -0.086" @ 0'- 3.5"

COND. 2: 3600.00 LBS DRAG LOAD.

Wind: 85 mph, h=15ft, TCDL=9.0,BCDL=4.2, ASCE 7-05, Enclosed, Cat.2, Exp.C, MWFRS, interior zone, load duration factor=1.6

Max DEF: TC:0.55 BC:0.51 Web:0.29

Truss designed for 4x2 outlookers, 2x4 let-ins of the same size and grade as structural top chord. Insure tight fit at each end of let-in. Outlookers must be cut with care and are permissible at inlet board areas only.



JOB NAME:

Scale: 0.2493

Truss: AB01

DES. BY: BC
DATE: 10/6/2011
SEQ.: 4983753
TRANS ID: 322716

WARNINGS:
1. Builder and erection contractor should be advised of all General Notes and Warnings before construction commences.
2. 2x4 compression web bracing must be installed where shown +.
3. All lateral force resisting elements such as temporary and permanent stability bracing must be designed by designer of complete structure. CompuTrus assumes no responsibility for such bracing.
4. No load should be applied to any component until after all bracing and fasteners are complete and at no time should any loads greater than design loads be applied to any component.
5. CompuTrus has no control over and assumes no responsibility for the fabrication, handling, shipment and installation of components.
6. This design is furnished subject to the limitations set forth by

GENERAL NOTES, unless otherwise noted:
1. This truss design is adequate for the design parameters shown. Review and approval is the responsibility of the building designer, not the truss designer or truss engineer.
2. Design assumes the top and bottom chords to be laterally braced at 2' o.c. and at 10' o.c. respectively unless braced throughout their length by continuous sheathing such as plywood sheathing(TC) and/or drywall(BC).
3. 2x impact bridging or lateral bracing required where shown + +
4. Installation of truss is the responsibility of the respective contractor.
5. Design assumes trusses are to be used in a non-corrosive environment, and are for "dry condition" of use.
6. Design assumes full bearing at all supports shown. Shim or wedge if necessary.
7. Design assumes adequate drainage is provided.
8. Plates shall be located on both faces of truss, and placed so their center

This design prepared from computer input by
CALIFORNIA TRUSS CO [ERIC R]

LUMBER SPECIFICATIONS
TC: 2x4 DF #1&BTR
BC: 2x4 DF #1&BTR
WEBS: 2x4 DF STD/STUD

TC LATERAL SUPPORT <= 12"OC, UON.
BC LATERAL SUPPORT <= 12"OC, UON.

OVERHANGS: 27.3" 27.3"

Connector plate prefix designators:
C,CN,C18,CN18 (or no prefix) = CompuTrus, Inc
M,M20HS,M18HS,M16 = MiTek MT series

TRUSS SPAN 26'- 0.0"
LOAD DURATION INCREASE = 1.25
SPACED 24.0" O.C.

LOADING
LL(20.0)+DL(15.0) ON TOP CHORD = 35.0 PSF
DL ON BOTTOM CHORD = 7.0 PSF
TOTAL LOAD = 42.0 PSF

BOTTOM CHORD CHECKED FOR A 20 PSF LIMITED STORAGE
LIVE LOAD AT LOCATION(S) SPECIFIED BY IBC 2009.
THE BOTTOM CHORD DEAD LOAD IS A MINIMUM OF 10 PSF.

CBC2010/IBC2009 MAX MEMBER FORCES 4WR/GDF/Cq=1.00

1- 2=(-18) 59	2- 8=(0) 2147	3- 8=(-476) 37
2- 3=(-2418) 0	8- 9=(0) 1405	8- 4=(0) 766
3- 4=(-2127) 0	9- 6=(0) 2147	4- 9=(0) 766
4- 5=(-2127) 0		9- 5=(-476) 37
5- 6=(-2418) 0		
6- 7=(-18) 59		

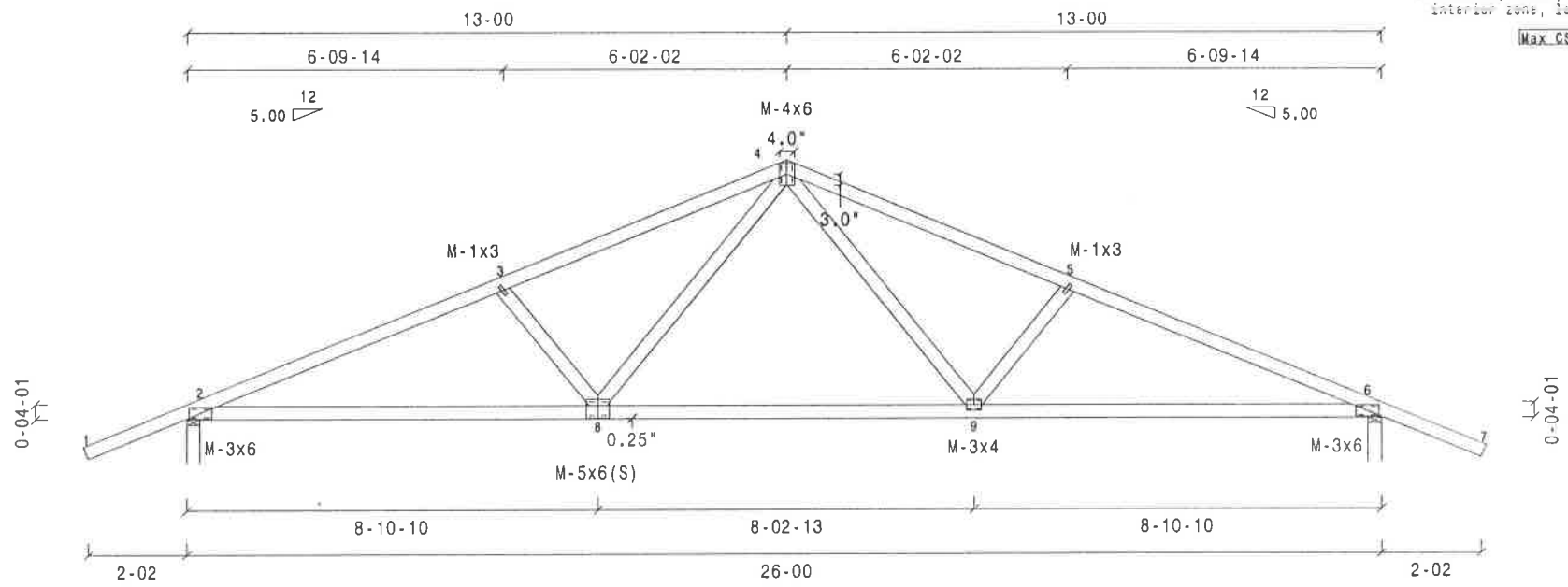
BEARING LOCATIONS	MAX VERT REACTIONS	MAX HORZ REACTIONS	BRG SIZE	REQUIRED BRG AREA SQ.IN.	(SPECIES)
0'- 0.0"	0/ 1371V	-134/ 134H	3.50"	2.19	DF (625)
26'- 0.0"	0/ 1371V	-134/ 134H	3.50"	2.19	DF (625)

VERTICAL DEFLECTION LIMITS: LL=L/360, TL=L/240
MAX LL DEFL = -0.022" @ -2'- 2.7" Allowed = 0.152"
MAX TL DEFL = -0.038" @ -2'- 2.7" Allowed = 0.228"
MAX LL DEFL = -0.081" @ 17'- 1.4" Allowed = 0.847"
MAX TL CREEP DEFL = -0.189" @ 8'- 10.6" Allowed = 1.271"
MAX LL DEFL = -0.022" @ 28'- 2.7" Allowed = 0.152"
MAX TL DEFL = -0.038" @ 28'- 2.7" Allowed = 0.228"
RECOMMENDED CAMBER (BASED ON DL DEFL)= 0.118"

MAX HORIZ. LL DEFL = 0.030" @ 25'- 8.5"
MAX HORIZ. TL DEFL = 0.062" @ 25'- 8.5"

Wind: 85 mph, h=15ft, TCDL=9.0,BCDL=4.2, ASCE 7-05, Enclosed, Cat.2, Exp.C, MWFRS, Interior zone, load duration factor=1.6

Max CSI: TC:0.55 BC:0.52 Web:0.31



JOB NAME:

Scale: 0.2542

Truss: AB02
DES. BY: MJ
DATE: 8/18/2011
SEQ.: 4924702
TRANS ID: 318814

WARNINGS:
1. Builder and erection contractor should be advised of all General Notes and Warnings before construction commences.
2. 2x4 compression web bracing must be installed where shown +.
3. All lateral force resisting elements such as temporary and permanent stability bracing must be designed by designer of complete structure. CompuTrus assumes no responsibility for such bracing.
4. No load should be applied to any component until after all bracing and fasteners are complete and at no time should any loads greater than design loads be applied to any component.
5. CompuTrus has no control over and assumes no responsibility for the fabrication, handling, shipment and installation of components.
6. This design is furnished subject to the limitations set forth by TPI/WTCA in BCSI, copies of which will be furnished upon request.

CompuTrus, Inc. Software 7.6.1A(1L)-E

GENERAL NOTES, unless otherwise noted:
1. This truss design is adequate for the design parameters shown. Review and approval is the responsibility of the building designer, not the truss designer or truss engineer.
2. Design assumes the top and bottom chords to be laterally braced at 2' o.c. and at 10' o.c. respectively unless braced throughout their length by continuous sheathing such as plywood sheathing(TC) and/or drywall(BC).
3. 2x Impact bridging or lateral bracing required where shown + +
4. Installation of truss is the responsibility of the respective contractor.
5. Design assumes trusses are to be used in a non-corrosive environment, and are for "dry condition" of use.
6. Design assumes full bearing at all supports shown. Shim or wedge if necessary.
7. Design assumes adequate drainage is provided.
8. Plates shall be located on both faces of truss, and placed so their center lines coincide with joint center lines.
9. Digits indicate size of plate in inches.
10. For basic connector plate design values see ESR-2529 (CompuTrus) and/or ESR-1311, ESR-1988 (MiTek).

REGISTERED PROFESSIONAL ENGINEER
SCOTT R. CARROLL
No. 29017
EXP. 3/31/13
CIVIL ENGINEER
STATE OF CALIFORNIA

This design prepared from computer input by
CALIFORNIA TRUSS CO [ERIC R]

LUMBER SPECIFICATIONS
TC: 2x4 DF #1&BTR
BC: 2x4 DF #1&BTR
WEBS: 2x4 DF STD/STUD

TC MAX PURLIN SPACING 32"OC, UON.
BC MAX PURLIN SPACING 120"OC, UON.

OVERHANGS: 27.3" 27.3"

Unbalanced live loads have been considered for this design.

Connector plate prefix designators:
C,CN,C18,CN18 (or no prefix) = CompuTrus, Inc
M,M20HS,M18HS,M16 = MiTek MT series

TRUSS SPAN 26'- 0.0"
LOAD DURATION INCREASE = 1.25 (Non-Rep)
SPACED 30.0" O.C.

LOADING
LL(20.0)+DL(15.0) ON TOP CHORD = 35.0 PSF
DL ON BOTTOM CHORD = 7.0 PSF
TOTAL LOAD = 42.0 PSF

BC UNIF LL(0.0)+DL(15.0)= 15.0 PSF 10'- 6.0" TO 15'- 6.0" V

BOTTOM CHORD CHECKED FOR A 20 PSF LIMITED STORAGE LIVE LOAD AT LOCATION(S) SPECIFIED BY IBC 2009. THE BOTTOM CHORD DEAD LOAD IS A MINIMUM OF 10 PSF.

BEARING LOCATIONS
0'- 0.0"
26'- 0.0"

CBC2010/IBC2009 MAX MEMBER FORCES 4WR/GDF/Cq=1.00

1- 2=(-22)	74	2-10=(0)	3051	3-10=(-621)	46
2- 3=(-3419)	0	10-12=(0)	2564	10- 4=(0)	665
3- 4=(-2907)	0	12- 8=(0)	3051	4-11=(-2109)	0
4- 5=(-556)	0			11- 5=(0)	241
5- 6=(-556)	0			11- 6=(-2109)	0
6- 7=(-2907)	0			6-12=(0)	665
7- 8=(-3419)	0			12- 7=(-621)	46
8- 9=(-22)	74				

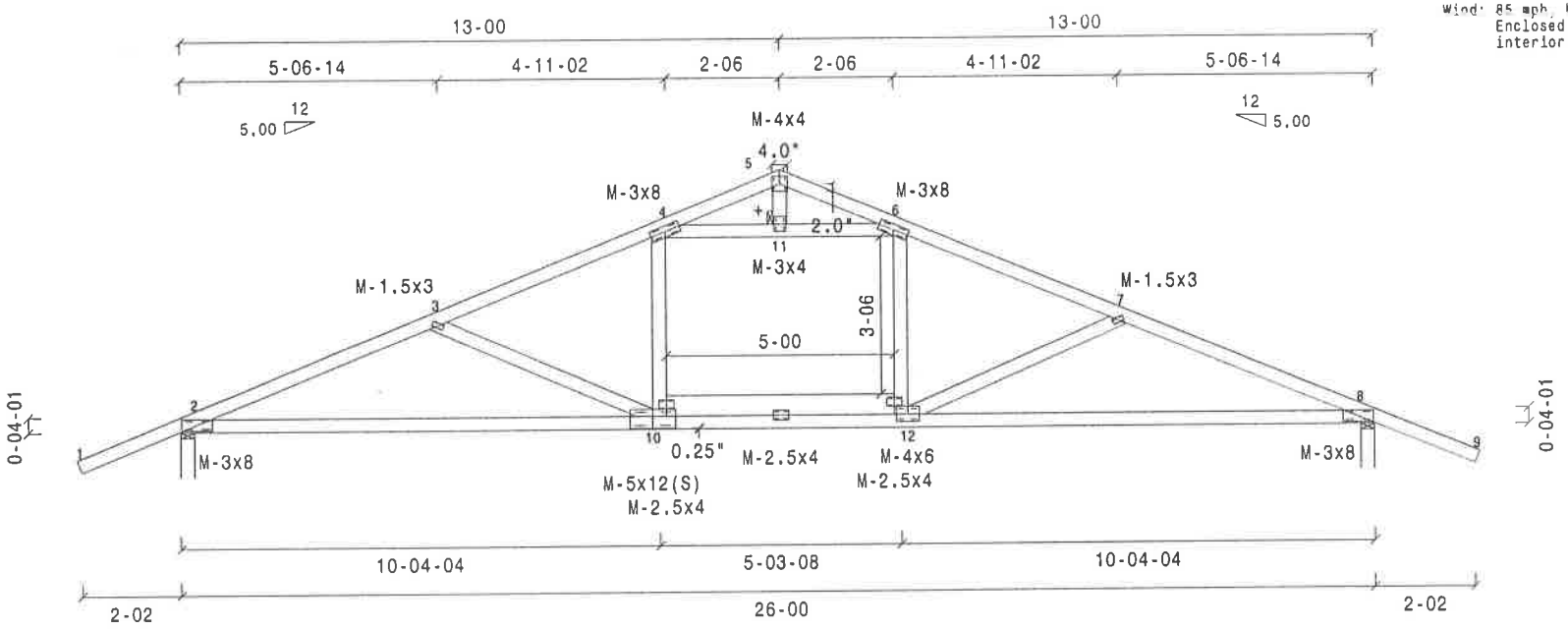
MAX VERT REACTIONS	MAX HORZ REACTIONS	BRG SIZE	REQUIRED BRG AREA SQ.IN.	(SPECIES)
0/ 1876V	-168/ 168H	3.50"	3.00	DF (625)
0/ 1876V	-168/ 168H	3.50"	3.00	DF (625)

VERTICAL DEFLECTION LIMITS: LL=L/360, TL=L/240
MAX LL DEFL = -0.027" @ -2'- 2.7" Allowed = 0.152"
MAX TL DEFL = -0.048" @ -2'- 2.7" Allowed = 0.228"
MAX LL DEFL = -0.270" @ 10'- 5.3" Allowed = 0.847"
MAX TL DEFL = -0.381" @ 10'- 5.3" Allowed = 1.271"
MAX LL DEFL = -0.027" @ 28'- 2.7" Allowed = 0.152"
MAX TL DEFL = -0.048" @ 28'- 2.7" Allowed = 0.228"
RECOMMENDED CAMBER (BASED ON DL DEFL)= 0.169"

MAX HORIZ. LL DEFL = 0.046" @ 25'- 8.5"
MAX HORIZ. TL DEFL = 0.095" @ 25'- 8.5"

Wind: 85 mph, h=15ft, TCDL=9.0 BCDL=4.2, ASCE 7-05; Enclosed, Cat.2, Exp.C, MWFRS, interior zone, load duration factor=1.6

Max CSI: TC:0.95 BC:0.87 Web:0.35



JOB NAME:

Scale: 0.2419

Truss: AB03

DES. BY: MJ
DATE: 8/18/2011
SEQ.: 4924703
TRANS ID: 318814

WARNINGS:
1. Builder and erection contractor should be advised of all General Notes and Warnings before construction commences.
2. 2x4 compression web bracing must be installed where shown +.
3. All lateral force resisting elements such as temporary and permanent stability bracing must be designed by designer of complete structure. CompuTrus assumes no responsibility for such bracing.
4. No load should be applied to any component until after all bracing and fasteners are complete and at no time should any loads greater than design loads be applied to any component.
5. CompuTrus has no control over and assumes no responsibility for the fabrication, handling, shipment and installation of components.
6. This design is furnished subject to the limitations set forth by TPI/WTCA in BCSI, copies of which will be furnished upon request.

CompuTrus, Inc. Software 7.6.1A(1L)-Z

GENERAL NOTES, unless otherwise noted:
1. This truss design is adequate for the design parameters shown. Review and approval is the responsibility of the building designer, not the truss designer or truss engineer.
2. Design assumes the top and bottom chords to be laterally braced at 2' o.c. and at 10' o.c. respectively unless braced throughout their length by continuous sheathing such as plywood sheathing(TC) and/or drywall(BC).
3. 2x Impact bridging or lateral bracing required where shown + +
4. Installation of truss is the responsibility of the respective contractor.
5. Design assumes trusses are to be used in a non-corrosive environment, and are for "dry condition" of use.
6. Design assumes full bearing at all supports shown. Shim or wedge if necessary.
7. Design assumes adequate drainage is provided.
8. Plates shall be located on both faces of truss, and placed so their center lines coincide with joint center lines.
9. Digits indicate size of plate in inches.
10. For basic connector plate design values see ESR-2529 (CompuTrus) and/or ESR-1311, ESR-1988 (MiTek).

REGISTERED PROFESSIONAL ENGINEER
SCOTT R. CARROLL
No. 29017
EXP. 3/31/13
CIVIL ENGINEER
STATE OF CALIFORNIA

This design prepared from computer input by
CALIFORNIA TRUSS CO [ERIC R]

LUMBER SPECIFICATIONS
TC: 2x4 DF #1&BTR
BC: 2x4 DF #1&BTR
WEBS: 2x4 DF STD/STUD

TC LATERAL SUPPORT <= 12"OC. UON.
BC LATERAL SUPPORT <= 12"OC. UON.

OVERHANGS: 0.0" 27.3"

Connector plate prefix designators:
C,CN,C18,CN18 (or no prefix) = CompuTrus, Inc
M,M20HS,M18HS,M16 = MiTek MT series

TRUSS SPAN 26'- 0.0"
LOAD DURATION INCREASE = 1.25
SPACED 24.0" O.C.

LOADING
LL(20.0)+DL(15.0) ON TOP CHORD = 35.0 PSF
DL ON BOTTOM CHORD = 7.0 PSF
TOTAL LOAD = 42.0 PSF

BOTTOM CHORD CHECKED FOR A 20 PSF LIMITED STORAGE
LIVE LOAD AT LOCATION(S) SPECIFIED BY IBC 2009.
THE BOTTOM CHORD DEAD LOAD IS A MINIMUM OF 10 PSF.

CBC2010/IBC2009 MAX MEMBER FORCES 4WR/GDF/Cq=1.00

1- 2=(-2420)	0	1- 7=(0) 2149	2- 7=(-478)	40
2- 3=(-2128)	0	7- 8=(0) 1406	7- 3=(0)	768
3- 4=(-2127)	0	8- 5=(0) 2148	3- 8=(0)	766
4- 5=(-2418)	0		8- 4=(-476)	37
5- 6=(-18)	59			

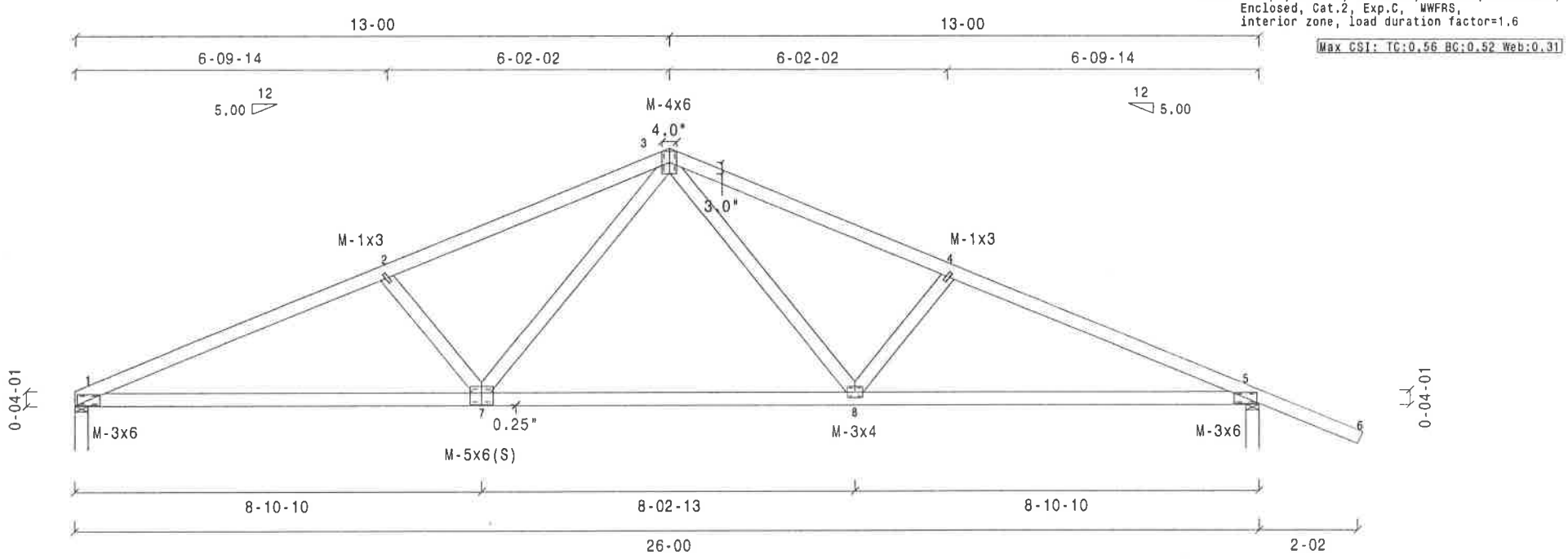
BEARING LOCATIONS	MAX VERT REACTIONS	MAX HORZ REACTIONS	BRG SIZE	REQUIRED BRG AREA SQ.IN.	(SPECIES)
0'- 0.0"	0/ 1215V	-115/ 134H	3.50"	1.94	DF (625)
26'- 0.0"	0/ 1380V	-115/ 134H	3.50"	2.21	DF (625)

VERTICAL DEFLECTION LIMITS: LL=L/360, TL=L/240
MAX LL DEFL = -0.081" @ 8'- 10.6" Allowed = 0.847"
MAX TL CREEP DEFL = -0.189" @ 8'- 10.6" Allowed = 1.271"
MAX LL DEFL = -0.022" @ 28'- 2.7" Allowed = 0.152"
MAX TL DEFL = -0.038" @ 28'- 2.7" Allowed = 0.228"
RECOMMENDED CAMBER (BASED ON DL DEFL)= 0.118"

MAX HORIZ. LL DEFL = 0.030" @ 25'- 8.5"
MAX HORIZ. TL DEFL = 0.062" @ 25'- 8.5"

Wind: 85 mph, h=15ft, TCDL=9.0,BCDL=4.2, ASCE 7-05,
Enclosed, Cat.2, Exp.C, MWFRS,
interior zone, load duration factor=1.6

Max CSI: TC:0.56 BC:0.52 Web:0.31



JOB NAME:

Scale: 0.2888

Truss: AB04

DES. BY: MJ
DATE: 8/18/2011
SEQ.: 4924704
TRANS ID: 318814

WARNINGS:
1. Builder and erection contractor should be advised of all General Notes and Warnings before construction commences.
2. 2x4 compression web bracing must be installed where shown +.
3. All lateral force resisting elements such as temporary and permanent stability bracing must be designed by designer of complete structure. CompuTrus assumes no responsibility for such bracing.
4. No load should be applied to any component until after all bracing and fasteners are complete and at no time should any loads greater than design loads be applied to any component.
5. CompuTrus has no control over and assumes no responsibility for the fabrication, handling, shipment and installation of components.
6. This design is furnished subject to the limitations set forth by TPI/WTCA in BCSI, copies of which will be furnished upon request.

CompuTrus, Inc. Software 7.6.1A(1L)-E

GENERAL NOTES, unless otherwise noted:
1. This truss design is adequate for the design parameters shown. Review and approval is the responsibility of the building designer, not the truss designer or truss engineer.
2. Design assumes the top and bottom chords to be laterally braced at 2' o.c. and at 10' o.c. respectively unless braced throughout their length by continuous sheathing such as plywood sheathing(TC) and/or drywall(BC).
3. 2x Impact bridging or lateral bracing required where shown + +
4. Installation of truss is the responsibility of the respective contractor.
5. Design assumes trusses are to be used in a non-corrosive environment, and are for "dry condition" of use.
6. Design assumes full bearing at all supports shown. Shim or wedge if necessary.
7. Design assumes adequate drainage is provided.
8. Plates shall be located on both faces of truss, and placed so their center lines coincide with joint center lines.
9. Digits indicate size of plate in inches.
10. For basic connector plate design values see ESR-2529 (CompuTrus) and/or ESR-1311, ESR-1988 (MiTek).

REGISTERED PROFESSIONAL ENGINEER
SCOTT R. CARROLL
EXP. 3/31/13
CIVIL ENGINEER
STATE OF CALIFORNIA

LUMBER SPECIFICATIONS
TC: 2x4 DF #1&BTR
BC: 2x4 DF #1&BTR
WEBS: 2x4 DF STD/STUD

TC LATERAL SUPPORT <= 12"OC, UON.
BC LATERAL SUPPORT <= 12"OC, UON.

OVERHANGS: 27.3" 27.3"

M-1.5x3 or equal at non-structural vertical members (uon).

Connector plate prefix designators:
C,CN,C18,CN18 (or no prefix) = CompuTrus, Inc
M,M20HS,M18HS,M16 = MiTek MT series

TRUSS SPAN 26'- 0.0"
LOAD DURATION INCREASE = 1.25
SPACED 24.0" O.C.

LOADING
LL(20.0)+DL(15.0) ON TOP CHORD = 35.0 PSF
DL ON BOTTOM CHORD = 7.0 PSF
TOTAL LOAD = 42.0 PSF

LIMITED STORAGE DOES NOT APPLY DUE TO THE SPATIAL REQUIREMENTS OF CBC 2010 NOT BEING MET.

BOTTOM CHORD CHECKED FOR 10PSF LIVE LOAD, TOP AND BOTTOM CHORD LIVE LOADS ACT NON-CONCURRENTLY.

CBC2010/IBC2009

MAX MEMBER FORCES

1- 2=(-18) 59	2- 8=(-1254) 3222	3- 8=(-570) 171
2- 3=(-2154) 0	8- 9=(-1152) 2445	8- 4=(-12) 736
3- 4=(-1862) 0	9- 6=(-1254) 3222	4- 9=(-12) 736
4- 5=(-1862) 0		9- 5=(-570) 171
5- 6=(-2154) 0		
6- 7=(-18) 59		

4WR/GDF/Cq=1.00

BEARING LOCATIONS	MAX VERT REACTIONS	MAX HORZ REACTIONS	BRG SIZE	REQUIRED BRG AREA SQ.IN.	(SPECIES)
0'- 0.0"	0/ 1248V	-3600/ 3600H	3.50"	2.00	DF (625)
26'- 0.0"	0/ 1248V	-3600/ 3600H	3.50"	2.00	DF (625)

VERTICAL DEFLECTION LIMITS: LL=L/360, TL=L/240

MAX LL DEFL = -0.022"	@ -2'- 2.7"	Allowed =	0.152"
MAX TL DEFL = -0.038"	@ -2'- 2.7"	Allowed =	0.228"
MAX LL DEFL = -0.071"	@ 8'- 10.6"	Allowed =	0.847"
MAX TL CREEP DEFL = -0.189"	@ 8'- 10.6"	Allowed =	1.271"
MAX LL DEFL = -0.022"	@ 28'- 2.7"	Allowed =	0.152"
MAX TL DEFL = -0.038"	@ 28'- 2.7"	Allowed =	0.228"

RECOMMENDED CAMBER (BASED ON DL DEFL)= 0.118"

MAX HORIZ. LL DEFL = 0.058" @ 0'- 3.5"
MAX HORIZ. TL DEFL = -0.086" @ 0'- 3.5"

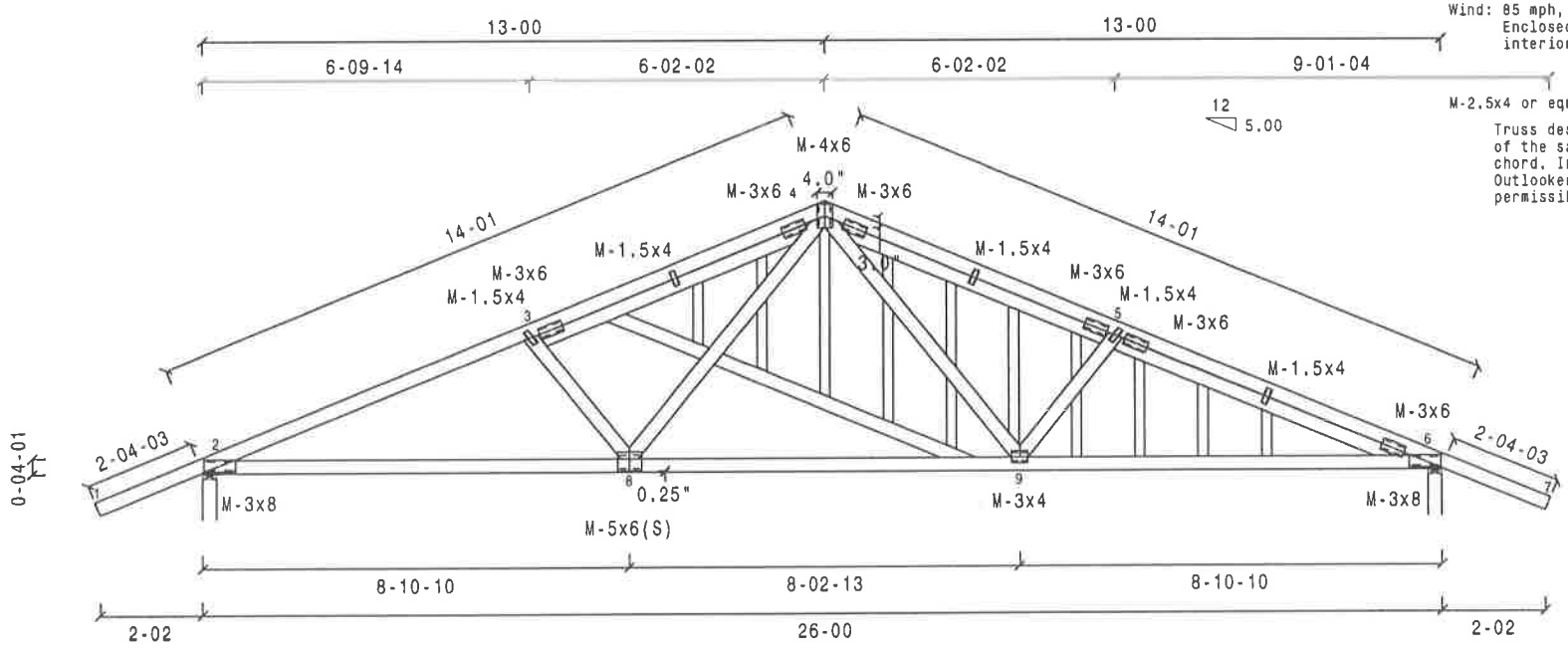
COND. 2: 3600.00 LBS DRAG LOAD.

Wind: 85 mph, h=15ft, TCDL=9.0,BCDL=4.2, ASCE 7-05, Enclosed, Cat.2, Exp.C, MWFRS, interior zone, load duration factor=1.6

Max CSI: TC:0.53 BC:0.51 Web:0.26

M-2.5x4 or equal at non-structural diagonal inlets.

Truss designed for 4x2 outlookers. 2x4 let-ins of the same size and grade as structural top chord. Insure tight fit at each end of let-in. Outlookers must be cut with care and are permissible at inlet board areas only.



JOB NAME:

Scale: 0.2493

Truss: AB05

DES. BY: BC
DATE: 10/6/2011
SEQ.: 4983752
TRANS ID: 322716

WARNINGS:

1. Builder and erection contractor should be advised of all General Notes and Warnings before construction commences.
2. 2x4 compression web bracing must be installed where shown +.
3. All lateral force resisting elements such as temporary and permanent stability bracing must be designed by designer of complete structure. CompuTrus assumes no responsibility for such bracing.
4. No load should be applied to any component until after all bracing and fasteners are complete and at no time should any loads greater than design loads be applied to any component.
5. CompuTrus has no control over and assumes no responsibility for the fabrication, handling, shipment and installation of components.
6. This design is furnished subject to the limitations set forth by

GENERAL NOTES, unless otherwise noted:

1. This truss design is adequate for the design parameters shown. Review and approval is the responsibility of the building designer, not the truss designer or truss engineer.
2. Design assumes the top and bottom chords to be laterally braced at 2' o.c. and at 10' o.c. respectively unless braced throughout their length by continuous sheathing such as plywood sheathing(TC) and/or drywall(BC).
3. 2x impact bridging or lateral bracing required where shown + +
4. Installation of truss is the responsibility of the respective contractor.
5. Design assumes trusses are to be used in a non-corrosive environment, and are for "dry condition" of use.
6. Design assumes full bearing at all supports shown. Shim or wedge if necessary.
7. Design assumes adequate drainage is provided.
8. Plates shall be located on both faces of truss, and placed so their center

REGISTERED PROFESSIONAL ENGINEER
DAVID A. JOHNSTON
No. 40806
EXP 3/31/13
CIVIL ENGINEER
STATE OF CALIFORNIA

LUMBER SPECIFICATIONS
TC: 2x4 DF #1&BTR
BC: 2x4 DF #1&BTR
WEBS: 2x3 DF STD/STUD

TC LATERAL SUPPORT <= 12"OC, UON.
BC LATERAL SUPPORT <= 12"OC, UON.

OVERHANGS: 27.3" 27.3"

M-1.5x3 or equal at non-structural vertical members (uon).

Unbalanced live loads have been considered for this design.

Connector plate prefix designators:
C,CN,C18,CN18 (or no prefix) = CompuTrus, Inc
M,M20HS,M18HS,M16 = MiTek MT series

TRUSS SPAN 16'- 1.0"
LOAD DURATION INCREASE = 1.25
SPACED 24.0" O.C.

LOADING
LL(20.0)+DL(15.0) ON TOP CHORD = 35.0 PSF
DL ON BOTTOM CHORD = 7.0 PSF
TOTAL LOAD = 42.0 PSF

LIMITED STORAGE DOES NOT APPLY DUE TO THE SPATIAL REQUIREMENTS OF IRC 2009 AND IBC 2009 NOT BEING MET.

BOTTOM CHORD CHECKED FOR 10PSF LIVE LOAD, TOP AND BOTTOM CHORD LIVE LOADS ACT NON-CONCURRENTLY.

Truss designed for 4x2 outlookers, 2x4 let-ins of the same size and grade as structural top chord. Insure tight fit at each end of let-in. Connect with M-3x5 at each end and M-1.5x3 at center of board (u.o.n.). Refer to Seq No 056943 for plate placement detail. Outlookers must be cut with care and are permissible at inlet board areas only.

CBC2010/IBC2009 MAX MEMBER FORCES 4WR/GDF/Cq=1.00

1- 2=(-18) 59	2- 8=(-201) 944	3- 8=(-29) 199
2- 3=(-904) 0	8- 6=(-201) 944	8- 5=(-29) 199
3- 4=(-792) 0		
4- 5=(-782) 0		
5- 6=(-904) 0		
6- 7=(-18) 59		

BEARING LOCATIONS	MAX VERT REACTIONS	MAX HORZ REACTIONS	BRG SIZE	REQUIRED BRG AREA SQ.IN.	(SPECIES)
0'- 4.3"	0/ 831V	+1000/ 1000H	5.50"	1.24	DF (625)
15'- 8.7"	0/ 831V	+1000/ 1000H	5.50"	1.24	DF (625)

VERTICAL DEFLECTION LIMITS: LL=L/360, TL=L/240

MAX LL DEFL =	-0.022" @	-2'- 2.7"	Allowed =	0.152"	
MAX TL DEFL =	-0.038" @	-2'- 2.7"	Allowed =	0.228"	
MAX LL DEFL =	-0.010" @	0'- 0.0"	Allowed =	0.024"	
MAX TL DEFL =	-0.012" @	0'- 0.0"	Allowed =	0.035"	
MAX LL DEFL =	-0.092" @	8'- 0.5"	Allowed =	0.482"	
MAX TL CREEP DEFL =	-0.255" @	8'- 0.5"	Allowed =	0.723"	
MAX LL DEFL =	-0.010" @	16'- 1.0"	Allowed =	0.024"	
MAX TL DEFL =	-0.012" @	16'- 1.0"	Allowed =	0.035"	
MAX LL DEFL =	-0.022" @	18'- 3.7"	Allowed =	0.152"	
MAX TL DEFL =	-0.038" @	18'- 3.7"	Allowed =	0.228"	

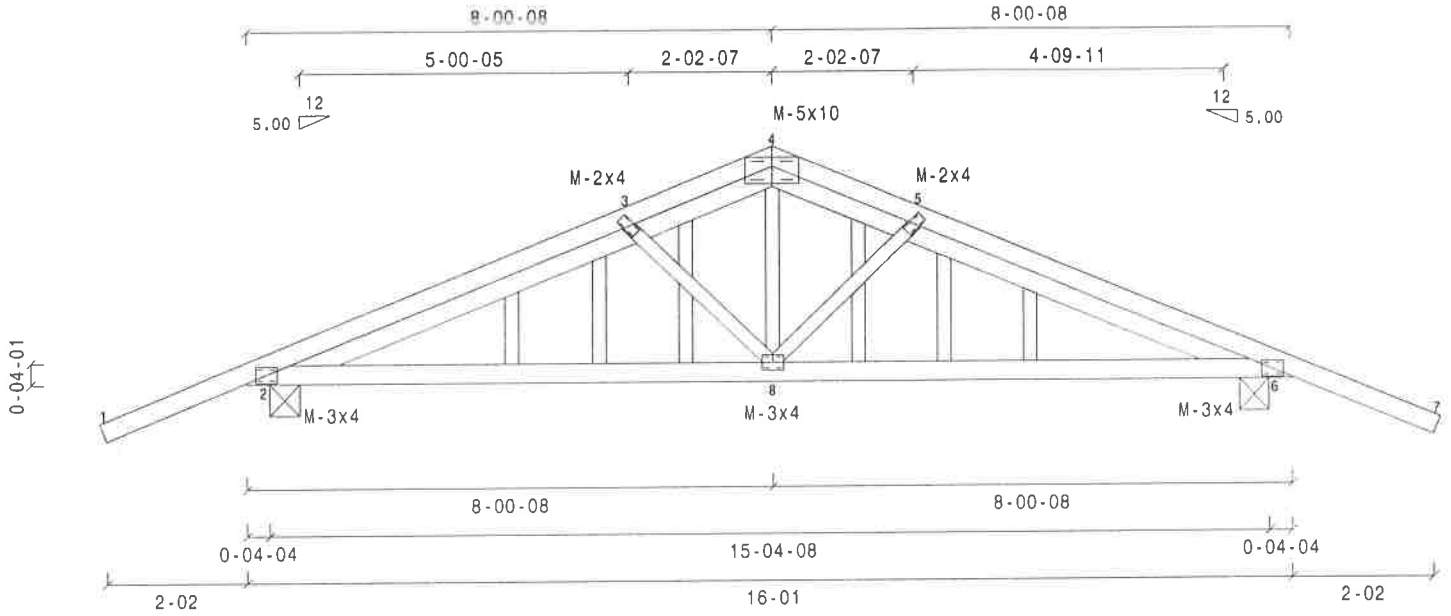
RECOMMENDED CAMBER (BASED ON DL DEFL)= 0.164"

MAX HORIZ. LL DEFL = 0.009" @ 0'- 9.8"
MAX HORIZ. TL DEFL = -0.016" @ 0'- 9.8"

COND. 2: 1000.00 LBS DRAG LOAD.

Wind: 85 mph, h=15ft, TCDL=9.0,BCDL=4.2, ASCE 7-05, Enclosed, Cat.2, Exp.C, MWFRS, interior zone, load duration factor=1.6

Max CSI: TC:0.60 BC:0.31 Web:0.11



JOB NAME:

Scale: 0.3361

Truss: AC01

DES. BY: MJ
DATE: 8/18/2011
SEQ.: 4924706
TRANS ID: 318814

WARNINGS:
1. Builder and erection contractor should be advised of all General Notes and Warnings before construction commences.
2. 2x4 compression web bracing must be installed where shown +.
3. All lateral force resisting elements such as temporary and permanent stability bracing must be designed by designer of complete structure. CompuTrus assumes no responsibility for such bracing.
4. No load should be applied to any component until after all bracing and fasteners are complete and at no time should any loads greater than design loads be applied to any component.
5. CompuTrus has no control over and assumes no responsibility for the fabrication, handling, shipment and installation of components.
6. This design is furnished subject to the limitations set forth by TPI/WTCA in BCSI, copies of which will be furnished upon request.

CompuTrus, Inc. Software 7.6.1A(1L)-E

GENERAL NOTES, unless otherwise noted:
1. This truss design is adequate for the design parameters shown. Review and approval is the responsibility of the building designer, not the truss designer or truss engineer.
2. Design assumes the top and bottom chords to be laterally braced at 2' o.c. and at 10' o.c. respectively unless braced throughout their length by continuous sheathing such as plywood sheathing(TC) and/or drywall(BC).
3. 2x Impact bridging or lateral bracing required where shown + +
4. Installation of truss is the responsibility of the respective contractor.
5. Design assumes trusses are to be used in a non-corrosive environment, and are for "dry condition" of use.
6. Design assumes full bearing at all supports shown. Shim or wedge if necessary.
7. Design assumes adequate drainage is provided.
8. Plates shall be located on both faces of truss, and placed so their center lines coincide with joint center lines.
9. Digits indicate size of plate in inches.
10. For basic connector plate design values see ESR-2529 (CompuTrus) and/or ESR-1311, ESR-1988 (MiTek).

REGISTERED PROFESSIONAL ENGINEER
SCOTT R. CARROLL
EXP. 3/31/13
CIVIL ENGINEER
STATE OF CALIFORNIA

This design prepared from computer input by
CALIFORNIA TRUSS CO [ERIC R]

LUMBER SPECIFICATIONS
TC: 2x4 DF #1&BTR
BC: 2x4 DF #1&BTR
WEBS: 2x3 DF STD/STUD

TC LATERAL SUPPORT <= 12"OC, UON.
BC LATERAL SUPPORT <= 12"OC, UON.

OVERHANGS: 27.3" 27.3"

Unbalanced live loads have been considered for this design.

Connector plate prefix designators:
C,CN,C18,CN18 (or no prefix) = CompuTrus, Inc
M,M20HS,M18HS,M16 = MiTek MT series

TRUSS SPAN 16'- 1.0"
LOAD DURATION INCREASE = 1.25
SPACED 24.0" O.C.

LOADING
LL(20.0)+DL(15.0) ON TOP CHORD = 35.0 PSF
DL ON BOTTOM CHORD = 7.0 PSF
TOTAL LOAD = 42.0 PSF

LIMITED STORAGE DOES NOT APPLY DUE TO THE SPATIAL REQUIREMENTS OF IRC 2009 AND IBC 2009 NOT BEING MET.

BOTTOM CHORD CHECKED FOR 10PSF LIVE LOAD, TOP AND BOTTOM CHORD LIVE LOADS ACT NON-CONCURRENTLY.

CBC2010/IBC2009 MAX MEMBER FORCES 4WR/GDF/Cq=1.00

1- 2=(-18) 59	2- 8=(0) 732	3- 8=(-11) 199
2- 3=(-904) 0	8- 6=(0) 732	8- 5=(-11) 199
3- 4=(-782) 0		
4- 5=(-782) 0		
5- 6=(-904) 0		
6- 7=(-18) 59		

BEARING LOCATIONS	MAX VERT REACTIONS	MAX HORZ REACTIONS	BRG SIZE	REQUIRED BRG AREA SQ.IN.	(SPECIES)
0'- 4.3"	0/ 831V	-104/ 104H	5.50"	1.24	DF (625)
15'- 8.7"	0/ 831V	-104/ 104H	5.50"	1.24	DF (625)

VERTICAL DEFLECTION LIMITS: LL=L/360, TL=L/240

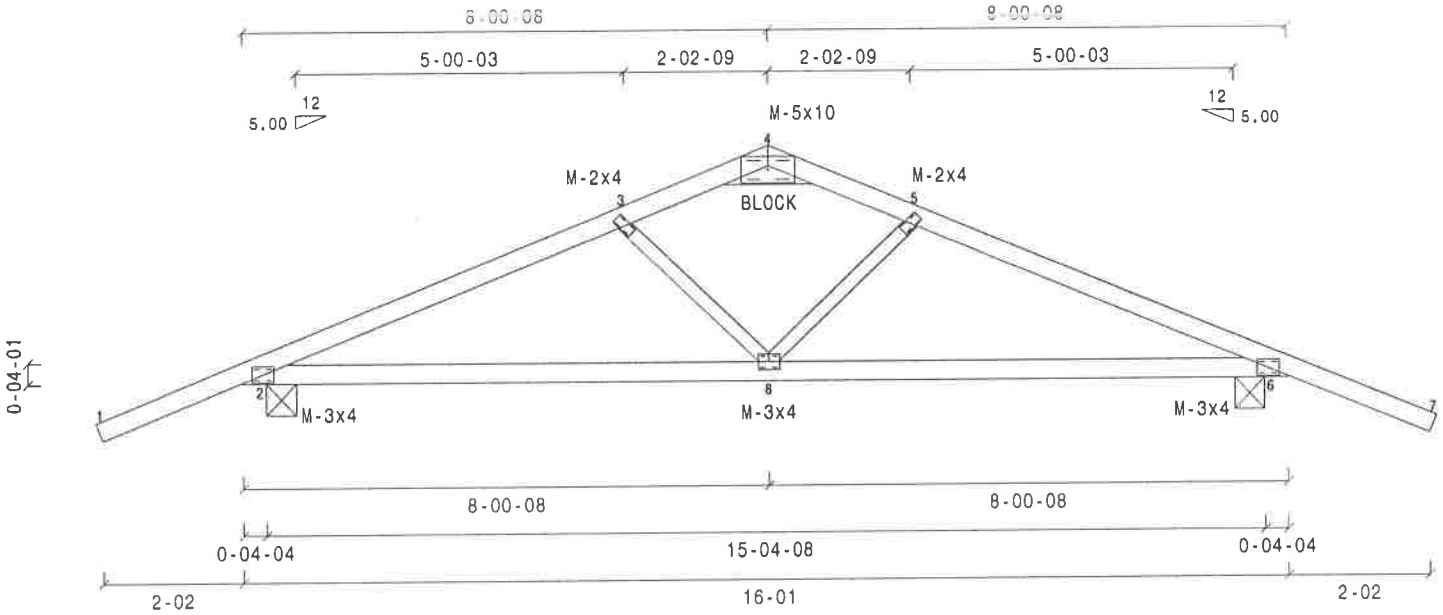
MAX LL DEFL = -0.022"	@ -2'- 2.7"	Allowed = 0.152"
MAX TL DEFL = -0.038"	@ -2'- 2.7"	Allowed = 0.228"
MAX LL DEFL = -0.010"	@ 0'- 0.0"	Allowed = 0.024"
MAX TL DEFL = -0.012"	@ 0'- 0.0"	Allowed = 0.035"
MAX LL DEFL = -0.092"	@ 8'- 0.5"	Allowed = 0.482"
MAX TL CREEP DEFL = -0.255"	@ 8'- 0.5"	Allowed = 0.723"
MAX LL DEFL = -0.010"	@ 16'- 1.0"	Allowed = 0.024"
MAX TL DEFL = -0.012"	@ 16'- 1.0"	Allowed = 0.035"
MAX LL DEFL = -0.022"	@ 18'- 3.7"	Allowed = 0.152"
MAX TL DEFL = -0.038"	@ 18'- 3.7"	Allowed = 0.228"

RECOMMENDED CAMBER (BASED ON DL DEFL)= 0.164"

MAX HORIZ. LL DEFL = 0.007" @ 15'- 3.2"
MAX HORIZ. TL DEFL = 0.012" @ 15'- 3.2"

Wind: 85 mph, h=15ft, TCDL=9.0,BCDL=4.2, ASCE 7-05, Enclosed, Cat.2, Exp.C, MWFRS, interior zone, load duration factor=1.6

Max CSI: TC:0.60 BC:0.31 Web:0.11



JOB NAME:

Scale: 0.3361

Truss: AC02

DES. BY: MJ
DATE: 8/18/2011
SEQ.: 4924707
TRANS ID: 318814

WARNINGS:
1. Builder and erection contractor should be advised of all General Notes and Warnings before construction commences.
2. 2x4 compression web bracing must be installed where shown +.
3. All lateral force resisting elements such as temporary and permanent stability bracing must be designed by designer of complete structure. CompuTrus assumes no responsibility for such bracing.
4. No load should be applied to any component until after all bracing and fasteners are complete and at no time should any loads greater than design loads be applied to any component.
5. CompuTrus has no control over and assumes no responsibility for the fabrication, handling, shipment and installation of components.
6. This design is furnished subject to the limitations set forth by TPI/WTCA in BCSI, copies of which will be furnished upon request.

CompuTrus, Inc. Software 7.6.1A(1L)-Z

GENERAL NOTES, unless otherwise noted:
1. This truss design is adequate for the design parameters shown. Review and approval is the responsibility of the building designer, not the truss designer or truss engineer.
2. Design assumes the top and bottom chords to be laterally braced at 2' o.c. and at 10' o.c. respectively unless braced throughout their length by continuous sheathing such as plywood sheathing(TC) and/or drywall(BC).
3. 2x Impact bridging or lateral bracing required where shown + +.
4. Installation of truss is the responsibility of the respective contractor.
5. Design assumes trusses are to be used in a non-corrosive environment, and are for "dry condition" of use.
6. Design assumes full bearing at all supports shown. Shim or wedge if necessary.
7. Design assumes adequate drainage is provided.
8. Plates shall be located on both faces of truss, and placed so their center lines coincide with joint center lines.
9. Digits indicate size of plate in inches.
10. For basic connector plate design values see ESR-2529 (CompuTrus) and/or ESR-1311, ESR-1988 (MiTek).

REGISTERED PROFESSIONAL ENGINEER
SCOTT R. CARROLL
EXP. 3/31/13
CIVIL ENGINEER
STATE OF CALIFORNIA

This design prepared from computer input by
CALIFORNIA TRUSS CO [ERIC R]

LUMBER SPECIFICATIONS
TC: 2x4 DF #1&BTR
BC: 2x4 DF #1&BTR
WEBS: 2x3 DF STD/STUD

TC LATERAL SUPPORT <= 12"OC. UON.
BC LATERAL SUPPORT <= 12"OC. UON.

OVERHANGS: 27.3" 27.3"

M-1.5x3 or equal at non-structural vertical members (uon).

Connector plate prefix designators:
C,CN,C18,CN18 (or no prefix) = CompuTrus, Inc
M,M20HS,M18HS,M16 = MiTek MT series

TRUSS SPAN 11'- 4.0"
LOAD DURATION INCREASE = 1.25
SPACED 24.0" O.C.

LOADING
LL(20.0)+DL(15.0) ON TOP CHORD = 35.0 PSF
DL ON BOTTOM CHORD = 7.0 PSF
TOTAL LOAD = 42.0 PSF

LIMITED STORAGE DOES NOT APPLY DUE TO THE SPATIAL REQUIREMENTS OF IRC 2009 AND IBC 2009 NOT BEING MET.

BOTTOM CHORD CHECKED FOR 10PSF LIVE LOAD, TOP AND BOTTOM CHORD LIVE LOADS ACT NON-CONCURRENTLY.

Truss designed for 4x2 outlookers, 2x4 let-ins of the same size and grade as structural top chord. Insure tight fit at each end of let-in. Connect with M-3x5 at each end and M-1.5x3 at center of board (u.o.n.). Refer to Seq No 056943 for plate placement detail. Outlookers must be cut with care and are permissible at inlet board areas only.

CBC2010/IBC2009 MAX MEMBER FORCES 4WR/GDF/Cq=1.00
1-2=(-18) 59 2-6=(0) 531 6-3=(0) 224
2-3=(-646) 0 6-4=(0) 531
3-4=(-646) 0
4-5=(-18) 59

BEARING LOCATIONS	MAX VERT REACTIONS	MAX HORZ REACTIONS	BRG SIZE	REQUIRED BRG AREA SQ.IN.	(SPECIES)
0'- 0.0"	0/ 632V	-500/ 500H	3.50"	1.01	DF (625)
11'- 4.0"	0/ 632V	-500/ 500H	3.50"	1.01	DF (625)

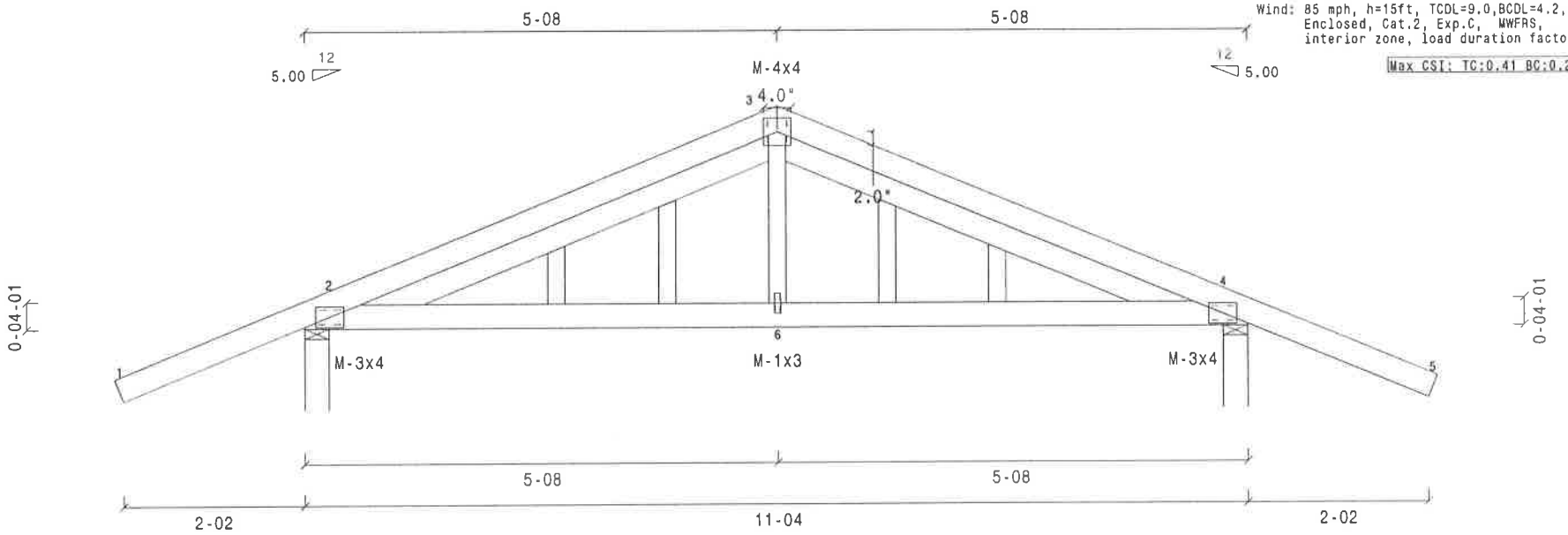
VERTICAL DEFLECTION LIMITS: LL=L/360, TL=L/240
MAX LL DEFL = -0.022" @ -2'- 2.7" Allowed = 0.152"
MAX TL DEFL = -0.038" @ -2'- 2.7" Allowed = 0.228"
MAX LL DEFL = -0.008" @ 5'- 8.0" Allowed = 0.358"
MAX TL CREEP DEFL = -0.024" @ 5'- 8.0" Allowed = 0.538"
MAX LL DEFL = -0.022" @ 13'- 6.7" Allowed = 0.152"
MAX TL DEFL = -0.038" @ 13'- 6.7" Allowed = 0.228"
RECOMMENDED CAMBER (BASED ON DL DEFL)= 0.016"

MAX HORIZ. LL DEFL = 0.003" @ 0'- 3.5"
MAX HORIZ. TL DEFL = -0.007" @ 0'- 3.5"

COND. 2: 500.00 LBS DRAG LOAD.

Wind: 85 mph, h=15ft, TCDL=9.0,BCDL=4.2, ASCE 7-05, Enclosed, Cat.2, Exp.C, MWFRS, interior zone, load duration factor=1.6

Max CSI: TC:0.41 BC:0.22 Web:0.13



JOB NAME:

Scale: 0.4884

Truss: AD03
DES. BY: MJ
DATE: 8/18/2011
SEQ.: 4924708
TRANS ID: 318814

WARNINGS:
1. Builder and erection contractor should be advised of all General Notes and Warnings before construction commences.
2. 2x4 compression web bracing must be installed where shown +.
3. All lateral force resisting elements such as temporary and permanent stability bracing must be designed by designer of complete structure. CompuTrus assumes no responsibility for such bracing.
4. No load should be applied to any component until after all bracing and fasteners are complete and at no time should any loads greater than design loads be applied to any component.
5. CompuTrus has no control over and assumes no responsibility for the fabrication, handling, shipment and installation of components.
6. This design is furnished subject to the limitations set forth by TPI/WTCA in BCSI, copies of which will be furnished upon request.

CompuTrus, Inc. Software 7.6.1A(1L)-E

GENERAL NOTES, unless otherwise noted:
1. This truss design is adequate for the design parameters shown. Review and approval is the responsibility of the building designer, not the truss designer or truss engineer.
2. Design assumes the top and bottom chords to be laterally braced at 2' o.c. and at 10' o.c. respectively unless braced throughout their length by continuous sheathing such as plywood sheathing(TC) and/or drywall(BC).
3. 2x Impact bridging or lateral bracing required where shown + +
4. Installation of truss is the responsibility of the respective contractor.
5. Design assumes trusses are to be used in a non-corrosive environment, and are for "dry condition" of use.
6. Design assumes full bearing at all supports shown. Shim or wedge if necessary.
7. Design assumes adequate drainage is provided.
8. Plates shall be located on both faces of truss, and placed so their center lines coincide with joint center lines.
9. Digits indicate size of plate in inches.
10. For basic connector plate design values see ESR-2529 (CompuTrus) and/or ESR-1311, ESR-1988 (MiTek).

REGISTERED PROFESSIONAL ENGINEER
SCOTT R. CARROLL
No. 29017
EXP. 3/31/13
CIVIL ENGINEER
STATE OF CALIFORNIA

This design prepared from computer input by
CALIFORNIA TRUSS CO [ERIC R]

LUMBER SPECIFICATIONS
TC: 2x4 DF #1&BTR
BC: 2x4 DF #1&BTR
WEBS: 2x3 DF STD/STUD

TC LATERAL SUPPORT <= 12"OC. UON.
BC LATERAL SUPPORT <= 12"OC. UON.

OVERHANGS: 27.3" 27.3"

Connector plate prefix designators:
C,CN,C18,CN18 (or no prefix) = CompuTrus, Inc
M,M20HS,M18HS,M16 = MiTek MT series

TRUSS SPAN 11'- 4.0"
LOAD DURATION INCREASE = 1.25
SPACED 24.0" O.C.

LOADING
LL(20.0)+DL(15.0) ON TOP CHORD = 35.0 PSF
DL ON BOTTOM CHORD = 7.0 PSF
TOTAL LOAD = 42.0 PSF

LIMITED STORAGE DOES NOT APPLY DUE TO THE SPATIAL REQUIREMENTS OF IRC 2009 AND IBC 2009 NOT BEING MET.

BOTTOM CHORD CHECKED FOR 10PSF LIVE LOAD, TOP AND BOTTOM CHORD LIVE LOADS ACT NON-CONCURRENTLY.

CBC2010/IBC2009 MAX MEMBER FORCES 4WR/GDF/Cq=1.00
1-2=(-18) 59 2-6=(0) 520 6-3=(0) 224
2-3=(-646) 0 6-4=(0) 520
3-4=(-646) 0
4-5=(-18) 59

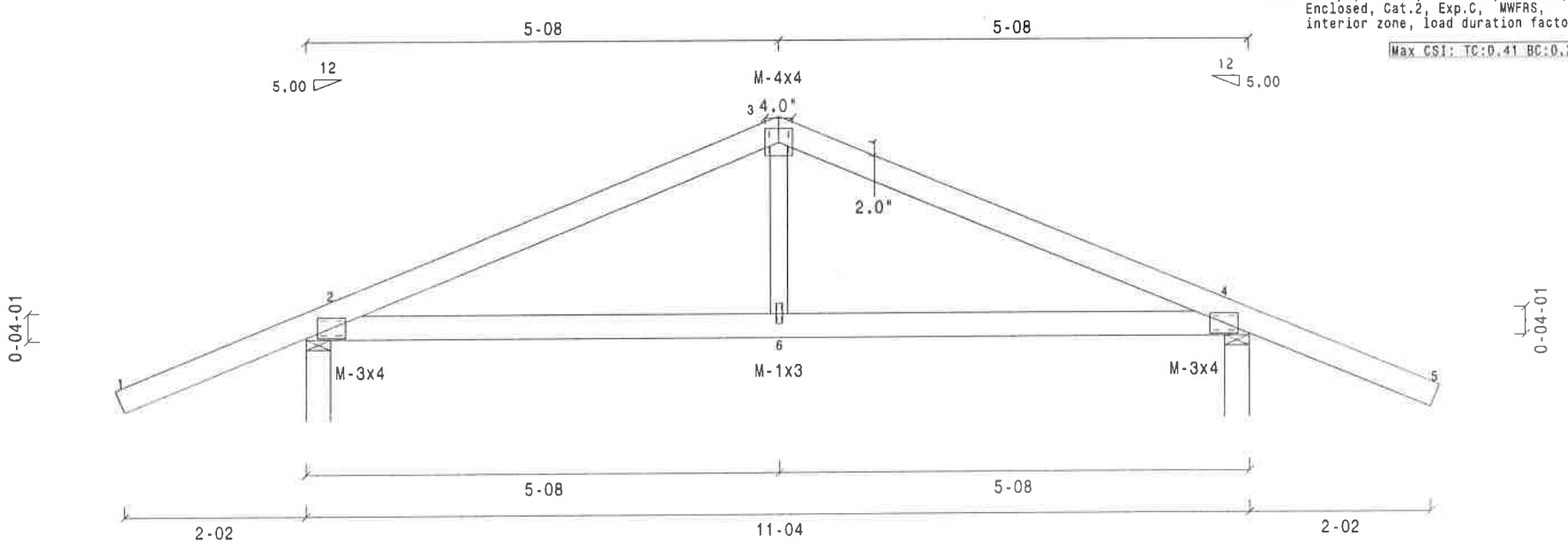
BEARING LOCATIONS	MAX VERT REACTIONS	MAX HORZ REACTIONS	BRG SIZE	REQUIRED BRG AREA SQ.IN.	(SPECIES)
0'- 0.0"	0/ 632V	-73/ 73H	3.50"	1.01	DF (625)
11'- 4.0"	0/ 632V	-73/ 73H	3.50"	1.01	DF (625)

VERTICAL DEFLECTION LIMITS: LL=L/360, TL=L/240
MAX LL DEFL = -0.022" @ -2'- 2.7" Allowed = 0.152"
MAX TL DEFL = -0.038" @ -2'- 2.7" Allowed = 0.228"
MAX LL DEFL = -0.008" @ 5'- 8.0" Allowed = 0.358"
MAX TL CREEP DEFL = -0.024" @ 5'- 8.0" Allowed = 0.538"
MAX LL DEFL = -0.022" @ 13'- 6.7" Allowed = 0.152'
MAX TL DEFL = -0.038" @ 13'- 6.7" Allowed = 0.228"
RECOMMENDED CAMBER (BASED ON DL DEFL)= 0.016"

MAX HORIZ. LL DEFL = 0.003" @ 11'- 0.5"
MAX HORIZ. TL DEFL = 0.007" @ 11'- 0.5"

Wind: 85 mph, h=15ft, TCDL=9.0,BCDL=4.2, ASCE 7-05, Enclosed, Cat.2, Exp.C, MWFRS, interior zone, load duration factor=1.6

Max CSI: TC:0.41 BC:0.22 Web:0.13



JOB NAME:

Scale: 0.4884

Truss: AD02
DES. BY: MJ
DATE: 8/18/2011
SEQ.: 4924709
TRANS ID: 318814

WARNINGS:
1. Builder and erection contractor should be advised of all General Notes and Warnings before construction commences.
2. 2x4 compression web bracing must be installed where shown +.
3. All lateral force resisting elements such as temporary and permanent stability bracing must be designed by designer of complete structure. CompuTrus assumes no responsibility for such bracing.
4. No load should be applied to any component until after all bracing and fasteners are complete and at no time should any loads greater than design loads be applied to any component.
5. CompuTrus has no control over and assumes no responsibility for the fabrication, handling, shipment and installation of components.
6. This design is furnished subject to the limitations set forth by TPI/WTCA in BCSI, copies of which will be furnished upon request.

CompuTrus, Inc. Software 7.6.1A(1L)-E

GENERAL NOTES, unless otherwise noted:
1. This truss design is adequate for the design parameters shown. Review and approval is the responsibility of the building designer, not the truss designer or truss engineer.
2. Design assumes the top and bottom chords to be laterally braced at 2' o.c. and at 10' o.c. respectively unless braced throughout their length by continuous sheathing such as plywood sheathing(TC) and/or drywall(BC).
3. 2x Impact bridging or lateral bracing required where shown + +
4. Installation of truss is the responsibility of the respective contractor.
5. Design assumes trusses are to be used in a non-corrosive environment, and are for "dry condition" of use.
6. Design assumes full bearing at all supports shown. Shim or wedge if necessary.
7. Design assumes adequate drainage is provided.
8. Plates shall be located on both faces of truss, and placed so their center lines coincide with joint center lines.
9. Digits indicate size of plate in inches.
10. For basic connector plate design values see ESR-2528 (CompuTrus) and/or ESR-1311, ESR-1988 (MiTek).

REGISTERED PROFESSIONAL ENGINEER
SCOTT R. CARROLL
No. 29017
EXP. 3/31/13
CIVIL ENGINEER
STATE OF CALIFORNIA

This design prepared from computer input by
CALIFORNIA TRUSS CO [ERIC R]

LUMBER SPECIFICATIONS
TC: 2x4 DF #1&BTR
BC: 2x6 DF #1&BTR
WEBS: 2x4 DF STD/STUD

TC LATERAL SUPPORT <= 12"OC. UON.
BC LATERAL SUPPORT <= 12"OC. UON.

Connector plate prefix designators:
C,CN,C18,CN18 (or no prefix) = CompuTrus, Inc
M,M2OHS,M18HS,M16 = MiTek MT series

(2) complete trusses required.
Join together 2 ply with 3"x.131 DIA GUN nails staggered at:
9" oc throughout 2x4 top chords,
5" oc throughout 2x6 bottom chords,
9" oc throughout webs.

11-04-00 GIRDER SUPPORTING 26-00-00
LOAD DURATION INCREASE = 1.25 (Non-Rep)

LOADING
TC UNIF LL(40.0)+DL(30.0)= 70.0 PLF 0'- 0.0" TO 11'- 4.0" V
BC UNIF LL(228.0)+DL(278.0)= 506.0 PLF 0'- 0.0" TO 11'- 4.0" V

LIMITED STORAGE DOES NOT APPLY DUE TO THE SPATIAL REQUIREMENTS OF IRC 2009 AND IBC 2009 NOT BEING MET.

BOTTOM CHORD CHECKED FOR 10PSF LIVE LOAD. TOP AND BOTTOM CHORD LIVE LOADS ACT NON-CONCURRENTLY.

CBC2010/IBC2009 MAX MEMBER FORCES 4WR/GDF/Cq=1.00

1- 2=(-5470) 0	1- 6=(0) 4962	6- 2=(0) 1242
2- 3=(-4016) 0	6- 7=(0) 4880	2- 7=(-1406) 0
3- 4=(-4016) 0	7- 8=(0) 4880	7- 3=(0) 2870
4- 5=(-5470) 0	8- 5=(0) 4962	7- 4=(-1406) 0
		4- 8=(0) 1242

BEARING LOCATIONS	MAX VERT REACTIONS	MAX HORZ REACTIONS	BRG SIZE	REQUIRED BRG AREA SQ.IN.	(SPECIES)
0'- 0.0"	0/ 3264V	-500/ 500H	3.50"	5.22	DF (625)
11'- 4.0"	0/ 3264V	-500/ 500H	3.50"	5.22	DF (625)

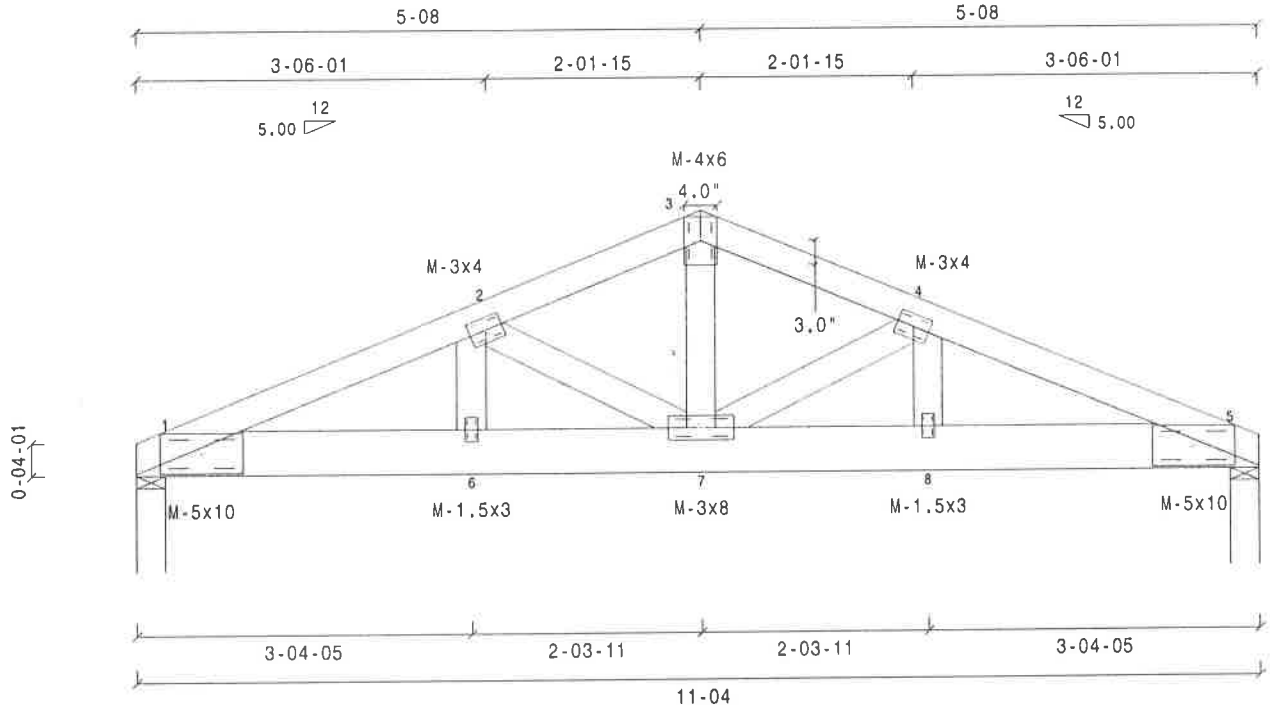
VERTICAL DEFLECTION LIMITS: LL=L/360, TL=L/240
MAX LL DEFL = -0.035" @ 5'- 8.0" Allowed = 0.358"
MAX TL CREEP DEFL = -0.094" @ 5'- 8.0" Allowed = 0.537"
RECOMMENDED CAMBER (BASED ON DL DEFL)= 0.060"

MAX HORIZ. LL DEFL = 0.010" @ 11'- 0.5"
MAX HORIZ. TL DEFL = 0.021" @ 11'- 0.5"

COND, 2: 500.00 LBS DRAG LOAD.

Wind: 85 mph, h=15ft, TCDL=9.0,BCDL=4.2, ASCE 7-05, Enclosed, Cat.2, Exp.C, MWFRS, interior zone, load duration factor=1.6

Max CSI: TC:0.16 BC:0.48 Web:0.58



Scale: 0.5127

JOB NAME:

Truss: AD01

DES. BY: MJ
DATE: 8/18/2011
SEQ.: 4924710
TRANS ID: 318814

WARNINGS:
1. Builder and erection contractor should be advised of all General Notes and Warnings before construction commences.
2. 2x4 compression web bracing must be installed where shown +.
3. All lateral force resisting elements such as temporary and permanent stability bracing must be designed by designer of complete structure. CompuTrus assumes no responsibility for such bracing.
4. No load should be applied to any component until after all bracing and fasteners are complete and at no time should any loads greater than design loads be applied to any component.
5. CompuTrus has no control over and assumes no responsibility for the fabrication, handling, shipment and installation of components.
6. This design is furnished subject to the limitations set forth by TPI/WTCA in BCSI, copies of which will be furnished upon request.

CompuTrus, Inc. Software 7.6.1A(1L)-E

GENERAL NOTES, unless otherwise noted:
1. This truss design is adequate for the design parameters shown. Review and approval is the responsibility of the building designer, not the truss designer or truss engineer.
2. Design assumes the top and bottom chords to be laterally braced at 2' o.c. and at 10' o.c. respectively unless braced throughout their length by continuous sheathing such as plywood sheathing(TC) and/or drywall(BC).
3. 2x Impact bridging or lateral bracing required where shown + +
4. Installation of truss is the responsibility of the respective contractor.
5. Design assumes trusses are to be used in a non-corrosive environment, and are for "dry condition" of use.
6. Design assumes full bearing at all supports shown. Shim or wedge if necessary.
7. Design assumes adequate drainage is provided.
8. Plates shall be located on both faces of truss, and placed so their center lines coincide with joint center lines.
9. Digits indicate size of plate in inches.
10. For basic connector plate design values see ESR-2529 (CompuTrus) and/or ESR-1311, ESR-1988 (MiTek).

REGISTERED PROFESSIONAL ENGINEER
SCOTT R. CARROLL
EXP. 3/31/13
CIVIL ENGINEER
STATE OF CALIFORNIA

SFD

CITY OF SANTA ANA

BUILDING PERMIT APPLICATION WORKSHEET

PLEASE PRINT

3/2/05:forms/Bldg.App.Worksheet

PROJECT ADDRESS: 717 East 3rd Street	SUITE:	SAPIN # 10172158
USE OF BUILDING: (RESIDENTIAL) COMMERCIAL INDUSTRIAL OTHER		2011-97093 MASTER ID#

NATURE OF WORK: (NEW) ADD ALTER/T.I. DEMO REROOF REPAIR SIGN MISC

NEW/ADDITION/ALTERATION:

1ST FL..	1,344 SF	BASEMENT: YES/NO	No SF	NO. OF STORIES:	1
2ND FL..	NA SF	PATIO/ENCL. PATIO:	126 ~~NA~~ SF	BLDG. HEIGHT:	15'
TOTAL OF OTHER FLS:	NA SF	RES. REMODEL:	NA SF	PROPOSED USE:	Single Family
GARAGE/CARPORT:	440 SF	ALTER/T.I.:	NA SF		

JOB DESCRIPTION (non-residential projects see reverse side of this application) :

New single-story 1,344# single family residence with 3 bedrooms 2 bath & 2 car detached garage

BUILDING OWNER'S NAME: City of Santa Ana			PHONE NO: 714.647.5390
ADDRESS: 20 Civic Center Plaza-M37	CITY: Santa Ana	STATE: CA	ZIP: 92702
TENANT'S NAME (Comm/Ind): N.A.			PHONE NO:
CONTRACTOR'S NAME: Habitat For Humanity Of Orange Co.	STATE CONTR. #: 843208	LICENSE CLASS: B	PHONE NO:
ADDRESS: 2200 South Ritchey	CITY: Santa Ana	STATE: CA	ZIP: 92705
WORKERS COMP. POLICY#: UWHA 486-000278-110	EXP. DATE 1-01-12	INSURANCE COMPANY: Ullico Casualty Co.	SANTA ANA BUS. LIC. #: 186231
ARCHITECT/ENGINEER: Ritnar Group	STATE LICENSE #:		PHONE NO: 949-250-8887
ADDRESS: 20341 SW Birch St. #100	CITY: Newport Beach	STATE: CA	ZIP: 92660
CONTACT NAME: Pat Albarstadt		**PHONE NO:** 714-235-4261	
E-MAIL ADDRESS: pata@habitatoc.org			

OFFICE USE ONLY: (ACC) OR SPC (CIRCLE ONE) 5 HRS PER FH BLDG. FEE $

OCC. GROUP: RECEIPT #: ~~58028~~ 58099 P/C FEE PD $ 135744

TYPE OF CONSTR: VALUATION: 146,496 SUBMITTAL DATE: 8-9-11

FIRE SPKR: (YES) / NO A/C: (YES) / NO FLOOD ZONE: X PROCESSED JDE

RES. DEV. FEE: (YES) / NO **PRIOR DWELLING UNIT :** YES / (NO) COMMENTS:

PLANNING OK TO CHECK & DATE 8/9/11 BLDG. DEPT. APPROVAL & DATE

PLNG CONDITIONS:

PLEASE CHECK ALL THAT APPLY TO YOUR PROJECT

JOB DESCRIPTION CHECKLIST:

- ☐ Additional square footage
- ☐ Awnings
- ☐ Canopy
- ☐ Card readers
- ☐ Ceiling work
- ☐ Change of occupancy (use)
- ☐ Disabled accessible (H/C) restrooms
- ☐ Dust collector
- ☐ Elevator shaft
- ☐ Exterior doors or windows
- ☐ Equipment pads
- ☐ Interior demo
- ☐ Kitchen equipment
- ☐ Partition walls
- ☐ Rated corridors
- ☐ Rated shafts
- ☐ Roof mounted equipment
- ☐ Security bars
- ☐ Screening for equipment
- ☐ Skylights
- ☐ Stairs
- ☐ Storefront/facade improvements
- ☐ Storage racks or shelving over 5'-9"
- ☐ Walk-in coolers

ITEMS REQUIRING SEPARATE BUILDING PERMIT APPLICATIONS:

- ☒ Block wall
- ☒ Complete demo
- ☒ Fence
- ☐ Fire signaling system
- ☒ Fire sprinklers
- ☐ Flagpole
- ☒ Lawn sprinkler system
- ☐ Light Standards
- ☐ Parking lot paving
- ☐ Parking lot striping
- ☐ Pedestrian protection
- ☐ Pool/Spa
- ☐ Signs
- ☐ Spray booth
- ☐ Temporary power pole
- ☐ Trash enclosure

GARAGE

CITY OF SANTA ANA

BUILDING PERMIT APPLICATION WORKSHEET

PLEASE PRINT

3/2/05:forms/Bldg.App.Worksheet

PROJECT ADDRESS: 717 East 3rd Street	SUITE:	SAPIN # 10172159
USE OF BUILDING: (RESIDENTIAL) COMMERCIAL INDUSTRIAL OTHER		2011-97093 MASTER ID#

NATURE OF WORK: (NEW) ADD ALTER/T.I. DEMO REROOF REPAIR SIGN MISC

NEW/ADDITION/ALTERATION:

1ST FL..	[redacted] SF	BASEMENT: YES/NO	No SF	NO. OF STORIES:	1
2ND FL..	NA SF	PATIO/ENCL. PATIO:	NA SF	BLDG. HEIGHT:	15'
TOTAL OF OTHER FLS:	NA SF	RES. REMODEL:	NA SF	PROPOSED USE:	Single Family
GARAGE/CARPORT:	[redacted] SF 450	ALTER/T.I.:	NA SF		

JOB DESCRIPTION (non-residential projects see reverse side of this application) :

[redacted] detatched 2-car garage

BUILDING OWNER'S NAME: City of Santa Ana			PHONE NO: 714.647.5390
ADDRESS: 20 Civic Center Plaza-M37	CITY: Santa Ana	STATE: CA	ZIP: 92702
TENANT'S NAME (Comm/Ind): N.A.			PHONE NO:
CONTRACTOR'S NAME: Habitat For Humanity Of Orange Co.	STATE CONTR. #: 843208	LICENSE CLASS: B	PHONE NO:
ADDRESS: 2200 South Ritchey	CITY: Santa Ana	STATE: CA	ZIP: 92705
WORKERS COMP. POLICY#: UWHA 486-000278-110 EXP. DATE 1-01-12	INSURANCE COMPANY: Ullico Casualty Co.	SANTA ANA BUS. LIC. #: 186231	
ARCHITECT/ENGINEER: Ritnar Group	STATE LICENSE #:	PHONE NO: 949-250-8887	
ADDRESS: 20341 SW Birch St - #100	CITY: Newport Beach	STATE: CA	ZIP: 92660
CONTACT NAME: Pat Albarstadt		PHONE NO: 714-235-4261	
E-MAIL ADDRESS: pata@habitatoc.org			

OFFICE USE ONLY: ACC OR SPC (CIRCLE ONE) _____ HRS PER _____ BLDG. FEE $ _____

OCC. GROUP: _____ RECEIPT #: ~~58078~~ 58099 P/C FEE PD $ 157.50

TYPE OF CONSTR: _____ VALUATION: $ 17,577 SUBMITTAL DATE: 8-9-11

FIRE SPKR: YES / NO A/C: YES / NO FLOOD ZONE: X PROCESSED JDE

RES. DEV. FEE: YES / NO **PRIOR DWELLING UNIT :** YES / NO COMMENTS: _____

PLANNING OK TO CHECK & DATE 8/9/11 BLDG. DEPT. APPROVAL & DATE _____

PLNG CONDITIONS: _____

FEE CHECKLIST WORKSHEET

Received by: _____ SAPIN #: 10172158

FEE TYPE	REQUIRED	
	Yes	No
Plan Check Fee	☑	☐
Disability Fee	☑	☐
SMIP Fee	☑	☐
Res. Dev. Fee	☑	☐
Fire Facility Fee	☐	☑
School Distr. Fee	☑	☐
Microfilm	☑	☐
FCWP Surcharge	☑	☐

CALCULATION AREA

	COST/SQ FT	X	TOTAL SQ FT	=	VALUATION
house	1344	x	109	=	146,496
gar	450	x	39.06	=	17,577

Counter computations/valuation $_____

Plan checker computation/final valuation $_____

ARCHITECTURAL PLAN CHECK COMMENTS

1. All items noted on this plan check report must be addressed. If you feel that an item is not applicable to your project, note "N/A" and discuss the reason with the plan checker.
2. Please indicate the sheet number and detail to the right of each correction, or note the number on the plans where the correction is made. Resubmit marked original, calculations and this correction sheet. A separate sheet for response may be used.
3. Resubmit 3 corrected sets of plans.
4. Please see corrections on submitted plans. Red marked set must be returned with revised plans. Plans resubmitted without the red markup set may result in delayed review time and additional plan check fees.
5. All drawings and supporting documents shall be prepared, stamped, and signed by a California licensed architect or registered professional engineer. (CRC R301.1.3, CBC 107.1 and 107.3.4.1).
6. Provide a fully dimensioned Site Plan on the drawings and on a separate 8-112" x 11" sheet of paper.
7. Provide building information on plans:
   - Occupancy type: R31 U
   - Fire sprinklered: Yes I No
8. List all deferred submittals on cover sheet, include truss drawings, (CRC R106.3.3)
9. Provide and show on the plans, house street number visible and legible from street. (Minimum 4"High x 1" Wide) CRC R319
10. Show all property lines of record on Site Plan. Buildings shall not be constructed over any property line.
11. Show the North arrow on the plans and centerline of labeled street(s) and alley.
12. Provide minimum class B roofing material.
13. Window in bathroom # 2 shall be tempered.
14. Show 30-inch clear width for water closet compartments and 24-inch clearance in front of a water closet.
15. Carbon monoxide alarms combined with smoke alarms shall comply with both sections R314 and section R315, all applicable standards, and requirements for listing and approval by the Office of the State Fire Marshal, for smoke alarms.
16. All new construction, interior or exterior alterations, repairs, or additions requiring a permit and having a valuation in excess of $1,000, or when one or more sleeping rooms are added or created, the entire dwelling shall be provided with smoke detectors located as required for a new dwelling. (CRC R314,3) Smoke alarms shall be installed in the following locations:
   - In each sleeping room.
   - Outside each separate sleeping area in the immediate vicinity of the bedrooms.

- On each additional story of the dwelling, including basements and habitable attics but not including crawl spaces and uninhabitable attics. In dwellings or dwelling units with split levels and without an intervening door between the adjacent levels, a smoke alarm installed on the upper level shall suffice for the adjacent lower level provided that the lower level is less than one full story below the upper level.
- When more than one smoke alarm is required to be installed within an individual dwelling unit the alarm devices shall be interconnected in such a manner that the actuation of one alarm will activate all of the alarms in the individual unit.

17. All new construction, Interior or exterior alterations, repairs, or additions requiring a permit and having a valuation in excess of $1,000,, an approved carbon monoxide alarm shall be installed in dwelling units and in sleeping units within which fuel-burning appliances are installed and in dwelling units that have attached garages shall be provided with carbon monoxide alarms (CRC R315)

- Carbon monoxide alarms shall only be required in the specific dwelling unit or sleeping unit for which the permit was obtained. Carbon monoxide alarms required by Sections R315.1 and R315.2 shall be installed in the following locations:
- Outside of each separate dwelling unit sleeping area in the immediate vicinity of the bedroom(s).
- On every level of a dwelling unit including basements.
- Where more than one carbon monoxide alarm is required to be installed within the dwelling unit or within a sleeping unit the alarm shall be interconnected in a manner that activation of one alarm shall activate all of the alarms in the individual unit.

Exception:

Interconnection is not required in existing dwelling units where repairs do not result in the removal of wall and ceiling finishes, there is no access by means of attic, basement or crawl space, and no previous method for interconnection existed

18. Shower compartments and walls above bathtubs with shower heads installed shall be finished with a smooth, nonabsorbent surface to a height of not less than 72" above the floor. (CRC R307.2)
19. Access shall be provided to all under-floor spaces. The floor access shall be a minimum 18" by 24" and openings through a perimeter wall shall be not less than 16" by 24". (CRC R408.4)

20. Bathrooms, laundry rooms, water closet compartments and similar rooms shall be mechanically ventilated in accordance with the CMC.
21. Glazing in swinging, sliding, and bifold doors 9 square feet or less shall be a

CALIFORNIA GREEN BUILDING STANDARDS

1. Plumbing fixtures and fittings shall meet the standards referenced in CGBC Table 4.303.3. CGBC 4303.3
   - Sec. 4.304 Irrigation controllers shall meet the requirements of CGBC 4.304.1.
   - Indicate on the plans the type of controllers and the location.
2. Note: Field verify controller installation when the controllers are installed by the contractor at time of building final.
3. Seal openings in the building envelope in compliance with the California Energy Code (CEC). Annular spaces around pipes, electric cables, conduits or other openings in plates at exterior walls shall be protected by closing such openings with cement mortar, concrete masonry, or a similar method acceptable to the enforcing agency. CGBC 4.406.1
4. All duct openings and other air distribution component openings shall be protected during storage on the construction site until final start-up with tape, plastic, sheet metal, or other acceptable methods to reduce the amount of dust and debris which may collect in the system. CGBC 4.504.1
5. Finish materials shall comply with COBC 4.504.2.
6. Adhesives, adhesive bonding primers, adhesive primers, sealants, sealant primers, and caulks shall comply with local or regional air pollution control or air quality management district rules where applicable, or meet the requirement of SCAQMD Rule 1168 VOC limits and prohibition on the use of certain toxic chemicals, except per subsection 2. COBC 4.504.2.1, subsection 1
7. Note on the plans that aerosol adhesives, smaller unit sizes of adhesives, and sealant or caulking compounds (in units of product, less packing, which do not weigh more than 1 pound and do not consist of more than 16 fluid ounces shall comply with statewide VOC standards and other requirements, including prohibitions on the use of certain toxic compounds, of CCR, Title 17, commencing with Section 94507. 4 CGBC.504.2.1, subsection 2
8. Verification of compliance with finish materials shall be provided at the request of the enforcing agency. Documents may include, but not limited to the following:
   - Manufacturer's product specification.
   - Field verification of on-site product containers.
   - Other methods approved by the local jurisdiction.
9. Carpets shall meet one of the following: 1. Carpet and Rug Institute's Green label plus program, 2. California Department of Public Health Standard Practice for the testing of VOCs (Specification 01350), 3. NSF/ANSI 140 at the Gold Level. 4. Scientific Certifications Systems Indoor AdvantageTM Gold. CGBC 4.504.3
10. Carpet cushion shall meet the requirements of the Carpet and Rug Institute Green Label Program, carpet adhesive shall meet the requirements of CGBC Table 4.504.1. CGBC 4.504.3.1,4.504.3.2
11. Hardwood plywood, particleboard, and medium density fiberboard composite wood products shall meet the requirements for Formaldehyde Limits in CGBC Table 4.504.5.
12. Note on the plans that documentation shall be provided to indicate compliance with CGBC 4.504 and shall include at least one of the following: Product certifications and specifications, chain of custody certifications, or other methods acceptable to the enforcing agency. CGBC 4.504.5.1
13. Add a note to plans the building materials with visible signs of water damage shall not be installed. CGBC 4.505.3
14. Moisture content of Building Materials, and verification, shall meet the requirements of CGBC 4.505.3.
15. Bathroom exhaust fans shall be ENERGY STAR compliant, ducted to terminate outside the building, and controlled by a humidistat capable of being adjusted between the relative humidity range of 50 to 80 percent. CGBC 4.506
16. Heating and air-conditioning system design shall be sized, designed and have their equipment selected using the following methods: CGBC 4.507.2
   - Heat loss and heat gain is established according to ACCA Manual J, ASHRAE handbooks or other equivalent design software or methods.
   - Duct systems are sized according to ACCA 29-D Manual D, ASHRAE handbooks or other equivalent design software or methods.
   - Select heating and cooling equipment according to ACCA 36-S Manual S or other equivalent design software or methods.
17. Specify that inspections are required for certification of all CALGreen features in the plans and listed on Mandatory Measures Lists. Submit the name and qualifications of the person or persons anticipated to perform the inspections.
   - The following credentials are required
   - An oral and written exam is required to obtain the special inspection credential
18. The maximum length of a dryer vent is 14 feet with two bends. Two feet shall be decreased for each bend more than two, unless approved by the Building Official. (CMC 504.3.2.2)
19. Note on the plans: "An approved backwater valve is required for drainage piping serving fixtures located below the elevation of the next upstream manhole cover. Fixtures above such elevation shall not discharge through the backwater valve. Clean outs for drains that pass through a back water valve shall be clearly identified with a permanent label stating "backwater valve downstream." (CPC 710.1)
20. All hose bibs must be protected by an anti siphon device. (CPC 603.1)

Pat Alberstadt

Associate: Fernando

Full Name:	Ron Ritner
Last Name:	Ritner
First Name:	Ron
Job Title:	Owner
Company:	Ritner Group
Business Address:	503 32nd Street Suite 139 Newport Beach, CA 92660
Business:	(949) 250-8887
Mobile:	(949) 584-8987
Business Fax:	(949) 250-8882
E-mail:	rritner@ritnergroup.com
E-mail Display As:	rritner@ritnergroup.com
Categories:	Business Active

Associate: Fernando

STRUCTURES DESIGN GROUP, INC.
STRUCTURAL ENGINEERING & DESIGN
17780 Fitch #185
Irvine, CA 92614
(949) 252-7660
(949) 252-7661 fax
www.sdgeng.com

October 10, 2011

Mr. Pat Alberstadt
Habitat For Humanity – Orange County
2200 South Ritchey
Santa Ana, CA 92705

Subject: **Habitat for Humanity – 3rd Street**
Roof Truss Shop Drawing Review
Roof Truss Company: California Truss Frame
Prepared By / Date: ER 8-18-11
Date Received: 10-10-11
Quantity Received: 6 Wet Signed

SDG Job No. 2011009
Sequence Number: 11009/101011-02
RT Job Name: Habitat for Humanity – 3rd Street
RT Job Number: M-12536
Date Returned: 10-10-11
Quantities Returned: 6 Wet for Submittal

Dear Pat:

Accompanying this letter, we are forwarding 6 sets of shop drawings to you for submittal to the Building Official for their review and approval. The drawings were reviewed for general conformance with design concept of the project as indicated by the structural documents prepared by our office. We have not reviewed quantities or dimensions. We have not reviewed fabrication processes, techniques of construction, or coordination of the work with that of any other trade. We have not reviewed the manner in which the work would be performed or if it may be performed in a safe and satisfactory manner. Should we have made any comments or corrections on the drawings, these comments or corrections do not relieve the contractor from compliance with the structural documents. In as much as we have reviewed the drawings only for general conformance with the design concept, unless deviations from the design intent have been clearly indicated as such, we may not have made note of them and the contractor is not relieved from compliance with the structural documents. Our review of these drawings is not an indication of their preparation under our supervision.

These shop drawings are being returned with no objection taken to their use. The drawings are to be submitted to the Building Official for his approval and made a part of the "Approved Plans."

If you have any questions regarding this review, please do not hesitate to contact this office.

Sincerely,

STRUCTURES DESIGN GROUP, INC.

Philip G. Soma, Jr. PE
President

REGISTERED PROFESSIONAL ENGINEER
PHILIP G. SOMA JR.
No. C46231
Exp. 12-31-12
CIVIL
STATE OF CALIFORNIA

11009 - RTSDR Cal Truss Frame Seq-02 Pat Alberstat 2011-11-10.doc

cc: (6) Addressee
(1) File 2011009

minimum category classification of I (CPSC 16 CFR 1201) and I I (CPSC 16 CFR 1201) when more than 9 square feet or sliding. (Table R308.3.1 (1), R308.3 (1)) (Sliding doors)

22. Provide a section of stairway showing a maximum rise of 7.75 inches and a minimum run width of 10 inches for straight stairways. The maximum difference between the stair risers and treads shall not be greater than 318". (CRC R311.7.4)
23. The total net free ventilating area shall not be less than 11150 or 11300 when a Class I or I I vapor barrier is installed on the warm-in-winter side of the ceiling. (CRC R806.2)
24. Access shall be provided to all under-floor spaces. The floor access shall be a minimum 18" by 24" and openings through a perimeter wall shall be not less than 16" by 24". (CRC R408.4)
25. Show location of underfloor access crawl hole (18 x 24 inches). (CRC R408.4)
26. how size of the AC unit on the drawings.
27. Show insulation and radiant barrier on the full height cross section.
28. Identify each window with it's SHGC and U-factor.
29. The construction documents shall provide sufficient clarify to indicate the location, nature, and scope of the proposed green building features. CGBC 102.2
30. Plans shall indicate method of verification of compliance with all CALGreen requirements, Third party or other methods shall demonstrate satisfactory conformance with mandatory measures. Include City's Mandatory Measures Checklist copies onto plans.
31. Indicate on plans method of showing field verification either by installer or third party.
32. Indicate on the plans that a construction waste management plan and documentation demonstrating compliance with the plan shall be submitted that:
    - Identifies the materials to be diverted from disposal by recycling, reuse on the project or salvage for future use or sale.
    - Specifies if materials will be sorted on-site or mixed for transportation to a diversion facility. - Identifies the diversion facility where the material collection will be taken.
    - Identifies construction methods employed to reduce the amount of waste generated.
    - - Specifies that the amount of materials diverted shall be calculated by weight or volume, but not by both. CGBC 4.408.2, 4.408.2.1
33. Provide anchorage details for FAU units. (CMC 303.4)
34. Revise plans to indicate how separate combustion air is provided for FAU located in attic. (CMC 701.3)

STRUCTURES DESIGN GROUP, INC.
STRUCTURAL ENGINEERING & DESIGN
17780 Fitch #185
Irvine, CA 92614
(949) 252-7660
(949) 252-7661 fax
www.sdgeng.com

August 26, 2011

Mr. Pat Alberstadt
2200 South Ritchey
Santa Ana, CA 92705

Subject: **HABITAT 3rd STREET SANTA ANA** SDG JN: 2011-009
Plan Check Response Letter
Plan Check Number(s): Unknown
Date of Check: Unknown
Jurisdiction: Santa Ana, California
Plan Checker: Unknown

Dear Pat,

Please refer to the following responses for the plan check for the above named project.

Item #	Response
1.	Refer to the responses for the issues as presented for review.
2.	There are comments on the plans at the areas that had comments on them for review.
3.	Refer to the 3 sets to be presented for approval.
4.	Refer to the returned red lined plans with comments adjacent to those comments for additional reference.
5.	Refer to the stamped and signed drawings as required.
6.	The nailing schedule is presented on Sheet SN-1 at the left of the sheet.
7.	Refer to the added note on the foundation plans as requested.
8.	The soil classification and bearing pressure is indicated on Sheet SN-1, upper left corner in the design criteria section.
9.	Refer to the added note on the foundation plans as requested.
10.	Refer to the reviewed plans by the Geotechnical Engineer as requested.
11.	Refer to the added note on the foundation plans as requested.
12.	Refer to Sheet SN-2, Division 6, Section 06100, Paragraphs 3 5 for the specifications for wood in direct contact with concrete.
13.	Refer to the architectural plans for the crawl space access as required.
14.	The shear wall capacities have been reduced in relation to the ratio presented of 2b/h.
15.	The anchor bolt spacing may be calculated as a 50% ratio of capacity when using a 2x sill plate for shear wall design loads from 350 to 600 plf and have been adjusted accordingly.
16.	Refer to the upper left corner of Sheet SN-1 for the Basic Design Criteria as requested. Floor and roof loads are present in the floor and roof framing notes respectively on sheet SN-1.
17.	The truss loads are presented in the Truss Notes section on the framing plans and are not to be a deferred submittal and are to be reviewed with this plan check submittal. Refer also to the Roof and Ceiling Framing Notes on Sheet SN-1 Note number 6.
18.	Refer to detail 13/SD1 for the connection of the truss bottom chords to the non-bearing walls.
19.	Refer to detail 13/SD1 for the clearance requirements as requested.
20.	Refer to detail(s) 1/SD2 and Roof Framing Note #4 for additional information.
21.	The wall lengths relate to the height of the top plates or in the case of the shear transfer around the opening approach, to the header height. None of the panels violate these requirements.
22.	Refer to the added note on the Foundation Plan as requested.
23.	Refer to the numbers to be identified on the Foundation Plan as requested.
24.	Refer to the added notes on the Foundation Plans as requested.

25. Refer to the girder sizes on the Foundation Plan as requested.
26. The isolated Garage structure is allowed to be resisted using a rotation analysis increasing the transfer on the sides and the doubling the load to the rear wall. Refer to the calculations for additional information.
27. The anchor bolt usage is dependent on the design load to the shear wall and is calculated on a case by case basis, not by the capacity of the shear panel.
28. The girders are supported using GH Girder Hangers from Simpson Strong Tie and satisfy the end distance requirement.

If you require additional clarification or information, please do not hesitate to contact our office for assistance.

Very truly yours,

STRUCTURES DESIGN GROUP, INC.

Philip G. Soma, Jr. PE
President

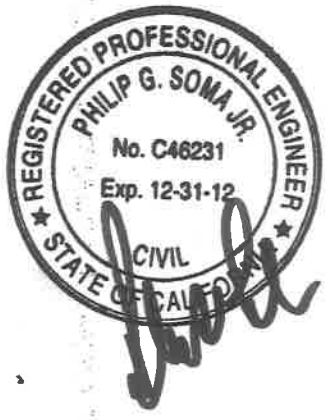
REGISTERED PROFESSIONAL ENGINEER
PHILIP G. SOMA JR.
No. C46231
Exp. 12-31-12
CIVIL
STATE OF CALIFORNIA

cc: (3) Addressee
(1) File 2011-009

STRUCTURES DESIGN GROUP, INC.
STRUCTURAL ENGINEERING & DESIGN
17780 Fitch #185
Irvine, CA 92614
(949) 252-7660
(949) 252-7661 fax
www.sdgeng.com

RECEIVED
OCT 18 2011
City of Santa Ana

Project:	**Habitat - Santa Ana – 717 E. 3rd Street** Santa Ana, CA
File No.:	2011-009
Subject:	**Project Calculations – 2nd Building Department Submittal**
Date:	09-29-11
Owner/Client:	Habitat for Humanity – Orange County 2200 South Ritchey Santa Ana, CA 92705 714.434.6200 x240 Mr. Pat Alberstadt
Architect:	The Ritner Group 503 32nd Street Suite 139 Newport Beach, CA 92660 949.250.8887 Mr. Ron Ritner
Soils:	Associated Soils Engineering, Inc. 2860 Walnut Ave. Signal Hill, CA 90755 562.426.7990 Mr. Ted Riddell



Project No. 11-6260
Occupancy Category: C / I = 1.0
Soil Profile Type: S_D
Bearing value: 1300 / 1500 PSF
Site Location: 33.747 N, -117.747 W
Seismic Site Classification: D
Ss = 1.393; S1 = 0.496
Fa = 1.0, Fv = 1.504
SMs=1.393, SM1=0.746; SDs=.929, SD1=0.472

Code: 2010 California Building Code.

Engineer: Philip G. Soma, Jr., PE

Notice: The content of these documents is understood to be an expression of professional opinion. It is based on our best knowledge, information and belief. No guarantee or warrantee is expressed or implied. These documents are the property of Structures Design Group, Inc.

Structures Design Group, Inc

9/29/2011

Structural Engineering & Design

Project: Habitat Santa Ana 3rd Street | Date: 4/20/11 | File No. : 2011009

Designer: P S | Revision | Sheet

Rev.: 04-20-11 - SDG Loading - 2010 CBC

Note: Roof dead loads are per sq ft of surface area. "Adj. for Slope" corrects for horztional projection.

ROOF LOAD #1	Sloping
Max Slope per Foot	5.00 12
Roofing, Asphalt Shingle	s 10.00 psf
Sheathing, 15/32" osb	s 1.70 psf
Framing, for roof	s 2.00 psf
Insulation	0.50 psf
Framing, for Ceiling	0.00 psf
Finish, 1/2" dw	2.20 psf
Mech. & Elect.	0.50 psf
Sprinklers	0.50 psf
Item	0.00 psf
Allowance	0.79 psf
Adjustment for Slope	0.81 psf
Total Dead Load	19.00 psf
Live Load	19.00 psf
Total Load	38.00 psf

RAISED FLOOR LOAD #1	
Finish, Carpet & Pad	1.00 psf
Underlayment	0.00 psf
Sheathing, 23/32" osb	2.50 psf
Frm'g, 2x6 @ 16	1.40 psf
Insulation	0.50 psf
Finish, 1/2" dw	0.00 psf
Mech. & Elect.	0.50 psf
Sprinklers	0.50 psf
Item	0.00 psf
Allowance	3.60 psf
Total Dead Load	10.00 psf
Live Load	40.00 psf
Total Load	50.00 psf

EXT. WALL	
Stucco, Masonite Siding	8.00 psf
Shthg, 15/32" osb-50% long	0.875 psf
Framing, 2x4 @ 16"oc	1.00 psf
Insulation	0.50 psf
Finish, 1/2" dw	2.20 psf
Item	0.00 psf
Allowance	0.42 psf
Total Dead Load	13.00 psf

PARTITION WALL	
Finish(paint)	0.00 psf
Shthg, 15/32" osb max	1.70 psf
Frmg, 2x4@16"oc	1.00 psf
Insulation	0.50 psf
Finish, 2-1/2" dw	4.40 psf
Plumbing	0.50 psf
Allowance	0.25 psf
Total Dead Load	8.35 psf

DECK LOAD #1	
Sheathing, Spaced 2x6	1.50 psf
Frm'g, 2x6 @ 12"oc	2.60 psf
Insulation	0.50 psf
Finish, 5/8" dw	0.00 psf
Mech. & Elect.	0.00 psf
Sprinklers	0.00 psf
Item	0.00 psf
Allowance	2.40 psf
Total Dead Load	7.00 psf
Live Load	40.00 psf
Total Load	47.00 psf

CONCRETE:

A. Concrete used shall achieve a minimum strength of 2500 psi in 28 days.

B. Steel Bars shall be Grade 40 except that No. 5 and larger shall be Grade 60.

WOOD:

A. All nails shall be sinker or short wire nails, unless noted otherwise. All nails used for sheathing attachment shall be common wire nails.

B. Manufactured hardware shall be Simpson Company products.

C. Solid framing lumber shall conform with the rules of the Western Wood Products Association. Lumber grades shall be:

Use	Grade mark & bending stress
2x4 studs(H<9'-0"):	Douglas Fir-Larch Standard or Stud
2x4 studs(H>9'-0"):	Douglas Fir-Larch Construction or #2
2x4, 3x4, & 4x4 plates:	Douglas Fir-Larch #2
2x6, 3x6, 4x6 & deeper plates:	Douglas Fir-Larch Construction or #2
2x6 & deeper studs:	Douglas Fir-Larch Construction or #2
3x4 & 4x4 studs & posts:	Douglas Fir-Larch #2
4x6 & deeper studs & posts:	Douglas Fir-Larch #2
6x6 & larger square posts:	Douglas Fir-Larch #1
6x8 & larger rectangular posts:	Douglas Fir-Larch #1
2x4 joists & rafters:	Douglas Fir-Larch #2
2x6 & deeper joists & rafters:	Douglas Fir-Larch #2
4x6 to 4x12 beams:	Douglas Fir-Larch #2
4x14 & 4x16 beams:	Douglas Fir-Larch #1
6x8, 8x10, 10x12 & deeper beams:	Douglas Fir-Larch #1

D. All wood resting on concrete shall be pressure treated Douglas Fir.

E. All wood product panels (plywood, oriented strand board) shall comply with the American Plywood Association standards for APA Structural-Use panels

Use	Grade & Grade Mark
Roof sheathing	APA Rated Sheathing Exposure I
Floor sheathing	APA Rated Sturd-I-Floor Exposure I, or APA Rated Sheathing Exposure I
Wall sheathing	APA Rated Sheathing Exposure I conforming with PS-1

F. Glued laminated timber members shall be Western species and shall be 24F-V4 for simple span members and 24F-V8 for other members. Standard camber is calculated using 3500 foot radius plus or minus 200 feet, unless otherwise noted.

G. Manufactured Micro=Lam and Parallam timbers shall be Trus Joist MacMillan Products. Manufactured Timberstrand timbers shall be Trus Joist MacMillan Products. Manufactured Gang=Lam and Redi=Lam II laminated timbers shall be Louisiana Pacific Products. Manufactured Versa=Lam timbers shall be Boise Cascade Products.

HABITAT FOR HUMANITY ORANGE COUNTY
717 E 3rd St Santa Ana, CA

Job No: 2011 009
Date: 09/29/11

PLAN 1 - ROOF FRAMING

Framing: Roof is to be 2x roof trusses @ 24" on center designed by a licensed roof truss designer.

Roofing: Concrete Tile
Pitch: 5 : 12
DL: 19 psf
LL: 19 psf
TL: 38 psf

Loads: Refer to Sheet 2

[1] Type Header for 3 Ft Opening for a Bearing Condition

L = 3.33 ft.

Loads:	TL	FLL+DL	DL	At	To	Load Derivation:
w1,plf =	524	277	277	0.00	3.33 ft.	Roof*(26/2+2)+Ext Wall*2

R1 = 873 462 462 lbs — V reduced at Neither Support
R2 = 873 462 462 lbs — Vmax ----> 873 lbs
At x = 1.67 ft V,x = 0 lbs — M = 8.7 in-kips
b = 5.50 in — Case: 1 — Total Load
d = 3.50 in — LDF = 1.25 — RM = 1.00
A = 19.25 in^2 — Fv = 206 psi — fv = 68 psi — 33.0%
S = 11.2 in^3 — Fb = 1493 psi — fb = 778 psi — 52.1% — 6x4 DF #2
I = 20 in^4 — E = 1600 ksi — d,TL = 0.05 in L/ 864
d,LL = 0.02 in L/ 1833

[1] Typical Header for 6 Ft Opening for a Bearing Condition at Front of Dining Room

L = 6.33 ft.

Loads:	TL	FLL+DL	DL	At	To	Load Derivation:
w1,plf =	524	277	277	0.00	6.33 ft.	Roof*(26/2+2)+Ext Wall*2

R1 = 1659 877 877 lbs — V reduced at Neither Support
R2 = 1659 877 877 lbs — Vmax ----> 1659 lbs
At x = 3.17 ft V,x = 0 lbs — M = 31.5 in-kips
b = 5.50 in — Case: 1 — Total Load
d = 5.50 in — LDF = 1.25 — RM = 1.00
A = 30.25 in^2 — Fv = 213 psi — fv = 82 psi — 38.7%
S = 27.7 in^3 — Fb = 1500 psi — fb = 1137 psi — 75.8% — 6x6 DF #1
I = 76 in^4 — E = 1600 ksi — d,TL = 0.16 in L/ 489
d,LL = 0.07 in L/ 1037

[3] Header @ Non-Bearing Condition - Max 3'-0" Opening

L = 3.33 ft.

Loads:	TL	FLL+DL	DL	At	To	Load Derivation:
w1,plf =	136	98	98	0.00	3.33 ft.	Roof*(2/2+1)+Ext Wall*4

R1 = 227 163 163 lbs — V reduced at Neither Support
R2 = 227 163 163 lbs — Vmax ----> 227 lbs
At x = 1.67 ft V,x = 0 lbs — M = 2.3 in-kips
b = 5.50 in — Case: 1 — Total Load
d = 1.50 in — LDF = 1.25 — RM = 1.00
A = 8.25 in^2 — Fv = 225 psi — fv = 41 psi — 18.3%
S = 2.1 in^3 — Fb = 1688 psi — fb = 1099 psi — 65.1% — 2x6 DF #2 FLAT
I = 2 in^4 — E = 1600 ksi — d,TL = 0.15 in L/ 262
d,LL = 0.04 in L/ 938

FLOOR FRAMING

Framing: Floor is to be framed using 2x6 joists on 6x6 girders on post and pad footings to comprise the raised floor with minimum 12" clearance at girders and 18" clearance at joists.

See typical calculations at front of calc set (program by joist manufacturer).

Loads: Refer to Sheet 2

DL: 10.002 psf Including ceiling weight
LL: 40 psf
TL: 50.002 psf

[4] Floor Joist for Raised Floor - 8'-6" Max Span

L = 8.50 ft.

Loads:	TL	FLL+DL	DL	At	To	Load Derivation:
w1,plf =	67	67	13	0.00	8.50 ft.	Floor*32/(2*12)

R1 =	284	284	57	lbs	V reduced at	Neither Support				
R2 =	284	284	57	lbs	Vmax ---->	284	lbs			
At x =	4.25	ft V,x =	0	lbs	M =	7.2	in-kips			
b =	1.50	in	Case:	2	F,LL + DL					
d =	5.50	in	LDF =	1.00	RM =	1.15				
A =	8.25	in^2	Fv =	180	psi	fv =	52	psi	28.7%	
S =	7.6	in^3	Fb =	1346	psi	fb =	957	psi	71.1%	2x6 DF #2
I =	21	in^4	E =	1600	ksi	d,TL =	0.24	in L/	433	
						d,LL =	0.19	in L/	541	

[5] 6x6 Floor Girder @ House - Max Span with Max Tributary Area

L = 7.25 ft.

Loads:	TL	FLL+DL	DL	At	To	Load Derivation:
w1,plf =	417	417	83	0.00	7.25 ft.	Floor*16.67/2

R1 =	1511	1511	302	lbs	V reduced at	Neither Support				
R2 =	1511	1511	302	lbs	Vmax ---->	1511	lbs			
At x =	3.63	ft V,x =	0	lbs	M =	32.9	in-kips			
b =	5.50	in	Case:	2	F,LL + DL					
d =	5.50	in	LDF =	1.00	RM =	1.00				
A =	30.25	in^2	Fv =	170	psi	fv =	75	psi	44.1%	
S =	27.7	in^3	Fb =	1200	psi	fb =	1185	psi	98.8%	6x6 DF #1
I =	76	in^4	E =	1600	ksi	d,TL =	0.21	in L/	410	
						d,LL =	0.17	in L/	512	

[6] Drop Beam at Porch

L = 7.50 ft.

Loads:	TL	FLL+DL	DL	At	To	Load Derivation:
w1,plf =	371	185	185	0.00	7.50 ft.	Roof*(15.5/2+2)

R1 =	1389	695	695 lbs		V reduced at	Neither Support			
R2 =	1389	695	695 lbs		Vmax ---->	1389	lbs		
At x =	3.75	ft V,x =	0 lbs		M =	31.3	in-kips		
b =	5.50	in	Case:	1	Total Load				
d =	5.50	in	LDF =	1.25	RM =	1.00			
A =	30.25	in^2	Fv =	213 psi	fv =	69	psi	32.4%	
S =	27.7	in^3	Fb =	1500 psi	fb =	1127	psi	75.2%	6x6 DF #1
I =	76	in^4	E =	1600 ksi	d,TL =	0.22	in L/	416	
					d,LL =	0.11	in L/	833	

[7] Garage Header

L = 8.67 ft.

Loads:	TL	FLL+DL	DL	At	To	Load Derivation:
w1,plf =	505	268	268	0.00	8.67 ft.	Roof*(21/2+1)+ExtWall*2

R1 =	2189	1160	1160 lbs		V reduced at	Neither Support			
R2 =	2189	1160	1160 lbs		Vmax ---->	2189	lbs		
At x =	4.34	ft V,x =	0 lbs		M =	56.9	in-kips		
b =	3.50	in	Case:	1	Total Load				
d =	13.25	in	LDF =	1.25	RM =	1.00			
A =	46.38	in^2	Fv =	225 psi	fv =	71	psi	31.5%	
S =	102.4	in^3	Fb =	1250 psi	fb =	556	psi	44.5%	4x14 DF #1
I =	678	in^4	E =	1700 ksi	d,TL =	0.06	in L/	1869	
					5 d,LL =	0.03	in L/	3974	

[7] Alternate Garage Header

L = 16.67 ft.

Loads:	TL	FLL+DL	DL	At	To	Load Derivation:
w1,plf =	505	268	268	0.00	16.67 ft.	Roof*(21/2+1)+ExtWall*2

R1 =	4208	2229	2229 lbs		V reduced at	Neither Support			
R2 =	4208	2229	2229 lbs		Vmax ---->	4208	lbs		
At x =	8.33	ft V,x =	0 lbs		M =	210.4	in-kips		
b =	3.50	in	Case:	1	Total Load				
d =	14.00	in	LDF =	1.25	RM =	1.00			
A =	49.00	in^2	Fv =	356 psi	fv =	129	psi	36.2%	
S =	114.3	in^3	Fb =	2765 psi	fb =	1840	psi	66.6%	3 1/2 x 14 LSL
I =	800	in^4	E =	1500 ksi	d,TL =	0.73	in L/	274	
					d,LL =	0.34	in L/	582	

HABITAT FOR HUMANITY ORANGE COUNTY
717 E 3rd St Santa Ana, CA

Job No: 2011 009
Date: 09/29/11

FOUNDATION

Foundation is to be raised floor with 2x6 Floor Joists and 4x6 girder beams on post and beam below.

Allowable Bearing: 1300 psf at continuous footings
1500 psf at isolated pad footings

Soils Report No: 11-6260
By: Associated Soils Engineering
Date: March 14, 2011

Uniform Load at Continuous Footings

w,max = 913 plf = Floor*8.67/2+ExtWall*8+Roof*(26/2+2)
Width = 0.70 ft = w,max / A.S.B

Use: 15 in wide footing
18 in blw grade

Allowable Concentrated Load at Uniform Footing

P,all = 6500 lbs = A.S.B. * width * footing depth * 2

Maximum Concentrated Load at Continuous Footing

P,max = 2189 lbs at Beam #7 Reaction
A,req = 1.68 ft^2 = P,max / A.S.B.

No Pad Footing Req'd

Pad Footings Required

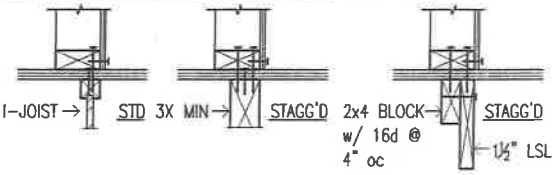
Pad at Corner Posts of Right Porch

P= 1389 lbs Bm#6 + Bm #10
A,req = 1.07 ft^2 = P,max / A.S.B.

Use 2'-6" sq x 18" deep pad ftg

SHEAR WALL SCHEDULE

1. Provide sheathing as noted to resist racking forces as noted below: 2007 CALIFORNIA BUILDING CODE.

Mark	Wall Sheathing (2), (3), (5), (7), (8)	Sole plate connection to framing below (1), (5)
◇*	Note: When an asterisk * accompanies the shear wall mark, apply sheathing prior to any adjacent or perpendicular framing.	
#9 (260 plf)	3/8" wood product panels with 8d common or plywood nails at 6" o.c. along all boundaries and edges and at 12" o.c. in the field. All edges of panels shall be blocked with at least a 2x4.	16d short or sinker nails at 4" o.c.
#10 (350 plf)	3/8" wood product panels with 8d common or plywood nails at 4" o.c. along all boundaries and edges and at 12" o.c. in the field. All edges of panels shall be blocked with at least a 2x4.	16d short or sinker nails at 3" o.c. staggered. (4)
#11 (490 plf)	3/8" wood product panels with 8d common or plywood nails at 3" o.c. along all boundaries and edges and at 12" o.c. in the field. Nails at panel joints shall be staggered. All edges of panels shall be blocked. Foundation sills may be 2x unless noted otherwise on plan. Framing at all panel joints shall be 3x min. (6).	16d short or sinker nails at 3" o.c. staggered. (4)
#12 (640 plf)	3/8" wood product panels with 8d common or plywood nails at 2" o.c. staggered along all boundaries and edges and at 12" o.c. in the field. All edges of panels shall be blocked. Foundation sills may be 2x unless noted otherwise on plan. Framing at all panel joints shall be 3x min. (4), (6).	40d common nails in predrilled holes at 4" o.c. staggered (4). Alt: 2X sill w/16d short S.P.N. @ 2" o.c. staggered into solid framing below sheathing. (4)
#13 (770 plf)	15/32" wood product panels with 10d common or plywood nails at 2" o.c. staggered along all boundaries and edges and at 12" o.c. in the field. All edges of panels shall be blocked. Framing at all panel joints and foundation sills shall be 3x min. (4). (6).	40d common nails in predrilled holes at 4" o.c. staggered. Alt: 3/8" diameter x 6" long lag screws at 6" o.c. staggered (into solid framing below sheathing. (4)
#14 (870 plf)	15/32" wood product panels, Structural I panel grade, with 10d common or plywood nails at 2" o.c. staggered along all boundaries and edges and at 12" o.c. in the field. All edges of panels shall be blocked. Framing at all panel joints and foundation sills shall be 3x min. (4), (6).	3/8" diameter x 6" long lag screws at 4" o.c. staggered into solid framing below sheathing. (4)

NOTE: Hot-dipped zinc coated galvanized nails may be required where panels are fastened to pressure-treated lumber; See Rough Carpentry notes on Sheet SN-2.

Footnote:

1. Floor sheathing is included as part of required nail penetration.
2. Refer to specification for alternate wood product panel grading and usage.
3. Sheets shall be not less than 4 feet by 8 feet except at boundaries and changes where the minimum dimension shall be 24 inches. Single 12" long portions may be used once in any full length shear panel application.
4. Stagger is 1/2 inch. Provide min. 3x solid blocking or framing below sheathing at staggered S.P.N. above. I-joist blocking is not acceptable for 40d common nails or 3/8" diameter lag screws.
5. Provide minimum 1 1/2" spacing of fasteners. Over any 24 inch range of fasteners, the average spacing shall be at least as close as that given.
6. 3x sill plates are required at shear walls where the design shear exceeds 350 plf. Where design shear does not exceed 600 plf, a 2x plate may be used provided anchor bolts are designed for a load capacity of 50% or less of the allowable capacity.
7. Use 3 inch square by .229 inch thick plate washers with a 13/16" x 1-3/4" long slotted hole shall be provided at all sill plate connections to the foundation. Use a standard cut washer betwen the nut and the 3" square washer.
8. Nail sizes shall conform with the following table:

Size & Name	Nail Length	Wire Dia.	Wire Gauge	Head Dia.	Pre-Bore Drill Dia.
8d Plywood	2"	.131"	10-1/4	.281"	
8d Common	2-1/2"	.131"	10-1/4	.281"	
10d Plywood	2-3/8"	.148"	9	.312"	
10d Common	3"	.148"	9	.312"	
16d Short (framer)	3-1/4"	.131"	10-1/4	.281"	
16d Sinker	3-1/4"	.148"	9	.344"	
40d Common	5"	.225"	4	.469"	11/64" or no. 18 drill gage
5d Cooler	1-5/8"	.086"	13-1/2	.224"	
6d Cooler	1-7/8"	.092"	13	.250"	

2010 CBC SEISMIC DESIGN PARAMETERS				
Site Latitude:	N 33.7473^0	Site Longitude:	W 117.7473^0	
Seismic Parameter			**Recommended Value**	
Site Class [a]			D	
Soil Profile Name [b]			Stiff Soil Profile	
Site Coefficient, Fa [c]			1.0	
Site Coefficient, Fv [d]			1.504	
0.2-Second Spectral Response Acceleration, S_S [e]			1.393g	
1.0-Second Spectral Response Acceleration, S_1 [f]			0.496g	
Adjusted 0.2-Second Spectral Response Acceleration, SM_S [g]			1.393g	
Adjusted 1.0-Second Spectral Response Acceleration, SM_1 [h]			0.746g	
Design 0.2-Second Spectral Response Acceleration, SD_S [i]			0.929g	
Design 1.0-Second Spectral Response Acceleration, SD_1 [j]			0.497g	
PGA for Site Seismic Hazard Analysis [k]			0.372g	
Occupancy Category		**I or II**	**III**	**IV**
Seismic Design Category based on SD_S [l]		D	D	D
Seismic Design Category based on SD_1 [m]		D	D	D

a Per 2010 CBC Table 1613.5.2

b Per 2010 CBC Table 1613.5.2

c Per Java Ground Motion Parameter Calculator from USGS website. Also shown on 2010 CBC Table 1613.5.3 (1).

d Per Java Ground Motion Parameter Calculator from USGS website. Also shown on 2010 CBC Table 1613.5.3 (2).

e Per Java Ground Motion Parameter Calculator from USGS website. Also shown on 2010 CBC Figure 1613.5 (1).

f Per Java Ground Motion Parameter Calculator from USGS website. Also shown on 2010 CBC Figure 1613.5 (2).

g $SM_S = Fa \times S_S$

h $SM_1 = Fv \times S_1$

i $SD_S = 2/3 \times SM_S$

j $SD_1 = 2/3 \times SM_1$

k PGA = SDs/2.5 per 2010 CBC Section 1803.5.12.2.

l Per 2010 CBC Table 1613.5.6 (1). Also refer to 2010 CBC Section 1613.5.6 for special conditions.

m Per 2010 CBC Table 1613.5.6 (2). Also refer to 2010 CBC Section 1613.5.6 for special conditions.

4.0 GEOLOGIC HAZARDS

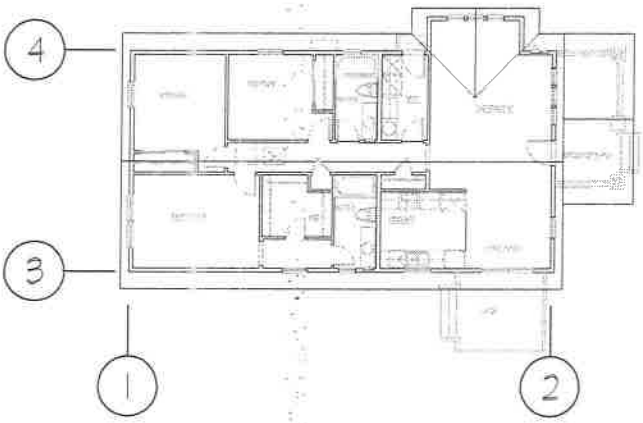
4.1 SURFACE FAULT RUPTURE AND GROUND SHAKING

The subject site is not located within an Alquist-Priolo Earthquake Fault Zone. No known active or potentially active faults are shown crossing the site on published maps reviewed. No evidence for active faulting was encountered in the exploratory excavations performed during this evaluation. The risk of surface rupture at the site is considered very low.

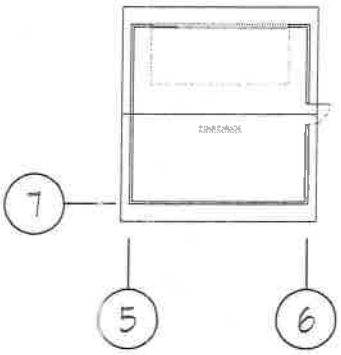
LATERAL ANALYSIS KEYPLAN

ROOF LEVEL SHEAR WALL LINES

HOUSE



GARAGE



HABITAT FOR HUMANITY ORANGE COUNTY
717 E 3rd St Santa Ana, CA

Job No: 2011 009
Date: 09/29/11

Seismic Design

Project Location: 717 E 3rd Street Santa Ana, CA

Latitude: 33.747 Longitude: -117.747

Occupancy Category: II I = 1.00

Mapped Acceleration Parameters *(Refer to USGS printout for referenced site specific information)*

S_S = 1.393 Site Class: D

S_1 = 0.496

MCE Spectral Response Acceleration Parameters

F_a = 1.000 $S_{MS} = F_a * S_S$ = 1.393

F_v = 1.504 $S_{M1} = F_v * S_1$ = 0.746

Design Spectral Acceleration Parameters & Seismic Design Category

$S_{DS} = {}^2/_3 S_{MS}$ = 0.929 per Table 11.6-1: D ρ = 1.3

$S_{D1} = {}^2/_3 S_{M1}$ = 0.497 per Table 11.6-2: D ρ = 1.3

Approximate Fundamental Period

h_n = 17.00 ft C_T = 0.02 x = 0.75

$T_a = C_T (h_n)^x$ = 0.167 C_u = 1.400

$T_{MAX} = C_u T_a$ = 0.234 T_L = 8 *from ASCE 7-05 Fig. 22-16*

Seismic Response Coefficients & Base Shear *(Load Combinations of CBC Section 1605.3.1)*

Direction	*R*	*[12.8-2] C_S*	*[12.8-3] $C_{S,MAX}$*	*[12.8-5] $C_{S,MIN}$*	*[12.8-6] $C_{S,MIN}$*	V = 0.7 ρ Cs W
N-S	6.5	0.143	0.326	0.010	N/A	V_{N-S} = 0.130 W
E-W	6.5	0.143	0.326	0.010	N/A	V_{E-W} = 0.130 W

Area # 1 2 story condition

		Top Plt	*Bot Plt*
Roof Pitch =	5.0/12		
Roof Level Plate Ht =	9.00 ft	9.75 ft	0.75 ft
Floor Thickness =	0.50 ft		
Floor Level Plate Ht =	0.25 ft	0.25 ft	0.00 ft

Roof Level		*DL*	*h,trib*	*L,ft*	*Qty*	*Long*	*Trans*
Roof T.A. =	1772 sf	19 psf	-	-	-	33668 lb	33668 lb
Transverse walls:	Exterior:	15 psf	4.50 ft	101.17 ft	x 1 =	6829 lb	-
	Interior:	10 psf	4.50 ft	87.50 ft	x 1 =	3938 lb	-
Longitudinal walls:	Exterior:	15 psf	4.50 ft	59.63 ft	x 1 =	-	4025 lb
	Interior:	10 psf	4.50 ft	85.04 ft	x 1 =	-	3827 lb
Load to diaphragm = Diaphragm DL + perpendicular walls x 4.50 ft. =						44434 lb	41520 lb
Load to diaphragm below = perp. walls x 4.50 ft. + parallel int. walls x 9.00 ft. =						18420 lb	15727 lb

Floor Level		*DL*	*h,trib*	*L,ft*	*Qty*	*Long*	*Trans*
Floor T.A. =	1345 sf	10 psf	-	-	-	13450 lb	13450 lb
Transverse walls:	Exterior:	15 psf	0.13 ft			0 lb	-
	Interior:	10 psf	0.13 ft			0 lb	-
Longitudinal walls:	Exterior:	15 psf	0.13 ft			-	0 lb
	Interior:	10 psf	0.13 ft			-	0 lb
Load from above =						18420 lb	15727 lb
Load to diaphragm = Diaphragm DL + perpendicular walls x 0.13 ft. + Load from above =						31870 lb	29177 lb

HABITAT FOR HUMANITY ORANGE COUNTY
717 E 3rd St Santa Ana, CA

Job No: 2011 009
Date: 09/29/11

Force Distribution - Longitudinal Direction

	Fx	hx	Fx*hx	F,dist		V,seis	TA	v,psf
Roof:	44434	9.75	433236	74927	x .130 =	9741 lb	/ 1772 =	5.50 psf
Floor:	31870	0.25	7968	1378	x .130 =	179 lb	/ 1345 =	0.13 psf
Total:	76305		441204					

Force Distribution - Transverse Direction

	Fx	hx	Fx*hx	F,dist		V,seis	TA	v,psf
Roof:	41520	9.75	404818	69445	x .130 =	9029 lb	/ 1772 =	5.10 psf
Floor:	29177	0.25	7294	1251	x .130 =	163 lb	/ 1345 =	0.12 psf
Total:	70697		412113					

Area #2 — 1 story condition — Garage

Roof Pitch = 5.0/12
Roof Level Plate Ht = 9.00 ft

	Top Plt	Bot Plt
	9.00 ft	0.00 ft

Roof Level

		DL	h,trib	L,ft	Qty	Long	Trans
Roof T.A. =	575 sf	19 psf	-	-	-	10925 lb	10925 lb
Transverse walls:	Exterior	15 psf	4.50 ft	21.00 ft	x 2 =	2835 lb	-
	Interior	10 psf	4.50 ft	0.00 ft	x 0 =	0 lb	-
Longitudinal walls:	Exterior	15 psf	4.50 ft	21.00 ft	x 2 =	-	2835 lb
	Interior	10 psf	4.50 ft	0.00 ft	x 0 =	-	0 lb
					Load to Roof Diaphragm:	13760 lb	13760 lb

Force Distribution - Longitudinal Direction

	Fx	hx	Fx*hx	F,dist		V,seis	TA	v,psf
Roof:	13760	9.00	123840	13760	x .130 =	1789 lb	/ 575 =	3.11 psf

Force Distribution - Transverse Direction

	Fx	hx	Fx*hx	F,dist		V,seis	TA	v,psf
Roof:	13760	9.00	123840	13760	x .130 =	1789 lb	/ 575 =	3.11 psf

HABITAT FOR HUMANITY ORANGE COUNTY
717 E 3rd St Santa Ana, CA

Job No: 2011 009
Date: 09/29/11

Wind Design

Basic Wind Speed:	85 mph	Exposure:	C	z_g =	900	α =	9.5
K_d =	0.85	K_{zt} =	1.00	I =	1.00		

Area #1

Roof pitch =	5.0 : 12	Θ =	22.62	degrees from horizontal	
d_{HORIZ} to ridge =	13.00 ft	h_{ROOF} =	5.42 ft		
h_{PLATE} =	9.00 ft	h_{MEAN} =	11.71 ft	= h_{PLATE} + h_{ROOF} / 2	
K_Z =	0.85	q_z =	13.35 psf	= 0.00256 K_Z K_{zt} K_d V^2 I	
Least horizontal dim =	26.00 ft	a =	3.00 ft	2a =	6.00 ft

Zone:	1	2	3	4	1E	2E	3E	4E
GC_{pi} =	0.54	-0.45	-0.47	-0.41	0.77	-0.72	-0.65	-0.60
p (psf) =	7.18	-6.06	-6.23	-5.53	10.29	-9.59	-8.65	-7.98

Area #2

Roof pitch =	5.0 : 12	Θ =	22.62	degrees from horizontal	
d_{HORIZ} to ridge =	10.50 ft	h_{ROOF} =	4.38 ft		
h_{PLATE} =	9.00 ft	h_{MEAN} =	11.19 ft	= h_{PLATE} + h_{ROOF} / 2	
K_Z =	0.85	q_z =	13.35 psf	= 0.00256 K_Z K_{zt} K_d V^2 I	
Least horizontal dim =	21.00 ft	a =	3.00 ft	2a =	6.00 ft

Zone:	1	2	3	4	1E	2E	3E	4E
GC_{pi} =	0.54	-0.45	-0.47	-0.41	0.77	-0.72	-0.65	-0.60
p (psf) =	7.18	-6.06	-6.23	-5.53	10.29	-9.59	-8.65	-7.98

HABITAT FOR HUMANITY ORANGE COUNTY
717 E 3rd St Santa Ana, CA

Job No: 2011 009
Date: 09/29/11

Diaphragm #1	Roof	Level	N-S	Direction

x,LEFT = 0.00 ft x,RIGHT = 50.00 ft Diaphragm width = 50.00 ft

Seismic Loads

	Load ID	WSEIS	y,MIN	y,MAX	depth	V,SEIS	X,MIN	X,MAX
w1 =	L/R	5.50 psf	0.00 ft	26.00 ft	26.00 ft	142.9 plf	0.00 ft	50.00 ft
w2 =	L/R	5.50 psf	0.00 ft	30.00 ft	30.00 ft	164.9 plf	0.00 ft	0.00 ft
w3 =	L/R	5.50 psf	0.00 ft	26.00 ft	26.00 ft	142.9 plf	0.00 ft	0.00 ft

Uniform Wind Loads

	Windward Surfaces			Leeward Surfaces				
	Zone	p,wind	ht	Zone	p,wind	ht	X,MIN	X,MAX
Area #1 - w1:	1E	10.29	4.50 ft	4E	-7.98	4.50 ft	0.00 ft	6.00 ft
Area #1 - w2:	2E	-9.59	5.42 ft	3E	-8.65	5.42 ft	0.00 ft	6.00 ft
Area #1 - w3:	1	7.18	4.50 ft	4	-5.53	4.50 ft	6.00 ft	44.00 ft
Area #1 - w4:	2	-6.06	5.42 ft	3	-6.23	5.42 ft	6.00 ft	44.00 ft
Area #1 - w5:	1E	10.29	4.50 ft	4E	-7.98	4.50 ft	44.00 ft	50.00 ft
Area #1 - w6:	2E	-9.59	5.42 ft	3E	-8.65	5.42 ft	44.00 ft	50.00 ft

Diaphragm Shears:

Left Side of Diaphragm				Right Side of Diaphragm			
Seismic	Wind 1	Wind 2	Wind, 10 PSF	Seismic	Wind 1	Wind 2	Wind, 10 PSF
3573 lbs	1597 lbs	1597 lbs	2479 lbs	3573 lbs	1597 lbs	1597 lbs	2479 lbs

	y,MIN	y,MAX			y,MIN	y,MAX
Left Boundary:	0.00 ft	50.00 ft		Right Boundary:	0.00 ft	50.00 ft
Diaphragm depth =	50.00 ft			Diaphragm depth =	50.00 ft	
v,dia, left =	71.5 plf			v,dia, right =	71.5 plf	
v,allow =	180.0 plf	OK		v,allow =	180.0 plf	OK

Moments & Chords:

At x = 25.00 ft Vx = 0 lbs

M = 44667 ft-lbs

T_{CHORD} = 893 lbs at diaphragm depth = 50.00 ft

Unblocked Diaphragm OK
Chord Splices: 8-16d or CS16

HABITAT FOR HUMANITY ORANGE COUNTY
717 E 3rd St Santa Ana, CA

Job No: 2011 009
Date: 09/29/11

Line 1 Level 1 *Location:* Left of Bedrooms

Diaphragm Loads:	*Seismic*	*Wind 1*	*Wind 2*	*Wind.min*	*y.min*	*y.max*
Load #1:	3573 lb	1597 lb	1597 lb	2479 lb	0.00 ft	26.00 ft

Total Shear:	*Seismic*	*Wind 1*	*Wind 2*	*Wind.min*
V at this level =	3573 lb	1597 lb	1597 lb	2479 lb
V.total =	3573 lb	1597 lb	1597 lb	2479 lb

Shear Walls / Diaphragm Connections:

Combined wall length = 9.75 ft
Length of top plate = 26.00 ft
v, wall = 366 plf
v, plate = 137 plf

Shear Panel: Type 11
A35 Spacing: 32" oc
AB spacing & Plate: 16"/ 2x

Horiz. or Vert. Irregularity?: N *Seismic Load Factor:* 1.00 *at diaphragm connections*

Wall 1				*Seismic*	*Wind 1*	*Wind 2*	*Wind.min*		
	Length =	9.75 ft						Drag:	1271 lbs
	Start of Wall:	9.25 ft	OTM:	32.2 ft-k	14.4 ft-k	14.4 ft-k	22.3 ft-k	Plt. Splice:	12-16d
	End of Wall:	19.00 ft	0.6*RM:	5.0 ft-k	5.0 ft-k	5.0 ft-k	5.0 ft-k	Alt. Strap:	CS16
	Wall Height:	9.00 ft	Uplift abv:					Alt.:HTT4	
	h/d =	0.92	Net Uplift:	2787 lbs	963 lbs	963 lbs	1777 lbs	Holddown:	STHD10
	Uniform DL Resisting:	175.0 plf	Roof*(2/2+1)+ExtWall*9					Min Post:	4x4

HABITAT FOR HUMANITY ORANGE COUNTY
717 E 3rd St Santa Ana, CA

Job No: 2011 009
Date: 09/29/11

Line 2 Level 1 *Location:* Right of Dining Room

Diaphragm Loads:	*Seismic*	*Wind 1*	*Wind 2*	*Wind.min*	*y.min*	*y.max*
Load #1:	3573 lb	1597 lb	1597 lb	2479 lb	0.00 ft	26.00 ft

Total Shear:	*Seismic*	*Wind 1*	*Wind 2*	*Wind.min*
V at this level =	3573 lb	1597 lb	1597 lb	2479 lb
V.total =	3573 lb	1597 lb	1597 lb	2479 lb

Shear Walls / Diaphragm Connections: H:W Reduction = 2w/H= 83% - New Capacity = 408 plf - OK at Type 11

Combined wall length = 9.25 ft
Length of top plate = 26.00 ft
v, wall = 386 plf
v, plate = 137 plf
Shear Panel: Type 11
A35 Spacing: 32" oc
AB spacing & Plate: 16" / 2x

Horiz. or Vert. Irregularity?: N *Seismic Load Factor:* 1.00 *at diaphragm connections*

				Seismic	*Wind 1*	*Wind 2*	*Wind.min*		
Wall 1	Length =	3.75 ft						Drag:	933 lbs
	Start of Wall:	0.00 ft	OTM:	13.0 ft-k	5.8 ft-k	5.8 ft-k	9.0 ft-k	Plt. Splice:	8-16d
	End of Wall:	3.75 ft	0.6*RM:	0.7 ft-k	0.7 ft-k	0.7 ft-k	0.7 ft-k	Alt. Strap:	CS16
	Wall Height:	9.00 ft	Uplift abv:					Alt.:HTT4	
	h/d =	2.40	Net Uplift:	3280 lbs	1357 lbs	1357 lbs	2215 lbs	Holddown:	STHD10
	Uniform DL Resisting:	175.0 plf	Roof*(2/2+1)+ExtWall*9					Min Post:	4x4

				Seismic	*Wind 1*	*Wind 2*	*Wind.min*		
Wall 2	Length =	5.50 ft						Drag:	1890 lbs
	Start of Wall:	6.75 ft	OTM:	19.1 ft-k	8.5 ft-k	8.5 ft-k	13.3 ft-k	Plt. Splice:	16-16d
	End of Wall:	12.25 ft	0.6*RM:	1.6 ft-k	1.6 ft-k	1.6 ft-k	1.6 ft-k	Alt. Strap:	MSTA36
	Wall Height:	9.00 ft	Uplift abv:					Alt.:HTT4	
	h/d =	1.64	Net Uplift:	3188 lbs	1265 lbs	1265 lbs	2123 lbs	Holddown:	STHD10
	Uniform DL Resisting:	175.0 plf	Roof*(2/2+1)+ExtWall*9					Min Post:	4x4

HABITAT FOR HUMANITY ORANGE COUNTY
717 E 3rd St Santa Ana, CA

Job No: 2011 009
Date: 09/29/11

Diaphragm #1 *Roof* *Level* *E-W* *Direction*

$x_{,LEFT}$ = 0.00 ft $x_{,RIGHT}$ = 26.00 ft Diaphragm width = 26.00 ft

Seismic Loads

	Load ID	WSFIS	$y_{,MIN}$	$y_{,MAX}$	depth	$V_{,SEIS}$	$x_{,MIN}$	$x_{,MAX}$
w1 =	T/R	5.10 psf	0.00 ft	50.00 ft	50.00 ft	254.8 plf	0.00 ft	26.00 ft
w2 =	T/R	5.10 psf	34.75 ft	46.00 ft	11.25 ft	57.3 plf	26.00 ft	30.00 ft

Trapezoidal Wind Loads

	Windward Surfaces			Leeward Surfaces			
	Zone	p,wind	ht.min/max	Zone	p,wind	ht.min/max	x at 'ht'
Area #1 - w1,min:	1E	10.29	4.50 ft	4E	-7.98	4.50 ft	0.00 ft
max:	-	-	7.00 ft	-	-	7.00 ft	6.00 ft
Area #1 - w2,min:	1	7.18	7.00 ft	4	-5.53	7.00 ft	6.00 ft
max:	-	-	9.92 ft	-	-	9.92 ft	13.00 ft
Area #1 - w3,min:	1	7.18	7.00 ft	4	-5.53	7.00 ft	20.00 ft
max:	-	-	9.92 ft	-	-	9.92 ft	13.00 ft
Area #1 - w4,min:	1E	10.29	4.50 ft	4E	-7.98	4.50 ft	26.00 ft
max:	-	-	7.00 ft	-	-	7.00 ft	20.00 ft

Diaphragm Shears:

Left Side of Diaphragm				Right Side of Diaphragm			
Seismic	Wind 1	Wind 2	Wind, 10 PSF	Seismic	Wind 1	Wind 2	Wind, 10 PSF
3294 lbs	1383 lbs	1383 lbs	937 lbs	3559 lbs	1383 lbs	1383 lbs	937 lbs

	$y_{,MIN}$	$y_{,MAX}$			$y_{,MIN}$	$y_{,MAX}$
Left Boundary:	0.00 ft	50.00 ft		Right Boundary:	0.00 ft	50.00 ft
Diaphragm depth =	50.00 ft			Diaphragm depth =	50.00 ft	
v,dia, left =	65.9 plf			v,dia, right =	71.2 plf	
v,allow =	180.0 plf	OK		v,allow =	180.0 plf	OK

Moments & Chords:

At x = 13.00 ft V_x = -18 lbs

M = 21298 ft-lbs

T_{CHORD} = 426 lbs at diaphragm depth = 50.00 ft

Unblocked Diaphragm OK
Chord Splices: 8-16d or CS16

HABITAT FOR HUMANITY ORANGE COUNTY
717 E 3rd St Santa Ana, CA

Job No: 2011 009
Date: 09/29/11

Line 3 — Level 1 — *Location:* Front of House

Diaphragm Loads:	*Seismic*	*Wind 1*	*Wind 2*	*Wind,min*	*y,min*	*y,max*
Load #1:	3294 lb	1383 lb	1383 lb	937 lb	0.00 ft	50.00 ft

Total Shear:	*Seismic*	*Wind 1*	*Wind 2*	*Wind,min*
V at this level =	3294 lb	1383 lb	1383 lb	937 lb
V,total =	3294 lb	1383 lb	1383 lb	937 lb

Shear Walls / Diaphragm Connections:

Combined wall length = 27.08 ft — v, wall = 122 plf — Shear Panel: Type 9
Length of top plate = 50.00 ft — v, plate = 66 plf — A35 Spacing: 48" oc
AB spacing & Plate: 48" / 2x

Horiz. or Vert. Irregularity?: N — *Seismic Load Factor:* 1.00 *at diaphragm connections*

				Seismic	*Wind 1*	*Wind 2*	*Wind,min*		
Wall 1	Length =	17.75 ft						Drag:	990 lbs
	Start of Wall:	0.00 ft	OTM:	19.4 ft-k	8.2 ft-k	8.2 ft-k	5.5 ft-k	Plt. Splice:	8-16d
	End of Wall:	17.75 ft	0.6*RM:	39.2 ft-k	39.2 ft-k	39.2 ft-k	39.2 ft-k	Alt. Strap:	CS16
	Wall Height:	9.00 ft	Uplift abv:						
	h/d =	0.51	Net Uplift:	0 lbs	0 lbs	0 lbs	0 lbs	Holddown:	N/A
	Uniform DL Resisting:	415.0 plf	Roof*(26/2+1)+ExtWall*9					Min Post:	N/A
Wall 2	Length =	5.33 ft						Drag:	683 lbs
	Start of Wall:	26.92 ft	OTM:	5.2 ft-k	2.2 ft-k	2.2 ft-k	1.5 ft-k	Plt. Splice:	8-16d
	End of Wall:	32.25 ft	0.6*RM:	3.5 ft-k	3.5 ft-k	3.5 ft-k	3.5 ft-k	Alt. Strap:	CS16
	Wall Height:	8.00 ft	Uplift abv:						
	h/d =	1.50	Net Uplift:	0 lbs	0 lbs	0 lbs	0 lbs	Holddown:	N/A
	Uniform DL Resisting:	415.0 plf	Roof*(26/2+1)+ExtWall*9					Min Post:	N/A
Wall 3	Length =	4.00 ft						Drag:	675 lbs
	Start of Wall:	35.75 ft	OTM:	3.9 ft-k	1.6 ft-k	1.6 ft-k	1.1 ft-k	Plt. Splice:	8-16d
	End of Wall:	39.75 ft	0.6*RM:	2.0 ft-k	2.0 ft-k	2.0 ft-k	2.0 ft-k	Alt. Strap:	CS16
	Wall Height:	8.00 ft	Uplift abv:						
	h/d =	2.00	Net Uplift:	0 lbs	0 lbs	0 lbs	0 lbs	Holddown:	N/A
	Uniform DL Resisting:	415.0 plf	Roof*(26/2+1)+ExtWall*9					Min Post:	N/A

HABITAT FOR HUMANITY ORANGE COUNTY
717 E 3rd St Santa Ana, CA

Job No: 2011 009
Date: 09/29/11

Line 4 — Level 1 — *Location:* Rear of House

Diaphragm Loads:	*Seismic*	*Wind 1*	*Wind 2*	*Wind,min*	*y,min*	*y,max*
Load #1:	3559 lb	1383 lb	1383 lb	937 lb	0.00 ft	50.00 ft

Total Shear:	*Seismic*	*Wind 1*	*Wind 2*	*Wind,min*
V at this level =	3559 lb	1383 lb	1383 lb	937 lb
V,total =	3559 lb	1383 lb	1383 lb	937 lb

Shear Walls / Diaphragm Connections:

Combined wall length = 25.66 ft — v, wall = 139 plf — Shear Panel: Type 9
Length of top plate = 50.00 ft — v, plate = 71 plf — A35 Spacing: 48" oc
AB spacing & Plate: 24" / 2x

Horiz. or Vert. Irregularity?: N — *Seismic Load Factor:* 1.00 *at diaphragm connections*

				Seismic	*Wind 1*	*Wind 2*	*Wind,min*		
Wall 1	Length =	14.67 ft						Drag:	990 lbs
	Start of Wall:	0.00 ft	OTM:	18.3 ft-k	7.1 ft-k	7.1 ft-k	4.8 ft-k	Plt. Splice:	8-16d
	End of Wall:	14.67 ft	0.6*RM:	26.8 ft-k	26.8 ft-k	26.8 ft-k	26.8 ft-k	Alt. Strap:	CS16
	Wall Height:	9.00 ft	Uplift abv:						
	h/d =	0.61	Net Uplift:	0 lbs	0 lbs	0 lbs	0 lbs	Holddown:	N/A
	Uniform DL Resisting:	415.0 plf	Roof*(26/2+1)+ExtWall*9					Min Post:	N/A
Wall 2	Length =	6.67 ft						Drag:	1191 lbs
	Start of Wall:	18.17 ft	OTM:	3.7 ft-k	1.4 ft-k	1.4 ft-k	1.0 ft-k	Plt. Splice:	12-16d
	End of Wall:	24.83 ft	0.6*RM:	5.5 ft-k	5.5 ft-k	5.5 ft-k	5.5 ft-k	Alt. Strap:	CS16
	Wall Height:	4.00 ft	Uplift abv:						
	h/d =	0.60	Net Uplift:	0 lbs	0 lbs	0 lbs	0 lbs	Holddown:	N/A
	Uniform DL Resisting:	415.0 plf	Roof*(26/2+1)+ExtWall*9					Min Post:	N/A
Wall 3	Length =	4.33 ft						Drag:	1305 lbs
	Start of Wall:	27.33 ft	OTM:	2.4 ft-k	0.9 ft-k	0.9 ft-k	0.6 ft-k	Plt. Splice:	12-16d
	End of Wall:	31.66 ft	0.6*RM:	2.3 ft-k	2.3 ft-k	2.3 ft-k	2.3 ft-k	Alt. Strap:	CS16
	Wall Height:	4.00 ft	Uplift abv:						
	h/d =	0.92	Net Uplift:	-33 lbs	0 lbs	0 lbs	0 lbs	Holddown:	N/A
	Uniform DL Resisting:	415.0 plf	Roof*(26/2+1)+ExtWall*9					Min Post:	N/A

Drag Forces at Specified Locations:

Enter distance from datum:	Drag force =	*Strap*	*Plt Splice*
35.33 ft	1044 lb	CS16	12-16d
45.67 ft	308 lb	CS16	8-16d

HABITAT FOR HUMANITY ORANGE COUNTY
717 E 3rd St Santa Ana, CA

Job No: 2011 009
Date: 09/29/11

Diaphragm #1 Roof Level N-S Direction

x_{LEFT} = 0.00 ft x_{RIGHT} = 21.00 ft Diaphragm width = 21.00 ft

Seismic Loads

	Load ID	w_{SEIS}	y_{MIN}	y_{MAX}	depth	v_{SEIS}	x_{MIN}	x_{MAX}
w1 =	L2R	3.11 psf	0.00 ft	21.00 ft	21.00 ft	65.3 plf	0.00 ft	21.00 ft

Uniform Wind Loads

	Windward Surfaces			Leeward Surfaces				
	Zone	p,wind	ht	Zone	p,wind	ht	x_{MIN}	x_{MAX}
Area #1 - w1:	1E	10.29	4.50 ft	4E	-7.98	4.50 ft	0.00 ft	6.00 ft
Area #1 - w2:	2E	-9.59	4.38 ft	3E	-8.65	4.38 ft	0.00 ft	6.00 ft
Area #1 - w3:	1	7.18	4.50 ft	4	-5.53	4.50 ft	6.00 ft	15.00 ft
Area #1 - w4:	2	-6.06	4.38 ft	3	-6.23	4.38 ft	6.00 ft	15.00 ft
Area #1 - w5:	1E	10.29	4.50 ft	4E	-7.98	4.50 ft	15.00 ft	21.00 ft
Area #1 - w6:	2E	-9.59	4.38 ft	3E	-8.65	4.38 ft	15.00 ft	21.00 ft

Diaphragm Shears:

Left Side of Diaphragm				Right Side of Diaphragm			
Seismic	Wind 1	Wind 2	Wind, 10 PSF	Seismic	Wind 1	Wind 2	Wind, 10 PSF
686 lbs	754 lbs	754 lbs	932 lbs	686 lbs	754 lbs	754 lbs	932 lbs

	y_{MIN}	y_{MAX}		y_{MIN}	y_{MAX}
Left Boundary:	0.00 ft	21.00 ft	Right Boundary:	0.00 ft	21.00 ft
Diaphragm depth =	21.00 ft		Diaphragm depth =	21.00 ft	
v,dia, left =	44.4 plf		v,dia, right =	44.4 plf	
v,allow =	180.0 plf	OK	v,allow =	180.0 plf	OK

Moments & Chords:

At x = 10.50 ft V_X = 263 lbs

M_x = 6861 ft-lbs

T_{CHORD} = 327 lbs at diaphragm depth = 21.00 ft

Unblocked Diaphragm OK
Chord Splices: 8-16d or CS16

Planning and Building Agency
Planning Division
20 Civic Center Plaza
P.O. Box 1988 (M-20)
Santa Ana, CA 92702
(714) 647-5804
www.santa-ana.org

Sapin Dev Rev
Application Data Sheet

Master I.D.: 2011-97093

Project Address: 717 E Third St

Application Number: RES-2011-695-NEW

Application Date: 06/14/2011

Planner/Project Manager: Linnaus, Lucy

Determination: Staff Review

Application Description: New single-story 1,344 square foot single family residence with three bedrooms, two baths, and two-car detached garage.

Dev Rev Project Conditions:

Ok to plan check

CITY OF SANTA ANA
PLAN CHECK - CHECKLIST

JOB ADDRESS: 717 E 3rd St

TRACKING #: 10172158-59 **DATE:** 8-9-11

FOR PLANCHECK STATUS CALL (714) 647-5800

PLEASE INITIAL EACH ITEM BELOW

NA 1. I agree to pay a plancheck fee established for this project with the understanding that this payment is not a guarantee that a permit will be issued and that this fee is not refundable once a plancheck has commenced.

NA 2. I understand that I may request an "Accelerated Plancheck" at an additional cost to me. This plancheck will be performed by an in-house plan checker with the intention of reducing plancheck time for the Building & Safety Division.

NA 3. I understand that the project valuation (from which plancheck and permit fees are calculated) will be reviewed during the plancheck process and that said valuation shall be adjusted up or down in accordance with established fee computation regulations.

NA 4. I understand that I shall submit **separate plans, applications and plancheck fees** for the following when plan check is required:

a. Electrical Plans - 2 complete sets
b. Plumbing Plans - 3 complete sets
c. Mechanical Plans - 2 complete sets
d. Grading Plans - 3 complete sets

NA 5. I understand that I shall visit the Public Works Department to verify whether a field inspection of the property is required. I understand that prior to the issuance of the Building permit I am required to obtain Public Works Agency approval if my project valuation exceeds $30,000 or has added plumbing fixtures, or added bedrooms, or exceeds 500 sq.ft.

AGREED TO BY APPLICANT OR AGENT

Applicant's Signature [signature] for: Habitat for Humanity of Orange Co.

Print Name Norbert Albarstadt Address 2200 South Ritchey, Santa Ana, Ca

Telephone Number 714.235.4261 Fax 714.434.1222

FOR OFFICE USE ONLY: "Checklist of items discussed" APPROVALS & FEES REQUIRED: Y/N

1. ✓ Planning Department
2. ✓ Public Works Agency
3. ✓ Fire Departmemt
4. ✓ Police Department
5. ✓ School District
6. ___ Health Department
7. ✓ Title 24 (Energy)
8. ___ Title 24 (Disabled Access)
9. ___ Roof Mounted Equip.
10. ___ List of Subcontr.
11. ✓ Bldg. Pmt. Info.
12. ___ Summary of Appr. Req.
13. ✓ FY Information
14. ✓ Constr. Act. Req.
15. ✓ Res. Dev. Fees
16. ✓ SMIP
17. ✓ Microfilming
18. ✓ Const. Debris Recyc.
19. ✓ FCWP Surcharge
20. ✓ LOA/Owner-Builder Ver.

PERMIT TECHNICIAN [signature]

Form 58: 3-26-04

CITY OF SANTA ANA
DEVELOPMENT FEES WORKSHEET -- MECHANICAL PERMIT

Project Address: 717 3rd Street	Contractor: Habitat for Humanity of Orange Co.
Tenant Name: NA	Address: 2200 South Ritchey
Building Owner: City of Santa Ana	City: Santa Ana St.: CA Zip: 92705
Address: 20 Civic Center Plaza	Contractor License No.: 843208
City: Santa Ana St.: CA Zip: 92702	Contractor e-mail: pata@habitatoc.org
Phone: 714.647.5390	Phone: 714.434.6200
Contact Person: Pat Alberstadt	**Contact E-Mail Strongly Recommended, PLEASE PRINT:**
Contact Phone: 714.434.6200 Ext 240	pata@habitatoc.org

NEW BUILDING ☐ ALTERATIONS/ADDITIONS ☐

ITEM	NO.	EACH	TOTAL
Each Furnace Including Ducts & Vents (includes Floor Furnace)			
Up to 100,000 BTU	1	53.60	53.60
Over 100,000 BTU	—	76.50	—
Furnace/Compressor Combo (Res)	—	103.75	—
____Compressor, ____Heat Pump (packaged or split), ____ Boiler			
5 HP or less	1	73.74	73.74
Over 5 to 30 HP		88.18	
Over 30 to 50 HP		110.22	
Over 50 HP		118.80	
VAV Box (includes ductwork)			
Up to 2,000 CFM	—	36.40	—
Over 2,000 CFM	—	53.60	—
Air Handling			
Up to 2,000 CFM	1	36.40	36.40
Over 2,000 CFM	—	53.60	—
Absorption System			
Up to 1,000,000 BTU	—	63.68	—
1,000,001 to 1,750,000 BTU	—	90.75	—
1,750,001 and over	—	154.00	—
Miscellaneous			
Outdoor Dual Pkgd Heat/Cool	—	92.60	—
Wall Heater	—	53.60	—
Unit Heater	—	53.06	—
Suspended Heater	—	47.52	—
Decorative Fireplace: Wood ☐, Gas ☐	—	47.52	—
Clothes Dryer (residential)	1	33.00	33.00
Clothes Dryer (commercial)	—	44.55	—

ITEM	NO.	EACH	TOTAL
Ventilation System			
Alt. ☐ Rpr. ☐, Add. ☐ (per system)	—	35.64	—
Type I Hood w/Duct & Fan	—	92.60	—
Type II Hood w/Duct & Fan	—	53.60	—
Bathroom/Restroom Fan	2	24.95	49.90
Laundry Fan	1	28.51	28.51
Range Hood (residential)	1	17.50	17.50
Environmental Air Fan (res/comm)	—	28.75	—
Vent Fan (non-residential)	—	35.64	—
Fan Coil	—	46.46	—
Evaporative Cooler	—	53.60	—
Gas Piping (Incidental)	—	18.30	—
Fire Dampers	—	53.60	—
Fire Suppression (Fire Department)	1	53.60	53.60
Clean Agent System (Fire Department)	—	154.00	—
Install/Repair/Replace Appliance Vent	—	53.60	—
Product Conveying System (flammable Vapors, fumes, heat, etc.)	—	154.00	—
Dust Collection System	—	154.00	—
Appliances not Listed	—	53.60	—
System Not Listed (halon, smoke evac, crematory, etc.)	—	154.00	—
	—		—

SUBTOTAL	$	346.25
P/C – 65% OF SUBTOTAL	$	225.06
MIN. FEE – (Nonresidential)	$ 60.00	
ISSUANCE & General Plan Surcharge	$ 45.00 + 18.00 = $63.00	
TOTAL	$	694.31

Office Use Only

BLDG PMT # 10172158	RECEIPT #	DATE:
OCCUPANCY:	P/C FEE PD:	BY:
CONST TYPE:		P/C# 40119680

CITY OF SANTA ANA
DEVELOPMENT FEES WORKSHEET -- PLUMBING PERMIT

Project Address:	717 3rd Street	Contractor:	Habitat for Humanity of Orange Co.
Tenant Name:	NA	Address:	2200 South A Ritchey
Building Owner:	City of Santa Ana	City:	Santa Ana St.: CA Zip: 92705
Address:	20 Civic Center Plaza	Contractor License No.:	843208
City:	Santa Ana St.: CA Zip: 92702	Contractor e-mail:	pata@habitatoc.org
Phone:	714.647.5390	Phone:	714.434.6200
Contact Person:	Pat Albersfadt	**Contact E-Mail Strongly Recommended**	**PLEASE PRINT:**
Contact Phone:	714.434.6200 Ext 240		pata@habitatoc.org

NEW BUILDING ☐ ALTERATIONS/ADDITIONS ☐

ITEM	NO.	EACH	TOTAL
Fixtures			
Water Closet or Bidet	2	11.62	23.24
Urinal	—	8.91	—
Tub, Shower, or Tub/Shower	2	18.20	36.40
Whirlpool Tub or Foot Spa	—	18.20	—
Sink, Lavatory, Laundry or Utility	4	10.40	41.60
Clothes Washing Machine	1	11.43	11.43
Dishwasher	1	9.80	9.80
Garbage Disposal	1	8.71	8.71
___Floor Sink + ___ Floor Drain =	—	13.20	—
Drinking Fountain (one location)	—	7.32	—
Cap Fixture (each)	—	5.70	—
Sewer			
New Sewer – first 100'	1	52.80	52.80
Each 100' Sewer (or any portion)	—	18.20	—
Additional Sewer Connection	—	18.20	—
Repair/Alter Sewer	—	36.40	—
Cap Sewer	—	81.68	—
Gas			
New Gas System (first 4 outlets)	1	36.40	36.40
Each Additional Gas Outlet	—	5.80	—
Extend or Alter Gas System	—	53.60	—
Repair Gas Piping	—	36.40	—
Cap Gas Outlet – each	—	6.93	—
Swimming Pools			
Pool Trap	—	18.20	—
Pool Heater	—	59.40	—
Pool Piping	—	36.40	—

ITEM	NO.	EACH	TOTAL
Miscellaneous			
Water Heater Res ☐ Comm ☐		18.20	
Water Heater Tankless	1	53.60	53.60
Water Heater over 50 gallons	—	74.61	—
Water Service/Piping– each 100'	1	36.40	36.40
Repipe (residential) – each 100'	—	36.40	
Fire Line/Hydrant – each 100'	—	36.40	
Primary/Secondary Roof Drain Set	—	36.40	
Deck/Area Drain	—	7.84	
Rain Piping/Gutters – each 100'	2	17.69	35.38
Storm Drains – 100'	—	23.40	—
Water Softener – Residential	—	18.20	—
Water Softener – Commercial	—	36.40	—
Backflow less than 2"	6	18.20	109.20
Backflow 2" and above	—	36.40	—
Vacuum Breakers – first 5	—	16.63	—
Vacuum Breakers – each >5	—	4.75	—
Hose Bib with Vacuum Breaker	2	12.67	25.34
Grease/Waste Interceptor		30.70	
Dental Unit		26.40	
Medical Gas Piping – each 100'		36.40	
Alteration to Drain/Vent		36.40	
Appliances not Listed		53.60	

SUBTOTAL	$	480.30
P/C 65% OF SUBTOTAL	$	312.20
MIN. FEE – (Nonresidential)	$ 60.00	
ISSUANCE & General Plan Surcharge	$ 45.00 + 18.00 = $63.00	
TOTAL	$	915.50

Office Use Only

BLDG PMT # 10172158	RECEIPT #	DATE:
OCCUPANCY:	P/C FEE PD:	BY:
CONST TYPE:		P/C # 80126607

Requesting in-house plan check

CITY OF SANTA ANA PLANNING & BUILDING AGENCY

Planning & Building Agency
Permits & Plan Check Section
20 Civic Center Plaza
P.O. Box 1988 (M-19)
Santa Ana, CA 92702
(714) 647-5800
www.santa-ana.org

ACCELERATED PLAN CHECK REQUEST

HO18: 07-01-11

Project Address: 717 E 3rd St

Misc. Receipt: 58042 *Processed By:* _____ *Plan Checked By:* _____

Cost: $117.70 per hour for each discipline. The plan checker will estimate the number of hours for review. This fee is in addition to the regular plan check fee.

Type of Plan Check: Building 10172158-59 Electrical _____

Est. Hrs. 5 Actual _____ Est. Hrs. _____ Actual _____

Plumbing _____ Mechanical _____

Est. Hrs. _____ Actual _____ Est. Hrs. _____ Actual _____

X Owner/Representative Signature: Norbert Albertstadt

X Print Name: Norbert Albertstadt Date:

X Telephone Number: (714) 235-4261 Fax Number: ( )

X NA **An accelerated plan check review will not include the following:**

Fire, Police, Public Works, Planning or Landscaping Plan Check

Revisions: If requesting an "accelerated revision", the cost will be $207.25 per hour in addition to the accelerated fee of $117.70 per hour (total $324.95).

INTERNAL USE ONLY

Name (Last, First, Initial)	Employee #	Division

From (Date & Time)	To (Date & Time)	Total Hours Worked	_____ Comp Time Requested _____ Overtime Requested

Employee Signature: Date:

AUTHORIZED		APPROVALS	
_____ Comp time _____ Overtime		_____ Division Manager	_____ Date
_____ Immediate Supervisor	_____ Date	_____ Executive Director	_____ Date

Distribution: White: Office Yellow: Applicant

3rd STREET
SINGLE FAMILY RESIDENCE

SANTA ANA, CALIFORNIA

HABITAT FOR HUMANITY OF ORANGE COUNTY
2200 RITCHEY STREET
SANTA ANA, CALIFORNIA 92705
(714) 434-6200

⚠1 CITY OF SANTA ANA PLANNING & BUILDING AGENCY
Planning & Building Agency
Building Safety Division
20 Civic Center Plaza
P.O. Box 1988 (M-19)
Santa Ana, CA 92702
(714) 647-5800
www.santa-ana.org

CALGREEN RESIDENTIAL CHECKLIST

GRN-01 CGC 2010

MANDATORY MEASURES FOR NEWLY-CONSTRUCTED RESIDENTIAL BUILDINGS

Use this worksheet to identify where on the construction documents the following mandatory CALGreen requirements are provided. Incorporate this worksheet onto the construction documents.

ITEM #	CODE SECTION	REQUIREMENT	REFERENCE SHEET (Sheet # or N/A)	COMMENTS (e.g. note # or detail #)
		PLANNING AND DESIGN		
1	4.106.2	Storm water drainage and retention during construction	SP-1	Note 1
2	4.106.3	Surface drainage	SP-1	Note 2
		ENERGY EFFICIENCY		
3	4.210.1	Meet California Energy Code	T-24	
		WATER EFFICIENCY & CONSERVATION		
4	4.303.1	20 percent savings	A1.6	Work sheet (WS-2)
5	4.303.2	Multiple showerheads serving one shower	N/A	
6	4.304.1	Irrigation controllers	T-1	Note 2
		MATERIAL CONSERVATION & RESOURCE EFFICIENCY		
7	4.406.1	Joints and openings	T-1	Note 9
8	4.408.1	Construction waste reduction of at least 50 percent	T-1	Note 24
9	4.410.1	Operation and maintenance manual	T-1	Note 21
		ENVIRONMENTAL QUALITY		
10	4.503.1	Fireplaces and woodstoves	N/A	
11	4.504.1	Covering of duct openings and protection of mechanical equipment during construction	T-1	Note 8
12	4.504.2	Finish material pollutant control	T-1	Note 11-14
13	4.504.2.1	Adhesives, sealants, caulks	T-1	Note 11-14
14	4.504.2.2	Paints and coatings	T-1	Note 11-14
15	4.504.2.3	Aerosol paints and coatings	T-1	Note 11-14
16	4.504.2.4	Verification	T-1	Note 11-14
17	4.504.3	Carpet systems	T-1	Note 15
18	4.504.3.1	Carpet cushion	T-1	Note 16
19	4.504.4	Resilient flooring systems	N/A	
20	4.504.5	Composite wood products	T-1	Note 17
21	4.505.2	Capillary break	T-1	Note 10
22	4.505.3	Moisture content of building materials	T-1	Note 20
23	4.506.1	Bathroom exhaust fans	T-1	Note 3
24	4.507.1	Whole house exhaust fans	A1.6	Plan
25	4.507.2	Heating and air-conditioning system design	T-1	Note 4

Rev: 7/21/2011 Page 1 of 1

⚠1 CITY OF SANTA ANA PLANNING & BUILDING AGENCY
Planning & Building Agency
Building Safety Division
20 Civic Center Plaza
P.O. Box 1988 (M-19)
Santa Ana, CA 92702
(714) 647-5800
www.santa-ana.org

CALGREEN RESIDENTIAL CERTIFICATION

GRN-02 CGC 2010

GREEN BUILDING RESIDENTIAL CERTIFICATION CHECKLIST AT FINAL INSPECTION

Project Address:	Project Number:
Project Description:	

As contractor/architect/owner/engineer, I __________ certify that the following green building code requirements have been incorporated into the new residential building.

__________ Surface drainage.
__________ Indoor water use fixtures are in compliance with the residential mandatory measures of the CALGreen Code (CGC).
__________ Outdoor water use in compliance with the CGC.
__________ Joints and openings in the building envelope have been sealed in compliance with the CGC.
__________ Construction Waste Reduction, Disposal and Recycling report verified.
__________ A copy of the Operational and Maintenance Manual required by the CGC has been placed at the site and has or will be transferred to the owner.
__________ Fireplace compliance with emissions verified to comply with 4.503.1 and AQMD 445.
__________ Duct openings and mechanical equipment protection during construction was verified.
__________ Adhesives, sealants, caulks, paints, coatings, aerosol paints, carpet systems, resilient flooring systems, and composite wood products used at the site are in compliance with the CGC.
__________ The concrete slab (if applicable) for the project has been installed with capillary break per plans.
__________ The moisture content of the floor and wall framing did not exceed 19 percent when the building framing was enclosed.
__________ Each room containing a bathtub, shower or tub/shower combination has been provided with an approved mechanical exhaust fan with humidistat and/or signage according to the CGC.
__________ A whole house exhaust fan if installed is in compliance with R-4.2 insulation when off per CGC.
__________ The heating and air-conditioning system is in compliance with the plans and the CGC.
__________ I have reviewed all of the above items and the Mandatory Measures incorporated into the plans and find this project in compliance with the CALGreen Code.

I certify that the above noted information is true and correct.

Signature: __________ Date: __________

Print Name: __________ Phone No. __________

Rev: 7/21/2011 Page 1 of 1

⚠2 CALIFORNIA GREEN BUILDING STANDARDS

1. Plumbing fixtures and fittings shall meet the standards referenced in CGBC Table 4.303.3. CGBC 4303.3
2. Sec. 4.304 Irrigation controllers shall meet the requirements of CGBC 4.304.1.
   - Indicate on the plans the type of controllers and the location.
   - Field verify controller installation when the controllers are installed by the contractor at time of building final.
3. Bathroom exhaust fans shall be ENERGY STAR compliant, ducted to terminate outside the building, and controlled by a humidistat capable of being adjusted between the relative humidity range of 50 to 80 percent. CGBC 4.506
4. Heating and air-conditioning system design shall be sized, designed and have their equipment selected using the following methods: CGBC 4.507.2
   - Heat loss and heat gain is established according to ACCA Manual J, ASHRAE handbooks or other equivalent design software or methods.
   - Duct systems are sized according to ACCA 29-D Manual D, ASHRAE handbooks or other equivalent design software or methods.
   - Select heating and cooling equipment according to ACCA 36-S Manual S or other equivalent design software or methods.
5. The maximum length of a dryer vent is 14 feet with two bends. Two feet shall be decreased for each bend more than two, unless approved by the Building Official. (CMC 504.3.2.2)
6. "An approved backwater valve is required for drainage piping serving fixtures located below the elevation of the next upstream manhole cover. Fixtures above such elevation shall not discharge through the backwater valve. Clean outs for drains that pass through a back water valve shall be clearly identified with a permanent label stating "backwater valve downstream." (CPC 710.1)
7. All hose bibs must be protected by an anti-siphon device. (CPC 603.1)
8. All duct openings and other air distribution component openings shall be protected during storage on the construction site until final start-up with tape, plastic, sheet metal, or other acceptable methods to reduce the amount of dust and debris which may collect in the system. CGBC 4.504.1
9. Seal openings in the building envelope in compliance with the California Energy Code (CEC). Annular spaces around pipes, electric cables, conduits or other openings in plates at exterior walls shall be protected by closing such openings with cement mortar, concrete masonry, or a similar method acceptable to the enforcing agency. CGBC 4.406.1
10. 4.505.2 Concrete slab foundations. Concrete slab foundations required to have a vapor retarder by California Building Code, CCR, Title 24, Part2, Chapter 19, shall also comply with this section.
    a) 4.505.2.1Capillary break. A capillary break shall be installed in compliance with at least one of the following:
       i) A 4-inch (101.6 mm) thick base of 1/2 inch (12.7 mm) or larger clean aggregate shall be provided with a vapor retarder in direct contact with concrete and a concrete mix design, which will address bleeding, shrinkage, and curling, shall be used. For additional information, see American Concrete Institute, ACI302.2R-06.
       ii) Other equivalent methods approved by the enforcing agency.
       iii) A slab design specified by a licensed design professional.
11. Finish materials shall comply with COBC 4.504.2.
12. Adhesives, adhesive bonding primers, adhesive primers, sealants, sealant primers, and caulks shall comply with local or regional air pollution control or air quality management district rules where applicable, or meet the requirement of SCAQMD Rule 1168 VOC limits and prohibition on the use of certain toxic chemicals, except per subsection 2. COBC 4.504.2.1, subsection 1
13. Aerosol adhesives, smaller unit sizes of adhesives, and sealant or caulking compounds (in units of product, less packing, which do not weigh more than 1 pound and do not consist of more than 16 fluid ounces shall comply with statewide VOC standards and other requirements, including prohibitions on the use of certain toxic compounds, of CCR, Title 17, commencing with Section 94507. 4 CGBC.504.2.1, subsection 2
14. Verification of compliance with finish materials shall be provided at the request of the enforcing agency. Documents may include, but not limited to the following:
    - Manufacturer's product specification.
    - Field verification of on-site product containers.
    - Other methods approved by the local jurisdiction.
15. Carpets shall meet one of the following: 1. Carpet and Rug Institute's Green label plus program, 2. California Department of Public Health Standard Practice for the testing of VOCs (Specification 01350), 3. NSF/ANSI 140 at the Gold Level. 4. Scientific Certifications Systems Indoor AdvantageTM Gold. CGBC 4.504.3
16. Carpet cushion shall meet the requirements of the Carpet and Rug Institute Green Label Program, carpet adhesive shall meet the requirements of CGBC Table 4.504.1. CGBC 4.504.3.1,4.504.3.2
17. Hardwood plywood, particleboard, and medium density fiberboard composite wood products shall meet the requirements for Formaldehyde Limits in CGBC Table 4.504.5.
18. Documentation shall be provided, upon request, to indicate compliance with CGBC 4.504 and shall include at least one of the following: Product certifications and specifications, chain of custody certifications, or other methods acceptable to the enforcing agency. CGBC 4.504.5.1
19. Building materials with visible signs of water damage shall not be installed. CGBC 4.505.3
20. Moisture content of Building Materials, and verification, shall meet the requirements of CGBC 4.505.3.
21. 4.410.1Operation and maintenance manual. At the time of final inspection, a manual, compact disc, web-based reference or other media acceptable to the enforcing agency which includes all of the following shall be placed in the building:
    a) Directions to the owner or occupant that the manual shall remain with the building throughout the life cycle of the structure.
    b) Operation and maintenance instructions for the following:
       i) Equipment and appliances, including water-saving devices and systems, HVAC systems, water-heating systems and other major appliances and equipment.
       ii) Roof and yard drainage, including gutters and downspouts.
       iii) Space conditioning systems, including condensers and air filters.
       iv) Landscape irrigation systems.
       v) Water reuse systems.
    c) Information from local utility, water and waste recovery providers on methods to further reduce resource consumption, including recycle programs and locations.
    d) Public transportation and/or carpool options available in the area.
    e) Educational material on the positive impacts of an interior relative humidity between 30-60 percent and what methods an occupant may use to maintain the relative humidity level in that range.
    f) Information about water-conserving landscape and irrigation design and controllers which conserve water.
    g) Instructions for maintaining gutters and downspouts and the importance of diverting water at least 5 feet away from the foundation.
22. All energy items noted on the T-24 drawings will be checked and approved by a certified HERRS rater. All other items will be confirmed in accordance with No. 23 below.
23. Inspections are required for certification of all CALGreen features in the plans and listed on Mandatory Measures Lists. Submit the name and qualifications of the person or persons anticipated to perform the inspections.
    - The Inspector shall Mark Korando, a licensed contractor in the state of California.
24. To comply with 4.408.1 of the Mandatory Measures for Residential Construction, all normal construction and demolition (C&D) waste created from this project will be hauled by Waste Management Inc, to their Sunset facility in Irvine, CA. The C&D will be sorted and separated at this facility and receive a recycling rate of 70%. The diverted materials shall be calculated by weight.

Subject To The Following Approvals:
☑ Planning Department
☑ Fire Department
☑ Police Department
☑ Public Works Agency
☑ Grading Permit
☐ County of Orange Health Department
☐ Cal / OSHA
☐ Flood Plain
☑ School District
☑ Park Acquisition and Development

SHEET SCHEDULE

T-1	COVER SHEET
GN-1	GENERAL NOTES
GN-2	GENERAL NOTES
T-24.1	TITLE 24 ENERGY COMPLIANCE
T-24.MM	TITLE 24 MANDATORY MEASURES
⚠ A1.1	ARCHITECTURAL SITE PLAN
A1.2	FLOOR PLAN
A1.3	SECTIONS
A1.4	ELEVATIONS & ROOF PLAN
A1.5	INTERIOR ELEVATIONS
A1.6	UTILITY PLAN
D-1	DETAILS
D-2	DETAILS
SN-1	GENERAL NOTES & REQUIREMENTS
SN-2	STRUCTURAL DETAILS & NOTES
S-1.1	RAISED FLOOR FOUNDATION PLAN
S-1.2	ROOF FRAMING PLANS
PFD-1	FOUNDATION DETAILS
SD-1	FRAMING DETAILS
SD-2	FRAMING DETAILS

TOTAL SHEETS = 20

APPROVED
PLANNING DIVISION
MASTER I.D. 2011-97-093
G.P. UN Zone UN-2
PLANNER Lucy L DATE 11-10-11
TRANSFERRED BY ______ DATE ______
PLANNING INSPECTION REQUIRED:
ROUGH ______ FINAL ______ NONE ______
NAME ______ (714) ______
RETAIN PLANS FOR FUTURE REVISIONS.
SUBJECT TO ITEMS CHECKED AND CONDITIONS BELOW:
☐ INTERIOR TI ONLY
☐ NO EXTERIOR ALTERATIONS/MODIFICATIONS
☐ ALL MATERIALS TO MATCH EXISTING
☐ SCREENING REQUIRED
☐ SUBMIT LANDSCAPE PLANS
CONDITIONS:

ARCHITECTURAL STRUCTURAL
ACCEPTED FOR CONSTRUCTION
SEPARATE PERMITS ARE REQUIRED FOR ELECTRICAL, PLUMBING & MECHANICAL PLANS
This set of plans and specifications must be kept on the job at all times and it is unlawful to make any changes or alterations on same without written permission from the City of Santa Ana.
The acceptance of this plan and specifications SHALL NOT be held to permit nor be an approval of the violation of any provisions of ANY City Ordinance or State Law.
Accepted By K. Ah Date 11-10-11
CITY OF SANTA ANA
Date Issued KH 1/19/12

Area Tabulation

Total Site Area	6,180 Sq. Ft.
Residence	1,344 Sq. Ft.
Total Living	1,344 Sq. Ft.
2 Car Garage	441 Sq. Ft.
Total	441 Sq. Ft.
Entry Porch	130 Sq. Ft.
Total	130 Sq. Ft.

APPROVED PLANS SHALL BE ON JOB SITE AT ALL TIMES
The stamping of this set of plans SHALL NOT be held to permit or to approve the violation of any law, or the cardinal reading or any building.
APPROVED 11-15-11
SANTA ANA FIRE DEPT.
SCHEDULE FIRE DEPARTMENT INSPECTIONS AND TESTS 72 HOURS IN ADVANCE. PHONE (714) 647-5700
Fire Sprinkler 13D

PERMIT TYPE:	(BLDG) ELECT PLBG MECH GRADING
PERMIT#	10172158
OCC. GROUP	R3/U
CONSTR. TYPE	VB-Spk
CODE EDITION	CBC 2010
FLOOD ZONE	
FLOOD ZONE CERTIF. REQ'D	YES (NO)
MICROFILM	(YES) NO
RADIANT BARRIER @ ROOF	YES (NO)
RESIDENTIAL DEV. FEE	(YES) NO
SCHOOL DISTRICT	(YES) NO

RECEIVED
NOV 08 2011
City of Santa Ana

⚠1 SANTA ANA POLICE DEPARTMENT RESIDENTIAL SECURITY REQUIREMENTS

1. Exterior swinging door must be solid core, 1-3/4" thick or with panels 9/16" thick. (8-210,A)
2. Doors leading from a garage into a dwelling unit must be sold core, 1-3/8" thick. (8-210,B)
3. Specify that above doors be equipped with deadbolt locks approved by the Police Department (8-210,C) - specify make and model number.
4. Specify flush bolts with 5/8" embedment into head and threshold on inactive leaves of exterior double doors. (8-210,E)
5. Glazing in exterior doors or within 40" of the latch must be tempered or burglary resistant. (8-210,F)
6. Hinges for out-swinging doors must have non-removable pins. (8-210,G)
7. Strike plates must be 3-1/2'' long, secured to the jamb with screws 2-112" in length. (8-210,H)
8. Front exterior doors to be equipped with 180' door viewers or clear vision panels. (8-210,I)
9. Each structure must have a street address or other identification, which is visible from the street. Figures must be 4" minimum in height of a color contrasting to the background. (8-210,K1)
10. Provide an illuminated plot plan of the complex at each driveway entrance. (8-210,K2)
11. Specify light fixtures,at exterior doors, which provide one-foot candle of light at ground level. (8-210,L)
12. Exterior walkways, passageways within multiple dwelling complexes must be provided with .25-foot candle of light. (8-210,M)
13. Parking lots and parking structures of multiple dwelling complexes must be provided with one-foot candle of light. (8-210,N)
14. Required exterior light fixtures must be vandal resistant type.
15. Wooden garage doors must have panels 5/16" in thickness_ (8-208-A1)
16. Garage doors more than 16-feet in width must have two locking points. (8-208,C)
17. Slide bolt assemblies must be attached to the doorframe with non-removable bolts. (8-208,D)
18. The slide bolt must be 3/8" in diameter. (8-208,D)
19. Windows and sliding glass doors must comply with test standards of section 8-212. Specify make and model number. (8-209,A)
20. Louvered windows may not be used within 12' vertically or 6' horizontally from any walkable surface.
21. All skylights shall be provided with rated burglary resistant glazing. (8-210)

⚠1 SANTA ANA FIRE DEPARTMENT NOTES

1. The project shall comply with 2010 California Building Code (C.B.C.), 2010 California Fire Code (C.F.C.)and other currently adopted codes, standards, regulations and requirements enforced by the Santa Ana Fire Department.
2. Fire Department final inspection required. Schedule all inspections a minimum of 72 hours in advance by calling (714) 647-5700.
3. All new and significantly altered fire sprinkler systems shall meet the requirements of the C.B.C .Chapter 16 for live, dead and combination engineered design loads. Fire Sprinkler Plan submittals shall include the following:
   a. Plan view showing the building's structural framing members and all points of hanger attachments.
   b. A civil or structural engineer's wet ink stamp with signature approving the systems method of attachment to the structure regarding CBC Chapter 16 and N.F.P.A. #13 for system bracing.
4. An automatic fire sprinkler system shall be installed throughout the building in compliance with C.F.C./C.B.C. Chapter 9 and N.F.P.A. Standards 13, 13R or 13D as applicable. A separate plan submittal is required.
5. Modification to the sprinkler systems shall comply with N.F.P.A. Standards 13, 13R or 13D as applicable. A separate plan submittal is required.
6. Underground fire line plans requires a separate submittal to the Building Department for Fire Department review (separate from the Public Works grading plan).

"Police Department" Final Inspection Required 647-5740

APPROVED
DATE 11/15/11
SANTA ANA POLICE DEPT.

SYMBOLS

SECTION REFERENCE — SECTION NUMBER (A) / SHEET NUMBER (A3.6)
DETAIL REFERENCE — DETAIL NUMBER (1) / SHEET NUMBER (D1)

- SINGLE POLE SWITCH
- 3 WAY SWITCH
- 110V DUPLEX OUTLET
- 1/2 HOT OUTLET
- GFI OUTLET
- WEATHERPROOF GFI OUTLET
- 220V A/C CONNECTION
- CEILING FIXTURE
- RECESSED CEILING FIXTURE
- RECESSED FLUORESCENT CEILING FIXTURE
- WALL FIXTURE (AT +72" U.O.N.)
- VENTED FAN
- TELEPHONE
- CABLE TV
- PB PUSH BUTTON
- CHIMES
- HB HOSE BIBB
- SOV WATER SHUT OFF VALVE
- ICE ICE MAKER STUB
- FG FUEL GAS
- KEY FUEL GAS SHUT OFF WITH KEY

PROJECT DATA

APPLICABLE CODES

THE PROJECT SHALL COMPLY WITH THE

2010 CALIFORNIA BUILDING CODE VOLUMES 1 & 2
2010 CALIFORNIA RESIDENTIAL CODE
2010 CALIFORNIA PLUMBING CODE
2010 CALIFORNIA MECHANICAL CODE
2010 CALIFORNIA ELECTRICAL CODE
2010 CALIFORNIA ENERGY CODE
2010 CALIFORNIA GREEN CODE
2010 CALIFORNIA FIRE CODE
2010 CALIFORNIA REFERENCE STANDARDS CODE

ZONE

ZONE: SD-84-UN-1

PLAN	TYPE OF CONST.	OCCUP. GROUP	STORIES	DWELLING AREA (SQ. FT.)	GARAGE AREA (SQ. FT.)
1	V-B	⚠1 R-3 / U	1	1,344	441

⚠1 FIRE SPRINKLERS: REQUIRED CRC SEC. R313.2

LEGAL DESCRIPTION

LOT 17 IN BLOCK "A" OF NOAH PALMER ADDITION AS PER MAP RECORDED IN BOOK 2, PAGE 11 OF MISCELLANEOUS MAPS, RECORDS OF SAID ORANGE COUNTY, CALIFORNIA.

LOT ADDRESSES		
ADDRESS	PERMIT No.	APN
717 EAST 3rd STREET	-	398-481-12

⚠1 DEFERRED SUBMITTALS

- TRUSSES
- GARDEN WALLS
- FIRE SPRINKLERS
- IRRIGATION

CONSULTANTS

OWNER: HUMANITY HOUSING, INC.
2200 RITCHEY STREET
SANTA ANA, CA 92705
TEL: (714) 434-6200 pata@habitatoc.org

ARCHITECT: RITNER GROUP, INC.
503 32nd STREET SUITE 130
NEWPORT BEACH, CA 92663
TEL: (949) 999-3255 rritner@ritnergroup.com

STRUCTURAL ENGINEER: STRUCTURE DESIGN GROUP
17780 FITCH SUITE 185
IRVINE, CA 92614
TEL: (949) 252-7660 phil@sdgeng.com

ENERGY CALCULATIONS: HERITAGE ENERGY GROUP
470 WALD
IRVINE, CA 92618
TEL: (949) 789-7221 rudy@heritageenergygroup.com

CIVIL ENGINEER: WALDEN & ASSOCIATES
2552 WHITE ROAD SUITE B
IRVINE, CA 92614
TEL: (949) 660-0110 dbacon@waldenassociates.net

GEOTECHNICAL ENGINEER: ASSOCIATED SOILS ENGINEERING, INC.
2860 WALNUT AVENUE
SIGNAL HILL, CA 90755
TEL: (562) 426-7990 ted@associatedsoils.com

Project Location: 717 East 3rd Street, Santa Ana, Ca. 92701

No.	Date	Revision
⚠1	10-10-11	Building Department Corrections
⚠2	11-07-11	Building Department Corrections

Revisions

LICENSED ARCHITECT — STATE OF CALIFORNIA

ritner | GROUP
503 32nd STREET STREET, SUITE 130
NEWPORT BEACH, CA 92663
TELEPHONE: (949) 999-3255 FAX: (949) 999-3259

Architect

Project

East 3rd STREET
HABITAT FOR HUMANITY OF ORANGE COUNTY
717 East 3rd Street
Santa Ana, CA 92701
(714) 434-6200

Project Number: 11001
Drawn By: RJR
Checked By:

Sheet Title
TITLE SHEET

Scale: N/A
Date: 7/27/11

Sheet Number
T-1

10172158 - Acc Rck

DIVISION 1 - GENERAL REQUIREMENTS

1. All work shall comply with applicable requirements of the City of SANTA ANA, County of ORANGE, 2010 CBC, State and local codes.

2. Permits: The general building permit and plan check fee shall be secured and paid for by the BUILDER. All other permits shall be taken out and paid for by the Sub-contractor directly responsible.

3. Substitution: No substitutions shall be made without the BUILDER's approval.

4. Intention: The intention of the documents is to include all labor, material, equipment, and transportation necessary for complete and proper execution of the work.

5. Changes: The BUILDER may order extra work or make changes by altering, adding to, or deduction from the work, the contract sum being adjusted accordingly.

6. Cutting and Patching: All trades shall do their own cutting, fitting, patching, etc., to make the several parts come together properly and fit it to receive or be received by the work of other trades.

7. Scope: All trades shall furnish all labor, equipment, materials, and perform all work necessary, indicated, reasonably inferred, or required by any code with jurisdiction to complete their scope of work for a complete and proper finished job.

8. Clean-up: All trades shall, at all times, keep the premises free from accumulation of waste materials or rubbish caused by their work.

9. Temporary Toilets: The General Contractor shall provide temporary toilet facilities for all trades until completion of the work.

10. Lines and Levels: The Contractor shall be responsible for the accuracy of the building lines and levels. The Contractor shall compare carefully the lines and levels shown on the drawing with existing levels for the location and construction of the work and shall call the Architect's attention to any discrepancies before proceeding with the work.

11. On Site Verification of all dimensions and conditions shall be the responsibility of the Contractor and Sub-contractors. Noted dimensions take precedent over scale. Each Contractor or Sub-contractor shall report to Project Superintendent all conditions which prevent the proper execution of their work.

12. BUILDER' Architect and Project Superintendent to be notified immediately by Contractor or Sub-Contractor should any discrepancy or other question arise pertaining to the working drawings and/or specifications.

13. Sub-Contractor shall insure that all work is done in a professional workmanlike manner by skilled mechanics and shall replace any material or items damaged by Sub-contractor's performance. Sub-contractors and Suppliers are hereby notified that they are to confer and cooperate fully with each other during the course of construction to determine the exact extent and overlap of each other's work and to successfully complete the execution of the work.

14. Structural Engineering Prepared By: Structure Design Group

A. Refer to the current calculations for any question regarding lumber grades, beam and header sizes, footings and shear requirements.

B. No deviations from structural details shall be made without the written approval of the Structural Engineer. Approval by City Inspector does not constitute authority to deviate from plans or specifications.

15. Soils Engineering:

A. Refer to the current Soils Report prepared by: Associated Soils Engineering, Inc.

DIVISION 2 - SITEWORK

1. Scope:

A. The contractor shall take all necessary measures to fully protect adjacent properties.

B. The work consists of furnishing all labor, equipment, materials, and performing all operations necessary for all earthwork, including securing and paying for the grading permit.

2. Excavations:

A. See soils report prepared by: Associated Engineering, Inc.
B. Excavations for footings shall be made to the width, length, and depth required. Finished with level bottoms.
C. Excavation shall be kept free of standing water.
D. Where excavations are made to depth greater than indicated, such additional depth shall be filled with concrete as specified for footings.

3. Fill and Backfill:

A. See soils report prepared by: Associated Engineering, Inc.
B. Filled materials shall be free from debris, vegetable matter and other foreign substances.
C. Backfill for pipe trenches shall be compacted on both sides of pipe in six inch layers.

4. General Grading and Drainage: See Civil Engineering drawings prepared by:

A. Refer to the current Landscape Architect's grading and construction documents.

B. All finish grades to drain away from the building footings.

DIVISION 3 - CONCRETE

1. See structural calculations, specifications and drawings prepared by:

DIVISION 4 - MASONRY

1. Materials:
A. Masonry Units: Standard medium weight concrete block, grade `N' units, ASTM C-90 (Where occurs).
B. Reinforcing Steel: (see structural notes).
C. Water: Clean, fresh, suitable for domestic purposes.
D. Tie Wire: Tie Wire: ASTM A-82, 16 gauge; black annealed.
E. Portland Cement: ASTM C-150-62, Type II. Use Sulfate resistant Type V cement when required by Soils Engineer.
F. Sand: ASTM C-144.
G. Lime: Hydrated - ASTM C-207, Type S.
2. Mortar and Grout:
A. Cement Mortar: One part cement, 3 parts (maximum mortar sand, 1/4 part lime. All parts by volume. Conform to C.B.C. Table 21A (Type "S" Mortar, minimum compressive strength to be Fc = 2000 psi).
B. Grout: One part cement, 3 parts sand, 1/10 part lime. Add water to produce consistency for pouring without separation. Also, add one pint of "Red Label Sucanum" per sack of cement. Mortar Type "S" 2,000 PSI at 28 days.
3. Reinforcing: Shall be accurately placed and held in place top and bottom. See structural engineering. Cover for reinforcing shall conform to C.B.C. Section 1907.7.1.
4. Workmanship:
A. Work shall be plumb, level, and true to line.
B. All masonry work shall be laid in common bond, except as noted on drawings.
C. Joints: Rounded, except as noted.

DIVISION 5 - METALS

1. Scope: Furnish all metal supports, angles, plates, attachments, bolts, leg bolts, gates, railings, weldings, shop priming and include installation as required to complete work.

2. Work by Others: All blocking to receive attachments shall be provided under Rough Carpentry.

3. Welds: Welds shall be ground smooth all weld splatter removed and shall comply with the specifications of the "American Welding Society".

4. Materials: See drawings for sizes, material and attachments. Fabricators to provide shop drawings for stair and all exposed work for approval prior to commencing work.

5. Ornamental Iron: Stair railings as shown on the drawings. (Where applicable)

6. Materials:

A. Structural steel and miscellaneous iron shall conform to ASTM A-36.

B. Bolts, nuts and screws shall conform to ASTM A-307 Grade "A".

C. Welding rods shall conform to AWS for intended use.

D. Steel plates shall conform to ASTM A283, Grade A.

E. Steel tubing shall conform to ASTM A501.

DIVISION 6 - WOOD AND PLASTICS

SECTION 6A. ROUGH CARPENTRY

1. See structural calculations, specifications, and drawings prepared by: Structure Design Group

2. Plywood Minimums: Floor sheathing APA 5/8" thick T&G Sturd-I-Floor or rated sheathing (CDX) refer to framing plan.

3. Roof Sheathing: APA 1/2" thick (5 ply min.) rated sheathing exposure 1 or exterior.

SECTION 6B. FINISH CARPENTRY:

1. Scope:

A. Furnish and install all Finish Carpentry complete, including trim, door frames, paneling, shelving.

B. Installation of Finish Hardware, bath accessories, cabinet pulls, etc.

2. Workmanship:

A. All joists shall be tight and true and securely fastened. Corners shall be neatly metered, butted, or coped, with nails set and surfaces free of tool marks.

B. Wood work shall be accurately scribed to fit adjoining surfaces.

C. All work shall be machined or hand-sanded, sharp edges and splinters removed, and completely prepared for finish.

D. Full length continuous boards shall be used whenever applicable or specifically noted.

3. Materials:

A. Door Frames:

(1) Frames shall be set plumb and true, rigidly secured, and protected during the course of construction.

B. Door Stops and Casing: Manufactured of clear pine.

(1) All vertical and horizontal trim members shall be in longest practicable lengths

D. Shelving: As selected by BUILDER.

E. Wood Base: (Throughout) 2" (min) high clear pine or as otherwise noted.

4. Fitting and Hanging of Doors:

A. Each door shall be accurately cut, trimmed, and fitted to its respective frame and hardware with due allowances for painter's finishes.

B. Clearance at the lock and hanging stiles and at the top shall not exceed 1/8". Clearance at the bottom shall be adjusted for finish floor covering schedules, including carpeting.

C. Lock stile edges shall be beveled.

D. Door shall operate freely, but not loosely, without sticking or binding without hinge bound conditions; and with all hardware property adjusted and functioning.

SECTION 6C. CABINETS:

1. Scope: Furnish and install all cabinet work complete.

2. Standards:

A. All natural finish cabinets shall meet the requirements of Southern California Association of Cabinet Manufacturer's Standard Grade.

B. All paint grade finish cabinets shall meet the requirements of Southern California Association of Cabinet Manufacturer's Standard Grade.

C. All stain grade finish cabinets shall meet the requirements of Southern California Association of Cabinet Manufacturer's Standard Grade.

3. Materials and Design:

A. Kitchen Cabinets: As selected by BUILDER, as per shop drawings.

B. Baths: Stain Grade

C. Linens and Service room cabinet: Stain Grade

D. General storage cabinets: Paint Grade

E. Verify appliance size with BUILDER and Supplier.

F. Cabinets must be compatible to or meet NKCA (ANSI) Standards.

4. Workmanship:

A. All joints shall be tight and true and securely fastened. Corners shall be metered, butted, or coped, nails set, and surfaces free of tool marks.

B. Use concealed fastenings where possible.

C. Install all work level, plumb, and true. Scribe members accurately in place to fit adjoining surfaces.

D. Plywood and particle board shall be hardwood edge banded on all exposed edges.

SECTION 6D. INSULATION:

MINIMUMS: See plans for actual habitable envelopes.

1. Scope: Work shall include all labor, materials, and equipment required to install insulation as indicated and specified.

2. Materials:

A. Thermal Insulation: Floors, Living Spaces, Roofs, Ceilings, and Walls. See Title 24 Energy Compliance Calculation prepared by: Heritage Energy

1. Exterior walls: Minimum R-13

2. Exterior Ceilings and Roofs: Minimum R-19 mineral wool batts at attic areas.

3. Installation:

A. Thermal Insulation:

(1) Install batts between joints, securely and tightly fitted, at all ceiling areas exposed to roof or attic areas, including any vertical wall areas separating living spaces from attics between ceilings and roofs. Install eave vent pans at all eave vent blocking.

DIVISION 7 - THERMAL AND MOISTURE PROTECTION

SECTION 7A. ROOFING

1. Scope: Furnish and install roofing and waterproofing work complete, including cant strips and incorporating other trades flashing, sleeves and jacks.

2. Materials:

A. Ashphalt tile

(1) Roof tile shall be installed as per manufacturer's specifications, weight, color and shape to be selected by owner and approved by Architect. Application of eave tile clips are required, and approved roofers mastic shall be used for ridge, hip and rake tiles, field nailing is required per code for every tile. See exterior elevations for tile shapes.

B. Underlayment: Provide Min. 30# 2 layers

3. Flashing and Gravel Stop: 26 gauge G.I. lap joints and fill with roofing cement.

4. Roofing Nails: Galvanized.

5. Special Conditions:
A. Provide crickets as indicated and as necessary.

6. Installation: Install roofing and wall flashing per manufacturer's recommendations carefully incorporating G.I. flashing scuppers, jacks, sleeves, roof, drains, etc. supplied by others.

SECTION 7B. SHEET METAL:

1. Scope: Provide miscellaneous metal work as indicated and specified.

2. Materials: Flashing: 26 gauge galvanized sheet metal. ASTM A-93-38 unless otherwise shown.

3. General:

A. Work shall be accurately fabricated to detail and fitted to job conditions.

B. Molded and brake-formed members shall be finished true and straight, sharp lines and angles.

C. Lock seams flat and true to line; 1/2 inch wide, sweated full with solder.

D. Sheet metal work shall be designed to provide complete weather-tight and waterproof connections.

4. Shop Painting: All galvanized metal shall be shop primed with one coat of zinc dust-zinc oxide primer over all surfaces.

5. Flashing:

A. Provide all flashing and counter-flashing items as indicated and as required to make complete work completely waterproof.

B. Flashing shall be brake formed to sharp lines and fitted to details.

C. Flash and counter-flash at all roof to wall conditions. G.I. flash and caulk wood beams and outlookers projecting through exterior walls or roof surfaces.

D. Flash all exterior door and window openings with approved method and materials which conforms to standards of local and applicable codes.

6. Attic Ventilation:

A. Scope: Provide attic ventilation as per Chapter 1505.3 C.B.C.

B. Attic Vents: See Architectural plans for standard and special shaped vents, and venting requirements. Openings of vents to have 1/4" corrosion resistant metal mesh covering per Section 1505.3, U.B.C.

C. Provide soffit ventilation per Sec. 1505.3 C.B.C.

7. Dryer Vent: Dryer vent to outside air per manufacturer's specifications and local jurisdictional requirements, and as per C.M.C. Section 504.3,908.

DIVISION 8 - DOORS AND WINDOWS: (Refer to Building Security Code for additional information where applicable). All doors shall comply with Uniform Building Security code and

SECTION 8A. WOOD DOORS:

1. Scope: Furnish all wood doors as indicated on plans.

2. Wood Doors:

A. Entry Doors: 1-3/4" solid core, metal design approved by Architect.

B. Exterior Doors: 1 3/4" thick french door, design approved by Architect.

C. Exterior Doors: 1-3/4" thick, solid core.

D. Interior Doors: 1-3/8" thick, hollow core slab.

E. Wardrobe door: 1-3/8" thick, hollow core with hard board 6 panel masonite colonist/painted. Master bedroom to have optional mirrored with light oak and beveled glass.

F. Unit Door to Garage: 1-3/4" thick, solid core with self-closure

SECTION 8B. METAL DOORS AND WINDOWS: (Refer to Building Security Code for Additional Information where applicable). All doors shall comply with uniform building security code.

1. Scope: Furnish all metal window and doors as shown on plans.

2. Aluminum windows, shall comply with AAMA specifications HS B-1 complete with aluminum frames and aluminum screens.

3. Finish: White Duranod 1C.

4. Aluminum Sliding Doors: Shall comply with AAMA Specifications SDG-D-1 complete wit aluminum frame and aluminum screen. Doors to be glazed with tempered glass.

5. Finish: White Duranod 1C.

6. Caulking and weather sealings Specified in Section 8F.

7. Glass specified in Section 8C. Doors and windows weather stripped with all joints and penetrations caulked and sealed.

8. Metal (24 GA.) segmented doors at garage. Install per MFG. specs style and finish as selected by owner.

9. Metal louver door shall comply with AAMA specification.

SECTION 8C. GLASS AND GLAZING: (Refer to Building Security Code for additional information where applicable). All windows shall comply with California Building Security Code

1. Scope: Furnish and install all glazing and mirrors other than factory glazed doors and windows. Glazing shall be done during finish work.

2. Glass and Glazing: As per Chapter 24 of the C.B.C. - See Energy Compliance calculations prepared by:

3. Materials:

A. Windows: Single strength "B" or better (tempered or wired glass where required by governing body).

B. Doors and fixed glass where noted - tempered

C. Sheet Glass: 3/16" as per Chapter 24 of C.B.C.

D. Mirrors: Polished plate - Glass (5/16")

E. Caulking Compound: Gun applied non-hardening.

F. Tub and shower enclosures - approved shatterproof.

SECTION 8D. WEATHERSTRIPPING AND THRESHOLDS-ALL EXTERIOR DOORS AND WINDOWS:

1. Exterior Doors and Windows: Shall be completely weatherstripped. Penetrations to be caulkedand sealed.

2. Thresholds: Aluminum.

SECTION 8E. GARAGE DOOR HARDWARE: Slide Bolt per security ordinance NO. 770.

1. Provide hardware per manufacturers specifications and local codes.

2. Doors shall be adjusted and counterbalanced for each operation.

3. Garage sectional door as selected by owner when three garage doors occurs the opener will be tied together on two doors.

SECTION 8F SEALANT AND CAULKING

1.01 SCOPE

A. Provide labor, materials, equipment, and services necessary for installation of sealants and caulking complete as indicated on the drawings.

B. Principle work in this Section:

1. Coordinate all work in this Section with related trades.

2. This section contains general specifications pertaining to caulking and sealants throughout the project as indicated or required, and becomes a part of all trade sections requiring sealants. The term "caulking" or "sealant" is used throughout the drawings and specifications to define the materials and method of filling with an elastics compound, the small crevices, holes, separations, and joints between similar and different materials that cannot be sealed by any other means to prevent the passage or penetration of wind, rain, water, and dust to make joints weathertight.

1.02 QUALITY ASSURANCE

A. Codes and Standards:

1. California Building Code

2. Sealant and Waterproof Institute

3. National Roofing Contractors Association NRCA Roofing and Waterproofing Manual.

1.03 JOB CONDITIONS

Work shall be performed within range of temperatures and climatic conditions recommended by the manufacturer and association.

1.04 PRODUCTS

As selected by developer.

1.05 CHARACTERISTICS

A. Color: Unless indicated or specified otherwise, exposed sealants shall match color of adjacent materials. Where adjacent materials on each side of joint are different colors, use sealant color as directed. If selected color is not available from one manufacturer, obtain from another manufacturer.

B. Staining: Joint fillers, primers or other materials used in conjunction with sealants shall not cause staining of sealants or materials to which they are applied.

Project Location: 717 East 3rd Street, Santa Ana, Ca. 92701

1101GN1.DWG

Revisions

No.	Date	Revision
1	10-10-11	Building Department Corrections

Architect

LICENSED ARCHITECT RICHARD J. RITNER No. C-24105 Exp. 8-31-13 STATE OF CALIFORNIA

ritner|GROUP

503 32nd STREET STREET, SUITE 130

NEWPORT BEACH, CA 92663

TELEPHONE: (949) 999-3255 FAX: (949) 999-3259

Project

East 3rd STREET

HABITAT FOR HUMANITY OF ORANGE COUNTY

717 East 3rd Street
Santa Ana, CA 92701
(714) 434-6200

Project Number: 11001

Drawn By: RJR

Checked By:

Sheet Title

GENERAL NOTES

Scale: N/A

Date: 7/27/11

Sheet Number

GN-1

1.06 MATERIALS

A. Sealant Types and Locations:

1. At general wall locations and around perimeter of toilet fixtures, one part silicone sealant as manufactured by Dow Corning Corp., Tremco, or General Electric Corp.

SURFACES	DOW CORNING	GENERAL ELECTRICAL
Non-porous surfaces such as glass, metal, ceramic and plastics.	#781	#1200
Porous surfaces such as block and concrete.	#780	#1300
Locations such as ceramic tile, plumbing fixtures and others where a mildew resistant sealant is required.	#785	#1700
Locations where a high degree of movement is anticipated.	#790	Silprus

2. For joints in floors and sidewalks, use two part Polyurethane 40 - 45, Shore A; Rubber-Caulk 230, manufactured by Products Research and Chemical Corporation; "Betaseal #450" with formulation to obtain Shore-A hardness of 40 -45, by Essex Chemical Corporation or "Dareseal-U Traffic Grade" by Grace Construction Materials. Do not use bituminous materials.

3. For all other interior locations use compound to match adjacent work; one part non-sagging, permanently elastic butyl or similar polymer dispensing in compound containing a maximum of 10% solvents; "Sealtight Elastomeric Butyl Caulk;, by W.R. Meadow, Inc., or "PRC Rubber Caulk 2000 Sealant", by Products Research and Chemical Corporation.

1.07 OTHER MATERIALS

A. Primer: As recommended by sealant manufacturer for use with sealant and for application on to the various types of materials to which sealant is applied.

B. Closures: Where required, in lieu of primers, use those recommended by sealant manufacturer.

C. Joint Filler: Must be compatible with sealant used and as recommended by sealant manufacturer.

1. Open cell neoprene or plastic foam "rod".
2. Felt Tape: Mil-F-5656A, pressure-sensitive adhesive with interliner on one face, 1.5 mm thick.
3. Caulking Bead or Tape: Approved non-drying elastic polymer type with other inorganic fillers for optional use in place of felt tape.
4. Extruded Neoprene: ASTM 0750
5. Fillers and backing shall be free from oil or other staining elements and compatible with the sealant used. Oakum and other types of absorptive materials shall not be used, including materials impregnated with solvent or bituminous materials. Filler and backing material shall be of a compressible nature.

1.08 APPLICATION

A. Joint Dimensions: No joint shall be less than 1/4 inch wide. Depth of sealant shall not be greater than the width nor less than 1/4 inch. for joints one inch wide or greater, depth of sealant shall be at least 1/2 the width.

B. Joint Preparation:

1. Perform in strict accordance with manufacturer's application instructions, including cleaning and priming.

2. Remove protective coating from aluminum components so that sealant adheres to base metal.

C. Joint Filler: Use Where joints are deeper than 1/2 inch. Position accurately inside joint to within 12mm of surface to establish and control the uniform designed thickness of sealant. Where joints are over 3/4 inch wide, place filler so that depth of joint to receive sealant does not exceed 1/4 inch.

D. Sealant Placing: Apply material with sufficient pressure to completely fill the void space to assure complete wetting of contact area and to obtain uniform adhesion. During application keep tip of nozzle at bottom of joint, forcing sealant to fill from bottom of joint to top. Finish joints smooth and flush with adjacent surface, unless detailed otherwise. Modification of the sealant by addition of liquids, solvents, or powders are not permitted.

DIVISION 9 - FINISHES

SECTION 9A. GYPSUM WALLBOARD AND CEILING BOARD

1. Scope: Furnish and install all Gypsum Wallboard Work complete.
2. Standards:
   A. All work shall comply with Chapter 25 of the C.B.C.
   B. All work and materials shall comply with American Standard Association's "Specifications of Gypsum Wallboard Finishes."
3. Materials:
   A. Gypsum Wallboard: 5/8" thick at all ceiling (TYP.), 1/2" thick at all walls. TYP.. Use 5d nails at 7" O.C. or as noted on shearwall schedule.
   B. Gypsum Wallboard: 5/8" thick, fire rated "X" at 1 hour walls as detailed and at other walls and ceilings where noted on drawings - use 6d cooler nails at 7" O.C. or as noted on shearwall schedule.
   C. Metal Corner Bead, Casing, and Trim, Galvanized.
      (1) L-shaped trim at exposed edges as detailed.
      (2) Corner Bead at external corners.
      (3) Bull nose (round corners) as selected by BUILDER.
   D. Tape and Compound: As recommended by gypsum board manufacturer.
   E. Nailing: Per code (see also drawings for special nailing requirements).
4. Workmanship:
   A. All joints in finished surfaces shall be taped and finished with joint compound. Reinforce all corners.
   B. Provide metal trim at all exposed edges and external corners. Metal trim shall be galvanized.
   C. Trim shall be tight to wallboard edges, plumb, level, and true to plan, securely attached.
   D. Conceal exposed nail or screw heads with joint compound.
   E. Nails shall be annular ring (GSD-54) conforming to ASTM C-380-58T. The contractor may use wallboard screw in lieu of nails without structural engineers review and written approval.
   F. Protect all exposed wood beams, posts, etc.
5. Finishes:
   A. Walls: Light Orange Peel Texture
   B. Ceilings: Light Orange Peel Texture

SECTION 9B. CERAMIC TILE

1. Standards: American Standard Association Specification A-108. Tile showers surfaces shall be (2) layers of green board tile wet surfaces shall be cement plaster backed.
2. Materials:
   A. Tile: As selected by BUILDER.
   B. Grout: Color as selected by BUILDER.
3. Counter Tops:
   A. Kitchen: Ceramic tile as selected by owner
   B. Bath: Cultural Marble as selected by owner.
   C. Showers: Fiberglass shower pan with ceramic tile wall as selected by owner.

SECTION 9C. RESILIENT FLOORING:

1. Scope: Furnish and install all resilient flooring material complete as scheduled.
2. Materials:
   A. Sheet Vinyl: As selected by BUILDER.
   B. Adhesives: As recommended by the manufacturer of the floor covering.
3. Installation:
   A. Subfloors shall be clean, free of dust and perfectly dry.
   B. Surfaces shall be primed as recommended by manufacturer.
   C. Materials shall be applied in accordance with the manufacturer's instructions.

SECTION 9D. EXTERIOR STUCCO:

1. Standards: All exterior stucco shall conform to local and C.B.C., applicable edition, State and Local codes and requirements.
2. Color: 20/30 Sand finish and color to be selected by BUILDER and approved by Architect.
3. Exterior Coating: PORTLAND CEMENT PLASTER by LA HABRA STUCCO or equivalent.
   A. Materials and methods shall be as per manufacturer's recommendations and the C.B.C.
   B. Lathing paper shall be an approved waterproof building paper subject to city approval.
   C. Wire shall be zinc-coated steel not less than 20 gauge, the wire and backing wire shall be annealed applied.
   D. Three coat application:
      The 1st coat shall be a minimum of 3/8" thick.
      The 1st and 2nd coat shall be a minimum of 3/4" thick.
      The finish coat shall completely cover the 2nd coat and the 1st, 2nd and finish coat shall be a minimum of 7/8" thick.
   E. Reinforcement shall be applied straight without buckles and with joints staggered.
   F. Contractor shall scrub foundation from stucco screed to 6" below finish grades.
   G. All stucco surfaces shall be straight plumb and true without waves or match lines.
   H. Provide expansion joints as per C.B.C. and manufacturer's requirements.

SECTION 9E. PAINTING AND FINISHING:

1. Scope: Provide painting work as indicated and specified, complete including preparation of surfaces other than those that are factory primed.
2. Materials:
   A. Submit list of materials and manufacturer for approval.
   B. All materials shall be delivered to the site in sealed original manufacturer's containers.
   C. Exterior overcoat as manufactured by or approved equal.
3. Colors: To be selected by Architect.
4. Preparation of Surfaces:
   A. Surfaces shall be clean and dry, and in suitable condition for finish specified. Remove all oil, grease, bond breaking agents, dust, mill scale and efflorescence.
   B. Cracks, holes, and knots shall be filled, sanded smooth, and sealed. Wood surfaces, except resawn wood, shall be sanded perfectly smooth. Sanding dust shall be completely removed.
   C. Hardware shall be masked or removed prior to painting.
   D. Trim and other finish work shall be backpainted prior to installation.
5. Workmanship:
   A. Each coat shall be uniformly applied, well brushed out and free of brush marks, runs, sags or skips.
   B. Paint finishes shall be cut sharply to line. Protect adjacent surfaces.
   C. Mix and apply paint and stains in accordance with the manufacturer's instructions.
6. Exterior Painting and Staining:
   A. Exterior wood, exposed beams, all trim, etc.: one coat overcoat over one coat primer.
   B. Exposed metal, including vent pipes, exhaust vents, heating and air conditioning units, grilles, etc., two coats over primer. Color as selected by Architect.
7. Interior Painting and Finishing:
   A. Ceilings and wall.
      (1) Kitchens, bathrooms: One coat enamel undercoating, one coat stipple semi gloss enamel.
      (2) All other rooms: One coat.
   B. Wardrobes: Closets (except shelving): Finish as specified for adjoining room.
   C. Doors, frames, wood base, shelf cleats: One coat enamel undercoat, one coat semi-gloss enamel.
   D. Wood hand railings: 2 coats of sealer-stain.
   E. Paint grade cabinets (exterior and interior): One coat sealer and one coat semi-gloss enamel.
   F. Metal Surfaces: Paint same as adjacent surfaces.

SECTION 9F. EXTERIOR HARDBOARD SIDING

1. Scope: Furnish and install siding complete as indicated on the drawing.
2. Quality Assurance: Work shall conform to requirement of California Building Code.
3. Material:
   a. Siding: Superside drop side width 12" length 16' - 0" thickness 1/2" exposure 11 1/16" as manufactured by masonite corporation of approved equal color as selected by architect.
   b. Building Paper: Type 1; asphalt saturated felt, non perforated, 15 lbs. type.
4. Installation:
   a. Install metal flashing at sill head of wall openings.
   b. Install siding in accordance with manufacturer's instruction arrange components to encourage watershed. Securely fasten in place aligned, level, and plumbing, out board ends over bearing surfaces.

SECTION 10A. BUILDERS SPECIALTIES:

1. Scope: Furnish and install complete in working order the items indicated on the drawings and as specified herein.
2. Bathroom and Toilet Accessories: As selected by the BUILDER.
3. Kitchen Built-Ins: As selected by the BUILDER.
4. Finish Hardware: As selected by the BUILDER.
5. House Numbers: As selected by the BUILDER and approved by governing bodies.
6. Fireplaces: As selected by the BUILDER. Provide tight fitting closeable metal or glass doors, outside air intake with damper. Continuous burning gas pilot prohibited.
7. Floor Finishes:
   A. Carpeted areas: 25 oz. carpet as specified by BUILDERs over 3/8" 5 lb. rebound pad, tackless strip and edge trim.
   B. Resilient Flooring Areas: Sheet vinyl applied in strict accordance with manufacturer's printed directions.

DIVISION 15 - MECHANICAL

SECTION 15A. PLUMBING:

1. Scope: Supply all labor, transportation, materials, etc. for installation of complete plumbing system to operate according to the best practices of the trade and including but not limited to: Fixtures, hot and cold water piping, soil and vent piping, hot water heaters, pipe insulation, permits, fees, meters, vaults, etc. All materials, work, etc., to comply with all requirements of the 2010 C.P.C. and all legally constituted public authorities having jurisdiction including all County and State ordinances.
2. Plumbing Plans: Shall be submitted by the Plumbing Contractor to the Building Department county of ORANGE. Submit one set to the Architect.
3. Hangers and Straps: All horizontal ABS piping shall be hung with approved hangers at 4' - 0" on center minimum and spaced to permit expansion and contraction without hitting adjoining pipe. Vertical piping shall be supported at 8' -0" on center with wrought steel "U" straps securely fastened to building frame.
4. Clean-out Hubs: Shall be installed flush with face of wall or cabinet in accordance with U.P.C. Sec. 707.
5. Drains: Provide and install area drains, as required by civil engineers and or landscape architect.
6. Plumbing Fixtures: As selected by the BUILDER.
7. Water Heater: Provide CEC Certification. 50 gallon glass lined (Verify with Title 24 Report).
8. Appliances: As selected by the owner.
9. See civil engineer for back water valve requirements.

SECTION 15B. HEATING/AIR CONDITIONING:

1. Scope: Supply all labor, transportation, materials, etc. for installation of complete plumbing system to operate according to the best practices of the trade and including but not limited to: Fixtures, hot and cold water piping, soil and vent piping, hot water heaters, pipe insulation, permits, fees, meters, vaults, etc. All materials, work, etc., to comply with all requirements of the 2010 C.P.C. and all legally constituted public authorities having jurisdiction including all County and State ordinances.
2. Heating Systems to be gas. See Title 24 Report for SEER requirements.
3. Cooling system: Provide duct insulation per Uniform Mechanical Code, Chapter 6. Provide damper controls on exhaust fans.
4. Heating Plans and Calculations: Shall be submitted by the HVAC Contractor to the City of SANTA ANA Building Department, County of Orange. for approval. Submit one set to the Architect.
5. Equipment Installation: All equipment installation as per manufacturer's specifications.

DIVISION 16 - ELECTRICAL

ELECTRICAL SECTION:

1. Scope: Supply all labor, transportation, materials, etc., for installation of complete electrical system to operate according to the best practices of the trade and including but not limited to: Fixtures, appliances, wiring, switches, receptacles, television jacks, service, grounds, temporary power, junction boxes, conduit, sub-panels, etc. All work, materials, etc., to comply with all requirements of all legally constituted authorities having jurisdiction including all County and State ordinances and 2010 C.E.C.
2. Electrical Plans: Shall be submitted by the Electrical Contractor out to the SANTA ANA Building Department, County of Orange for approval. Submit one set to the Architect.
3. House Service: Size per requirements.
4. All equipment installed outdoors and exposed to weather shall be "weather proof".
5. Receptacles in kitchen and bathrooms shall be installed above work top unless otherwise noted on plans.
6. Receptacles shall be installed vertically at 12" +/- above floor.
7. Verify and locate all outlets prior to drywall otherwise noted, locate all switches at 36" from finished floor.
8. Provide ground fault circuit interrupter (GFI) protection at kitchens counters, all bathroom, outdoor receptacles and at receptacles in wet locations per N.E.C.

8.1. ICT Fixtures: All recessed lights at insulated ceilings shall be U.L. approved for direct contact with insulation.

9. Electrical Equipment:
   A. Chimes: As selected by the BUILDER.
   B. Light Fixtures: As selected by the BUILDER.
   C. Exhaust Fans: As selected by the BUILDER.
   D. Appliances: As selected by the BUILDER.
   E. Luminous Ceilings: As selected by the BUILDER.
   F. Smoke detectors: As selected by the BUILDER to conform to U.B.C. Section 310.9. Smoke detectors shall be hard wired.
   G. General lighting for kitchens and bathrooms: 40 lumen/watt per 2010 Title 24 requirements.
10. Kitchen Appliances:
   A. Range/Oven: As selected by the BUILDER. Appliance to have intermittent ignition device.
   B. Dishwasher: As selected by the BUILDER.
   C. Garbage Disposer: As selected by the BUILDER.

1. SUPPLEMENTAL GENERAL NOTES:
   A. General Conditions of this contract shall be the American Institute of Architects Standard Document No. 201 including all supplementary general conditions.
   B. Detailed drawings and specifications take precedence over general drawings and specifications, dimensions take precedence over scaled measurements.
   C. Should errors, omissions, or discrepancies appear in drawings or specifications, or in the work done by others affecting this work, the Architect shall be notified at once and shall issue instructions as to procedure.
   D. The Contractor shall conform to and abide by all local City, County, and State building and safety laws, such laws shall be considered a part of these specifications and the provisions of such regulations shall be observed. The Contractor shall notify the Architect if drawings or specifications are at variance. Should the Contractor perform any work contrary to such laws, or regulations, he shall bear all cost arising.
   E. Anchor or strap appliances to resist earthquake motion. CMC Section 304.
   F. Heating and cooling equipment (including water heaters) located in a garage shall be installed so that the pilots or burners are at least 18" above the floor level. CMC Section 308.
   G. Provide combustion air to forced air unit to comply with CMC Chapter 7.
   H. Clothes dryer shall be exhausted to the outside CMC Section 908 and Section 504.3.
   I. Water outlets with hose attachments and hose bibs must have approved non-removable type backflow prevention devices installed. CPC Section 603.3.7.
   J. All ducts penetrating firewalls shall be minimum 26 gauge galvanized sheet metal. Section 302.4. Refer to (1) one hour construction duct penetration detail.
   K. No domestic dishwasher shall be connected to a drainage system or food waste disposer without the use of an approved dishwasher airgap fitting, CPC Section 807.4.
   L. All 125 volt, single-phase, 15 and 20 ampere receptacles installed outdoors where there is direct grade level access shall have ground-fault circuit-interrupter protection for personnel. CEC 210-8(a)3
   M. Exhaust fans in bath and/or laundry rooms must connect directly to the outside and must provide 5 air changes per hour. They must also be provided with back draft dampers. Section 1203.3.

CITY OF SANTA ANA POLICE DEPARTMENT SECURITY REQUIREMENTS

1. Except for vehicular access doors, all exterior swinging doors of any residential building and attached garages, incuding the door leading from the garage area into the dwelling unit shall be equipped as follows:
   A. All wood doors shall be of solid core construction with a minimum thickness of one and three-fourths (1 3/4) inches, or with panels not less than nine-sixteenths (9/16) inch thick.
   B. A single or double door shall be equipped with a single cylinder deadbolt lock. The bolt shall have minimum projection of one (1) inch and shall be constructed so as to repel cutting tool attack. The deadbolt shall have an embedment of at least three-fourths (3/4) inches into the strike plate receiving the projected bolt. The cylinder shall have a cylinder guard. A minimum of five (5) pin tumblers, and shall be connected to the inner portion of the lock by connecting screws of at least one-fourth (1/4) inch in diameter. All installation shall be done so that the performance of the locking device will meet the intended anti-burglary requirements. A dual locking mechanism constructed so that both deadbolt and latch can be retracted by a single action of the inside door knob, or lever, may be substituted provided it meets all other specifications for locking devices.
   C. The inactive leaf of double door(s) shall be equiped with metal flush bolts having a minimum embedment of five-eights (5/8) inches into the head and threashold or the door frame.
   D. Glazing in exterior doors or within (40) inches of any locking mechanism shall be of fully tempered glass, rated burglary iresistant glazing or dual pane glass.
   E. Except where clear vision panels are installed, all front exterior doors shall be equiped with a wide angle (180 degree) door viewer.
2. All residential dwellings shall display an illuminated street number in a prominent location on the street side of the residence in such a position that the number is easily visible to approaching emergency vehicles. The numbers shall be no less than four (4) inches in height and shall be of contrasting color to the background to which they they are attached.

Project Location: 717 East 3rd Street, Santa Ana, Ca. 92701

11001GN1.DWG

Revisions

No.	Date	Revision
1	10-10-11	Building Department Corrections

Architect

ritner|GROUP
503 32nd STREET STREET, SUITE 130
NEWPORT BEACH, CA 92663
TELEPHONE: (949) 999-3255 FAX: (949) 999-3259

Project

East 3rd STREET

HABITAT FOR HUMANITY OF ORANGE COUNTY

717 East 3rd Street
Santa Ana, CA 92701
(714) 434-6200

Project Number: 11001
Drawn By: RJR
Checked By:

Sheet Title

GENERAL NOTES

Scale: N/A
Date: 7/27/11

Sheet Number

GN-2

HERS REQUIRED VERIFICATION

or the installation of a HERS verified Charge Indicator Display (CID). If a cooling system is not installed, then HERS verification is not necessary.

This building incorporates HERS verified High Energy Efficiency Ratio (EER).

This building incorporates HERS verified Duct Leakage. Target leakage is calculated and documented on the CF-4R. If the measured CFM is above the target, then corrective action must be taken to reduce the duct leakage and then must be retested. Alternatively, the compliance calculations could be redone without duct testing. If ducts are not installed, then HERS verification is not necessary.

REMARKS

OVERHANGS

Surface	Area (sf)	Window Width	Window Height	Overhang Depth	Overhang Height	Left Extension	Right Extension
3 Window	51.0	n/a	5	1	1	n/a	n/a
4 Window	30.0	n/a	5	7	1	n/a	n/a
6 Door	40.0	n/a	5	1	1	n/a	n/a
7 Window	30.0	n/a	5	1	1	n/a	n/a

HVAC SYSTEMS

System Type	Number of Systems	Minimum Efficiency	Verified HighEff EER	Verified Refrig Charge or CID	Verified Cooling Coil Airflow	Verified Fan Watt Draw	Verified Maximum Total Rated Cooling Capacity
Furnace	1	0.800 AFUE	n/a	n/a	n/a	n/a	n/a
ACSplit	1	13.00 SEER	11	Yes	No	No	No

HVAC SIZING

System Type	Total Heating Load (Btu/hr)	Sensible Cooling Load (Btu/hr)	Design Cooling Capacity (Btu/hr)	Verified Maximum Cooling Capacity (Btu/hr)
Furnace	14226	n/a	n/a	n/a
ACSplit	n/a	11560	13380	n/a

Sizing Location..... SANTA ANA FS
Winter Outside Design..... 33 F
Winter Inside Design..... 70 F
Summer Outside Design..... 89 F
Summer Inside Design..... 75 F
Summer Range..... 26 F

DUCT SYSTEMS

System Type	Duct Location	Duct R-value	Verified Duct Leakage	Verified Surface Area	Verified Buried Ducts
Furnace	Attic	R-4.2	Yes	No	No
ACSplit	Attic	R-4.2	Yes	No	No

Project Title..... Single Family Home Date..09/30/11 17:01:58
Project Address..... 717 3rd Street ******
Santa Ana, CA *v8.1*
Documentation Author... Sam Maimone ******
Heritage Energy Group, LLC
470 Wald
Irvine, CA 92618
(949) 789-7221

Building Permit #
Plan Check / Date
Field Check/ Date

Climate Zone..... 08
Compliance Method..... MICROPAS8 v8.1 for 2008 CEC Standards (r03)

MICROPAS8 v8.1 File-11036 Wth-CTZ08S08
User#-MP0940 User-Heritage Energy Group, LL Run-

MICROPAS8 ENERGY USE SUMMARY

Energy Use (kTDV/sf-yr)	Standard Design	Proposed Design	Compliance Margin	Percent Improvement
Space Heating.....	9.93	6.66	3.27	32.9%
Space Cooling.....	20.78	15.39	5.39	25.9%
Ventilation Fans.....	1.33	1.33	0.00	0.0%
Water Heating.....	22.92	14.89	8.03	35.0%
Total	54.96	38.27	16.69	30.4%

*** Building complies with Computer Performance ***
*** HERS Verification Required for Compliance ***

GENERAL INFORMATION

HERS Verification..... Required
Conditioned Floor Area.... 1344 sf
Building Type..... Single Family Detached
Construction Type ..... New
Natural Gas at Site ..... Yes
Building Front Orientation. Front Facing 180 deg (S)
Number of Dwelling Units... 1
Number of Building Stories. 1
Weather Data Type..... FullYear

Floor Construction Type.... Raised Floor
Number of Building Zones... 1
Conditioned Volume..... 12096 cf
Slab-On-Grade Area..... 0 sf
Glazing Percentage..... 16.3 % of floor area
Average Glazing U-factor... 0.31 Btu/hr-sf-F
Average Glazing SHGC..... 0.28
Average Ceiling Height..... 9 ft

HERITAGE ENERGY GROUP
TITLE 24 ENERGY CONSULTANTS

470 Wald
Irvine, CA 92618
T: 949-789-7221
F: 949-789-7222

2008 TITLE 24 ENERGY COMPLIANCE SHEET

3rd STREET
HUMANITY HOUSING INC.
717 East 3rd Street
Santa Ana, CA 92705
(714) 434-6200

T-24.1

COMPLIANCE STATEMENT

This certificate of compliance lists the building features and performance specifications needed to comply with Title-24, Parts 1 and 6 of the California Code of Regulations, and the administrative regulations to implement them. This certificate has been signed by the individual with overall design responsibility.

DESIGNER or OWNER

Name.... MARK KOADWOG
Company. Habitat for Humanity
Address. 2165 S. Grand Avenue
Santa Ana, CA 92705
Phone... 714-434-6200
License. N/A
Signed.. [signature] SR. V.P. 10-18-11 (date)

DOCUMENTATION AUTHOR

Name.... Sam Maimone
Company. Heritage Energy Group, LLC
Address. 470 Wald
Irvine, CA 92618
Phone... (949) 789-7221
Signed.. _____ (date)

ENFORCEMENT AGENCY

Name.... _____
Title... _____
Agency.. _____
Phone... _____
Signed.. _____ (date)

HVAC SIZING NOTES

Note: The loads shown are only one of the criteria affecting the selection of HVAC equipment. Other relevant design factors such as air flow requirements, outside air, outdoor design temperatures, coils sizing, availability of equipment, oversizing safety margin, etc., must also be considered. It is the HVAC designer's responsibility to consider all factors when selecting the HVAC equipment.

Electronically Signed at CalCERTS.com by Pat Alberstadt (Habitat for Humanity - Orange County) 9/30/2011

Electronically Filed by Sam Maimone and Authenticated at CalCERTS.com - 9/30/2011

INFILTRATION TESTING DETAILS

Blower Door Leakage Target (CFM50h/SLA)	Blower Door Leakage Minimum (CFM50h/SLA)
1056 / 3.0	528 / 1.5

FAN SYSTEMS

System Type	Flow (cfm)	Power (W/cfm)
Standard	58.44	.25

WATER HEATING SYSTEMS

Tank Type	Heater Type	Distribution Type	Number in System	Energy Factor	Tank Size (gal)	External Insulation R-value
1 SmallTankless	Gas	Standard	1	0.84	n/a	R-n/a

SPECIAL FEATURES AND MODELING ASSUMPTIONS

*** Items in this section should be documented on the plans, ***
*** installed to manufacturer and CEC specifications, and ***
*** verified during plan check and field inspection. ***

This building incorporates a Radiant Barrier.

This building incorporates a non-standard Water Heating System.

HERS REQUIRED VERIFICATION

*** Items in this section require field testing and/or ***
*** verification by a certified home energy rater under ***
*** the supervision of a CEC-approved HERS provider using ***
*** CEC approved testing and/or verification methods and ***
*** must be reported on the CF-4R installation certificate. ***

This building incorporates HERS verified High Quality Insulation Installation.

This building incorporates HERS verified Building Envelope Sealing. Target and Minimum CFM values measured at 50 pascals are shown in INFILTRATION TESTING DETAILS above. If the measured CFM50h is above the target, then corrective action must be taken to reduce the infiltration and then retest. Alternatively, the compliance calculations could be redone without infiltration testing.

This building incorporates a HERS verified Improved Refrigerant Charge test

BUILDING ZONE INFORMATION

Zone Type	Floor Area (sf)	Volume (cf)	# of Dwell Units	# of People	Conditioned	Thermostat Type	Vent Height (ft)	Vent Area (sf)	Verified Leakage or Housewrap
Residence	1344	12096	1.00	6.0	Yes	Setback	2.0	Standard	3 SLA

ATTIC AND ROOF DETAILS

Roof Type	Roof Mass (lb/sqft)	Roof Rise	Reflectance	Emissivity	Frame Depth (in.)	Spacing (in.)	R-Value Above Deck	R-Value Below Deck	Vent Area Ratio	Vent High
Tile	Heavy	5:12	0.10	0.85	3.5	24 oc	0.00	0.00	1/300	0.00

OPAQUE SURFACES

Surface	Frame Type	Area (sf)	U-factor	Sheathing R-val	Cavity R-val	Act Azm	Tilt	Solar Gains	Appendix JA4 Reference	Location/ Comments
1 Wall	Wood	185	0.074	19	0	0	90	Yes	4.3.1	A5
2 Wall	Wood	349	0.074	19	0	90	90	Yes	4.3.1	A5
3 Wall	Wood	198	0.074	19	0	180	90	Yes	4.3.1	A5
4 Wall	Wood	330	0.074	19	0	270	90	Yes	4.3.1	A5
5 AtticRad	Wood	1344	0.031	30	0	n/a	0	Yes	4.2.1	A20
6 Floor	Wood	1344	0.037	19	0	n/a	0	No	4.4.1	A4

FENESTRATION SURFACES

Orientation	Area (sf)	U-factor	SHGC	Act Azm	Tilt	Exterior Shade Type	Location/Comments
1 Door Back (N)	40.0	0.310	0.290	0	90	Standard	1
2 Wind Back (N)	15.0	0.310	0.290	0	90	Standard	2
3 Wind Right (E)	51.0	0.310	0.290	90	90	Standard	4
4 Wind Front (S)	30.0	0.290	0.220	180	90	Standard	7
5 Wind Front (S)	12.5	0.290	0.220	180	90	Standard	8
6 Door Left (W)	40.0	0.310	0.290	270	90	Standard	10
7 Wind Left (W)	30.0	0.310	0.290	270	90	Standard	11

Mandatory Measures Summary — MF-1R

Residential (Page 3 of 3)

Site Address:	Enforcement Agency:	Date:

EXCEPTION 1: Permanently installed low efficacy luminaires shall be allowed provided that they are controlled by a manual-on occupant sensor certified to comply with the applicable requirements of §119.
EXCEPTION 2: Permanently installed low efficacy luminaires in closets less than 70 square feet are not required to be controlled by a manual-on occupant sensor.

§150(k)11: Permanently installed luminaires located in rooms or areas other than in kitchens, bathrooms, garages, laundry rooms, closets, and utility rooms shall be high efficacy luimnaires.
EXCEPTION 1: Permanently installed low efficacy luminaires shall be allowed provided they are controlled by either a dimmer switch that complies with the applicable requirements of §119, or by a manual-on occupant sensor that complies with the applicable requirements of §119.
EXCEPTION 2: Lighting in detached storage building less than 1000 square feet located on a residential site is not required to comply with §150(k)11.

§150(k)12: Luminaires recessed into insulated ceilings shall be listed for zero clearance insulation contact (IC) by Underwriters Laboratories or other nationally recognized testing/rating laboratory; and have a label that certifies the lumiunaire is airtight with air leakage less then 2.0 CFM at 75 Pascals when tested in accordance with ASTM E283; and be sealed with a gasket or caulk between the luminaire housing and ceiling.

§150(k)13: Luminaires providing outdoor lighting, including lighting for private patios in low-rise residential buildings with four or more dwelling units, entrances, balconies, and porches, which are permanently mounted to a residential building or to other buildings on the same lot shall be high efficacy.
EXCEPTION 1: Permanently installed outdoor low efficacy luminaires shall be allowed provided that they are controlled by a manual on/off switch, a motion sensor not having an override or bypass switch that disables the motion sensor, and one of the following controls: a photocontrol not having an override or bypass switch that disables the photocontrol; OR an astronomical time clock not having an override or bypass switch that disables the astronomical time clock; OR an energy management control system (EMCS) not having an override or bypass switch that allows the luminaire to be always on
EXCEPTION 2: Outdoor luminaires used to comply with Exception1 to §150(k)13 may be controlled by a temporary override switch which bypasses the motion sensing function provided that the motion sensor is automatically reactivated within six hours.
EXCEPTION 3: Permanently installed luminaires in or around swimming pool, water features, or other location subject to Article 680 of the California Electric Code need not be high efficacy luminaires.

§150(k)14: Internally illuminated address signs shall comply with Section 148; OR not contain a screw-base socket, and consume no more than five watts of power as determined according to §130(d).

§150(k)15: Lighting for parking lots and carports with a total of for 8 or more vehicles per site shall comply with the applicable requirements in Sections 130, 132, 134, and 147. Lighting for parking garages for 8 or more vehicles shall comply with the applicable requirements of Sections 130, 131, 134, and 146

§150(k)16: Permanently installed lighting in the enclosed, non-dwelling spaces of low-rise residential buildings with four or more dwelling units shall be high efficacy luminaires.
EXCEPTION: Permanently installed low efficacy luminaires shall be allowed provided that they are controlled by an occupant sensor(s) certified to comply with the applicable requirements of §119.

Mandatory Measures Summary — MF-1R

Residential (Page 1 of 3)

Site Address:	Enforcement Agency:	Date:

NOTE: Low-rise residential buildings subject to the Standards must comply with all applicable mandatory measures listed, regardless of the compliance approach used. More stringent energy measures listed on the Certificate of Compliance (CF-1R, CF-1R-ADD, or CF-1R-ALT Form) shall supersede the items marked with an asterisk (*) below. This Mandatory Measures Summary shall be incorporated into the permit documents and the applicable features shall be considered by all parties as minimum component performance specifications whether they are shown elsewhere in the documents or in this summary. Submit all applicable sections of the MF-1R Form with plans.

DESCRIPTION

Building Envelope Measures:

§116(a)1: Doors and windows between conditioned and unconditioned spaces are manufactured to limit air leakage.
§116(a)4: Fenestration products (except field-fabricated windows) have a label listing the certified U-Factor, certified Solar Heat Gain Coefficient (SHGC), and infiltration that meets the requirements of §10-111(a).
§117: Exterior doors and windows are weather-stripped; all joints and penetrations are caulked and sealed.
§118(a): Insulation specified or installed meets Standards for Insulating Material. Indicate type and include on CF-6R Form.
§118(i): The thermal emittance and solar reflectance values of the cool roofing material meets the requirements of §118(i) when the installation of a Cool Roof is specified on the CF-1R Form.
*§150(a): Minimum R-19 insulation in wood-frame ceiling or equivalent U-factor.
§150(b): Loose fill insulation shall conform with manufacturer's installed design labeled R-Value.
*§150(c): Minimum R-13 insulation in wood-frame wall or equivalent U-factor.
*§150(d): Minimum R-13 insulation in raised wood-frame floor or equivalent U-factor.
§150(f): Air retarding wrap is tested, labeled, and installed according to ASTM E1677-95(2000) when specified on the CF-1R Form.
§150(g): Mandatory Vapor barrier installed in Climate Zones 14 or 16.
§150(l): Water absorption rate for slab edge insulation material alone without facings is no greater than 0.3%; water vapor permeance rate is no greater than 2.0 perm/inch and shall be protected from physical damage and UV light deterioration.

Fireplaces, Decorative Gas Appliances and Gas Log Measures:

§150(e)1A: Masonry or factory-built fireplaces have a closable metal or glass door covering the entire opening of the firebox.
§150(e)1B: Masonry or factory-built fireplaces have a combustion outside air intake, which is at least six square inches in area and is equipped with a with a readily accessible, operable, and tight-fitting damper and or a combustion-air control device.
§150(e)2: Continuous burning pilot lights and the use of indoor air for cooling a firebox jacket, when that indoor air is vented to the outside of the building, are prohibited.

Space Conditioning, Water Heating and Plumbing System Measures:

§110-§113: HVAC equipment, water heaters, showerheads, faucets and all other regulated appliances are certified by the Energy Commission.
§113(c)5: Water heating recirculation loops serving multiple dwelling units and High-Rise residential occupancies meet the air release valve, backflow prevention, pump isolation valve, and recirculation loop connection requirements of §113(c)5.
§115: Continuously burning pilot lights are prohibited for natural gas: fan-type central furnaces, household cooking appliances (appliances with an electrical supply voltage connection with pilot lights that consume less than 150 Btu/hr are exempt), and pool and spa heaters.
§150(h): Heating and/or cooling loads are calculated in accordance with ASHRAE, SMACNA or ACCA.
§150(i): Heating systems are equipped with thermostats that meet the setback requirements of Section 112(c).
§150(j)1A: Storage gas water heaters rated with an Energy Factor no greater than the federal minimal standard are externally wrapped with insulation having an installed thermal resistance of R-12 or greater.
§150(j)1B: Unfired storage tanks, such as storage tanks or backup tanks for solar water-heating system, or other indirect hot water tanks have R-12 external insulation or R-16 internal insulation where the internal insulation R-value is indicated on the exterior of the tank.
§150(j)2: First 5 feet of hot and cold water pipes closest to water heater tank, non-recirculating systems, and entire length of recirculating sections of hot water pipes are insulated per Standards Table 150-B.
§150(j)2: Cooling system piping (suction, chilled water, or brine lines),and piping insulated between heating source and indirect hot water tank shall be insulated to Table 150-B and Equation 150-A.
§150(j)2: Pipe insulation for steam hydronic heating systems or hot water systems >15 psi, meets the requirements of Standards Table 123-A.
§150(j)3A: Insulation is protected from damage, including that due to sunlight, moisture, equipment maintenance, and wind.
§150(j)3A: Insulation for chilled water piping and refrigerant suction lines includes a vapor retardant or is enclosed entirely in conditioned space.

Mandatory Measures Summary — MF-1R

Residential (Page 2 of 3)

Site Address:	Enforcement Agency:	Date:

§150(j)4: Solar water-heating systems and/or collectors are certified by the Solar Rating and Certification Corporation.

Ducts and Fans Measures:

§150(m)1: All air-distribution system ducts and plenums installed, are sealed and insulated to meet the requirements of CMC Sections 601, 602, 603, 604, 605 and Standard 6-5; supply-air and return-air ducts and plenums are insulated to a minimum installed level of R-4.2 or enclosed entirely in conditioned space. Openings shall be sealed with mastic, tape or other duct-closure system that meets the applicable requirements of UL 181, UL 181A, or UL 181B or aerosol sealant that meets the requirements of UL 723. If mastic or tape is used to seal openings greater than 1/4 inch, the combination of mastic and either mesh or tape shall be used
§150(m)1: Building cavities, support platforms for air handlers, and plenums defined or constructed with materials other than sealed sheet metal, duct board or flexible duct shall not be used for conveying conditioned air. Building cavities and support platforms may contain ducts. Ducts installed in cavities and support platforms shall not be compressed to cause reductions in the cross-sectional area of the ducts.
§150(m)2D: Joints and seams of duct systems and their components shall not be sealed with cloth back rubber adhesive duct tapes unless such tape is used in combination with mastic and draw bands.
§150(m)7: Exhaust fan systems have back draft or automatic dampers.
§150(m)8: Gravity ventilating systems serving conditioned space have either automatic or readily accessible, manually operated dampers.
§150(m)9: Insulation shall be protected from damage, including that due to sunlight, moisture, equipment maintenance, and wind. Cellular foam insulation shall be protected as above or painted with a coating that is water retardant and provides shielding from solar radiation that can cause degradation of the material.
§150(m)10: Flexible ducts cannot have porous inner cores.
§150(o): All dwelling units shall meet the requirements of ANSI/ASHRAE Standard 62.2-2007 Ventilation and Acceptable Indoor Air Quality in Low-Rise Residential Buildings. Window operation is not a permissible method of providing the Whole Building Ventilation required in Section 4 of that Standard.

Pool and Spa Heating Systems and Equipment Measures:

§114(a): Any pool or spa heating system shall be certified to have: a thermal efficiency that complies with the Appliance Efficiency Regulations; an on-off switch mounted outside of the heater; a permanent weatherproof plate or card with operating instructions; and shall not use electric resistance heating or a pilot light.
§114(b)1: Any pool or spa heating equipment shall be installed with at least 36" of pipe between filter and heater, or dedicated suction and return lines, or built-up connections for future solar heating
§114(b)2: Outdoor pools or spas that have a heat pump or gas heater shall have a cover.
§114(b)3: Pools shall have directional inlets that adequately mix the pool water, and a time switch that will allow all pumps to be set or programmed to run only during off-peak electric demand periods.
§150(p): Residential pool systems or equipment meet the pump sizing, flow rate, piping, filters, and valve requirements of §150(p).

Residential Lighting Measures:

§150(k)1: High efficacy luminaires or LED Light Engine with Integral Heat Sink has an efficacy that is no lower than the efficacies contained in Table 150-C and is not a low efficacy luminaire as specified by §150(k)2.
§150(k)3: The wattage of permanently installed luminaires shall be determined as specified by §130(d).
§150(k)4: Ballasts for fluorescent lamps rated 13 Watts or greater shall be electronic and shall have an output frequency no less than 20 kHz.
§150(k)5: Permanently installed night lights and night lights integral to a permanently installed luminaire or exhaust fan shall contain only high efficacy lamps meeting the minimum efficacies contained in Table 150-C and shall not contain a line-voltage socket or line-voltage lamp holder; OR shall be rated to consume no more than five watts of power as determined by §130(d), and shall not contain a medium screw-base socket.
§150(k)6: Lighting integral to exhaust fans, in rooms other than kitchens, shall meet the applicable requirements of §150(k).
§150(k)7: All switching devices and controls shall meet the requirements of §150(k)7.
§150(k)8: A minimum of 50 percent of the total rated wattage of permanently installed lighting in kitchens shall be high efficacy.
EXCEPTION: Up to 50 watts for dwelling units less than or equal to 2,500 ft^2 or 100 watts for dwelling units larger than 2,500 ft^2 may be exempt from the 50% high efficacy requirement when: all low efficacy luminaires in the kitchen are controlled by a manual on occupant sensor, dimmer, energy management system (EMCS), or a multi-scene programmable control system; and all permanently installed luminaries in garages, laundry rooms, closets greater than 70 square feet, and utility rooms are high efficacy and controlled by a manual-on occupant sensor.
§150(k)9: Permanently installed lighting that is internal to cabinets shall use no more than 20 watts of power per linear foot of illuminated cabinet.
§150(k)10: Permanently installed luminaires in bathrooms, attached and detached garages, laundry rooms, closets and utility rooms shall be high efficacy.

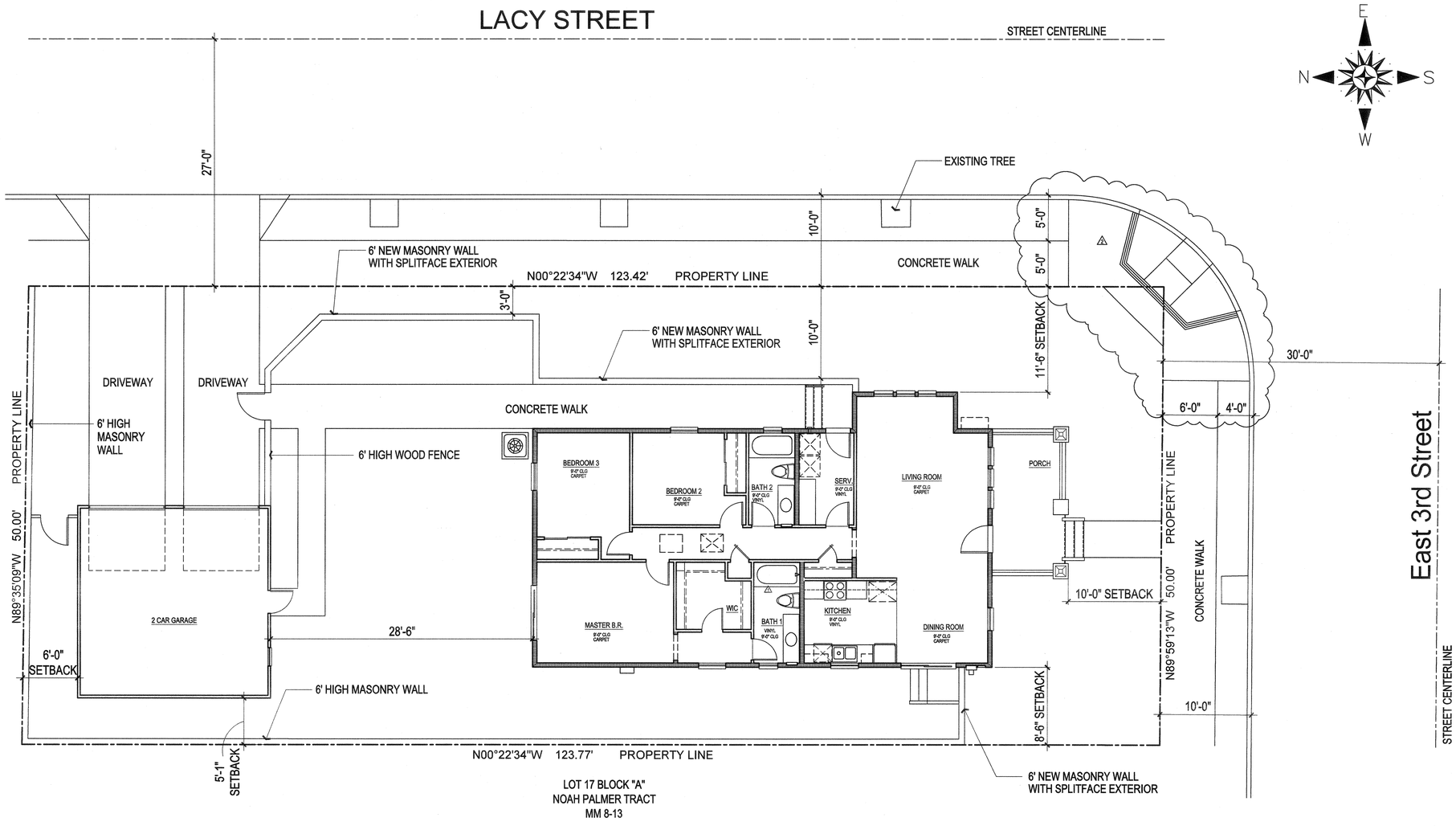
HERITAGE ENERGY GROUP
TITLE 24 ENERGY CONSULTANTS

470 Wald
Irvine, CA 92618
T: 949-789-7221
F: 949-789-7222

2008 TITLE 24 ENERGY COMPLIANCE SHEET

Mandatory Measures

T-24.MM



ARCHITECTURAL SITE PLAN

SCALE: 3/16" = 1'-0"

General Notes:

1. Projects that disturb less than acre of soil and are not part of a larger common plan of development which in total disturbs one acre or more, shall manage storm water drainage during construction. In order to manage storm water drainage during construction, one or more of the following measures shall be implemented to prevent flooding of adjacent property, prevent erosion and retain soil runoff on the site. CGC 4.106.2
   a. Retention basins of sufficient size shall be utilized to retain strom water on the site.
   b. Where storm water is conveyed to a public drainage system, collection point, gutter or similar disposal method, water shall be filtered by use of a barrier system, wattle or other method approved by the enforcing agency.
   c. Compliance with a lawfully enacted storm water management ordinance.
2. The Site Shall be planned and developed to keep surface water away from buildings. plans shall be provided and approved by the City Engineer that show site grading and provide for storm water retention and drainage during construction. BMP's that are currently enforced by the City Engineer must be implemented prior to initial inspection by the Building Department. CGC 4.106.3

Project Location: 717 East 3rd Street, Santa Ana, Ca. 92701

11001A2.DWG

Revisions

No.	Date	Revision
1	10-10-11	Building Department Corrections
2	11-07-11	Building Department Corrections

Architect

ritner|GROUP
503 32nd STREET STREET, SUITE 130
NEWPORT BEACH, CA 92663
TELEPHONE: (949) 999-3255 FAX: (949) 999-3259

Project

East 3rd Street

HABITAT FOR HUMANITY OF ORANGE COUNTY

717 East 3rd Street
Santa Ana, CA 92701
(714) 434-6200

Project Number: 11001
Drawn By: RJR
Checked By:

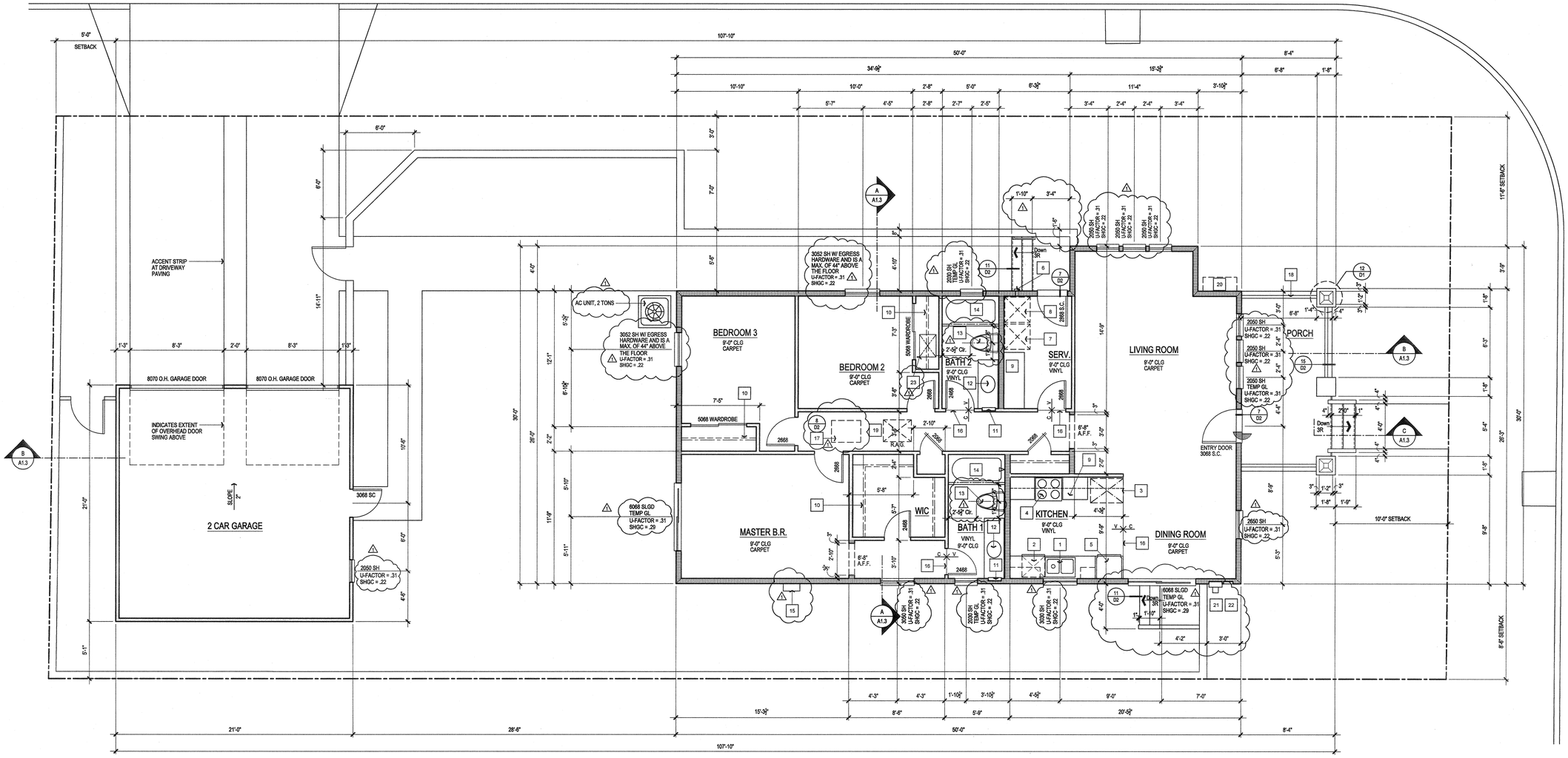
Sheet Title

ARCHITECTURAL SITE PLAN

Scale: 3/16"=1'-0"
Date: 7/27/11

Sheet Number

A1.1



FLOOR PLAN

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

FLOOR PLAN NOTES:

1. GLAZING IN SWINGING, SLIDING, AND BIFOLD DOORS 9 SQUARE FEET OR LESS SHALL BE A MINIMUM CATEGORY CLASSIFICATION OF I (CPSC 16 CFR 1201) AND II (CPSC 16 CFR 1201) WHEN MORE THAN 9 SQUARE FEET OR SLIDING, (TABLE R308.3.1 (1), R308.3 (1)) (SLIDING DOORS)

FLOOR PLAN KEY NOTES:

- ASBD - AS SELECTED BY DEVELOPER (ALLOWANCE PROVIDED BY DEVELOPER)
- IPMS - INSTALL PER MANUFACTURER'S SPECIFICATIONS.

1. KITCHEN SINK (ASBD) (IPMS)
2. BUILT-IN DISHWASHER. (ASBD) (IPMS)
3. REFRIGERATOR, PROVIDE RECESSED COLD WATER BIBB FOR ICE MAKER. (ASBD) (IPMS)
4. GAS RANGE WITH VENT HOOD ABOVE VENT TO OUTSIDE AIR (ASBD) (IPMS)
5. PANTRY. (SEE INTERIOR ELEVATIONS)
6. DRYER VENT
7. WASHER SPACE: PROVIDE RECESSED HOT AND COLD WATER BIBBS AND WASTE DRAIN.
8. DRYER SPACE: PROVIDE METAL DUCT FOR DRYER EXHAUST EXTENDING TO OUTSIDE AIR WITH BACK DRAFT DAMPER. PER C.M.C. 504.3,703 AND 704
9. BUILT-IN CABINETS - (SEE INTERIOR ELEVATIONS.)
10. SHELF AND POLE.
11. RECESSED MEDICINE CABINET. (ASBD)
12. PORCELAIN SINK - PROVIDE TAIL PIECE TO LAV'S FOR PRIMARY CONDENSE LINES. SECONDARY LINES TO DISCHARGE AT CONSPICUOUS LOCATION.
13. PORCELAIN WATER CLOSET TO BE A MAXIMUM 1.6 GALLONS PER FLUSH. C.P.C. 402.0
14. 30"X60" ONE PIECE TUB/SHOWER. WALLS ABOVE BATH TUBS WITH SHOWER HEADS INSTALLED SHALL BE FINISHED WITH A SMOOTH , NONABSORBENT SURFACE TO A HEIGHT OF NOT LESS THAN 72". ABOVE THE FLOOR (CRC R307.2)
15. TANKLESS WATER HEATER: TAKAGI T-K3-OS. SIZE 190,000 BTU/HR OR APPROVED EQUAL
16. LINE OF FLOOR MATERIAL CHANGE.
17. 30" X 30" ATTIC ACCESS.
18. 36" HIGH GUARDRAIL & HANDRAILS - SEE DETAILS
19. F.A.U. IN ATTIC SPACE ABOVE. PROVIDE LIGHT,SWITCH, 110V RECEPTACLE, FLUE GAS AND A MINIMUM OF 30" WIDE WORKING SPACE IN FRONT OF FURNACE AND A PASSAGEWAY WITH ATTIC ACCESS WITHIN 20'-0" OF F.A.U. PER C.M.C. 904.11, PROVIDE COMBUSTION AIR PER C.M.C. 701.3 PROVIDE ANCHORAGE OF FAU UNITS PER C.M.C. 303.4
20. GAS METER AREA
21. ELECTRIC METER
22. CABLE TV/ TELEPHONE
23. 18"x24" CRAWL SPACE ACCESS (CRC R408.4)

INTERIOR ELEVATION KEY (A / B / C / D — A1.5)

AREA TABULATION	
LIVING	1,344 SQ. FT.
PORCH	128 SQ. FT.
GARAGE	441 SQ. FT.

INSULATION SCHEDULE	
CEILING	R-30
EXTERIOR WALL	R-19
RAISED FLOOR	R-19
SLAB EDGE	NONE
GLAZING	ALL DUAL PANE
DUCT	R-4.2

UNDER FLOOR AREA TABULATION

VENTILATION REQUIRED: ATTIC AREA = 1,344 SQ. FT. / 150 =	8.96	SQ. FT.
X 144 =	1,290	SQ. IN.
VENTILATION PROVIDED:		
(13) 14" x 8" VENT	100 SQ. IN. EA. =	1,300 SQ. IN.
TOTAL VENTILATION PROVIDED =		1,300 SQ. IN.

KEY

- INDICATES LOW WALL
- 2 x 4 STUD WALL
- 2 x 6 STUD WALL
- SOFFIT/DROP CEILING

Project Location: 717 East 3rd Street, Santa Ana, Ca. 92701

11001A2.DWG

Revisions

No.	Date	Revision
1	10-10-11	Building Department Corrections

Architect

ritner|GROUP
503 32nd STREET STREET, SUITE 130
NEWPORT BEACH, CA 92663
TELEPHONE: (949) 999-3255 FAX: (949) 999-3259

Project

East 3rd STREET

HABITAT FOR HUMANITY OF ORANGE COUNTY

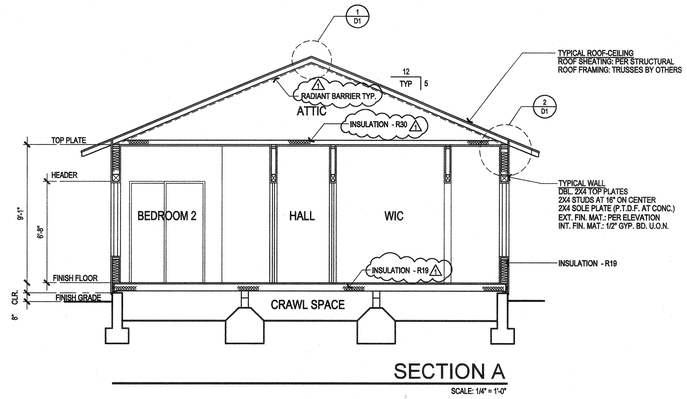
717 East 3rd Street
Santa Ana, CA 92701
(714) 434-6200

Project Number: 11001
Drawn By: RJR
Checked By:

Sheet Title: FLOOR PLAN

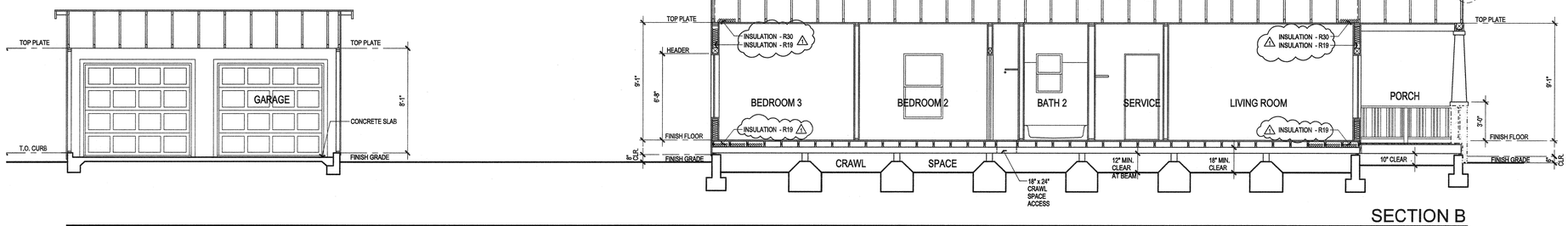
Scale: 1/4"=1'-0"
Date: 7/27/11

Sheet Number: A1.2



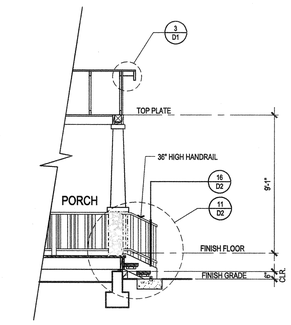
SECTION A

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



SECTION B

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



SECTION C

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

Project Location: 717 East 3rd Street, Santa Ana, Ca. 92701

11001A4.DWG

Revisions			
	No.	Date	Revision
	1	10-10-11	Building Department Corrections

Architect

ritner|GROUP

503 32nd STREET, SUITE 130

NEWPORT BEACH, CA 92663

TELEPHONE: (949) 999-3255 FAX: (949) 999-3259

Project

East 3rd STREET

HABITAT FOR HUMANITY OF ORANGE COUNTY

717 East 3rd Street
Santa Ana, CA 92701
(714) 434-6200

Project Number: 11001

Drawn By: RJR

Checked By:

Sheet Title

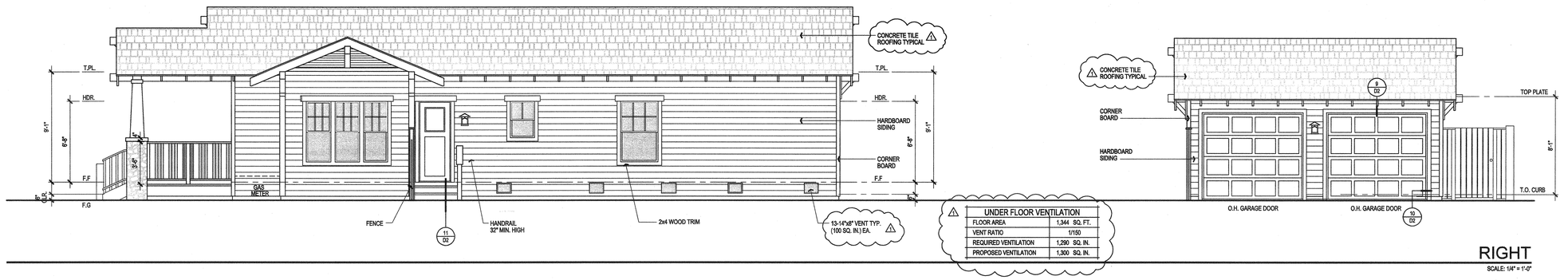
SECTIONS

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

Date: 7/27/11

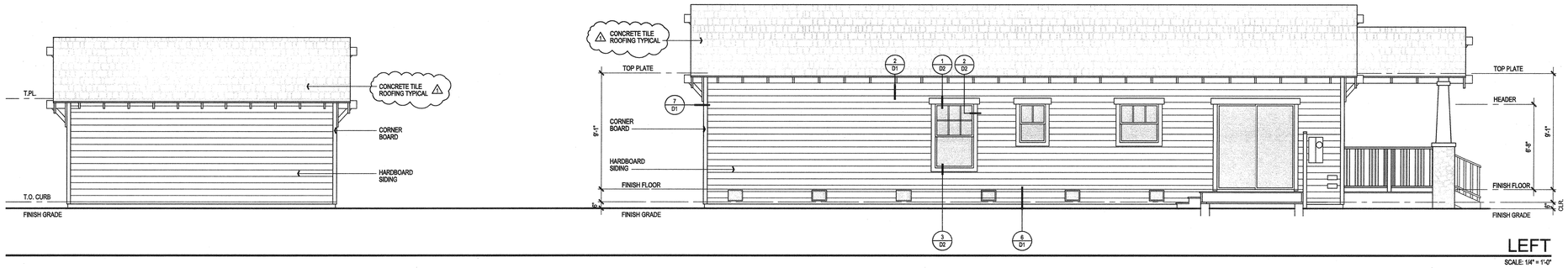
Sheet Number

A1.3



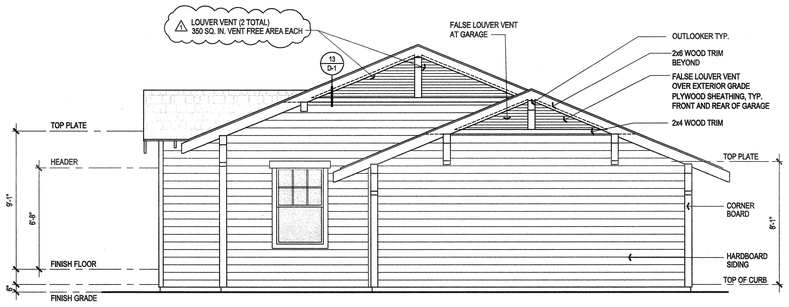
RIGHT

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



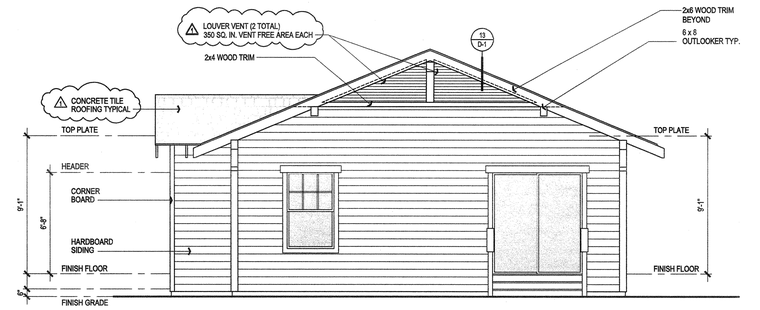
LEFT

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



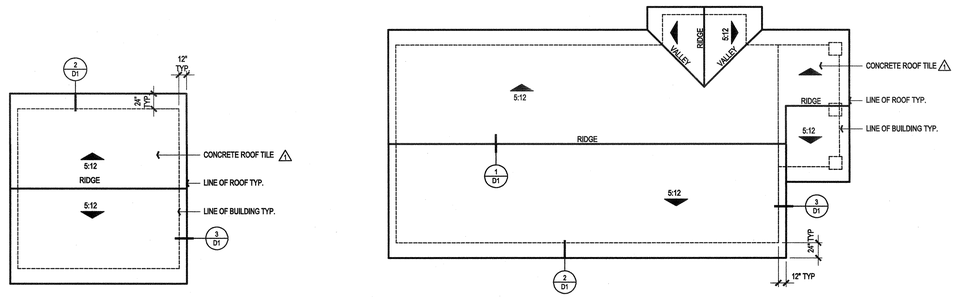
REAR - GARAGE

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



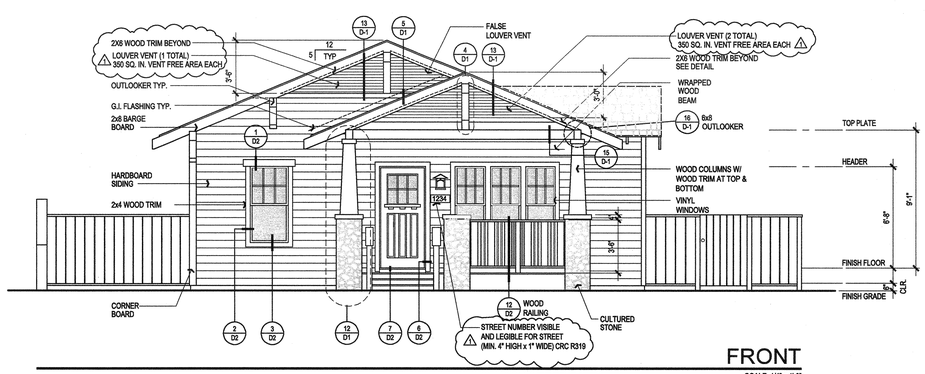
REAR - HOUSE

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



ROOF PLAN

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



FRONT

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

ATTIC AREA TABULATION

VENTILATION REQUIRED:			
ATTIC AREA = 1,472 SQ. FT. / 150 =		9.81	SQ. FT.
X 144 =		1,413	SQ. IN.
	FURNACE COMBUSTION AIR:	45	SQ. IN.
	TOTAL VENTILATION REQUIRED:	1,458	SQ. IN.
GABLE VENTILATION PROVIDED:			
(5) CUSTUM GABLE VENT(S)	350 SQ. IN. EA. =	1,750	SQ. IN.
TOTAL VENTILATION PROVIDED =		1,750	SQ. IN.

ELEVATION / ROOF PLAN NOTES

ROOF:	CONCRETE TILE ROOFING BY EAGLELITE, CLASS A ROOF COVERING OR APPROVED EQUAL, ICC # ESR-1900
SIDING:	HARDBOARD LAP SIDING OVER TYVEK BUILDING PAPER
G.I. FLASHING:	MINIMUM 26 GAGE GALVINIZED SHEET METAL
WALL OPENINGS:	PROVIDE VAPOR BARRIER PER DETAIL 4/D-2

Project Location: 717 East 3rd Street, Santa Ana, Ca. 92701

Revisions

No.	Date	Revision
1	10-10-11	Building Department Corrections

Architect

ritner|GROUP
503 32nd STREET STREET, SUITE 130
NEWPORT BEACH, CA 92663
TELEPHONE: (949) 999-3255 FAX: (949) 999-3259

Project

East 3rd STREET

HABITAT FOR HUMANITY OF ORANGE COUNTY

717 East 3rd Street
Santa Ana, CA 92701
(714) 434-6200

Project Number: 11001
Drawn By: RJR
Checked By:

Sheet Title

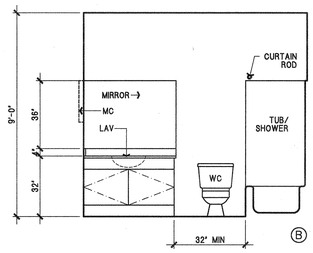
EXTERIOR ELEVATIONS

Scale: 1/4"=1'-0"
Date: 7/27/11

Sheet Number

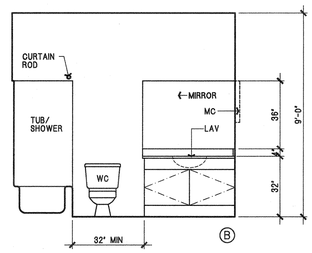
A1.4

11001A4DWG



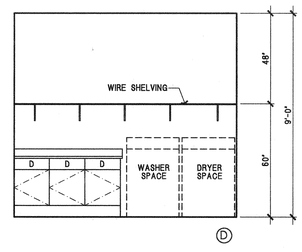
BATH 1

COUNTERTOP/SPLASH: -
CABINET FINISH: PRE-FINISHED



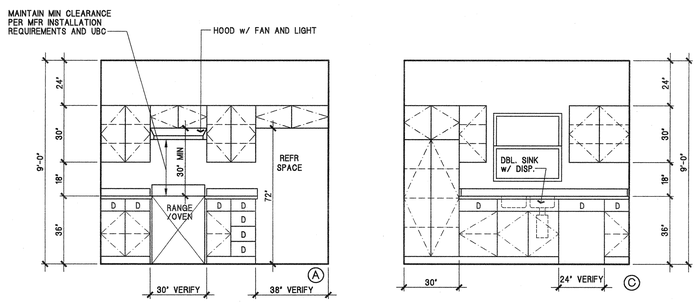
BATH 2

COUNTERTOP/SPLASH: -
CABINET FINISH: PRE-FINISHED



SERVICE

COUNTERTOP/SPLASH: -
CABINET FINISH: PRE-FINISH



KITCHEN

COUNTERTOP/SPLASH: PLASTIC LAMINATE
CABINET FINISH: PRE-FINISH

INTERIOR ELEVATIONS

Project Location: 717 East 3rd Street, Santa Ana, Ca. 92701

11001A5.DWG

Revisions		
No.	Date	Revision
1	10-10-11	Building Department Corrections

Architect

ritner|GROUP

503 32nd STREET STREET, SUITE 130

NEWPORT BEACH, CA 92663

TELEPHONE: (949) 999-3255 FAX: (949) 999-3259

Project

East 3rd STREET
HABITAT FOR HUMANITY OF ORANGE COUNTY

717 East 3rd Street
Santa Ana, CA 92701
(714) 434-6200

Project Number: 11001

Drawn By: RJR

Checked By:

Sheet Title

INTERIOR ELEVATIONS

Scale: 3/8"=1'-0"

Date: 7/27/11

Sheet Number

A1.5

⚠1 WORKSHEET (WS-1)
BASELINE WATER USE

BASELINE WATER USE CALCULATION TABLE									
FIXTURE TYPE	FLOW RATE (gpm)[2]		DURATION		DAILY USES		OCCUPANTS[3,4]		GALLONS PER DAY
Showerheads	2.5	X	5 min.	X	1	X	NA	=	0
Showerheads residential	2.5	X	8 min.	X	1	X	4	=	80
Lavatory faucets residential	2.2	X	.25 min.	X	3	X	4	=	6.6
Lavatory faucets nonresidential	0.5	X	.25 min.	X	3		NA	=	0
Kitchen faucets	2.2	X	4 min.	X	1	X	4	=	35.2
Replacement aerators	2.2	X		X		X	NA	=	0
Wash fountains	2.2	X		X		X	NA	=	0
Metering faucets	0.25	X	.25 min.	X	3	X	NA	=	0
Metering faucets for wash fountains	2.2	X	.25 min.	X		X	NA	=	0
Gravity tank type water closets	1.6	X	1 flush	X	1 male[1] 3 female	X	2M & 2F	=	12.8
Flushometer tank water closets	1.6	X	1 flush	X	1 male[1] 3 female	X	NA	=	0
Flushometer valve water closets	1.6	X	1 flush	X	1 male[1] 3 female	X	NA	=	0
Electromechanical hydraulic water closets	1.6	X	1 flush	X	1 male[1] 3 female	X	NA	=	0
Urinals	1.0	X	1 flush	X	2 male	X	NA	=	0
Total daily baseline water use (BWU)								=	134.6
134.6 (BWU) X .80 = 107.68 Allowable water use									

1. The daily use number shall be increased to three if urinals are not installed in the room.
2. The flow rate is from the CEC Appliance Efficiency Standards, Title 20 *California Code of Regulations*; where a conflict occurs, the CEC standards shall apply.
3. For low-rise residential occupancies, the number of occupants shall be based on two persons for the first bedroom, plus one additional person for each additional bedroom.
4. For nonresidential occupancies, refer to Table A, Chapter 4, 2010 *California Plumbing Code*, for occupant load factors.

⚠1 WORKSHEET (WS-2)
20 PERCENT REDUCTION WATER USE

20 PERCENT REDUCTION WATER USE CALCULATION TABLE									
FIXTURE TYPE	FLOW RATE (gpm)[2]		DURATION		DAILY USES		OCCUPANTS[3,4]		GALLONS PER DAY
Showerheads	0	X	5 min.	X	1	X	NA	=	0
Showerheads residential	1.75	X	8 min.	X	1	X	4	=	56
Lavatory faucets residential	1.5	X	.25 min.	X	3	X	4	=	4.5
Lavatory faucets nonresidential	0	X	.25 min.	X	3	X	NA	=	0
Kitchen faucets	1.8	X	4 min.	X	1	X	4	=	28.8
Replacement aerators	0	X		X		X	NA	=	0
Wash fountains	0	X		X		X	NA	=	0
Metering faucets	0	X	.25 min.	X	3	X	NA	=	0
Metering faucets for wash fountains	0	X	.25 min.	X		X	NA	=	0
Gravity tank type water closets	0	X	1 flush	X	1 male[1] 3 female	X	NA	=	0
HET[5] High efficiency toilet	1.28	X	1 flush	X	1 male[1] 3 female	X	2M & 2F	=	10.24
Flushometer tank water closets	0	X	1 flush	X	1 male[1] 3 female	X	NA	=	0
Flushometer valve water closets	0	X	1 flush	X	1 male[1] 3 female	X	NA	=	0
Electromechanical hydraulic water closets	0	X	1 flush	X	1 male[1] 3 female	X	NA	=	0
Urinals	0	X	1 flush	X	2 male	X	NA		0
Urinals nonwater supplied	0.0	X	1 flush	X	2 male	X	NA	=	0
Proposed water use								=	99.54
99.54 (BWU from WS-1) X .80 = 79.63 Allowable water use									

1. The daily use number shall be increased to three if urinals are not installed in the room.
2. The flow rate is from the CEC Appliance Efficiency Standards, Title 20 *California Code of Regulations*; where a conflict occurs, the CEC standards shall apply.
3. For low-rise residential occupancies, the number of occupants shall be based on two persons for the first bedroom, plus one additional person for each additional bedroom.
4. For nonresidential occupancies, refer to Table A, Chapter 4, 2010 *California Plumbing Code*, for occupant load factors.
5. Includes single and dual flush water closets with an effective flush of 1.28 gallons or less.

Single Flush Toilets - The effective flush volume shall not exceed 1.28 gallons (4.8 liters). The effective flush volume is the average flush volume when tested in accordance with ASME A 112.19.233.2.

Dual Flush Toilets - The effective flush volume shall not exceed 1.28 gallons (4.8 liters). The effective flush volume is defined as the composite, average flush volume of two reduced flushes and one full flush. Flush volumes will be tested in accordance with ASME A 112.19.2 and ASME A 112.19.14.

⚠2

VOLTS = 120/240 1 Phase — MAIN = 200 Amperes — PANEL NAME = House Panel — LOCATION = SW corner of house — FEEDER SIZE = #4 Min — MOUNTING = Outside btwn Studs

Check 3 hour loads below	LOAD DESCRIPTION	WATTAGE ØA	WATTAGE ØB	# of LTG	# of REC	# of MISC	CIR	BRK	BRK	CIR	# of MISC	# of REC	# of LTG	WATTAGE ØA	WATTAGE ØB	LOAD DESCRIPTION	Check 3 hour loads below
	Solar Reserve						1		20	2		1		1030		Dishwasher	
	Solar Reserve						3		20	4		1			690	Disposal	
	Washer	750			1		5	20	20	6		1		1500		Refrigerator	
	Dryer		750		1		7	20	20	8		3			200	Outside Outlets (1)	
	Kitchen 1 Outlets (1)	1500			2		9	20	15	10		9		560		Living/Dine Outlets (2)	
	Kitchen 2 Outlets (1)		1500		2		11	20	15	12			3		200	Dine/Bath 1 Lights (2)	
	Furnace/Air Handler	1500			1		13	20	15	14		8		500		Bed 1 & 2 Outlets (2)	
	Bath 2 Outlets (1)		100		1		15	20	15	16		7			403	Bed 3/Hall Outlets (2)	
	Kit/Bath2/Serv Lights	260		4			17	15	20	18		1		100		Bath 1 Outlets (1)	
	Garage (1)		340	3	1	1	19	20	15	20	2				300	Tankless & Pump	
	Bath 2/Attic Lights	200		3			21	15	15	22	5		4	560		SD/Bed 3 Lights (2)	
	AC		1875			1	23	30	20	24	2				2030	Microwave/Stove	
	AC	1875				1	25	30	15	26			4	270		Outside Lts & Address	
							27			28							
							29			30							
							31			32							
							33			34							
							35			36							
							37			38							
							39			40							
							41			42							

SUB-TOTAL 3,750 — TOTAL WATTS 12,093 — ADJUSTED WATTS 13,968 — SUB-TOTAL 8,343

(1) GFCI (2) AFCI

0

TOTAL WATTS plus 25% of any loads that will be on for three hours or longer as well as 25% of the largest motor = ADJUSTED WATTS
ADJUSTED WATTS Divided by the Highest Voltage = CALCULATED LOAD Example: 22000 Watts Divided by 240 Volts = 91.7 Amperes

CALCULATED LOAD = 58.2 Amperes

LM = AC Compressor LCL = 85' Garage Power & 55' Air Conditioning

⚠2

Residential Standard Calculation

by: John Sokolik — Version 7.28 — 9/25/97

Job Name
Habitat for Humanity
717 East 3rd Street
Santa Ana CA 92705
0

10/24/11 11:34

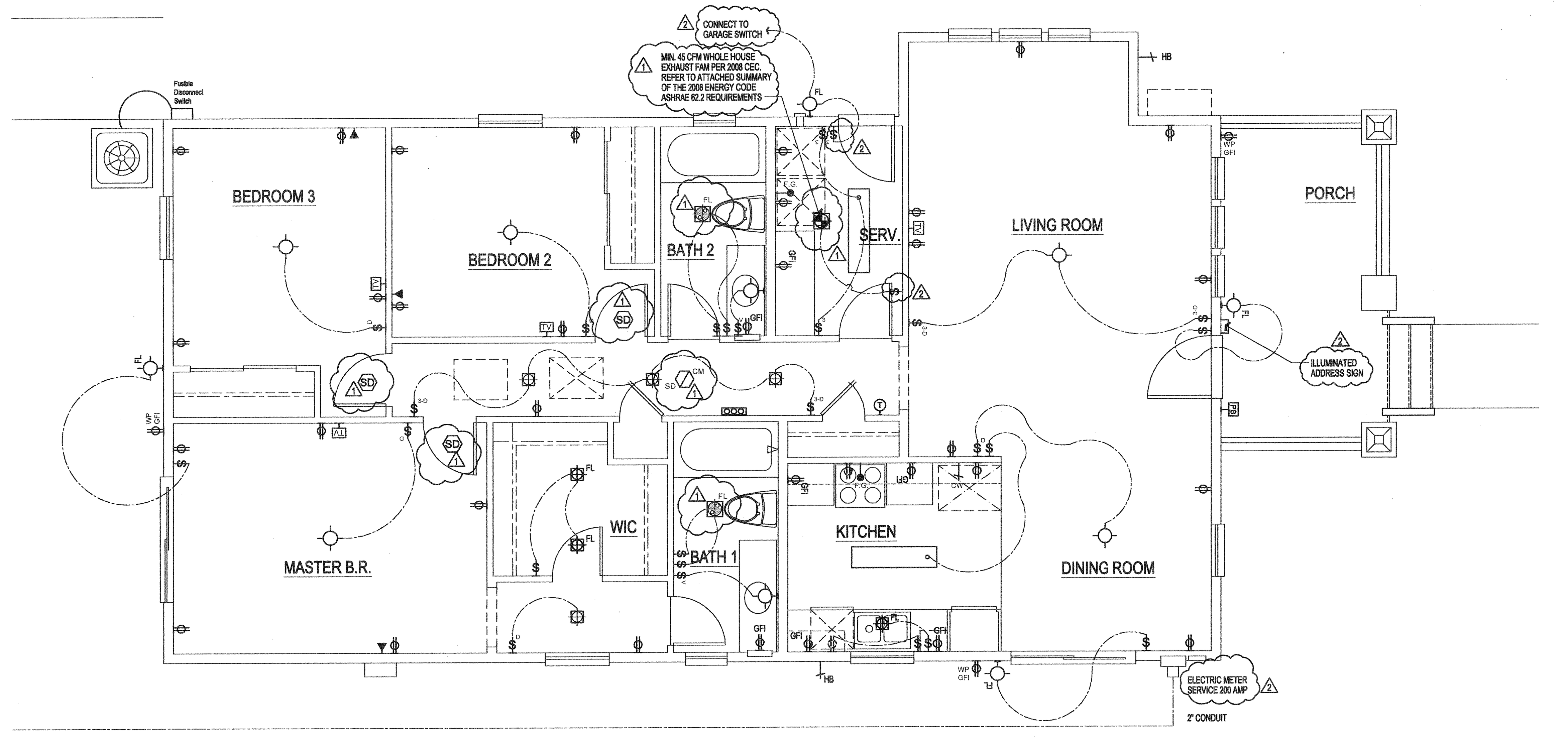
STEP 1 Article 220.42 & 220.52
sq. ft — 1344 General Lighting load 4,032 VA
2 Small Appliance 3,000 VA
1 Laundry circuit 1,500 VA
Gen.Lgt.,Sm App.& Laun. Load 8,532 VA
3,000 VA @ 100%= 3,000 VA
5,532 VA @ 35% = 1,936 VA
VA @ 25% = VA
General Lighting Demand Load 4,936 VA

STEP 2 Article 220.50 & 220.51
2 ton 3,750 VA AHU 1 1500 1,500 VA — Total Heat Load 1,500 VA
A/C #2 VA AHU 2 Select VA — Total CU Load 3,750 VA
A/C #3 VA AHU 3 Select VA — **Greater of Heat @ 100% vs.A/C @ 100% 3,750 VA**
A/C #4 VA AHU 4 Select VA
A/C #5 VA AHU 5 Select VA

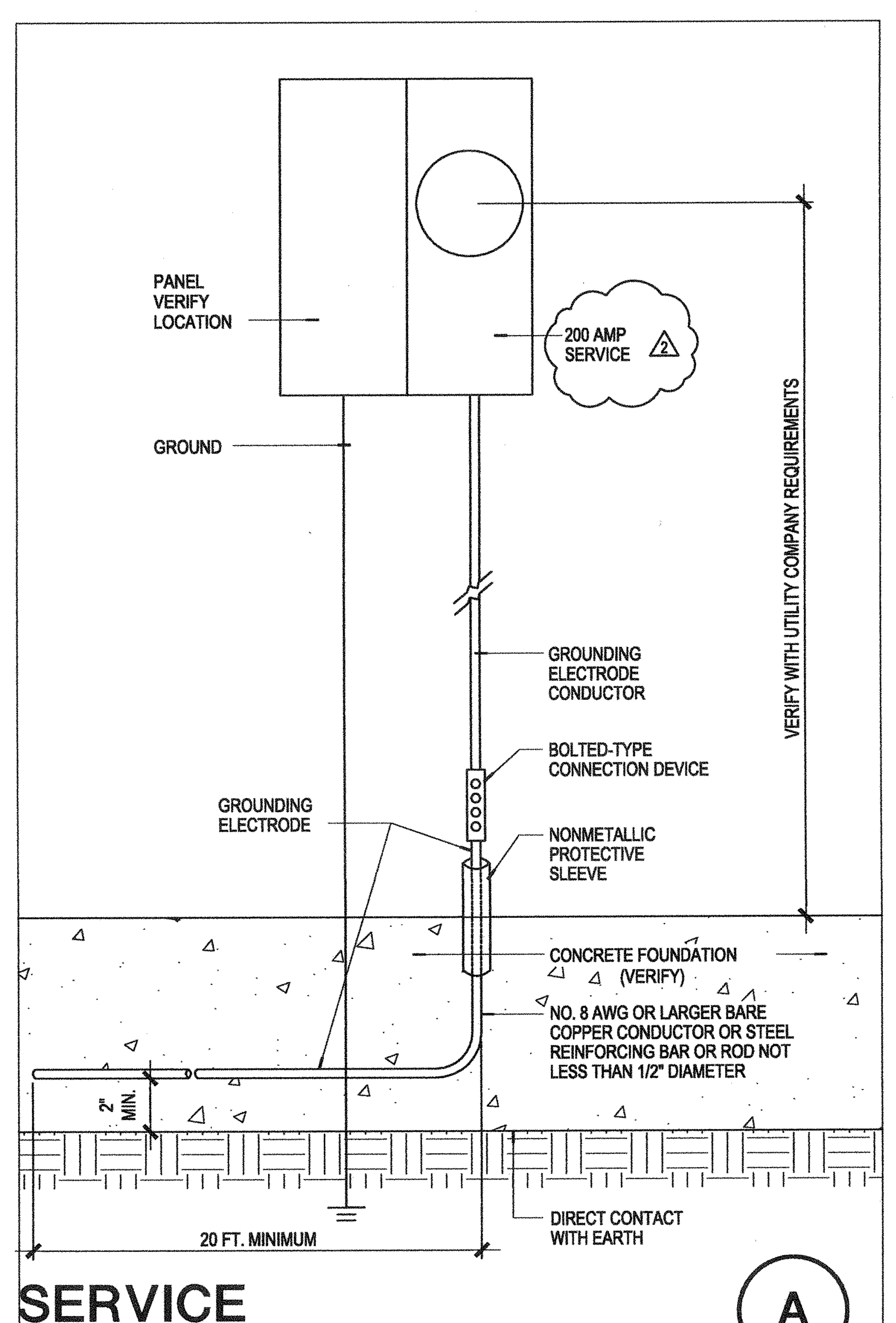
STEP 3 Article 220.53 — **Appliance Demand Load 3,938 VA**
4,500 VA — Water Heater VA
1,500 VA — 1 Refrigerator 1,500 VA — **Dryer Demand Load VA**
600 VA — Freezer VA
1,030 VA — 1 Dishwasher 1,030 VA — **Range Demand Load VA**
690 VA — 1 Disposal 690 VA
780 VA — Trash Compactor VA — **Service Demand 12,624 VA**
1,630 VA — 1 Microwave 1,630 VA
Central Vac VA — **Demand Load 53 A**
340 VA — Mini Refrigerator VA
400 VA — 1 Range hood 400 VA — **Neutral Demand 36 A**
540 VA — Wine Cooler VA
1,500 VA — Ironing Center VA — **Min.Service Req. 100 A**
select — Jacuzzi Tub VA
select — Sprinkler Pump VA — **Min. Feeder size 4**
select — Well Pump VA — **Min. Neutral size 6**
select — Fountain Pump VA — **Eq. Grding Cond. 8**
select — Elevator VA — ☐ Copper
Pool Equip. Panel VA 100% Demand
VA No Demand
VA No Demand — Total Appliance Load 5,250 VA
4 or more demand @ 75% plus 100% demand loads 3,938 VA

STEP 4 Article 220.54
Electric Clothes Dryers
STEP 5 Article 220.55
Electric Ranges — Col C demand W
Number of appliances
Cooktop — Col B demand
☒ Check Box for Gas Range — Cooktop — Col B demand
Oven(s) — Col B demand
Oven(s) — Col B demand
Number of appliances — Dem. Factor 0%
Cooktop & Oven Demand Load W

jmp1jds@earthlink.net

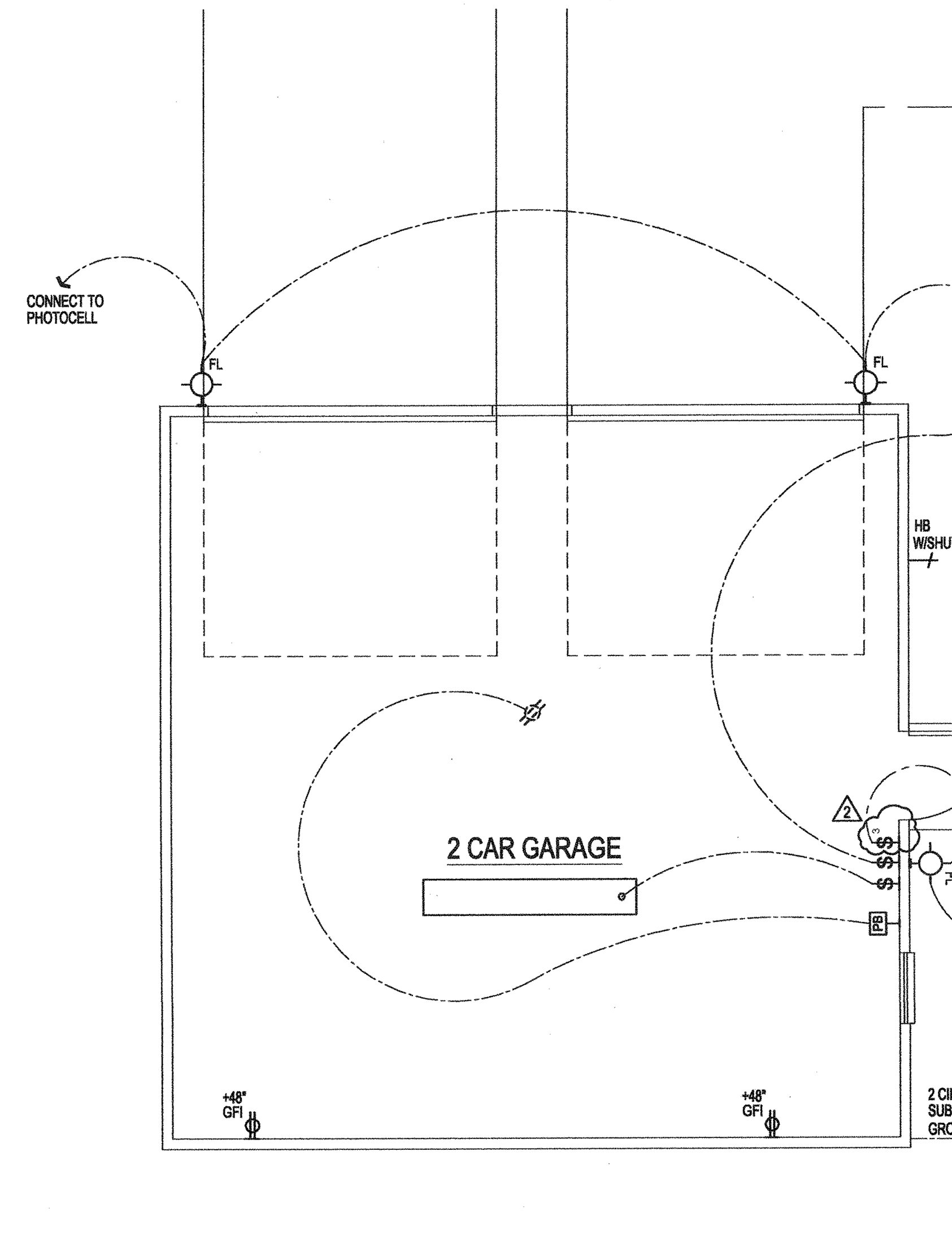


RESIDENCE UTILITY PLAN



SERVICE

SCALE: 1-1/2"=1'-0" — SERVICE (A)



GARAGE UTILITY PLAN

ELECTRICAL LEGEND

	RECESSED FLUORESCENT CEILING FIXTURE / SHALL BE I.C. RATED CANS
	RECESSED CAN LIGHT / SHALL BE I.C. RATED CANS
	RECESSED CAN - EYEBALL / SHALL BE I.C. RATED CANS
	CEILING SURFACE MOUNT LIGHT
	WALL SURFACE MOUNT LIGHT (AT +72" U.O.N.)
	FLUORESCENT FIXTURE
	WALL FLUORESCENT FIXTURE (AT +72" U.O.N.)
	DUPLEX OUTLET AFCI
GFI W.P.	SPECIAL PURPOSE DUPLEX OUTLET (I.E. W.P. - G.F.I.)
	SWITCHED DUPLEX OUTLET AFCI
220	RANGE/DRYER 220V OUTLET
APPLIANCE POWER	DIRECT WIRE CONNECTION
	TELEPHONE OUTLET
TV	CATV (TELEVISION) OUTLET
T	THERMOSTAT
	UNDER-COUNTER OR CONCEALED OUTLETS
CLG	CEILING MOUNTED DUP. OUTLET
TV	CATV W/ DATA TRANSFER/NETWORK OUTLET OR CATEGORY 5
FL	CEILING FLUORESCENT FIXTURE
$	SINGLE POLE SWITCH
$3 $4	THREE-WAY SWITCH, FOUR-WAY SWITCH
$D	SINGLE POLE SWITCH - DIMMER
$V	USER DEFINED SWITCH / V-VACANCY SENSOR
PB	PUSH BOTTOM
	CHIMES
FL	EXHAUST FAN/FLUORESCENT LIGHT /SHALL BE I.C. RATED CAN
	EXHAUST FAN
	EXHAUST FAN/LIGHT
	EXHAUST FAN/LIGHT/HEAT
SD CM	SMOKE / CARBON MONOXIDE DETECTOR
SD	SMOKE DETECTOR
KEY F.G.	GAS KEY & GAS
HB	HOSE BIBB

ELECTRICAL PLAN NOTES

1. ALL ELECTRICAL WORK SHALL BE IN CONFORMANCE WITH LOCALLY ADOPTED BUILDING CODE AND ADMENDMENTS. ALL ELECTRICAL WORK SHALL ALSO CONFORM WITH THE LOCAL BUILDING ENERGY EFFICIENCY STANDARDS.
2. PROVIDE SERVICE PANEL WITH U.F.E.R. GROUND AND BARE COPPER WIRE BONDED TO UNDERGROUND COLD WATER PIPE.
3. PROVIDE RECEPTACLE AND GAS SUPPLY TO FORCED AIR UNIT. PROVIDE A QUICK DISCONNECT AT ALL MECHANICAL EQUIPTMENT AND A SERVICE RECEPTACLE WITHIN 25 FEET.
4. ⚠1 PROVIDE APPROVED CEILING MOUNTED SMOKE/ CARBON MONOXIDE DETECTORS AS SHOWN ON PLAN WITH PERMANENT WIRING AND BATTERY BACK- UP, LOCATED A MIN. OF 3' IN FRONT OF THE KITCHEN SIDE OF THE RETURN AIR GRILL. PROVIDE AN ADDITIONAL DETECTOR NEAR THE TOP OF A VAULTED OR HIGH CEILING, IF THE VAULT IS 24" HIGHER THAN THE HALLWAY TO THE BEDROOMS. DETECTORS SHALL BE INSTALLED A MINIMUM OF 24" FROM ROOM REGISTERS AND SHALL BE INTERCONNECTED.
5. ALL RECEPTACLES IN GARAGE, BATHROOM, OUTDOORS, AND WITHIN THE KITCHEN SHALL HAVE GFI CIRCUIT PROTECTION. EACH BATHROOM SHALL BE ON A SINGLE DEDICATED 20A CIRCUIT.
6. PROVIDE SEPARATE CIRCUITS FOR ALL ANTICIPATED LOADS AS REQUIRED BY CODE GREATER THAN 20 AMPS.
7. KITCHEN GENERAL LIGHTING - HIGH EFFICACY OR UP TO 50% OF THE TOTAL WATTAGE CAN BE LOW EFFICACY ALL HIGH-EFFICACY AND LOW-EFFICACY MUST BE CONTROLLED SEPARATELY
8. BATHROOMS - HIGH EFFICACY OR MANUAL-ON OCCUPANCY SENSOR
9. KITCHEN COUNTER CIRCUITS SHALL BE DIVIDED INTO TWO SEPARATE CIRCUITS. ALL SMALL APPLIANCE CIRCUIT SHALL BE ON A MIN. 20 AMP. CIRCUIT. REFRIGERATORS CANNOT BE ON EITHER OF THESE CIRCUITS, BUT MAY BE ON CIRCUITS WITH THE RANGE CLOCK AND/OR HOOD..
10. RECESSED FIXTURES - MUST BE RATED FOR INSULATION CONTACT (IC-RATED), AIRTIGHT (ASTME283) AND SEALED W/ A GASKET OR CAULK BETWEEN HOUSE AND CEILING ALL HIGH-EFFICACY AND LOW-EFFICACY MUST BE CONTROLLED SEPARATELY
11. LIGHTS IN CLOTHES CLOSETS TO COMPLY AS FOLLOWS:
    A. CLOSET LESS THAN 70 SQ. FT. HAVE NO LIGHTING OR CONTROL REQUIREMENTS.
    B. CLOSET GREAT THAN 70 SQ. FT. EACH AND EVERY PERMANENTLY INSTALLED LIGHTING FIXTURE MUST COMPLY WITH THE STANDARDS, BY MEANS OF BEING HIGH EFFICACY, CONTROLLED BY MANUAL-ON OCCUPANCY SENOR, OR CONTROLLED BY A DIMMER.
12. GFI RECEPTACLES IN GARAGE OR AT PATIO SHALL NOT BE ON KITCHEN COUNTER CIRCUIT.
13. FIXTURES USED TO MEET FLUORESCENT REQUIREMENTS SHALL NOT CONTAIN MEDIUM-BASED INCANDESCENT LAMP SOCKETS.
14. FIXTURES THAT WEIGH MORE THAN 6 POUNDS OR EXCEED 16-INCHES IN ANY DIMENSION SHALL NOT BE SUPPORTED BY THE SCREW SHELL OF A LAMP HOLDER.
15. ALL BATHROOM FANS TO BE 50 CFM'S MINIMUM. PROVIDE A MINIMUM OF FIVE (5) AIR CHANGES PER HOUR.
16. EDISON COMPANY APPROVAL IS REQUIRED FOR METER LOCATION PRIOR TO INSTALLATION.
17. A.F.C.I. PROTECTOR FOR ALL BEDROOMS OUTLETS, LIGHTS, RECEPTACLES AND SMOKE DETECTORS.
18. RECEPTACLES SHALL BE INSTALLED SO THAT NO POINT ALONG THE FLOOR LINE IN ANY WALL SPACE IS MORE THAT 6 FEET, MEASURED HORIZONTALLY, FROM AN OUTLET IN THAT SPACE. RECEPTACLE OUTLETS SHALL, INSOFAR AS PRACTICABLE, BE SPACED EQUAL DISTANCES APART. (C.B.C. 210-52)
19. FIELD INSPECTOR TO REVIEW AND APPROVE UNDERGROUND SERVICE REQUIREMENT PRIOR TO CONCRETE PLACEMENT.
20. ALL STAIRS SHALL HAVE AN ILLUMINATION LEVEL ON TREADS RUNS OF NOT LESS THAN 1 FOOT CANDLE (11 lux) CBC 1205.4
21. PROVIDE IN KITCHENS LOCAL EXHAUST SYSTEM VENTED TO OUTDOORS WITH RATE = 100 CFM
22. SMOKE DETECTORS ARE NOT TO BE LOCATED IN KITCHEN, GARAGE, OR WITHIN 3 FEET FROM DOOR TO KITCHEN OR BATHROOM OR SUPPLY AIR REGISTERS
23. ALL DOORS FROM HOUSE TO POOL YARD MUST BE EQUIPPED WITH ALARM OR PROVIDE AN ALTERNATE DROWNING PREVENTION SAFETY FEATURE PER CBC 3109.4.4.2
24. ROOMS CONTAINING BATHTUBS, SHOWERS, SPAS AND SIMILAR FIXTURES SHALL BE PROVIDED WITH AN EXHAUST FAN WITH A MINIMUM CAPACITY OF 50 CFM. DUCTLESS FANS ARE UNACCEPTABLE CBC 1203.4.2.1, CMC T-4-4.
25. ALL EXHAUST FANS SHALL BE CONTROLLED BY A HUMIDISTAT.
26. ⚠1 BATHROOMS, LAUNDRY, WATER CLOSET COMPARTMENTS AND SIMILAR ROOMS SHALL BE MECHANICALLY VENTILATED IN ACCORDANC WITH THE CMC.
27. ⚠1 CARBON MONOXIDE ALARMS COMBINED WITH SMOKE ALARMS SHALL COMPLY WITH BOTH SECTIONS R314 AND SECTION R315, ALL APPLICABLE STANDARDS, AND REQUIREMENTS FOR LISTING AND APPROVAL BY THE OFFICE OF THE STATE FIRE MARSHAL, FOR SMOKE ALARMS.

SUMMARY OF THE 2008 ENERGY CODE ASHRAE 62.2 REQUIREMENTS:

MECHANICAL WHOLE HOUSE VENTILATION MUST BE PROVIDED. THE EXHAUST FAN CAN BE A DEDICATED IAQ FAN THAT RUNS CONTINUOUSLY OR IT CAN BE A BATH FAN THAT IS USED FOR BOTH WHOLE HOUSE VENTILATION AND LOCAL VENTILATION.

THE FOLLOWING FORMULA OR TABLE CAN BE USED TO FIND THE REQUIRED CONTINUOUS VENTILATION RATE:

EQUATION 4-1

$$\text{VENTILATION RATE (CFM)} = \frac{\text{CFA}}{100} + [\,7.5 \times (\text{NUMBER BEDROOMS} + 1)\,]$$

OR

TABLE 4-7 - CONTINUOUS WHOLE-BUILDING VENTILATION RATE (CFM)

CONDITIONED FLOOR AREA (FT^2)	BEDROOMS 0-1	2-3	4-5	6-7	>7
≤ 1500	30	45	60	75	90
1501-3000	45	60	75	90	105
3001-4500	60	75	90	105	120
4501-6000	75	90	105	120	135
6001-7500	90	105	120	135	150
>7500	105	120	135	150	165

BATHROOM EXHAUST FANS MUST BE DUCTED TO THE EXTERIOR WITH A MINIMUM 50 CFM.

KITCHEN EXHAUST FANS MUST BE DUCTED TO THE EXTERIOR. THE EXHAUST FAN CAN BE EITHER INTERMITTENT (100 CFM) OR CONTINUOUS (20 CFM). RANGE HOOD OR MICROWAVE/HOOD COMBINATION REQUIRES A MINIMUM 100 CFM. THIS REQUIREMENT CAN ALSO BE MET WITH EITHER A CEILING OR WALL MOUNTED EXHAUST FAN OR WITH A DUCTED FAN OR DUCTED VENTILATION SYSTEM THAT PROVIDES AT LEAST 5 AIR CHANGES OF THE KITCHEN VOLUME PER HOUR. RECIRCULATING RANGE HOODS THAT DO NOT EXHAUST POLLUTANTS TO THE OUTSIDE CAN NOT BE USED TO MEET THE REQUIREMENTS.

NOISE RATING. ALL CONTINUOUSLY OPERATED EXHAUST FANS SHALL HAVE A NOISE RATING OF 1 "SONE" MAXIMUM, OR 3 "SONE" MAXIMUM FOR INTERMITTENT USE.

SWITCHES. ALL EXHAUST FANS MUST BE SWITCHED SEPARATELY FROM LIGHTING SYSTEMS. EXCEPTION: AN EXHAUST FAN WITH AN INTEGRAL LIGHTING SYSTEM WHERE THE LIGHTING SYSTEM CAN BE MANUALLY TURNED ON AND OFF WHILE ALLOWING THE FAN TO CONTINUE TO OPERATE FOR AN EXTENDED PERIOD OF TIME IS PERMITTED.

Project Location: 717 East 3rd Street, Santa Ana, Ca. 92701

Revisions

No.	Date	Revision
⚠1	10-10-11	Building Department Corrections
⚠2	11-07-11	Building Department Corrections

Architect
ritner | GROUP
503 32nd STREET STREET, SUITE 130
NEWPORT BEACH, CA 92663
TELEPHONE: (949) 999-3255 FAX: (949) 999-3259

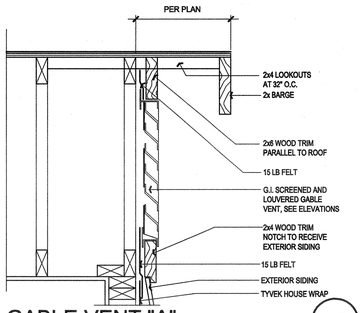
Project
East 3rd STREET
HABITAT FOR HUMANITY OF ORANGE COUNTY
717 East 3rd Street
Santa Ana, CA 92701
(714) 434-6200

Project Number: 11001
Drawn By: RJR
Checked By:

Sheet Title
UTILITY PLAN

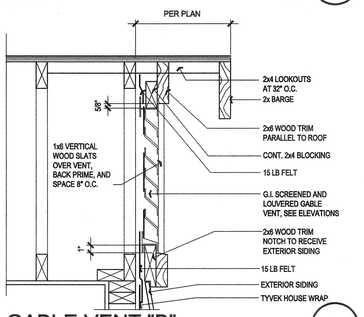
Scale: 1/4"=1'-0"
Date: 7/27/11

Sheet Number
A1.6



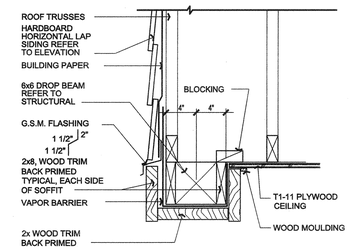
GABLE VENT "A" 13

SCALE: 1-1/2"=1'-0" RVENT1



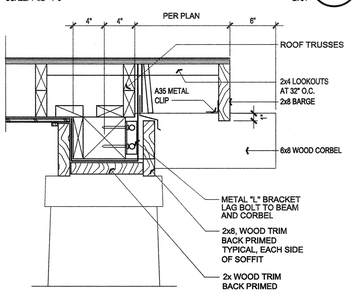
GABLE VENT "B" 14

SCALE: 1-1/2"=1'-0" RVENT1



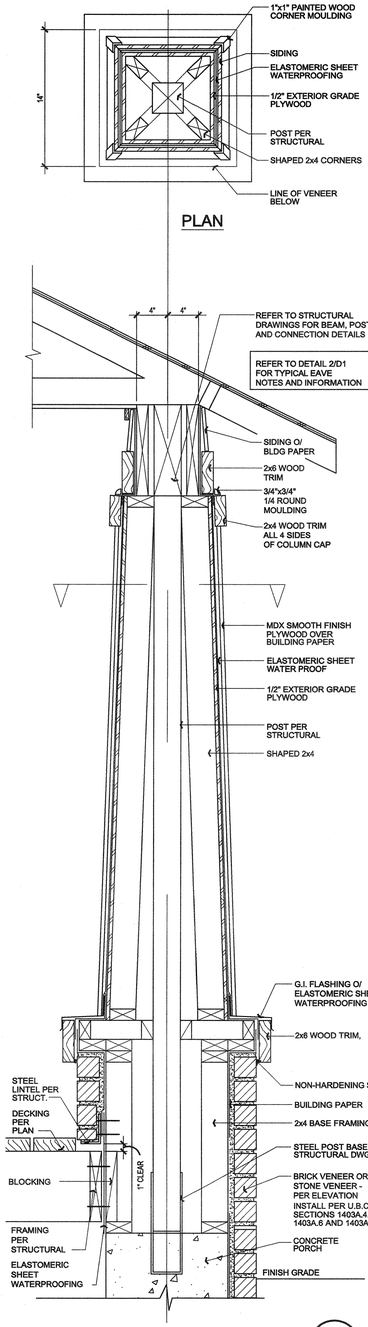
ENTRY PORCH SOFFIT 15

SCALE: 1-1/2"=1'-0" E751



OUTLOOKER AT SOFFIT 16

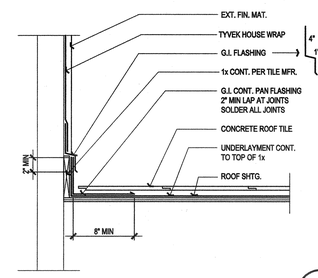
SCALE: 1-1/2"=1'-0" RRAKE4



PLAN

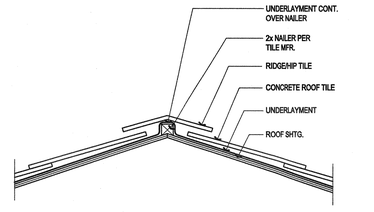
COLUMN 12

SCALE: 1-1/2"=1'-0" COL1



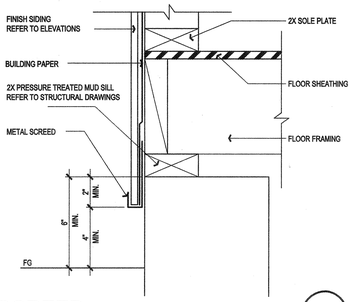
RAKE-WALL 5

SCALE: 1-1/2"=1'-0" RK2WA1



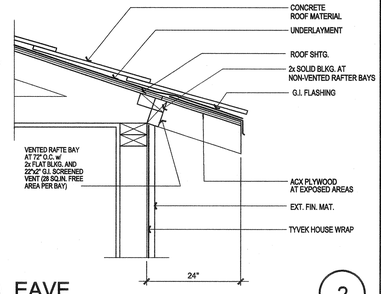
RIDGE/HIP 1

SCALE: 1-1/2"=1'-0" RIDGE1



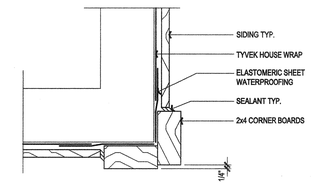
SCREED 6

SCALE: 3"=1'-0" SCREED



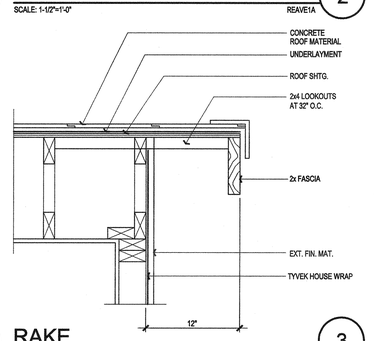
EAVE 2

SCALE: 1-1/2"=1'-0" REAVE1A



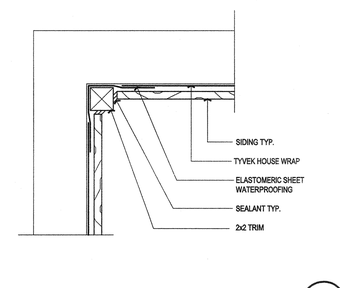
CORNER 7

SCALE: 3"=1'-0" CORNER1A



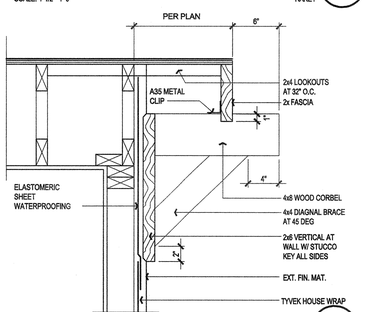
RAKE 3

SCALE: 1-1/2"=1'-0" RAKE1



CORNER 8

SCALE: 3"=1'-0" CORNER1B



OUTLOOKER 4

SCALE: 1-1/2"=1'-0" RRAKE3

Project Location: 717 East 3rd Street, Santa Ana, Ca. 92701

11001D1.DWG

Revisions		
No.	Date	Revision
1	10-10-11	Building Department Corrections

Architect

ritner|GROUP

503 32nd STREET STREET, SUITE 130
NEWPORT BEACH, CA 92663
TELEPHONE: (949) 999-3255 FAX: (949) 999-3259

Project

East 3rd STREET

HABITAT FOR HUMANITY OF ORANGE COUNTY

717 East 3rd Street
Santa Ana, CA 92701
(714) 434-6200

Project Number: 11001
Drawn By: RJR
Checked By:

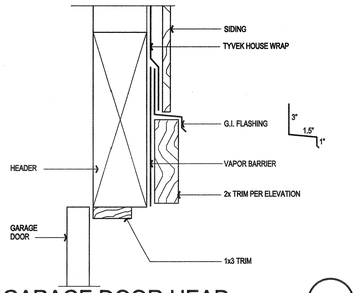
Sheet Title

DETAILS

Scale: N/A
Date: 7/27/11

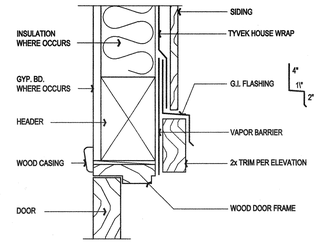
Sheet Number

D1



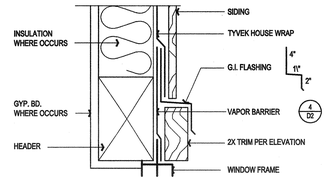
GARAGE DOOR HEAD

SCALE: 3"=1'-0" GD13H 9



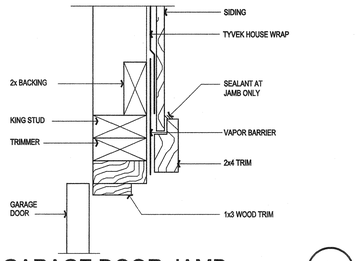
DOOR HEAD

SCALE: 3"=1'-0" D13H 5



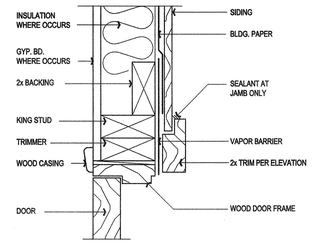
WINDOW HEAD

SCALE: 3"=1'-0" W13H 1



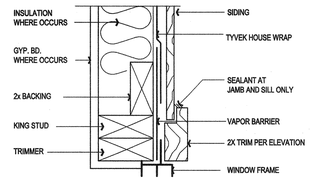
GARAGE DOOR JAMB

SCALE: 3"=1'-0" GD13J 10



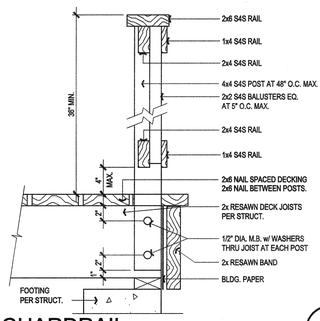
DOOR JAMB

SCALE: 3"=1'-0" D13J 6



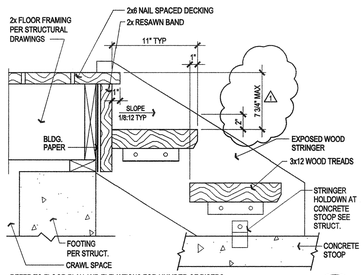
WINDOW JAMB

SCALE: 3"=1'-0" W13J 2



GUARDRAIL

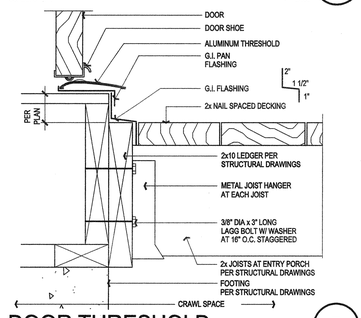
SCALE: 1-1/2"=1'-0" RAIL 15



REFER TO FLOOR PLAN AND ELEVATIONS FOR NUMBER OF RISERS.

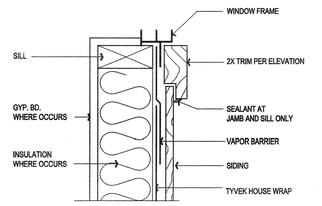
STAIR AT PORCH

SCALE: 1-1/2"=1'-0" ST 11



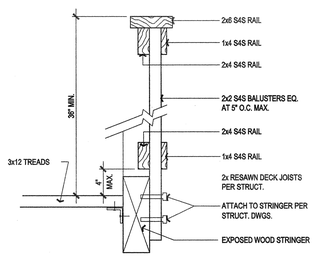
DOOR THRESHOLD

SCALE: 3"=1'-0" D01TH2 7



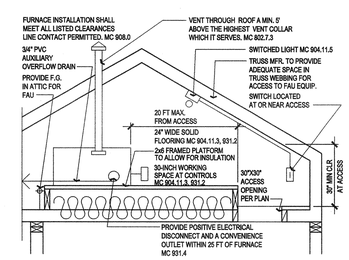
WINDOW SILL

SCALE: 3"=1'-0" W13S 3



HANDRAIL

SCALE: 1-1/2"=1'-0" RAIL2 16

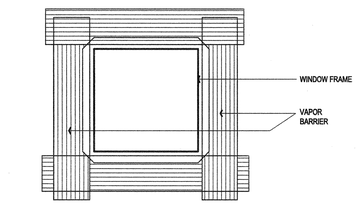


NOTES:

1. IF MORE THAN ONE FAU IS LOCATED IN THE ATTIC, PROVIDE A MIN. OF 30" CLR BETWEEN FAU'S
2. PROVIDE WATER TIGHT PAN WITH A 3/4" DRAIN LINE DISCHARGING AT A POINT THAT CAN BE READILY OBSERVED
3. HVAC SYSTEM SHALL USE MERV 6 FILTERS OR BETTER
4. HVAC SHALL HAVE THE FOLLOWING SPECIFICATION: 42,000 BTU FURNACE, 2 TON AIR CONDITIONER AND 1,000 CFM OF AIR FLOW
5. FURNACE SHALL BE SECURED TO THE STRUCTURE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS

ATTIC FURNANCE

FAU 8



FIRST: BOTTOM STRIP UNDER NAIL FLANGE
SECOND: SIDE STRIPS UNDER NAIL FLANGES AND OVER BOTTOM STRIP
LAST: TOP STRIP OVER NAIL FLANGE & OVER SIDE STRIPS

VAPOR BARRIER

SCALE: 1-1/2"=1'-0" VAPOR 4

Project Location: 717 East 3rd Street, Santa Ana, Ca. 92701

11001D2.DWG

Revisions

No.	Date	Revision
1	10-10-11	Building Department Corrections

Architect

ritner|GROUP
503 32nd STREET STREET, SUITE 130
NEWPORT BEACH, CA 92663
TELEPHONE: (949) 999-3255 FAX: (949) 999-3259

Project

East 3rd STREET

HABITAT FOR HUMANITY OF ORANGE COUNTY

717 East 3rd Street
Santa Ana, CA 92701
(714) 434-6200

Project Number: 11001

Drawn By:

Checked By:

Sheet Title

DETAILS

Scale: N/A

Date: 7/27/11

Sheet Number

D-2

BASIC DESIGN CRITERIA

1 2010 California Building Code
2. Design wind speed: 85 mph; Exposure C.
3. Seismic Zone: 4 / 1 = 1.0 / Occupancy Category C
4. Seismic Site Classification: D / Soil Bearing Pressure: 1300 psf (Ftg) / 1500 psf (Pad)
5. Soil Expansion – Low
6. Project Location: 33.747N – 117.747W
7. Ss = 1.393 ; S1 = .496
8. Fa = 1.0 ; Fv 1.504
9. SMs = 1.393 ; SM1 .746
10. SDs = .929 ; SD1 .472

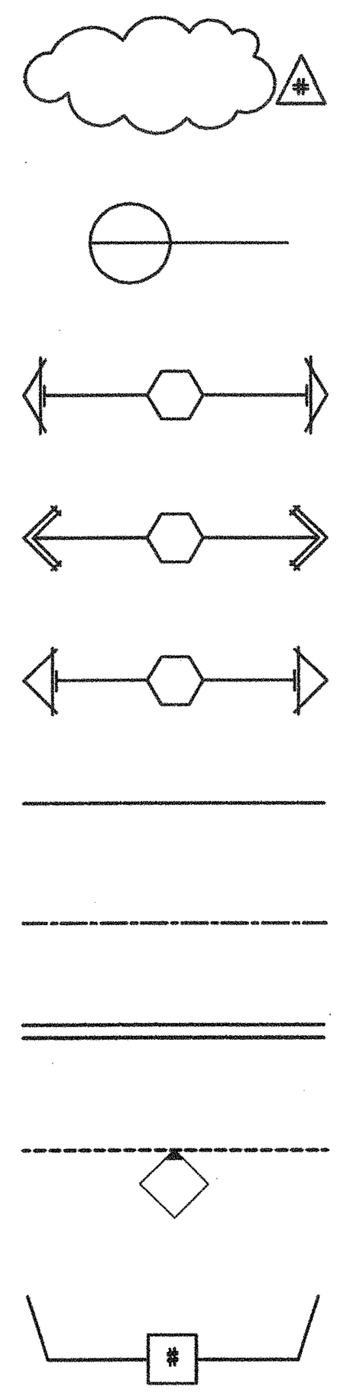
STRUCTURAL ABBREVIATIONS

Mark	Meaning	Mark	Meaning	Mark	Meaning
AB	Anchor Bolt	FJ	Floor Joist	RJ	Roof Joist
ALT	Alternate	FOC	Face of Concrete	RR	Roof Rafter
BLKG	Block(ing)	FOM	Face of Masonry	S	Standard I beam, steel
BM	Beam	FOS	Face of Stud	SHTG	Sheathing
BN	Boundary Nail	FOW	Face of Wall	SINK	Sinker, nail
BOT	Bottom	GLB	Glu-Lam Beam	SPN	Sole Plate Nailing
BRG	Bearing	GLH	Glu-Lam Header	SQ	Square
C	Channel, steel	GT	Girder Truss	SS	Select Structural
CMBR	Camber	HGR	Hanger	STD	Standard
CANT	Cantilever	HDR	Header	SW	Shear Wall
CJ	Ceiling Joist	HT	Height	T&G	Tongue & Groove
CJ	Construction Joint	HORIZ	Horizontal	THK	Thick
CL	Center Line	I-JST	I-Joist	TOC	Top of Concrete/Curb
COMM	Common Nail	in	Inch	TRPL	Triple
CONT	Continuous	KP	King Post	TR	Trimmer, stud
d	Penny, nail	KS	King Stud	TS	Tube Steel
DBL	Double	L	Angle, steel	TYP	Typical
DTL	Detail	LVL	Laminated Veneer Lumber	UNO	Unless Noted Otherwise
DF	Douglas Fir	LSL	Laminated Strand Lumber	VERT	Vertical
DIA	Diameter	M	Misc. I Beam, steel	V=L	Versalam
DJ	Deck Joist	MAX	Maximum	W	Wide flange steel beam
DP	Deep	MB	Machine Bolt	w/	With
DR	Drop	MC	Misc. channel, steel	w/o	Without
DSS	Dense Select Structural	MIN	Minimum	WD	Wide
EE	Each End	M=L	Micro=Lam Beam	X-	Extra Strong
EF	Each Face	NTS	Not to Scale	ø	Diameter
EN	Edge nail	OC	On Center	#	Pound/Number
EQ	Equal	OSB	Oriented Strand Board	&	And
ES	Each Side	PC	Pipe Column, steel	/	Per
EW	Each Way	PL	Property Line	@	At
FT	Foot	PSF	Pounds per Sq. Ft.	±	Plus or minus
FDTN	Foundation	PSI	Pounds per Sq. Inch		
FTG	Footing	PSL	Parallel Strand Lumber		
FL	Flush	PLY	Plywood		

Note: Refer to manufacturer product catalogue for product specific abbreviations.

SYMBOLS, STRUCTURAL SCHEDULE

Mark or Symbol — Comment



Cloud & Delta for structural revisions.

Detail bubble for specific connection requirements.

Roof truss framing member.

Roof rafter framing member.

Floor joist framing member.

Joist, rafter, or truss framing member.

Header, beam or girder framing member.

Double joist, girder truss or built-up framing member.

Shear wall type and length of application to framing. Refer to shear wall schedule for connection to framing.

Anchor bolt spacing at sill plate connection to foundation with special requirements for other than 2x sill plate applications.

Additional marks or symbols may be used which are not shown above.
Note: Consult the American Welding Society publication for weld symbols.

GENERAL PLAN NOTES

1. All work not specifically detailed or noted shall be constructed similarly to that indicated on the Construction Documents.
2. Refer to Architectural drawings for elevation configuration and location of roofs, floors, walls, windows, doors, curbs, depressed areas and other non-structural elements.
3. Refer to Mechanical, Plumbing, Heating and Air Conditioning, and Electrical drawings for size and location of specific related elements.
4. Contractor or Owner shall compare all dimensions indicated on Structural drawings prior to construction and shall notify Structural Engineer and Architect for clarification of discrepancy.

SHOP DRAWINGS AND DEFERRED SUBMITTAL SCHEDULE

1. This listing applied only to the Structural drawings. Submittal to the Structural Engineer for review shall be performed by the Contractor or Owner. They shall be checked for general conformance to the Structural drawings prior to submittal. The Structural Engineer shall inform in writing to the Contractor or Owner if the said shop drawings appear to be in general conformance with the Structural intent of the drawings. Deferred shop drawing submittals, as allowed by the Building Official, shall be reviewed and approved by the Structural Engineer & Building Official prior to construction and shall be included as part of the official record of Construction Documents.

Shop drawing type:	Extent of Structural Engineer's review of submitted drawings:	Building Official's deferred submittal requirements:
1. Roof truss	general review	approval is required.

2. Additional seals, stamps, or marks placed on shop drawings by the Structural Engineer merely indicate additional information required for general conformance to the structural intent of the Construction Documents and do not indicate approval of such unless specifically noted.
3. Shop drawings will not be reviewed for quantities and dimensions by the Structural Engineer.
4. Five working days shall be allowed for review of submitted drawings by the Structural Engineer.

NAILING SCHEDULE

1. As a minimum and shall be superseded if specifically detailed or noted elsewhere, the various wood components of the structure shall be connected as follows:

Note: Refer to manufacturer's catalogue to minimum specific connection requirements.

Item	Description	Nailed Connection
1.	Joist to mud sill or upper top plate	(3) 8d common or 16d sinker or short, toe nails.
2.	Blocking to joist	(3) 8d common or 16d sinker or short, toe nails or (2) 16d sinker or short face nail.
3.	Sole (bottom) plate to joist or blocking	16d sinker or short face nails at 16" o.c.
4.	Lower top plate to stud	(2) 16d sinker or short face nail or (4) 8d common or 16d sinker or short toe nail.
5.	Stud to sole bottom plate	(2) 16d sinker or short face nail or (4) 8d common or 16d sinker or short toe nail.
6.	Double or Built-up studs typical stitching	16d sinker or short face nails at 24" o.c.
7.	Top plates at intersection or overlap	(4) 16d sinker or short face nail.
8.	Top plate typical stitching	16d sinker or short face nails at 16" o.c.
9.	Upper top plates at laps	(8) 16d sinker or short face nail each side of upper plate break.
10.	Rim joist to upper top plate or mud sill	8d common or 16d sinker or short toe nails at 6" o.c.
11.	Ceiling joist to plate, toe nail	(3) 8d common or 16d sinker or short toe nails.
12.	Ceiling joist, lap over walls and partition	(3) 16d sinker or short face nails.
13.	Ceiling joist to parallel rafters	(3) 16d sinker or short face nails.
14.	Rafter or roof truss to plate, toe nail	(3) 8d common or 16d sinker or short toe nails.
15	Built up corner studs	16d sinker or short face nails at 24" o.c.
16.	Three piece built up girder and beam	(2) rows of 16d at 12" o.c. at top and at bottom (3) 16d at each end.
17.	2x flat planks	(2) 16d sinker or short face nails at each support.

ROOF AND CEILING FRAMING NOTES

1. Roof Sheathing: Provide 15/32" thick Exposure 1 wood product panel with a minimum span rating of 32" oc. Sheathing long dimension shall be placed perpendicular to supports. Provide minimum 2x blocking at all edges not applied to framing members as required for blocked diaphragms as indicated on Framing Plans. Nailed connection of roof diaphragm shall be inspected by the Building Official prior to covering with roofing paper or loading of roofing material. Main sheathing diaphragm shall continue under all California framed or cricketed portions, UNO.. Refer to detail (1/SD-1) for additional information. Provide nailed connection as follows:

   Unblocked Diaphragm (Typical U.N.O.)

   8d common or plywood nails at 6" oc at all edges and boundaries and 12" oc in field. Blocking is not required.

   Blocked Diaphragm (Noted with "X" or hatched area on Framing Plans)

   8d common or plywood nails at 6" oc at all edges and boundaries and 12" oc in field. Minimum 2x blocking is required.

2. 2x hangers shall be Simpson LUS style hangers appropriate for framing member. Provide full nailing per manufacturers specifications.
3. Refer to detail (12/SD-1) for connection requirements at California Framed roof portions.
4. Provide full depth or other blocking panels at all bearing locations and at ends of framing member at all trusses and rafters.
5. Refer to detail (13/SD-1) for bracing requirements at non-bearing walls to truss or joist framing.
6. Roof trusses shall be designed for application of tile roofing material weighing approximately 10 psf. Dead loading onto top chord of trusses is approximately 15 psf. Dead loading onto bottom chord of trusses is approximately 5 psf. Live loading onto top chord of trusses is approximately 20 psf. Other live or dead supplemental loading as applicable shall be also be included by roof truss manufacturer. Trusses shall be cambered to allow for deflection due to loading but shall not impose loading onto non-bearing partitions. Provide truss designs that do not allow for more than 0.25" of differential deflection between adjacent truss framing members.
7. HVAC equipment shall be properly designed and braced when installed in attic space.
8. Roof truss bracing and hangers shall be clearly indicated and detailed on roof truss layouts and design package for use in field for proper bracing of truss system. Truss shop drawing packages may be rejected if hanger and bracing information is not clearly stated on shop drawings.

FOUNDATION NOTES

1. Dimensions listed on the Foundation Plans should be verified by the Contractor in accordance with the architectural floor plans. All holdown hardware and anchor bolting requirements shall be provided and verified by the Contractor. He shall also verify additional architectural features such as stoops, porches, depressions, patios and porches.
2. Refer to detail (7/RFD-1) for reinforcing laps, bends and stirrups and ties.
3. Refer to detail (13/RFD-1) for trenching setbacks.
4. A maximum slab elevation differential of 1/8" in 10 feet is allowed.
5. The details for foundation construction are shown as a one-pour stem wall system at the house and the curb footing system at the Garage. The garage slab will be isolated from the footing to allow movement. Contact the Structural Engineer for additional recommendations.
6. Shot pins may be used to affix interior sill plates to the slab where anchor bolts are not indicated for shear walls. Use minimum .145" diameter x 2.875" long pins with a metal plate washer at 36" oc. Use minimum two shot pins for sill portions longer than 16". Locate pins no more than 6" from ends or breaks in the sill plate.
7. Refer to details (9/RFD-1) & (12/RFD1) for anchor bolt installation requirements. Anchor bolts shall be used to affix the plates to the slab for all exterior walls and specific interior walls as indicated on the Foundation Plans. Use minimum 5/8" diameter anchor bolts at 48"oc U.N.O. on the Foundation Plans. Provide minimum two anchor bolts per sill plate. Provide one anchor bolt at maximum 12" from ends or breaks in the sill plate. Locate anchor bolt minimum 1-1/2 diameters away from the edge of the sill plate to the edge of the drilled hole for the bolt. The drilled hole is to be maximum 1/16" oversized for proper bolt installation. Provide minimum 7" embedment of anchor bolt into concrete as required, U.N.O.. Anchor bolts to be set for thicker than standard 2x sill plates where indicated on Foundation or Framing Plans.
8. Refer to details (10/RFD-1) and (11/RFD-1) for holdown installations as required. Refer to the foundation plans for general locations for installation. The contractor is responsible for the exact location of the holdown hardware for compliance with the Construction Documents. Holdown hardware shall be properly tied in place or nailed to form boards to satisfy manufacturers installations requirements.
9. Pre-saturation and special pad preparation requirements shall be performed in accordance with the soils report recommendations.
10. Provide square plate washers at anchor bolt locations. Washers shall be at least 3" Square x .229" thick steel plate with a 13/16" x 1-3/4" diagonal slotted hole.
11. Special reinforcing requirements above and beyond typical reinforcing requirements will be indicated by solid double lines as follows (==================================).
12. Footing depths, widths and minimum reinforcing requirements are as follows: Provide concrete chairs or blocks for reinforcing to soil clearance requirements and tie reinforcing in place to prevent movement during concrete placement.

Footing Type	Width	Depth	Reinorcing Top & Bott.
Continuous Footing	15"	18"	(2) #4 Top & Bottom
Isolated Pad Footing	Minimum 30" square	18"	(2) #4 E/W @ Bottom

13. Slab thicknesses and subgrade preparations are as follows: Provide concrete chairs or blocks for reinforcing to soil clearance requirements. Reinforcing to be placed in the middle third of the slab thickness. Thicknesses listed for slab and sand layers are actual, not nominal.

Slab Type	Thickness (ACTUAL)	Reinforcing	Sand-Abv	Vapor	Sand – Blw
Garage	4.5"	#3 Bars @ 18"oc E/W	2"	None	None

GENERAL FRAMING NOTES

1. Refer to detail (2/SD-1) for typical top plate splices at breaks in the upper top plate. Refer to detail (3/SD-1) for typical complete double top plate breaks.
2. Refer to detail (4/SD-1) for typical post to beam connections.
3. Refer to details (6/SD-1) & (8/SD-1) for typical shear panel framing configurations. Refer to sheet SN-1 of the construction documents for the Shear Wall Schedule for typical sheathing, framing and nailing requirements.
4. Refer to detail (7/SD-1) for typical wall framing at openings. Stud framing to be full height without interruption from sill plate to top plate unless at openings where trimmer framing shall be full height to header and be full bearing for loading transfer.
5. Refer to details (9/SD-1), (10/SD-1) & (11/SD-1) for typical boring and notching of studs, joists and top plates. Consult the Structural Engineer for evaluation of over-bored or notched framing members. Structural posts, beams and girders shall not be bored or notched without prior approval from the Structural Engineer.
6. Framing materials shall not be used if they contain unusual defects.
7. Provide typical nailing in accordance with the Nailing Schedule as listed on sheet SN-1 of the construction documents unless noted otherwise for specific framing requirements.
8. Provide king post framing or solid bearing at all beam or girder truss bearing locations at header framing. Provide full height blocking at rim locations at post framing for holdowns or bearing requirements. Provide aligned post framing at lower levels equal to or greater than the post framing above for proper bearing load transfer to foundation elements.
9. Provide 2x6 stud walls at plumbing routing locations to prevent over boring or notching of studs or top plates.
10. Provide 2x4 stud framing at 16" oc for typical wall framing unless noted otherwise in architectural drawings.
11. Provide temporary bracing at the floor framing members to adequately support material stockpiles above to prevent over-loading and permanent deflection of floor framing members.
12. Provide full height balloon framed walls at fireplace flues with bracing at floor and roof diaphragms.
13. Provide blocking with boundary nailing at perimeter of holes in shear panels for holes exceeding 4" x 6" or 5" square. Provide minimum one complete stud bay of shear panel framing between holes larger than 4" x 6" or 5" square. Consult the Structural Engineer for evaluation of holes in shear panels exceeding 10" x 14" or 12" square.
14. Provide final tightening of nuts and bolts just prior to covering with finish materials.
15. Details for stair railings and handrail connections satisfying lateral loading requirements shall be submitted to the Structural Engineer for review and coordination with construction documents.
16. Floor framing members have not been designed to support water beds. Structural Engineer to be notified for evaluation prior to filling of bladder with water.

FLOOR FRAMING NOTES

1. Floor Sheathing: Provide 23/32" thick T & G wood product panel with a minimum span rating of 20" oc. Sheathing long dimension shall be placed perpendicular to supports. Provide minimum 2x blocking at all edges not applied to framing members as required for blocked diaphragms as indicated on Framing Plans. Provide sheathing adhesive prior to placement of sheathing onto supports. Adhesive shall be fluid and pliable during mechanical connection to framing members. Refer to detail (1/SD-1) for additional information. Provide nailed connection as follows:

   Unblocked Diaphragm (Typical U.N.O.)

   10d common or plywood nails at 6" oc at all edges and boundaries and 10" oc in field. Blocking is not required.

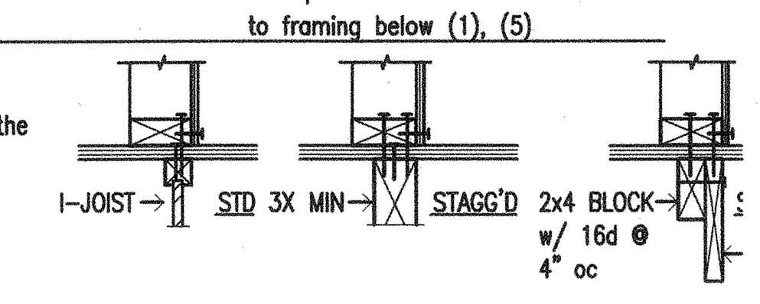
   Blocked Diaphragm (Noted with "X" or hatched area on Framing Plans)

   10d common or plywood nails at 6" oc at all edges and boundaries and 10" oc in field. Minimum 2x blocking is required.

2. I-Joist hangers shall be Simpson IUS or MIT style hangers appropriate for framing member. Provide full nailing per manufacturers specifications. Full height joist support shall be provided to top chord of I-Joist.
3. 2x hangers shall be Simpson LUS style hangers appropriate for framing member. Provide full nailing per manufacturers specifications.
4. Provide full height blocking at all bearing locations and at ends of framing member at I-Joist, beam or joists. I-Joist blocking shall be the same size and type as adjacent joists, U.N.O..
5. Provide additional I-Joist framing member under all parallel partition walls in excess of 8 feet in length over any joist span, regardless of existing joist layout, U.N.O..

SHEAR WALL SCHEDULE

1. Provide sheathing as noted to resist racking forces as noted below: 2010 CALIFORNIA BUILDING CODE.

Mark	Wall Sheathing (2), (3), (5), (7), (8)	Sole plate connection to framing below (1), (5)
◇ *	Note: When an asterisk * accompanies the shear wall mark, apply sheathing prior to any adjacent or perpendicular framing.	
#9 (260 plf)	3/8" wood product panels with 8d common or plywood nails at 6" o.c. along all boundaries and edges and at 12" o.c. in the field. All edges of panels shall be blocked with at least a 2x4.	16d short or sinker nails at 4" o.c.
#10 (350 plf)	3/8" wood product panels with 8d common or plywood nails at 4" o.c. along all boundaries and edges and at 12" o.c. in the field. All edges of panels shall be blocked with at least a 2x4.	16d short or sinker nails at 3" o.c. staggered. (4)
#11 (490 plf)	3/8" wood product panels with 8d common or plywood nails at 3" o.c. along all boundaries and edges and at 12" o.c. in the field. Nails at panel joints shall be staggered. All edges of panels shall be blocked. Foundation sills may be 2x unless noted otherwise on plan. Framing at all panel joints shall be 3x min. (6).	16d short or sinker nails at 3" o.c. staggered. (4)
#12 (640 plf)	3/8" wood product panels with 8d common or plywood nails at 2" o.c. staggered along all boundaries and edges and at 12" o.c. in the field. All edges of panels shall be blocked. Foundation sills may be 2x unless noted otherwise on plan. Framing at all panel joints shall be 3x min. (4), (6).	40d common nails in predrilled holes at 4" o.c. staggered (4). Alt: 2X sill w/16d short S.P.N. @ 2" o.c. staggered into solid framing below sheathing. (4)
#13 (770 plf)	15/32" wood product panels with 10d common or plywood nails at 2" o.c. staggered along all boundaries and edges and at 12" o.c. in the field. All edges of panels shall be blocked. Framing at all panel joints and foundation sills shall be 3x min. (4), (6).	40d common nails in predrilled holes at 4" o.c. staggered. Alt: 3/8" diameter x 6" long lag screws at 6" o.c. staggered (into solid framing below sheathing. (4)
#14 (870 plf)	15/32" wood product panels, Structural I panel grade, with 10d common or plywood nails at 2" o.c. staggered along all boundaries and edges and at 12" o.c. in the field. All edges of panels shall be blocked. Framing at all panel joints and foundation sills shall be 3x min. (4), (6).	3/8" diameter x 6" long lag screws at 4" o.c. staggered into solid framing below sheathing. (4)

NOTE: Hot-dipped zinc coated galvanized nails may be required where panels are fastened to pressure-treated lumber; See Rough Carpentry notes on Sheet SN-2.

Footnote:

1. Floor sheathing is included as part of required nail penetration.
2. Refer to specification for alternate wood product panel grading and usage.
3. Sheets shall be not less than 4 feet by 8 feet except at boundaries and changes where the minimum dimension shall be 24 inches. Single 12" long portions may be used once in any full length shear panel application.
4. Stagger is 1/2 inch. Provide min. 3x solid blocking or framing below sheathing at staggered S.P.N. above. I-joist blocking is not acceptable for 40d common nails or 3/8" diameter lag screws.
5. Provide minimum 1 1/2" spacing of fasteners. Over any 24 inch range of fasteners, the average spacing shall be at least as close as that given.
6. 3x sill plates are required at shear walls where the design shear exceeds 350 plf. Where design shear does not exceed 600 plf, a 2x plate may be used provided anchor bolts are designed for a load capacity of 50% or less of the allowable capacity. Cracked concrete per ACI 318 yields 840# per bolt regardless of sill plate thickness. Uncracked concrete values per 2005 NDS Table 11E yields 1235# for a 2x plate and 1635# for a 3x plate using a conservative load duration factor of only 1.33 vs. the allowable 1.6 per NDS Table 2.3.2. Adjustments for using 50% capacity for 2x sill plates would yield 420# for cracked concrete and 600# for uncracked concrete.
7. Use 3 inch square by .229 inch thick plate washers with a 13/16" x 1-3/4" long slotted hole shall be provided at all sill plate connections to the foundation. Use a standard cut washer betwen the nut and the 3" square washer.
8. Nail sizes shall conform with the following table:

Size & Name	Nail Length	Wire Dia.	Wire Gauge	Head Dia.	Pre-Bore Drill Dia.
8d Plywood	2"	.131"	10-1/4	.281"	
8d Common	2-1/2"	.131"	10-1/4	.281"	
10d Plywood	2-3/8"	.148"	9	.312"	
10d Common	3"	.148"	9	.312"	
16d Short (framer)	3-1/4"	.131"	10-1/4	.281"	
16d Sinker	3-1/4"	.148"	9	.344"	
40d Common	5"	.225"	4	.469"	11/64" or no. 18 drill gage
5d Cooler	1-5/8"	.086"	13-1/2	.224"	
6d Cooler	1-7/8"	.092"	[illegible]	.250"	

ASSOCIATED SOILS ENGINEERING, INC.
Plans have been reviewed from a geotechnical engineering standpoint only and are in compliance with the Preliminary Geotechnical Investigation Report prepared by this firm dated 3/14/4, Job No. 11-6260 and subsequent addena.
This review did not include checking accuracy of design and dimensions or compliance with building code requirements.
Date: 10/18/14

REGISTERED PROFESSIONAL GEOTECHNICAL LAWRENCE J. D. No. 2881 EXP. 6/30/ STATE OF CALIFORNIA

REGISTERED PROFESSIONAL ENGINEER PHILLIP G. SOMA JR. No. 46231 EXP. 12-31-12 CIVIL STATE OF CALIFORNIA

STRUCTURES DESIGN GROUP, INC.
17780 FITCH SUITE 185
Irvine, Ca 92614

HABITAT SANTA ANA
717 E. 3rd Street Santa Ana, CA 92701
Habitat for Humanity Orange County
2200 S Ritchey Street Santa Ana, CA 92705

REVISIONS

NO.	DATE	NO.	DATE

PROJECT MANAGER P.S.
DESIGNER P.S.
DRAWN BY A.D.
REVIEWED BY P.S.
JOB NUMBER 2011009
SHEET **SN.1**
2011-08-25
CAD FILE:

GENERAL REQUIREMENTS

01000 GENERAL REQUIREMENTS AND CODES:

1. The construction documents are comprised of the structural drawings, notes and specifications in conjunction with the related architectural drawings, notes and specifications.

2. Work performed shall be in accordance with the 2007 California Building Code (CBC), the California Code of Regulations(CCR), Title 24 – California Building Code and the local County or City building codes and ordinances. Work performed shall also be in accordance with all applicable federal, state and local jurisdiction laws and regulations.

3. The Contractor shall assume full responsibility for compliance with all safety regulations and orders, general industrial safety orders from the State Division of Industrial Safety, the regulations of the federal and state Occupational Safety and Health Administrations, (OSHA) and other regulatory provisions of the local governing jurisdiction. The Contractor shall be held fully responsible and hold harmless the Structural Engineer for any damages, penalties or construction delays resulting from his failure to comply with governing laws, ordinances, regulations and statutes.

4. All design, erection and maintenance of any shoring, bracing or supports, whether temporary or permanent, shall be the full responsibility of the Contractor and will not be provided by the Structural Engineer. The Contractor shall be responsible for the temporary bracing of the structure until all lateral bracing elements, sheathing diaphragms, framing members and connectors have been installed. The Structural Engineer or his representative will not be reviewing, observing or inspecting any temporary support such as those listed above.

01100 ALTERNATES AND DISCREPANCIES:

1. Approval from the Structural Engineer, Owner and Architect must be obtained prior to any construction substitutions or alternatives.

2. All dimensions and conditions listed on the Construction Documents shall be checked and verified by the Contractor prior to commencement of work and all discrepancies shall be immediately brought to the attention of the Structural Engineer, Owner and Architect for clarification.

3. Information listed on the Construction Documents shall be evaluated in the following order of importance: Specific drawing information shall supersede general specifications and notes, specifically detailed drawings and specifications shall supersede general drawing information and dimensions indicated or derived from the dimensioned floor plans shall supersede all scaled dimensions.

01200 SHOP DRAWINGS:

1. The Contractor shall check the shop drawings indicated in the SHOP DRAWINGS AND DEFERRED SUBMITTAL for conformance to the Construction Documents prior to submittal to the Structural Engineer for review. Shop drawings indicated In shall be submitted for review to the Structural Engineer and the Building Official, as noted.

2. Any deviations by the Shop Drawings from the Construction Documents shall be clearly indicated.

3. One additional set of Shop Drawings shall be submitted to the Structural Engineer for his records.

4. The Contractor shall be fully responsible for the correctness and completeness of the dimensions and quantities listed on the Shop Drawings as well as the techniques, methods, safety precautions and coordination with other trades. The Contractor shall also be responsible for the compliance to the Construction Documents. The Shop Drawings will only be reviewed by the Structural Engineer for general conformance to the design concept of the Construction Documents.

5. The Shop Drawings shall be stamped by a duly Licensed Engineer prior to submittal to the Structural Engineer for review.

01300 TESTING AGENCIES:

1. The Owner shall schedule and contract the services of a Testing Agency approved by the Building Official as required or as noted on the Construction Documents.

2. Results of the tests performed shall be submitted to the Building Official, Special Inspector, Structural Engineer and Architect.

01400 SPECIAL INSPECTION:

1. The Owner shall schedule and contract with the Special Inspector (Deputy Inspector), when such services are required as noted in the Construction Documents. The Special Inspector shall be licensed and approved by the Building Official.

2. Inspection of the work and the preparation and extraction of the testing samples in accordance with the Construction Documents and the Building Code shall be performed by the Special Inspector and shall furnish reports to the Structural Engineer, the Building Official and the Architect. Any deviations or discrepancies shall be immediately addressed by the Contractor for correction, and if not corrected, to the Structural Engineer and the Building Official. A final signed report shall be generated as well as monthly, or more periodically as requested, until special inspection activities have been completed. Reports shall indicate the special inspection duties and locations and if the work was performed in accordance with the Construction Documents and the Building Code according to the inspectors best judgment and ability.

3. Work requiring special inspection shall not be covered or obstructed so as to provide ample access for inspection duties. Removal of coverings or obstructions shall be provided as required.

4. The Contractor shall be fully responsible for the proper scheduling of special inspection activities as well as acquiring final Building Official approval for work performed prior to covering with finish materials or other materials causing obstruction of the work performed.

01500 SOILS INSPECTION:

1. The Owner shall schedule and contract with the Soils Engineer when such services are required as noted in the Construction Documents.

2. The Soils Engineer shall furnish reports to the Structural Engineer, the Building Official and the Owner that the work performed be the Contractor was in accordance with the Soils Report.

3. Any deviations or discrepancies shall be immediately addressed by the Contractor for correction, and if not corrected, to the Structural Engineer and the Building Official.

DIVISION 2: SITE WORK AND FOUNDATIONS

02000 SUBSURFACE INVESTIGATION FOR CONVENTIONAL FOUNDATIONS:

1. The foundation design is in accordance with the provisions of the soils report dated March 13, 2011, by Associated Soils Engineering, Report No. 11–6260 for 717 E 3rd St Santa Ana, CA. The provisions of the soils report have been incorporated into the design of the foundation system.

02100 CONVENTIONAL FOUNDATIONS:

1. The Contractor shall be responsible for the adequate protection of all adjacent properties.

2. The Contractor shall be responsible for the complete site and pad preparation in accordance with the provisions of the Soils Report as recommended by the Soils Engineer.

3. All trenches and excavations receiving concrete shall be clean and free of debris or water. Over excavated footings shall be filled with concrete or filled with approved fill material and re–compacted and certified by the Soils Engineer. Back–fill shall not be placed until the concrete in the footings, slabs and walls have cured enough to resist lateral soil pressure from re–compaction activities.

4. Grading around the pad shall be such that drainage from rain or irrigation shall be away from the foundation.

5. Footing penetrations by plumbing or other conduit shall be reviewed and approved by the Structural Engineer, Building Official and the Architect when located under continuous or pad footings.

02100 CONVENTIONAL FOUNDATIONS:

6. The Contractor shall schedule the inspection activities of the Soils Engineer for the inspection of footing trenches and excavations prior to placement of reinforcing steel or concrete. The Soils Engineer shall certify that the pad preparation and trenches are in accordance with the Soils Report. A Certificate of Compliance shall be submitted by the Soils Engineer to Building Official prior to Building Department inspection activities with copies forwarded to the Structural Engineer and the Architect.

DIVISION 3: CONCRETE

03000 REINFORCING STEEL FOR CONVENTIONAL FOUNDATIONS:

1. Reinforcing steel used in the foundation system shall be deformed bars and shall be Grade 60 steel except for #4 bars and smaller may be Grade 40. The properties of the reinforcing steel shall conform to ASTM A–615 for Deformed and Plain Billet Steel Bars for Reinforcing Steel.

2. Contractor to provide mill certificates for the reinforcing steel to the Building Official prior to inspection. Additional copies shall also be distributed to the Structural Engineer and the Architect.

3. Special Inspection activities are not required for the placement of the reinforcing steel.

03200 CONCRETE ACCESSORIES:

1. All anchor bolts and threaded rods shall conform to ASTM A–307, Low Carbon Steel Externally and Internally Threaded Standard Fasteners. Cut threads, not rolled threads are to be used for all anchor bolts and threaded rods.

2. Shot pins shall be Hilti, Inc. products per ICC ESR–1663 & 2379 or shall be ITW/Ramset/Red Head products per ICC ESR–2690. Refer to the manufacturer's installation specifications as required. Consult the Structural Engineer for alternate product usage.

3. Wedge or expansion anchors shall be used only as specifically noted on the Construction Documents. Refer to the manufacturer's installation specifications as required. Consult the Structural Engineer for alternate product usage. Special Inspection for the installation shall be required only if specifically noted on the Construction Documents.

4. Connection hardware for Strong Wall® shear panels to the foundation system shall be Simpson Strong Tie SSTB® bolt per ICC ESR–1267. Holdown anchors for holdowns are to be minimum ASTM A307 material with A36 plate washers as noted and detailed on the construction documents. Consult the Structural Engineer for alternate product usage.

5. Alternate manufactured hardware shall be submitted to the Structural Engineer for review and, if approved, incorporated into the Construction Documents.

03300 CONCRETE FOR CONVENTIONAL FOUNDATIONS:

1. Cement used shall be Type II or V and shall conform to UBC Std 19–1 based on ASTM C–150–85a and ASTM C–595–86, Portland Cement and Blended Hydraulic Cements.

2. Water used for mixing of concrete shall be clean and free from unacceptable concentrations of organic materials, acids and alkaloids.

3. Admixtures incorporated into the concrete mixture shall not contain calcium chlorides.

4. The Contractor shall ensure that the Concrete Mix Design has been provided by a licensed qualified engineer in accordance with UBC Section 1905.

5. The concrete shall be designed, transported and mixed in accordance with UBC Std 19–3 based on ASTM C–94, Specification for Ready Mixed Concrete.

6. Concrete shall be designed to achieve a minimum 28 day compressive strength of 2500 psi with a 4 inch to a 5 inch slump from standard cone test. Testing or Special Inspection for the concrete placement is not required.

7. Testing of the concrete is not required for 2500 psi concrete when the placements are less than 50 cubic yards. As an alternate to testing for placements more than 50 cubic yards, a letter attesting to the design strength and other properties of the concrete shall be submitted to the Building Department prior to concrete placement with copies forwarded to the Structural Engineer and the Architect.

8. Aggregate used for the concrete mix shall conform to ASTM C–33, Concrete Aggregates. Maximum nominal size of aggregates shall be as follows:

   A. One third the depth of the slab.

   B. One fifth of the dimension of the distance between the form boards.

   C. Three fourths the clear distance between reinforcing steel.

   D. 1 Inch.

9. Minimum clear distances from edge of reinforcing to face of the concrete are as follows:

   A. Concrete cast or placed directly against soil surface 3"

   B. Concrete cast or placed against forms for #5 Bars and smaller 1–1/2"

   C. Concrete cast or placed against forms for #6 Bars to #14 Bars 2"

10. The concrete surface shall be kept at minimum 50°F for a minimum of 7 days after placement. Concrete surface shall be kept moist for a minimum of 7 days unless a curing agent is used to promote even curing of the concrete. Curing agents or admixtures shall be applied and maintained in accordance with the manufacturers and Building Code requirements.

DIVISION 6: TIMBER

06000 FASTENERS AND CONNECTORS:

1. Nails for wood to wood or connector to wood shall be made of steel wire and conform to Federal Specification FF–N–105B, Wire, Cut and Wrought Nails, Staples and Spikes. Nails not directly specified on Construction Documents shall be sinker or common type for the penny size indicated. Common nails or approved fastener shall be used for all sheathing to framing diaphragm connections and where specifically noted on Construction Documents. Paslоder nails of equivalent diameter and minimum penetration into framing member may be substituted for common, sinker or short nails as specified on Construction Documents.

2. Pneumatically driven fasteners may be provided in–lieu–of common, sinker or short nails indicated on the Construction Documents. The diameter shall be equal to but no larger than the common wire diameter for the penny weight indicated and the nail head may be standard round type or D shaped head. Fasteners shall be ICC ESR approved based on the 2006 IBC and shall be reviewed for adequacy by the Structural Engineer prior to installation.

3. Nails shall be of minimum sizes as indicated below:

Nail Type Specified	Minimum Length	Wire Diameter	Wire Gauge	Minimum Head Diameter	Pre–drilled Pilot Hole
8d Joist Hgr (N8)	1–1/2"	.131"	10–1/4	.281"	
8d Ply	2"	.131"	10–1/4	.281"	
8d Common	2–1/2"	.131"	10–1/4	.281"	
10d Joist Hgr (N10)	1–1/2"	.148"	9	.312"	
10d Ply	2–3/8"	.148"	9	.312"	
10d Ring Shank	2–3/8"	.135"	10	.312"	
10d Common	3"	.148"	9	.312"	
16d Joist Hgr (N16)	2–1/2"	.162"	8	.344"	
16d Short	3–1/4"	.131"	10–1/4	.281"	
16d Box	3–1/2"	.135"	10	.344"	
16d Sinker	3–1/4"	.148"	9	.344"	1/8" or #30
16d Common	3–1/2"	.162"	8	.344"	1/8" or #30
20d Simpson N20A	1–3/4"	.192"	6	.192"	1/8" or #30
20d Simpson N20AN	2–1/8"	.192"	6	.192"	11/64" or #18
40d Common	5"	.225"	4	.469"	

06000 FASTENERS AND CONNECTORS – CONTINUED:

4. Manufactured framing connectors or hardware shall be Simpson Strong Tie products in accordance with ICC ESR reports 1056, 1267, 1396, 1622, 1679, 1771, 1772, 1866, 2105, 2236, 2320, 2329, 2330, 2549, 2551, 2552, 2553, 2554, 2604, 2605, 2606, 2608, 2613, 2614, 2615, & 2616. If an alternate manufacturer is requested, provide a complete cross reference listing for all hardware specified on the Constructino Documents and the proposed hardware callouts for review and approval.

5. Floor sheathing adhesive shall conform to American Plywood Association specification AFG–01, Adhesives for Field Gluing Plywood to Wood Framing. Documentation attesting to specification acceptance shall be provided to the Building Official or approved by the Federal Housing Authority prior to application. Adhesive shall meet the minimum requirements for wet condition of service.

6. Machine bolts shall conform to ANSI / ASME B–18.2.1, Square and Hex Bolts and Screws and shall be made of metal conforming to ASTM A–307, Low Carbon Steel Externally and Internally Threaded Standard Fasteners. Washers shall be provided between all bolts or nuts in direct contact with wood framing. Provide a maximum 1/32" larger drilled hole for bolts 3/8" or less in diameter and 1/16" larger drilled holes for larger than 3/8" in diameter for bolt installation pre–drill procedures.

7. Lag bolts shall conform to ANSI / ASME B–18.2.1, Square and Hex Bolts and Screws and shall be made of metal conforming to ASTM A–307, Low Carbon Steel Externally and Internally Threaded Standard Fasteners. Washers shall be provided between all bolt heads in direct contact with wood framing. Provide a pre–drilled installation hole per the following table prior to screwed or turned installation into framing. Insertion by force using a hammer or similar device is not acceptable. Installation depth into framing shall be the full diameter threaded portion of the bolt. Refer to the following table for pre–drill information:

Diameter of Lag Bolt	Hole Diameter for Unthreaded Shank	Hole Diameter for Threaded Shank
1/4"	1/4"	5/32"
3/8"	3/8"	15/64"
1/2"	1/2"	5/16"
5/8"	5/8"	13/32"
3/4"	3/4"	1/2"

8. Washers for bolt to wood connections shall be round type unless specifically noted on Construction Documents and shall conform to ANSI / ASME B–18.22.1, Plain Washers. Square washers shall be made of ASTM A–36, Structural Steel with dimensions as noted below. Refer to the following table for correct minimum washer requirements for bolt size specified:

Bolt Diameter	Round or Square Washer Inside Diameter	Round Washer Outside Diameter	Round Washer Thickness	Square Washer Size – Each Leg	Square Washer Thickness
1/4"	5/16"	3/4"	1/16"		
3/8"	7/16"	1"	5/64"		
1/2"	9/16"	1–3/8"	5/64"	2"	3/16"
5/8"	11/16"	1–3/4"	9/64"	2–1/2"	1/4"
3/4"	13/16"	2"	5/32"	2–3/4"	5/16"
7/8"	15/16"	2–1/4"	11/64"	3"	5/16"
1"	1–1/16"	2–1/2"	11/64"	3–1/2"	3/8"

06100 ROUGH CARPENTRY:

1. Framing lumber shall be grade stamped and shall conform to the Western Wood Products Association (WWPA), Western Lumber Grading Rules, West Coast Lumber Inspection Bureau (WCLIB), Standard Grading Rules No. 17 or the National Lumber Grades Authority (NLGA), Standard Grading Rules for Canadian Lumber. The grading agency shall be certified with the American Lumber Standards Committee and in accordance with ICBO AA–514. Lumber shall be dressed as surfaced green (S–GRN) and shall be dry and well seasoned and at or below 19% moisture content prior to the application of wall coverings.

2. Sawn lumber shall have the minimum following grades:

Lumber Usage or Classification	Species and Grade of Lumber
2x4 Studs – 9 feet long or less	Douglas Fir Larch – Standard or Stud
2x4 Studs – over 9 feet in length	Douglas Fir Larch – Construction or #2
2x6 Studs – 11 feet long or less	Douglas Fir Larch – Standard or Stud
2x6 Studs – over 11 feet in length	Douglas Fir Larch – #2
2x8 & Larger Studs	Douglas Fir Larch – #2
2x4 & 3x4 Plates	Douglas Fir Larch – #2 or Standard
2x6, 3x6 or 2x8 & Larger Plates	Douglas Fir Larch – #2
3x4 & 4x4 Posts or Studs	Douglas Fir Larch – #2
4x6 & Larger 4x Posts & Studs	Douglas Fir Larch – #1
6x6 & Larger 6x or 8x Posts	Douglas Fir Larch – #1
2x Joists & Rafters	Douglas Fir Larch – #2
4x4 to 4x12 Beams, Headers & Joists	Douglas Fir Larch – #2
4x14 & 4x16 Beams & Headers	Douglas Fir Larch – #1
6x8 and Larger 6x and 8x10 and Larger 8x Bms & Hdrs	Douglas Fir Larch – #1

3. All wood resting on concrete or masonry or embedded into concrete or in contact with soil shall be preservative treated Douglas Fir.

4. Sheathing panels shall conform to UBC Standard 23–2, Construction and Industrial Plywood which is based on Product Standard PS 1–95 or shall conform to UBC Standard 23–3, Performance Standard for Wood–Based Structural–Use Panels which is based on Product Standard PS 2–92. Sheathing panels shall be grade stamped by an ICBO–approved independent grading agency such as the American Plywood Association / The Engineered Wood Association (APA), Timberco, Inc. or Teco, Pelican Spruce Mills, Ltd. or Louisiana Pacific Corporation. Panels used for covering the exterior of outside walls shall be Exterior rated sheathing. Framing member spacing shall not exceed that of the panel rating for roof or floor sheathing applications. Sheathing shall be installed with the long direction perpendicular to framing supports. Alternate manufacturers, thickness, grades, exposure ratings, span ratings, species and grading agencies shall be submitted to the Structural Engineer for review. Refer to the following table for minimum specifications for sheathing applications:

Application	Panel Grade	Plys & Layers (Plys / Layer)	Exposure Rating	Min. Span Rating
Roof Sht'g	Rated Sheathing	3/3	Exposure I	See notes
Floor Sht'g	Rated Sheathing	4/3	Exposure I	Sht SN–1
3/8" Wall Sht'g	Rated Sheathing	3/3	Exposure I	24 / 0
15/32" Wall Sht'g	Rated Sht'g or Structural I	4/3	Exposure I	24 / 0
Plating Sht'g	Structural I	5/5	Exposure I	24 / 0

5. Preservative treated solid framing lumber shall be pressure treated and conform to American Wood Preservers Association (AWPA), AWPA Standard C–2, Lumber, Timbers, Bridge and Mine Ties – Pressure Treatment. Hot–dipped zinc coated galvanized fasteners are required for attachment to pressure treated lumber, unless SBX–DOT (sodium borate) or zinc borate is used as the treatment solution and is approved by the Building Official. Treatment type and inspection agency shall be clearly stamped on treated material. Exterior exposed surfaces shall be coated or painted with a minimum of two (2) coats of sealer or covered by framing or drywall for interior applications.

06200 GLUED – LAMINATED LUMBER:

1. Glued laminated lumber shall be manufactured, fabricated and shall be inspected for quality control in accordance with ANSI / AITC A–190.1, Structural Glued – laminated Timber. Fabrication of timbers shall be using materials at 16 % or lower moisture content and shall utilize adhesive approved for wet condition of service.

2. Glue Laminated Timbers shall be Visually Graded Western Species with a 24F–V4 combination for standard applications and 24F–V8 for cantilevered applications.

3. Glue Laminated Timbers shall be clearly stamped or marked and shall be accompanied by a Certificate of Compliance indicating conformance to ANSI / AITC A–190.1. Approved Certificate of Compliance issuing agencies are the American Institute of Timber Construction (AITC) per ICBO NER–296, Western Wood Products Association (WWPA) per ICBO NER–QA–220 or the APA – The Engineered Wood Association per ICBO NER QA–397. A copy of the Certificate of Compliance shall be presented to the inspector prior to installation, with copies forwarded to the Structural Engineer and the Architect.

4. Camber requirements for glue laminated timbers shall be as indicated on the Construction Documents or shall have a standard camber with a radius of curvature of 3500 feet plus or minus 200 feet.

5. Preservative treated glued–laminated timbers exposed to weather shall be pressure treated and conform to American Wood Preservers Association (AWPA), AWPA Standard C–28, Pressure Treatment of Structural Glued–laminated Timber or AITC Standard 109, Standard Preservative Treatment of Structural Glued–laminated Timber. Ammonium Copper Zinc Arsenate shall be used as the treatment solution. Treatment type and inspection agency shall be clearly stamped on treated material. Treatment agency to conform to American Wood Preservers Bureau (AWPB) AWPB Standard LP. Exterior exposed surfaces shall be coated or painted with minimum two (2) coats of sealer or covered by framing or drywall for interior applications.

06300 MANUFACTURED LUMBER PRODUCTS:

1. Manufactured lumber products, identified on plan as LSL, TSL, LVL and PSL, shall be from the following manufacturers and shall conform to the related ICC reports indicated:

   A. Trus Joist MacMillan Products per ICC ESR–1387:

Label	Grade or Type	Fb	Fv	M.O.E.	Notes
LSL,TSL	1.5E Timberstrand® LSL	2250 psi	285 psi	1,500,000 psi	a
LVL,M=L	1.9E Microllam® LVL	2600 psi	285 psi	1,900,000 psi	b,e
LSL,LVL,PSL	2.0E Parallam® PSL	2900 psi	290 psi	2,000,000 psi	c

   B. Louisiana Pacific Products per ICC ESR–1254:

Label	Grade or Type	Fb	Fv	M.O.E.	Notes
LSL,TSL	Gang–Lam® LVL 2250Fb 1.5E	2250 psi	285 psi	1,500,000 psi	d,e
LVL,M=L	Gang–Lam® LVL 2650Fb 1.9E	2650 psi	285 psi	1,900,000 psi	d,e
LSL,LVL,PSL	Gang–Lam® LVL 2950Fb 2.0E	2950 psi	290 psi	2,000,000 psi	d,e

   C. Boise Cascade Products per ICC ESR–1040:

Label	Grade or Type	Fb	Fv	M.O.E.	Notes
TSL,LSL	Versa–Lam® LVL 2250Fb	2250 psi	225 psi	1,500,000 psi	c,e
LSL,LVL,PSL	Versa–Lam® LVL 2800Fb	2800 psi	285 psi	2,000,000 psi	c,e

   D. Roseburg Forest Products per ICBO ESR–1210:

Label	Grade or Type	Fb	Fv	M.O.E.	Notes
LSL,TSL	1.5E RIGIDLAM LVL	2250 psi	220 psi	1,500,000 psi	f,e
LSL,LVL,PSL	2.0E RIGIDLAM LVL	2900 psi	285 psi	2,000,000 psi	f,e

   a. Bending stress adjustment factor for depths greater than 12" = $(12/d)^{0.092}$

   b. Bending stress adjustment factor for depths greater than 12" = $(12/d)^{0.136}$

   c. Bending stress adjustment factor for depths greater than 12" = $(12/d)^{1/9}$

   d. Bending stress adjustment factor for depths greater than 12" = $(12/d)^{1/7}$
   for depths less than 12" = $(12/d)^{1/9}$

   e. Multiple 1–3/4" wide mechanically laminated sections using nails or bolts may be used. Consult Structural Engineer for specific requirements.

   f. Bending stress adjustment factor for depths greater than 12" = $(12/d)^{1/8}$

2. Manufactured Lumber products shall be properly stamped or marked by the licensed fabricator or manufacturer.

3. Manufactured Lumber products exposed to weather shall be pressure treated and conform to the American Wood Preservers Association (AWPA), AWPA Standard C–9, Pressure Treatment of Above Ground Use Exposed to Weather. Chromated Copper Arsenate shall be used as the treatment solution and shall have a retention value of 0.40 lb./cu. ft. and shall have penetration to a minimum depth of 0.50". Treatment type and inspection agency shall be clearly stamped on treated material. A Certificate of Inspection indicating conformance to AWPA C–9 shall be submitted to the Building Official with copies forwarded to the Structural Engineer and the Architect. Treatment agency to conform to American Wood Preservers Bureau (AWPB) AWPB Standard LP. Exterior exposed surfaces shall be coated or painted with minimum two (2) coats of sealer or covered by framing or drywall for interior applications.

06500 WOOD ROOF TRUSSES, METAL PLATE CONNECTED:

1. Wood roof trusses shall be manufactured in accordance with CBC Section 2303.4–Trusses and the provisions of the Truss Plate Institute document ANSI / TPI 1, National Design Standard for Metal Plate Connected Wood Truss Construction.

2. Light Metal Plate Connectors shall be ICC approved and shall conform to CBC Section 2303.4.2.

3. Materials for the top and bottom chords of the truss shall be of Douglas Fir Larch.

4. The truss manufacturer shall clearly indicate on the truss shop drawing layout sheet the appropriate hanger sizes, locations and related backing in supporting trusses as required for proper nailed or bolted connection per framing hardware connectors.

5. Trusses shall be cambered as required to maintain a non–bearing condition to intermediate walls or framing.

6. Refer to the truss manufacturers specifications for general installation procedures or the Construction Documents for additional specific installation procedures. This would include, but not limited to, blocking, bracing, bridging, generic and specific truss framing connections. If any discrepancy, conform to the more limiting of the requirements.

7. The trusses shall be designed by a licensed Professional Engineer, referred to as the Roof Truss Engineer. Truss shop drawings shall be stamped and signed by the Roof Truss Engineer. The trusses shall be legibly branded or marked within 2 feet of the center of the span on the face of the bottom chord with the name of the truss manufacturer, design loading and the spacing of the trusses.

8. The truss manufacturer shall employ an approved Quality Control Inspection Agency to verify correct fabrication per applicable Building Code and ICC report specifications.

STRUCTURAL OBSERVATION PROGRAM

1. THE OWNER SHALL EMPLOY THE ENGINEER OF RECORD OR ARCHITECT OF RECORD REGISTERED/LICENSED IN THE STATE OF CALIFORNIA WHO IS RESPONSIBLE FOR THE STRUCTURAL DESIGN TO PERFORM STRUCTURAL OBSERVATION.

   ENGINEER OF RECORD: PHILIP G. SOMA, JR., CE 46231 - EXP. 12-31-2012
   DESIGNATED FOR OBSERVATION: PHILIP G. SOMA, JR., CE 46231 - EXP. 12-31-2012

2. THE ENGINEER OR ARCHITECT RESPONSIBLE FOR STRUCTURAL OBSERVATION, THE CONTRACTOR, AND APPROPRIATE SUBCONTRACTORS SHALL HOLD A PRE-CONSTRUCTION MEETING TO REVIEW THE DETAILS OF THE STRUCTURAL SYSTEM TO BE OBSERVED.

3. FOUNDATION PRE-POUR: LOCATION OF REINFORCING AND TENDONS; LOCATION AND TYPE OF ANCHOR BOLTS AND HOLDOWNS.

   FLOOR NAILING: SIZE AND SPACING OF NAILS USED AT DIAPHRAGM EDGES AND BOUNDARIES.

   ROOF NAILING: SIZE AND SPACING OF NAILS USED AT DIAPHRAGM EDGES AND BOUNDARIES.

   FRAMING: SIZE, SPECIES AND GRADE OF LUMBER; SHEARWALL CONSTRUCTION; MECHANICAL CONNECTIONS REQUIRED FOR FORCE TRANSFER.

REGISTERED PROFESSIONAL ENGINEER
PHILIP G. SOMA JR.
NO. 46231
EXP. 12-31-12
CIVIL
STATE OF CALIFORNIA

STRUCTURES DESIGN GROUP, INC.
17780 FITCH SUITE 185
Irvine, Ca 92614
(949)252-7660/252-7661FAX
www.sdgeng.com

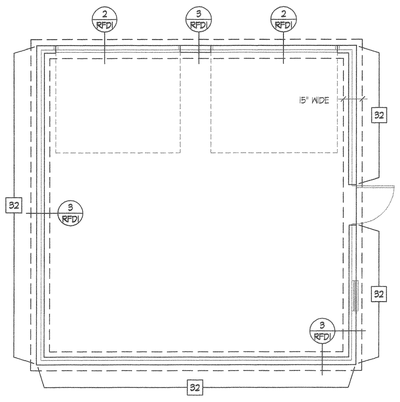
HABITAT SANTA ANA
717 E. 3RD STREET SANTA ANA, CA 92701
HABITAT FOR HUMANITY ORANGE COUNTY
2200 S RITCHEY STREET SANTA ANA, CA 92705

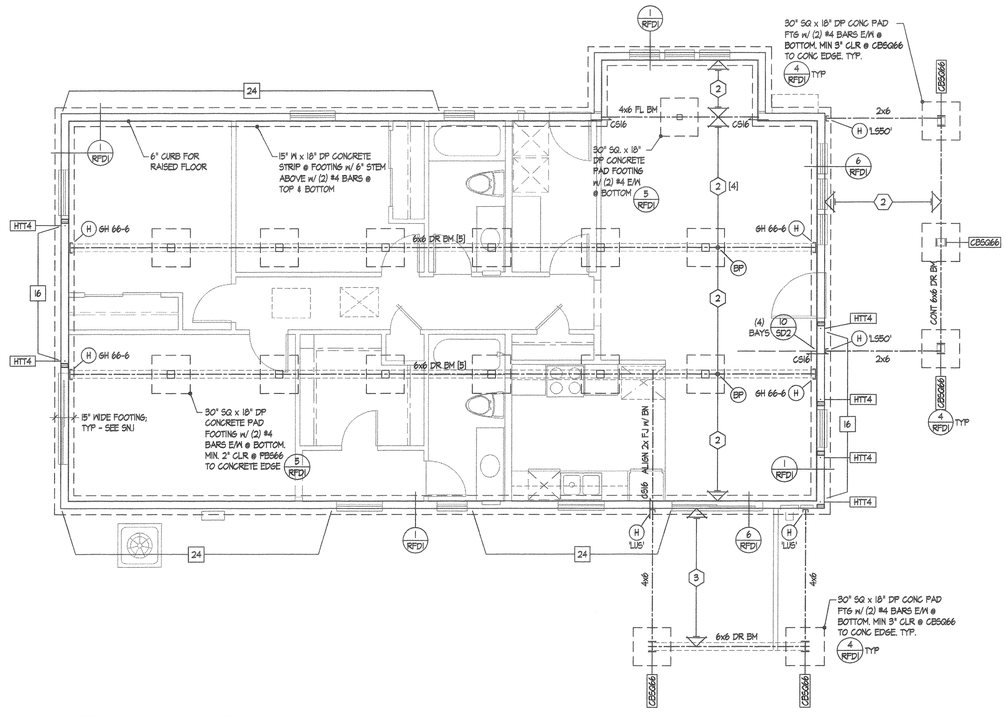
REVISIONS			
NO.	DATE	NO.	DATE

PROJECT MANAGER
P.S.
DESIGNER
P.S.
DRAWN BY
A.D.
REVIEWED BY
P.S.
JOB NUMBER
2011009
SHEET
SN.2

2011-08-25

CAD FILE:





FOUNDATION PLAN

FOUNDATION NOTES

1. SEE SHEET SN-1 FOR GENERAL NOTES AND SN-2 FOR TYPICAL SPECIFICATIONS.
2. REFER TO FOUNDATION NOTE #11 ON SHEET SN-1 FOR FOOTING DIMENSIONS AND REQUIREMENTS.
3. REFER TO FOUNDATION NOTE #12 ON SHEET SN-1 FOR SLAB REQUIREMENTS.
4. TYPICAL WALL TO SLAB ANCHORAGE DETAILS:
   - 1 RFD1 EXTERIOR WALL
   - 3 RFD1 EXTERIOR WALL AT GARAGE
   - 2 RFD1 GARAGE APRON
5. □ INDICATES SIMPSON HDA, MTT OR HTT HOLDDOWN PER 10 RFD1 OR PER 11 RFD1 FOR A STEM WALL CONDITION.
6. FOUNDATION SILL PLATES SHALL BE BOLTED TO THE FOUNDATION USING STEEL ANCHOR BOLTS WITH A MINIMUM NOMINAL DIAMETER OF 5/8" AND A MINIMUM EMBEDMENT OF 7" INTO THE CONCRETE. ANCHOR BOLT SPACING SHALL NOT EXCEED 4'-0". THERE SHALL BE A MINIMUM OF TWO BOLTS PER PIECE WITH ONE BOLT LOCATED NOT MORE THAN 12" OR LESS THAN SEVEN BOLT DIAMETERS FROM EACH END OF THE PIECE. 3" SQ x .229" THICK PLATE WASHERS SHALL BE USED AT EACH FOUNDATION SILL PLATE ANCHOR BOLT. USE A STANDARD CUT WASHER BETWEEN THE NUT AND THE PLATE WASHER.

ANCHOR BOLT LEGEND

- 2 PROVIDE TOTAL OF (2) 5/8"ø ANCHOR BOLTS
- 3 PROVIDE TOTAL OF (3) 5/8"ø ANCHOR BOLTS
- 12 PROVIDE 5/8"ø ANCHOR BOLTS AT 12"oc
- 16 PROVIDE 5/8"ø ANCHOR BOLTS AT 16"oc
- 24 PROVIDE 5/8"ø ANCHOR BOLTS AT 24"oc
- 32 PROVIDE 5/8"ø ANCHOR BOLTS AT 32"oc
- 48 PROVIDE 5/8"ø ANCHOR BOLTS AT 48"oc
- SW SIMPSON STRONG-WALL. SET ANCHORS WITH MFR'S TEMPLATE

ADDED NOTES PER BUILDING DEPT.

1. ALL HOLD DOWNS MUST BE TIED IN PLACE PRIOR TO FOUNDATION INSPECTION.
2. PRIOR TO REQUESTING A BUILDING SAFETY DIVISION FOUNDATION INSPECTION, THE GEOTECHNICAL ENGINEER SHALL INSPECT AND APPROVE THE FOUNDATION EXCAVATIONS.
3. PRIOR TO CALLING FOR FOUNDATION INSPECTION, THE BUILDING CORNERS SHALL BE SURVEYED AND STAKED BY A CALIFORNIA LICENSED LAND SURVEYOR OR QUALIFIED CIVIL ENGINEER. THE SURVEY AND STAKING MUST BE DOCUMENTED AND BEAR THE STAMP AND SIGNATURE OF THE PERSON RESPONSIBLE FOR THE SURVEY AND STAKING. THE CERTIFICATION DOCUMENT MUST BE SUBMITTED TO THE BUILDING INSPECTOR AT THE TIME OF FOUNDATION INSPECTION.
4. PRIOR TO REQUESTING A BUILDING DEPARTMENT FOUNDATION INSPECTION, THE SOILS ENGINEER SHALL INSPECT AND APPROVE THE FOUNDATION EXCAVATIONS.

ASSOCIATED SOILS ENGINEERING, INC.

REGISTERED PROFESSIONAL GEOTECHNICAL ENGINEER LAWRENCE J. D. CHUNG No. 2881 EXP. 6/30/13 STATE OF CALIFORNIA

Plans have been reviewed from a geotechnical engineering standpoint only and are in compliance with the Preliminary Geotechnical Investigation Report prepared by this firm dated 3/14/14 Job No. 14-6260 and subsequent addena.

This review did not include checking accuracy of design and dimensions or compliance with building code requirements.

Date: 10/8/14

REGISTERED PROFESSIONAL ENGINEER PHILIP G. SOMA, JR. No. 46231 EXP. 12-31-12 CIVIL STATE OF CALIFORNIA

STRUCTURES DESIGN GROUP, INC.
17780 FITCH SUITE 185
IRVINE, CA 92614
(949)252-7640/252-7661FAX
www.sdgeng.com

HABITAT SANTA ANA
717 E. 3RD STREET SANTA ANA, CA 92701
HABITAT FOR HUMANITY ORANGE COUNTY
2200 S RITCHEY STREET SANTA ANA, CA 92705

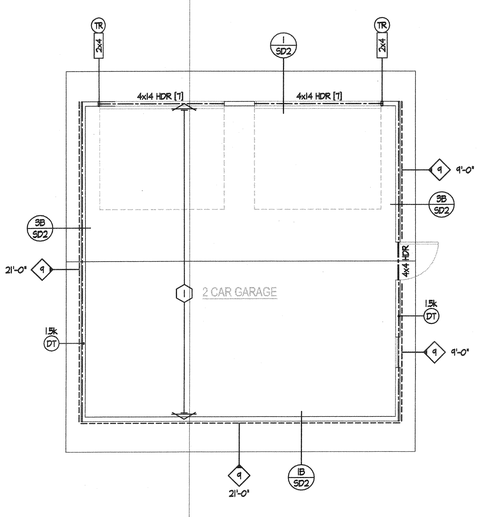
REVISIONS

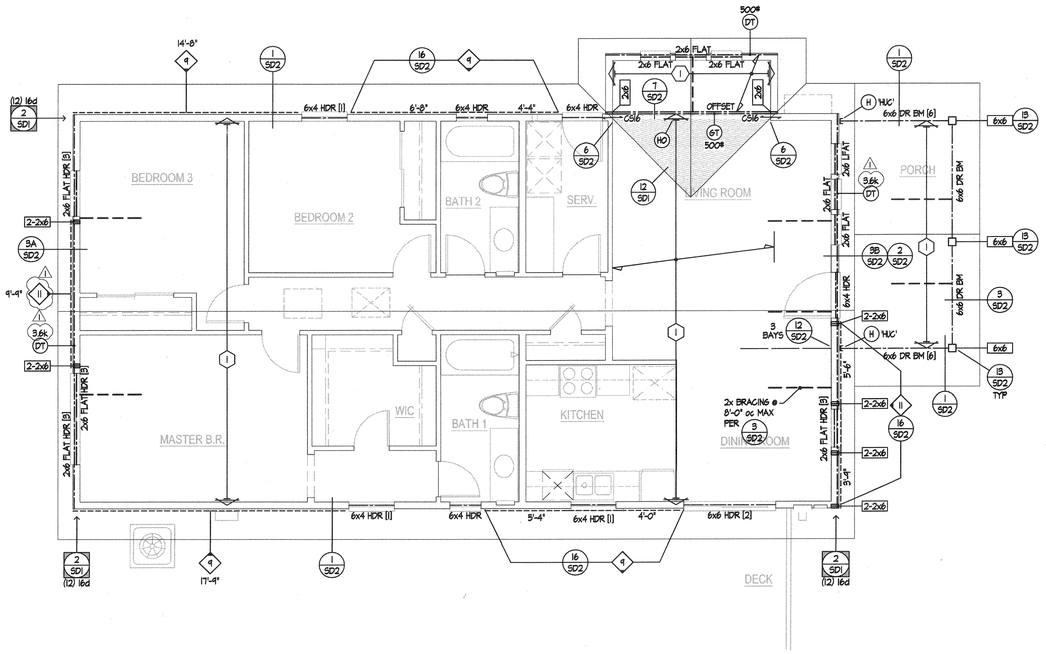
NO.	DATE	NO.	DATE

PROJECT MANAGER	P.S.
DESIGNER	P.S.
DRAWN BY	A.D.
REVIEWED BY	P.S.
JOB NUMBER	2011009
SHEET	S1.1

CAD FILE:

2011-08-25





FRAMING PLAN

FRAMING LEGEND

(1) 2x TRUSSES @ 24" oc

2 2x6 FLOOR JOISTS @ 16" oc

3 2x6 FLOOR JOISTS @ 12" oc

FRAMING NOTES

1. SEE SHEETS SN1 & SN2 FOR GENERAL NOTES AND SPECS.
2. (#) INDICATES SHEAR WALL. SEE SHEET SN1 FOR SCHEDULE. ALL NAILING APPLIES FULL HEIGHT AND FULL LENGTH OF WALL, U.N.O.
   (SW) INDICATES SIMPSON STRONG WALL BY SIMPSON STRONG-TIE. SEE CURRENT CATALOG FOR INSTALLATION REQUIREMENTS.
3. SPLICE PLATES OF EXTERIOR WALLS AND SHEAR WALLS PER (2/SD1) U.N.O.

ALTERNATE PLATE SPLICE SCHEDULE

NAILS SPECIFIED	STRAP ALTERNATE
(8) 16d	ST18 OR CS16
(12) 16d	CS16
(16) 16d	MSTA36
(20) 16d	MSTC28
(24) 16d	MSTC40

SEE 2/SD1 FOR ADDITIONAL INFORMATION

4. PROVIDE ½" CLEAR AT TOP OF NON-BEARING WALLS PER (13/SD1)
5. SEE DETAIL (9/SD1) FOR TYPICAL WALL FRAMING AT OPENING.
6. CEILING JOIST SCHEDULE

SIZE	12" oc	16" oc	24" oc
2x4	10'-9"	9'-9"	8'-6"
2x6	16'-11"	15'-4"	13'-5"
2x8	22'-2"	20'-3"	17'-8"

7. INTERIOR NON-BEARING WALL HEADER SCHEDULE

HEADER SIZE	MAX HDR SPAN w/ < 5'-0" WALL ABOVE	MAX HDR SPAN w/ < 10'-0" WALL ABOVE
2x4 FLAT	5'-0"	N/A
(2) 2x4 ON EDGE	6'-0"	4'-0"
4x4 STD & BTR	6'-6"	4'-6"
4x6 DF #2	10'-0"	9'-6"

8. SEE DETAILS (13/SD3) & (14/SD3) FOR TYP. WALL FLOOR TO FLOOR HOLDOWN INSTALLATIONS.
9. (2) 2x4 POST w/ 16d SHORT @ 6" oc STAGGERED MAY BE USED IN-LIEU-OF 4x4 POST CALLOUTS @ FLOOR TO FLOOR HOLDOWNS.

FRAMING NOTE LEGEND

- (AJ) - ALIGNMENT JOIST w/ E.N.
- (AP) - ABOVE POST BELOW
- (AR) - ALIGNMENT RAFTER w/ E.N.
- (AT) - ALIGNMENT TRUSS w/ E.N.
- (BP) - BEARING POINT
- (DT) - DRAG TRUSS w/ E.N.
- (EE) - EACH END
- (EN) - EDGE NAIL
- (EW) - EACH WAY
- (FH) - FULL HEIGHT
- (GT) - GIRDER TRUSS
- (H) - HANGER AS NOTED
- (HO) - HANGER BY OTHERS
- (KP) - KING POST
- (NP) - NAIL TO POST w/16d @ 4" oc
- (PA) - ALIGN WITH POST ABOVE
- (SB) - SOLID BLKG
- (TR) - TRIMMER

TRUSS NOTES

1. TRUSSES CAPABLE OF TRANSFERRING A MINIMUM LOAD OF 1 KIP (U.N.O. ON PLANS) FROM THE TOP CHORD TO THE BOTTOM CHORD SHALL BE PROVIDED IN THE FOLLOWING LOCATIONS, AT A MINIMUM:
   a) ABOVE EVERY SHEAR WALL PARALLEL TO TRUSS FRAMING
   b) ABOVE EVERY EXTERIOR WALL PARALLEL TO TRUSS FRAMING
      NOTE: GABLE END TRUSSES SHALL HAVE DIAGONAL WEBS IN ADDITION TO VERTICAL WEBS REQUIRED FOR ATTACHMENT OF FINISH MATERIALS
   c) AT ALL LOCATIONS WHERE A TRUSS IS SPECIFIED ON PLAN AS A DRAG TRUSS OR AS AN ALIGNMENT TRUSS
2. ALL HANGERS AND BRACING REQUIRED FOR SUPPORT OF ANY TRUSS ARE THE RESPONSIBILITY OF THE TRUSS MANUFACTURER, AND SHALL BE CLEARLY SHOWN ON THE TRUSS LAYOUT PLANS.
3. THE FRAMING CONTRACTOR SHALL HAVE THE BUILDING DEPT APPROVED TRUSS PLANS ON SITE PRIOR TO FOUNDATION INSPECTION AND THROUGHOUT THE CONSTRUCTION PHASE. THESE TRUSS PLANS SHALL CONFORM TO THE FRAMING PLANS PREPARED BY THE ENGINEER OF RECORD. TRUSS PLANS SHALL BEAR THE WET SIGNATURE OF THE TRUSS DESIGN ENGINEER, AND A WET STAMP WHICH SHOWS THE TRUSS PLANS HAVE BEEN REVIEWED BY THE ENGINEER OF RECORD. THESE TRUSS PLANS SHALL BE CONSIDERED PART OF THE CONSTRUCTION DOCUMENTS.
4. TRUSSES SHALL BE DESIGNED WITH CONSIDERATION FOR ALL SUPERIMPOSED LOADS, SUCH AS CHIMNEY FLUE FRAMING AND MECHANICAL EQUIPMENT.
5. REFER TO DETAIL 13/SD1 FOR NON-BEARING WALL TO TOP PLATE CONNECTION.

ADDITIONAL NOTES PER BUILDING DEPT.

1. FOLLOWING ARE THE DESIGN LOADS USED FOR THIS PROJECT:
   DEAD LOADS: ROOF/CEILING = 14 PSF
   DEAD LOADS: FLOOR = 10 PSF
   DEAD LOADS: EXTERIOR WALL = 15 PSF
   DEAD LOADS: INTERIOR WALL = 10 PSF
   DEAD LOADS: ROOF TILE = 10 PSF MAXIMUM
   LIVE LOADS: ROOF = 14 PSF - 5:12 SLOPE
   LIVE LOADS: FLOOR & DECK = 40 PSF
   LIVE LOADS: UNINHABITABLE ATTICS WITHOUT STORAGE = 10 PSF
   SEISMIC LOAD - V = 0.180 W - SEE SN-1 FOR LOCATION & DESIGN COEFFICIENTS
   WIND LOAD DESIGN CRITERIA : 85 MPH / EXPOSURE "C" / NO TOPO EFFECTS

REGISTERED PROFESSIONAL ENGINEER PHILIP C. SOMA JR. REG. NO. 46231 EXP. 12-31-12 CIVIL STATE OF CALIFORNIA

STRUCTURES DESIGN GROUP, INC.
17780 FITCH SUITE 185
IRVINE, CA 92614
(949) 852-7640 / 852-7661FAX
www.sdgeng.com

HABITAT SANTA ANA
717 E. 3RD STREET SANTA ANA, CA 92701
HABITAT FOR HUMANITY ORANGE COUNTY
2200 S RITCHEY STREET SANTA ANA, CA 92705

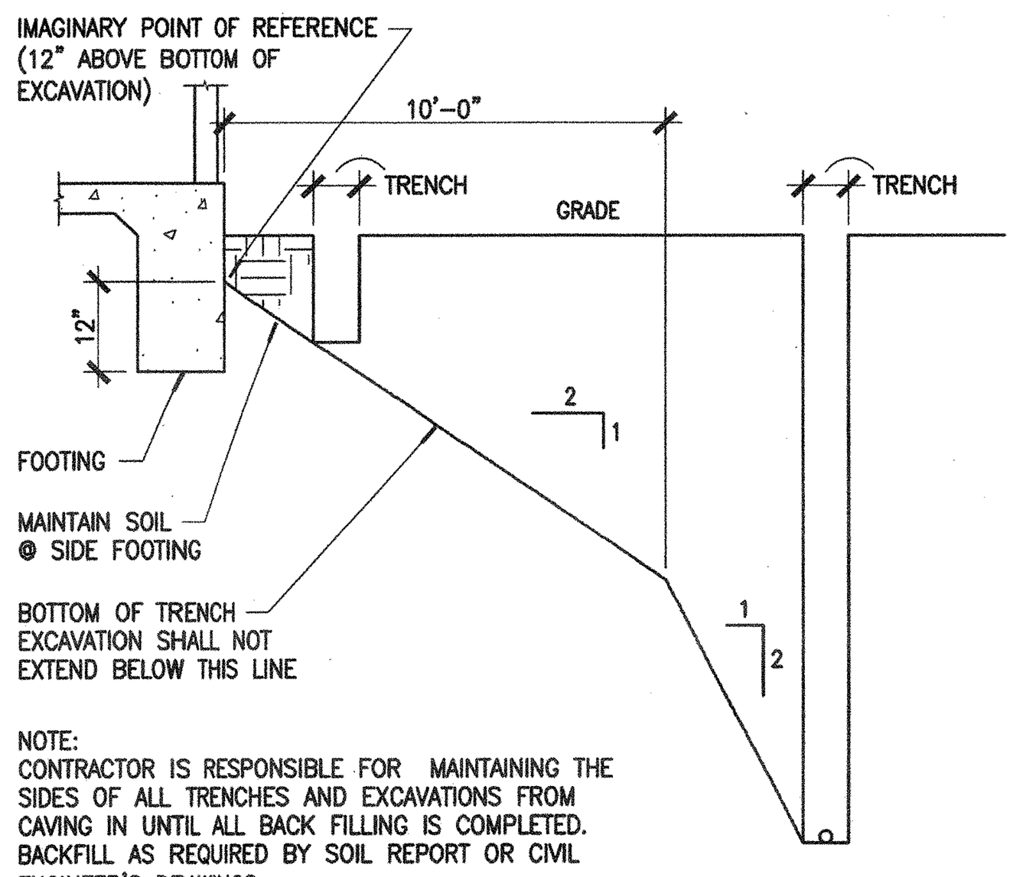
REVISIONS

NO.	DATE
1	08/25/11

PROJECT MANAGER P.S.
DESIGNER P.S.
DRAWN BY A.D.
REVIEWED BY P.S.
JOB NUMBER 2011009
SHEET **S1.2**

2011-08-25

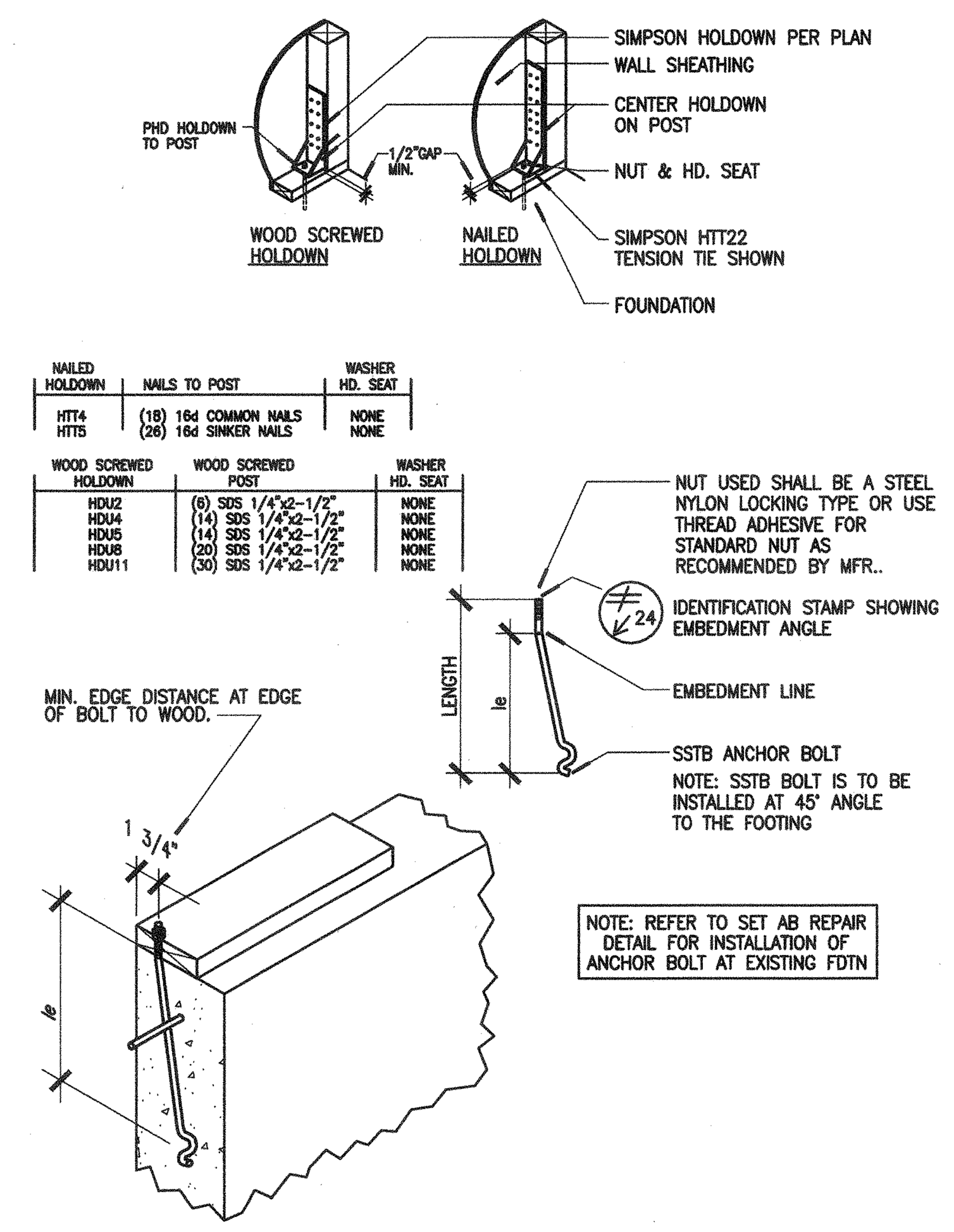
CAD FILE:



NOTE:
CONTRACTOR IS RESPONSIBLE FOR MAINTAINING THE SIDES OF ALL TRENCHES AND EXCAVATIONS FROM CAVING IN UNTIL ALL BACK FILLING IS COMPLETED. BACKFILL AS REQUIRED BY SOIL REPORT OR CIVIL ENGINEER'S DRAWINGS

TRENCHING RESTRICTIONS FOR FTGS (13)

NOT TO SCALE — FGEN02



NAILED HOLDOWN	NAILS TO POST	WASHER HD. SEAT
HTT4	(18) 16d COMMON NAILS	NONE
HTT5	(26) 16d SINKER NAILS	NONE

WOOD SCREWED HOLDOWN	WOOD SCREWED POST	WASHER HD. SEAT
HDU2	(6) SDS 1/4"x2-1/2"	NONE
HDU4	(14) SDS 1/4"x2-1/2"	NONE
HDU5	(14) SDS 1/4"x2-1/2"	NONE
HDU8	(20) SDS 1/4"x2-1/2"	NONE
HDU11	(30) SDS 1/4"x2-1/2"	NONE

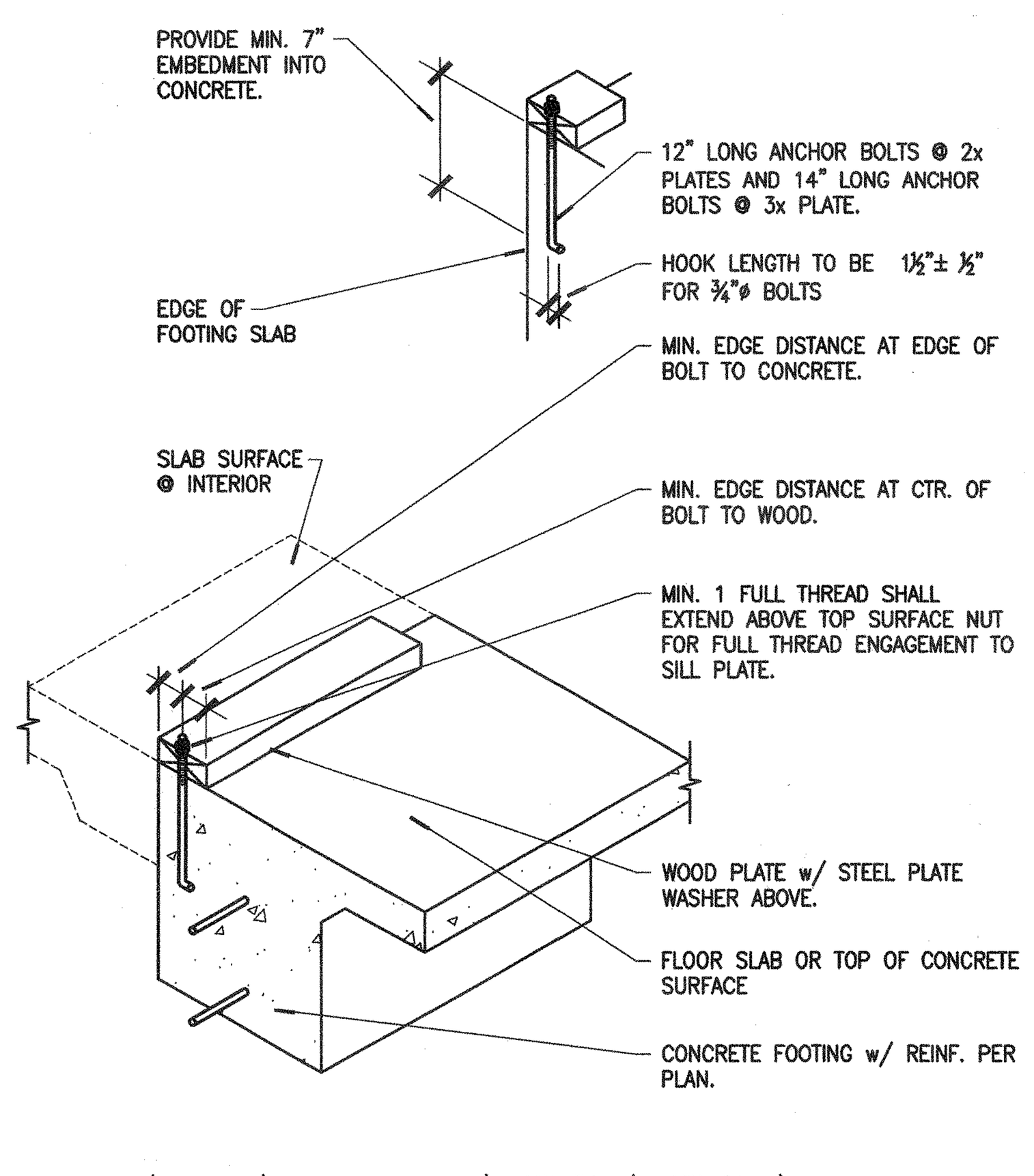
HOLDOWN	SSTB BOLT	BOLTø	LENGTH	MIN. EMBED. le	MINIMUM STEM WALL WIDTH
HTT4/HTT5	SSTB24	5/8"	25"	20 5/8"	6"
HDU2	SSTB20	5/8"	21	16 5/8"	6"
HDU4	SSTB24	5/8"	25"	20 5/8"	6"
HDU5	SSTB24	5/8"	25"	20 5/8"	6"
HDU8	SB 7/8x24	7/8"	24"	18"	8"
HDU11	SB 1x30	1"	30"	24"	10"

(14)

HOLDDOWN AT STEM WALL FOOTING (11)

1"=1'-0" — _FOSW05_2007CBC

NOTES:
1. ANCHOR BOLTS SHALL HAVE CUT THREADS, NOT ROLLED, DUE TO DECREASED ALLOWABLE LOADING. CHARACTERISTICS FOR SMALLER DIAMETER ROLLED THREADS.
2. WASHER ARE TO BE FABRICATED FROM A36 PLATE STEEL.
3. SILL PLATE SHALL NOT BE COUNTERSUNK FOR WASHER. PROVIDE REPAIR FOR INCORRECTLY INSTALLED ANCHOR BOLT IN-LIEU-OF NOTCHING SILL PLATE.
4. BORING IN WOOD PLATE SHALL BE NO LARGER THAN BOLT HOLE SIZE NOTED. CONSULT STRUCTURAL ENGINEER FOR REPAIR OF OVER DRILLED HOLE.

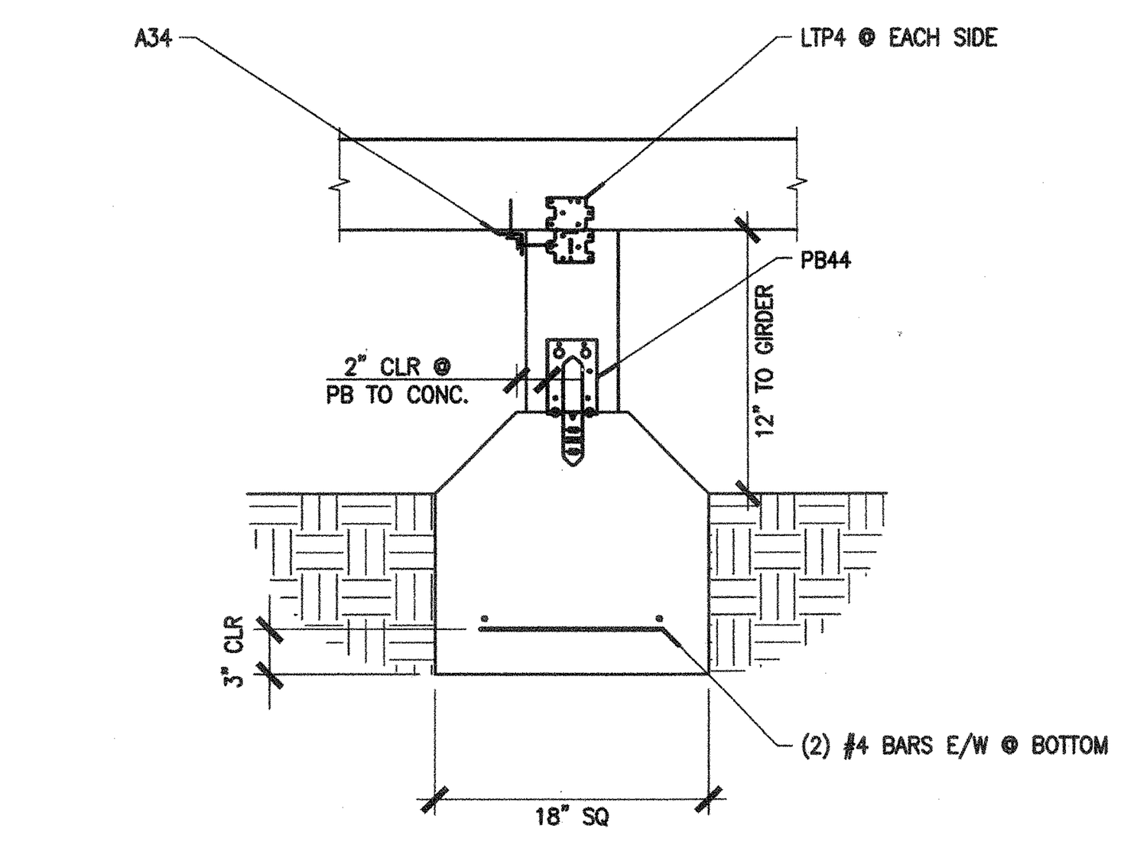


ANCHOR BOLT SIZE	BOLT HOLE SIZE	MIN. 1-1/2d EDGE DISTANCE		MIN. 7d DISTANCE TO END OF PLATE	MIN. 6d ANCHOR BOLT SPACING	WASHER * SIZE	
		TO WOOD	TO CONC.			SQUARE SIZE	THICKNESS
⅝"	1¹⁄₁₆"	¹⁵⁄₁₆"	1⅞"	4⅜"	3¾"	3" x 3"	.229"
¾"	1³⁄₁₆"	1⅛"	2¼"	5¼"	4½"	3" x 3"	.229"

* - SLOTTED HOLE AT WASHER TO BE ³⁄₁₆" LARGER THAN BOLT DIAMETER AND 1½" LONG. USE STANDARD CUT WASHER BETWEEN NUT AND PLATE WASHER.

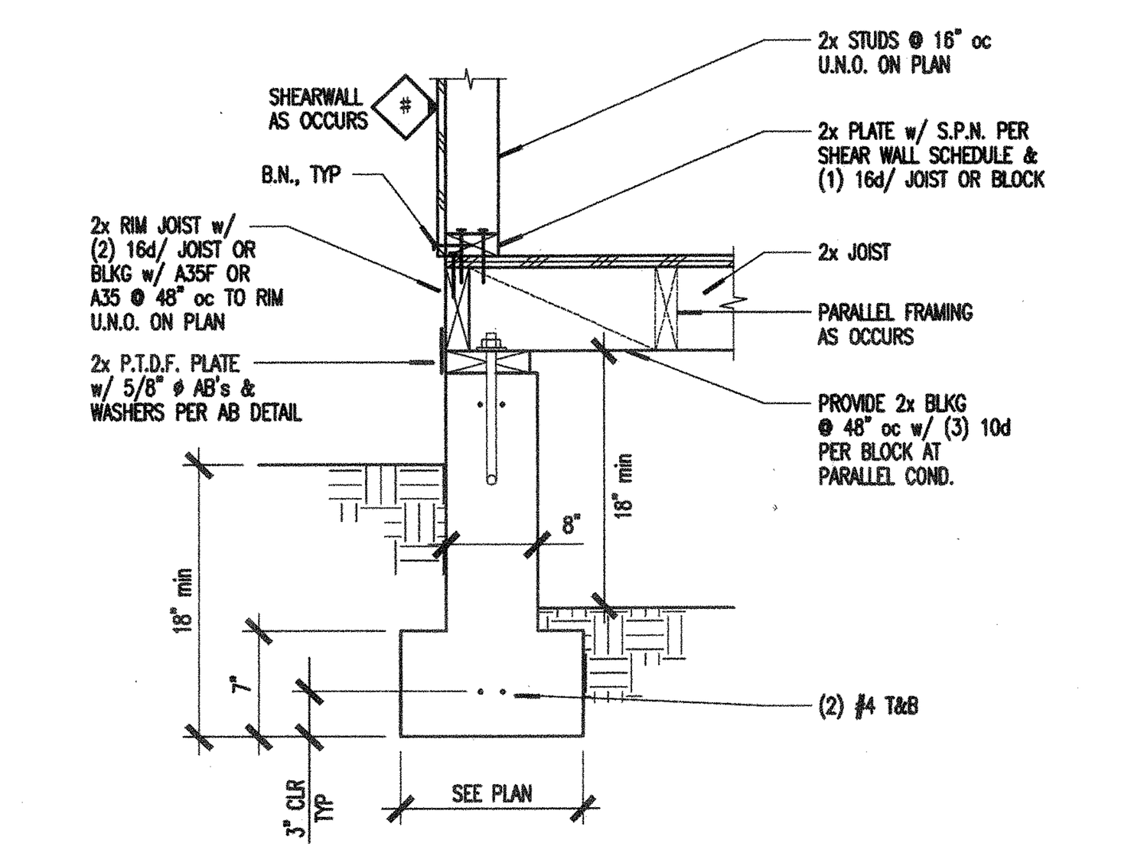
ANCHOR BOLTS AT ONE POUR FOOTING (9)

1"=1'-0" — FGEN06_07CBC



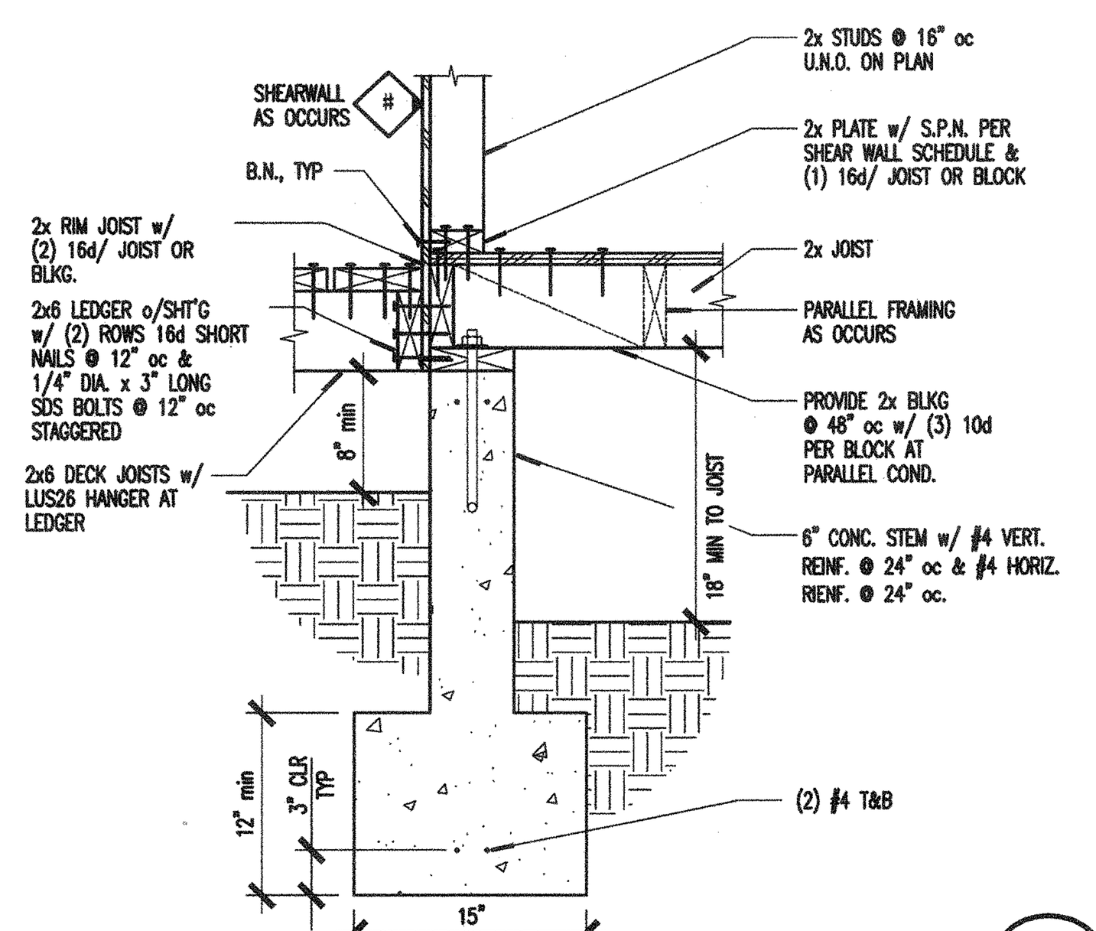
PAD FOOTING AT GIRDER (5)

1"=1'-0" — _FOSW13



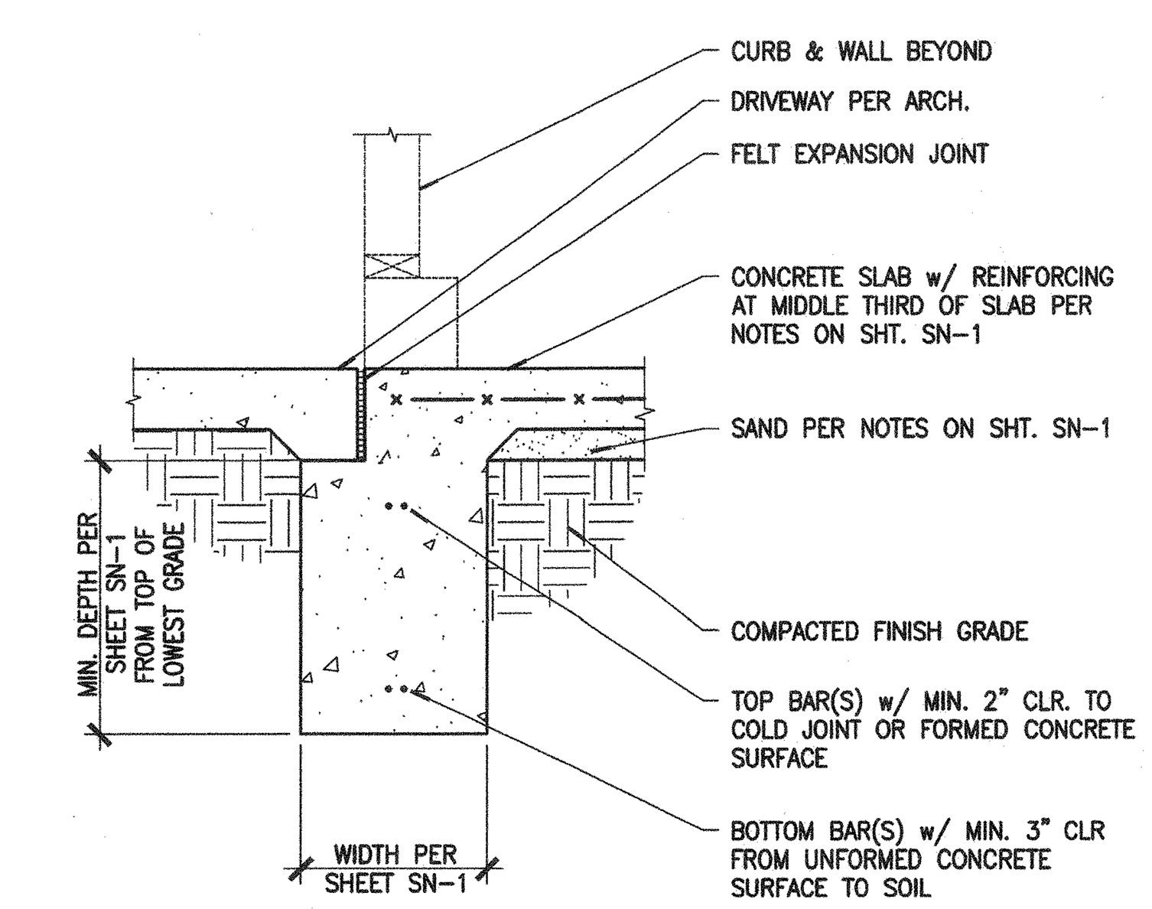
EXTERIOR STEM WALL FOOTING (1)

1"=1'-0" — _FOSW01



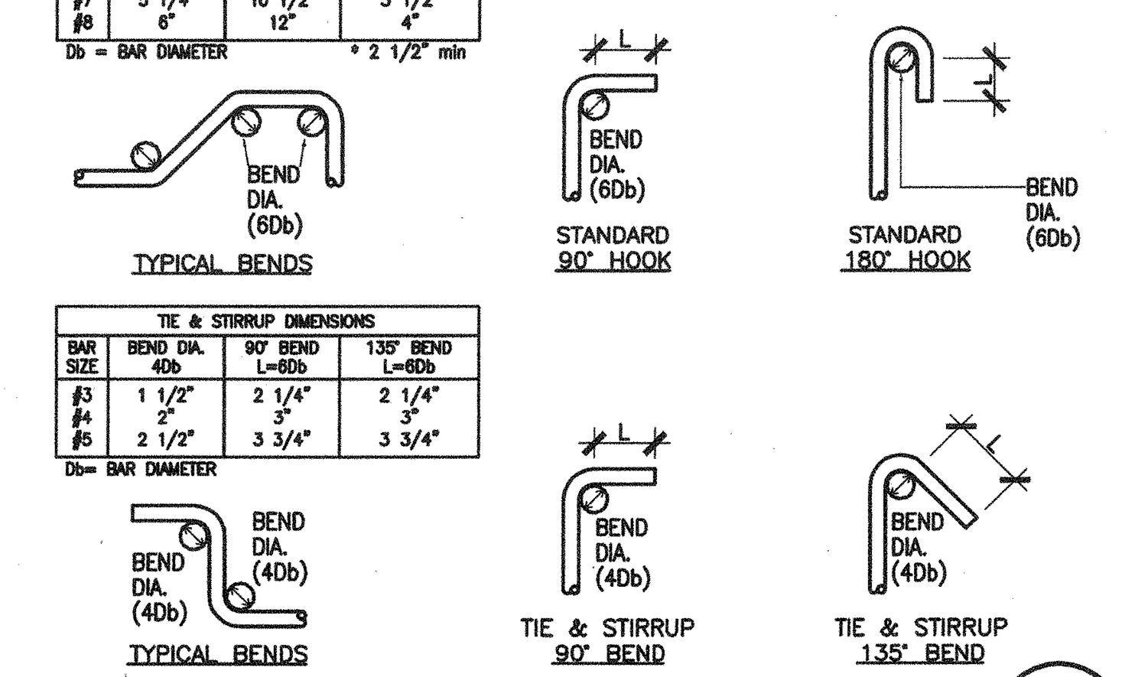
EXTERIOR CURB FOOTING @ PORCH (6)

1"=1'-0" — 11009_6RFD1



FTG @ GARAGE APRON - ONE POUR (2)

1"=1'-0" — FOCT06A



STANDARD HOOK DIMENSIONS			
BAR SIZE	BEND DIA. 6Db	90° BEND L=12Db	180° BEND L=4Db*
#3	2 1/4"	4 1/2"	2 1/2"
#4	3"	6"	2 1/2"
#5	3 3/4"	7 1/2"	2 1/2"
#6	4 1/2"	9"	3"
#7	5 1/4"	10 1/2"	3 1/2"
#8	6"	12"	4"

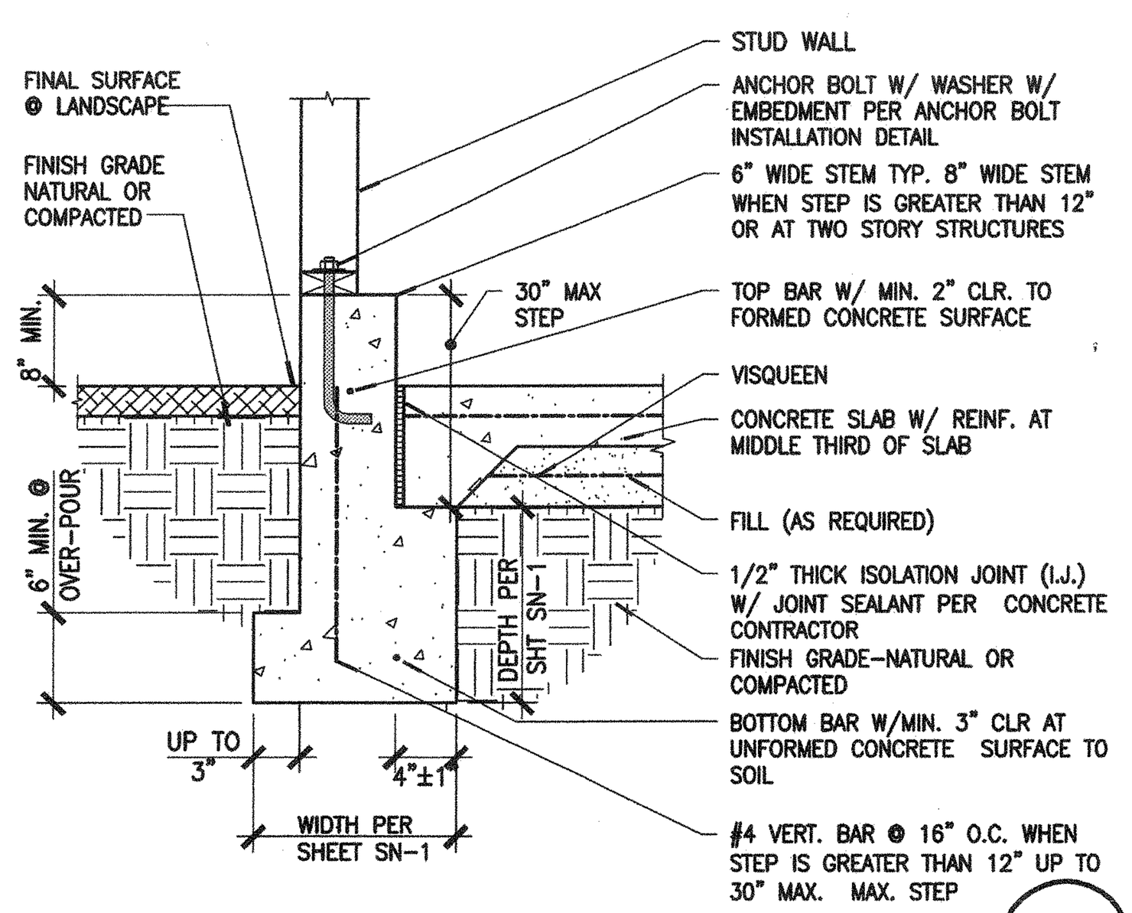
Db = BAR DIAMETER — * 2 1/2" min

TIE & STIRRUP DIMENSIONS			
BAR SIZE	BEND DIA. 4Db	90° BEND L=6Db	135° BEND L=6Db
#3	1 1/2"	2 1/4"	2 1/4"
#4	2"	3"	3"
#5	2 1/2"	3 3/4"	3 3/4"

Db= BAR DIAMETER

REBAR HOOK, TIE & STIRRUP BENDS (7)

NOT TO SCALE — FGEN01

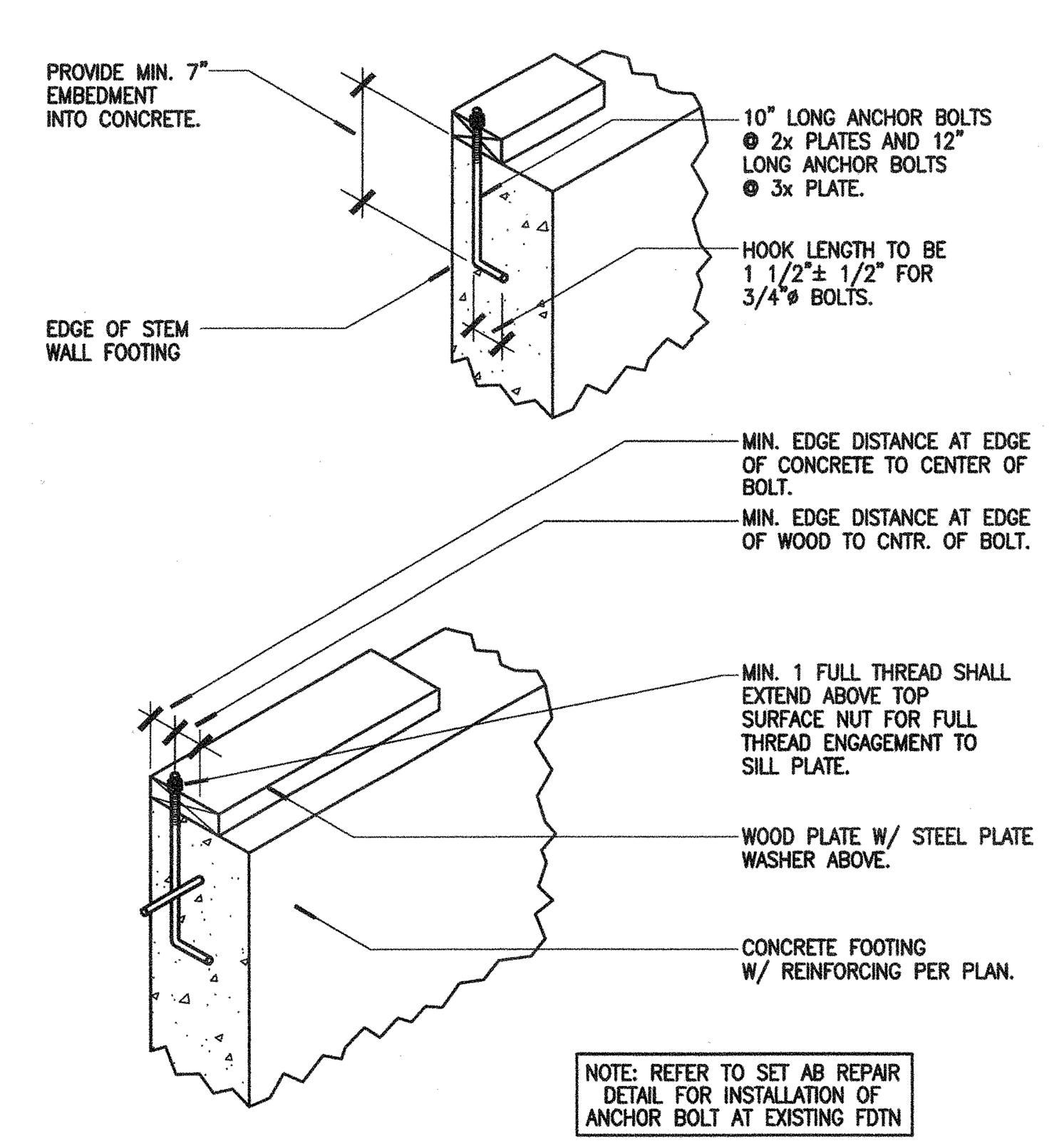


FTG @ EXTERIOR GARAGE (3)

1"=1'-0" — FOCT05

(15)

NOTES:
1. ANCHOR BOLTS SHALL HAVE CUT THREADS, NOT ROLLED, DUE TO DECREASED ALLOWABLE LOADING CHARACTERISTICS FOR SMALLER DIAMETER ROLLED THREADS.
2. WASHERS ARE FABRICATED FROM A36 PLATE STEEL.
3. SILL PLATE SHALL NOT BE COUNTERSUNK FOR WASHER. PROVIDE REPAIR FOR INCORRECTLY INSTALLED ANCHOR BOLT IN-LIEU-OF NOTCHING SILL PLATE.
4. BORING IN WOOD PLATE SHALL BE NO LARGER THAN BOLT HOLE SIZE NOTED. CONSULT STRUCTURAL ENGINEER FOR REPAIR OF OVER DRILLED HOLE.

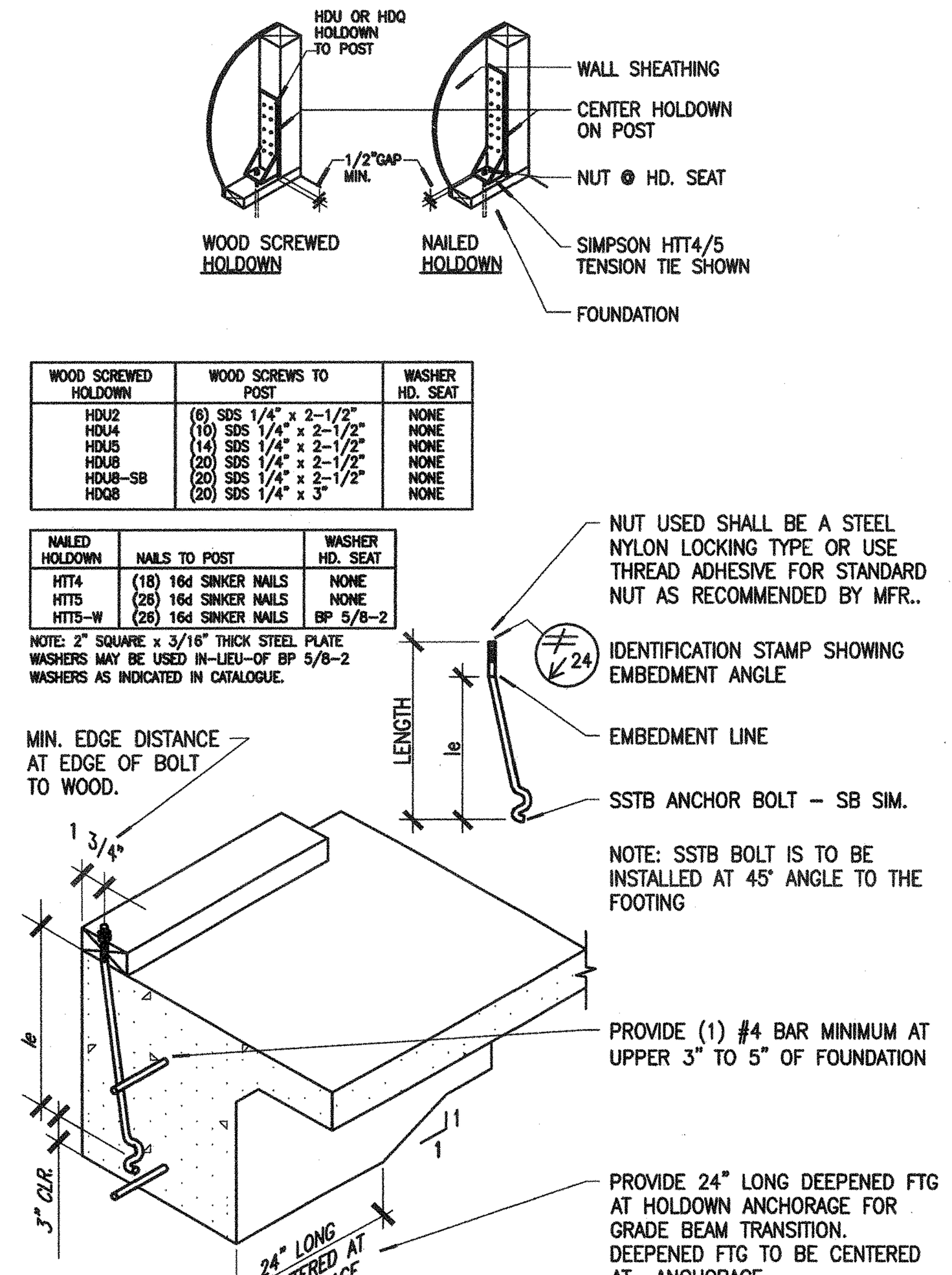


ANCHOR BOLT SIZE	BOLT HOLE SIZE	MIN. 1-1/2d EDGE DISTANCE		MIN. 7d DISTANCE TO END OF PLATE	MIN. 6d ANCHOR BOLT SPACING	WASHER SIZE	
		TO WOOD	TO CONC.			SQUARE SIZE	THICKNESS
5/8"	11/16"	15/16"	1 7/8"	4 3/8"	3 3/4"	2" SQUARE	3/16"
3/4"	13/16"	1 1/8"	2 1/4"	5 1/4"	4 1/2"	2-3/4" SQ.	5/16"

(16)

ANCHOR BOLTS AT STEM WALL FOOTING (12)

1"=1'-0" — _FOSW06



WOOD SCREWED HOLDOWN	WOOD SCREWS TO POST	WASHER HD. SEAT
HDU2	(6) SDS 1/4" x 2-1/2"	NONE
HDU4	(10) SDS 1/4" x 2-1/2"	NONE
HDU5	(14) SDS 1/4" x 2-1/2"	NONE
HDU8	(20) SDS 1/4" x 2-1/2"	NONE
HDU8-SB	(20) SDS 1/4" x 2-1/2"	NONE
HDQ8	(20) SDS 1/4" x 3"	NONE

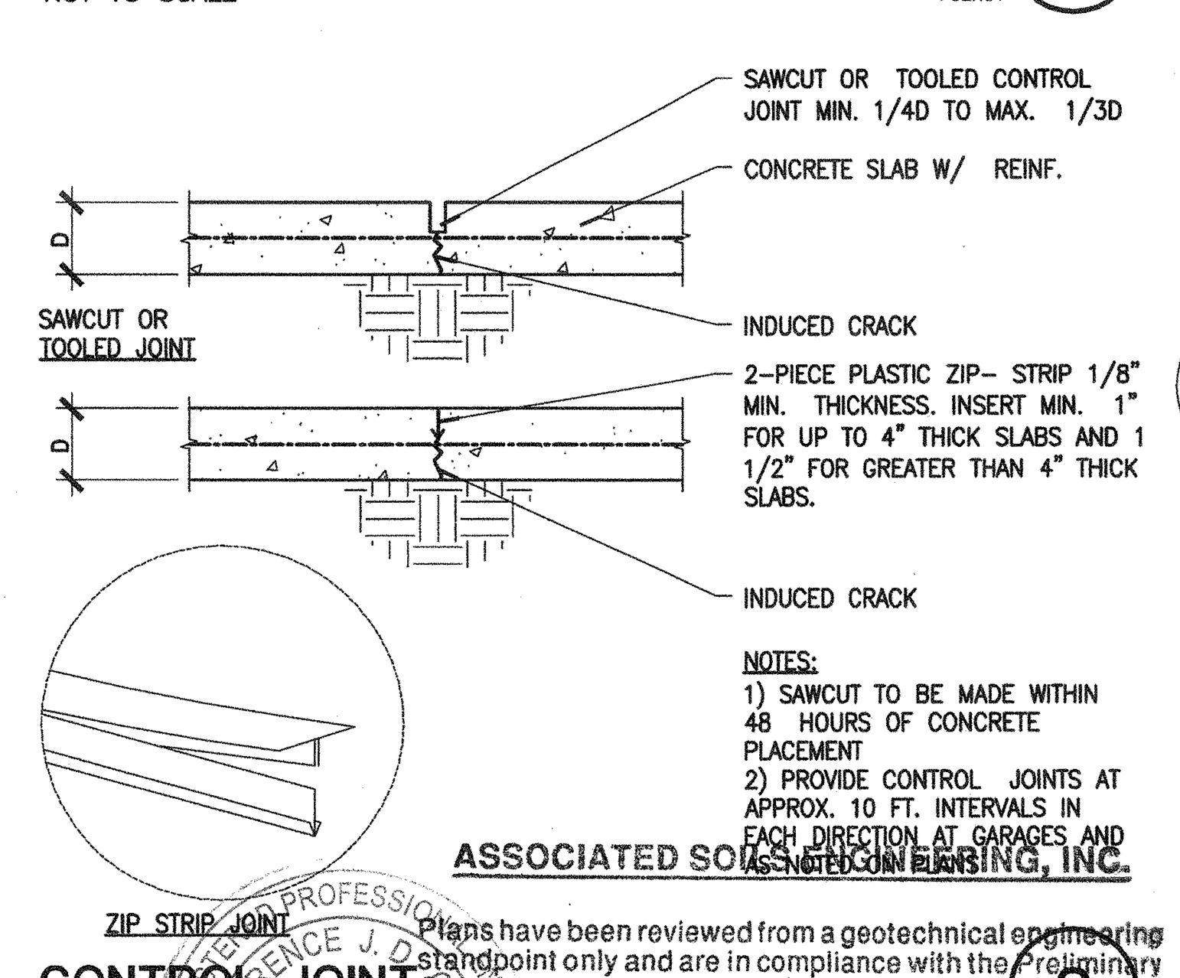
NAILED HOLDOWN	NAILS TO POST	WASHER HD. SEAT
HTT4	(18) 16d SINKER NAILS	NONE
HTT5	(26) 16d SINKER NAILS	NONE
HTT5-W	(26) 16d SINKER NAILS	BP 5/8-2

NOTE: 2" SQUARE x 3/16" THICK STEEL PLATE WASHERS MAY BE USED IN-LIEU-OF BP 5/8-2 WASHERS AS INDICATED IN CATALOGUE.

HOLDOWN	HD BOLT	BOLTø	LENGTH	EMBED. le	HD. SEAT
HTT4 / HDU2/4	SSTB20	5/8"	21-5/8"	16-5/8"	NONE
HTT5 / HDU5	SSTB24	5/8"	25-5/8"	20-5/8"	NONE
HDU8	SSTB28	7/8"	29-7/8"	24-7/8"	NONE
HDQ8	SB 7/8x24	7/8"	24"	18"	NONE

HLDN SSTB/SB ANCHORAGE ONE POUR (10)

1"=1'-0" — FOHD02_07CBC_SSTB_NEW

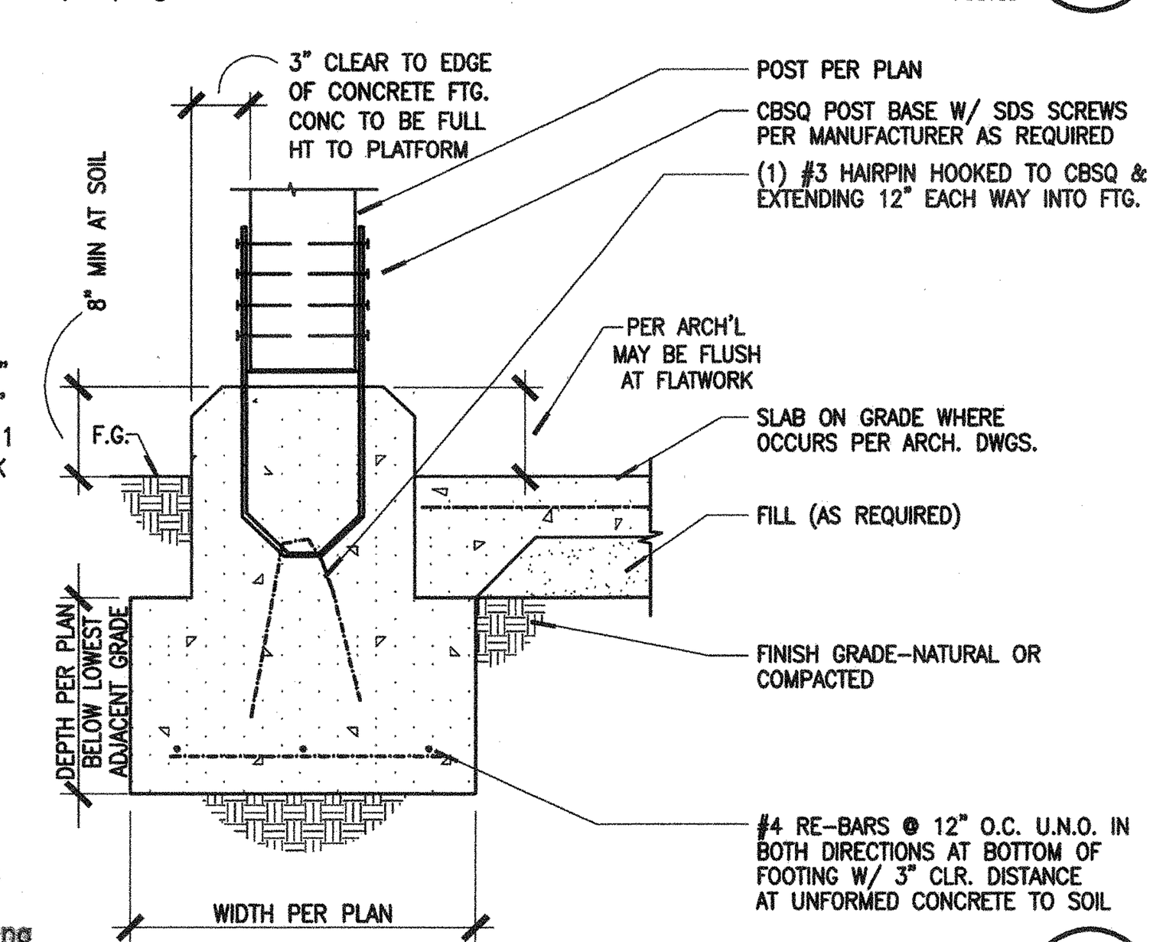


NOTES:
1) SAWCUT TO BE MADE WITHIN 48 HOURS OF CONCRETE PLACEMENT
2) PROVIDE CONTROL JOINTS AT APPROX. 10 FT. INTERVALS IN EACH DIRECTION AT GARAGES AND AT FLATWORK.

CONTROL JOINT (8)

1"=1'-0"

ASSOCIATED SOILS ENGINEERING, INC.
Plans have been reviewed from a geotechnical engineering standpoint only and are in compliance with the Preliminary Geotechnical Investigation Report dated [illegible], Job No. [illegible] and subsequent addena.
This review did not include checking accuracy of design and dimensions or compliance with building code requirements.
By: [signature] Date: 10/18/11
REGISTERED PROFESSIONAL GEOTECHNICAL ENGINEER — No. 288 — EXP. 6/30/12 — STATE OF CALIFORNIA



FOOTING @ CBSQ POST BASE (4)

1"=1'-0" — FOCT14B

DO NOT SCALE PRINTS

REGISTERED PROFESSIONAL ENGINEER — PHILIP G. SOMA JR. — NO. 46231 — EXP. 12-31-12 — CIVIL — STATE OF CALIFORNIA

STRUCTURES DESIGN GROUP, INC.
17780 FITCH SUITE 185
Irvine, Ca 92614
(949)252-7660/252-7661FAX
www.sdgeng.com

HABITAT SANTA ANA
717 E. 3RD STREET SANTA ANA, CA 92701

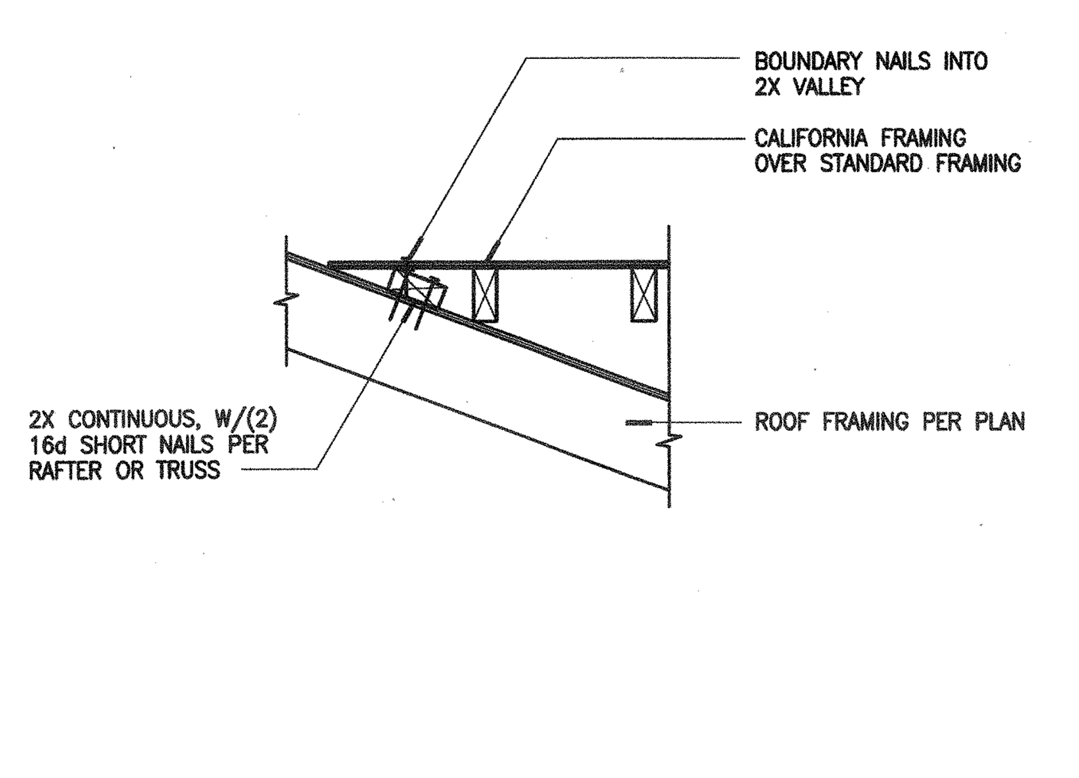
HABITAT FOR HUMANITY ORANGE COUNTY
2200 S RITCHEY STREET SANTA ANA, CA 92705

REVISIONS			
NO.	DATE	NO.	DATE

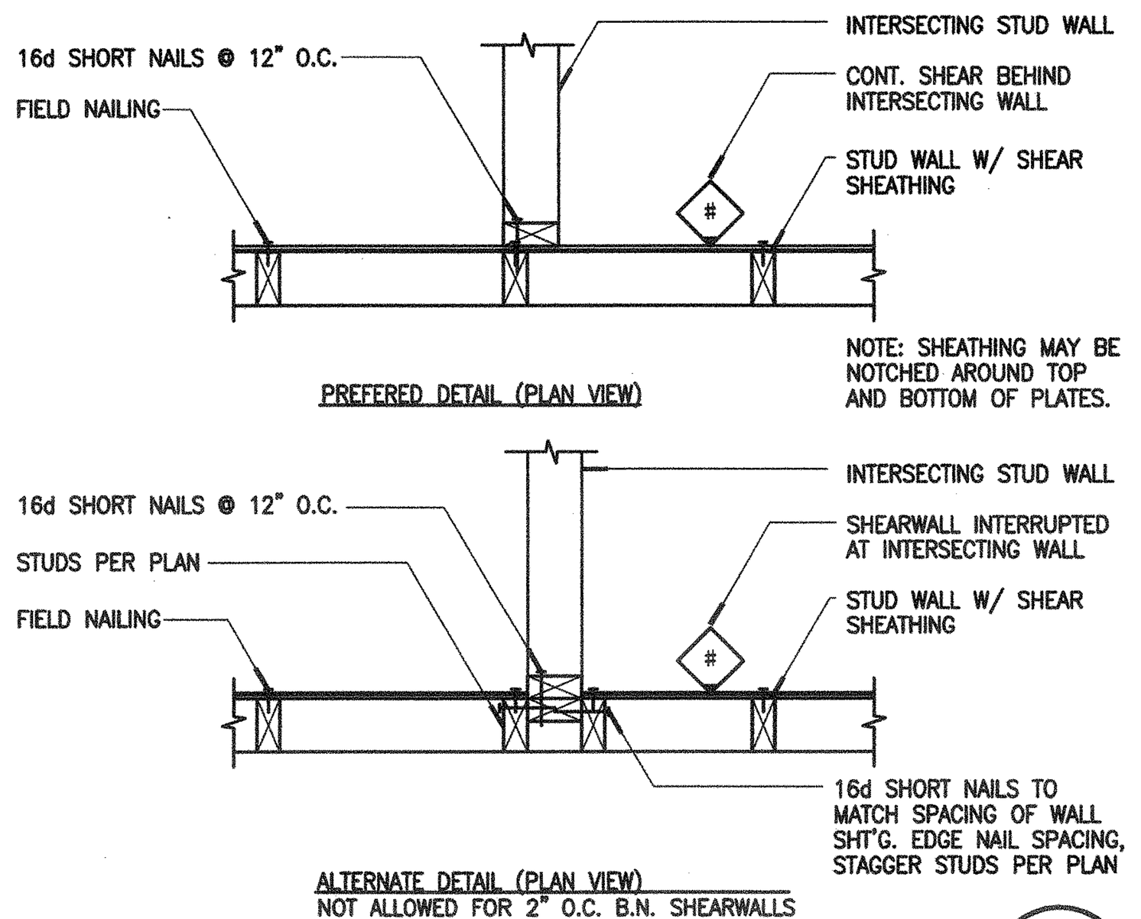
PROJECT MANAGER: P.S.
DESIGNER: P.S.
DRAWN BY: A.D.
REVIEWED BY: P.S.
JOB NUMBER: 2011009
SHEET: **RFD.1**

CAD FILE:

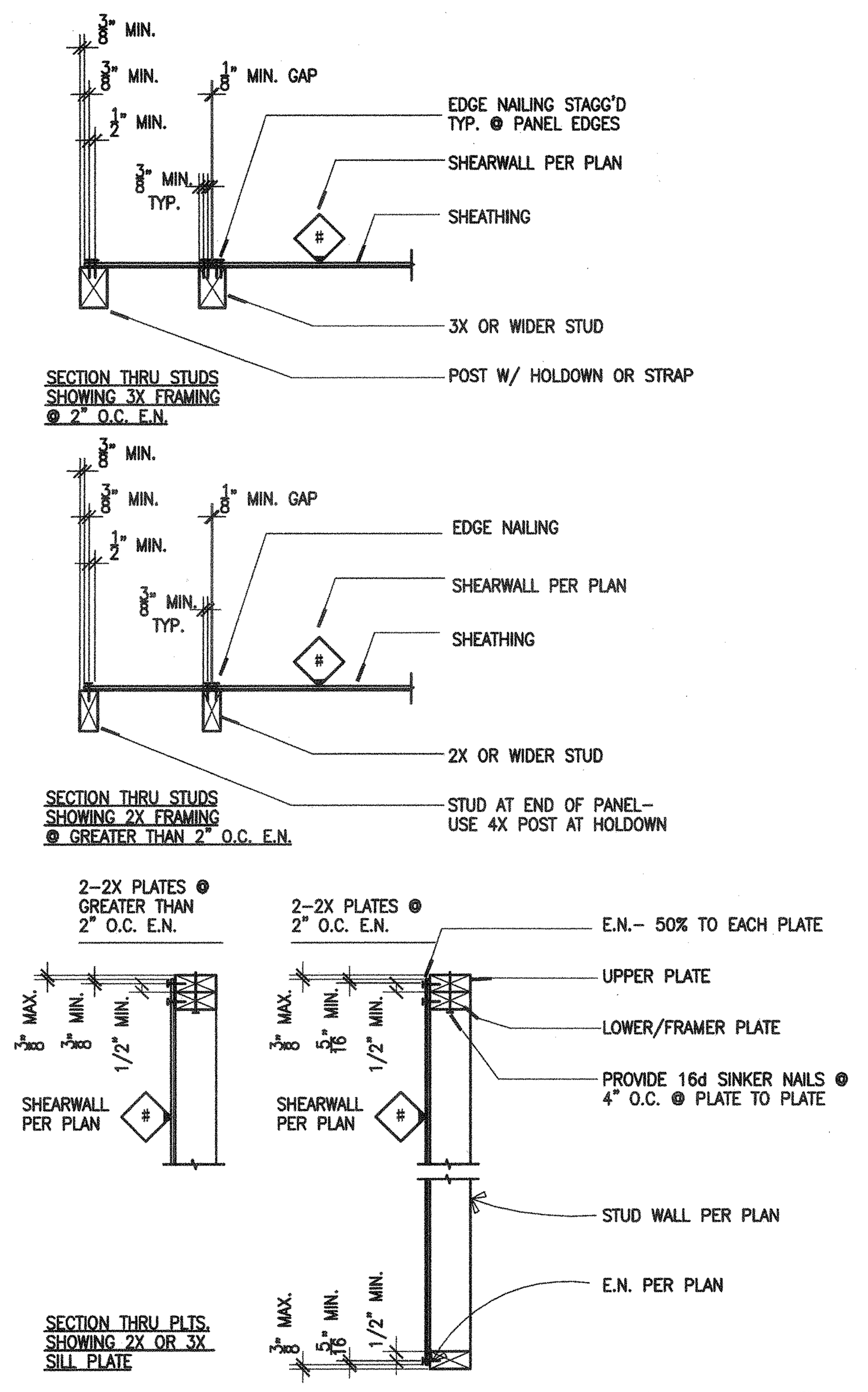
2011-08-25



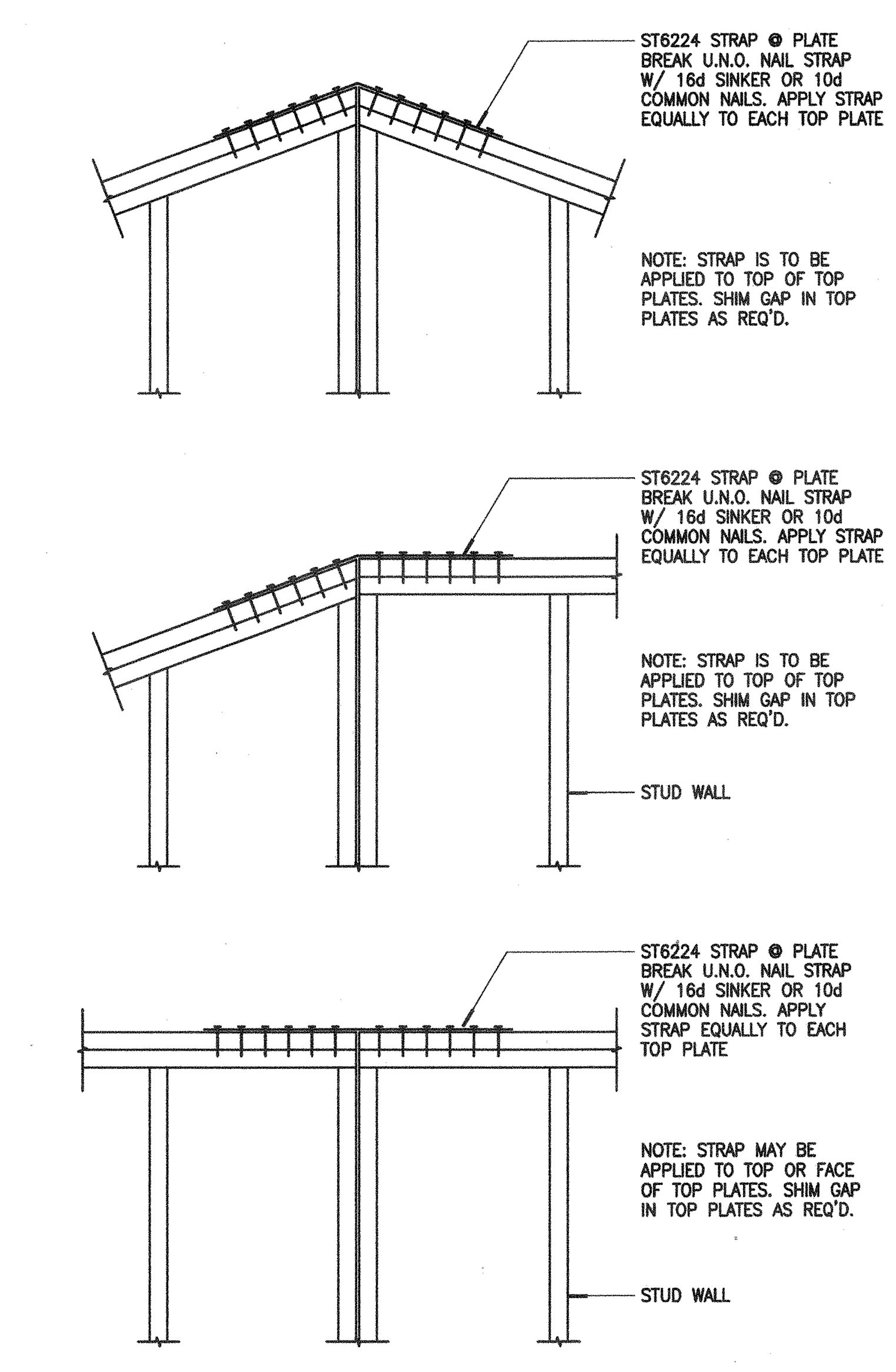
ROOF SHEATHING AT CALIF. FRAMING (12)
N.T.S. _WCGN13



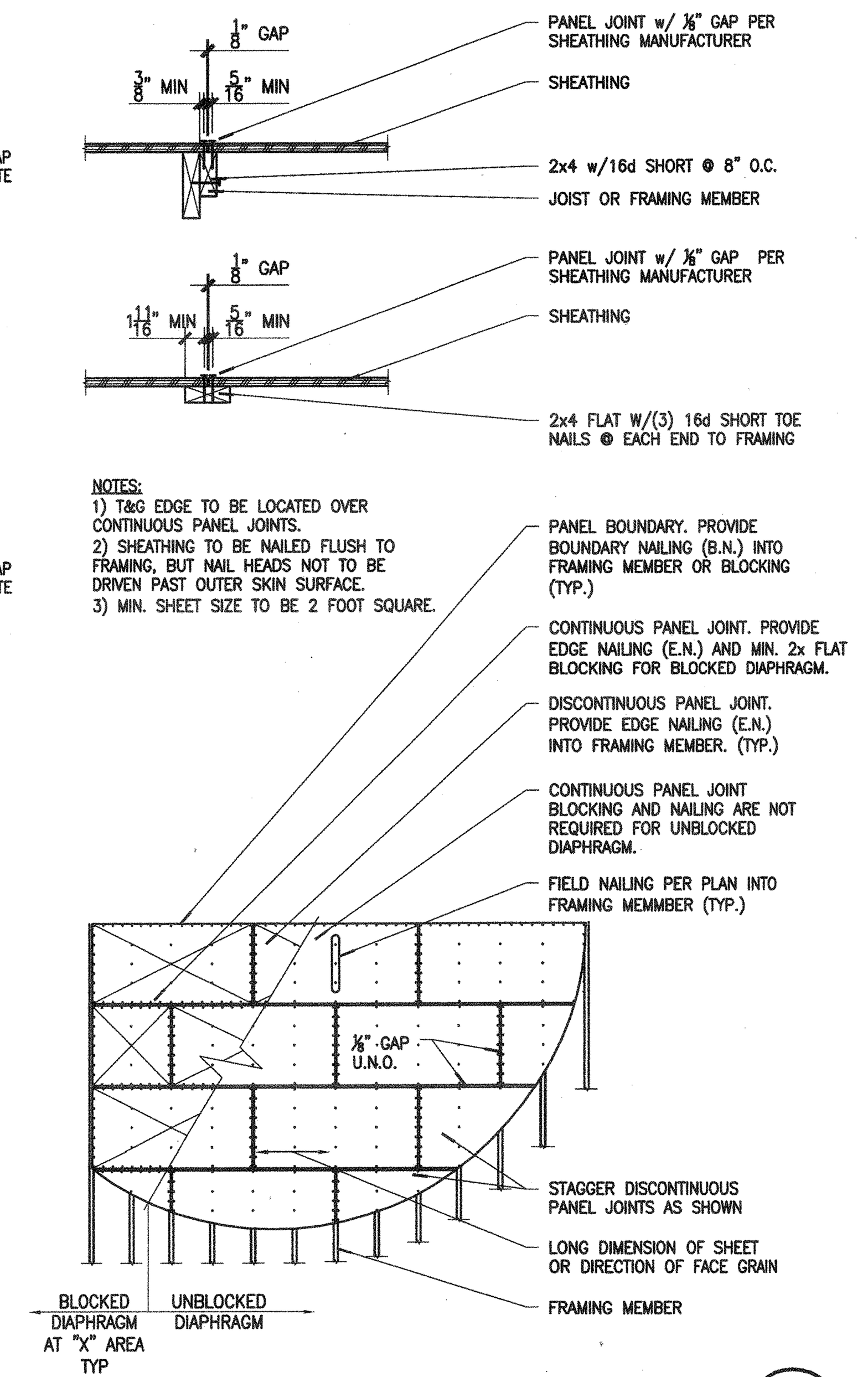
SHEARWALL AT INTERSECTING WALL (8)
N.T.S. _WCGN11



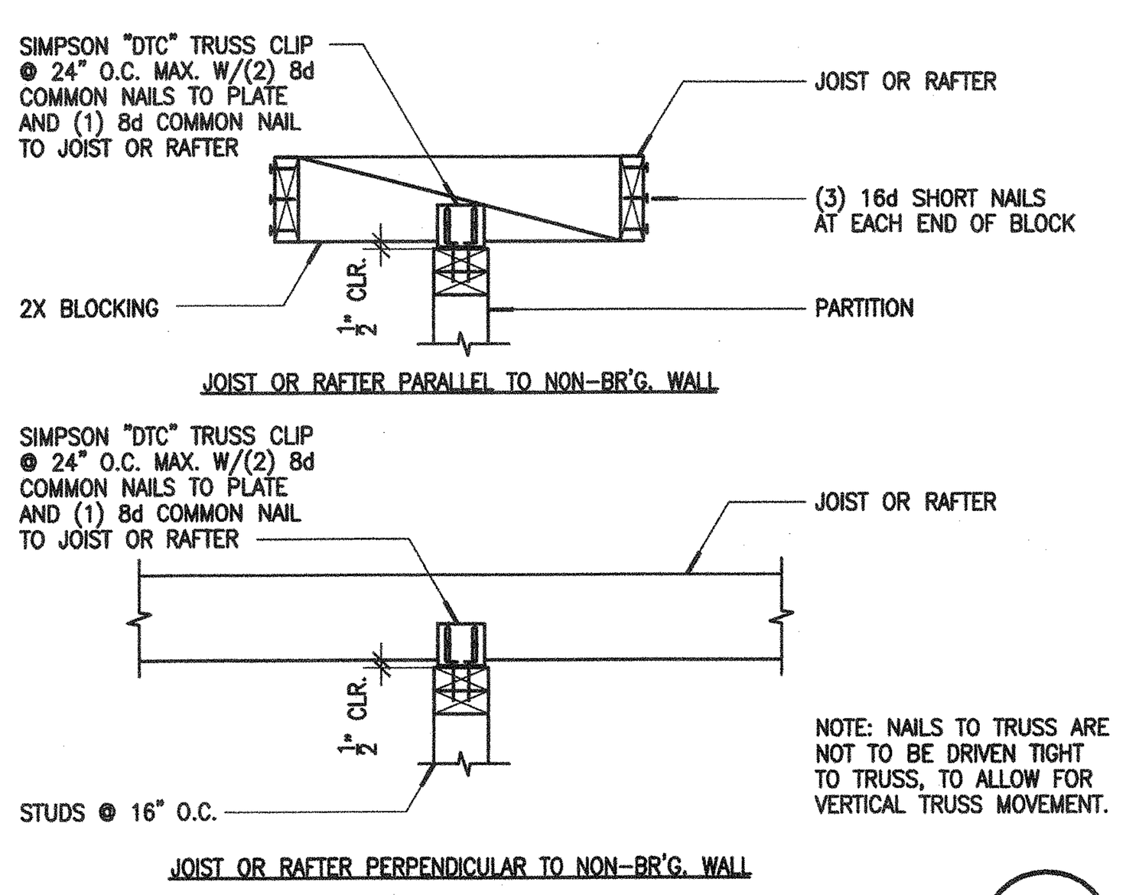
SHEAR WALL NAILING (5)
1"=1'-0"



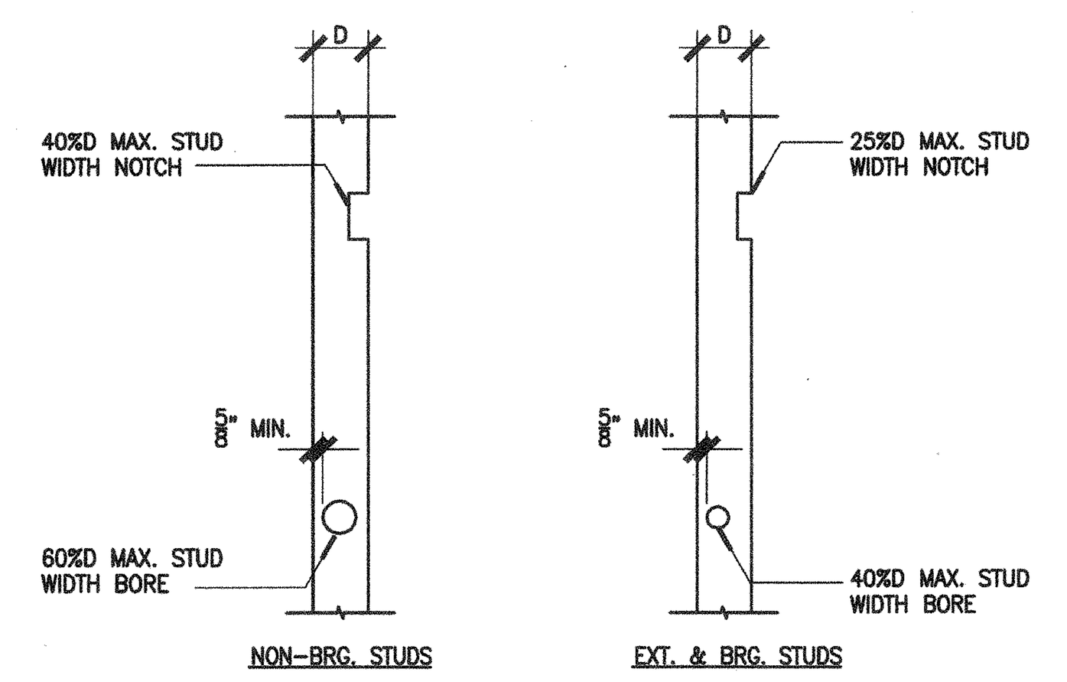
TOP PLATE BREAK (3)
N.T.S. _WCGN04



SHEATHING DIAPHRAGM (1)
N.T.S. _WCGN01



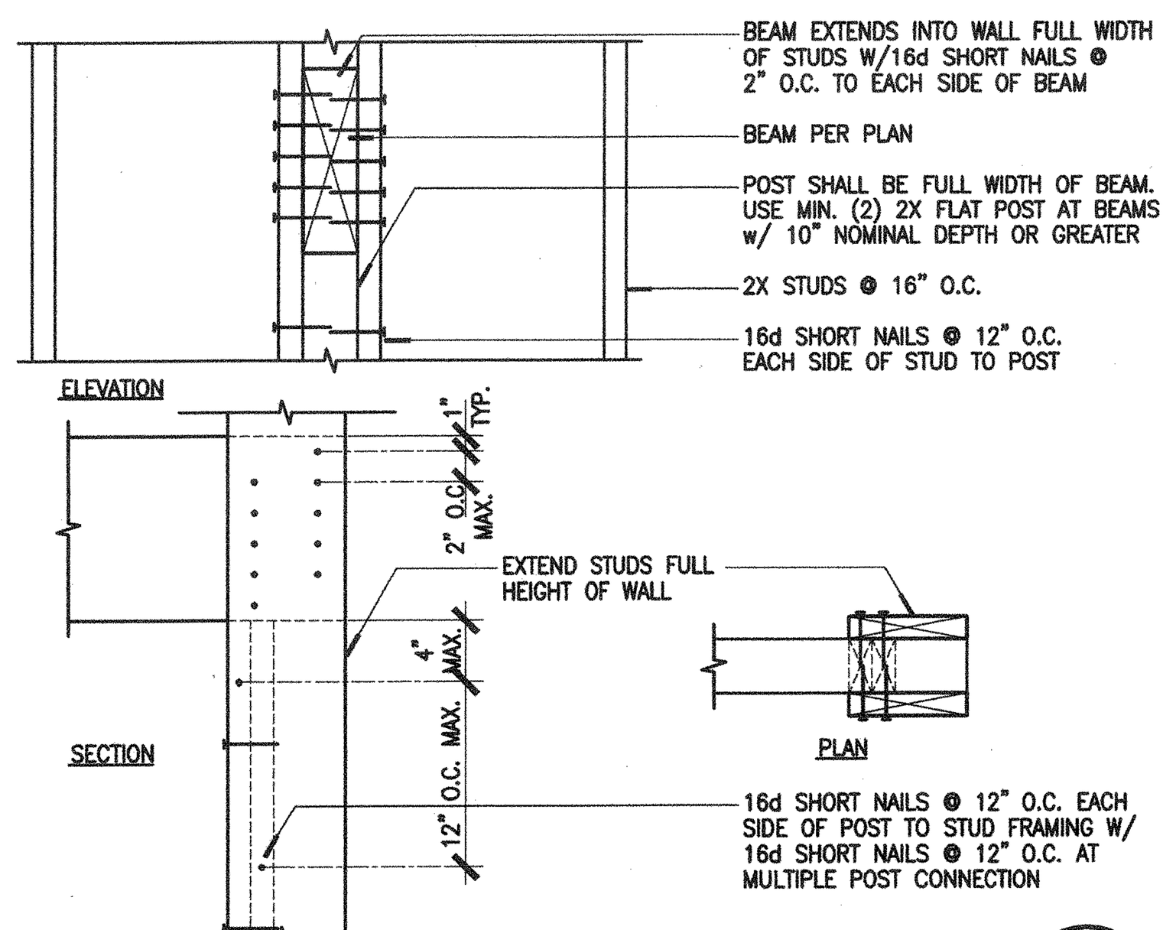
TRUSS AT NON-BEARING PARTITION (13)
N.T.S. _WCGN14



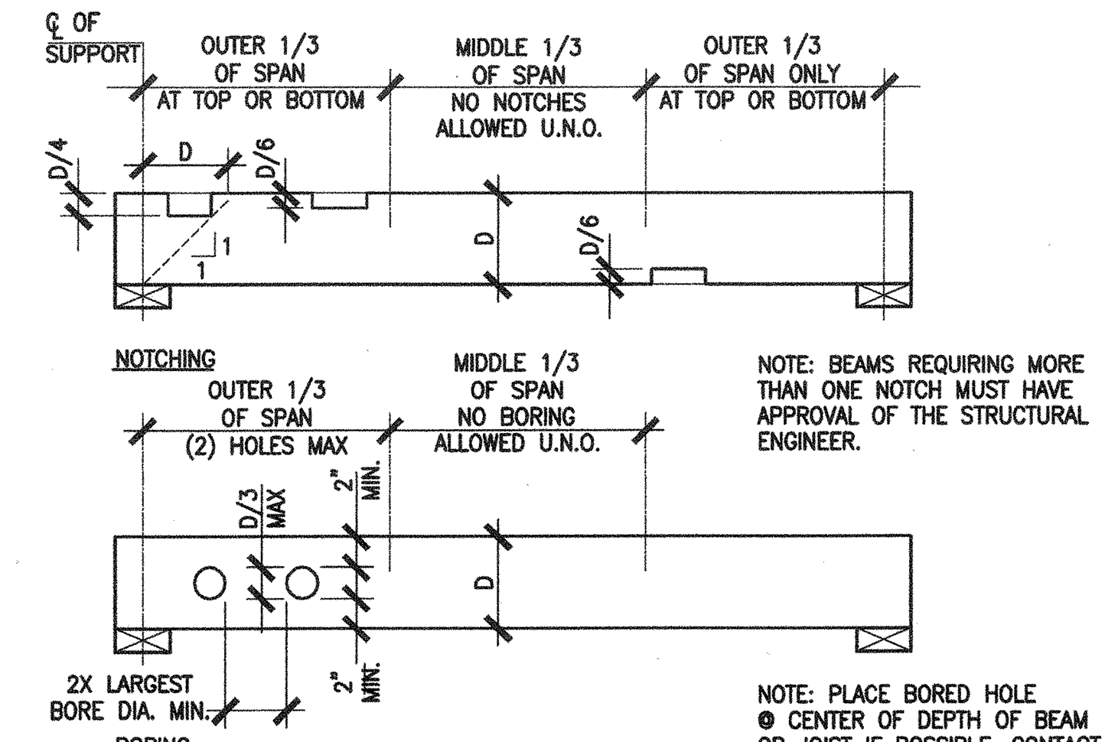
FRACTION OF STUD	2X4	2X6	2X8
25%D	7/8"	1-3/8"	1-7/8"
40%D	1-3/8"	2-1/8"	3"
60%D	2"	3-1/4"	4-1/4"

NOTE: NOTCH AND BORE NOT TO OCCUR ON SAME STUD WITHIN 36" OF EACH OTHER

BORED OR NOTCHED STUDS (9)
N.T.S. _WCGN17



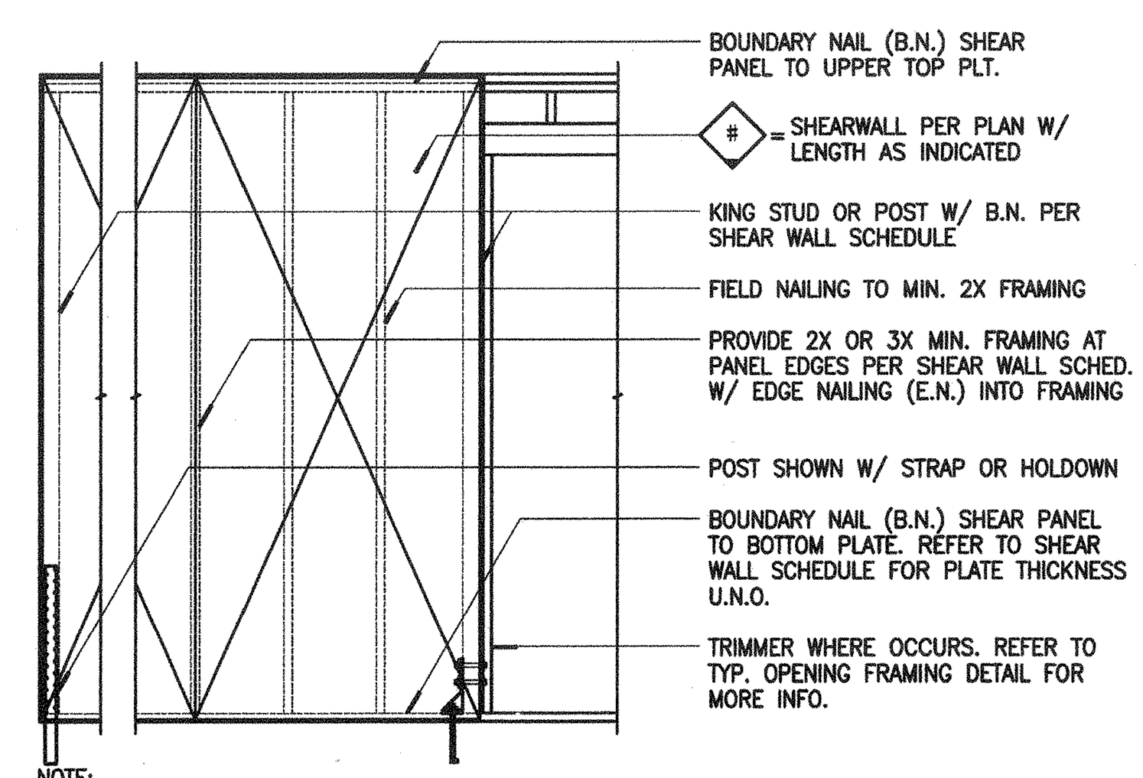
BEAM TO POST IN WALL FRAMING (14)
N.T.S. _WCGN07



FRACTION OF JOIST	2X6	2X8	2X10	2X12	2X14
D/6	7/8"	1-1/8"	1-1/2"	1-7/8"	2-1/8"
D/3	1-1/4"	2-3/8"	3"	3-3/4"	4-3/8"

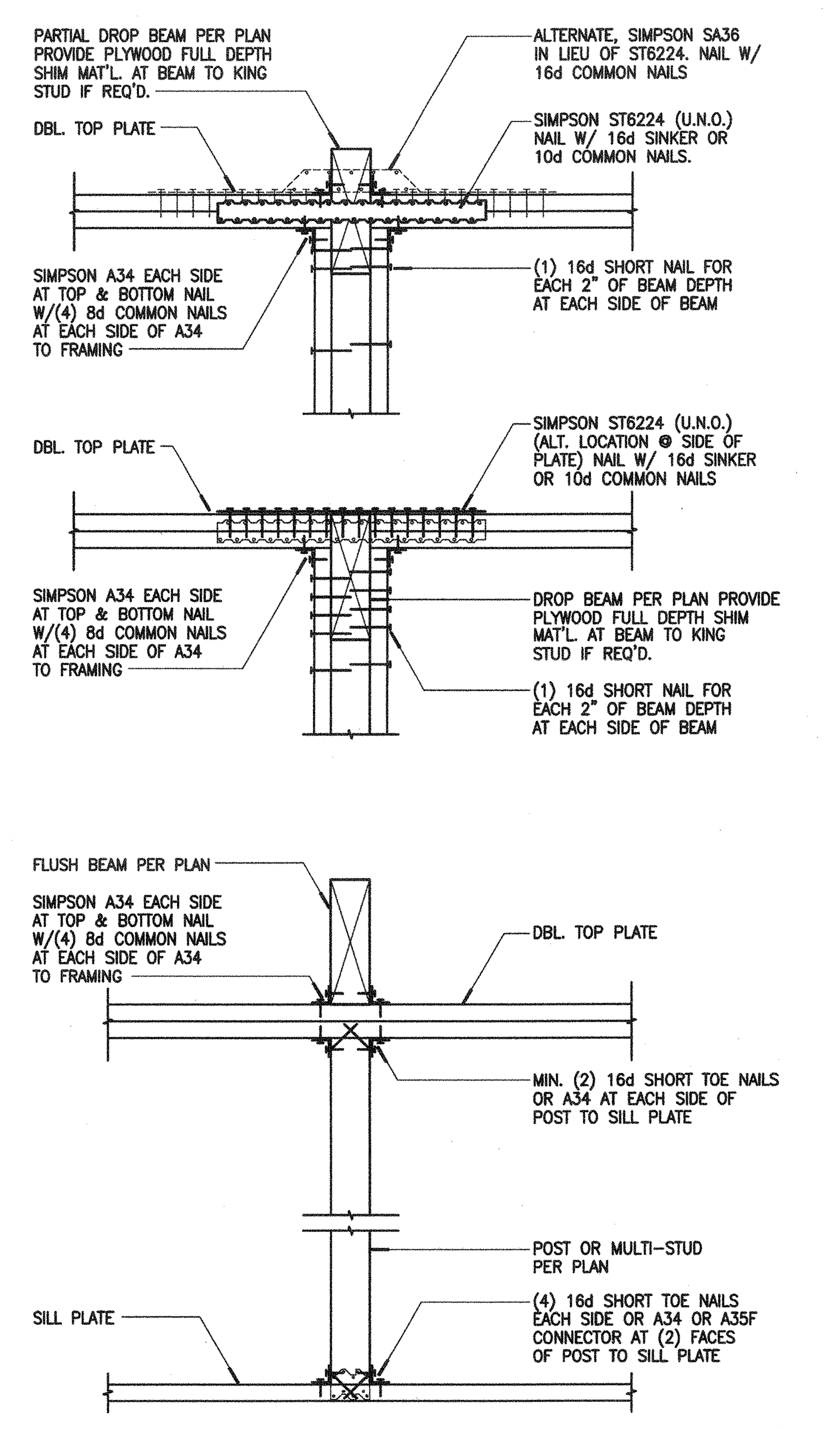
NOTE: PLACE BORED HOLE @ CENTER OF DEPTH OF BEAM OR JOIST IF POSSIBLE. CONTACT STRUCTURAL ENGINEER FOR EVALUATION OF BORED OR NOTCHED BEAMS OR JOISTS PRIOR TO MODIFICATION OF FRAMING MEMBER.

BORED OR NOTCHED BEAM OR JOIST (10)
N.T.S. _WCGN18

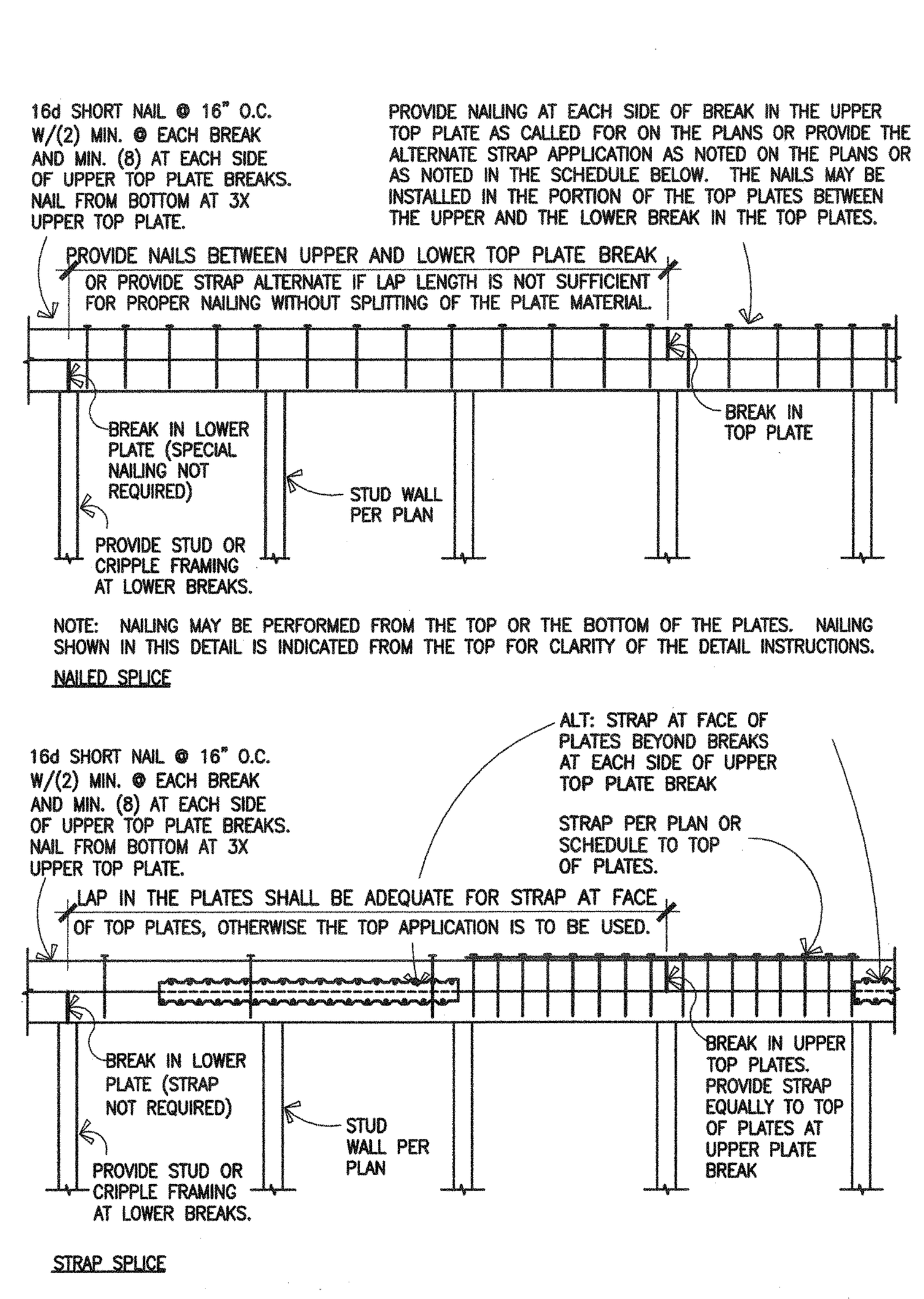


NOTE:
1. CONTACT STRUCTURAL ENGINEER FOR EVALUTATION OF SPLIT OR CRACKED LUMBER FOR ADEQUACY.
2. REFER TO SHEARWALL SCHED. FOR NAIL SIZES, SHT'G. THICKNESS & GRADE AND MIN. FRAMING REQ'S.
3. PROVIDE BLOCKING OR FRAMING FOR NAILED ATTACHMENT AT ALL PANEL EDGES. ALL PANEL EDGES.
4. STAGGER NAILS THAT ARE SPACED 2" O.C. STAGGER IS MIN. 1/8".
5. LOCATE PLUMBUNG AND/OR DUCTING AT OPPOSITE FACE TOP PLATES FROM SHEAR MATERIAL.

SHEAR PANEL (6)
N.T.S. _WCGN09



POST TO BEAM - TYPICAL FRAMING (4)
N.T.S. _WCGN05

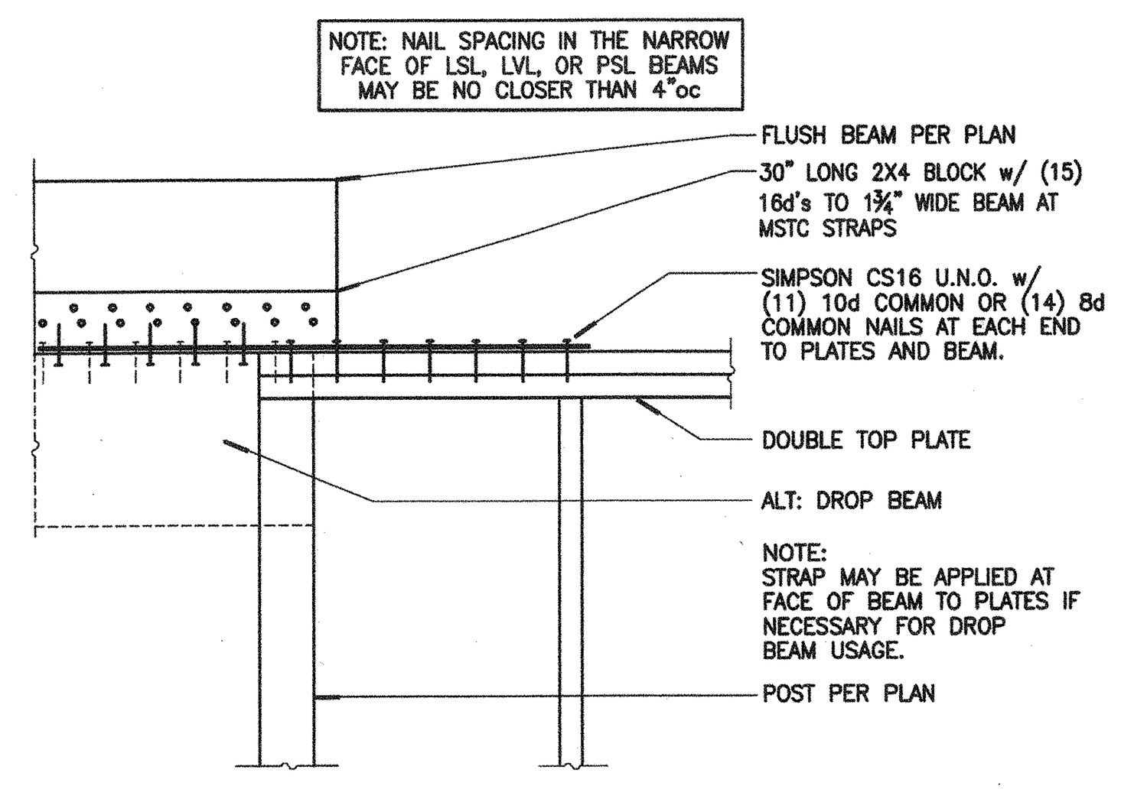


ALTERNATE PLATE SPLICE SCHEDULE

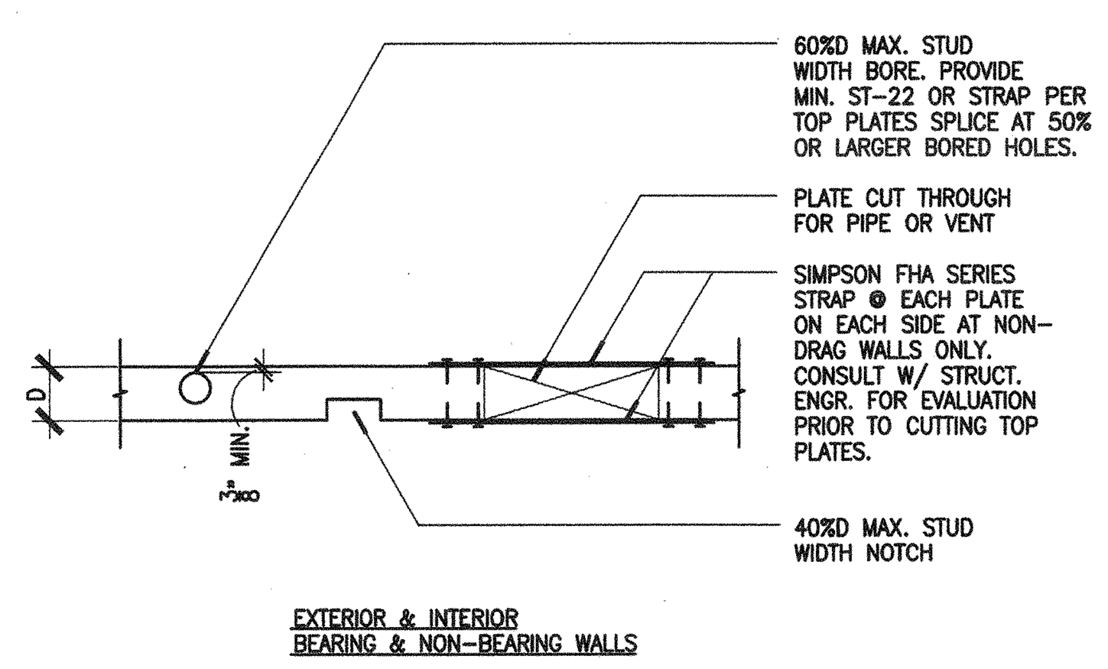
NO. NAILS EACH SIDE OF BREAK	ALTERNATE STRAP OPTION
8-16d SHORT NAILS	SIMPSON ST18 OR CS16 X 20" LONG
12-16d SHORT NAILS	CS16 X 26" LONG
16-16d SHORT NAILS	SIMPSON MSTA36
20-16d SHORT NAILS	SIMPSON MSTC28
24-16d SHORT NAILS	SIMPSON MSTC40

NOTE: USE 16d SINKER OR 10d COMMON NAILS @ ST STRAPS. PROVIDE FULL NAILING W/ MIN. 2" LONG 8d COMMON NAILS OR 16d SHORT NAILS @ CS16.

TOP PLATE SPLICE (2)
1"=1'-0" _WCGN03



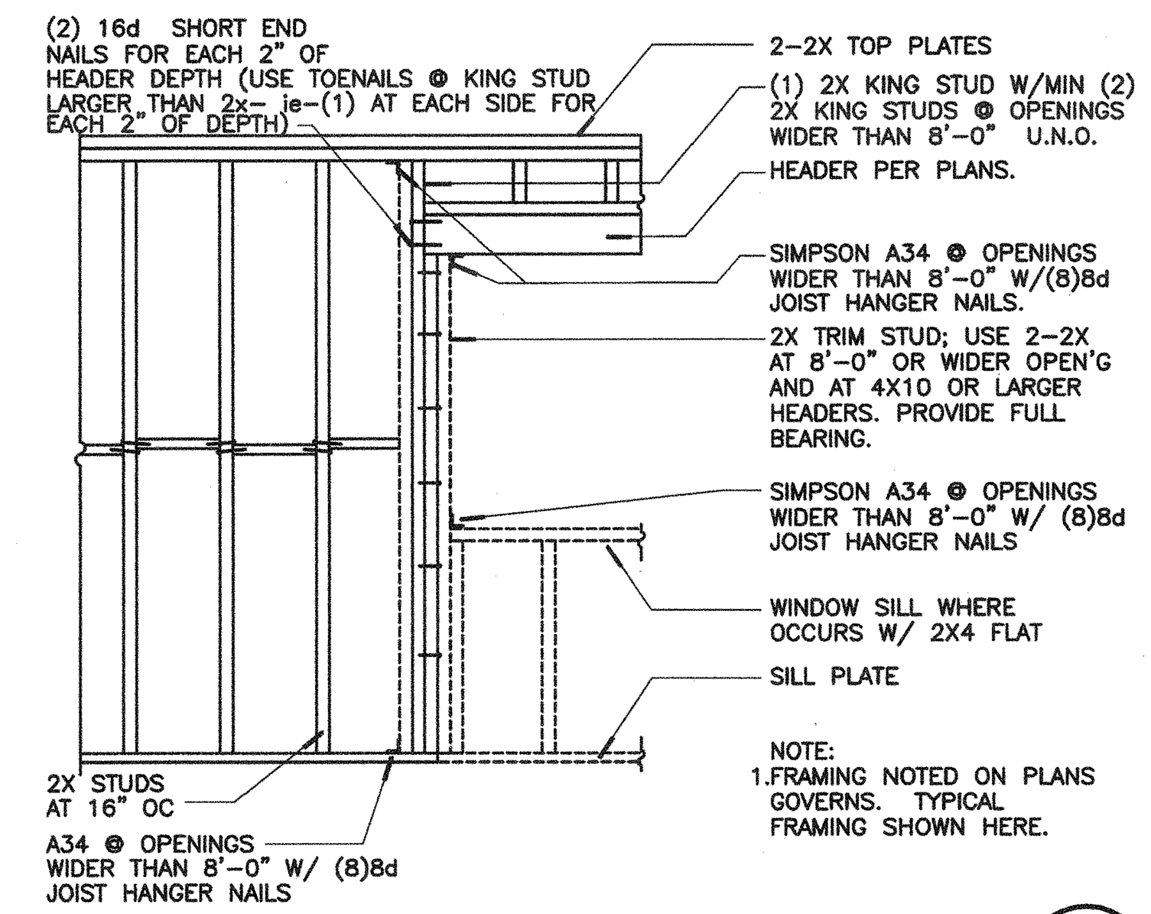
DRAG AT BEAM TO TOP PLATES (15)
1"=1'-0" _WCGD01



FRACTION OF STUD	2X4	2X6	2X8
40%D	1-3/8"	2-1/8"	3"
60%D	2"	3-1/4"	4-1/4"

NOTE: NAIL FHA STRAP W/ (4) 16d SINKER OR SHORT NAILS OR (4) 10d COMMON NAILS AT EACH END.

BORED OR NOTCHED TOP PLATES (11)
N.T.S. _WCGN16



WALL FRAMING (7)
N.T.S. _WCGN08

DO NOT SCALE PRINTS

REGISTERED PROFESSIONAL ENGINEER PHILIP G. SOMA JR. NO. 46231 EXP. 12-31-12 CIVIL STATE OF CALIFORNIA

STRUCTURES DESIGN GROUP, INC.
17780 FITCH SUITE 185
Irvine, Ca 92614
(949)252-7660/252-7661FAX
www.sdgeng.com

HABITAT SANTA ANA
717 E. 3RD STREET SANTA ANA, CA 92701

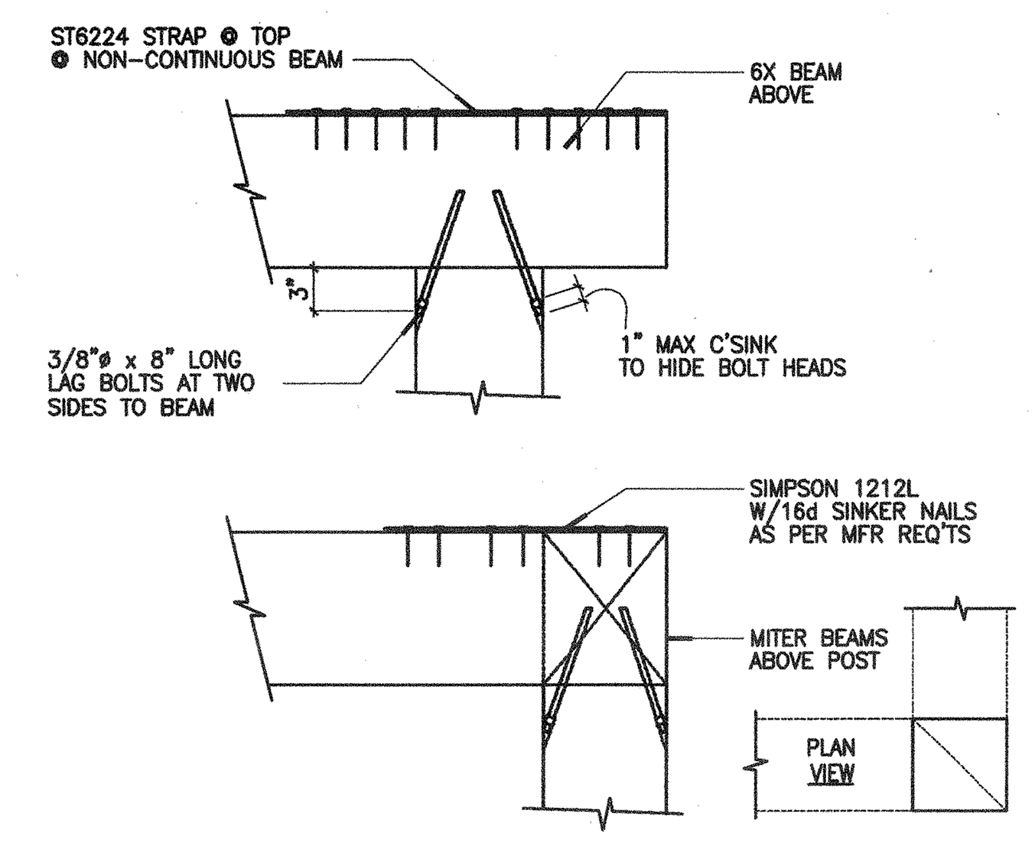
HABITAT FOR HUMANITY ORANGE COUNTY
2200 S RITCHEY STREET SANTA ANA, CA 92705

REVISIONS

NO.	DATE	NO.	DATE

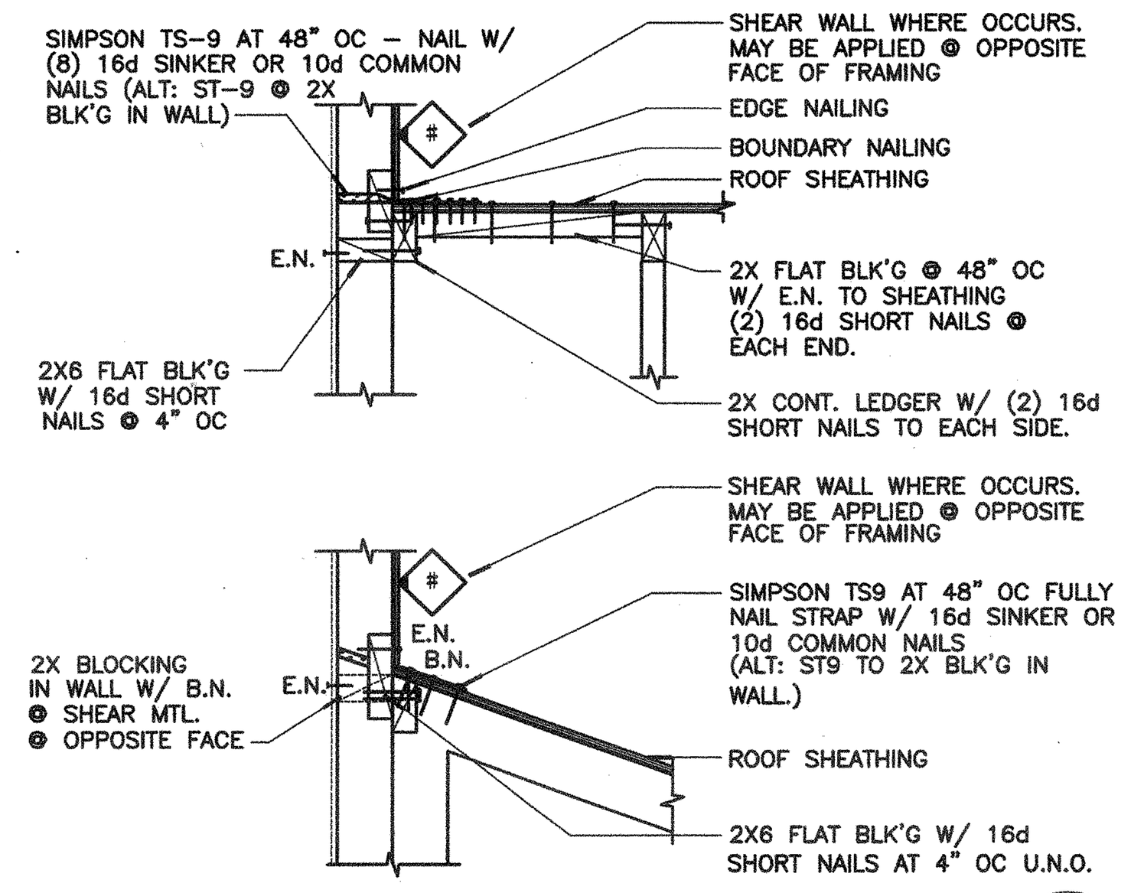
PROJECT MANAGER P.S.
DESIGNER P.S.
DRAWN BY A.D.
REVIEWED BY P.S.
JOB NUMBER 2011009
SHEET SD.1
CAD FILE:

2011-08-25



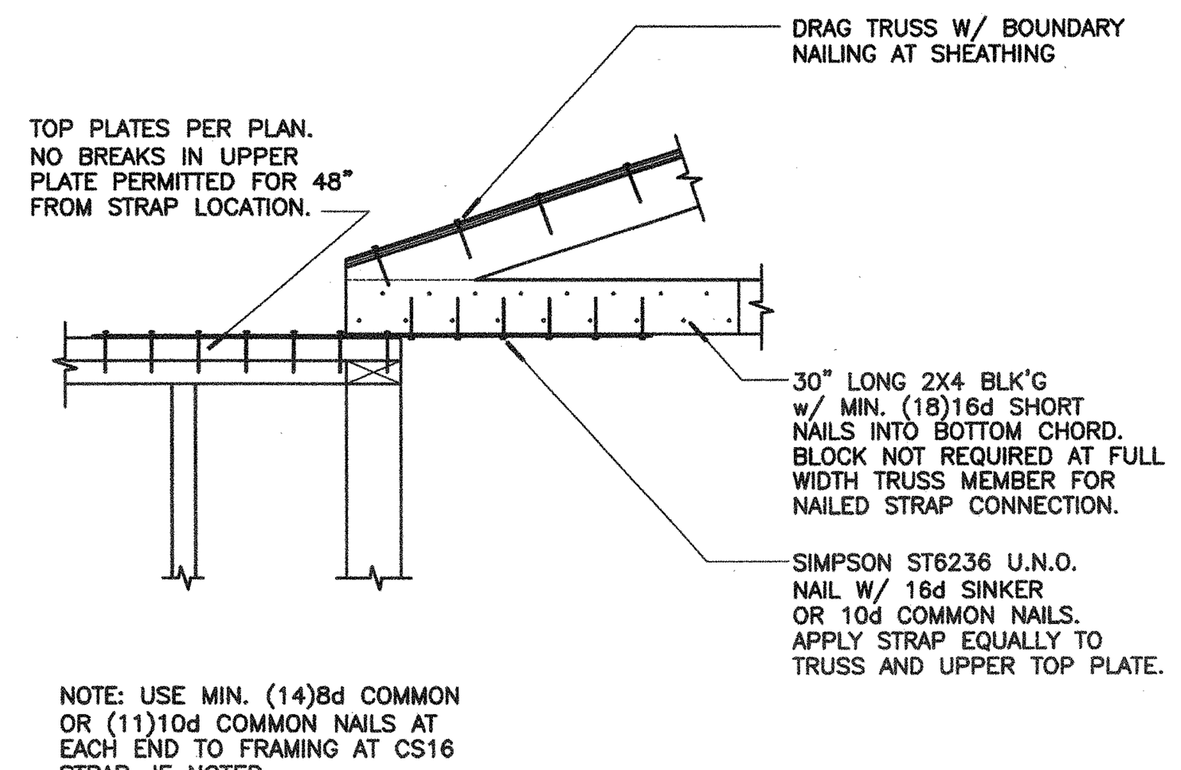
POST TO BEAM AT PORCH (13)

1"=1'-0"



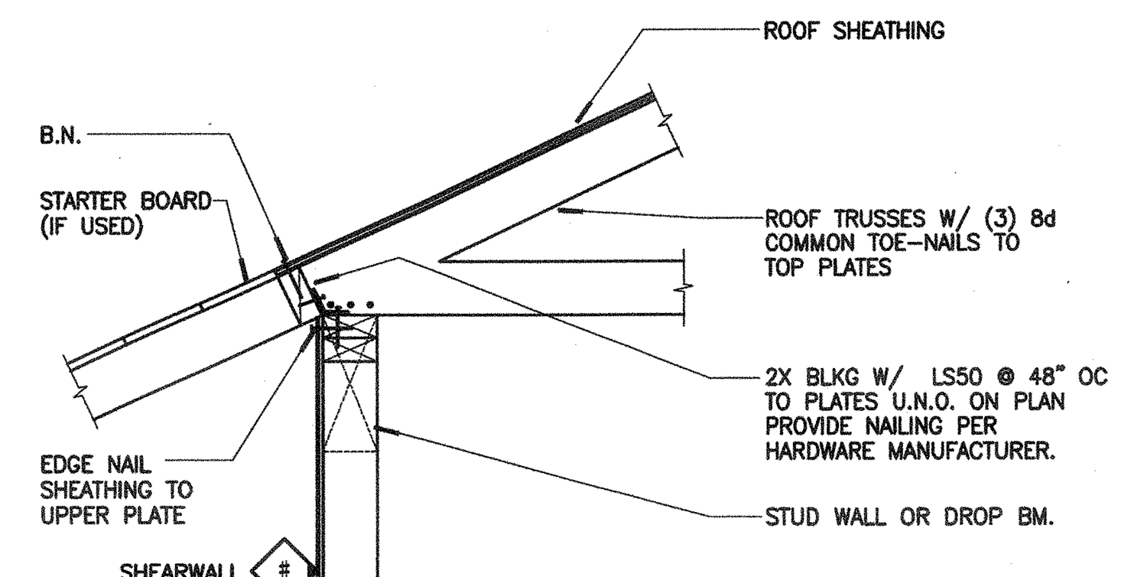
SHRTNSFR — SHEAR WALL ABOVE LOW ROOF ONLY (9)

N.T.S.



DRAG- ALIGNED DRAG TRUSS TO TOP PLATES (5)

N.T.S.

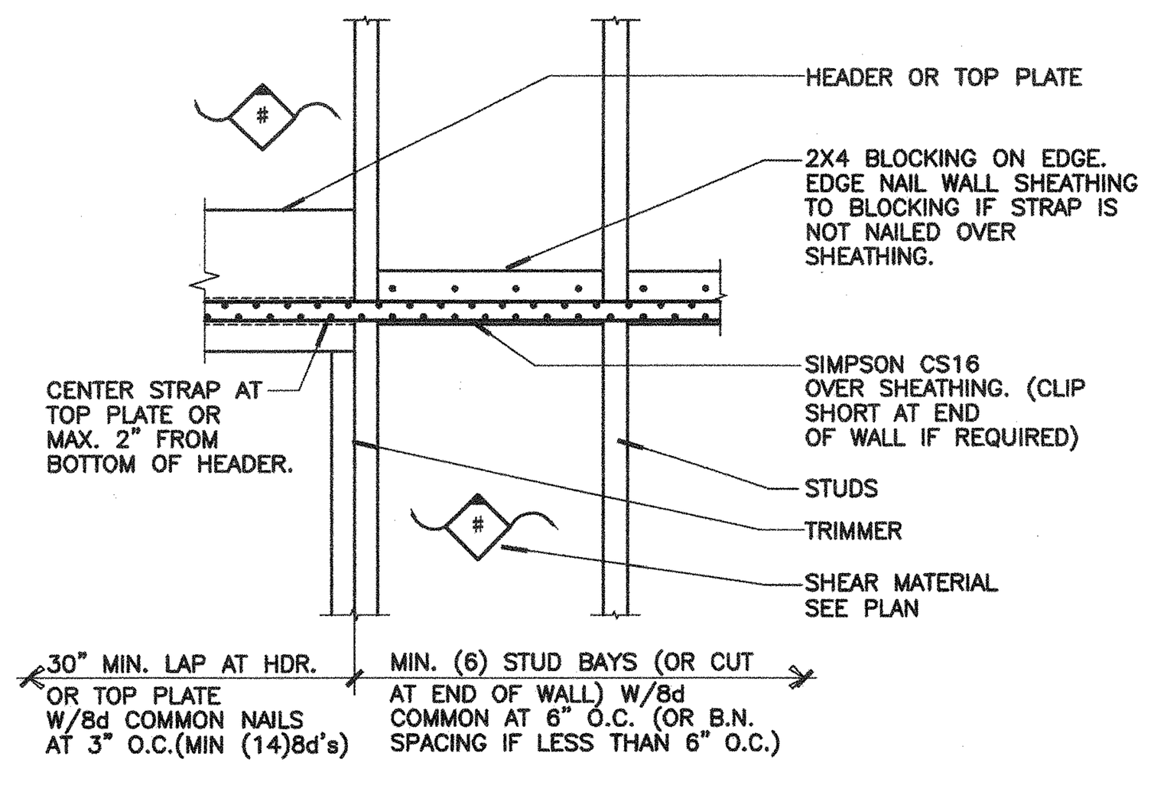


LTR	LS50 SPACING
A	32" OC
B	24" OC
C	16" OC
D	12" OC

TRUSS PERPENDICULAR TO WALL-STD (1)

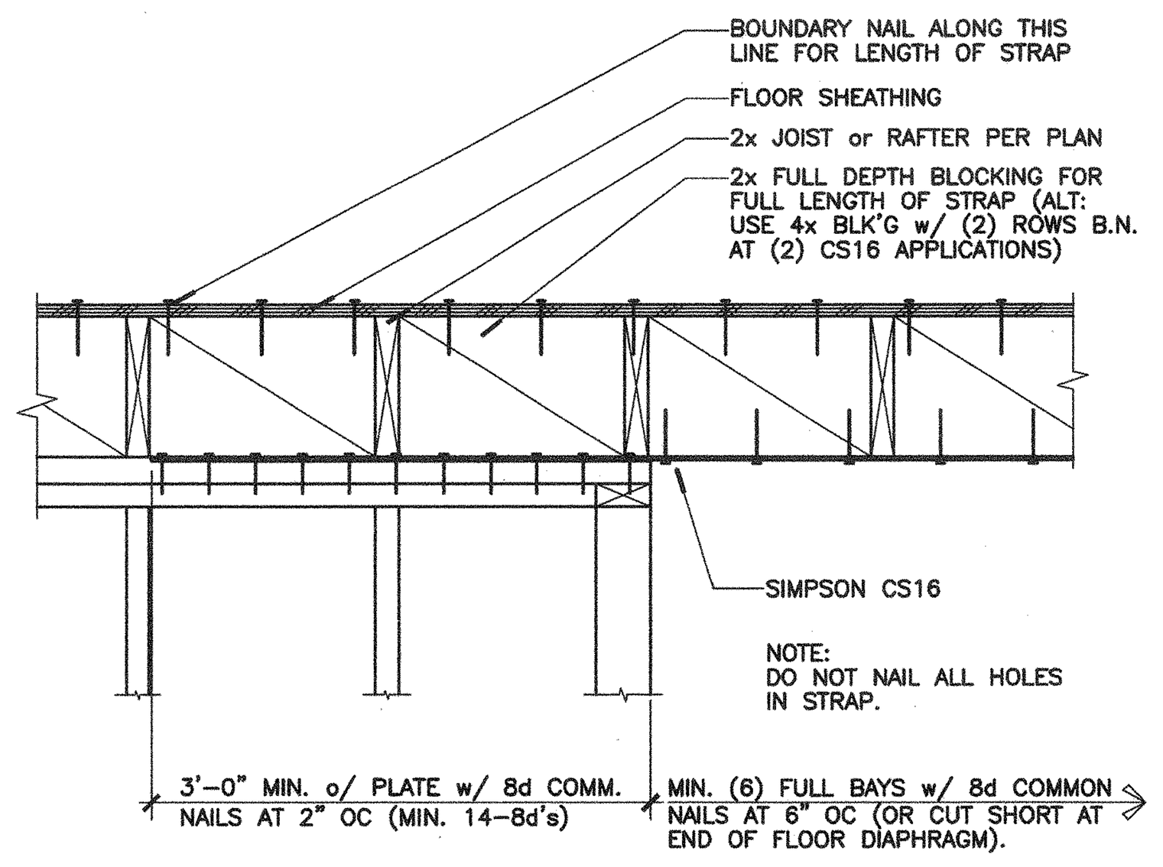
1"=1'-0"

_WPRS01



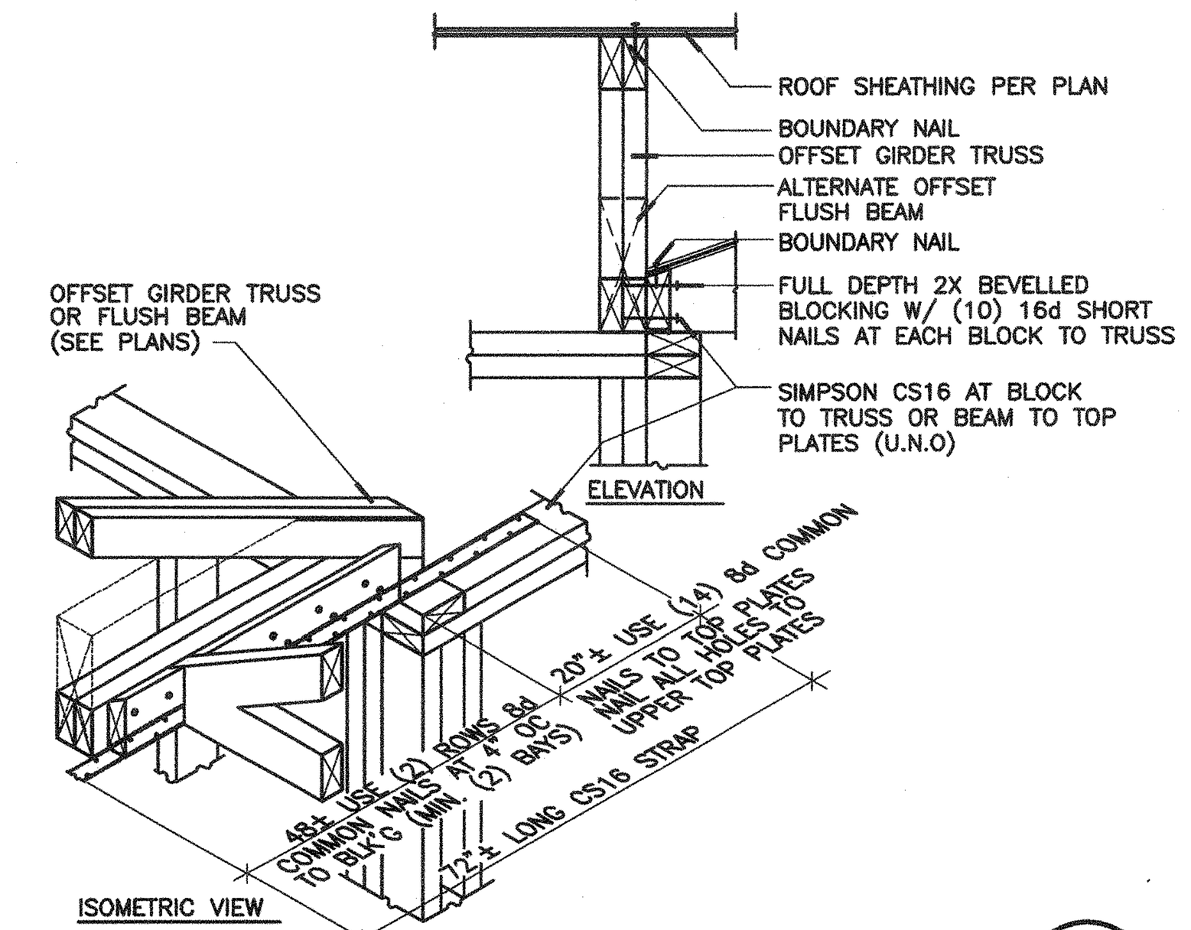
DRAG WITH CS16 AT HEADER OR PLATES TO WALL (14)

N.T.S.



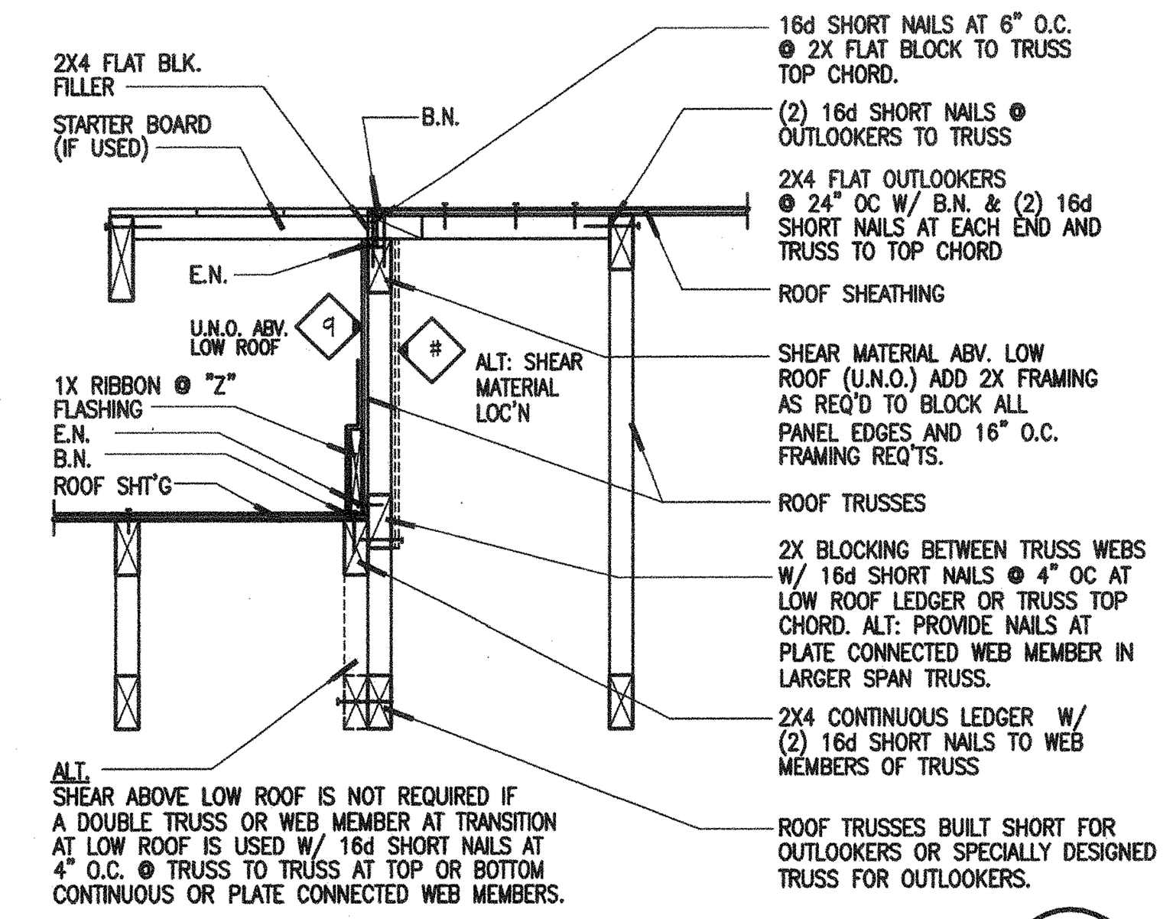
DRAG WITH CS16 AT TOP PLATES (10)

1"=1'-0"



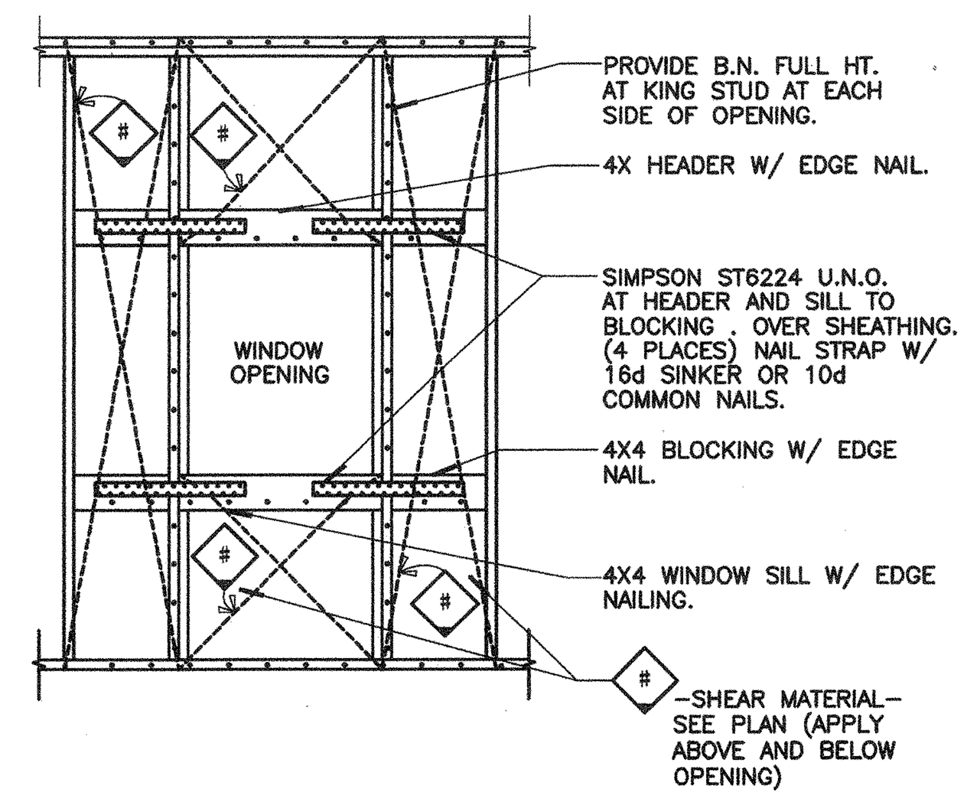
(DRAG) CS16 AT OFFSET GIRDER DRAG TRUSS TO PLATE (6)

N.T.S.



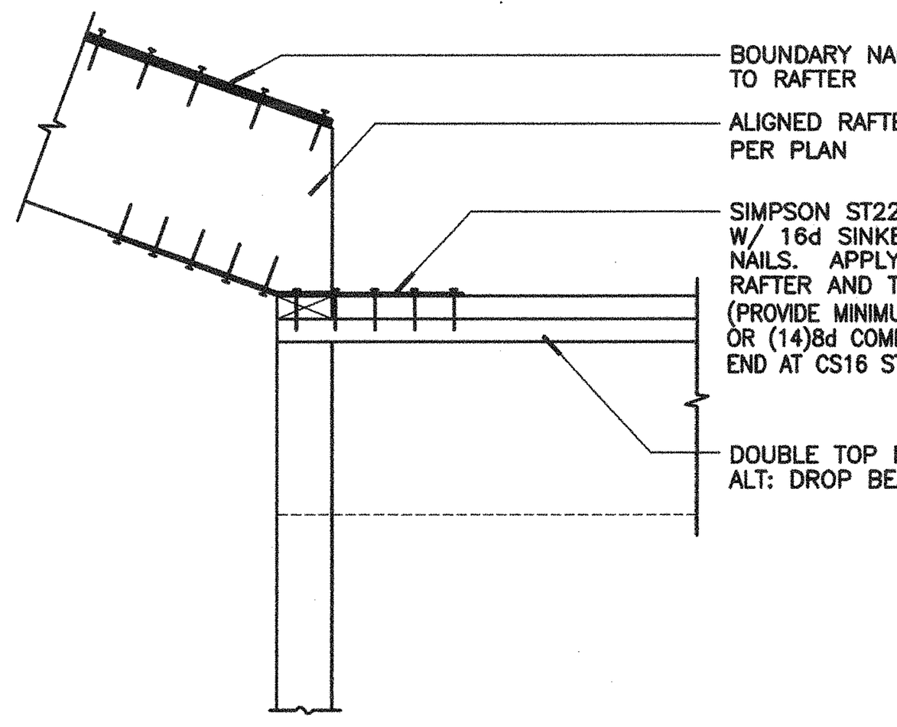
SHRTNSFR — TRUSS TO TRUSS @ TRANSITION (2)

1"=1'-0"



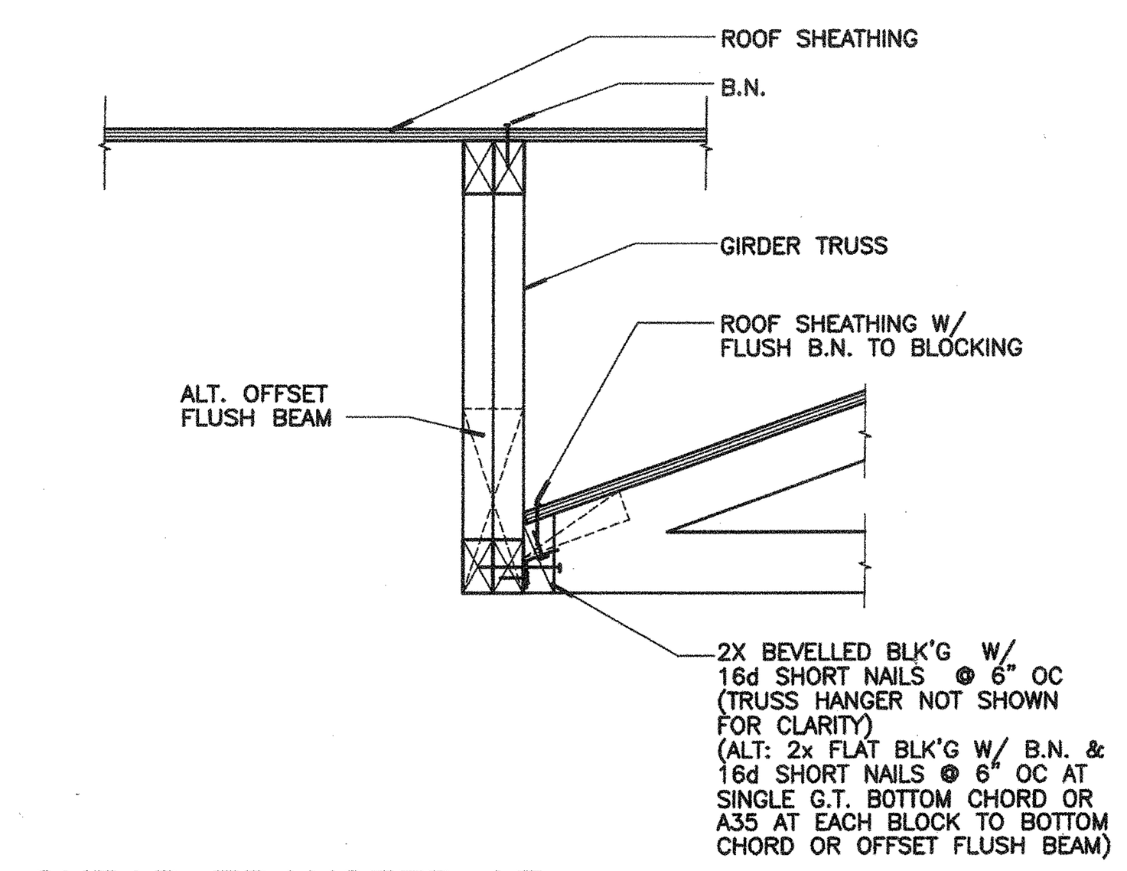
SHRTNSFR WITH ST6224 AT SINGLE OPENING (15)

N.T.S



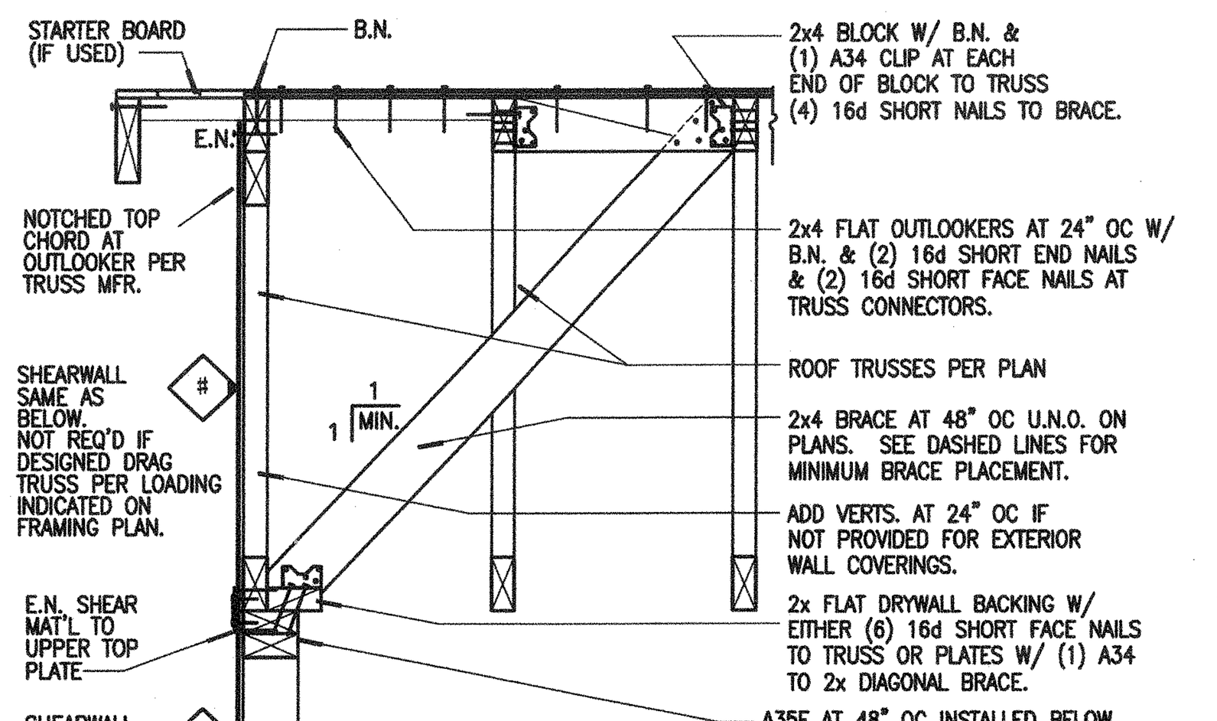
DRAG AT RAFTER TO TOP PLATE (11)

N.T.S.



SHEAR TRANSFER AT LOW ROOF TO GIRDER TRUSS (7)

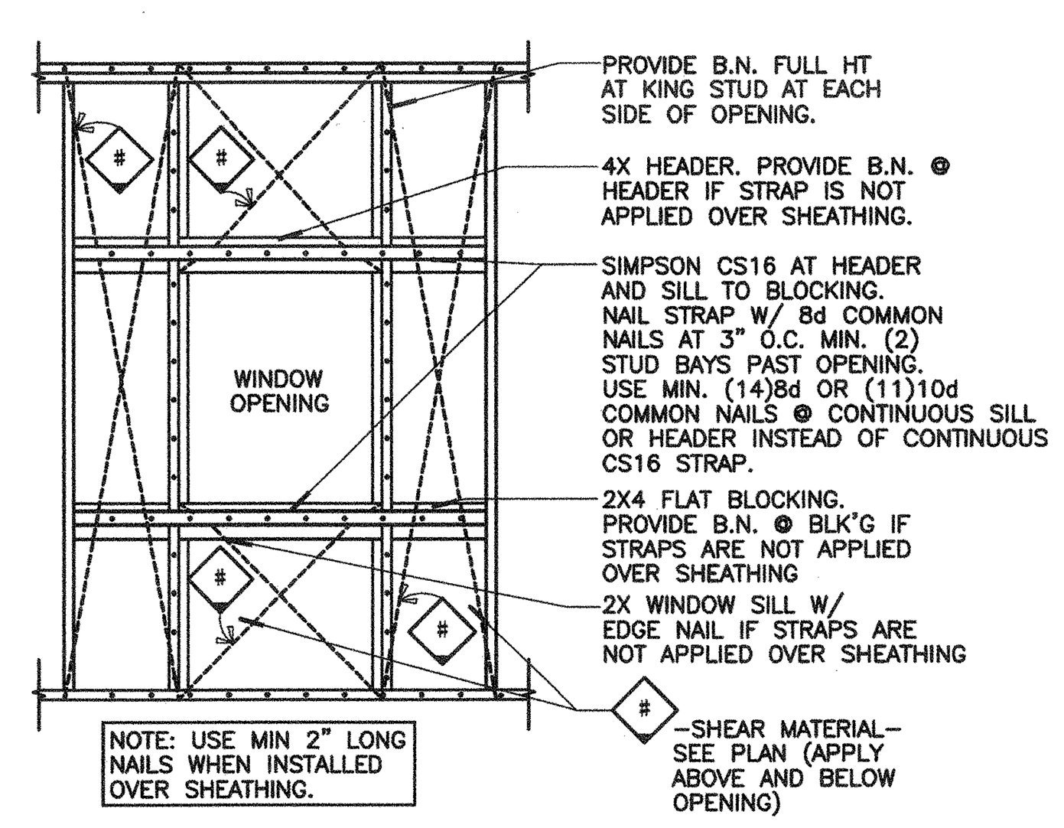
N.T.S.



LTR	A35 OR LTP4 SPACING
A	32" OC
B	24" OC
C	16" OC
D	12" OC

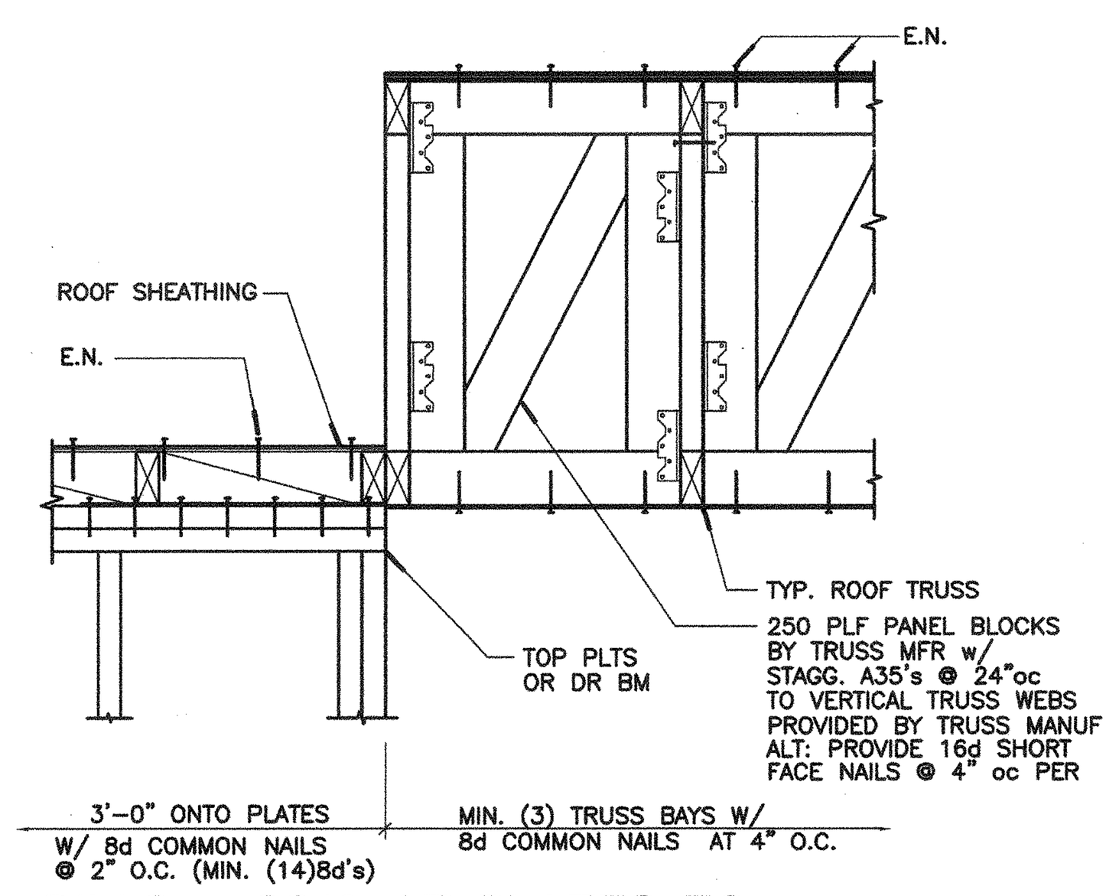
SHRTNSFR — TRUSS PARALLEL TO EXTERIOR WALL WITH OUTLOOKERS. (3)

N.T.S.



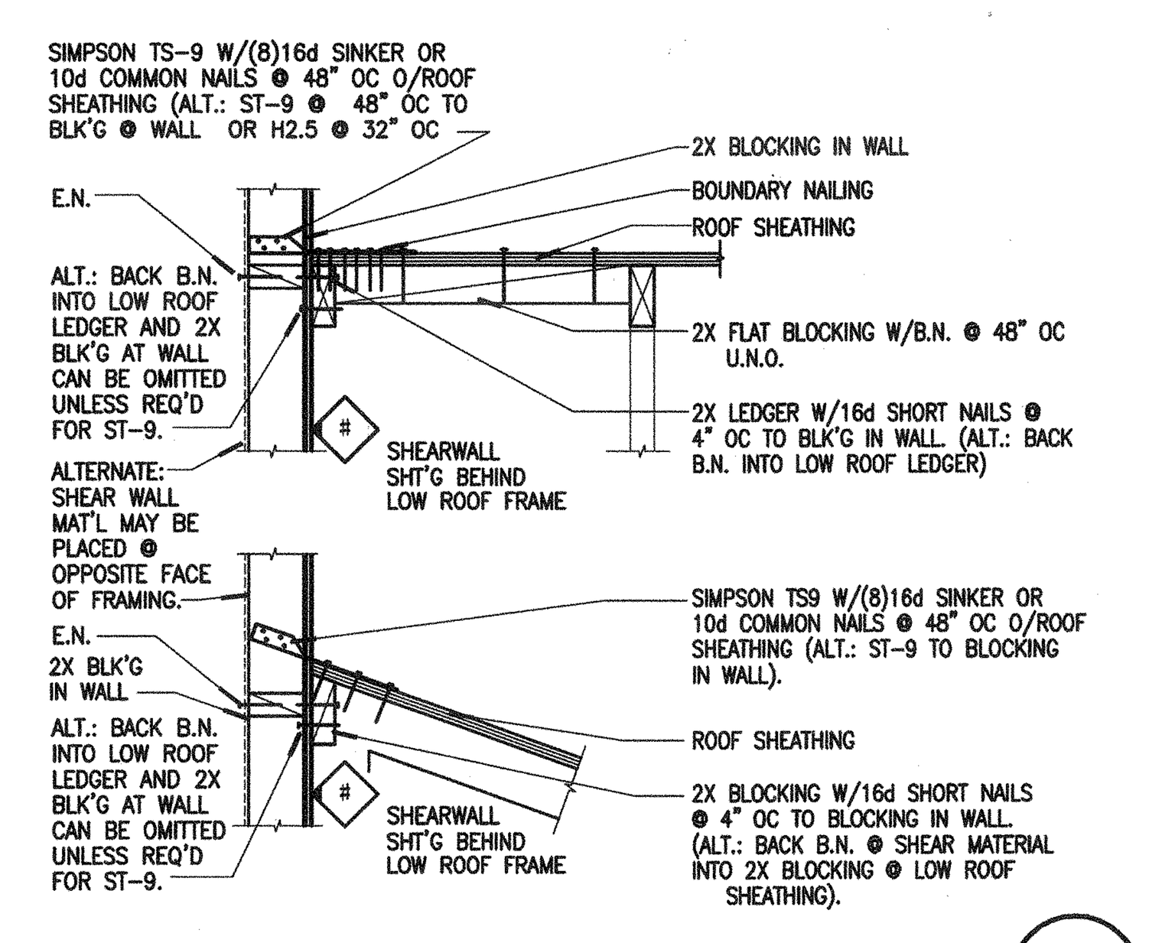
SHEAR TRANSFER WITH CS16 AT SINGLE OPENING (16)

N.T.S.



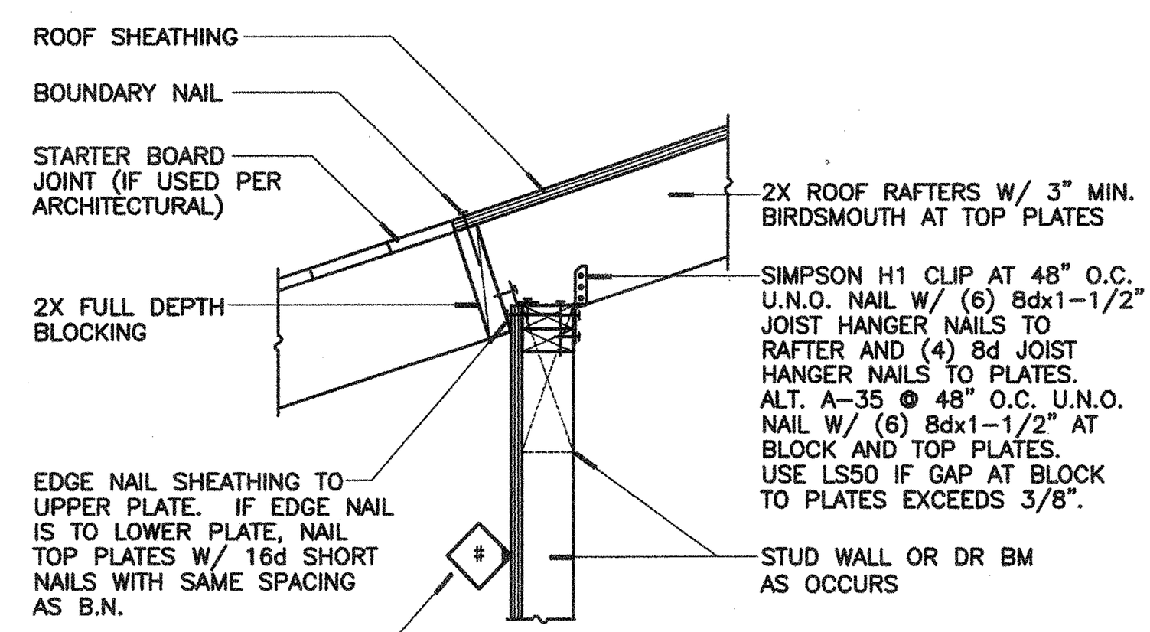
DRAG - CS16 AT PLATES TO PANEL BLOCKS AT TRUSS BAY (12)

1"=1'-0"



SHEARWALL CONTINUOUS @ LOW ROOF (8)

N.T.S.



LTR	A35 SPAC'G	HI SPAC'G	COMBO SPAC'G (A35 & HI)
A	32" O.C.	24" O.C.	64" O.C./48" O.C.
B	24" O.C.	24" O.C.	48" O.C./48" O.C.
C	16" O.C.	24" O.C.	32" O.C./24" O.C.
D	12" O.C.	24" O.C.	24" O.C./24" O.C.

SHEAR TNSFR RAFTER TO WALL (4)

N.T.S.

_WCRS01

DO NOT SCALE PRINTS

REGISTERED PROFESSIONAL ENGINEER — PHILIP G. SOMA JR. — NO. 46231 — EXP. 12-31-12 — CIVIL — STATE OF CALIFORNIA

STRUCTURES DESIGN GROUP, INC.
17780 FITCH SUITE 185
Irvine, Ca 92614
(949)252-7660/252-7661FAX
www.sdgeng.com

HABITAT SANTA ANA

717 E. 3RD STREET SANTA ANA, CA 92701

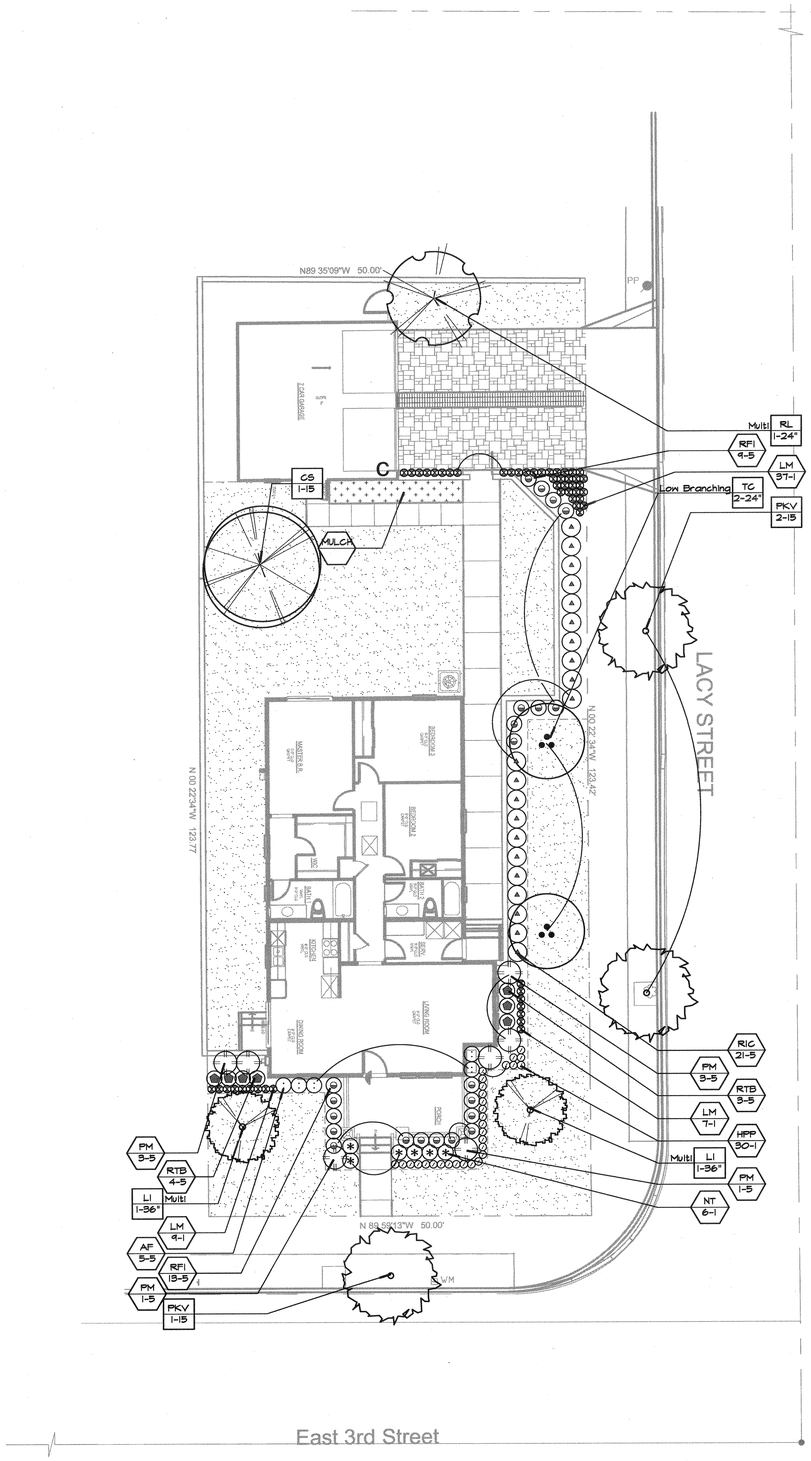
HABITAT FOR HUMANITY ORANGE COUNTY
2200 S RITCHEY STREET SANTA ANA, CA 92705

REVISIONS			
NO.	DATE	NO.	DATE

PROJECT MANAGER: P.S.
DESIGNER: P.S.
DRAWN BY: A.D.
REVIEWED BY: P.S.
JOB NUMBER: 2011009
SHEET: SD2

2011-08-25

CAD FILE:



LANDSCAPE IRRIGATION TO BE CONTROLLED BY:
HUNTER ProC - 900i WITH *HUNTER SOLAR-SYNC WSS*
(SEE CONTROLLER LOCATION ON PLANS INDICATED WITH "C")

GROUND COVER SCHEDULE

SYMBOL	DESCRIPTION	AVAIL.
	2" thick covering of Forest Floor Mulch in all flat (3:1 or less) planting areas. Slopes to receive 2" thick covering of mulch where specified on plan.	R & S
	Sodded Hybrid Tall Fescue (Bid Alternate - Hydroseed @ 12 lbs. per 1000 sq. ft.	----
	2" thick covering of Shredded Bark Mulch in all fallow areas. Slopes to receive 2" thick covering of mulch where specified on plan.	R & S
	3" thick covering of Pea Gravel Mulch in all fallow areas. Install weed fabric below gravel.	XXX

Supplier list:
R & S - R & S Soils Products - 23842 La Rosa Dr.
Lake Forest, CA 92630 - Contact: Steve Carneal (949) 830-8882

HABITAT FOR HUMANITY TREE SCHEDULE

ABBR.	BOTANICAL NAME	COMMON NAME	SIZE	WUCOLS
CS	Citrus (Navel Orange)	Navel Orange	15 GAL.	M
LI	Lagerstroemia 'Natchez'	Crape Myrtle	36" Box	M
PKV	Prunus c. 'Krauter Vesuvius' (Low Branching)	Flowering Cherry	15 GAL.	M
RL	Rhus lancea (Multi Trunk)	African Sumac	24" Box	L
TC	Tristania conferta (Low Branching)	Brisbane Box	24" Box	M

HABITAT FOR HUMANITY SHRUB SCHEDULE

ABBR.	BOTANICAL NAME	COMMON NAME	SIZE	WUCOLS
AF	Anigozanthus flavidus 'Bush Gold'	Kangaroo Paw	5 GAL.	L
HPP	Heuchera 'Palace Purple'	Coral Bells	1 GAL.	M
LM	Liriope muscari	Lily Turf	1 GAL.	M
NT	Nassella tenuissima	Mexican Feather Grass	1 GAL.	L
PM	Phormium 'Maori Maiden'	New Zealand Flax	5 GAL.	M
RIC	Rhaphiolepis indica 'Clara'	Indian Hawthorne	5 GAL.	M
RFI	Rosa floribunda 'Iceberg'	Iceberg Rose	5 GAL.	M
RTB	Rosmarinus officinalis 'Tuscan Blue'	Tuscan Blue Rosemary	5 GAL.	L

0' 2' 4' 8' 16'
Scale: 1/8"=1'-0"

L:\Code Red\Habitat For Humanity\FWD\Habitat_Planting_10-04-11.dwg

JOB #

LICENSED LANDSCAPE ARCHITECT
ANDREW C. BOWDEN
SIGNATURE
RENEWAL DATE
DATE
STATE OF CALIFORNIA

REVISIONS

HABITAT FOR HUMANITY

Orange County, California

Landscape Plans

HABITAT FOR HUMANITY
717 E. 3RD STREET
SANTA ANA, CA.

PLANTING PLAN

LAND CONCERN
LANDSCAPE ARCHITECTURE
1750 EAST DEERE AVENUE
SANTA ANA, CA 92705
949.250.4822

project manager:
Andy Bowden

approved by:
Andy Bowden

drawn by:
Philip Stevens

date:
05/02/11

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

SHEET
1 of 1

project name and client

GRADING PLAN
FOR
HABITAT FOR HUMANITY
717 E. 3RD STREET
SANTA ANA, CA

GRADING NOTES:

1. ALL GRADING SHALL COMPLY WITH CBC CHAPTERS 18 AND 33, AND APPENDIX CHAPTER 33 AND THE SANTA ANA MUNICIPAL CODE. A CITY GRADING PERMIT IS REQUIRED FOR GRADING.
2. GRADING SHALL NOT BE STARTED WITHOUT FIRST NOTIFYING THE CITY GRADING INSPECTOR. A PRE-GRADING MEETING ON THE SITE IS REQUIRED BEFORE STARTING OF GRADING WITH THE FOLLOWING PEOPLE PRESENT: GRADING CONTRACTOR, DESIGN CIVIL ENGINEER, GEOTECHNICAL ENGINEER, GRADING INSPECTOR AND WHEN REQUIRED, THE ARCHAEOLOGIST AND PALEONTOLOGIST. THE REQUIRED INSPECTIONS FOR GRADING WILL BE EXPLAINED AT THIS MEETING.
3. AN APPROVED COPY OF THE GRADING PLANS SHALL BE ON THE PERMITTED SITE WHILE WORK IS IN PROGRESS.
4. THE DESIGN CIVIL ENGINEER SHALL BE AVAILABLE DURING THE GRADING TO VERIFY COMPLIANCE WITH THE PLANS, SPECIFICATIONS, CODE AND ANY SPECIAL CONDITIONS OF THE PERMIT WITHIN HIS PURVIEW.
5. THE GEOTECHNICAL ENGINEER SHALL PERFORM PERIODIC INSPECTIONS AND SUBMIT A COMPLETE REPORT AND MAP UPON COMPLETION OF THE ROUGH GRADING. THE COMPACTION REPORT AND APPROVAL FROM THE GEOTECHNICAL ENGINEER SHALL INDICATE THE TYPE OF FIELD TESTING PERFORMED. EACH TEST SHALL BE IDENTIFIED WITH THE METHOD OF OBTAINING THE IN-PLACE DENSITY, WHETHER SAND CONE OR DRIVE RING AND SHALL BE SO NOTED FOR EACH TEST. SUFFICIENT MAXIMUM DENSITY DETERMINATIONS SHALL BE PERFORMED TO VERIFY THE ACCURACY OF THE MAXIMUM DENSITY CURVES BY THE FIELD TECHNICIAN.
6. CUT AND FILL SLOPES SHALL BE NO STEEPER THAN 2 FOOT HORIZONTAL TO 1 FOOT VERTICAL (2:1) EXCEPT WHERE SPECIFICALLY APPROVED OTHERWISE.
7. FILLS SHALL BE COMPACTED THROUGHOUT TO A MINIMUM OF 90% RELATIVE DENSITY. AGGREGATE BASE FOR ASPHALTIC AREAS SHALL BE COMPACTED TO MINIMUM OF 95% RELATIVE DENSITY. MAXIMUM DENSITY SHALL BE DETERMINED BY UNIFORM BUILDING CODE STANDARD NO. 70-1 OR APPROVED EQUIVALENT, AND FIELD DENSITY BY UNIFORM CODE STANDARD NO. 70-2 OR APPROVED EQUIVALENT.
8. THE CONTRACTOR SHALL NOT CREATE ANY TRENCH OR EXCAVATION 5-FEET OR MORE WITHOUT THE NECESSARY PERMIT FROM THE STATE OF CALIFORNIA DIVISION OF INDUSTRIAL SAFETY.
9. ALL CUT SLOPED SHALL BE INVESTIGATED BOTH DURING AND AFTER GRADING BY THE GEOTECHNICAL ENGINEER TO DETERMINE IF ANY SLOPE STABILITY PROBLEM EXISTS. SHOULD EXCAVATION DISCLOSE ANY GEOLOGICAL HAZARDS OR POTENTIAL GEOLOGICAL HAZARDS, THE GEOTECHNICAL ENGINEER SHALL SUBMIT RECOMMENDED TREATMENT TO THE CITY ENGINEER FOR APPROVAL.
10. THE PERMITEE IS RESPONSIBLE FOR DUST CONTROL MEASURES. WATER ACTIVE SITES AT LEAST TWICE DAILY.
11. THE LOCATING AND PROTECTION OF ALL EXISTING UTILITIES IS THE RESPONSIBILITY OF THE PERMITEE.
12. GRADING OPERATIONS INCLUDING MAINTENANCE OF EQUIPMENT WITHIN ONE-HALF MILE OF HUMAN OCCUPANCY SHALL NOT BE CONDUCTED BETWEEN THE HOURS OF 5:00 P.M. AND 7:00 A.M. DAILY, ON SUNDAY OR ON A FEDERAL HOLIDAY,
13. THE PERMITEE SHALL GIVE REASONABLE NOTICE TO THE OWNER OF ADJOINING LANDS AND BUILDINGS PRIOR TO BEGINNING EXCAVATIONS WHICH MAY AFFECT THE LATERAL AND SUBJACENT SUPPORT OF THE ADJOINING PROPERTY. THE NOTICE SHALL STATE THE INTENDED DEPTH OF EXCAVATION AND WHEN EXCAVATION COMMENCES. THE ADJOINING OWNER SHALL BE ALLOWED AT LEAST 30 DAYS AND REASONABLE ACCESS ON THE PERMITTED PROPERTY TO PROTECT HIS STRUCTURE, IF HE SO DESIRES, UNLESS OTHERWISE PROTECTED BY LAW.
14. ALL EXISTING DRAINAGE COURSES THROUGH THE SITE SHALL REMAIN OPEN TO HANDLE THE STORM WATER; HOWEVER, IN ANY CASE, THE PERMITEE SHALL BE HELD LIABLE FOR ANY DAMAGE DUE TO OBSTRUCTING NATURAL DRAINAGE PATTERNS.
15. APPROVED EROSION PROTECTION DEVICES SHALL BE PROVIDED AND MAINTAINED DURING THE RAINY SEASON AND SHALL BE IN PLACE AT THE END OF EACH DAY'S WORK. PROPER EROSION CONTROL MEASURES MUST BE SHOWN ON THE PLANS.
16. CONSTRUCTION SITES SHALL BE MAINTAINED IN SUCH A CONDITION THAT AN ANTICIPATED STORM DOES NOT CARRY WASTES OR POLLUTANTS OFF THE SITES.

    DISCHARGES OF MATERIAL OTHER THAN STORM WATER ARE ALLOWED ONLY WHEN NECESSARY FOR PERFORMANCE AND COMPLETION OF CONSTRUCTION PRACTICES AND WHERE THEY DO NOT; CAUSE OR CONTRIBUTE TO A VIOLATION OF ANY WATER QUALITY STANDARD; CAUSE OR THREATEN TO CAUSE POLLUTION, CONTAMINATION, OR NUISANCE; OR CONTAIN A HAZARDOUS SUBSTANCE IN A QUANTITY REPORTABLE UNDER FEDERAL REGULATIONS 40 CFR 117 AND 302.

    POTENTIAL POLLUTANTS INCLUDE BUT ARE NOT LIMITED TO: SOLID OR LIQUID CHEMICAL SPILLS; WASTES FROM PAINTS, STAINS, SEALANTS, GLUES, LIMES, PESTICIDES, HERBICIDES, WOOD PRESERVATIVES AND SOLVENTS; ASBESTOS FIBERS, PAINT FLAKES OR STUCCO FRAGMENTS; FUELS, OILS, LUBRICANTS, AND HYDRAULIC RADIATOR OR BATTERY FLUIDS; FERTILIZERS, VEHICLES/EQUIPMENT WASH WATER AND CONCRETE WASH WATER; CONCRETE, DETERGENT OR FLOATABLE WASTES; WASTES FROM ANY ENGINE/EQUIPMENT STEAM CLEANING OR CHEMICAL DEGREASING; AND SUPERCHLORINATED POTABLE WATER LINE FLUSHINGS.

    DURING CONSTRUCTION, DISPOSAL OF SUCH MATERIALS SHOULD OCCUR IN A SPECIFIED AND CONTROLLED TEMPORARY AREA ON-SITE, PHYSICALLY SEPARATED FROM POTENTIAL STORM WATER RUN-OFF, WITH ULTIMATE DISPOSAL IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL REQUIREMENTS.
17. DEWATERING OF CONTAMINATED GROUNDWATER, OR DISCHARGING CONTAMINATED SOILS VIA SURFACE EROSION IS PROHIBITED. DEWATERING OF NON-CONTAMINATED GROUNDWATER REQUIRES A NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT FROM THE RESPECTIVE STATE REGIONAL WATER QUALITY CONTROL BOARD.
18. ALL DIRT, SAND, MUD, OR DEBRIS DEPOSITED OR SPILLED UPON PUBLIC STREETS DURING ANY GRADING, HAULING, OR EXPORT OPERATIONS SHALL BE IMMEDIATELY CLEANED UP BY THE DEVELOPER, HIS CONTRACTOR, SUBCONTRACTORS, OR AGENTS TO THE SATISFACTION OF THE CITY ENGINEER. FAILURE TO DO SO WILL BE CAUSE FOR STOPPING ALL SUCH GRADING, HAULING, OR EXPORT WORK BY THE CITY UNTIL SUCH TIME AS THE STREETS ARE CLEANED.
19. ALL TRUCKS HAULING DIRT, SAND, OIL, OR OTHER LOOSE MATERIALS ARE TO BE COVERED OR SHOULD MAINTAIN A LEAST TWO FEET OF FREEBOARD IN ACCORDANCE WITH THE REQUIREMENTS OF CVC SECTION 23114.
20. CONTRACTOR IS RESPONSIBLE FOR THE REPAIR OF ALL DAMAGES TO PUBLIC PROPERTIES THAT ARE CAUSED BY THE WORK ON-SITE. REPAIR MUST BE COMPLETED TO THE SATISFACTION OF THE CITY ENGINEER.
21. EARTHWORK VOLUMES:

CUT	0 CY	CUBIC YARDS
FILL	360 CY	CUBIC YARDS
NET	360 CY	CUBIC YARDS

    PURE VOLUME ONLY - NO ESTIMATE MADE FOR FOOTING OR OVEREXCAVATIONS.

    THE ABOVE QUANTITIES DO NOT INCLUDE ANY TRENCHING OR FOOTING SPOIL. THEY ARE ENGINEER'S ESTIMATE AND ARE FOR PERMIT PURPOSES ONLY. THE CONTRACTOR SHALL PROVIDE INDEPENDENT ESTIMATE FOR BIDDING AND CONTRACT PURPOSES.

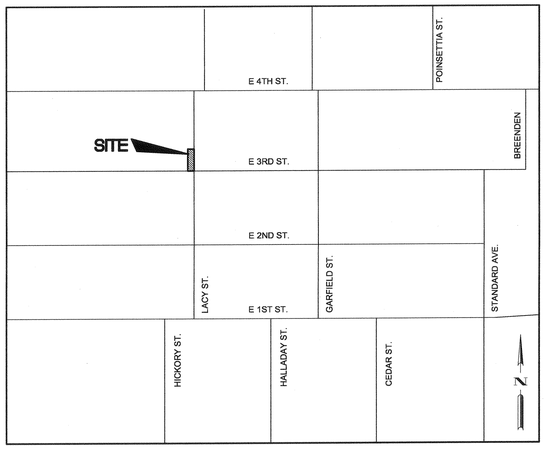
    CONTRACTOR SHALL SUBMIT HAUL ROUTES FOR APPROVAL IF NET VOLUMES EXCEED 500 CUBIC YARDS.
22. SEPARATE PERMITS MUST BE OBTAINED FROM THE CITY BUILDING AND SAFETY DIVISION FOR THE CONSTRUCTION OF RETAINING WALLS, LIGHT POLES, TRASH ENCLOSURES, ON-SITE PLUMBING AND ALL BUILDING STRUCTURES.

EROSION CONTROL NOTES:

SEE SHEET NO. 2

SCAQMD FUGITIVE DUST NOTES:

1. ALL MATERIALS EXCAVATED OR GRADED SHALL BE SUFFICIENTLY WATERED TO PREVENT EXCESSIVE AMOUNTS OF DUST. WATERING WITH COMPLETE COVERAGE SHALL OCCUR AT LEAST TWICE DAILY, ONCE IN THE LATE MORNING AND ONCE AFTER WORK IN DONE FOR THE DAY.
2. ALL CLEARING AND EARTHWORK ACTIVITIES SHALL CEASE DURING PERIODS OF HIGH WINDS (WINDS GREATER THAN 25 MPH AVERAGED OVER ONE HOUR) OR DURING STAGE 1 OR STAGE 2 SMOG PERIODS.
3. INTERNAL ROADWAYS AND PROJECT SITE ENTRY AND EXIT POINTS SHALL BE CLEANED AT THE END OF EACH DAY BY THE PROJECT DEVELOPER. DUST AND DEBRIS FROM CONSTRUCTION ACTIVITIES THAT MIGRATES OR IS CARRIED ONTO MACARTHUR BOULEVARD OR MAIN STREET ADJACENT TO THE PROJECT SITE SHALL ALSO BE CLEANED EACH DAY.
4. ALL MATERIAL TRANSPORTED OFF-SITE SHALL EITHER BE SUFFICIENTLY WATERED OR SECURELY COVERED TO PREVENT EXCESSIVE AMOUNTS OF DUST. HAUL TRUCKS LEAVING THE SITE SHALL HAVE A MINIMUM FREEBOARD DISTANCE OF 12-INCHES.
5. CONSTRUCTION EQUIPMENT LEAVING THE PROJECT SITE SHALL BE WHEEL WASHED.
6. THE AMOUNT OF AREA DISTURBED BY CLEARING AND EARTHWORK ACTIVITIES SHALL BE MINIMIZED AT ALL TIMES.
7. EQUIPMENT ENGINES SHALL BE MAINTAINED IN GOOD CONDITION AND IN PROPER TUNE ACCORDING TO MANUFACTURER'S SPECIFICATIONS.
8. TO THE EXTENT FEASIBLE, CONSTRUCTION EQUIPMENT SHALL BE USE ALTERNATIVE CLEAN FUELS SUCH AS COMPRESSED NATURAL GAS EQUIPMENT WITH OXIDATION CATALYSTS. IF ALTERNATIVE CLEAN FUELS ARE NOT FEASIBLE, GASOLINE POWERED CONSTRUCTION EQUIPMENT SHALL BE USED.
9. CONSTRUCTION EQUIPMENT OPERATING ON DIESEL FUEL SHALL USE PARTICULATE FILTERS OR LOW SULFUR DIESEL.
10. TO THE EXTENT FEASIBLE CONSTRUCTION OPERATIONS SHALL USE ELECTRICITY FROM POWER POLES IN-LIEU OF TEMPORARY DIESEL OR GASOLINE-POWERED GENERATORS.



VICINITY MAP
NO SCALE

PRIVATE ENGINEER'S NOTICE TO CONTRACTORS:

THE EXISTENCE AND LOCATION OF ANY UNDERGROUND UTILITY PIPES OR STRUCTURES SHOWN ON THIS PLAN ARE OBTAINED BY A SEARCH OF AVAILABLE RECORDS. TO THE BEST OF OUR KNOWLEDGE THERE ARE NO EXISTING UTILITIES EXCEPT AS SHOWN ON THESE PLANS. THE CONTRACTOR IS REQUIRED TO TAKE DUE PRECAUTIONARY MEASURES TO PROTECT THE UTILITIES SHOWN AND ANY OTHER LINES OR STRUCTURES NOT SHOWN ON THESE PLANS.

ALL CONTRACTORS AND SUBCONTRACTORS PERFORMING WORK SHOWN ON OR RELATED TO THESE PLANS SHALL CONDUCT THEIR OPERATIONS SO THAT ALL EMPLOYEES ARE PROVIDED A SAFE PLACE TO WORK AND THE PUBLIC IS PROTECTED. ALL CONTRACTORS AND SUBCONTRACTORS SHALL COMPLY WITH THE "OCCUPATIONAL SAFETY AND HEALTH REGULATIONS" OF THE U.S. DEPARTMENT OF LABOR, AND THE STATE OF CALIFORNIA DEPARTMENT OF INDUSTRIAL RELATIONS' "CONSTRUCTION SAFETY ORDERS".

THE CIVIL ENGINEER SHALL NOT BE RESPONSIBLE IN ANY WAY FOR THE CONTRACTORS' AND SUBCONTRACTORS' COMPLIANCE WITH THE "OCCUPATIONAL SAFETY AND HEALTH REGULATIONS" OF THE U.S. DEPARTMENT OF LABOR OR WITH THE STATE OF CALIFORNIA DEPARTMENT OF INDUSTRIAL RELATIONS' "CONSTRUCTION SAFETY ORDERS".

CONTRACTOR FURTHER AGREES THAT HE SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY; THAT THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS; AND THAT THE CONTRACTOR SHALL DEFEND, INDEMNIFY AND HOLD THE OWNER AND THE ENGINEER HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPTING FOR LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE OWNER OR THE ENGINEER.

UNAUTHORIZED CHANGES AND USES:

THE ENGINEER PREPARING THESE PLANS WILL NOT BE RESPONSIBLE FOR, OR LIABLE FOR, UNAUTHORIZED CHANGES TO OR USES OF THESE PLANS. ALL CHANGES TO THE PLANS MUST BE IN WRITING AND MUST BE APPROVED BY THE PREPARER OF THESE PLANS.

LEGEND

AC	– ASPHALT CONCRETE	FH	– FIRE HYDRANT
C/L	– CENTERLINE	WM	– WATER METER
CONC	– CONCRETE	WV	– WATER VALVE
EP	– EDGE OF PAVEMENT	RPP	– BACKFLOW PREVENTER
FL	– FLOWLINE	PIV	– POST INDICATOR VALVE
FS	– FINISHED SURFACE	FDC	– FIRE DEPARTMENT CONNECTION
LS	– LANDSCAPE AREA	FR	– FIRE RISER
NG	– NATURAL GROUND	DDC	– DOUBLE DETECTOR CHECK
PB	– PULL BOX	IC	– IRRIGATION CONTROL VALVE
SMH	– SEWER MANHOLE	S	– SEWER MANHOLE
TC	– TOP OF CURB		– WALL

ST LT	– STREET LIGHT
PL	– PARKING LOT LIGHT
TPB	– TRAFFIC PULL BOX
PB	– PULL BOX
GM	– GAS METER
	– TREE
	– SIGN
	– POWER POLE
	– GUY WIRE
	– CHAIN LINK FENCE

CONSTRUCTION NOTES & QUANTITIES ESTIMATE:*

(1)	CONSTRUCT CONCRETE PAVING PER LANDSCAPE ARCHITECT'S PLAN	360 – S.F.
(2)	INSTALL GRAVEL MULCH PER LANDSCAPE ARCHITECT'S PLAN	300 – S.F.
(3)	CONSTRUCT DECORATIVE PAVERS PER LANDSCAPE ARCHITECT'S PLAN	400 – S.F.
(4)	CONSTRUCT 3" PVC SCH 40 PIPE, INCLUDING REQUIRED FITTINGS	22 – L.F.
(10)	CONSTRUCT DRIVEWAY APPROACH PER CITY STD. PLAN 1112 CASE 2 (W=18.5', A=18.5', X=3')	200 – S.F.
(11)	CONSTRUCT 6" CURB PER CITY STD. PLAN 1101, TYPE B-1	35 – L.F.
(12)	CONSTRUCT SIDEWALK PER CITY STD. PLAN 1104	1,050 – S.F.
(13)	CONSTRUCT TYPE "B" PARKWAY CULVERT W/ CASE II INLET, N=2-3" PVC SCH 40 PIPE PER CITY STD. PLAN 319	1 – EA.
(14)	CONSTRUCT CURB RAMP PER CITY STD. PLAN 1122, TYPE II (RETROFIT) INCLUDING (W=1') FULL DEPTH A.C. PATCH	195 – S.F.
(15)	SAWCUT AND REMOVE EXISTING CURB	55 – L.F.
(16)	SAWCUT AND REMOVE EXISTING DRIVEWAY	400 – S.F
(17)	SAWCUT AND REMOVE EXISTING SIDEWALK INCLUDING ACCESS RAMP	1,170 – S.F.
(19)	PROTECT IN PLACE EXISTING IMPROVEMENT	N/A
(20)	CONSTRUCT 4" PVC SCH 40 PIPE, INCLUDING REQUIRED FITTINGS	100 – L.F.
(21)	CONSTRUCT 6" DIA. AREA DRAIN WITH GRATE BY NDS (OR APPROVED EQUAL) AND DETAIL ON SHEET 2	1 – EA.
(22)	CONSTRUCT AREA DRAIN WITH GRATE BY NDS (OR APPROVED EQUAL) SIZE PER PLAN AND DETAIL ON SHEET 2	5 – EA.
(23)	INSTALL LANDSCAPE AND IRRIGATION PER LANDSCAPE ARCHITECT'S PLAN	665 – S.F.
(24)	PROVIDE 4" MIN. OPENING IN WALL FOR OVERFLOW	1 – EA.
(25)	REMOVE EXISTING CHAIN LINK FENCE AND APPURTENANCES INCLUDING FOOTING	190 – L.F.
(26)	CONSTRUCT CMU WALL (H=6') PER CITY STD. PLAN 113-A (CASE AS REQUIRED BY FIELD CONDITIONS)	140 – L.F.
(27)	PLANT 24" BOX STREET TREE PER CITY STD. PLAN 1224 (CONTACT 714.647.3330 FOR SPECIES)	2 – EA.
(28)	GRIND 0.17' ACROSS ROADWAY INCLUDING TRANSVERSE JOINS AND OVERLAY 0.17' MIN AC (TYPE III-C3- PG 64-10) TO CENTERLINE FEATHER AS REQUIRED FOR SMOOTH JOIN	1,980 – S.F.
(W1)	EXIST. METER TO BE REMOVED (CONTACT CITY FORCES AT 714.647.3346 FOR ASSISTANCE)	1 – EA.
(W2)	INSTALL 1" WATER SERVICE AND METER BOX PER CITY STD. PLAN 1401 (5/8" METER TO BE PROVIDED BY CITY FORCES, UPON APPLICATIN AND PAYMENT OF FEES)	1 – EA.
(S1)	EXIST. SEWER LATERAL TO BE CAPPED	1 – EA.
(S2)	CONSTRUCT 6" PVC-SDR 35 SEWER LATERAL PER CITY STD. PLAN 1204, WITH BEDDING AND BACKFILL PER CITY STD 1208	1 – EA.
(S3)	CHISEL AN "S" ON THE CURB FACE TO INDICATE SEWER LATERAL LOCATION	1 – EA.

* THE ABOVE QUANTITIES ARE THE ENGINEER'S ESTIMATE AND ARE FOR PERMIT PURPOSES ONLY. THE CONTRACTOR SHALL PROVIDE INDEPENDENT ESTIMATE FOR BIDDING AND CONTRACT PURPOSES.

BENCHMARK:

SA-247-70 NAVD 88 (ADJ 2010) ELEV. 122.488

DESCRIBED BY OCS 2001 – FOUND 3 3/4" OCS ALUMINUM BENCHMARK DISK STAMPED "SA-247-70", SET IN THE TOP OF A 4 IN. BY 4 IN. CONCRETE POST. MONUMENT IS LOCATED IN THE SOUTHEAST CORNER OF THE INTERSECTION OF HALLADAY STREET AND FIRST STREET, 19 FT. EASTERLY OF THE CENTERLINE OF HALLADAY STREET AND 106 FT. SOUTHERLY OF THE CENTERLINE OF FIRST STREET, MONUMENT IS SET LEVEL WITH THE TOP OF CURB.

BASIS OF BEARINGS:

BEARINGS SHOWN HEREON ARE BASED ON THE CENTERLINE OF 3RD STREET BEARING NORTH 89°59'13" WEST, PER TRACT NO. 12812 M.M. 703/47-49.

LEGAL DESCRIPTION:

LOT 17, BLOCK A, NOAH PALMER TRACT, AS SHOWN ON THE MAP FILED IN BOOK 8, PAGES 13 OF MISCELLANEOUS MAPS IN THE OFFICE OF THE COUNTY RECORDER OF ORANGE COUNTY.

ASSESSOR PARCEL NO.

PARCEL 398-481-13

JOB ADDRESS:

717 E. 3RD STREET

OWNER:

HABITAT FOR HUMANITY OF ORANGE COUNTY
2200 SOUTH RITCHEY
SANTA ANA, CA 92705
(714) 434-6200

SOILS ENGINEER:

ASSOCIATED SOILS ENGINEERING, INC.
2860 WALNUT AVENUE
SIGNAL HILL, CA 90755
(562) 426-7990
PROJECT NO. 11-6260

LIST OF DRAWINGS

NO.	DESCRIPTION
1	TITLE SHEET
2	GRADING PLAN/ HORIZONTAL CONTROL PLAN/ EROSION CONTROL PLAN

THE TOPOGRAPHY WAS COMPILED BY LEONARD C. STILES, TEL (714) 538-4276, 2209 EAST CARRIE AVENUE, ORANGE, CA 92867, JOB #SS-8, DATE 01/17/11. THE ACCURACY AND COMPLETENESS OF WHICH WALDEN & ASSOCIATES RELIED UPON WITHOUT INDEPENDENT EVALUATION OR VERIFICATION.

GRADING PERMIT NO.
P 101105

DIGALERT
DIAL TOLL FREE
1-800-422-4133
AT LEAST TWO DAYS BEFORE YOU DIG
UNDERGROUND SERVICE ALERT OF SOUTHERN CALIFORNIA

NUMBER	DESCRIPTION	DATE	INITIAL
	REVISIONS		

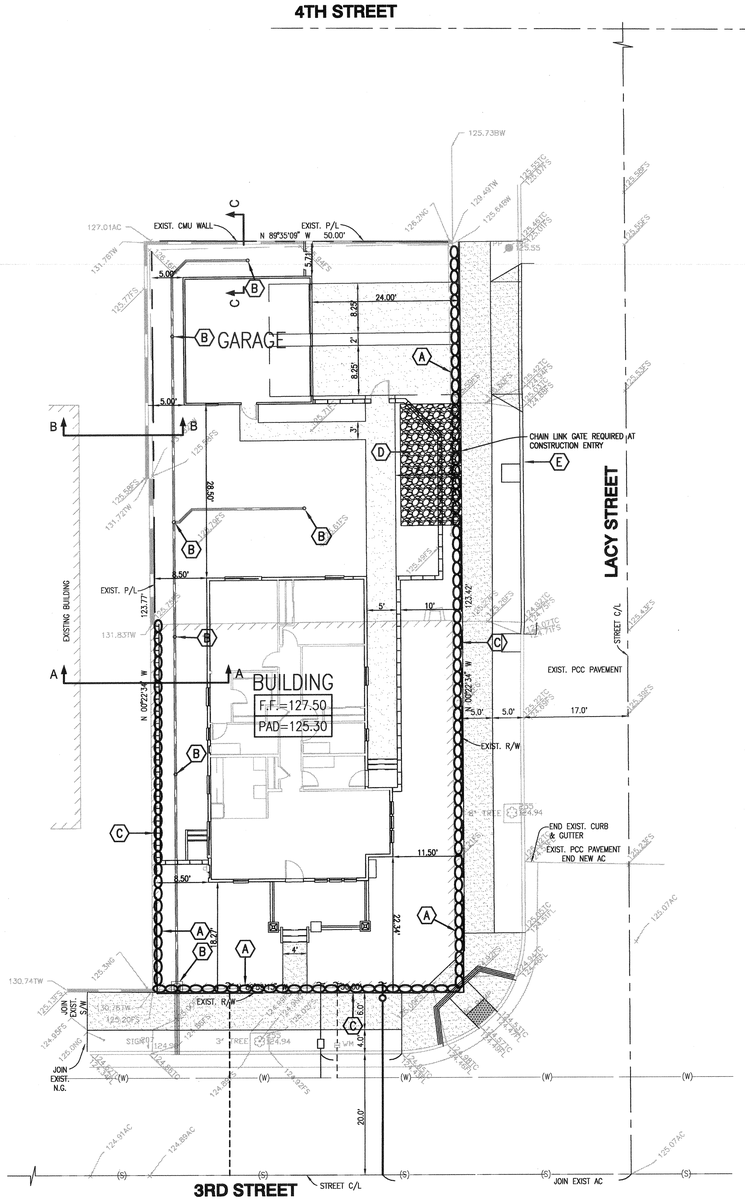
REGISTERED PROFESSIONAL ENGINEER – DAVID LEE BACON – No. 40496 Exp. 3-31-13 – CIVIL – STATE OF CALIFORNIA

WALDEN & ASSOCIATES
CIVIL ENGINEERS
LAND SURVEYORS
PLANNERS
2552 WHITE ROAD, SUITE B, IRVINE, CA 92614
(949) 660-0110 FAX: 660-0418

DAVID L. BACON PE 40496 DATE

PRECISE GRADING PLAN
TITLE SHEET
FOR
HABITAT FOR HUMANITY
717 E. 3RD STREET
SANTA ANA, CALIFORNIA

JOB NUMBER 1668-841-001
DATE: 11/07/11
DRAWN: SK
CHECKED: DB
SHEET 1 OF 2



HORIZONTAL CONTROL AND EROSION PLAN

CONSTRUCTION NOTES

(A) INSTALL GRAVEL BAGS TWO ROWS WIDE TWO BAGS HIGH

(B) CONSTRUCT TEMPORARY INLET PROTECTION PER DETAIL HEREON

(C) INSTALL CHAIN LINK FENCING INCLUDING GATE AT CONSTRUCTION ENTRY WITH FABRIC ALONG THE PERIMETER OF THE JOBSITE EXCEPT WHERE ±6' CMU WALLS ARE LOCATED

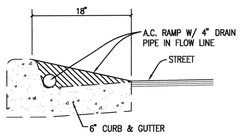
(D) INSTALL 10' WIDE X 20' LONG X 12" THICK GRAVEL BLANKET (3" TO 6" ROCK SIZE), OR SHAKER RACKS FOR PROJECT CONSTRUCTION ENTRY.

(E) INSTALL TEMPORARY ACCESS RAMP PER DETAIL HEREON AT CONSTRUCTION ENTRY FOR SITE ACCESS. (IF CURB AND GUTTER EXIST)

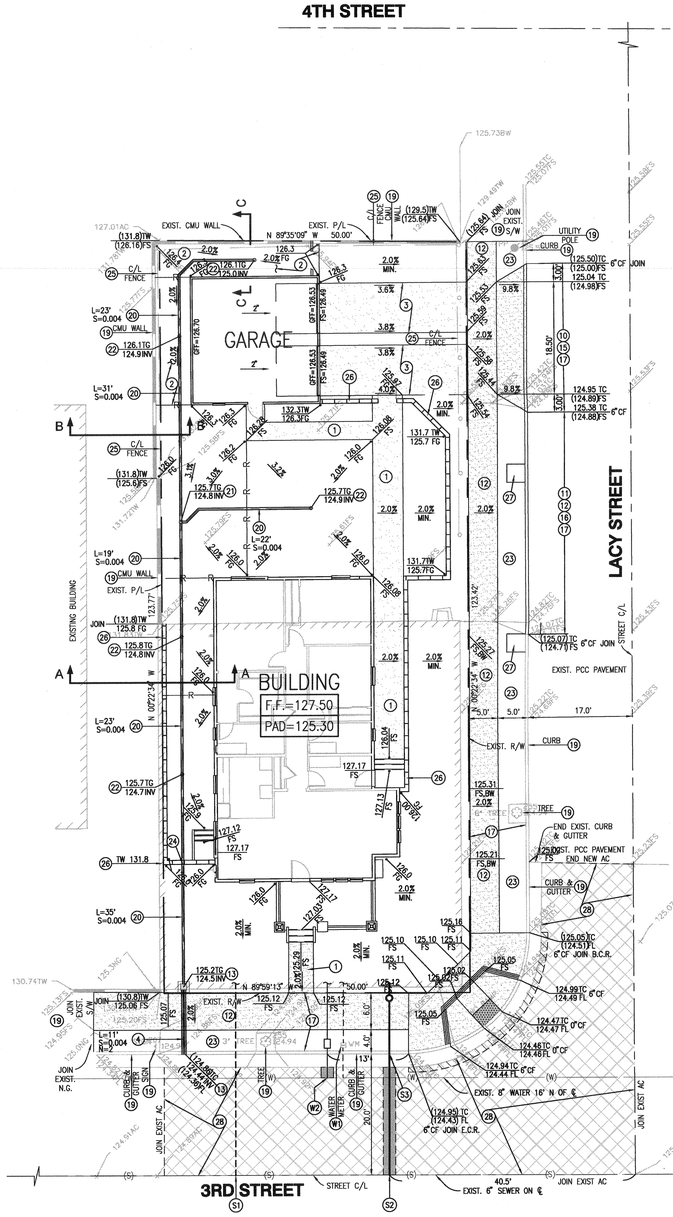
EROSION AND SEDIMENT CONTROL NOTES:

1. ALL WORK SHALL BE IN ACCORDANCE WITH THE EROSION CONTROL PLANS AND THE RECOMMENDATIONS OF THE SOILS REPORT.
2. EROSION CONTROL MEASURES SHALL BE IN PLACE AT THE END OF EACH WORKING DAY WHENEVER THE DAILY RAINFALL PROBABILITY EXCEEDS 40%.
3. EQUIPMENT AND WORKERS FOR EMERGENCY WORK SHALL BE MADE AVAILABLE AT ALL TIMES DURING THE RAINY SEASON. NECESSARY MATERIALS SHALL BE AVAILABLE ON SITE AND STOCKPILED AT CONVENIENT LOCATIONS TO FACILITATE RAPID CONSTRUCTION OF TEMPORARY EROSION CONTROL DEVICES AT ALL TIME.
4. CONTROLS SHALL BE SET UP AND MAINTAINED AS CONSTRUCTION PROCEEDS. ADJUSTMENTS TO THE EROSION CONTROL PLANS ARE ALLOWABLE AS REQUIRED AND APPROVED BY CITY.
5. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL IMPLEMENT STRUCTURAL AND NONSTRUCTURAL BEST MANAGEMENT PRACTICES (BMP'S) IN CONFORMANCE WITH THE GUIDELINES OF THE CALIFORNIA STORM WATER BMP HANDBOOKS.
6. AFTER A RAINSTORM, ALL SEDIMENT AND DEBRIS SHALL BE REMOVED FROM STREETS, CHECK BERMS AND DESILTING BASINS. ANY GRADED SLOPE SURFACE PROTECTION MEASURES DAMAGED DURING A RAINSTORM SHALL BE IMMEDIATELY REPAIRED.
7. THE PERMITEE AND CONTRACTOR SHALL BE RESPONSIBLE AND SHALL TAKE NECESSARY PRECAUTIONS TO PREVENT TRESPASS ONTO AREAS WHERE IMPOUNDED WATER CREATED A HAZARDOUS CONDITION.

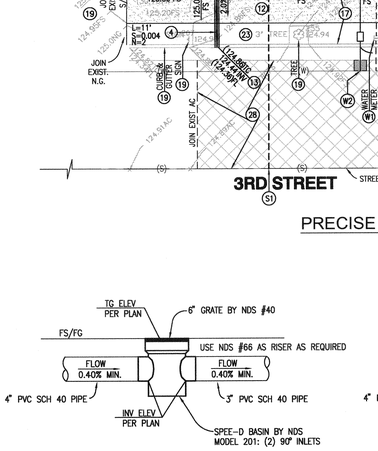
(B) TEMPORARY INLET PROTECTION DETAILS
NO SCALE



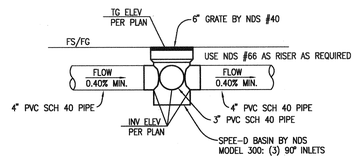
(E) AC RAMP DETAIL
NO SCALE



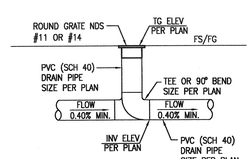
PRECISE GRADING PLAN



(13) DRAIN CLEAN OUT DETAIL
NO SCALE



(21) 6" DRAIN DETAIL
NO SCALE



(22) DRAIN DETAIL
NO SCALE

GRADING CONSTRUCTION NOTES

(1) CONSTRUCT CONCRETE PAVING PER LANDSCAPE ARCHITECT' S PLAN
(2) PLACE GRAVEL MULCH PER LANDSCAPE ARCHITECT'S PLAN
(3) CONSTRUCT DECORATIVE PAVERS PER LANDSCAPE ARCHITECT'S PLAN
(4) CONSTRUCT 3" PVC SCH 40 PIPE, INCLUDING REQUIRED FITTINGS
(10) CONSTRUCT DRIVEWAY APPROACH PER CITY STD. PLAN 1112 CASE 2 (W=18.5', A=18.5', X=3')
(11) CONSTRUCT 6" CURB PER CITY STD. PLAN 1101, TYPE B-1
(12) CONSTRUCT SIDEWALK PER CITY STD. PLAN 1104
(13) CONSTRUCT TYPE "B" PARKWAY CULVERT W/ CASE II INLET, N=2-3" PVC SCH 40 PIPE PER CITY STD. PLAN 319
(14) CONSTRUCT CURB RAMP PER CITY STD. PLAN 1122, TYPE II (RETROFIT) INCLUDING (W=1') FULL DEPTH A.C. PATCH
(15) SAWCUT AND REMOVE EXISTING CURB
(16) SAWCUT AND REMOVE EXISTING DRIVEWAY
(17) SAWCUT AND REMOVE EXISTING SIDEWALK INCLUDING A.C. RAMP
(19) PROTECT IN PLACE EXISTING IMPROVEMENT
(20) CONSTRUCT 4" PVC SCH 40 PIPE, INCLUDING REQUIRED FITTINGS
(21) CONSTRUCT 6" DIA. AREA DRAIN WITH GRATE BY NDS (OR APPROVED EQUAL) AND DETAIL HEREON
(22) CONSTRUCT AREA DRAIN WITH GRATE BY NDS (OR APPROVED EQUAL) SIZE PER PLAN AND DETAIL HEREON
(23) INSTALL LANDSCAPE AND IRRIGATION PER LANDSCAPE ARCHITECT'S PLAN
(24) PROVIDE 4" MIN. OPENING IN WALL FOR OVERFLOW
(25) REMOVE EXISTING CHAIN LINK FENCE AND APPURTENANCES INCLUDING FOOTING
(26) CONSTRUCT CMU WALL (H=6') PER CITY STD. PLAN 113-A (CASE AS REQUIRED BY FIELD CONDITIONS)
(27) PLANT 24" BOX STREET TREE PER CITY STD. PLAN 1224 (CONTACT 714.647.3330 FOR SPECIES)
(28) GRIND 0.17" ACROSS ROADWAY INCLUDING TRANSVERSE JOINS AND OVERLAY 0.17" MIN AC (TYPE III-C3- PG 64-10) TO CENTERLINE FEATHER AS REQUIRED FOR SMOOTH JOIN

WATER CONSTRUCTION NOTES

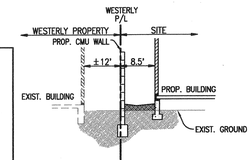
(W1) EXIST. METER TO BE REMOVED (CONTACT CITY FORCES AT 714.647.3346 FOR ASSISTANCE)
(W2) INSTALL 1" WATER SERVICE AND METER BOX PER CITY STD. PLAN 1401 (5/8" METER TO BE PROVIDED BY CITY FORCES, UPON APPLICATIN AND PAYMENT OF FEES)

SEWER CONSTRUCTION NOTES

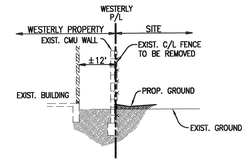
(S1) EXIST. SEWER LATERAL TO BE CAPPED
(S2) CONSTRUCT 6" PVC-SDR 35 SEWER LATERAL PER CITY STD. PLAN 1204, WITH BEDDING AND BACKFILL PER CITY STD 1208
(S3) CHISEL AN "S" ON THE CURB FACE TO INDICATE SEWER LATERAL LOCATION

NOTES:

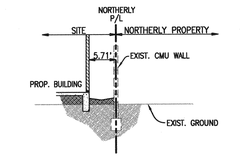
1. CONTRACTOR TO FIELD VERIFY EXISTING GRADES AND ELEVATIONS PRIOR TO CONSTRUCTION AND NOTIFY THE ENGINEER OF ANY CONFLICTS.
2. CONTRACTOR TO FIELD VERIFY EXISTING UTILITIES (HORIZONTAL AND VERTICAL LOCATIONS), INCLUDING GAS, SEWER AND WATER LATERALS PRIOR TO CONSTRUCTION AND NOTIFY THE ENGINEER OF ANY CONFLICTS.
3. CONTRACTOR TO PRESERVE EXISTING PCC STREET SECTION IN LACY STREET. SAWCUT LINE SHALL BE USED AS OUTSIDE FORM TO JOIN TO PROVIDE SMOOTH TRANSITION. NO 1" SLOT PATCH REQUIRED.
4. DEPTH (HIKE) OF GUTTER SHALL BE MODIFIED AS NECESSARY TO MATCH EXISTING CONDITIONS.



SECTION A-A
NO SCALE



SECTION B-B
NO SCALE



SECTION C-C
NO SCALE

GRADING PERMIT NO.
P 101105

DIGALERT
DIAL TOLL FREE 1-800-422-4133
AT LEAST TWO DAYS BEFORE YOU DIG
UNDERGROUND SERVICE ALERT OF SOUTHERN CALIFORNIA

NUMBER	DESCRIPTION	DATE	INITIAL
	REVISIONS		

REGISTERED PROFESSIONAL ENGINEER DAVID LEE BACON No. 40496 Exp. 3-31-13 STATE OF CIVIL CALIFORNIA

WALDEN & ASSOCIATES
CIVIL ENGINEERS
LAND SURVEYORS
PLANNERS
2552 WHITE ROAD, SUITE B, IRVINE, CA 92614
(949) 660-0110 FAX: 660-0418
DAVID L. BACON PE 40496 DATE

PRECISE GRADING PLAN
GRADING, H.C. AND E.C.
FOR
HABITAT FOR HUMANITY
717 3RD STREET
SANTA ANA, CALIFORNIA

JOB NUMBER	1688-841-001
DATE:	09/16/11
DRAWN:	SK
CHECKED:	DB
SHEET	2
OF	2

G:\projdata\1688 Scattered Lots Santa Ana\DWG\PGP\2rd Sheet_ 1688-TITLE-01.dwg, PRECISE GRADING, 11/7/2011 12:42:38 PM