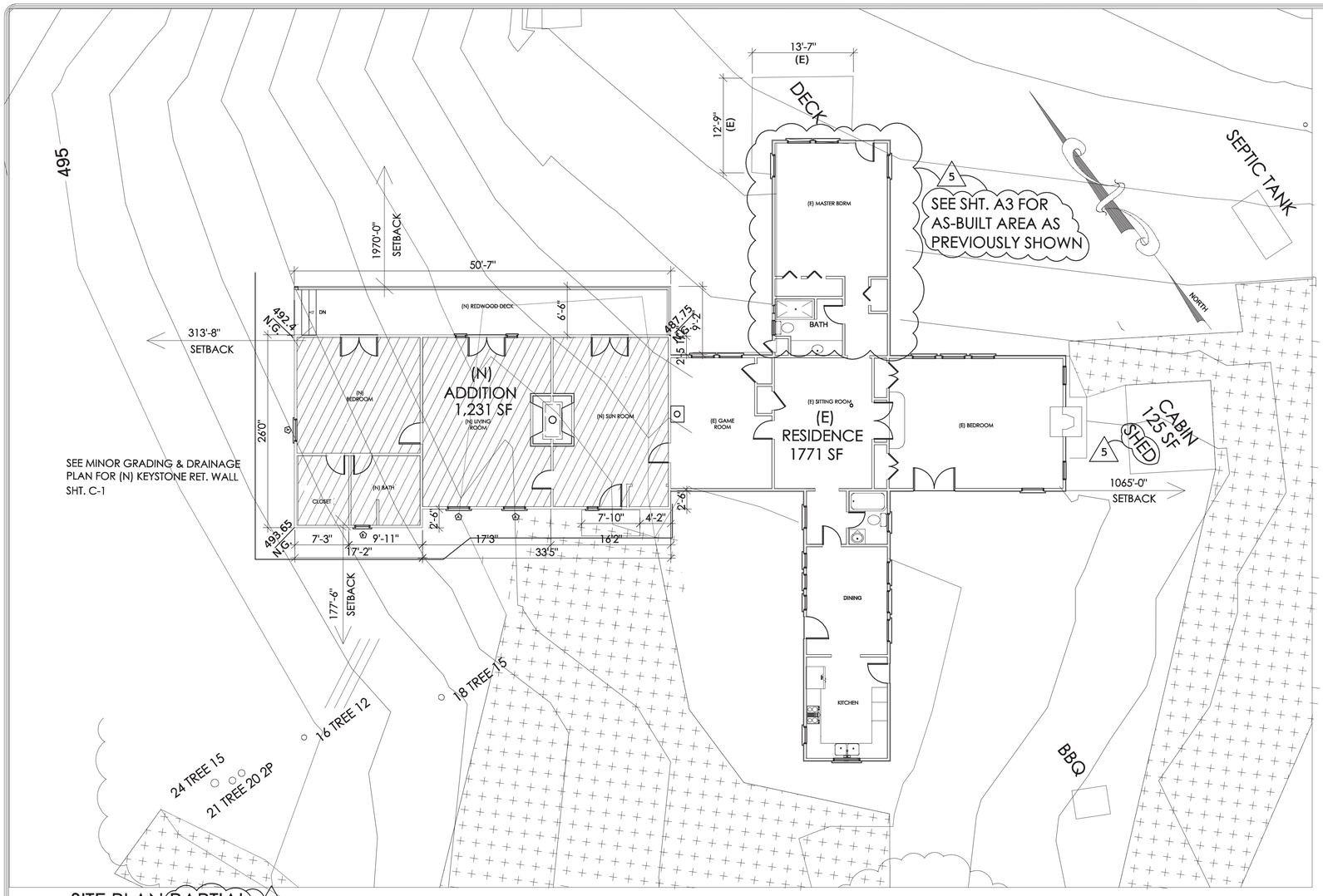


SITE PLAN (PARTIAL) 5

SCALE: 1/8" = 1'0"

NOTE: ALL STRUCTURES ARE SHOWN ACCURATELY ON THE TOPOGRAPHIC SURVEY ATTACHED, SHEET TS-1 WITH CORRESPONDING SQ. FT'GS. AND REFERENCED IN THE PROJECT INFORMATION ON THIS SHEET WITH CORRESPONDING CALCULATIONS

GENERAL NOTES

ALL CONSTRUCTION SHALL CONFORM TO THE 2016 CALIFORNIA RESIDENTIAL CODE (CRC), 2016 CALIFORNIA BUILDING CODE (CBC), 2016 CALIFORNIA FIRE CODE (CFC), 2016 CALIFORNIA PLUMBING CODE (CPC), 2016 CALIFORNIA MECHANICAL CODE (CMC), 2016 CALIFORNIA ELECTRICAL CODE (CEC), 2016 CALIFORNIA ENERGY CODE (CEnC), 2016 CALIFORNIA GREEN BUILDING STANDARDS (CGC), AND COUNTY OF SANTA CLARA MUNICIPAL CODE.

ALL CONSTRUCTION ACTIVITIES SHALL BE IN CONFORMANCE WITH THE SANTA CLARA COUNTY NOISE ORD. SECT. B11-154 AND PROHIBITED BTWN. 7:00 P.M. & 7:00 A.M. ON WEEKDAYS & SATURDAYS, OR AT ANYTIME ON SUNDAYS FOR THE DURATION OF CONSTRUCTION.

THE BUILDER SHALL CHECK THE PLANS AND CRITICAL DIMENSIONS IN THE FIELD AND NOTIFY THE DESIGNER AND OWNER OF ANY DESCREPIENCIES BEFORE CONSTRUCTION.

WRITTEN DIMENSIONS SHALL TAKE PRECEDENCE OVER SCALED DIMENSIONS.

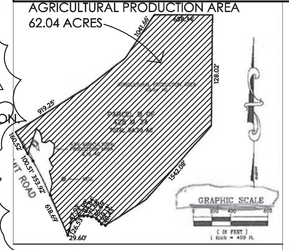
THE PROPERTY IS UNDER THE JURISDICTION OF CAL FIRE AND MUST COMPLY WITH SRA FIRE SAFE REGULATIONS-PRC 4290.

PER CALIFORNIA CIVIL CODE ARTICLE 1101.4 ANDCALGREEN SECTION 301.1, FOR ALL BUILDING ALTERATIONS OR IMPROVEMENTS TO A SINGLE FAMILY RESIDENTIAL PROPERTY, EXISTING PLUMBING FIXTURES IN THE ENTIRE HOUSE THAT DO NOT MEET COMPLIANT FLOW RATES WILL NEED TO BE UPGRADED.

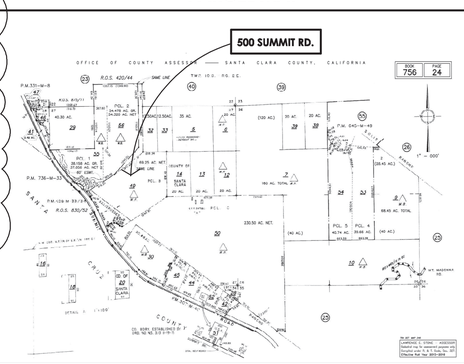
MECHANICAL EXHAUST FANS WHICH EXHAIST DIRECTLY FROM BATHROOMS SHALL COMPLY WITH ASHRAE 62.2 SECTION 5; EXHAUST FANS SHALL BE ENERGY COMPLIANT; EXHAUST FANS SHALL TERMINATE OUTSIDE THE BUILDING [CAL GREEN 4.506.1]

AGRICULTURAL AREA

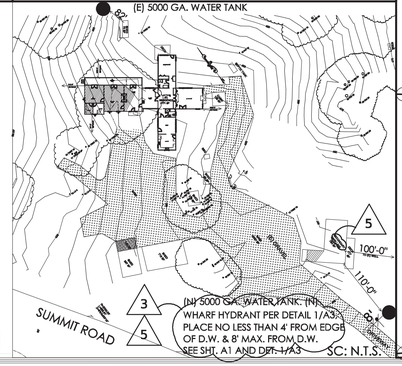
AGRICULTURAL PRODUCTION AREA
62.04 ACRES



PARCEL MAP



SITE REFERENCE



SC: N.T.S.

THE CASASSA FAMILY 500 SUMMIT ROAD MORGAN HILL, CA 95307

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PROJECT INFORMATION

SCOPE OF WORK:

NEW 1,231 S.F. ADDITION W/ BEDROOM, (N) BATH, (N) LIVING ROOM, LAUNDRY CLOS., AND A (N) SUNROOM W/ (N) 329 S.F. REDWOOD DECK. (N) FAU, REPLACE (E) W.H. RECOGNIZE (E) AS-BUILT BEDROOM 15'10"X 28'10" A PART OF (E) SQR. FT'G. (455 S.F.)

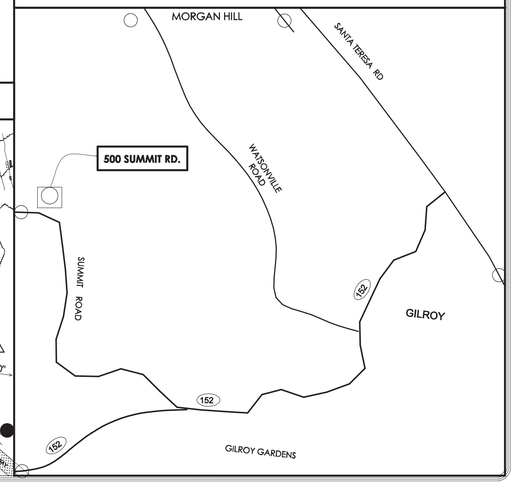
ADDRESS: 500 SUMMIT RD. MORGAN HILL, CA **APN:** 756-24-049

ZONING: HS-sr **LOT SIZE:** 64.20 (AC)/ 3,016,530 S.F. **EX. RES. NOT EQUIP. W. FIRE SPRINKLERS.**

EXISTING MAIN HOUSE S.F.	1771.0	SQ. FT.
NEW ROOM ADDITION S.F.	1231.0	SQ. FT.
TOTAL SQ. FT.	3002.0	SQ. FT.
(E) BBQ	20	SQ. FT.
(E) SECONDARY DWELLING	794	SQ. FT.
(E) 2ND DWELLING DECK	177	SQ. FT.
(E) CABIN (SHED)	125	SQ. FT.
(E) SHED	60	SQ. FT.
(N) DECK	173.4	SQ. FT.
(E) SHED	116	SQ. FT.
(E) SHED	70	SQ. FT.
(E) CARPORT	713	SQ. FT.
(E) CARPORT	357	SQ. FT.
(E) CONCRETE PATIO	143	SQ. FT.
(E) SEPTIC TANK	30	SQ. FT.

TOTAL LOT COVERAGE: 5,780.4 = < .019 % LOT COVERAGE

VICINITY MAP



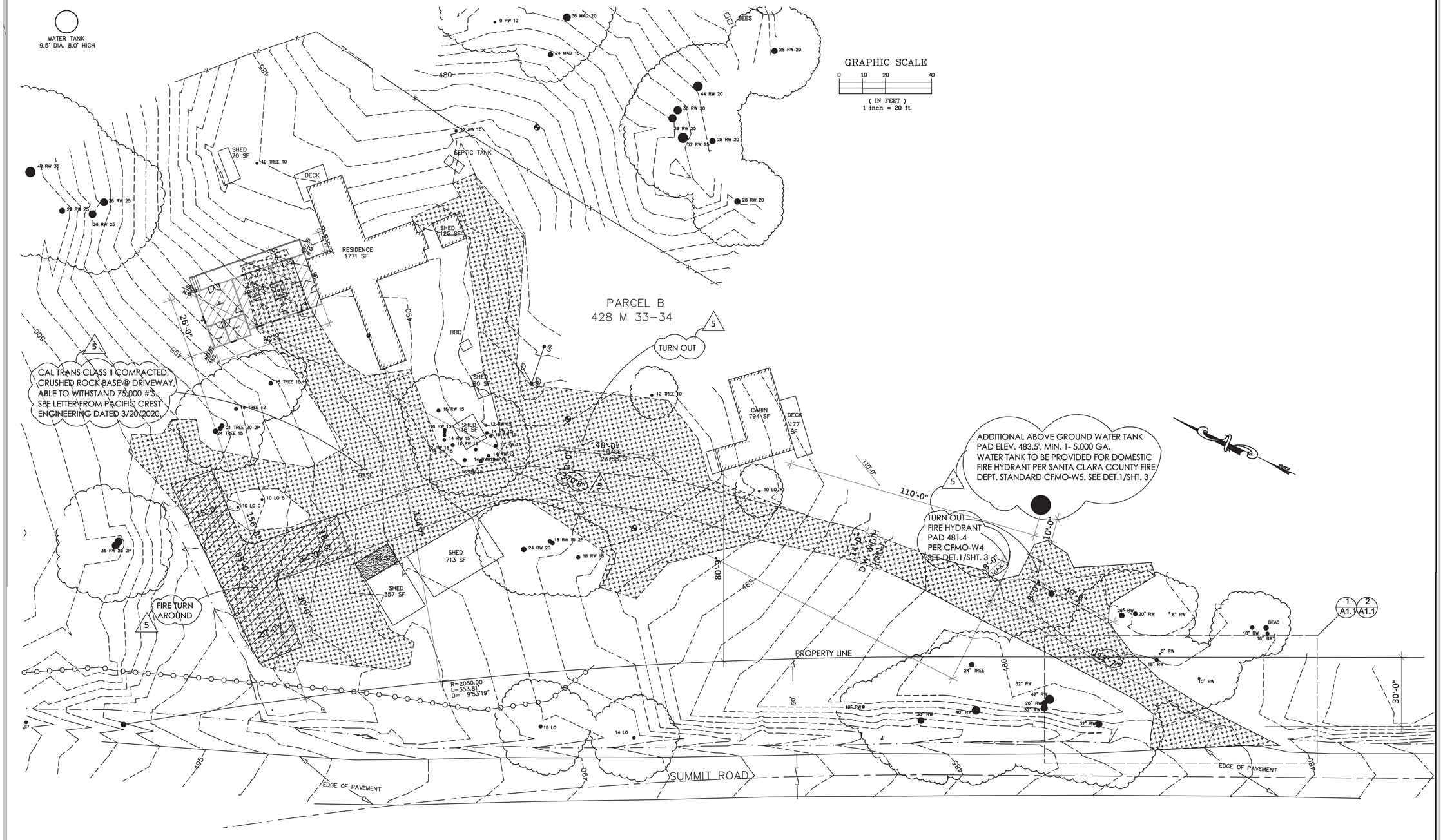
REVISIONS		BY
1	9/15/16	MC
2	2/5/17	WA
3	2/20/19	MC
4	3/30/19	MC
5	2/20/19	PD

COVER SHEET
SITE PLAN
INDEX
PROJECT DESCR.
VICINITY MAP

A NEW ADDITION FOR:
THE CASASSA FAMILY
500 SUMMIT ROAD
MORGAN HILL, CA 95307

LANDMARK DESIGNS
DESIGN * DEVELOPMENT
CONSTRUCTION MANAGEMENT * PRESERVATION
www.landmarkdesigns.net
P.O. BOX 2221 LOS GATOS, CA 95031 * 408-761-1218
2370 HYWY. 1, "F" MOSS LANDING, CA 95039 * 831-331-0432

DRAWN BY: K.B.
CHECKED BY: M.C./C.C.
DATE: 8-11-20
SCALE: AS SHOWN
JOB: 02116
SHEET: A0



SITE PLAN (PARTIAL) SCALE: 1" = 20'

REVISIONS		BY
5	2/20/20	PD

AS-BUILT SECOND DWELLING

A NEW ADDITION FOR:
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DRAWN BY K.B.
CHECKED BY: M.C./C.C.
DATE: 8-11-20
SCALE: AS SHOWN
JOB: 02116
SHEET
A1

TOPOGRAPHIC SURVEY

MIKE CASSASA

LICENSED LAND SURVEYOR
KENNETH DOUGLAS WILSON
NO. 5571
DATE: 2-4-2020
STATE OF CALIFORNIA

LEGAL DESCRIPTION: PARCEL B OF 428 M 34 IN THE COUNTY OF SANTA CLARA, CALIFORNIA

APN: 756-24-049
DATE: FEBRUARY 2020

KENNETH D. WILSON LS 5571	DRAWN BY: KDW	SCALE: 1"=20'	PROJECT: E-039	JOB NUMBER: E-039	SHEET: 1 of 3

SURVEYOR'S NOTE

THIS MAP CORRECTLY REPRESENTS A SURVEY DONE BY ME OR UNDER MY DIRECTION IN CONFORMANCE WITH THE REQUIREMENTS OF THE LAND SURVEYORS ACT. THE BOUNDARY LINES SHOWN HEREON ARE BASED ON A BOUNDARY SURVEY DONE BY WILSON LAND SURVEYS.

Kenneth D. Wilson DATE: 2-4-2020

KENNETH D. WILSON LS 5571

SITE BENCHMARK

ELEVATIONS FOR THIS SURVEY ARE BASED ON ASSUMED ELEVATION OF 500.00.

GENERAL NOTES

1. TREE SIZES AND TYPES ARE APPROXIMATE AND SHOULD BE VERIFIED BY A CERTIFIED ARBORIST.
2. FINISH FLOOR ELEVATIONS ARE TAKEN AT DOOR THRESHOLDS.
3. BUILDING CORNERS WERE LOCATED AT FINISH LOCATIONS (STUCCO, BLOCK OR WOOD AS IT EXISTS IN THE FIELD).

UNDERGROUND UTILITY NOTE

UNDERGROUND UTILITY LINES, IF SHOWN, DEPICT OUR ESTIMATION OF WHERE THE ACTUAL LINES MAY BE LOCATED. THE LINES WERE DETERMINED BY CONNECTING VISIBLE UTILITY APPURTENANCES AND ALSO BY USING PAINTED MARKINGS PLACED BY OTHERS. THE UNDERGROUND UTILITIES MAY OR MAY NOT BE AS DEPICTED ON THIS SURVEY. NO LIABILITY IS ACCEPTED FOR ANY DISCREPANCIES, OMISSIONS OR ERRORS WITH REGARD TO SAID UNDERGROUND UTILITY DEPICTIONS ON THIS SURVEY.

A TITLE REPORT WAS NOT AVAILABLE FOR THIS PROPERTY WHEN THE MAP WAS PREPARED. CAUTION SHOULD BE EXERCISED WHEN DESIGNING THE SITE. THERE MAY BE EXISTING EASEMENTS THAT IMPACT THE PROPERTY.

Email: kenw@wilsonlandsurveys.com
www.wilsonlandsurveys.com

WILSON LAND SURVEYS
EK 12
261 CARLTON CT.
LOS GATOS, CA 95032
408-427-2279

This map was prepared as an instrument of service for the preparation of plans and specifications for construction on the site shown on the map. The information shown hereon shall not be used in whole or in part for any other project without written authority of Wilson Land Surveys.

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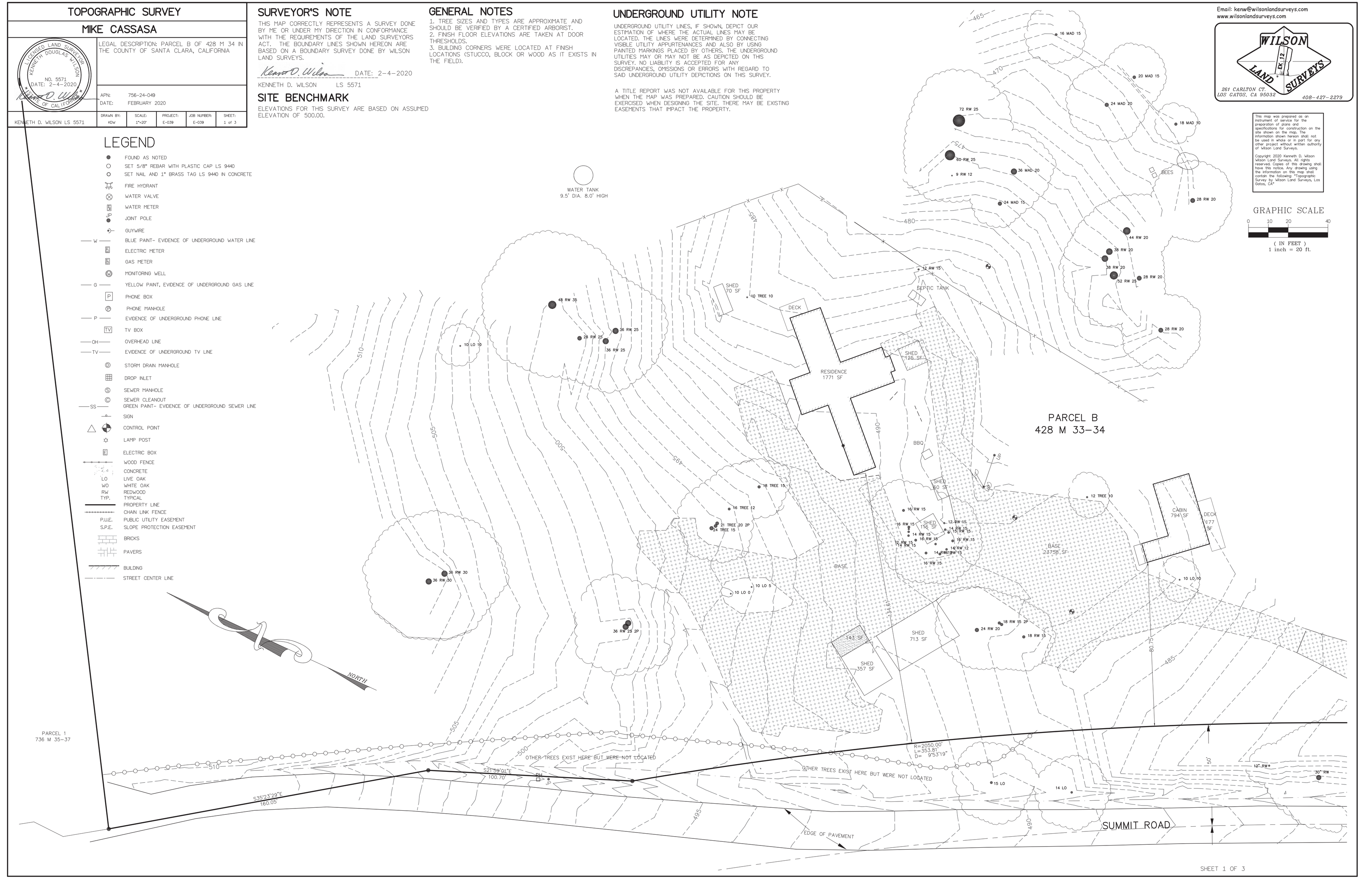
Wilson Land Surveys. All rights reserved. Copies of this drawing shall have this notice. Any drawing using the information on this map shall contain the following: "Topographic Survey by Wilson Land Surveys, Los Gatos, CA"

LEGEND

- FOUND AS NOTED
- SET 5/8" REBAR WITH PLASTIC CAP LS 9440
- SET NAIL AND 1" BRASS TAG LS 9440 IN CONCRETE
- FIRE HYDRANT
- WATER VALVE
- WATER METER
- JOINT POLE
- GUYWIRE
- W — BLUE PAINT- EVIDENCE OF UNDERGROUND WATER LINE
- ELECTRIC METER
- GAS METER
- MONITORING WELL
- G — YELLOW PAINT, EVIDENCE OF UNDERGROUND GAS LINE
- P PHONE BOX
- PHONE MANHOLE
- P — EVIDENCE OF UNDERGROUND PHONE LINE
- TV TV BOX
- OH — OVERHEAD LINE
- TV — EVIDENCE OF UNDERGROUND TV LINE
- STORM DRAIN MANHOLE
- DROP INLET
- SEWER MANHOLE
- SEWER CLEANOUT
- SS — GREEN PAINT- EVIDENCE OF UNDERGROUND SEWER LINE
- SIGN
- CONTROL POINT
- LAMP POST
- ELECTRIC BOX
- WOOD FENCE
- CONCRETE
- LO LIVE OAK
- WO WHITE OAK
- RW REDWOOD
- TYP. TYPICAL
- PROPERTY LINE
- CHAIN LINK FENCE
- P.U.E. PUBLIC UTILITY EASEMENT
- S.P.E. SLOPE PROTECTION EASEMENT
- BRICKS
- PAVERS
- BUILDING
- STREET CENTER LINE



TOPOGRAPHIC SURVEY

MIKE CASSASA

LICENSED LAND SURVEYOR
KENNETH DOUGLAS WILSON
NO. 5571
DATE: 2-4-2020
STATE OF CALIFORNIA

LEGAL DESCRIPTION: PARCEL B OF 428 M 34 IN THE COUNTY OF SANTA CLARA, CALIFORNIA

APN: 756-24-049
DATE: FEBRUARY 2020

KENNETH D. WILSON LS 5571	DRAWN BY:	SCALE:	PROJECT:	JOB NUMBER:	SHEET:
	KDW	1"=20'	E-039	E-039	2 of 3

LEGEND

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- CHAIN LINK FENCE
- P.U.E. PUBLIC UTILITY EASEMENT
- S.P.E. SLOPE PROTECTION EASEMENT
- BRICKS
- PAVERS
- BUILDING
- STREET CENTER LINE

NORTH

GRAPHIC SCALE
0 10 20 40
(IN FEET)
1 inch = 20 ft.

Email: kenw@wilsonlandsurveys.com
www.wilsonlandsurveys.com

WILSON LAND SURVEYS
ER. 12
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PARCEL B
428 M 33–34

N64°51'50"E
64.89'

N24°33'07"W
618.93'

N65°26'53"E
69.05'

N42°26'53"E
77.92'
3,571.62±N

S24°33'07"E
618.93'

SUMMIT ROAD

EDGE OF PAVEMENT

24" TREE
32" RW
42" RW
26" RW
32" RW
40" RW
30" RW
32" RW
26" RW
20" RW
6" RW
DEAD
18" RW
16" BAY
8" RW
18" RW
10" RW
15" LO
5" MADRONE
5" MADRONE
12" WO

TOPOGRAPHIC SURVEY

MIKE CASSASA

LICENSED LAND SURVEYOR
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KDW	1"=20'	E-039	E-039	3 of 3

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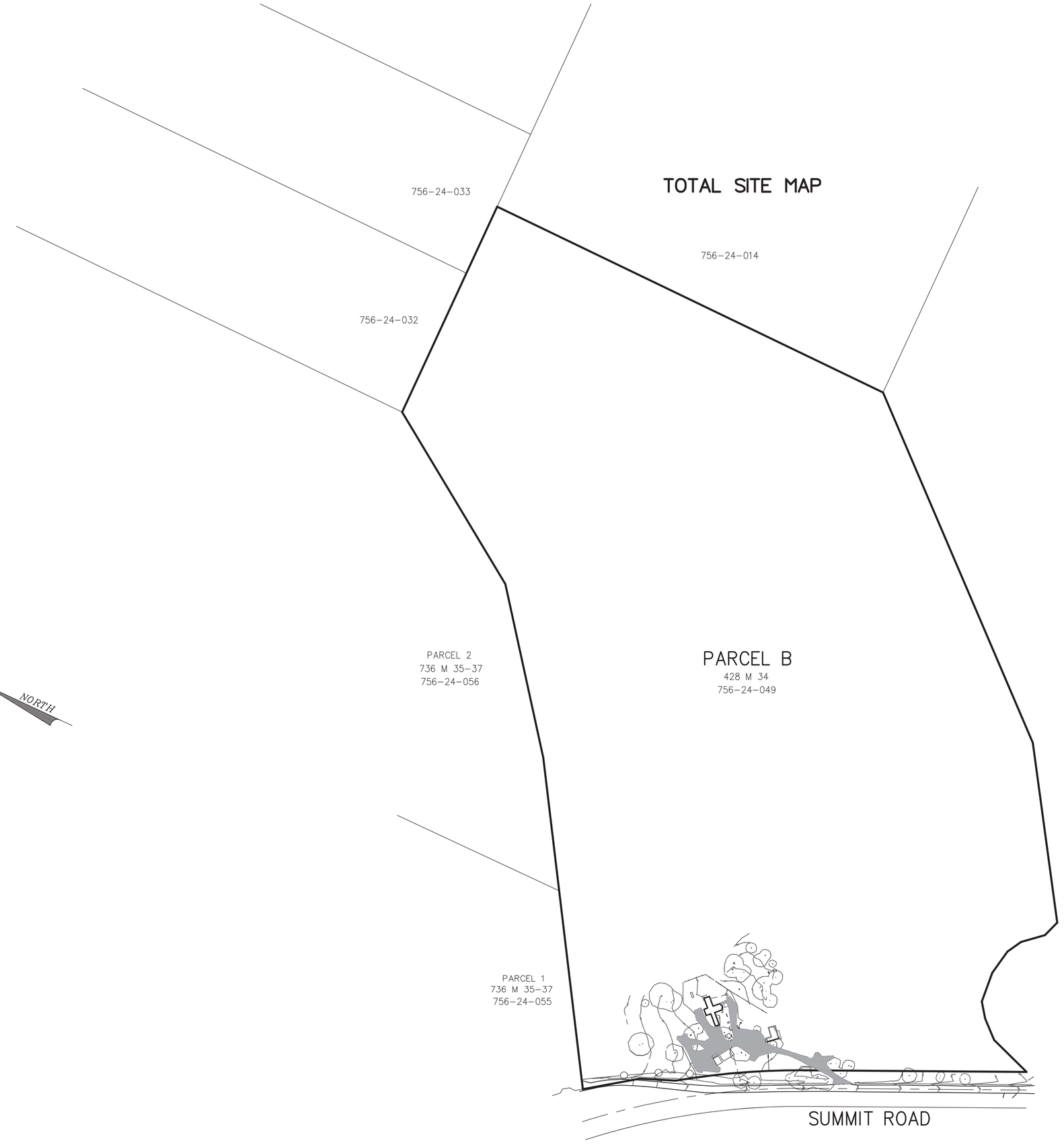
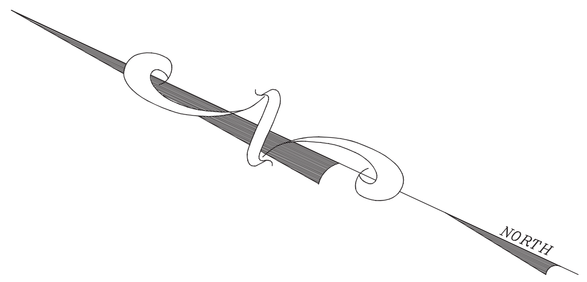
TOTAL SITE MAP



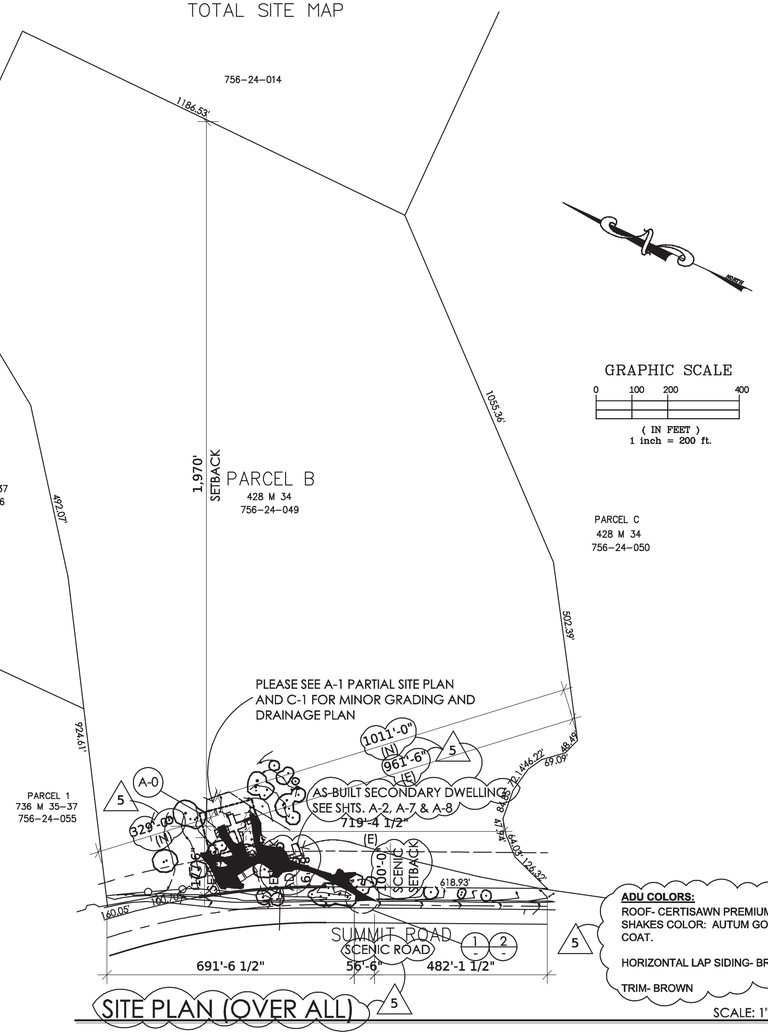


GRAPHIC SCALE

0 100 200 400

(IN FEET)
1 inch = 200 ft.

TOTAL SITE MAP



GRAPHIC SCALE

0 100 200 400

(IN FEET)

1 inch = 200 ft.

ADU COLORS:

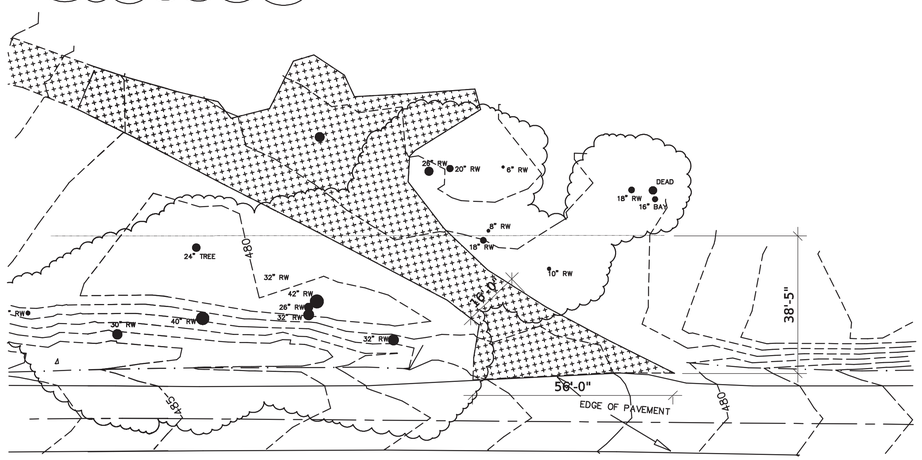
ROOF- CERTISAWN PREMIUM CEDAR SHAKES COLOR: AUTUM GOLD CLEAR COAT.

HORIZONTAL LAP SIDING- BROWN

TRIM- BROWN

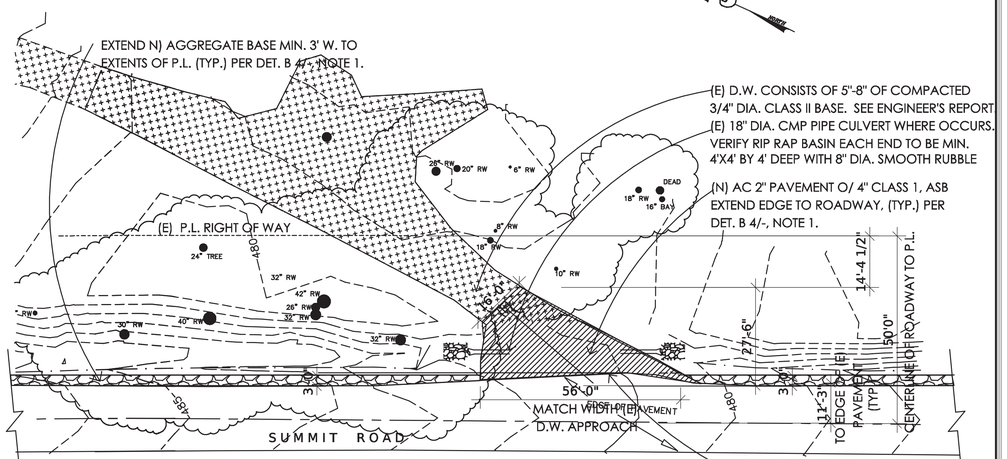
SITE PLAN (OVER ALL)

SCALE: 1" = 200'



1 EXISITNG DRIVEWAY APPROACH

SCALE: 1" = 20'0"



2 PROPOSED DRIVEWAY APPROACH

SCALE: 1" = 20'0"

County of Santa Clara, Roads and Airports Department
General Provisions

GENERAL PROVISIONS

I. **WORK REQUIREMENTS**

1. **Inspection** – The Permittee shall request initial inspection from the County at 408-573-2429 a minimum of twenty-four (24) hours prior to any work being performed. The Permittee shall request final inspection from the County within ten (10) days from the date of completion of the work at 408-573-2429.

2. **Legal Enforcement** – Work under the Encroachment Permit (Permit) must comply with provisions in the following references, whether or not they are set forth herein:
   a. California Streets and Highways Code,
   b. California State Water Resources Control Board NPDES General Permit for Storm Water Discharges Associated with Construction & Land Disturbance Activities (Order No. 2009-0009-DWQ or any amendment thereof),
   c. California Regional Water Quality Control Board, San Francisco Bay Region Municipal Regional Stormwater NPDES Permit (Order No. R2-2009-0074, NPDES Permit No. CAS612008, October 14, 2009, or any amendment thereof),
   d. Central Coast Regional Water Quality Control Board, Revised Regional Storm Water Management Plan for City of Gilroy, City of Morgan Hill, and County of Santa Clara (South County) (February 22, 2012 or any amendments thereof),
   e. County of Santa Clara Ordinance Code,
   f. County of Santa Clara Standard Details and Standard Specifications,
   g. Local ordinances and regulations of applicable municipality where the work is located, and
   h. Other regulatory agencies.

3. **General Instructions** – All work is to be completed in accordance with these General Provisions, Special Provisions, and the Encroachment Permit conditions shown on the Permit itself. Work plans and specifications, required bonds and insurance, must be submitted, approved and on file in the Roads and Airports Department (hereinafter County) prior to issuance of the Permit. If additional engineering, soils investigations or geological investigations are required, they shall be provided by the Permittee. All survey work including construction staking shall be provided by the Permittee.

4. **Emergency Contacts** – Names and telephone numbers of two responsible persons shall be furnished to the Permit Office prior to start of work for emergency contacts, 24 hours a day, seven days a week. The Permittee or the Contractor shall have a supervisory representative available for contact on the project at all times during the construction.

5. **On Site** – This Permit shall be kept at the site of work and must be shown to any authorized representative of the County or any law enforcement officer upon demand.

6. **Equipment and Material Storage** – No equipment (construction or other) or material shall be stored within the County ROW near the edge of the pavement, within the traveled way, or within the shoulder line which would create a hazardous condition or nuisance for the traveling public. Any material stored at the site of work must be shown to any authorized representative of the Department or any law enforcement officer upon demand. All proposed construction staging areas shall be presented to the Department for review and approval prior to use.

7. **Traffic Protection** – The Permittee shall make adequate provisions for the protection of the traveling public. Two copies of a proposed traffic control plan shall be submitted to the Permit Office for processing prior to issuance of a permit. All work which requires a traffic delay requires the Permittee to notify Santa Clara County Communications at (408) 299-2501 and the appropriate local garbage collection company of the date(s), time(s) and details of all detours.

8. **Traffic Lanes** – All traffic lanes shall be open to the traveling public during all hours of darkness, and on all weekends and holidays unless prior written approval is obtained from the County. One-way traffic may be permitted under the control of not less than two competent flagmen or as required by the latest issue of the California Manual on Uniform Traffic Control Devices for Streets and Highways during normal working hours. The prior approval in writing from the County. No variance of the requirements of this Section I.7. will be allowed without prior written approval from the County. No work within the ROW shall be undertaken until all materials, equipment, and labor forces are available to pursue the work to completion.

9. **Signs** – Any signs to be constructed in the execution of this Permit are to be approved by the County prior to placement of any signs.

10. **Temporary Traffic Control** – Temporary traffic control, including traffic control devices and signs, shall be installed in accordance with Part 2 – Signs, Part 6 – Temporary Traffic Control and any other applicable parts of the latest issue of the California Manual on Uniform Traffic Control Devices for Streets and Highways.

11. **Drainage** – If the work performed by the Permittee interferes with the established surface drainage pattern ample provision shall be made by the Permittee to provide for said drainage with prior approval in writing from the County before any work is performed. If there are any negative impacts to the established surface drainage patterns the Permittee shall take immediate steps to mitigate the negative impacts and restore the surface drainage patterns existing prior to any work being performed to the County's satisfaction and at no cost to the County.

12. **Permanent Monuments** – Any property corner stake, street monument or other permanent survey monument that will be disturbed during construction shall be shown on the plans for the work and referenced, removed and reset by competent persons legally qualified to perform this work.

13. **Facility Relocation** – Permittee shall be responsible for any required relocation, and cost thereof, of existing utilities or encroachments which may be affected by this Permit.

14. **Monument Corner Records** – Section 8771 of the Business and Professional Code, and Section 732, 1449.5, and 8103.5 of the Streets and Highways Code, Rev. 1996, mandates that prior to any reconstruction or relocation of streets or highways, all survey monuments are to be located and referenced to stable objects outside the construction area by or under the direction of a person authorized to practice land surveying. A corner record which shows the reference ties is to be filed with the County Surveyor's Office. After construction, permanent monuments are to be reset and a second corner record shall be filed. The Permittee is responsible for the cost of this work.

15. **Sight Distance** – As related to and affected by the improvements covered by this Permit, Permittee shall provide and maintain adequate sight distance per the latest Caltrans standards. Typical compliance may include, but not limited to, trimming and/or removal of trees; trimming and/or removal of vegetation; and, grading of embankments to provide for adequate sight distance. Before and after photos shall be taken by the Permittee and provided to the County for the files and reference as needed. Any costs associated with these photos shall be the sole responsibility of the Permittee.

16. **Integrated Pest Management** (IPM) - Santa Clara County Ordinance Division B28 regulates the use of integrated pest management and pesticide use within County ROW. Permittee shall comply with all provisions of Ordinance Code B28, and prior to using any pesticide. Permittee shall receive the written approval of the County IPM Coordinator. Additional information about the IPM Ordinance can be found at http://pesticides.countiesatwork.org

17. **Storm Water Pollution Prevention** – The work performed under this Permit is subject to the National Pollutant Discharge Elimination System (NPDES) regulations governed by State. San Francisco Bay Regional Water Quality Control Board for work sites located in the north County San Francisco Bay watersheds in (Region 2), and Central Coast Regional Water Quality Control board for work sites located in the South County Monterey Bay watersheds (Region 3). The following link will help to find the Regional Water Board for a particular work site: http://www.waterboards.ca.gov/waterboards_map.shtml. The County of Santa Clara Department of Roads & Airports is the owner/operator/co-Owner of the public road and accessways facilities where the work occurs, is responsible for preventing and/or mitigating potential chemical releases, erosion, and sedimentation impacts associated with storm water runoff that discharges to a municipal separate storm drain system or waterway.
   a. With respect to prevention and mitigation of construction-related storm water impacts to the public road and accessway facilities, the Permittee must develop and submit a Storm Water Pollution Prevention Plan (SWPPP) for review and approval by the County prior to the start of construction. The Permittee must implement the SWPPP during construction. The SWPPP may be developed as part of the entire project site's SWPPP and must identify appropriate storm water pollution prevention and treatment measures or Best Management Practices (BMPs) including, but not limited to, to the following practices applicable to the public road and accessway facilities:
      i. Prevention of material delivery and storage to the construction site and the contractor's material and equipment laydown/staging site in connection with construction activities.
      ii. Prevention of tracking of mud, dirt and construction materials onto public streets and accessways from the construction and equipment/material lay-down/staging site.
      iii. Prevention of discharge of water runoff during dry and wet weather onto public streets and accessways from the construction and equipment/material lay-down/staging site.
      iv. Prevention of soil erosion and sedimentation from construction and equipment/material lay-down/staging sites entering public street and accessway right-of-ways.

   The Permittee must maintain at the construction site the County-approved SWPPP, and revise the SWPPP as necessary or required by the County or the regulatory agency if, during construction, conditions (such as change in construction operations, construction staging modification, change in site conditions, or offsite drainage impacts) occur that affect the ability to implement the SWPPP effectively or the ability of the SWPPP to meet the objectives for water pollution control.

   For improvements for which construction disturbs one acre of land or more, the Permittee must, in addition to preparing a SWPPP, obtain coverage under the State Construction General Permit and file a Notice of Intent with the State Water Resources Control Board prior to commencement of construction. (For details, go to: www.swrcb.ca.gov/water_issues/programs/stormwater/construction.shtml).

   b. The following manuals are available to assist the Permittee in developing the SWPPP for the on-site and off-site improvements:
      i. Guidelines for Construction Projects prepared by California Regional Water Quality Control Board (available for purchase on DVD at http://store.abag.ca.gov/construction.asp#ec) and
      ii. Erosion and Sediment Control Field Manual (4th Edition) prepared by the California Regional Water Quality Control Board (available for purchase on DVD at http://store.abag.ca.gov/construction.asp#ec), and
      iii. Storm Water Best Management Practice Handbook for Construction Activity (November 2009 or latest edition) prepared by California Storm Water Quality Association (available by subscription at http://www.casqa.org/casqaservices/swbtf/tabid/169/c-k-best-management-practice-bmp-handbooks.aspx).

   c. IV. Exemptions
      i. SWPPP preparation and submittal by the Permittee is not required for the following types of projects:
         1). Improvements related to individual detached single-family homes, such as construction, repair or replacement of sidewalk, curb and gutter, and/or driveway with impervious surface, that are not part of a larger plan of development and that disturb less than one acre of land.
         2). Activities related to maintenance and improvement of existing utilities including, but not limited to, routine maintenance, scheduled and emergency repairs, and abandoning and/or upgrading utility lines and associated facilities.
         3). Construction activities related to installation of new underground and/or overhead utilities (such as conduits, substructures, pipelines, towers, poles, cables, wires, connectors and other associated equipment) including, but not limited to, potholing, concrete and asphalt remo replacement, trenching, excavation, boring and drilling, and pipel substructure installations, that disturb less than one acre of land
      ii. For projects that receive exemptions under Section I.16.C.a, the Pe and its contractors must implement good housekeeping practices (BI are construction materials, excavated materials, wastes materia sediment caused by erosion during construction activities, on-site or from entering the storm drain system and waterways.
      iii. For projects that are exempt under Section I.16.C.a, the Permitte also comply with the BMP Checklist furnished by the County.

II. **PERMIT PROVISIONS**

1. **Revocation** – This Permit is revocable in accordance with the procedur requirements of California Streets and Highways Code.

2. **Indemnification** – The Permittee shall fully indemnify, defend, and hold ha the County of Santa Clara (hereinafter "County"), it's officers, agen employees from any claim, liability, loss, injury or damage arising out o connection with, performance of this Agreement by the Permittee, it's Cor and/or it's agents, employees or Subcontractors, excepting only loss, in damage caused by the sole negligence or willful misconduct of pe employed by the County. It is the intent of the parties to this Agreement to the broadest possible coverage for the County. The Permittee shall reimbu County for all costs including, but not limited to, court costs and attorne liabilities incurred in the enforcement of this duty in which the Permittee is held responsible and found by the County under this Agreement.
   a. Issuance of a permit authorizing construction does not release the Dev Permittee or its Engineer from the responsibility for the correction of ar omissions contained in the plans. If, during the course of the construct public interest requires a modification of (or departure from) the specifi and/or plans, the County shall have the authority to require:
      i. The suspension of work;
      ii. The necessary modification to the specifications and/or plans; and,
      iii. To specify the manner in which the same is to be made.

3. **Insurance** – The Permittee shall obtain insurance as required in Santa Clara County Ordinance Division B17, Section B17-35(c) and shall provide a certificate of insurance verifying such insurance to the County prior to any work being performed. The County, its officers, employees and agents shall be named as additional insured.

4. **Bonds** – The Permittee shall obtain a performance bond in the amount indicated when required by the County as a condition of the permit and shall provide a certified copy of the bond verifying such bond in the amount required by the County.

5. **Bond Release** – If a Performance bond is posted, it will be released by the County after a written request for a final inspection and verification by the County the work has been satisfactorily completed. Release of the Performance bond is subject to the Permittee providing any Maintenance bond or Deferred Maintenance Agreement required by the County.

6. **Damages Caused by Permittee/Repairs** – All necessary repairs resulting from the encroachment permit work shall be made in accordance with County standards and specifications at the sole expense of the Permittee. The Permittee is required to repair any damage caused by the Permittee or the Contractors as a consequence of labor performed under the Permit within the time indicated by the County. If the Permittee fails to make the repairs within the time indicated, the County is authorized to repair the damage and recover all cost incurred, including overhead and administrative costs, from the Permittee, the surety or the insurance carrier.
   a. Prior to any construction activity in the vicinity of the fiber-optic facilities (i.e., conduit, fiber-optic cable, pull-box, splice enclosure, termination panel, and any related fiber-optic improvements), the Permittee or the Contractor shall pothole to locate, identify, and provide necessary precautionary measures to protect the existing fiber-optic facilities within the project limits from being damaged by construction activities. Potholing in dirt areas shall be performed by hand – no power excavation equipment shall be used.
   b. If the fiber-optic facilities are damaged by the Permittee or the Contractor, the Permittee or the Contractor shall make the necessary repair to the damaged fiber-optic facilities in accordance with Section 86.01.06 "Maintaining Existing and/or Temporary Electrical Systems and Traffic Communication Systems" of the County Standard Specifications and the following:
   c. Repair and replacement of damaged fiber-optic cable and related facilities shall be performed as follows:
      i. Within 48 hours of the damage occurring, the Permittee or the Contractor shall temporarily splice the fiber-optic cable using mechanical or fusion splicing, at the sole discretion of the County. After completion of temporary repairs, the County will determine whether the end equipment operates satisfactorily. If not, the County may direct the Permittee to replace the temporary splice within 48 hours. This shall be considered an interim repair only to restore service. The Permittee or the Contractor shall permanently repair other damaged facilities such as conduit and pull-box, unless prior written approval is obtained otherwise from the County.

         The repair shall be undertaken in the nearest junction box; by pulling available slack in the cable. If, in the determination of the County, insufficient slack is available, a new junction box shall be installed as directed.

      ii. Within 30 days after the acceptance of the interim repair by the County, the Permittee or its Contractor shall obtain a modified encroachment permit and replace the damaged cable between the system's end-to- end splice points installed during the initial installation as shown on the Fiber Splicing Details Map available for review in the Engineering Office of Traffic and Electrical Operations). During this permanent repair process, the fiber-optic cable shall not be disconnected or the equipment communicating on the cable shall not become non-operational for more than 48 hours. A seven (7) day notice shall be given to the Permit Inspection Unit of the Roads and Airports Department by calling (408) 573-2429 or faxing to (408) 441-0143 prior to any work associated with the repair of the fiber-optic cable. The replacement cable shall be of the same type and size equivalent to the replaced cable. Cable material, installation and splicing shall meet the requirements of the County Standard Specifications as follows:
         1). Section 86.02.08E "Fiber-optic Cable";
         2). Section 86.02.09C "Installation of Fiber-optic Cable";
         3). Section 86.02.09K(1) "Fiber-optic Connectors";
         4). Section 86.02.09E(2) "Fiber-optic Cable Splicing";
         5). Section 86.02.09G "Fiber-optic Splice Enclosure"; and
         6). Section 86.02.13D "Fiber-optic Cable Testing". OTDR and power meter tests shall be done after the repair to assure that a light loss is within the maximum allowable loss. This loss shall be determined by comparison of the test results with OTDR test results on file at the County, derived from the most recent test on each fiber. The OTDR test shall be performed on each fiber strand. The power meter test shall be performed only on fibers terminated on both ends. Both tests shall be done at 1,550 nm and 1,310 nm. The Permittee or the contractor shall record all test results and provide the results to the County for review and acceptance. All testing shall be observed by a representative of the County.
   d. In the event that the Permittee or the Contractor fail to make the necessary repairs and/or replacement of the fiber-optic facilities within the timeframe as specified herein, the County may perform the necessary repairs and/or replacement, interim and permanent, of the damaged facilities and recover all costs and expenses in accordance with these General Conditions of the Permit.
   e. The Permittee or the Contractor shall guarantee the repair work for a period of one (1) year from the date of acceptance of the work by the County in accordance with Section 5.17 "Correction of Work and Guarantee" of the County Standard Specifications.

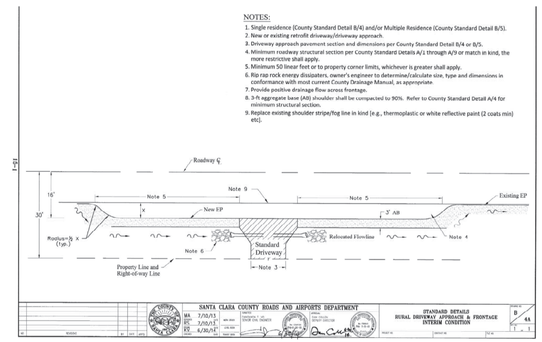
7. **Private Property** – This Permit shall not be construed as authorization for excavation and/or grading on private property adjacent to the encroachment or any other work for which a separate permit may be required.
   a. This Permit shall not be construed as authorization for any work for which a separate permit may be required – i.e. a driveway permit does NOT include a building permit. Each utility service lateral or sewer is separate from a permit to connect gas, electric, or communication.

8. **Relocation Responsibility** – In the event future improvement of the road necessitates relocation of the encroachment authorized by this Permit, the Permittee shall relocate same at their sole expense.

9. **Contracts and Agreements** – This Permit does not release the Permittee from any liabilities contained in other agreements or contracts with the County and other municipal agencies.

10. **Acceptance** – Commencement of any work under this Permit shall constitute acceptance of the conditions and requirements of the permit for the installation or future maintenance of the encroachment –whether or not the Permit is signed by said person or an authorized representative of said person, firm or corporation

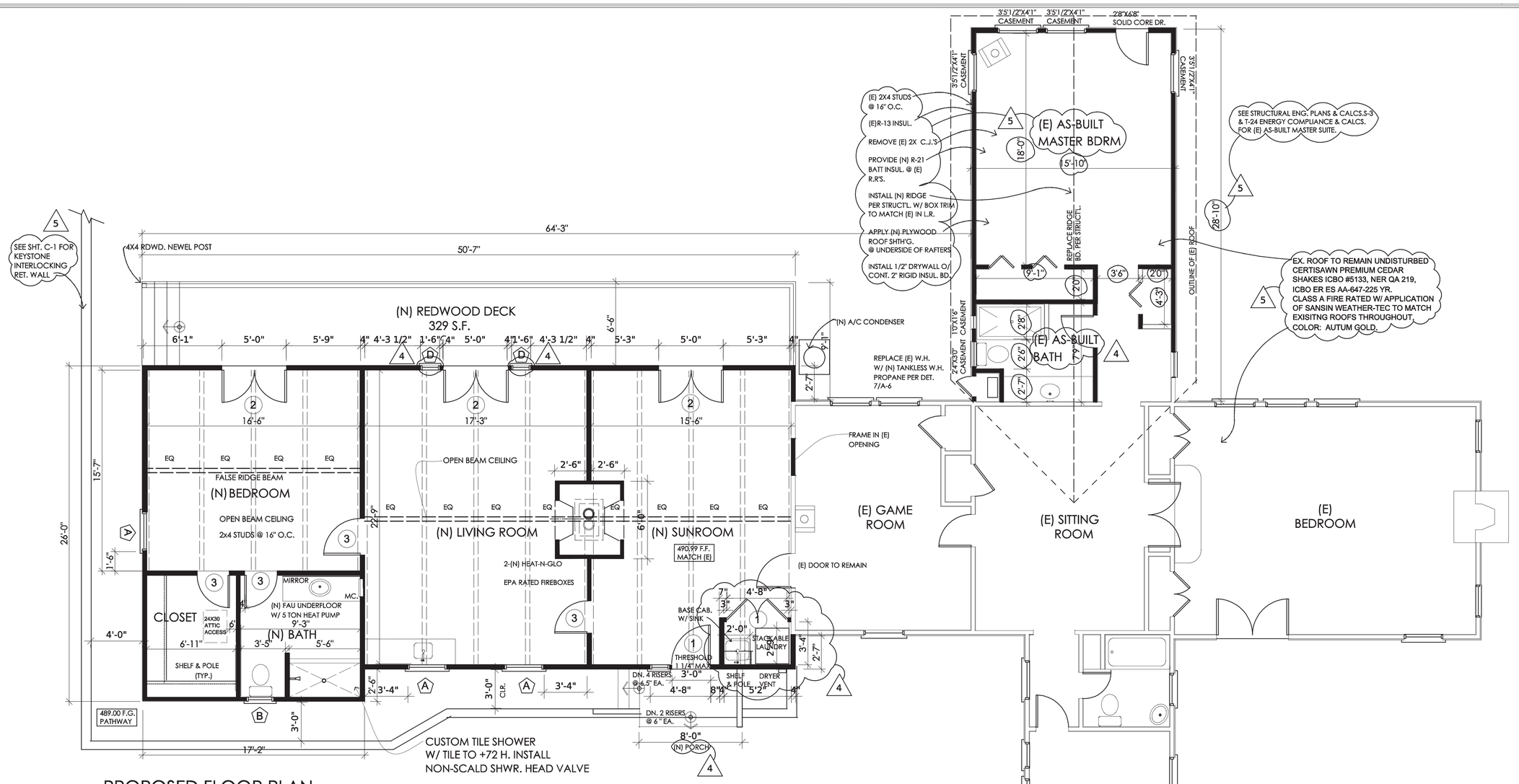
Any cost associated with this Section II.2.A shall be the sole responsibility of the Permittee.



SANTA CLARA COUNTY STANDARD DRIVEWAY APPROACH B 4A

SCALE: N.T.S.

Roadway ℄
3%
600 mm (3') shallow bb
-48.0-
Drainage swirls Routine
See Std B/4 Sheet 2
See note 6
Begin (N) Driveway
Conform to (E) EP
A
A
-48.0-
EP
Top of Curb
Top of Curb
See Std B/4 Sheet 2
See note 1
See note 1
See note 1
See note 1
600 mm (2') shallow bb
3.0% (-N) min
18" min (N) EP to Driveway
or BW bldg whichever greater
PLAN
SECTION A-A WITH CULVERT
SECTION A-A WITH VALLEY GUTTER
SECTION A-A WITH SLOTTED DRAIN (ALTERNATE)
SRA
SRA
SRA



PROPOSED FLOOR PLAN

NEW ROOM ADDITION 1259.7 SQ. FT.

SCALE: 1/4" = 1'0"

DOOR SCHEDULE

SYM.	SIZE	TYPE	OPERATION	DESCRIPTION
1	5'0" x 6'8"	FRENCH	HINGED	EXTERIOR, WOOD FRAME ENTRY DR. W/ SIDE LIGHT, 4- LIGHT GRILLE, TEMPERED GLASS.
2	2'8" x 6'8"	WD PANEL	HINGED	PAIR EXTERIOR, SOLID CORE, WOOD, FRENCH DR., TEMP. GLS.
3	2'8" x 6'8"	WD PANEL	HINGED	INTERIOR, HOLLOW CORE, WOOD RASIED PANEL DRS. ,
4	2'4" x 6'8"	WD PANEL	HINGED	PAIR INTERIOR, HOLLOW CORE, WOOD RAISED PANEL DRS.

WINDOW SCHEDULE

SYM.	SIZE	TYPE	OPERATION	DESCRIPTION
A	3'0" x 4'0"	WOOD	DBL HUNG	MARVIN DUAL PANED WINDOW. MATCH (E) 6- UPPER LITES (COTTAGE FEATURE)
B	2'0" x 3'0"	WOOD	SINGLE HUNG	MARVIN DUAL PANED WINDOW.
C	12" x 12"	SKYLIGHT	FIXED	SUNTUNNEL VELUX SKYLIGHT BY NULITE SOLUTIONS 408-370-3093
D	1'6" x 6'8"	WOOD	FIXED	SIDELIGHT W/ TEMP. GLS./ 4- DIVIDED PANES

MARVIN WOOD WINDOWS & DOORS PROVIDED BY OWNER. 6'8" HDR. HTS..
EXTERIOR COLOR: MATCH (E) INTERIOR FINISH: PINE WOOD FINISH STAIN (VERIFY W/ (E) AS NEC.)
HARDWARE: OIL RUBBED BRONZE (VERIFY TO MATCH (E). EXTERIOR TRIM PROFILE TO MATCH (E).
High performance smartsun low-e glass. Verify all (N) fenestration to have NFRC ratings no higher than 0.32/0.25 NFRC (non-metal framed).
7/8" simulated divided lite (grids)

LEGEND

EXISTING WALLS

NEW WALLS

UNDERFLOOR VENTILATION CALCS.

1,259.7 S.F. ADDITIONAL UNDERFLOOR AREA/ 300 = 4.19 S.F. VENTILATION REQ.
455 S.F. ASBUILT UNDERFLOOR AREA/ 300 = 1.51 S.F. VENTILATION REQ.

REVISIONS	BY
4 3/30/19	MC
5 2/20/19	PD

NEW ROOM ADDITION

A NEW ADDITION FOR:
THE CASASSA FAMILY
500 SUMMIT ROAD
MORGAN HILL, CA 95307

LANDMARK DESIGNS
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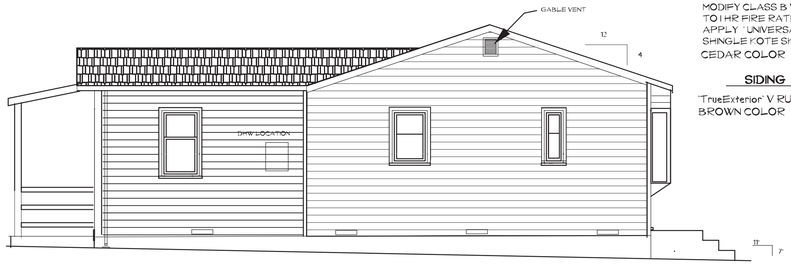
www.landmarkdesigns.net

DRAWN BY: K.B.
CHECKED BY: M.C./C.C.
DATE: 8-11-20
SCALE: 1/4" = 1'0"
JOB: 02116
SHEET: A2



AS-BUILT SIDE ELEVATION

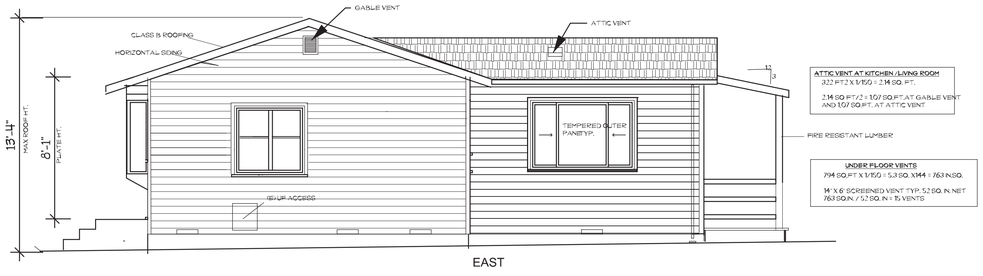
SCALE: 1/4" = 1'-0"

ROOFING

MODIFY CLASS B WOOD SHAKE
TO 1HR FIRE RATED
APPLY "UNIVERSAL FIRE SHIELD"
SHINGLE KOTE SK-200 TO EXISTING
CEDAR COLOR

SIDING

"TrueExterior" V RUSTIC W/ 8" REVEAL
BROWN COLOR



ATTIC VENT AT KITCHEN /LIVING ROOM
322 FT.2 X 1/150 = 2.14 SQ. FT.
2.14 SQ FT./2 = 1.07 SQ.FT. AT GABLE VENT
AND 1.07 SQ.FT. AT ATTIC VENT

UNDER FLOOR VENTS
794 SQ.FT X 1/150 = 5.3 SQ. X144 = 763 N.SQ.
14" X 6" SCREENED VENT TYP. 52 SQ. IN. NET
763 SQ.IN. / 52 SQ. IN = 15 VENTS

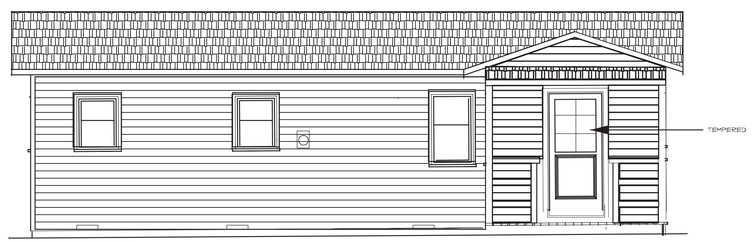
AS-BUILT SIDE ELEVATION

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



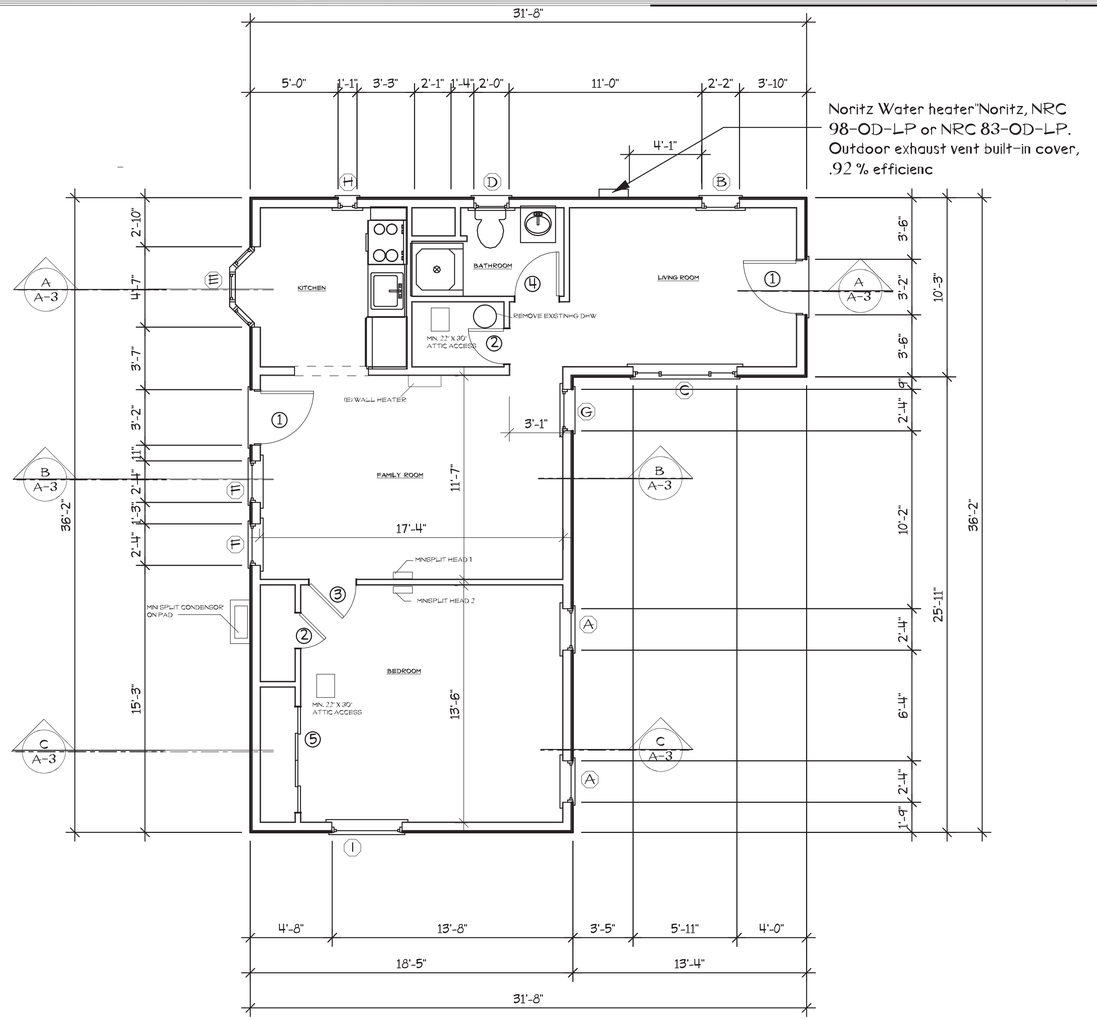
AS-BUILT REAR ELEVATION

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



AS-BUILT FRONT ELEVATION

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



AS-BUILT FLOOR PLAN

794 SQ.FT.

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

Door Schedule

MIN U FACTOR 0.23
MIN SHGC 0.30

Mark	Size	Description	Count
①	3'-0" X 6'-8"	36" Half-Lite Steel Door - 2x6 Wall	2
②	2'-0" X 6'-8"	28" Hinged Door - 6 panel	3
③	2'-8" X 6'-8"	32" Hinged Door - 6 panel	1
④	2'-6" X 6'-8"	30" Hinged Door - 6 panel	1
⑤	6'-0" X 6'-9"	6' Sliding Mirror Door	1

Window Schedule

Mark	Size	Description	Count
Ⓐ	2'-4" X 3'-0"	2'-4" X 3' Single Hung	2
Ⓑ	2'-2" X 3'-9"	2'-2" X 3'-9" Double Hung Window	1
Ⓒ	5'-11" X 3'-11"	4'-11" X 3'-11" Sliding Window	1
Ⓓ	2'-0" X 3'-0"	2' X 3' Single Hung	1
Ⓔ	4'-7" X 4'-2"	6'-5" X 4'-2" Bay Window (1'-8" Side Windows)	1
Ⓕ	2'-4" X 3'-5"	2'-4" X 3'-5" Single Hung	1
Ⓖ	2'-4" X 4'-0"	2'-4" X 4' Single Hung	1
Ⓗ	1'-1" X 3'-0"	2' X 3' Single Hung	1
Ⓘ	4'-0" x 3'-11"	4' x 3'11" Single Hung	1

F	BY

AS-BUILT
FLOOR PLAN,
ELEVATIONS,

LEGALIZE AN AS-BUILT 2ND DWELLING
FOR:
THE CASASSA FAMILY
500 SUMMIT ROAD
MORGAN HILL, CA 95307

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DRAWN BY
K.B.

CHECKED BY:
M.C./C.C.

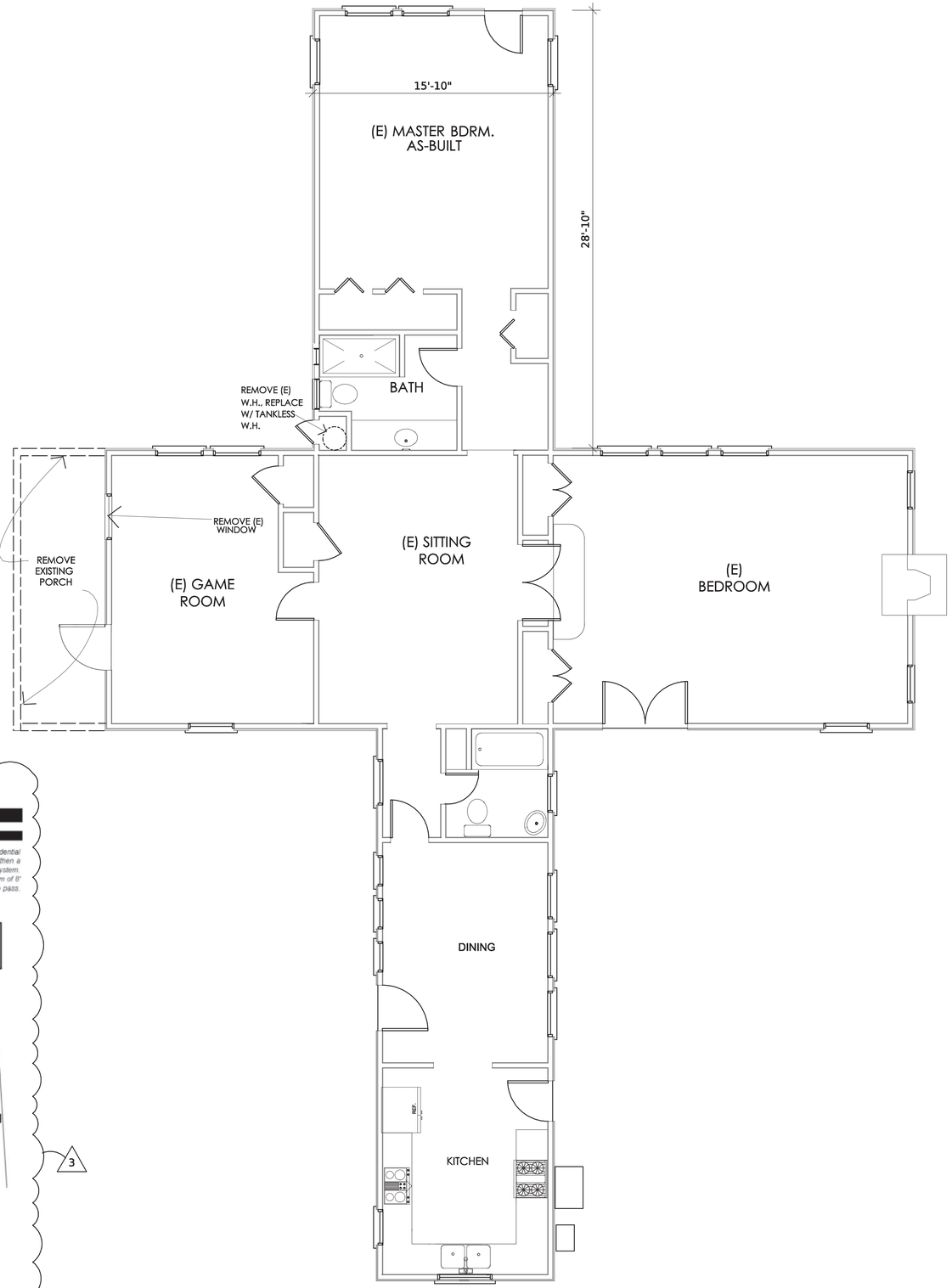
DATE:
6/9/20

SCALE:
AS SHOWN

JOB:
02116

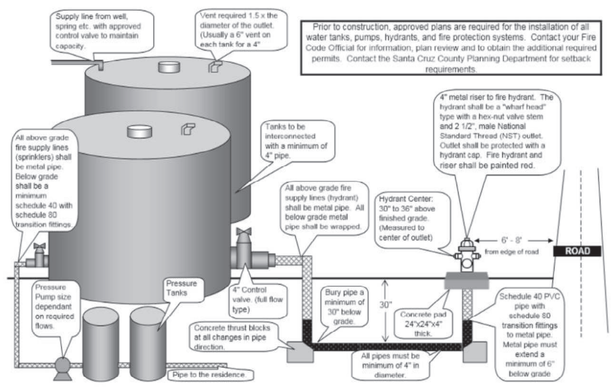
SHEET

A-2



EXISTING FLOOR PLAN

SCALE: 1/4" = 1'0"



WATER TANK INSTALLATION

1

3

REVISIONS	BY
3 2/20/19	MC

EXISTING
FLOOR PLAN

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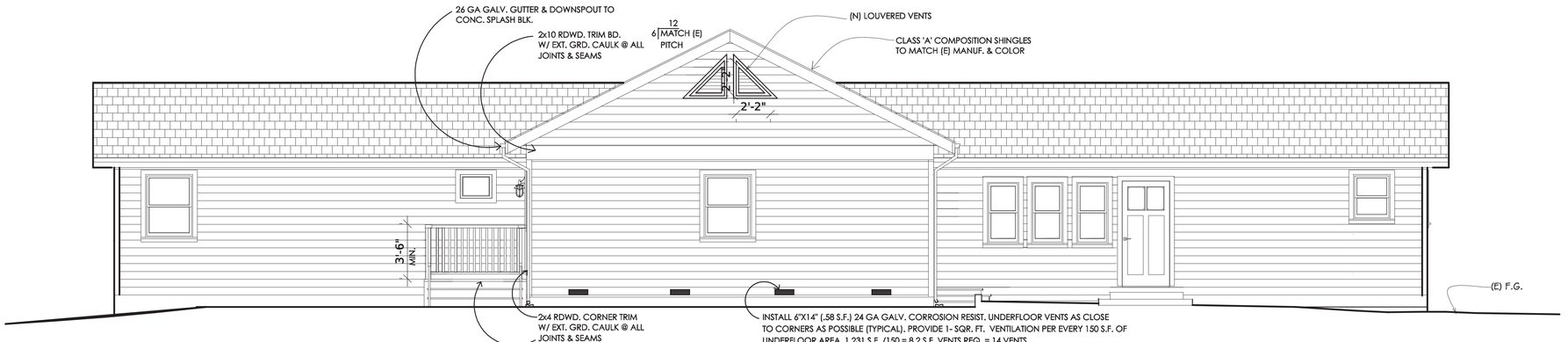
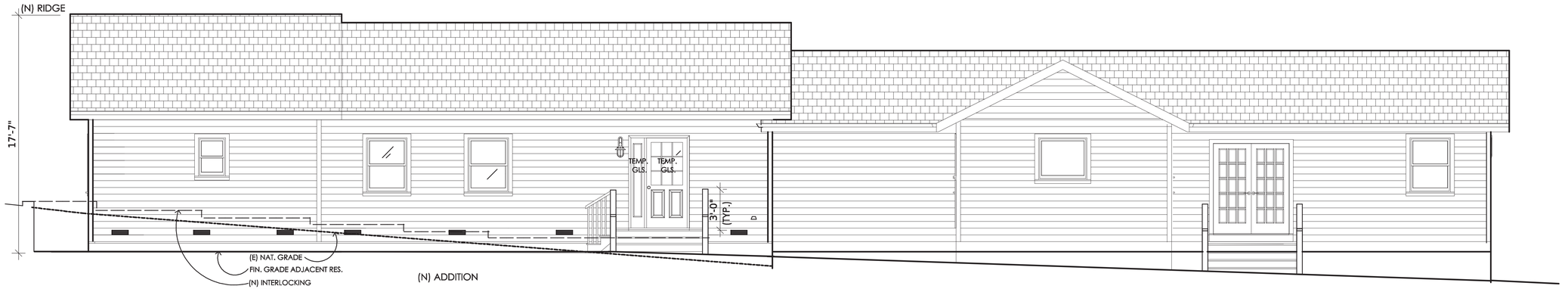
DRAWN BY K.B.
CHECKED BY: M.C./C.C.
DATE: 8-11-20
SCALE: 1/4" = 1'0"
JOB: 02116
SHEET A3



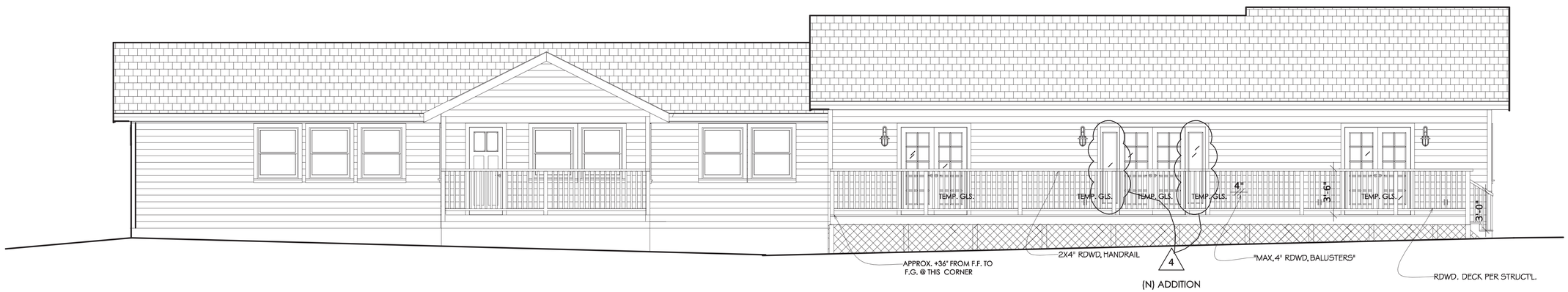
LEFT SIDE ELEVATION

SCALE: 1/4" = 1'0"



FRONT ELEVATION

SCALE: 1/4" = 1'0"



REAR ELEVATION

SCALE: 1/4" = 1'0"

REVISIONS	BY
4 3/30/19	MC

ELEVATIONS

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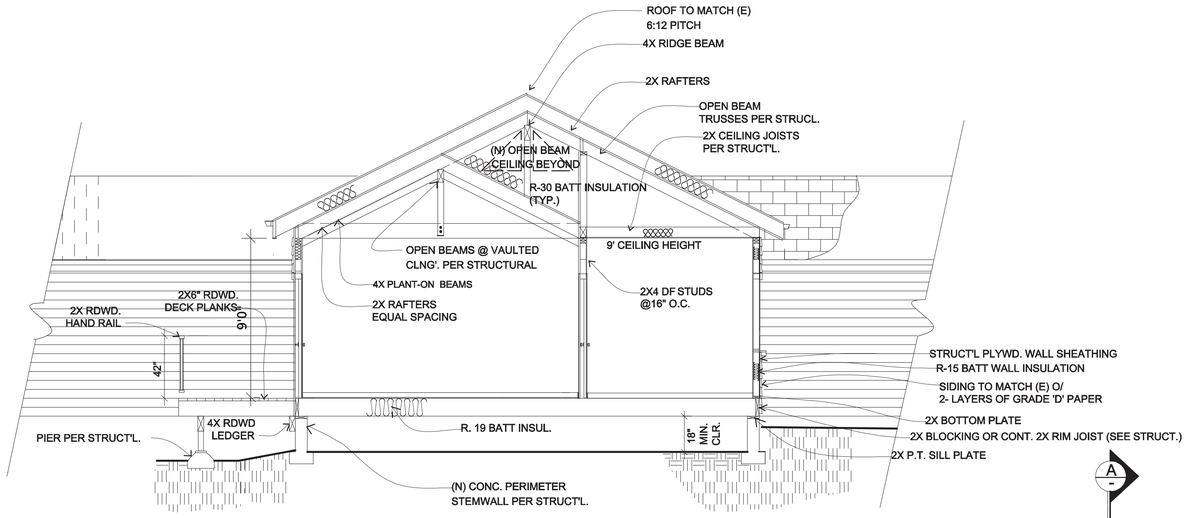
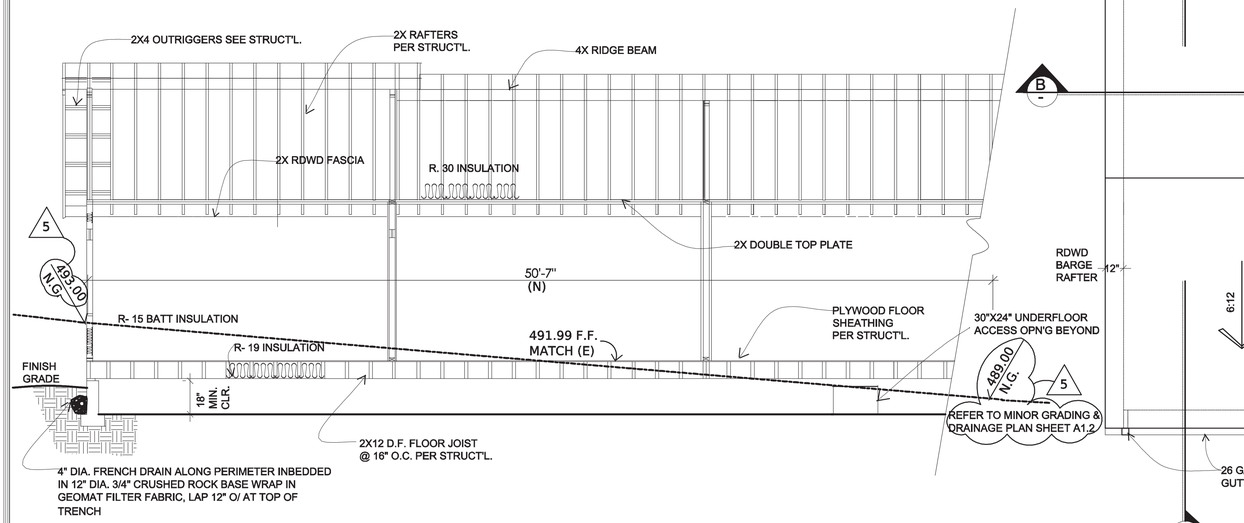
DRAWN BY	K.B.
CHECKED BY:	M.C./C.C.
DATE:	8/11/20
SCALE:	1/4" = 1'0"
JOB:	02116
SHEET	A4



SECTION VIEW

SCALE: 1/4" = 1'0"

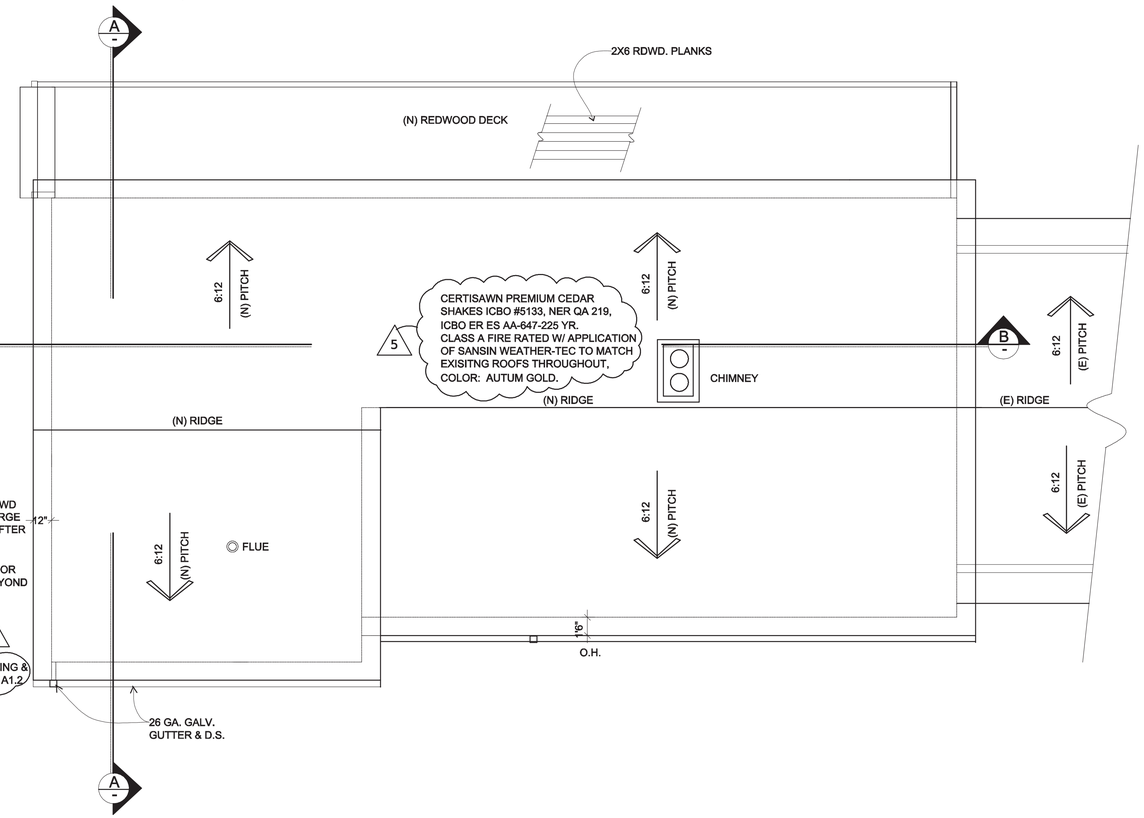
A



SECTION VIEW

SCALE: 1/4" = 1'0"

B



ROOF PLAN

SCALE: 1/4" = 1'0"

REVISIONS	BY

ROOF PLAN
SECTION A
SECTION B

A NEW ADDITION FOR:
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500 SUMMIT ROAD
MORGAN HILL, CA 95307

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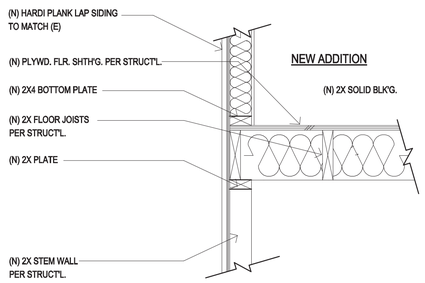
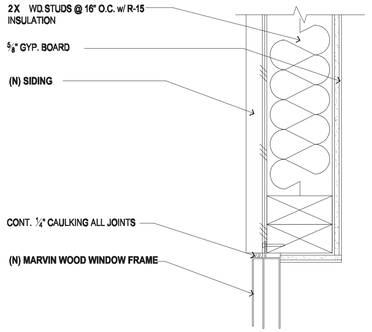
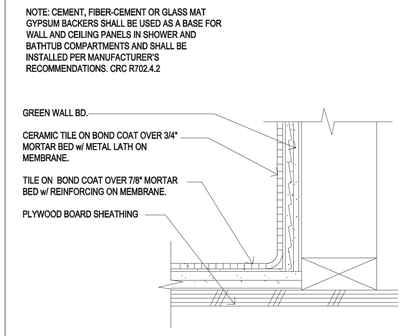
DRAWN BY	K.B.
CHECKED BY:	M.C./C.C.
DATE:	8-11-20
SCALE:	1/4"=1'0"
JOB:	02116
SHEET	A5



13 SECOND FLOOR/ FIRST FLOOR CEILING



9 WINDOW JAMB



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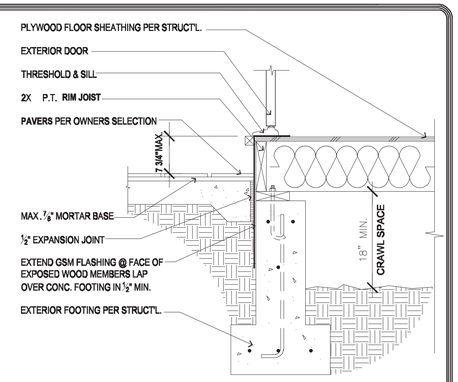

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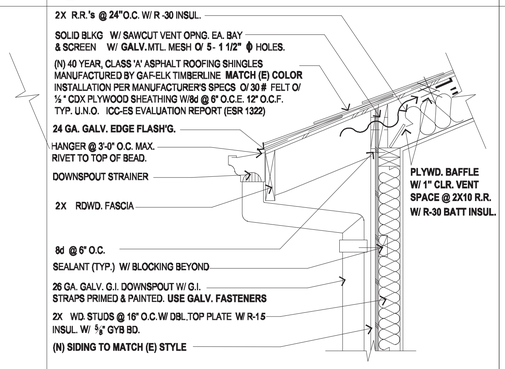
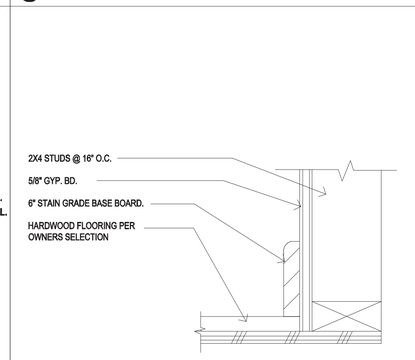
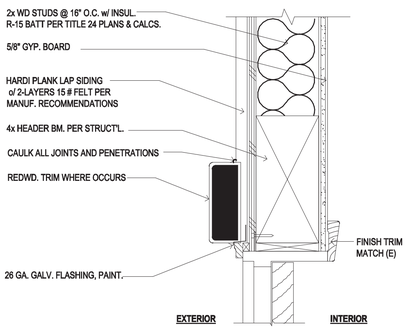


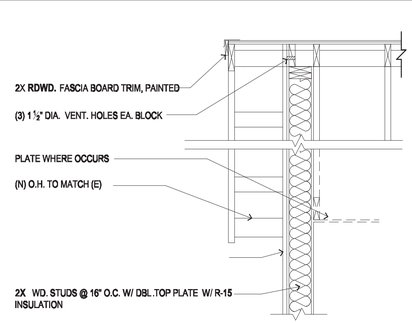
10 EAVE



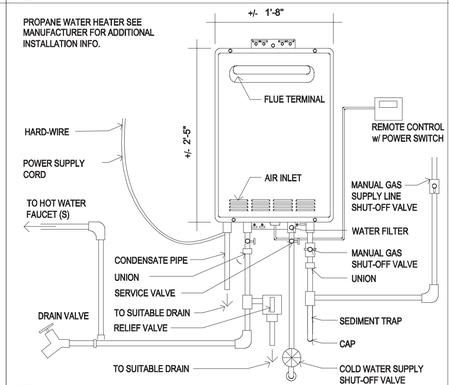
6 WOOD FINISH



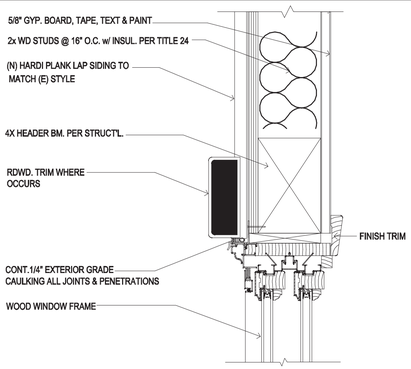
2 EXTERIOR DOOR HEADER



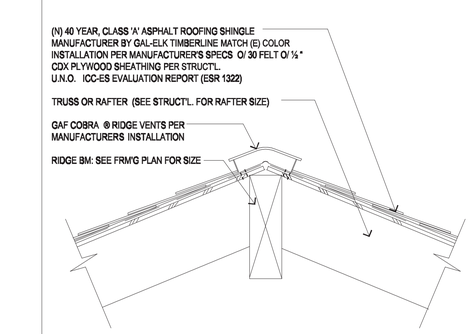
11 TYPICAL RAKE DETAIL



7 TANKLESS WATER HEATER



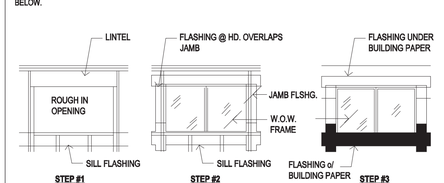
3 WINDOW HEADER



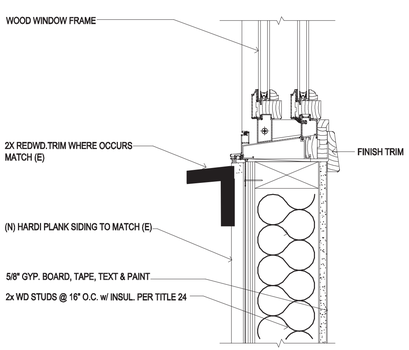
12 RIDGE/HIP W/ VENT DETAIL

TYP. FLASHING OF EXTERIOR WALL OPENINGS

INDIVIDUALLY FLASH ALL EXTERIOR OPENINGS FOR FIXTURES SUCH AS WINDOWS, DOORS, AND VENTS TO MAKE THEM WATERPROOF. FLASHING MATERIAL SHALL PROVIDE A FOUR HOUR MINIMUM PROTECTION FROM WATER PENETRATION WHEN TESTED IN ACCORDANCE WITH ASSTM D-779. SEALANT SHALL COMPLY TO F.S. TT-S-1657. IN HIGH WIND AREAS W. R. GRACE ICE & WATER SHIELD SHALL BE USED, OVER SOLID BACKING. FLASHING MATERIAL AT LEAST 9" WIDE SHALL BE APPLIED IN A WEATHERBOARD FASHION, BEGINNING WITH THE SILL WITH A STRIP LONG ENOUGH TO PROTECT BEYOND THE JAMB FLASHING TO BE APPLIED. THE TWO JAMB FLASHING ARE THEN APPLIED, WITH SUFFICIENT LENGTH TO EXTEND BEYOND THE SILL FLASHING, AND WITH THE SAME DISTANCE AT THE TOP. FOR FIXTURES WITHOUT NAIL ON FLANGES THE FLASHING SHALL BE 12" MINIMUM WIDTH AND EXTEND INTO THE ROUGH FRAME AT THE SILL AND JAMB. FOR NAIL ON FLANGE FIXTURES INSTALL BY PRESSING FLANGE POSITIVELY INTO A CONTINUOUS BEAD OF SEALANT WHICH EXTENDS AROUND THIS BOTTOM AND SIDES OF THE FIXTURE. APPLY THE TOP HORIZONTAL FLASHING LAST, WITH SUFFICIENT LENGTH TO EXTEND BEYOND THE JAMB FLASHING. OVERLAP AND SEAL AGAINST THE TOP NAILING FLANGE OR G.S.M. HEAD FLASHING WITH A CONTINUOUS BEAD OF SEALANT. APPLY REMAINING WALL SHEATHING PAPER IN A WEATHERBOARD FASHION WITH THE SILL FLASHING LAPPING OVER THE TOP AND THE HEAD AND JAMB FLASHING BELOW.



8 TYP. FLASHING



4 WINDOW SILL

REVISIONS	BY

DETAILS

A NEW ADDITION FOR:
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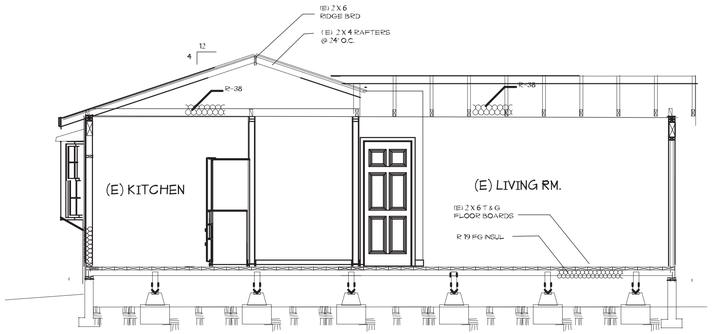
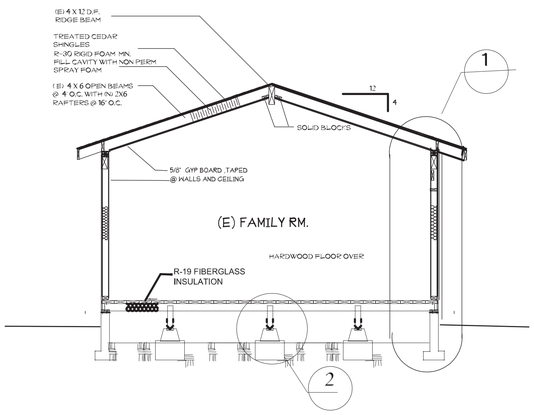
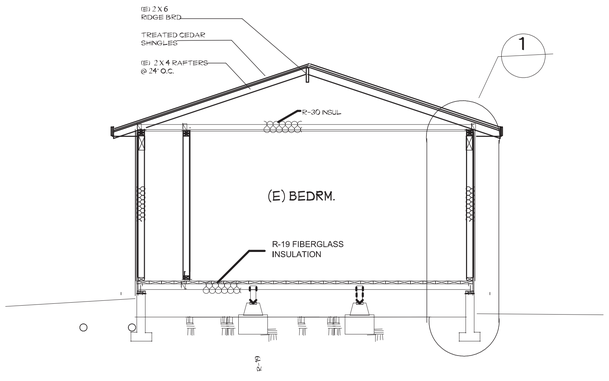
DRAWN BY:	K.B.
CHECKED BY:	M.C./.C.C.
DATE:	8/11/20
SCALE:	AS NOTED
JOB:	
SHEET:	A6



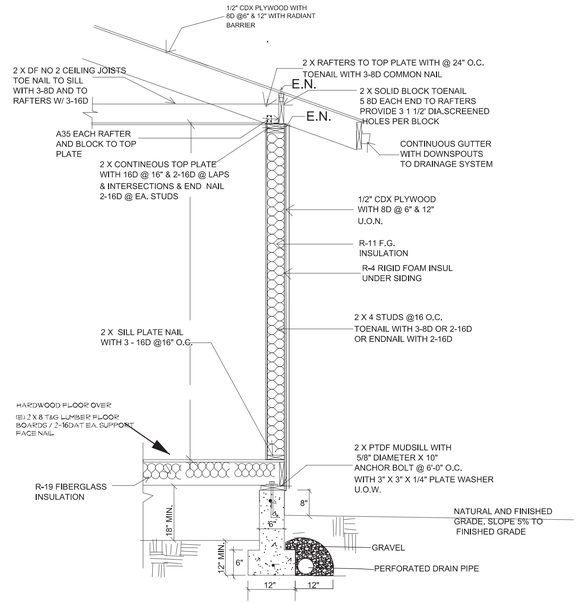
A SECTION VIEW 1/4"=1'-0"



B SECTION VIEW 1/4"=1'-0"



C SECTION VIEW 1/4"=1'-0"

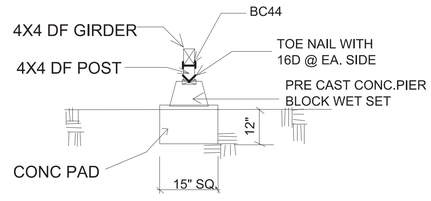


2500 PSI CONCRETE 'I' FOOTING
WITH 2- #4 GRADE 40 BARS TOP & BOTTOM
CONTINOUS

BOTTOM OF FOOTING MUST BE AT
LEAST 12" BELOW FINISHED GRADE
@INSIDE AND OUTSIDE FOUNDATION LINE

1 ONE STORY WALL DETAIL TYP.

1/2"= 1'-0"



2 PRE CAST PIER GIRDER DETAIL TYP.

1/2"= 1'-0"

REVISIONS		BY
5	2/20/20	BD

AS-BUILT SECTION, VIEW DETAILS

LEGALIZE AN AS-BUILT 2ND DWELLING FOR:

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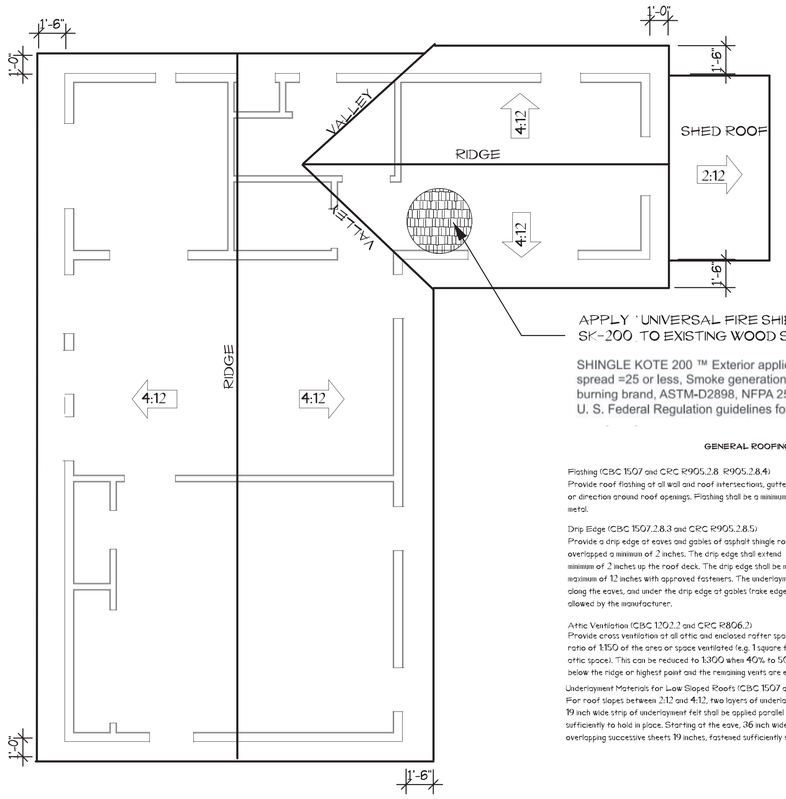
DRAWN BY	K.B.
CHECKED BY:	M.C./C.C.
DATE:	6 18 2020
SCALE:	AS SHOWN
JOB:	02116
SHEET	A-7



ROOF PLAN

1/4"=1'-0"

SHINGLE KOTE 200 ™ Exterior applications 5-Year or 200 inches of rain or simulated. Flame spread =25 or less, Smoke generation=26 or less, Meets or exceeds= ASTM E-84, ASTM E108 burning brand, ASTM-D2898, NFPA 255, NFPA 703, UL 723 same test as ASTM-84, Complies with U. S. Federal Regulation guidelines for paint and coatings.

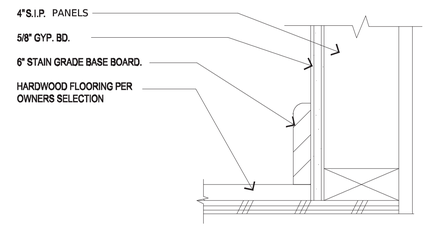
GENERAL ROOFING NOTES

Flashing (CBC 1507 and CRC R905.2.8 R905.2.8.4)
Provide roof flashing at all wall and roof intersections, gutters, and where there is a change in the roof slope or direction around roof openings. Flashing shall be a minimum 26 gauge corrosion-resistant galvanized metal.

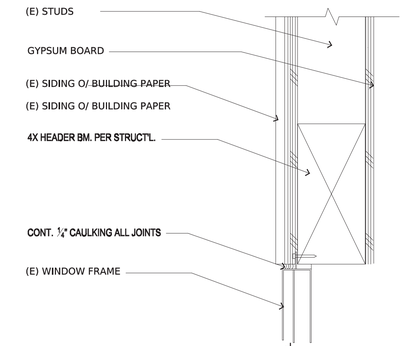
Drip Edge (CBC 1507.2.8.3 and CRC R905.2.8.5)
Provide a drip edge at eaves and gables of asphalt shingle roofs. Adjacent pieces of the drip edge shall be overlapped a minimum of 2 inches. The drip edge shall extend inch below the roof sheathing and a minimum of 2 inches up the roof deck. The drip edge shall be mechanically fastened to the roof deck at a maximum of 12 inches with approved fasteners. The underlayment shall be installed over the drip edge along the eaves, and under the drip edge at gables (rake edges). Shingles can be flush with the drip edge if allowed by the manufacturer.

Attic Ventilation (CBC 1202.2 and CRC R806.2)
Provide cross ventilation at all attic and enclosed rafter spaces. The net free ventilation shall be a minimum ratio of 1:150 of the area or space ventilated (e.g. 1 square foot of ventilation for each 150 square feet of attic space). This can be reduced to 1:300 when 40% to 50% of the vents are located not more than 3 feet below the ridge or highest point and the remaining vents are eave or cornice vents.

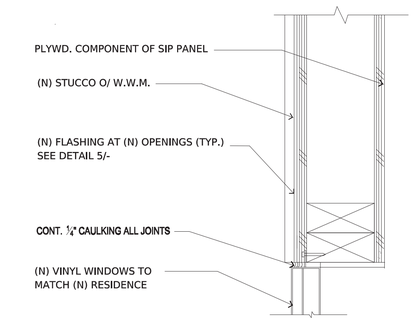
Underlayment Materials for Low Sloped Roofs (CBC 1507 and CRC R905.1.1)
For roof slopes between 2:12 and 4:12, two layers of underlayment material shall be applied. A minimum of 19 inch wide strip of underlayment felt shall be applied parallel with and starting at the eaves, fastened sufficiently to hold in place. Starting at the eave, 36 inch wide sheets of underlayment shall be applied overlapping successive sheets 19 inches, fastened sufficiently to hold in place.



FLOORING SC: 1/2"=1'0" 1



HEADER @ GARAGE WINDOW SC: 1/2"=1'0" 2



NEW WINDOW SCALE: 1 1/2" = 1'0" 3

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APPLY THE TOP HORIZONTAL FLASHING LAST, WITH SUFFICIENT LENGHT TO EXTEND BEYOND THE JAMB FLASHING OVERLAP AND SEAL AGAINST THE TOP NAILING FLANGE OR G.S.M. HEAD FLASHING WITH A CONTINOUS BEAD OF SEALANT.
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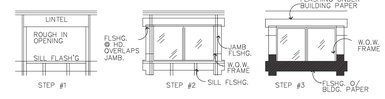

FLASHING @ EXT. WALL OPENINGS SC: 1"=1'0" 4

REVISIONS	BY
5 2/20/20	BD

AS-BUILT
ROOF PLAN,

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DRAWN BY
K.B.

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DATE:
6 18 2020

SCALE:
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JOB:
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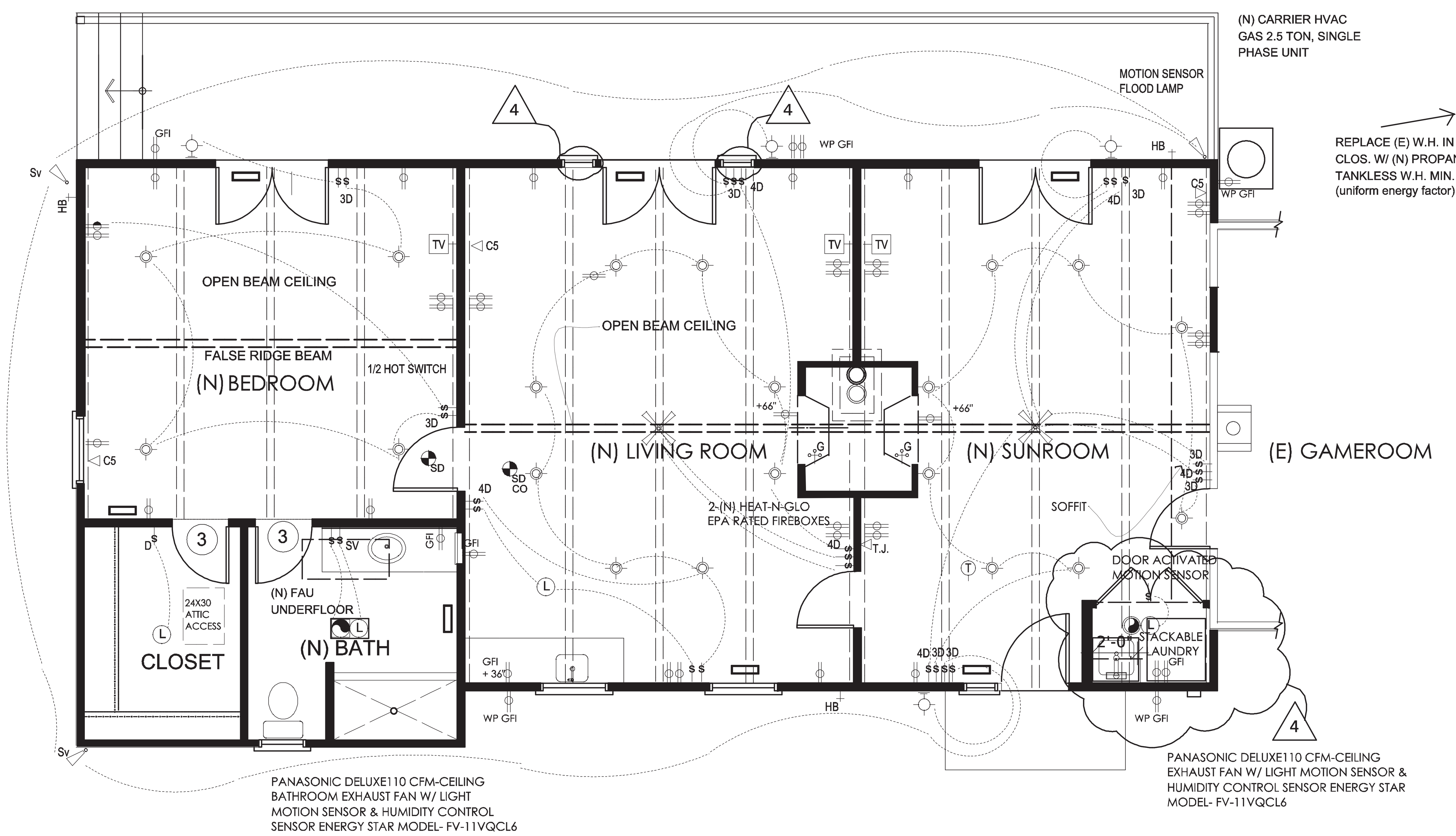
SHEET
A-8



ELECTRICAL PLAN

SC. 1/4"=1'0"

LIGHTING IN BATHROOMS. GARAGES, LAUNDRY ROOMS AND UTILITY ROOMS SHALL EITHER BE HIGH EFFICACY OR SHALL BE CONTROLLED BY A VACANCY SENSOR

OTHER ROOMS ALL LUMINARIES SHALL EITHER BE HIGH EFFICACY OR SHALL BE CONTROLLED BY A VACANCY SENSOR OR DIMMER. CLOSETS THAT ARE LESS THAN 70 SQUARE FEET ARE EXEMPT FROM THIS REGULATION.

OUTDOOR LIGHTING. ALL LUMINARIES MOUNTED TO THE BUILDING TO BE PROVIDED BY OWNER AND SHALL BE HIGH EFFICACY LUMINARIES OR SHALL BE CONTROLLED BY A PHOTO CONTROL MOTION SENSOR IN COMBINATION WITH A PHOTO CONTROL, ASTRONOMICAL , TIME CLOCK, OR ENERGY MANAGEMENT CONTROL SYSTEM.

UTILITY NOTES

ALL NOTES APPLY TO THIS PROJECT UNLESS OTHERWISE NOTED (U.O.N.)

GENERAL:
U1. SEE FLOOR PLAN AND FLOOR PLAN NOTES FOR APPLIANCES, FIXTURES, AND SPACE & WATER HEATER EQUIPMENT.
U2. SEE SITE PLAN AND SITE PLAN NOTES FOR SITE UTILITIES.
U3. GAS VENTS AND NON-COMBUSTIBLE PIPING PASSING THROUGH 3 FLOORS OR LESS SHALL BE EFFECTIVELY DRAFT-STOPPED AT EACH FLOOR OR CEILING (CRC R 302.12).

MECHANICAL:
M1. CONFORM WITH 2013 CBC, CRC, CMC, CFC & PAMC
M2. DUCTWORK: SMACCNA "LOW VELOCITY DUCT CONSTRUCTION" NFPA STANDARD #90A. ALL TRANSVERSE DUCT PLENUM AND FITTING JOINTS SHALL BE SEALED WITH PRESSURE SENSITIVE TAPE OR MASTIC TO PREVENT AIR LOSS. DUCTS SHALL BE INSULATED AS REQUIRED BY THE UMC. SEE FLOOR PLAN FOR F.A.U. AND FIREPLACES. DUCTS PENETRATING A WALL OR FLOOR-CEILING BETWEEN GARAGE & DWELLING TO BE MINIMUM 26 GAUGE METAL WITHOUT OPENING IN GARAGE. FIRE DAMPER REQUIRED OTHERWISE.
M3. GRILLES AND REGISTERS, DIFFUSERS, ETC: SUBJECT TO OWNERS APPROVAL. "PANASONIC" OR EQUAL FANS: DIRECTLY VENTED TO OUTSIDE, BACKDRAFT DAMPERS ARE REQUIRED
M4. LAUNDRY: MAXIMUM 10 MINUTE AIR CHANGE AND 5 SONES. DRYER VENT TO EXTERIOR TO BE 14 FEET MAXIMUM - 2 FEET PER 90 DEGREE TURN.
M5. BATHS: MAXIMUM 5 MINUTE AIR CHANGE, SONES: MASTER BATH: 2 SONES MAXIMUM. ADJACENT TO LIVING, DINING, KITCHEN, FAMILY ROOM: 5 SONES MINIMUM. OTHER BATHS: 5 SONES MAXIMUM.
M6. PROVIDE COMBUSTION AIR OPENINGS WITHIN 12" OF THE FLOOR AND CEILING FOR GAS BURNING EQUIPMENT, DIRECT TO OUTSIDE. HEIGHT TO COMBUSTIBLE MATERIAL ABOVE KITCHEN RANGES: 30" - UNPROTECTED, 24" - PROTECTED.
M7. RESIDENTIAL BATHROOM EXHAUST FANS. MECHANICAL EXHAUST FANS WHICH EXHAUST DIRECTLY FROM BATHROOMS SHALL COMPLY WITH ASHRAE 62.2, SECTION 5; EXHAUST FANS SHALL BE ENERGY COMPLIANT; EXHAUST FANS SHALL TERMINATE OUTSIDE THE BUILDING [CALGREEN 4.506.1]

PLUMBING:
P1. PIPING:
- DOMESTIC WATER (WITHIN BUILDING): COPPER
- GAS, EXPOSED TO WEATHER: GALVANIZED STEEL
- AIR CHAMBERS: 12" LONG CAPPED NIPPLE AT END OF EACH BRANCH TO EACH FIXTURE.
- DIELECTRIC UNIONS "F.P.C.O." REQUIREMENT AT ALL DISSIMILAR MATERIAL CONNECTIONS.
- SOFT-WATER LOOP WITH 2 GATE VALVES
- HEATED WATER TO HAVE CONTINUOUS LOOP SYSTEM
- NO GAS PIPING SHALL BE INSTALLED IN OR ON THE GROUND UNDER ANY BLDG'G STRUCTURE. ALL EXPOSED GAS PIPING SHALL BE 6" MIN. ABOVE GRADE OR STRUCTURE.
- UNDERGROUND METAL GAS PIPE MUST BE ELECTRICALLY ISOLATED FROM INTERIOR GAS PIPE BY AN APPROVED ISOLATION FITTING INSTALLED AT LEAST 6" ABOVE GRADE.

P2. WATER METER: 3/4" U.O.N. ON SITE PLAN.
P3. SHOWERHEADS AND FAUCETS: CEC CERTIFIED.
P4. PIPE INSULATION: R-3 ON HOT WATER PIPES IN UNCONDITIONED SPACES AND RECIRCULATING HOT WATER PIPES.
P5. STRAPS AND HANGERS: PROVIDE AS NECESSARY TO INSURE A STABLE INSTALLATION.
P6. SEE FLOOR PLAN FOR WATER HEATER.
P7. ALL HOSE BIBS AND LAWN SPRINKLER SYSTEMS SHALL HAVE APPROVED BACKFLOW PREVENTION DEVICES.
P8. GAS LINE TO BE SIZED BY PLUMBING CONTRACTOR. PROVIDE CALC'S AT FIRST INSPECTION.
P9. HOSE BIBS WITH APPROVED NON-REMOVABLE BACKFLOW PREVENTION DEVICE

ELECTRICAL:
E1. CONFORM WITH CURRENT ICC, NEC, NFPA, MFR'S, AND LOCAL REQUIREMENTS.
E2. ELECTRICAL SYSTEM GROUND PER CEC ARTICLE 250-66 ELECTRICAL SERVICE PANEL TO BE GROUNDED WITH 1/2Ø X 20' LONG REBAR FOR BACKUP UFER GROUND BONDED TO COLD WATER PIPE.
E3. ALL MATERIALS TO BE U.L. LABELED.
E4. METER: "SQUARE D", 120 VOLT/ 240 VOLT, 1 AND 3 WIRE GROUND.
E5. MAIN PANEL: FLUSH MOUNT, 30" CLEARANCE
E6. CONDUCTORS: MUST CONSIST OF FOUR WIRES AND THE RECEPTICALS AND PLUGS FOR THE APPLIANCE (COOKING APPLIANCES, RANGES, COOKTOPS, OVENS & DRYERS) MUST ACCOMMODATE FOUR WIRES.
E7. LAMPS: FOR GENERAL LIGHTING IN KITCHENS AND BATH SHALL BE ENERGY EFFICACY.
E8. ALL CONVENIENCE OUTLETS IN BATHROOMS, KITCHENS, LAUNDRY, OUTDOORS & IN GARAGES AND BASEMENTS SHALL BE G.F.I. PROTECTED.
E9. PROVIDE ELECTRIC OUTLET AND PUSH-BUTTON WIRE FOR GARAGE OPENER (INCLUDE OPENER).
E10. THERMOSTAT SHALL BE A SET-BACK TYPE, HONEYWELL T-8082A OR EQUAL.
E11. MAIN-PANEL: (E)SIZE 200 AMP SIZED TO PROVIDE FOUR FULL SIZE SPARE CIRCUIT SPACES FOR FUTURE EXPANSION
E12. RECESSED LIGHT FIXTURES INSTALLED IN AREAS TO RECEIVE INSULATION SHALL BE "IC" RATED & AIRTIGHT CONSTRUCTION (AT)UNITS (INSULATION ZERO CLEARANCE TYPE AND NO PENETRATION OR REMOVAL OF INSULATION ALLOWED.
E13. RECESSED LUMINARIES MUST ALLOW BALLAST MAINTENANCE AND REPLACEMENT READILY ACCESSIBLE FROM BELOW THE CEILING WITHOUT CUTTING HOLES IN CEILING (ENERGY STANDARDS).
E14. BATHROOM RECEPTACLES MUST BE ON A 20 AMP CIRCUIT (OR CIRCUITS) WITH NO OTHER OUTLETS.
E15. OUTSIDE RECEPTACLES MAY NOT BE ON A SMALL APPLIANCE CIRCUIT.
E16. CEILING FANS WEIGHING OVER 35 POUNDS CANNOT BE SUPPORTED BY AN ELECTRICAL BOX. THEY MUST BE SUPPORTED AS REQUIRED BY SEC 370-23.
E17. SUBPANELS AND OVER CURRENT DEVICES ARE PROHIBITED IN BATHRMS.
E18. ALL ELECTRICAL, TELECOMMUNICATION AND OTHER UTILITIES SHALL BE INSTALLED UNDERGROUND IN AN APPROVED METHOD OF CONSTRUCTION.
E19. ALL BRANCH CIRCUITS THAT SUPPLY 125-VOLT, SINGLE-PHASE 15 AND 20 AMP RECEPTACLE OUTLETS INSTALLED IN FAMILY ROOMS, DINING ROOMS, LIVING ROOMS, PARLORS, BEDROOMS, CLOSETS, HALLWAYS, OR SIMILAR AREAS SHALL BE PROTECTED BY ARCH-FAULT CIRCUIT INTERUPTERS.
E20. ALL RECEPTACLE OUTLETS IN THE GARAGE SHALL BE G.F.C.I.
E21. ALL ENVIRONMENTAL AIR DUCTS SHALL BE A MINIMUM OF 3 FEET FROM ANY OPENINGS INTO THE BUILDING (I.E., DRYERS, BATH AND UTILITIES FANS, ETC., MUST BE 3 FEET AWAY FROM DOORS, WINDOWS, OPENING SKYLIGHTS OR ATTIC VENTS).
E22. SHOWER AND TUB-SHOWER COMBINATIONS SHALL BE PROVIDED WITH INDIVIDUAL CONTROL VALVES OF THE PRESSURE BALANCE OR THE THERMOSTATIC MIXING VALVE TYPE.
E23. FIRST HOUR RATING OF THE WATER HEATER IS 80 GALLONS AS SPECIFIED IN CPC TABLE 5-1. CPC SECTION 501
E24. EXTERIOR RECEPTACLES AT THE FRONT AND REAR OF THE HOME MUST BE WITHIN 6 FEET 6 INCHES OF GRADE, GFCI PROTECTED, AND WATERPROOF.
E25. ALL INSTALLED LIGHTING IN BATHROOMS, ATTACHED AND DETACHED GARAGES, CLOSETS, LAUNDRY ROOMS, AND UTILITY ROOMS SHALL BE HIGH EFFICACY, OR CONTROLLED BY A VACANCY (MANUAL-ON OCCUPANT) SENSOR CERTIFIED TO CEC STANDARDS. (LOW EFFICACY LUMINARIES ARE ALLOWED IN CLOSETS LESS THAN 70 SQ.FT. FLOOR AREA; HOWEVER, LUMINARIES MUST COMPLY WITH THE REQ. OF THE 2013 CEC 410.10.
E26. RECESSED LUMINAIRES IN INSULATED CEILINGS MUST BE CERTIFIED AIRTIGHT (ASTM E283), SHALL BE SUFFICIENTLY AIRTIGHT TO PREVENT THE FLOW OF HEATED OR COOLED AIR BETWEEN CONDITIONED AND UNCONDITIONED SPACES, PROVIDED WITH GASKET BETWEEN LUMINAIRE AND CEILING, AND ALL AIR LEAK PATHS THROUGH LUMINAIRE ASSEMBLY OR CEILING OPENING MUST BE SEALED. (ENERGY STANDARDS).
E27. LUMINAIRES LOCATED OUTSIDE ON THE EXTERIOR OF THE BUILDING SHALL BE LISTED FOR DAMP/WET LOCATIONS. CEC ART. 100.
E28. ALL OUTDOOR LIGHTING ATTACHED TO BUILDINGS MUST BE HIGH EFFICACY, OR CONTROLLED BY A MOTION SENSOR IN ADDITION TO ONE OF THE FOLLOWING METHODS: PHOTOCONTROL NOT HAVING AN OVERRIDE OR BYPASS SWITCH; OR ASTRONOMICAL TIME CLOCK NOT HAVING AN OVERRIDE OR BYPASS SWITCH; OR AN ENERGY MANAGEMENT CONTROL SYSTEM (EMCS) NOT HAVING AN OVERRIDE OR BYPASS SWITCH THAT ALLOWS THE LUMINAIRE TO BE ALWAYS ON. (ENERGY STANDARDS).
E29. PROVIDE AN APPROVED BACKWATER VALVE ON DRAINAGE PIPING SERVING FIXTURES THAT HAVE FLOOD LEVEL RIMS LESS THAN 12" ABOVE THE ELEVATION OF THE NEXT UPSTREAM MANHOLE.
E30. A LEVEL SERVICE SPACE (INSPECTION, REPAIR AND REPLACEMENT) SHALL NOT BE LESS THAN 30" IN DEPTH, WIDTH AND HEIGHT OF THE WORKING SPACE AND 30" WIDE LOCATED AT THE FRONT OR SERVICE SIDE OF THE EQUIPMENT.
E31. RESIDENTIAL LIGHTING MANDATORY MEASURES SHALL BE INCORPORRATED INTO THE DESIGN AND SHALL BE NOTED/INCLUDED ON THE ELECTRICAL PLANS.
E32. EXHAUST FAN HOUSING AND CEILING TO PREVENT THE FLOW AND LOSS OF HEATED OR COOLED AIR.
E33. PROVIDE BACKDRAFT DAMPERS AT ALL EXHAUST FANS.
E34. RECEPTACLE OUTLETS SHALL HAVE NO POINT ALONG THE WALL IS FURTHER THAN 6 FEET FROM AN OUTLET. CEC 210.52(A)
E35. ALL 120 VOLTS, 15-AND 20-AMPERES RECEPTACLES SHALL BE TAMPER-RESISTANT(TR), CEC 406.12, 210.52 & 210.8(b).
E36. PROVIDE AFCI CIRCUIT PROTECTION FOR ALL (N) ROOMS (EXCEPT FOR KITCHEN, BATHROOMS, GARAGE, LAUNDRY AND PORCHES PER CEC 210.12
E37. BATHROOM FANS TO HAVE 20 CFM RATING AND KITCHEN HOOD TO BE 100 CFM.
E38. PROVIDE TAMPER PROOFING RECEPTACLES FOR ALL NEW INSTALLATION
E39. PROVIDE SEPARATE ELECTRICAL CIRCUITS FOR:
A. KITCHEN (2) 20 AMPS SMALL APPLIANCE CIRCUITS
B. BATHROOM (1) 20 AMPS CIRCUIT
C. LAUNDRY (1) 20 AMPS CIRCUIT
D. MOTOR (FAU).
E. JACUZZI MOTORS
F. GARBAGE DISPOSAL
G. DISHWASHER

ELECTRICAL SYMBOLS

INCANDESCENT LED FIXTURE: WALL MOUNTED, F = FLUORESCENT
INCANDESCENT LED FIXTURE: RECESSED MOUNTED
- C = CEILING MOUNTED LED
- F= FLUORESCENT LIGHT - MIN. 40 LUMENS PER WATT
- V= WATER VAPOR PROOF
- A = AUTOMATIC
- P = PENDANT

CEILING FAN & LED LIGHT

LED PANEL 1'×4'(40W) 2'×2'(40W&60W) 2'×4'(50W&75W) MODEL 'BL-P7-50W CNS/CDS'

LED T8 TUBE MODEL 'BL T8 18W 1200 WIDZ DIMMABLE' RETROFIT TUBE

EXTERIOR LED FLOOD LAMP ON MOTION SENSOR

NOTE: (N) SOLAR ACTIVATED 'FANATIC' FAN AND SUNTUNNELS, 12" W AND 18" W. BY NULIGHT SOLUTIONS 1.877.FAN-ATTIC

"PANASONIC" FAN/LIGHT COMBO. UNIT OR EQUAL

FAN UNIT 5 - AIR CHANGES PER HOUR MIN.

SD — SMOKE ALARMS SHALL RECEIVE THEIR PRIMARY POWER FROM THE BUILDING WIRING, BE EQUIPPED WITH BATTERY BACK-UP AND BE INTERCONNECTED IN SUCH A MANNER THAT THE ACTIVATION OF ONE ALARM WILL ACTIVATE ALL OF THE ALARMS. SMOKE ALARMS INSTALLED WITHIN 20 FT. OF A KITCHEN OR ANY ROOMS CONTAINING A FIREPLACE OR WOOD BURNING STOVE SHALL BE OF THE PHOTOELECTRIC TYPE. FOR PLACEMENT OF SMOKE ALARMS AND CARBON MONOXIDE ALARMS IN ROOMS WITH VARIATIONS IN CEILING HEIGHT (SLOPED, PITCHED ETC.), REFER TO THE MANUFACTURERS GUIDELINES FOR PROPER PLACEMENT.

CO — CO ALARMS MUST RECEIVE THEIR PRIMARY POWER FROM A COMMERCIAL SOURCE AND BE EQUIPPED WITH A BATTERY BACKED-UP ALARM WIRING SHALL BE DIRECTLY CONNECTED TO THE PERMANENT BUILDING WIRING WITHOUT A DISCONNECTING SWITCH OTHER THAN THAT REQUIRED FOR OVER CURRENT PROTECTION. (CRC R315.1.)

HEAT REGISTER: C= CEILING, F= FLOOR, T/K = TOE KICK

C.A.R. — COLD AIR RETURN: C= CEILING, L/W = LOW WALL

TV — TELEVISION/CABLE INTERNET

T — THERMOMETER CONTROL

CHANDELIER

C5 — CAT 5 JACK

T.J. — TELEPHONE/OPTIC CABLE JACK

$ — SWITCH:
- 3W = WAY SWITCH
- D = DIMMER
- 3D = 3 WAY DIMMER
- 4D = 3 WAY DIMMER
- S = MANUEL-ON OCCUPANCY SENSOR Sv = VACANCY SENSOR

OUTLET:
- 110V = 110 VOLT 2 - PRONG OUTLET
- 220V = 220 VOLT 2 - PRONG OUTLET
- GFI = CIRCUIT INTERRUPTOR
- WP = WATER PROOF

HB — WATER STUB OUT - A SIGN OR VALVE TAG SHALL BE INSTALLED AT THE MAIN SHUTOFF VALVE TO BE WATER DISTRIBUTION SYSTEM STATING THE FOLLOWING: "WARNING, THE WATER SYSTEM FOR THIS HOME SUPPLIES FIRE SPRINKLERS THAT REQUIRE CERTAIN FLOWS AND PRESSURES TO FIGHT FIRE. DEVICES THAT RESTRICT THE FLOW OR DECREASE THE PRESSURE OR AUTOMATICALLY SHUT OFF THE WATER TO THE FIRE SPRINKLER SYSTEM, SUCH AS WATER SOFTENERS, FILTRATION SYSTEMS AND AUTOMATIC SHUTOFF VALVES, SHALL NOT BE ADDED TO THIS SYSTEMS WITHOUT A REVIEW OF THE FIRE SPRINKLER SYSTEM BY A FIRE PROTECTION SPECIALIST. DO NOT REMOVE THIS SIGN." (CRC R313.3.7)

G/M — GAS METER

G — GAS STUB OUT

E/M — 200 AMPS. ELECTRICAL METER

REVISIONS	BY
4 3/30/19	MC

ELECTRICAL PLAN

A NEW ADDITION FOR:
THE CASASSA FAMILY
500 SUMMIT ROAD
MORGAN HILL, CA 95307

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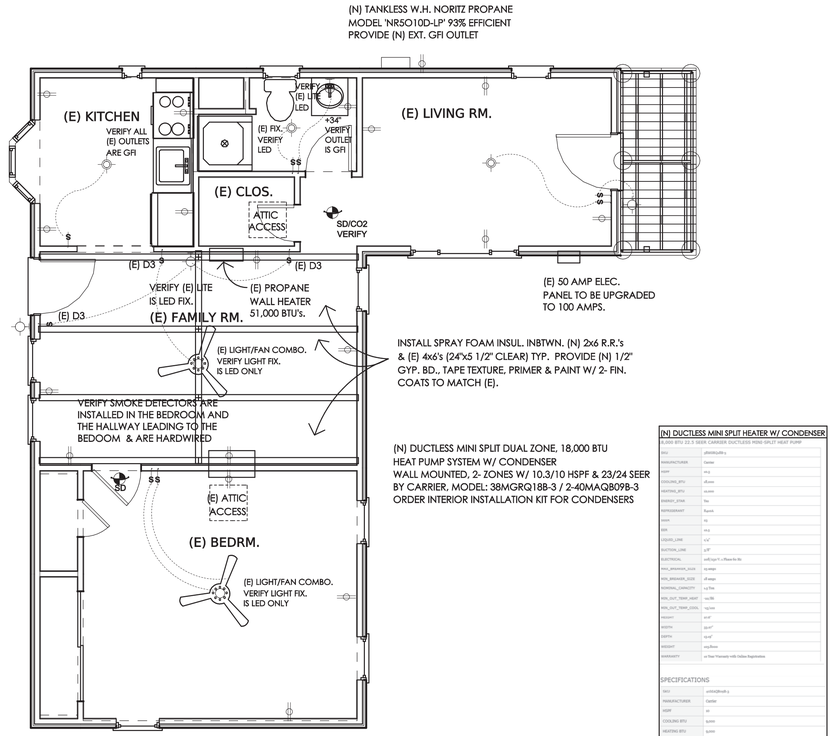
DRAWN BY: K.B.
CHECKED BY: M.C./C.C.
DATE: 8/11/20
SCALE: 1/4"=1'0"
JOB: 02116
SHEET: E 1

LIGHTING IN BATHROOMS. GARAGES, LAUNDRY ROOMS AND UTILITY ROOMS SHALL EITHER BE HIGH EFFICACY OR SHALL BE CONTROLLED BY A VACANCY

OTHER ROOMS ALL LUMINARIES SHALL EITHER BE HIGJH EFFICACY OR SHALL BE CONTROLLED BY AN VACANCY SENSOR OR DIMMER. CLOSETS THAT ARE LESS THAN 70 SQUARE FEET ARE EXEMPT FROM THIS REGULATION.

OUTDOOR LIGHTING. ALL LUMINARIES MOUNTED TO THE BUILDING TO BE PROVIDED BY OWNER AND SHALL BE HIGH EFFICACY LUMINARIES OR SHALL BE CONTROLLED BY A PHOTO CONTROL MOTION SENSOR IN COMBINATION WITH A PHOTO CONTROL, ASTRONOMICAL, TIME CLOCK, OR ENERGY MANAGEMENT CONTROL SYSTEM.



ELECTRICAL PLAN

W/ REFLECTED CEILING PLAN (794 S.F.)

SCALE: 1/4" = 1'0"

UTILITY NOTES

ALL NOTES APPLY TO THIS PROJECT UNLESS OTHERWISE NOTED (U.O.N.)

GENERAL:

U1. SEE FLOOR PLAN AND FLOOR PLAN NOTES FOR APPLIANCES, FIXTURES, AND SPACE & WATER HEATER EQUIPMENT.
U2. SEE SITE PLAN AND SITE PLAN NOTES FOR SITE UTILITIES.
U3. GAS VENTS AND NON-COMBUSTIBLE PIPING PASSING THROUGH 3 FLOORS OR LESS SHALL BE EFFECTIVELY DRAFT-STOPPED AT EACH FLOOR OR CEILING (CRC R 302.12).

MECHANICAL:

M1. CONFORM WITH 2016 CBC, CRC, CMC, CFC & PAMC
M2. DUCTWORK: SMACCNA "LOW VELOCITY DUCT CONSTRUCTION" NFPA STANDARD #90A. ALL TRANSVERSE DUCT PLENUM AND FITTING JOINTS SHALL BE SEALED WITH PRESSURE SENSITIVE TAPE OR MASTIC TO PREVENT AIR LOSS. DUCTS SHALL BE INSULATED AS REQUIRED BY THE UMC. SEE FLOOR PLAN FOR F.A.U. AND FIREPLACES. DUCTS PENETRATING A WALL OR FLOOR-CEILING BETWEEN GARAGE & DWELLING TO BE MINIMUM 26 GAUGE METAL WITHOUT OPENING IN GARAGE. FIRE DAMPER REQUIRED OTHERWISE.
M3. GRILLES AND REGISTERS, DIFFUSERS, ETC: SUBJECT TO OWNERS APPROVAL. "PANASONIC" OR EQUAL FANS: DIRECTLY VENTED TO OUTSIDE, BACKDRAFT DAMPERS ARE REQUIRED
M4. LAUNDRY: MAXIMUM 10 MINUTE AIR CHANGE AND 5 SONES. DRYER VENT TO EXTERIOR TO BE 14 FEET MAXIMUM - 2 FEET PER 90 DEGREE TURN.
M5. BATHS: MAXIMUM 5 MINUTE AIR CHANGE, SONES: MASTER BATH: 2 SONES MAXIMUM. ADJACENT TO LIVING, DINING, KITCHEN, FAMILY ROOM: 5 SONES MINIMUM. OTHER BATHS: 5 SONES MAXIMUM.
M6. PROVIDE COMBUSTION AIR OPENINGS WITHIN 12" OF THE FLOOR AND CEILING FOR GAS BURNING EQUIPMENT, DIRECT TO OUTSIDE. HEIGHT TO COMBUSTIBLE MATERIAL ABOVE KITCHEN RANGES: 30" - UNPROTECTED, 24" - PROTECTED.
M7. RESIDENTIAL BATHROOM EXHAUST FANS. MECHANICAL EXHAUST FANS WHICH EXHAUST DIRECTLY FROM BATHROOMS SHALL COMPLY WITH ASHRAE 62.2, SECTION 5; EXHAUST FANS SHALL BE ENERGY COMPLIANT; EXHAUST FANS SHALL TERMINATE OUTSIDE THE BUILDING [CALGREEN 4.506.1]

PLUMBING:

P1. PIPING:
- DOMESTIC WATER (WITHIN BUILDING): COPPER
- GAS, EXPOSED TO WEATHER: GALVANIZED STEEL
- AIR CHAMBERS: 12" LONG CAPPED NIPPLE AT END OF EACH BRANCH TO EACH FIXTURE.
- DIELECTRIC UNIONS "F.P.C.O." REQUIREMENT AT ALL DISSIMILAR MATERIAL CONNECTIONS.
- SOFT-WATER LOOP WITH 2 GATE VALVES
- HEATED WATER TO HAVE CONTINUOUS LOOP SYSTEM
- NO GAS PIPING SHALL BE INSTALLED IN OR ON THE GROUND UNDER ANY BLDG'G STRUCTURE. ALL EXPOSED GAS PIPING SHALL BE 6" MIN. ABOVE GRADE OR STRUCTURE.
- UNDERGROUND METAL GAS PIPE MUST BE ELECTRICALLY ISOLATED FROM INTERIOR GAS PIPE BY AN APPROVED ISOLATION FITTING INSTALLED AT LEAST 6" ABOVE GRADE.

P2. WATER METER: 3/4" U.O.N. ON SITE PLAN.
P3. SHOWERHEADS AND FAUCETS: CEC CERTIFIED.
P4. PIPE INSULATION: R-3 ON HOT WATER PIPES IN UNCONDITIONED SPACES AND RECIRCULATING HOT WATER PIPES.
P5. STRAPS AND HANGERS: PROVIDE AS NECESSARY TO INSURE A STABLE INSTALLATION.
P6. SEE FLOOR PLAN FOR WATER HEATER.
P7. ALL HOSE BIBS AND LAWN SPRINKLER SYSTEMS SHALL HAVE APPROVED BACKFLOW PREVENTION DEVICES.
P8. GAS LINE TO BE SIZED BY PLUMBING CONTRACTOR. PROVIDE CALC'S AT FIRST INSPECTION.
P9. HOSE BIBS WITH APPROVED NON-REMOVABLE BACKFLOW PREVENTION DEVICE

ELECTRICAL:

E1. CONFORM WITH CURRENT ICC, NEC, NFPA, MFR'S, AND LOCAL REQUIREMENTS.
E2. ELECTRICAL SYSTEM GROUND PER CEC ARTICLE 250-66 ELECTRICAL SERVICE PANEL TO BE GROUNDED WITH 1/2Ø X 20' LONG REBAR FOR BACKUP UFER GROUND BONDED TO COLD WATER PIPE.
E3. ALL MATERIALS TO BE U.L. LABELED.
E4. METER: "SQUARE D", 120 VOLT/ 240 VOLT, 1 AND 3 WIRE GROUND.
E5. MAIN PANEL: FLUSH MOUNT, 30" CLEARANCE
E6. CONDUCTORS: MUST CONSIST OF FOUR WIRES AND THE RECEPTICALS AND PLUGS FOR THE APPLIANCE (COOKING APPLIANCES, RANGES, COOKTOPS, OVENS & DRYERS) MUST ACCOMMODATE FOUR WIRES.
E7. LAMPS: FOR GENERAL LIGHTING IN KITCHENS AND BATH SHALL BE ENERGY EFFICACY.
E8. ALL CONVENIENCE OUTLETS IN BATHROOMS, KITCHENS, LAUNDRY, OUTDOORS & IN GARAGES AND BASEMENTS SHALL BE G.F.I. PROTECTED.
E9. PROVIDE ELECTRIC OUTLET AND PUSH-BUTTON WIRE FOR GARAGE OPENER (INCLUDE OPENER).
E10. THERMOSTAT SHALL BE A SET-BACK TYPE, HONEYWELL T-8082A OR EQUAL.
E11. MAIN-PANEL: (E)SIZE 200 AMP SIZED TO PROVIDE FOUR FULL SIZE SPARE CIRCUIT SPACES FOR FUTURE EXPANSION
E12. RECESSED LIGHT FIXTURES INSTALLED IN AREAS TO RECEIVE INSULATION SHALL BE "IC" RATED & AIRTIGHT CONSTRUCTION (AT)UNITS (INSULATION ZERO CLEARANCE TYPE) AND NO PENETRATION OR REMOVAL OF INSULATION ALLOWED.
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E14. BATHROOM RECEPTACLES MUST BE ON A 20 AMP CIRCUIT (OR CIRCUITS) WITH NO OTHER OUTLETS.
E15. OUTSIDE RECEPTACLES MAY NOT BE ON A SMALL APPLIANCE CIRCUIT.
E16. CEILING FANS WEIGHING OVER 35 POUNDS CANNOT BE SUPPORTED BY AN ELECTRICAL BOX. THEY MUST BE SUPPORTED AS REQUIRED BY SEC 370-23.
E17. SUBPANELS AND OVER CURRENT DEVICES ARE PROHIBITED IN BATHRMS.
E18. ALL ELECTRICAL, TELECOMMUNICATION AND OTHER UTILITIES SHALL BE INSTALLED UNDERGROUND IN AN APPROVED METHOD OF CONSTRUCTION.
E19. ALL BRANCH CIRCUITS THAT SUPPLY 125-VOLT, SINGLE-PHASE 15 AND 20 AMP RECEPTACLE OUTLETS INSTALLED IN FAMILY ROOMS, DINING ROOMS, LIVING ROOMS, PARLORS, BEDROOMS, CLOSETS, HALLWAYS, OR SIMILAR AREAS SHALL BE PROTECTED BY ARCH-FAULT CIRCUIT INTERUPTERS.
E20. ALL RECEPTACLE OUTLETS IN THE GARAGE SHALL BE G.F.C.I.
E21. ALL ENVIRONMENTAL AIR DUCTS SHALL BE A MINIMUM OF 3 FEET FROM ANY OPENINGS INTO THE BUILDING (I.E., DRYERS, BATH AND UTILITIES FANS, ETC., MUST BE 3 FEET AWAY FROM DOORS, WINDOWS, OPENING SKYLIGHTS OR ATTIC VENTS).
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E29. PROVIDE AN APPROVED BACKWATER VALVE ON DRAINAGE PIPING SERVING FIXTURES THAT HAVE FLOOD LEVEL RIMS LESS THAN 12" ABOVE THE ELEVATION OF THE NEXT UPSTREAM MANHOLE.
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E33. PROVIDE BACKDRAFT DAMPERS AT ALL EXHAUST FANS.
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C. LAUNDRY (1) 20 AMPS CIRCUIT
D. MOTOR (FAU).
E. JACUZZI MOTORS
F. GARBAGE DISPOSAL
G. DISHWASHER

ELECTRICAL SYMBOLS

- LED FIXTURE: WALL MOUNTED, F = FLUORESCENT
- LED INCANDESCENT FIXTURE: RECESSED MOUNTED
  - D= CEILING MOUNTED LED
  - F = FLUORESCENT LIGHT - MIN. 40 LUMENS PER WATT
  - V= WATER VAPOR PROOF
  - A = AUTOMATIC
  - P = PENDANT, BRUSHED NICKEL, AMBER SHADE, QUICK CONNECT
- **LED STRINGER LIGHTS (PROVIDE 110 WALL OUTLETS + 93")**
- CEILING FAN & LIGHT
- **LED PANEL 1'×4'(40W) 2'×2'(40W&60W) 2'×4'(50W&75W) MODEL 'BL-P7-50W CNS/CDS'**
- **LED T8 TUBE MODEL 'BL T8 18W 1200 WIDZ DIMMABLE' RETROFIT TUBE**
- EXTERIOR LED FLOOD LAMP W/ MOTION SENSOR
- **NOTE: (V) SOLAR ACTIVATED 'FANATIC' FAN**
- **'SOLOTUBE' OR 'SUNTUNNEL', 10" (LED LIGHT/FAN OPTIONAL)**
- "PANASONIC" FAN/LIGHT COMBO. UNIT OR EQUAL
- FAN UNIT 5 - AIR CHANGES PER HOUR MIN. ENERGY STAR
- SMOKE ALARMS SHALL RECEIVE THEIR PRIMARY POWER FROM THE BUILDING WIRING, BE EQUIPPED WITH BATTERY BACK-UP AND BE INTERCONNECTED IN SUCH A MANNER THAT THE ACTIVATION OF ONE ALARM WILL ACTIVATE ALL OF THE ALARMS. SMOKE ALARMS INSTALLED WITHIN 20 FT. OF A KITCHEN OR ANY ROOMS CONTAINING A FIREPLACE OR WOOD BURNING STOVE SHALL BE OF THE PHOTOELECTRIC TYPE. FOR PLACEMENT OF SMOKE ALARMS AND CARBON MONOXIDE ALARMS IN ROOMS WITH VARIATIONS IN CEILING HEIGHT (SLOPED, PITCHED ETC.), REFER TO THE MANUFACTURERS GUIDELINES FOR PROPER PLACEMENT.
- CO ALARMS MUST RECEIVE THEIR PRIMARY POWER FROM A COMMERCIAL SOURCE AND BE EQUIPPED WITH A BATTERY BACKED-UP ALARM WIRING SHALL BE DIRECTLY CONNECTED TO THE PERMANENT BUILDING WIRING WITHOUT A DISCONNECTING SWITCH OTHER THAN THAT REQUIRED FOR OVER CURRENT PROTECTION. (CRC R315.1.)
- HEAT REGISTER: C= CEILING, F= FLOOR, T/K = TOE KICK
- C.A.R. COLD AIR RETURN: C= CEILING, L/W = LOW WALL
- TV TELEVISION/CABLE INTERNET
- T THERMOMETER CONTROL
- CHANDELIER
- C5 CAT 5 JACK
- T.J. TELEPHONE/OPTIC CABLE JACK
- $ SWITCH:
  - 3W = WAY SWITCH
  - D = DIMMER
  - 3D = 3 WAY DIMMER
  - 4D = 3 WAY DIMMER
  - S= MANUEL-ON OCCUPANCY SENSOR Sv = VACANCY SENSOR
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  - 220V = 220 VOLT 2 - PRONG OUTLET
  - GFI = CIRCUIT INTERRUPTOR
  - WP = WATER PROOF
- HB WATER STUB OUT - A SIGN OR VALVE TAG SHALL BE INSTALLED AT THE MAIN SHUTOFF VALVE TO BE WATER DISTRIBUTION SYSTEM STATING THE FOLLOWING: "WARNING, THE WATER SYSTEM FOR THIS HOME SUPPLIES FIRE SPRINKLERS THAT REQUIRE CERTAIN FLOWS AND PRESSURES TO FIGHT FIRE. DEVICES THAT RESTRICT THE FLOW OR DECREASE THE PRESSURE OR AUTOMATICALLY SHUT OFF THE WATER TO THE FIRE SPRINKLER SYSTEM, SUCH AS WATER SOFTENERS, FILTRATION SYSTEMS AND AUTOMATIC SHUTOFF VALVES, SHALL NOT BE ADDED TO THIS SYSTEMS WITHOUT A REVIEW OF THE FIRE SPRINKLER SYSTEM BY A FIRE PROTECTION SPECIALIST. DO NOT REMOVE THIS SIGN." (CRC R313.3.7)
- G/M GAS METER
- G GAS STUB OUT
- E/M 200 AMPS. ELECTRICAL METER

REVISIONS	BY
1 7/16/19	KB

ELECTRICAL PLAN

LEGALIZE AN AS-BUILT 2ND DWELLING FOR:

THE CASASSA FAMILY
500 SUMMIT ROAD
MORGAN HILL, CA 95307

LANDMARK DESIGNS
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408-761-1218

DRAWN BY: K.B.
CHECKED BY: M.C./C.C.
DATE: JUNE 16, 2020
SCALE: 1/4" = 1'0"
JOB:
SHEET: E 1

SEE SHEET S-3 STRUCURAL FOUNDATION & FRAMING

SEE SHEET S-1 AND S-2 STRUCURAL FOUNDATION & FRAMING

(N) REDWOOD DECK

(N) BEDROOM

OPEN BEAM CEILING

(N) LIVING ROOM

(N) SUNROOM

CLOSET

24X30 ATTIC ACCESS

MIRROR

MC.

(N) BATH

SHELF & POLE (TYP.)

FRAME IN (E) OPENING

(E) MASTER BDRM

(E) BATH

(E) SITTING ROOM

(E) GAME ROOM

(E) BEDROOM

(E) DINING ROOM

REF.

(E) KITCHEN

NO.	REVISIONS

Romeo C. Cabalar, P.E.

consulting engineers, inc.
Structural Analysis & Design
SAN JOSE MAIN OFFICE:
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REGISTERED PROFESSIONAL ENGINEER ROMEO C. CABALAR C 46956 CIVIL STATE OF CALIFORNIA

JANUARY 25, 2021

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A PROPOSED REMODEL RESIDENCE FOR:

CASASSA RESIDENCE

500 SUMMIT ROAD WATSONVILLE, CA 95076

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PROJ. NO. 16-208	DATE 5-24-19
DRAWING NO.	S-0
	SHEET(S)

16208-24X36

NOTES:

1. ALL ANCHOR BOLTS NOT SHOWN ARE TO BE 5/8" DIA. x 12" A307 ANCHOR BOLT AT 4'-0"o.c. W/ 3" x 3" x 1/4" WASHER PLATE. SEE PLAN FOR FOR SPECIAL ANCHOR BOLT REFERENCE AT SHEAR WALLS. WHERE REQUIRED, USE HOT DIPPED GALVANIZED ANCHOR BOLTS, NAILS AND HARDWARES THAT ARE ATTACHED TO P.T.D.F. MUDSILL. PER RELEVANT CITY CODE REQUIREMENTS.
2. ALL HOLDOWNS SHOWN ON THIS PLAN TO BE CONNECTED FROM POST IN 1ST. FLOOR WALL TO FOOTING BELOW (UNO) AND TO BE INSTALLED PER SIMPSON CO. SPECIFICATIONS.
3. ALL INTERIOR FOOTING LOCATIONS NOT DIMENSIONED SHALL BE EQUALLY SPACED BETWEEN DIMENSIONED FOOTINGS AND/OR THE PERIMETER FOUNDATION.
4. STITCH NAIL ALL DOUBLE OR TRIPLE MEMBERS W/ 16d @ 4" o.c. STAGGERED (TYP.).
5. SEE DETAIL SHEETS FOR ADDITIONAL NOTES AND DETAILS.

LEGEND:

(N) CONT. FOOTING

(N) FOOTING

(E) CONT. FOOTING

SHEAR MATERIAL AND ANCHOR BOLT SPACING IDENTIFIER, (SEE SHEAR WALL SCHEDULE ON SHEET SD-4).

HD OR HDU5 — INDICATES LOCATION OF SIMPSON HDU5 HOLDOWN (FULLY SCREWED W/ 14-SDS 1/4x2 1/2) W/ 2 -2x POST, UNO. (PRE-DRILL NAILS OR USE 4x MIN. IF SPLITTING OCCURS) W/ SSTB24 AT (N) CONC. LOCATION.

TYPICAL DETAILS		
FRAMING CONDITION		DETAIL NO.
1		
2	SHEAR TRANSFER CORNER DETAIL	4/SD-4
3	NON-BRS WALL CONNECTION	10/SD-2
4	CEILING JOIST TO BALLOON FRAME WALL	11/SD-2
5	TOP PLATE SPLICE CONNECTION	3/SD-4
6	TIEDOWN/ HOLDOWN CONNECTION	1/SD-5, 3/SD-5, 6/SD-5, 8/SD-5, 11/SD-5
7	ROOF FRAMED OPENING	6/SD-2
8	PLYWOOD SHEARWALL INSTALLATION	1/SD-4
9	JOIST AND STUD CUTOUT DETAIL	1/SD-2
10	TYPICAL STUD LOCATIONS	2/SD-2
11	ROOF & FLOOR PLYWOOD INSTALLATION	3/SD-2
12	FRAMED WALL OPENING	7/SD-2
13	STRAP TO BEAM DETAIL	9/SD-2
14	BEAM TO POST CONNECTION	12/SD-2,

HOLDOWN NOTES:

1. ALL STRAP TYPE ANCHORS TO BE INSTALLED OVER PLYWD. SHEAR MATERIAL.
2. ALL DBL. 2x4 POSTS AT HOLDOWN, 'HD' OR STRAP LOCATIONS TO BE NAILED TOGETHER WITH 16d AT 4"o.c., STAGGERED.
3. IF 2x SHIMS OR 'PAD-OUT' STUDS ARE USED BETWEEN THE HOLDOWN ANCHOR AND THE POST SPECIFIED, ATTACH SHIMS TO THE SPECIFIED POST WITH A MINIMUM OF 16d AT 4"o.c., STAGGERED.

NOTE:

USE 2x6 STUDS AT ALL PLUMBING WALLS SEE ARCHITECTURAL DRAWINGS FOR LOCATION

INSTALL 14" x 6" G.S.M. FOUNDATION VENTS, W/ 1 SQUARE FOOT OF VENT FOR EVERY 150 SQUARE FEET OF UNDER FLOOR AREA. PLACE VENTS ON APPROXIMATELY OPPOSITE CORNERS FOR CROSS VENTILATION.

CORROSION PROTECTION NOTE:

CORROSION PROTECTION FOR NAILS AND OTHER HARDWARE ATTACHED TO PRESSURE TREATED LUMBER, OF PARTICULAR CONCERN IS THE SHEAR WALL EDGE NAILING INTO A PRESSURE-TREATED SILL PLATE. (NOTE: AS OF JAN. 1, 2004, MOST PRESSURE TREATED LUMBER WILL UTILIZE NEW CHEMICALS THAT ARE MORE CORROSIVE THAN THE TRADITIONAL CCA-C PROCESS.) USE GALVANIZED PRODUCTS, NOTE THAT THEY ARE TO BE HOT DIPPED GALVANIZED.

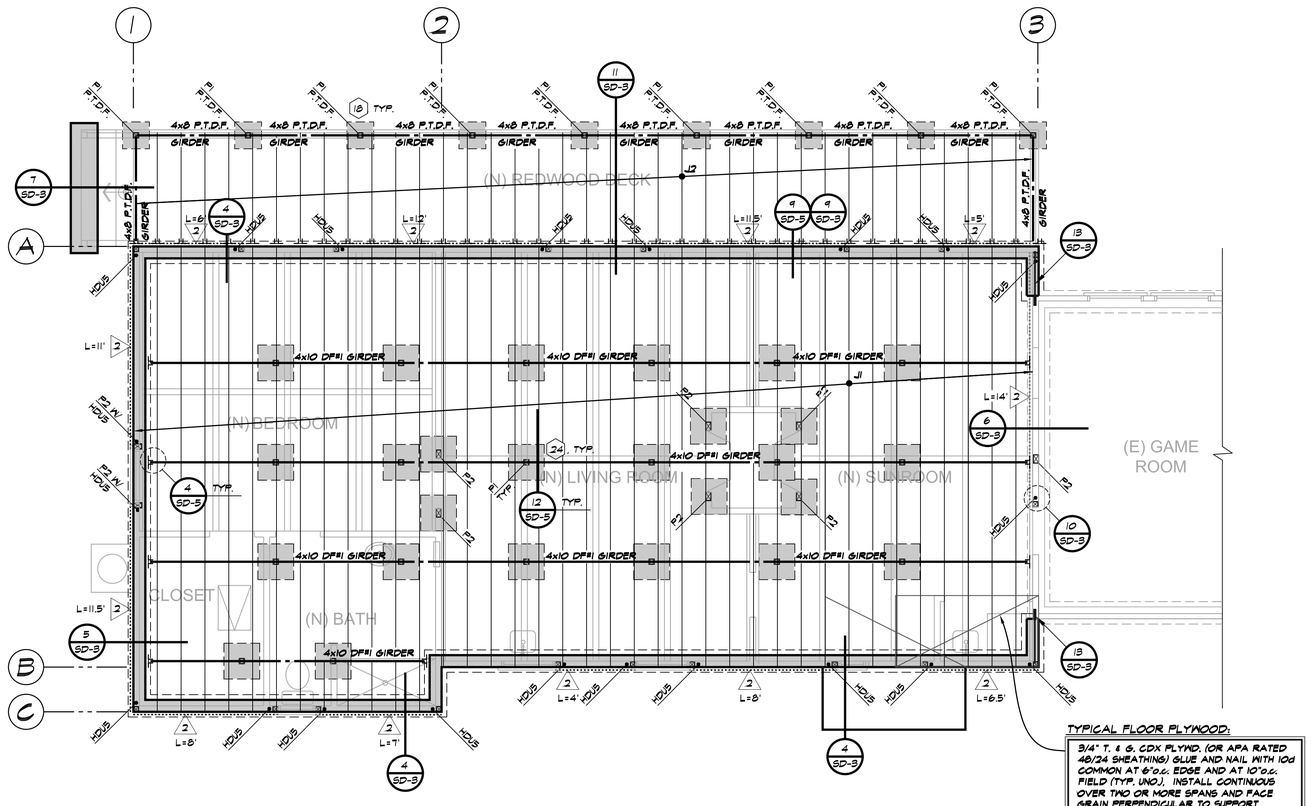
NEW FOOTING SHALL MATCH EXISTING

PRIOR TO THE CONSTRUCTION OF THE NEW FOUNDATION, VERIFICATION IS REQUIRED TO SHOW THAT THE NEW FOUNDATION SYSTEM MATCHES THE EXISTING (E) FOOTINGS. EXCAVATE AS REQUIRED FOR THE FIELD INSPECTOR TO VERIFY THE TYPE OF EXISTING FOUNDATION SYSTEM, PIER AND GRADE BEAM FOUNDATION SYSTEM SHALL BE AS PER THE LATEST CALIFORNIA BUILDING CODE AND SHALL BE DESIGNED BY A CIVIL, OR STRUCTURAL ENGINEER AND APPROVED BY THE CITY BUILDING DIVISION PRIOR TO COMMENCING OF CONSTRUCTION. PIER DEPTH SHALL BE MINIMUM AS EXISTING.

TYPICAL POST	
POST SIZE	
DS	DOUBLE STUDS
P1	4x4 POST
P2	4x6 POST
P3	4x8 POST
P4	6x6 POST
P5	6x8 POST

FOOTING SCHEDULE	
FOOTING SIZE	
18	1'-6" SQ.x24" THK. FTG W/ 3-#5 EACH WAY
24	2'-0" SQ.x24" THK. FTG W/ 4-#5 EACH WAY
30	2'-6" SQ.x24" THK. FTG.W/ 5-#5 EACH WAY
36	3'-0" SQ.x24" THK. FTG. W/ 5-#5 EACH WAY
42	3'-6" SQ.x24" THK. FTG.W/ 6-#5 EACH WAY
48	4'-0" SQ.x24" THK. FTG.W/ 7-#5 EACH WAY
54	4'-6" SQ.x24" THK. FTG.W/ 8-#5 EACH WAY

UNDERPINNING FOOTING SIZE	
24U	2'-0" SQ.x24" THK. FTG W/ 2-#4 EACH WAY
30U	2'-6" SQ.x24" THK. FTG.W/ 3-#4 EACH WAY
36U	3'-0" SQ.x24" THK. FTG. W/ 4-#5 EACH WAY



REDWOOD SELECT STRUCTURAL MAYBE USED IN LIEN OF DOUGLAS FIR

TYPICAL FLOOR JOIST, U.N.O.	
J1	2x12 FLR. JST. @ 16" oc.
J2	2x6 REDWOOD DECKING @ 16" oc.

PARTIAL FOUNDATION PLAN

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

NO.	REVISIONS

Romeo C. Cabalar, P.E.

consulting engineers, inc.
Structural Analysis & Design

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REGISTERED PROFESSIONAL ENGINEER ROMEO C. CABALAR C 46956 CIVIL STATE OF CALIFORNIA

JANUARY 25, 2021

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CASASSA RESIDENCE

500 SUMMIT ROAD WATSONVILLE, CA 95076

LANDMARK DESIGNS
RESIDENTIAL ARCHITECTURAL DESIGN
CONSTRUCTION DOCUMENTS & PERMIT EXPEDITING
PHYLLIS LANDY • ARCHITECTURAL DESIGNER
P.O. BOX 2813 APTOS, CA 95001 (831) 212-1218

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S—1

SHEET(S)

16208-24X36

ROOF FRAMING NOTES

1. PROVIDE A 2-2x POST BELOW ALL BEAM ENDS UNLESS A LARGER POST IS SPECIFIED.
2. NAIL ROOF PLYWOOD W/ EDGE NAILING TO ALL FRIEZE BLOCKING AT EXTERIOR WALLS AND RAFTERS IN LINE WITH EXTERIOR WALLS OR INTERIOR SHEAR WALLS
3. EXTEND ALL ROOF PLYWOOD BELOW CALIF. FRAMED AREAS AND EDGE NAIL TO BEAM OR PERIMETER WALL BLOCKING.
4. NAIL SHEAR MATERIAL WITH TWO ROWS OF EDGE NAILING TO ALL POSTS ATTACHED TO HOLDOWN ANCHORS OR STRAPS.
5. AT ALL POSTS, PROVIDE A POST OF IDENTICAL SIZE (UNLESS A LARGER IS SPECIFIED IN FLOOR AND WALLS BELOW.
6. LOCATE ALL FLUSH BEAMS DIRECTLY BELOW BEARING WALL OR POST IN FLOOR ABOVE.
7. NAIL FLOOR PLYWOOD WITH EDGE NAILING TO ALL FLUSH BEAMS, JOISTS OR BLOCKING IN LINE WITH OR OVER EXTERIOR WALLS OR SHEAR WALLS.
8. ALL EXTERIOR PORCH POST'S ARE TO BE SUPPORTED ON A RAISED CONCRETE CURB. SEE FOUNDATION DRAWINGS AND ARCHITECTURAL DRAWINGS (BY OTHERS) FOR MORE INFORMATION.
9. PROVIDE SOLID 2x BLOCKING BETWEEN RAFTERS OVER ALL BEARING WALLS AND BEAMS. ATTACH TO BEAM OR WALL BELOW WITH 3-16d PER BLOCK, UNO. EDGE NAIL PLYWD. TO BLOCKING.
10. SEE DETAIL SHEETS FOR ADDITIONAL NOTES AND DETAILS.
11. DO NOT OVERDRIVE NAILS INTO PLYWOOD. IF NAIL GUN IS USED, GUN SHOULD BE ADJUSTED TO UNDERDRIVE NAIL, THEN NAILS ARE TO BE HAND DRIVEN SO THAT THE HEAD OF THE NAIL IS FLUSH WITH THE FACE OF THE PLYWOOD.
12. AT NAILED CONNECTIONS, CARE IS TO BE TAKEN DURING CONSTRUCTION TO ENSURE THAT SPLITTING OF WOOD DOES NOT OCCUR. ANY SPLIT MEMBERS SHALL BE REMOVED AND REPLACED, USING A METHOD OF ATTACHING THE SPECIFIED CONNECTORS IN A WAY TO PREVENT SPLITTING.
13. ALL SPECIFIED BLOCKING IS TO BE INSTALLED "TIGHT" BETWEEN ADJACENT MEMBERS.
14. WALL, WINDOW, DOOR AND OPENING LOCATIONS SHOWN ON THIS PLAN ARE FOR REFERENCE ONLY. SEE ARCHITECTURAL PLANS FOR ALL DIMENSIONS AND EXACT LOCATIONS.
15. ALL HATCHED AREAS SHOWN ON FRAMING PLANS BELOW INDICATE CALIFORNIA FRAMING W/ 2x6 AT 24"o.c. SUPPORT RIDGE, HIP AND VALLEYS W/ KICKER AT 45°o.c. TO RAFTER BELOW (TYP. UNO.)

LEGEND

- 2x4 AT 16"o.c. STUDWALL BELOW (SEE SHEAR WALL SCHEDULE ON SHEET SD-4 FOR LOCATION OF 3x STUDS).
- 2x6 AT 16"o.c. STUD WALL BELOW, UNO(SEE ARCH'L. FOR OTHER LOCATIONS)
- 4x12 HEADER BM. (U.N.O.), REQ'D. AT EXT. WALLS & INT. BRG. WALLS ONLY.
- 6x10 HEADER BEAM AT 2x6 STUDWALL LOCATIONS.
- INTERIOR BEARING WALL.
- PROVIDE 3/8" PLYWOOD, NAIL W/ 8d COMMON AT 4"o.c. EDGE AND AT 12"o.c. FIELD, AT EXTERIOR NON-SHEAR WALL LOCATIONS
- SHEAR MATERIAL AND ANCHOR BOLT SPACING IDENTIFIER, (SEE SHEAR WALL SCHEDULE ON SHEET (13 / SD-4)).

HD OR HDU5 — INDICATES LOCATION OF SIMPSON HDU5 HOLDOWN (FULLY SCREWED W/ 14-SDS 1/4x2 1/2) W/ 2 -2x POST, UNO. (PRE-DRILL NAILS OR USE 4x MIN. IF SPLITTING OCCURS) W/ SSTB24 AT (N) CONC. LOCATION.

INDICATES LOCATION OF SIMPSON MST48 BM TO PLATE, JST. TO PLATE, BM TO JST., OR JST. TO JST.

'CS' & 'CMST' STRAP CLARIFICATION:

STRAP LENGTH CLARIFICATION EXAMPLE: CMST12/45"

- STRAP IDENTIFICATION, SEE SIMPSON CATALOG FOR ADDITIONAL INFO.
- REQUIRED END LENGTH (AT EACH END), SEE SIMPSON CATALOG FOR TOTAL CUT LENGTH REQUIREMENTS. FILL ALL HOLES, LOCATED WITHIN THE END LENGTH SPECIFIED, WITH SIMPSON N16 NAILS, INCLUDING TRIANGULAR HOLES. USE 14" END LENGTH NAILING, U.N.O. FOR CS16 STRAP, 45" END LENGTH NAILING, U.N.O. FOR CMST12 STRAP, 25" END LENGTH NAILING, U.N.O FOR CMSTC16.

STRAP LENGTH CLARIFICATION EXAMPLE: CMST12x90"

- TOTAL LENGTH OF STRAP USE 36" TOTAL LENGTH CLARIFICATION FOR CS16; U.N.O., 50" TOTAL LENGTH FOR CMSTC16; U.N.O.

MICRO-LAM NAILING:

3- ML WITH 3- ROWS OF 16d COMMON NAILS AT 12"o.c. EACH SIDE (STAGS.) OR 2- ROWS OF ½" Ø M.B.'S AT 24"o.c. (STAGS.)

2- ML WITH 2- ROWS OF 16d COMMON NAILS AT 12"o.c. EACH SIDE (STAGS.) OR 2- ROWS OF ½" Ø M.B.'S AT 24"o.c. (STAGS.)

NOTE: USE 2x6 STUDS AT ALL PLUMBING WALLS SEE ARCHITECTURAL DRAWINGS FOR LOCATION

PROVIDE 1/2" PLYWOOD W/ TYPE 2 NAILING AT ALL PONY WALL ABOVE LOW ROOF

CORROSION PROTECTION NOTE:

CORROSION PROTECTION FOR NAILS AND OTHER HARDWARE ATTACHED TO PRESSURE TREATED LUMBER, OF PARTICULAR CONCERN IS THE SHEAR WALL EDGE NAILING INTO A PRESSURE-TREATED SILL PLATE. (NOTE: AS OF JAN. 1, 2004, MOST PRESSURE TREATED LUMBER WILL UTILIZE NEW CHEMICALS THAT ARE MORE CORROSIVE THAN THE TRADITIONAL CCA-C PROCESS.) USE GALVANIZED PRODUCTS, NOTE THAT THEY ARE TO BE HOT DIPPED GALVANIZED.

LVL OR ML	1 3/4" x 11 7/8" MICRO-LAM BEAM, MANUFACTURED BY TRUS JOIST CO.,U.N.O.
PSL	3 1/2" x 11 7/8" PARALLAM BEAM, MANUFACTURED BY TRUS JOIST CO., U.N.O.
LSL OR TS	1 1/4" x 11 7/8" TIMBERSTRAND RIM, MANUFACTURED BY TRUS JOIST CO.
KP	KICKER POST TO BEAM OR PLATE BELOW. FOR TYPICAL RQUIREMENTS, SEE CORRESPONDING DETAILS.
FCB	FLUSH CEILING/FLOOR BEAM
PSL	PARALLAM BEAM, MANUFACTURED BY TRUSS JOIST CO.
D.S.	DOUBLE STUDS (UNDER BEAM, G.T., OR HEADER, U.N.O)

CEILING JOIST SCHEDULE ALTERNATE TO 24" o.c. SPACING		HANGERS
HORIZ. SPAN	SIZE & SPACING	SIMPSON TYPE
0'0" TO 9'-0"	2X4 DF #2 @ 16" O.C.	U24
9'-1" TO 15'-6"	2X6 DF #2 @ 16" O.C.	U26
15'-7" TO 20'-0"	2X8 DF #2 @ 16" O.C.	U28
20'-1" TO 24'-0"	2X10 DF #2 @ 16" O.C.	U210
24'-1" TO 28'-0"	2X12 DF#2 @ 16" O.C.	U210

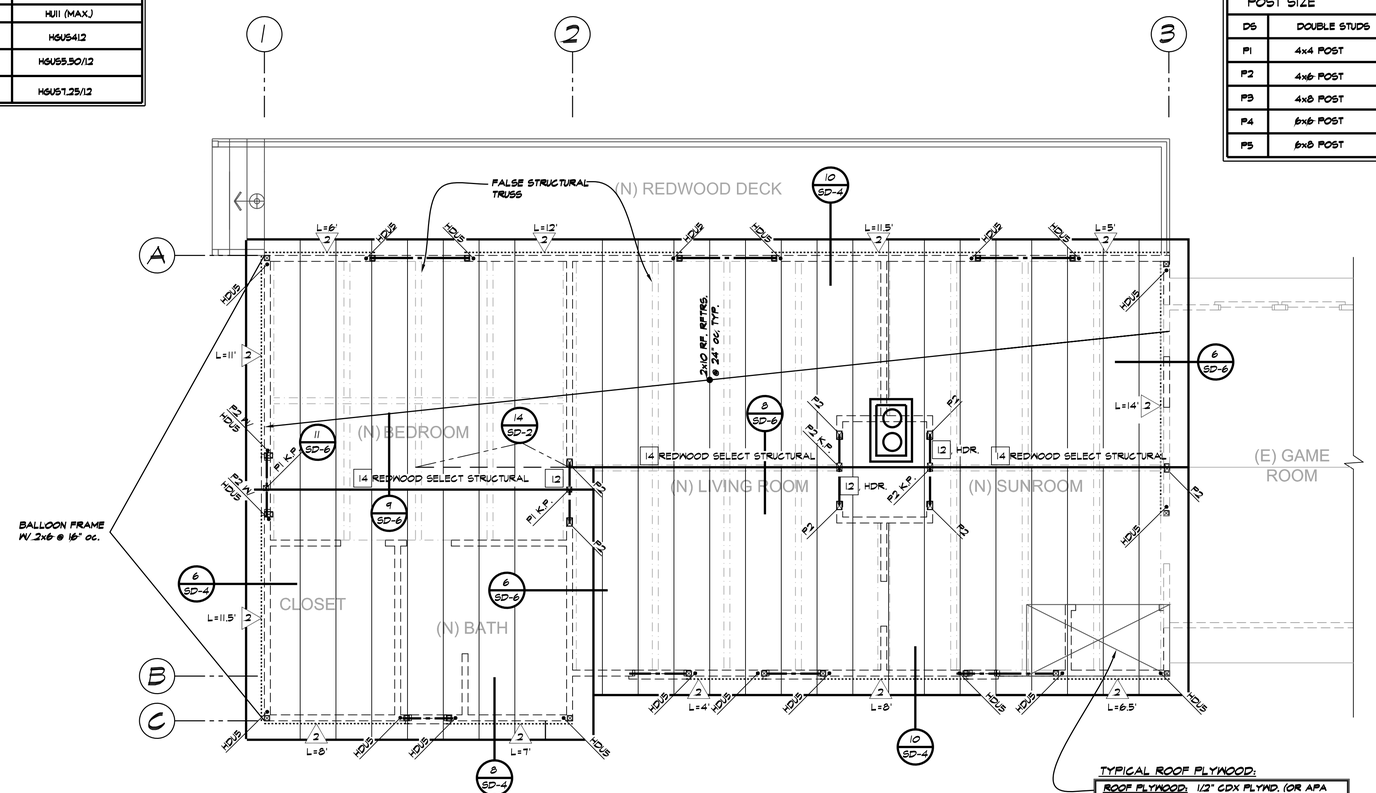
CEILING JOIST SCHEDULE		HANGERS
HORIZ. SPAN	SIZE & SPACING	SIMPSON TYPE
0'0" TO 8'-0"	2X4 DF #2 @ 24" O.C.	U24
8'-1" TO 13'-6"	2X6 DF #2 @ 24" O.C.	U26
13'-7" TO 1710"	2X8 DF #2 @ 24" O.C.	U28
17'-1" TO 20'-0"	2X10 DF #2 @ 24" O.C.	U210
20'-1" TO 24'-0"	2X12 DF#2 @ 24" O.C.	U210

HANGER SCHEDULE JOISTS & BEAMS, U.N.O.		
JOISTS/ BEAM	TOP FLANGE HANGER	FACE MOUNT HANGER
2x	-	LUS'
LVL	HPU1.81/11.88	HUI1 (MAX.)
3 1/2 x 11 7/8 OR 2 -LVL	HHU3.56/ 11.88	HGUS412
5 1/4 x 11 7/8 PSL OR 3 - LVL	HHU5.50/ 11.88	HGUS5.50/12
7 x 11 7/8 PSL	HHU7.12/ 11.88	HGUS7.25/12

TYPICAL DETAILS		
FRAMING CONDITION		DETAIL NO.
1		
2	SHEAR TRANSFER CORNER DETAIL	4/SD-4
3	NON-BRG WALL CONNECTION	10/SD-2
4	CEILING JOIST TO BALLOON FRAME WALL	11/SD-2
5	TOP PLATE SPLICE CONNECTION	3/SD-4
6	TIEDOWN/ HOLDOWN CONNECTION	1/SD-5, 3/SD-5, 6/SD-5, 8/SD-5, 11/SD-5
7	ROOF FRAMED OPENING	6/SD-2
8	PLYWOOD SHEARWALL INSTALLATION	1/SD-4
9	JOIST AND STUD CUTOUT DETAIL	1/SD-2
10	TYPICAL STUD LOCATIONS	2/SD-2
11	ROOF & FLOOR PLYWOOD INSTALLATION	3/SD-2
12	FRAMED WALL OPENING	7/SD-2
13	STRAP TO BEAM DETAIL	9/SD-2
14	BEAM TO POST CONNECTION	12/SD-2

TYPICAL BEAM/HDR SCHEDULE	
FRAMING SIZE	
1	3 1/2 x 11 7/8 PSL
2	5 1/4 x 11 7/8 PSL
3	7 x 11 7/8 PSL
4	3 1/2 x 14 PSL
5	5 1/4 x 14 PSL
6	7 x 14 PSL
7	5 1/4 x 16 PSL
8	5 1/4 x 18 PSL
9	3 1/2 x 9 1/2 PSL
10	5 1/4 x 9 1/2 PSL
10	7 x 9 1/2 PSL
11	4x10
12	4x12
13	6x10
14	6x12

TYPICAL POST	
POST SIZE	
DS	DOUBLE STUDS
P1	4x4 POST
P2	4x6 POST
P3	4x8 POST
P4	6x6 POST
P5	6x8 POST



REDWOOD SELECT STRUCTURAL MAYBE USED INLIEN OF DOUGLAS FIR

TYPICAL ROOF PLYWOOD:

ROOF PLYWOOD: 1/2" CDX PLYWD. (OR APA RATED 32/16 SHTHG.), NAIL WITH 8d COMMON AT 6"o.c. EDGE AND 12"o.c. FIELD (APPLY AT RT. ANGLES TO RAFTERS) INSTALL CONTINUOUS OVER TWO OR MORE SPANS AND FACE GRAIN PERPENDICULAR TO SUPPORT.

PARTIAL ROOF FRAMING

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

NO.	REVISIONS

Romeo C. Cabalar, P.E.

consulting engineers, inc.
Structural Analysis & Design

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REGISTERED PROFESSIONAL ENGINEER ROMEO C. CABALAR C 46956 CIVIL STATE OF CALIFORNIA

JANUARY 25, 2021

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A PROPOSED REMODEL RESIDENCE FOR:

CASASSA RESIDENCE

500 SUMMIT ROAD WATSONVILLE, CA 95076

LANDMARK DESIGNS
RESIDENTIAL DESIGN CONSULTANT
CONSTRUCTION DOCUMENTS PREPARATION
PHIL LANDMARK (831) 840-1138
P.O. BOX 1833 CAPITOLA, CA 95010

SCALE	NOT TO SCALE, U.N.O.
DRAWN	CHECKED RC
PROJ. NO. 16-208	DATE 5-24-19
DRAWING NO.	S-2
SHEET(S)	

16208-24X36

FOUNDATION NOTES:

1. ALL ANCHOR BOLTS NOT SHOWN ARE TO BE 5/8" DIA. x 12" A307 ANCHOR BOLT (MIN. 7" EMBEDMENT) 4'-0"o.c. W/ 3" x 3" x 1/4" WASHER PLATE. SEE PLAN FOR FOR SPECIAL ANCHOR BOLT REFERENCE AT SHEAR WALLS. WHERE REQUIRED, USE HOT DIPPED GALVANIZED ANCHOR BOLTS, NAILS AND HARDWARES THAT ARE ATTACHED TO P.T.D.F. MUDSILL. PER RELEVANT CITY CODE REQUIREMENTS.
2. ALL HOLDOWNS SHOWN ON THIS PLAN TO BE CONNECTED FROM POST IN 1ST. FLOOR WALL TO FOOTING BELOW (UNO) AND TO BE INSTALLED PER SIMPSON CO. SPECIFICATIONS.
3. ALL INTERIOR FOOTING LOCATIONS NOT DIMENSIONED SHALL BE EQUALLY SPACED BETWEEN DIMENSIONED FOOTINGS AND/OR THE PERIMETER FOUNDATION.
4. STITCH NAIL ALL DOUBLE OR TRIPLE MEMBERS W/ 16d @ 4" o.c., STAGGERED (TYP.).
5. SEE DETAIL SHEETS FOR ADDITIONAL NOTES AND DETAILS.

LEGEND:

(E) FOOTING

(E) CONT. FOOTING

SHEAR MATERIAL AND ANCHOR BOLT SPACING IDENTIFIER, (SEE SHEAR WALL SCHEDULE ON SHEET SD-4).

HD OR HDU5 — INDICATES LOCATION OF SIMPSON HDU5 HOLDOWN (FULLY SCREWED W/ 14-SDS 1/4x2 1/2) W/ 2 -2x POST, UNO. (PRE-DRILL NAILS OR USE 4x MIN. IF SPLITTING OCCURS) W/ SB5/8x24 AT (N) CONC. LOCATION.

TYPICAL DETAILS		
	FRAMING CONDITION	DETAIL NO.
1		
2	SHEAR TRANSFER CORNER DETAIL	4/SD-4
3	NON-BRG WALL CONNECTION	10/SD-2
4	CEILING JOIST TO BALLOON FRAME WALL	11/SD-2
5	TOP PLATE SPLICE CONNECTION	3/SD-4
6	TIEDOWN/ HOLDOWN CONNECTION	1/SD-5, 3/SD-5, 6/SD-5, 8/SD-5, 11/SD-5
7	ROOF FRAMED OPENING	6/SD-2
8	PLYWOOD SHEARWALL INSTALLATION	1/SD-4
9	JOIST AND STUD CUTOUT DETAIL	1/SD-2
10	TYPICAL STUD LOCATIONS	2/SD-2
11	ROOF & FLOOR PLYWOOD INSTALLATION	3/SD-2
12	FRAMED WALL OPENING	7/SD-2
13	STRAP TO BEAM DETAIL	9/SD-2
14	BEAM TO POST CONNECTION	12/SD-2.

NOTE:
USE 2x6 STUDS AT ALL PLUMBING WALLS SEE ARCHITECTURAL DRAWINGS FOR LOCATION

INSTALL 14" x 6" G.S.M. FOUNDATION VENTS, W/ 1 SQUARE FOOT OF VENT FOR EVERY 150 SQUARE FEET OF UNDER FLOOR AREA. PLACE VENTS ON APPROXIMATELY OPPOSITE CORNERS FOR CROSS VENTILATION.

HOLDOWN NOTES:
1. ALL STRAP TYPE ANCHORS TO BE INSTALLED OVER PLYWD. SHEAR MATERIAL.
2. ALL DBL. 2x4 POSTS AT HOLDOWN, 'HD' OR STRAP LOCATIONS TO BE NAILED TOGETHER WITH 16d AT 4"o.c., STAGGERED.
3. IF 2x SHIMS OR 'PAD-OUT' STUDS ARE USED BETWEEN THE HOLDOWN ANCHOR AND THE POST SPECIFIED, ATTACH SHIMS TO THE SPECIFIED POST WITH A MINIMUM OF 16d AT 4"o.c., STAGGERED.

CORROSION PROTECTION NOTE:
CORROSION PROTECTION FOR NAILS AND OTHER HARDWARE ATTACHED TO PRESSURE TREATED LUMBER. OF PARTICULAR CONCERN IS THE SHEAR WALL EDGE NAILING INTO A PRESSURE-TREATED SILL PLATE. (NOTE: AS OF JAN. 1, 2004, MOST PRESSURE TREATED LUMBER WILL UTILIZE NEW CHEMICALS THAT ARE MORE CORROSIVE THAN THE TRADITIONAL CCA-C PROCESS.) USE GALVANIZED PRODUCTS, NOTE THAT THEY ARE TO BE HOT DIPPED GALVANIZED. ALSO IF EXPOSED TO WEATHER.

NEW FOOTING SHALL MATCH EXISTING
PRIOR TO THE CONSTRUCTION OF THE NEW FOUNDATION, VERIFICATION IS REQUIRED TO SHOW THAT THE NEW FOUNDATION SYSTEM MATCHES THE EXISTING (E) FOOTINGS. EXCAVATE AS REQUIRED FOR THE FIELD INSPECTOR TO VERIFY THE TYPE OF EXISTING FOUNDATION SYSTEM. PIER AND GRADE BEAM FOUNDATION SYSTEM SHALL BE AS PER THE LATEST CALIFORNIA BUILDING CODE AND SHALL BE DESIGNED BY A CIVIL, OR STRUCTURAL ENGINEER AND APPROVED BY THE CITY BUILDING DIVISION PRIOR TO COMMENCING OF CONSTRUCTION. PIER DEPTH SHALL BE MINIMUM AS EXISTING.

ROOF FRAMING NOTES

1. PROVIDE A 2-2x POST BELOW ALL BEAM ENDS UNLESS A LARGER POST IS SPECIFIED.
2. NAIL ROOF PLYWOOD W/ EDGE NAILING TO ALL FRIEZE BLOCKING AT EXTERIOR WALLS AND RAFTERS IN LINE WITH EXTERIOR WALLS OR INTERIOR SHEAR WALLS
3. EXTEND ALL ROOF PLYWOOD BELOW CALIF. FRAMED AREAS AND EDGE NAIL TO BEAM OR PERIMETER WALL BLOCKING.
4. NAIL SHEAR MATERIAL WITH TWO ROWS OF EDGE NAILING TO ALL POSTS ATTACHED TO HOLDOWN ANCHORS OR STRAPS.
5. AT ALL POSTS, PROVIDE A POST OF IDENTICAL SIZE (UNLESS A LARGER IS SPECIFIED IN FLOOR AND WALLS BELOW.
6. LOCATE ALL FLUSH BEAMS DIRECTLY BELOW BEARING WALL OR POST IN FLOOR ABOVE.
7. NAIL FLOOR PLYWOOD WITH EDGE NAILING TO ALL FLUSH BEAMS, JOISTS OR BLOCKING IN LINE WITH OR OVER EXTERIOR WALLS OR SHEAR WALLS.
8. ALL EXTERIOR PORCH POST'S ARE TO BE SUPPORTED ON A RAISED CONCRETE CURB. SEE FOUNDATION DRAWINGS AND ARCHITECTURAL DRAWINGS (BY OTHERS) FOR MORE INFORMATION.
9. PROVIDE SOLID 2x BLOCKING BETWEEN RAFTERS OVER ALL BEARING WALLS AND BEAMS. ATTACH TO BEAM OR WALL BELOW WITH 3-16d PER BLOCK, UNO. EDGE NAIL PLYWD. TO BLOCKING.
10. SEE DETAIL SHEETS FOR ADDITIONAL NOTES AND DETAILS.
11. DO NOT OVERDRIVE NAILS INTO PLYWOOD. IF NAIL GUN IS USED, GUN SHOULD BE ADJUSTED TO UNDERDRIVE NAIL, THEN NAILS ARE TO BE HAND DRIVEN SO THAT THE HEAD OF THE NAIL IS FLUSH WITH THE FACE OF THE PLYWOOD.
12. AT NAILED CONNECTIONS, CARE IS TO BE TAKEN DURING CONSTRUCTION TO ENSURE THAT SPLITTING OF WOOD DOES NOT OCCUR. ANY SPLIT MEMBERS SHALL BE REMOVED AND REPLACED, USING A METHOD OF ATTACHING THE SPECIFIED CONNECTORS IN A WAY TO PREVENT SPLITTING.
13. ALL SPECIFIED BLOCKING IS TO BE INSTALLED "TIGHT" BETWEEN ADJACENT MEMBERS.
14. WALL, WINDOW, DOOR AND OPENING LOCATIONS SHOWN ON THIS PLAN ARE FOR REFERENCE ONLY. SEE ARCHITECTURAL PLANS FOR ALL DIMENSIONS AND EXACT LOCATIONS.
15. ALL HATCHED AREAS SHOWN ON FRAMING PLANS BELOW INDICATE CALIFORNIA FRAMING W/ 2x6 AT 24"o.c. SUPPORT RIDGE, HIP AND VALLEYS W/ KICKER AT 48"o.c. TO RAFTER BELOW (TYP. UNO.)

LEGEND

2x4 AT 16"o.c. STUDWALL BELOW (SEE SHEAR WALL SCHEDULE ON SHEET SD-4 FOR LOCATION OF 3x STUDS).

2x6 AT 16"o.c. STUD WALL BELOW, UNO.(SEE ARCH'L. FOR OTHER LOCATIONS)

4x12 HEADER BM. (U.N.O.), REQ'D. AT EXT. WALLS & INT. BRG. WALLS ONLY.

6x10 HEADER BEAM AT 2x6 STUDWALL LOCATIONS.

INTERIOR BEARING WALL.

PROVIDE 3/8" PLYWOOD, NAIL W/ 8d COMMON AT 4"o.c. EDGE AND AT 12"o.c. FIELD. AT EXTERIOR NON-SHEAR WALL LOCATIONS

SHEAR MATERIAL AND ANCHOR BOLT SPACING IDENTIFIER, (SEE SHEAR WALL SCHEDULE ON SHEET 13/SD-4).

INDICATES LOCATION OF SIMPSON MST48 BM TO PLATE, JST. TO PLATE, BM TO JST., OR JST. TO JST.

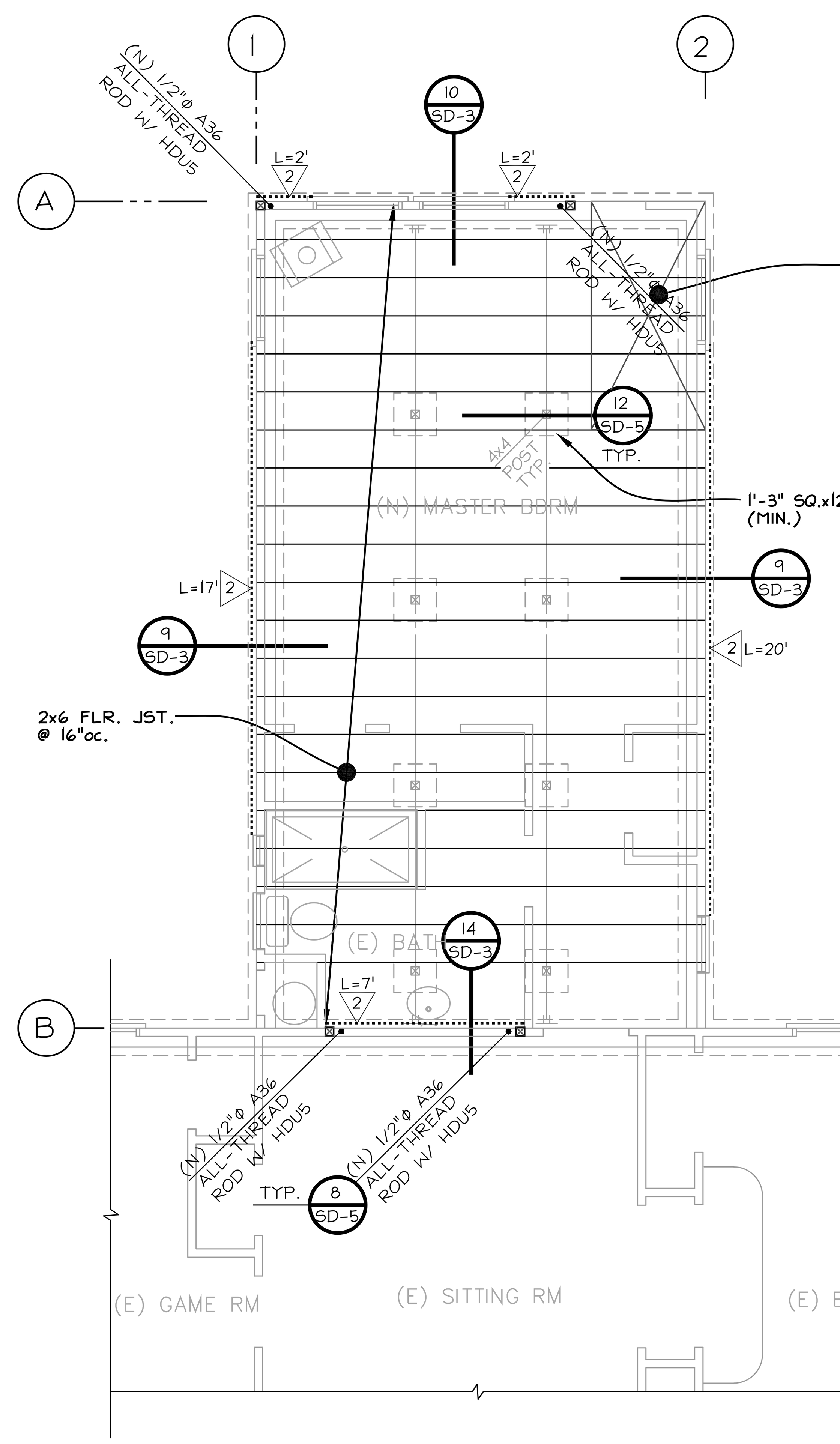
LVL OR ML	1 3/4" x 11 7/8" MICRO-LAM BEAM, MANUFACTURED BY TRUS JOIST CO.,U.N.O.
PSL	3 1/2" x 11 7/8" PARALLAM BEAM, MANUFACTURED BY TRUS JOIST CO., U.N.O.
LSL OR TS	1 1/4" x 11 7/8" TIMBERSTRAND RIM, MANUFACTURED BY TRUS JOIST CO.
KP	KICKER POST TO BEAM OR PLATE BELOW. FOR TYPICAL RQUIREMENTS, SEE CORRESPONDING DETAILS.
FCB	FLUSH CEILING/FLOOR BEAM
PSL	PARALLAM BEAM, MANUFACTURED BY TRUSS JOIST CO.
D.S.	DOUBLE STUDS (UNDER BEAM, G.T., OR HEADER, U.N.O)
2-2x6 K.B.	INDICATES LOCATION OF 2-2x6 KICK BRACE (K.B.) FROM ROOF FRAMING MEMBER TO BEAM OR WALL BELOW.
2-2x6 V.B.	INDICATES LOCATION OF 2-2x6 VERTICAL BRACE (V.B.) FROM ROOF FRAMING MEMBER TO BEAM OR WALL BELOW.
MSTC	INDICATES LOCATION OF SIMPSON MSTC52 HOLDOWN TO POST, BEAM OR HEADER BELOW.

HANGER SCHEDULE JOISTS & BEAMS, U.N.O.		
JOISTS/ BEAM	TOP FLANGE HANGER	FACE MOUNT HANGER
2x	-	'LUS'
LVL	WPU1.81/11.88	HU11 (MAX.)
3 1/2 x 11 7/8 OR 2 -LVL	HWU3.56/ 11.88	HGUS412
5 1/4 x 11 7/8 PSL OR 3 - LVL	HWU5.50/ 11.88	HGUS5.50/12
7 x 11 7/8 PSL	HWU7.12/ 11.88	HGUS7.25/12

NOTE: USE 'HGUS' HANGERS FOR BEAMS WITH SHEAR WALLS AND/ OR HOLDOWNS ABOVE.

CEILING JOIST SCHEDULE		HANGERS
HORIZ. SPAN	SIZE & SPACING	SIMPSON TYPE
0'0" TO-8-0"	2X4 DF #2 @ 24" O.C.	U24
8'-1" TO 13'-6"	2X6 DF #2 @ 24" O.C.	U26
13'-7" TO 17'0"	2X8 DF #2 @ 24" O.C.	U28
17'-1" TO 20'-0"	2X10 DF #2 @ 24" O.C.	U210
20'-1" TO 24'-0"	2X12 DF# 2 @ 24" O.C.	U210

CEILING JOIST SCHEDULE ALTERNATE TO 24" o.c. SPACING		HANGERS
HORIZ. SPAN	SIZE & SPACING	SIMPSON TYPE
0'0" TO-9-0"	2X4 DF #2 @ 16" O.C.	U24
9'-1" TO 15'-6"	2X6 DF #2 @ 16" O.C.	U26
15'-7" TO 20'-0"	2X8 DF #2 @ 16" O.C.	U28
20'-1" TO 24'-0"	2X10 DF #2 @ 16" O.C.	U210
24'-1" TO 28'-0"	2X12 DF# 2 @ 16" O.C.	U210

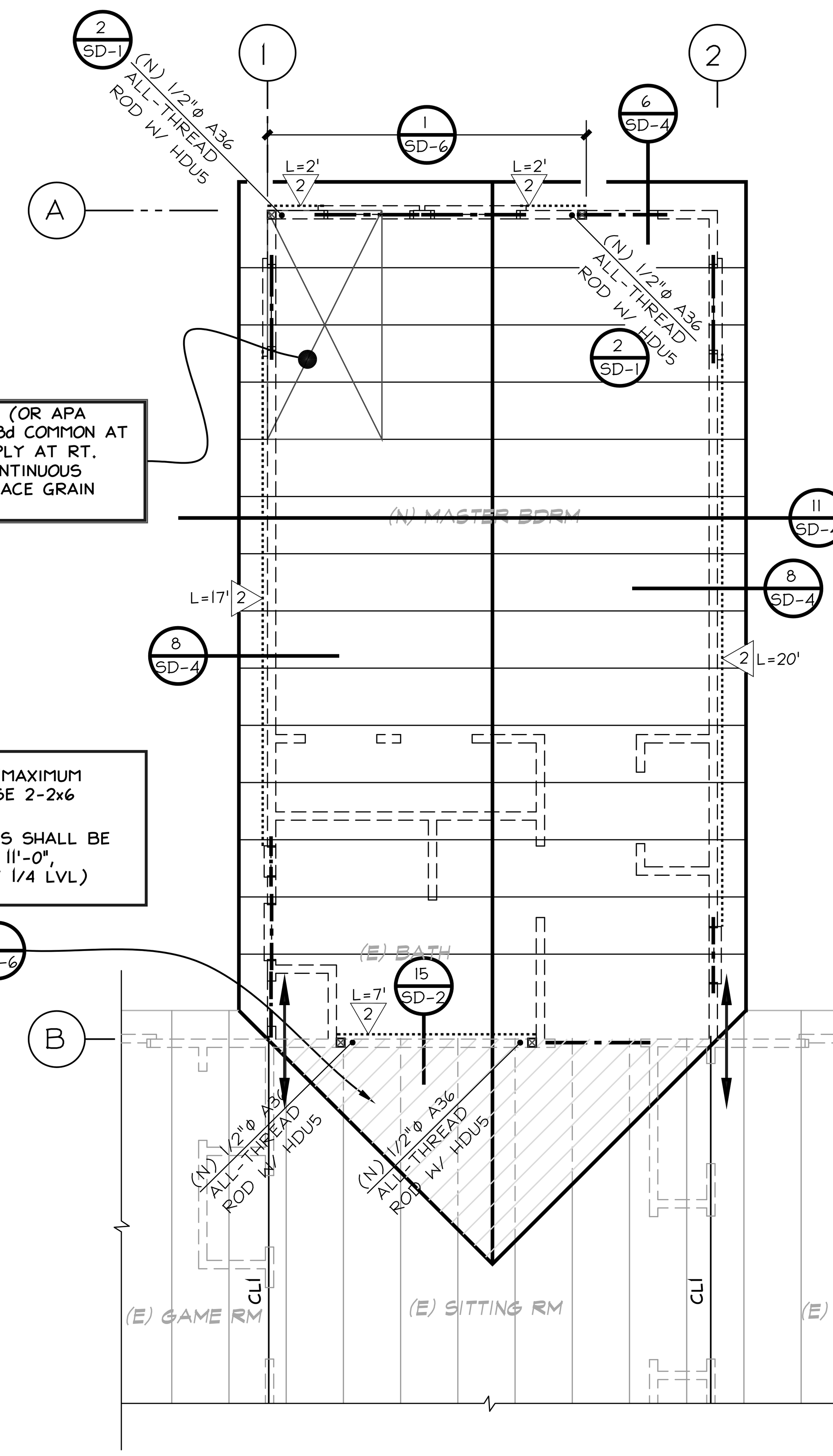


TYPICAL FLOOR PLYWOOD:
3/4" T. & G. CDX PLYWD. (OR APA RATED 48/24 SHEATHING) GLUE AND NAIL WITH 10d COMMON AT 6"o.c. EDGE AND AT 10"o.c. FIELD (TYP. UNO.), INSTALL CONTINUOUS OVER TWO OR MORE SPANS AND FACE GRAIN PERPENDICULAR TO SUPPORT.

TYPICAL ROOF PLYWOOD:
ROOF PLYWOOD: 1/2" CDX PLYWD. (OR APA RATED 32/16 SHTHG.), NAIL WITH 8d COMMON AT 6"o.c. EDGE AND 12"o.c. FIELD (APPLY AT RT. ANGLES TO RAFTERS) INSTALL CONTINUOUS OVER TWO OR MORE SPANS AND FACE GRAIN PERPENDICULAR TO SUPPORT.

COMPOSITION SHINGLE ROOF TYPICAL FRAMING, U.N.O.
1. ROOF RAFTERS SHALL BE 2x6 @ 24" oc (MAXIMUM HORIZONTAL SPAN =10'-0", OTHERWISE USE 2-2x6 @ 24" oc.)
2. RIDGE BOARD, HIP AND VALLEY RAFTERS SHALL BE 2x8 DF#1 (MAXIMUM HORIZONTAL SPAN = 11'-0", OTHERWISE USE 2-2x8 DF#1 OR 1 3/4 x 7 1/4 LVL)

CALIF. FRMG/ 1 SD-6



FOUNDATION PLAN
SCALE: 1/4" = 1'-0"

ROOF FRAMING PLAN
SCALE: 1/4" = 1'-0"

NO.	REVISIONS
1	1-25-21 MASTER BED. FRMG.

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JANUARY 25, 2021

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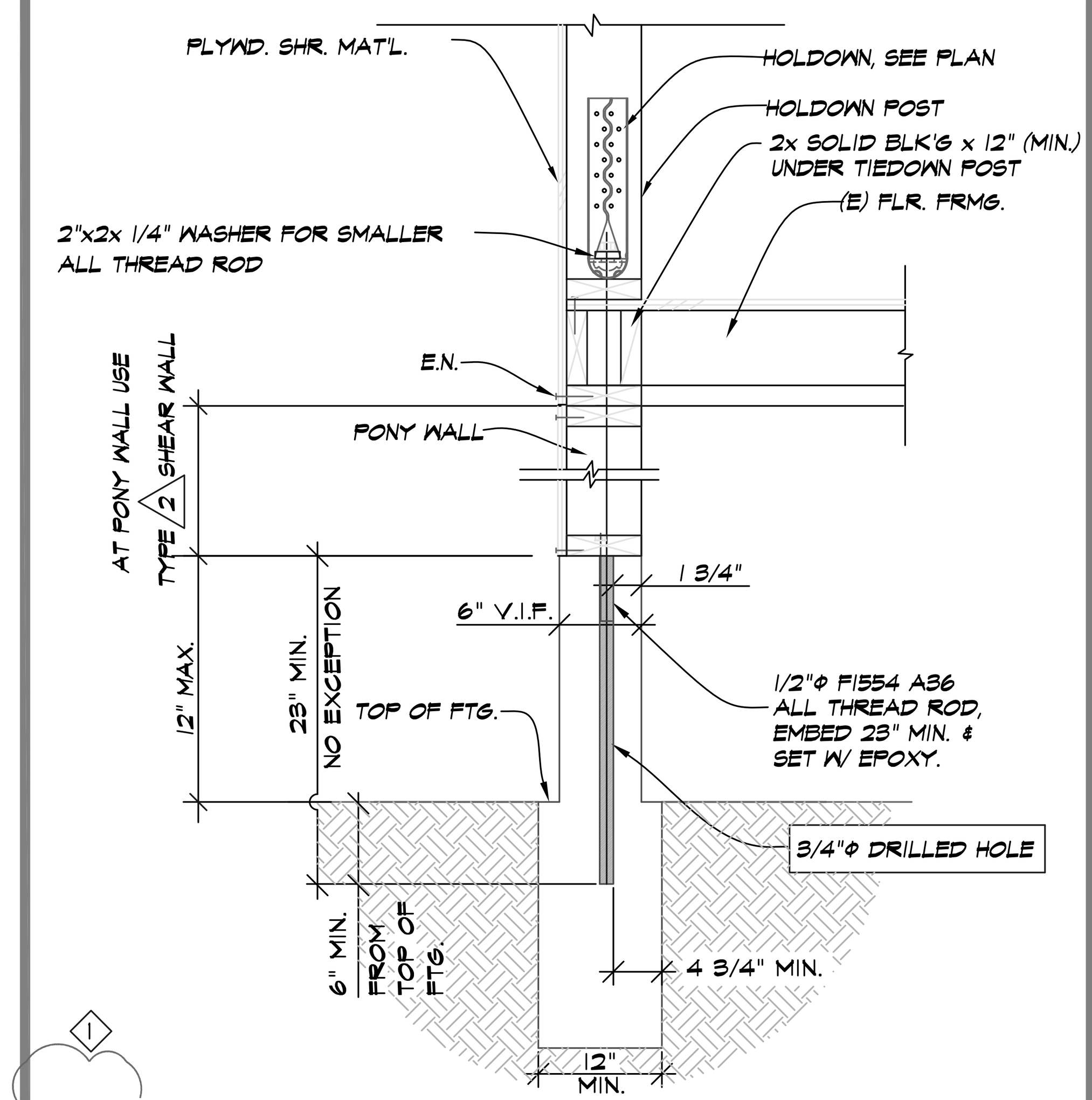
SCALE	
NOT TO SCALE, U.N.O.	
DRAWN	CHECKED RC
PROJ. NO. 16-208	DATE 5-24-19

DRAWING NO. 1
S-3
SHEET(S)

16208-24X36



1

2 TYP. FTG. DET.

FOUNDATIONS

1. ALL EXISTING FILL SOIL AND DISTURBED NATURAL SOILS ARE TO BE EXCAVATED AND REPLACED WITH PROPERLY COMPACTED FILL. ALL FILLING, BACKFILLING, RECOMPACTION, ETC. IS TO BE ACCOMPLISHED ONLY UNDER THE SUPERVISION OF A SOILS ENGINEER. COMPACTED FILL SHALL BE 95% DENSITY.
2. FOOTINGS ARE TO BE CARRIED A MINIMUM OF 18" INTO FIRM UNDISTURBED NATURAL SOIL OR APPROVED COMPACTED FILL.
3. DESIGN BEARING PRESSURE IS 1500 PSF WITH A 33% INCREASE FOR SEISMIC OR WIND LOADING.
4. RELATIVELY NON-EXPANSIVE FILL SHOULD BE USED IN BACKFILLING BEHIND WALLS ALL WALLS SHALL BE ADEQUATELY SHORED DURING THE BACKFILL OPERATION.

NEW FOOTING SHALL MATCH EXISTING

PRIOR TO THE CONSTRUCTION OF THE NEW FOUNDATION, VERIFICATION IS REQUIRED TO SHOW THAT THE NEW FOUNDATION SYSTEM MATCHES THE EXISTING (E) FOOTINGS. EXCAVATE AS REQUIRED FOR THE FIELD INSPECTOR TO VERIFY THE TYPE OF EXISTING FOUNDATION SYSTEM. PIER AND GRADE BEAM FOUNDATION SYSTEM SHALL BE AS PER THE LATEST CALIFORNIA BUILDING CODE AND SHALL BE DESIGNED BY A CIVIL, OR STRUCTURAL ENGINEER AND APPROVED BY THE CITY BUILDING DIVISION PRIOR TO COMMENCING OF CONSTRUCTION. PIER DEPTH SHALL BE MINIMUM AS EXISTING.

SHOP DRAWINGS:

SHOP DRAWINGS ARE AN AID FOR FIELD PLACEMENT AND ARE SUPERSEDED BY THE STRUCTURAL DRAWINGS. ANY REVIEW OF SHOP DRAWINGS BY THIS OFFICE IS ONLY FOR GENERAL CONFORMANCE TO THE STRUCTURAL REQUIREMENTS AND IN NO WAY GUARANTEES THE ACCURACY OR COMPLETENESS OF INFORMATION THEREON. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO INSURE ALL CONSTRUCTION IS IN FULL COMPLIANCE WITH THE LATEST SET OF STRUCTURAL DRAWINGS.

LUMBER

1. PLATES, STUDS, JOISTS AND BEAMS. (UNO)

MEMBERS	GRADE OF WOOD (U.N.O.)
A. 2x OR 3x MUDSILLS	P.T.D.F. (REDWOOD NO.1)
B. 4x	D.F. NO. 2 (REDWOOD NO.1-REDWOOD SELECT STRUCTURAL)
C. 6x AND LARGER	D.F. NO. 1 (REDWOOD NO.1-REDWOOD SELECT STRUCTURAL)
D. ALL STUDS	D.F. NO.2 (REDWOOD NO.1)
E. BLKG. & SOLE PLATES	D.F. CONSTR. GRADE (REDWOOD NO.1)
F. GLU LAM BEAMS	24F-V4, 24F-V8 AT CANTILEVER
G. TOP PLATES	D.F. CONSTR. GRADE (REDWOOD NO.1)

NOTE: ALL LUMBER SHALL HAVE A MAXIMUM MOISTURE CONTENT OF 19% AT TIME OF INSTALLATION.

2. PLYWOOD

LOCATION		GRADING	NAILING (U.N.O.)
ROOF	- 1/2" CDX OR OSB	APA (32/16)	10d @ 6" EDGE, 12" FIELD
FLOOR	- 3/4" T&G CDX OR OSB (OSB NOT ALLOWED IN DECKS OR BALCONIES)	APA (32/16)	10d @ 6" EDGE, 10" FIELD

NOTE: ALL GRADE MARKS ON PLYWOOD SHEATHING AND LUMBER SHALL BE LEGIBLE.

WOOD FRAME

1. ALL WOOD BEARING ON CONCRETE OR MASONRY SHALL BE PRESSURE TREATED FIR.
2. ALL METAL CONNECTORS SHALL BE SIMPSON STRONG-TIE CONNECTORS. THE NAILS FOR THESE CONNECTORS SHALL BE JOIST HANGER NAILS AS MANUFACTURED BY THE SIMPSON CO.
3. PROVIDE FIRE STOPS AT ALL INTERSECTIONS OF STUD WALLS AT FLOOR, CEILING AND ROOF. FIRE STOPS SHALL BE 2x NOMINAL THICKNESS OF WOOD AND SHALL BE THE FULL WITH OF THE ENCLOSED SPACE. PLACE FIRE STOPS AT A MAXIMUM SPACING OF 10'-0" IN EACH DIRECTION AND AT THE SAME LINES AS FIRE STOPS IN ADJACENT STUD WALLS.
4. TOP PLATES OF ALL STUD WALLS SHALL BE 2 PIECES THE SAME STUD SIZES. SPLICES TO LAP 4'-0" MINIMUM AND BE NAILED PER THE DETAILS.
5. BOLT HOLES IN WOOD SHALL BE 1/32" TO 1/16" LARGER THAN THE NORMAL BOLT DIAMETER. ALL BOLTS SHALL HAVE STANDARD CUT WASHER UNDER HEAD AND NUT UNLESS NOTED OTHERWISE.
6. ALL BOLTS SHALL BE RETIGHTENED PRIOR TO THE APPLICATION OF SHEATHING PLASTER, ETC.
7. STRUCTURAL MEMBERS SHALL NOT BE CUT FOR PIPES, ETC. UNLESS SPECIFICALLY DETAILED
8. PROVIDE 2x SOLID BLOCKING BETWEEN JOISTS AND RAFTERS AT ALL SUPPORTS BLOCKING SHALL BE ONE PIECE AND THE FULL DEPTH OF THE JOIST RAFTER.
9. CROSS BRIDGING OR SOLID BLOCKING SHALL BE PROVIDED AT 8'-0" O.C. MAXIMUM FOR ALL FLOOR JOISTS MORE THAN 12" DEEP AND AT 10'-0" O.C. MAXIMUM FOR ALL RAFTERS MORE THAN 8" DEEP.
10. PROVIDE DOUBLE JOISTS UNDER PARTITIONS WHICH ARE PARALLEL TO THE FLOOR JOISTS.

ABBREVIATIONS

A.B.	ANCHOR BOLT	M.A.	MST ABOVE
ABV.	ABOVE	M.B.	MACHINE BOLT
BD	BOARD	MFR.	MANUFACTURER
BM.	BEAM	MAX.	MAXIMUM
BLW.	BELOW	MIN.	MINIMUM
BLK.	BLOCK OR BLOCKING	MTL.	METAL
BLK'G	BLOCK OR BLOCKING	(N)	NEW
B.N.	BOUNDRY NAILING	N.T.S..	NOT TO SCALE
C.B.C.	CALIFORNIA BUILDING CODE	OC	ON CENTER
CLG.	CEILING	O.F.	OUTSIDE FACE
C.B.	CEILING BEAM	O.H.	OPPOSITE HAND
OC	CENTER TO CENTER, ON CENTER	P.A.	POST ABOVE
		PL	PLATE
COL.	COLUMN	PLY.	PLYWOOD
CONC.	CONCRETE	PLYWD.	PLYWOOD
CONT.	CONTINUOUS	P.E.N.	PLYWOOD EDGE NAILING
DL	DEAD LOAD	PLF	POUNDS PER LINEAL FOOT
Φ	DIAMETER	P.S.I.	POUNDS PER SQ. INCH
D.F.	DOUGLAS FIR	P.S.F.	POUNDS PER SQ. FOOT
D.S.	DOUBLE STUD	PSL	PARALLAM STRAND LUMBER
EA.	EACH	P.T.	PRESSURE TREATED
E.W.	EACH WAY	P.T.D.F	PRESSURE TREATED DOUGLAS FIR
(E)	EXISTING		
E.N.	EDGE NAILING	RFTR	RAFTER
EXT.	EXTERIOR	REBAR	DEFORMED REINFORCING BAR
F.O.S.	FACE OF STUD	S.A.D.	SEE ARCHITECTURAL DRAWINGS
F.O.C.	FACE OF CONCRETE	S.W.S	SHEAR WALL SCHEDULE
F.N.	FIELD NAILING	SHTG.	SHEATHING
FIN.	FINISH	SHT.	SHEET
FHWS	FLAT HEAD WOOD SCREW	SPECS.	SPECIFICATIONS
FLR.	FLOOR	STD.	STANDARD
F.C.B.	FLUSH CEILING BEAM	STL.	STEEL
FTG.	FOOTING	SQ.	SQUARE
GYP.	GYPSUM	THD.	THREAD
GLB	GLUED, PRESSURE LAMINATED BEAM	T.O.BM.	TOP OF BEAM., ETC.
H.F.	HEM FIR	T & G	TONGUE & GROOVE
HGR.	HANGER	T & B	TOP & BOTTOM
HDR..	HEADER	TL	TOTAL LOAD
H.A.	HOLDOWN ABOVE	TYP.	TYPICAL
H.D.	HOLDOWN	U.B.C.	UNIFORM BUILDING CODE
HORIZ.	HORIZONTAL		
H.D.G.	HOT DIPPED GALVANIZED	U.N.O.	UNLESS NOTED OTHERWISE
ICC	INTERNATIONAL CODE COUNCIL	U.O.N.	UNLESS OTHERWISE NOTED
INT.	INTERIOR		
JST.	JOIST	VERT.	VERTICAL
LVL	LAMINATED VENEER LUMBER	W/	WITH
L.S.	LAG SCREW	W.W.F.	WELDED WIRE FABRIC
LL	LIVE LOAD		
K.B.	KICK BRACE		
K.P.	KING POST OR KICKER POST		

CONCRETE:

1. CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 2500 PSI AT 28 DAYS.
2. AGGREGATES SHALL BE NATURAL SAND AND ROCK CONFORMING TO ASTM C33 (MAXIMUM AGGREGATE SIZE SHALL BE 3/4")
3. CEMENT SHALL BE PORTLAND CEMENT CONFORMING TO ASTM C-150, TYPE IV. (SULFIDE RESISTANT).
4. THE FOLLOWING MINIMUM CLEAR DISTANCES BETWEEN REINFORCING STEEL AND FACE OF CONCRETE SHALL BE MAINTAINED UNLESS NOTED OTHERWISE

   POURED AGAINST FORMS 2"
   POURED AGAINST EARTH 3"
5. PIPES MAY PASS THROUGH STRUCTURAL CONCRETE IN SLEEVES, BUT SHALL NOT BE EMBEDDED THEREIN. PIPES OF DUCTS EXCEEDING ONE-THIRD THE SLAB OR FOOTING THICKNESS SHALL BE PLACE IN THE STRUCTURAL CONCRETE UNLESS SPECIFICALLY DETAINED.
6. DOWELS, ANCHOR BOLTS AND OTHER EMBEDDED ITEMS ARE TO BE SECURED IN PLACE BEFORE CONCRETE IS POURED.
7. REFER TO ARCHITECTURAL DRAWINGS FOR REVEALS, AREAS OF TEXTURED CONCRETE OR SPECIAL FINISHES, ITEMS REQUIRED TO BE CAST INTO CONCRETE, CURBS AND SLAB DEPRESSIONS.
8. MINIMUM CEMENT CONTENT SHALL BE 5 SACKS PER CUBIC YARD FOR 2500 PSI CONCRETE.
9. MAXIMUM SLUMP SHALL BE 4".
10. OPTIONAL COLD JOINTS MAY BE USED WHERE SHOWN, COLD JOINT EDGES SHALL BE CLEAN, FREE OF EXTRANEOUS AND INTENTIONALLY ROUGHENED.

REINFORCING STEEL:

1. REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 40 FOR SIZES #4 AND SMALLER AND GRADE 60 FOR SIZES #5 AND LARGER.
2. WELDING OF REINFORCING STEEL SHALL CONFORM TO AWA D12-1 USING PROPER LOW HYDROGEN ELECTRODES. ALL BARS TO BE WELDED SHALL CONFORM TO ASTM A706.
3. WELDED FABRIC (MESH, WWF) SHALL CONFORM TO THE LATEST REVISED ASTM A185. SMOOTH WIRE FABRIC SHALL CONFORM TO ASTM A85, YIELD STRENGTH 60 KSI.
4. ALL BARS IN CONCRETE SHALL BE LAPPED A MINIMUM OF 36 BARS DIAMETERS (2'-0" MIN.) AT ALL SPLICES UNLESS NOTED OTHERWISE.
5. SPLICES OF HORIZONTAL REBAR IN FOOTING SHALL BE STAGGERED 4'-0" MINIMUM.
6. ALL BENDING OF REINFORCING STEEL SHALL CONFORM TO THE LATEST EDITION OF THE CALIFORNIA BUILDING CODE.
7. REINFORCING SHALL BE PLACED AND SUPPORTED IN A TRUE LINE AS SHOWN.
8. ALL REINFORCING SHALL BE CLEAN AND FREE OF EXTRANEOUS MATERIAL.

FLOOR I-JOIST

1. FLOOR JOISTS ARE TO BE DESIGNED FOR L/480 (DL & LL) MAXIMUM DEFLECTION CRITERIA.

MICROLAM BEAMS:

MICRO LAM (ML OR LVL) BEAMS ARE TO BE THE SIZE SHOWN ON THE PLANS AND TO BE MANUFACTURED BY TRUSS JOIST CORP. MICRO LAM BEAMS SHALL HAVE THE FOLLOWING ALLOWABLE DESIGN STRESSES.
E = 1,900,000 PSI
Fb = 2,600 PSI
Fv = 285 PSI

PARALLAM BEAMS:

PARALLAM (PSL) BEAMS ARE TO BE THE SIZE SHOWN ON PLANS, AND TO BE MANUFACTURED BY TRUSS JOIST CORP. PARALLAM BEAMS SHALL HAVE THE FOLLOWING ALLOWABLE DESIGN STRESSES.
E = 2,000,000 PSI
Fb = 2,900 PSI
Fv = 290 PSI

TIMBERSTRAND:

TIMBERSTRAND (TS) MEMBERS ARE TO BE THE SIZE SHOWN ON PLANS AND TO BE MANUFACTURED BY TRUSS JOIST CORP.

GLB NOTES:

1. ALL FABRICATION AND WORKMANSHIP SHALL CONFORM TO THE CURRENT EDITION OF THE STANDARD SPECIFICATIONS FOR STRUCTURAL GLUED LAMINATED DOUGLAS FIR (COAST REGION) LUMBER BY THE WEST COAST LUMBER MAN'S ASSOCIATION AND THE CURRENT EDITION OF TIMBER CONSTRUCTION.
2. ALL GLUED LAMINATED MEMBERS SHALL BE DOUGLAS FIR, COMBINATION 24F-V4 (U.N.O.) OR 24F-V8 WITH WATERPROOF RESORCINOL OR PHENOL RESORCINOL GLUE CONFORMING TO THE FEDERAL SPECIFICATIONS MIL-A-397. (USE 24F-V8 AT CANTILEVER CONDITION).
3. FINISH OF THE MEMBERS SHALL BE INDUSTRIAL APPEARANCE GRADE IN CONFORMANCE WITH THE STANDARD APPEARANCE GRADES OF THE A.I.T.C.
4. A CERTIFICATE OF INSPECTION FOR EACH GLU-LAM BEAM FROM AN APPROVED TESTING AGENCY SHALL BE SUBMITTED TO AND APPROVED BY THE LOCAL BUILDING DEPT. AND BY THE ENGINEER PRIOR TO ERECTION.

EPOXY AND ANCHORS: (ICC-ES ESR 2508)

1. EPOXY GROUT USED FOR THE SETTING OR DEFORMED REINFORCING BARS SHALL BE SIMPSON 'SET-XP' EPOXY SURFACE OF EXISTING CONCRETE SHALL BE FREE FROM DUST OR DEBRIS PRIOR TO INJECTION EPOXY PRODUCT TO BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
2. EPOXY USED FOR THE SETTING OF ALL-THREAD ROD BOLTS SHALL BE SIMPSON 'SET-XP' EPOXY. EPOXY SHALL BE INSTALLED WITH MANUFACTURER'S RECOMMENDATIONS AND PROVIDE SPECIAL INSPECTION BY CERTIFIED TESTING AGENCY.

PROJECT DATA:

LOADING	FLOOR	ROOF
DEAD LOAD	16 psf	16 psf
LIVE LOAD	40 psf	20 psf
SEISMIC COEFFICIENT		
S_1 = 1.123	T_L = 12	F_a = 1.0
S_{D1} = 1.123	C_s = 0.02	F_v = 1.5
S_{DS} = 1.561		
SEISMIC DESIGN CATEGORY:	E	
WIND LOAD COEFFICIENT		
WIND SPEED 110 MPH	WIND EXPOSURE: B	
K_d = 0.85	K_z = 0.70	GC_{pi} = 0.18
I = 1	K_{zt} = 1	

GENERAL NOTES:

1. ALL CONSTRUCTION AND WORKMANSHIP SHALL CONFORM TO THE 2013 CALIFORNIA BUILDING CODE.
2. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS. ELEVATIONS AND CONDITIONS PRIOR TO STARTING CONSTRUCTION.
3. ANY DEVIATIONS FROM THE PLANS. WHICH ARE NECESSITATED BY FIELD CONDITIONS OR ANY CONDITIONS DIFFERENT FROM THOSE INDICATED ON PLAN, SHALL BE CALLED TO THE ATTENTION OF THE STRUCTURAL ENGINEER PRIOR TO CONTINUING CONSTRUCTION. ALL WORK IS TO BE COORDINATED SO THAT COOPERATION BETWEEN THE TRADES, WHERE REQUIRED, IS ACCOMPLISHED.
4. ALL DIMENSIONS TO TAKE PRECEDENCE OVER SCALE SHOWN ON PLANS, ELEVATIONS SECTIONS AND DETAILS.
5. NOTES AND DETAILS ON DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL NOTES AND TYPICAL DETAILS.
6. MATERIAL NOTES AND SPECIFICATIONS ON DRAWINGS SHALL TAKE PRECEDENCE OVER THE PROJECT SPECIFICATIONS.
7. VERIFY ALL OPENINGS THROUGH CONSTRUCTION WITH HEATING AND VENTILATING CONTRACTOR PLUMBING CONTRACTOR AND ELECTRICAL CONTRACTOR FOR SIZE AND LOCATION, PRIOR TO COMMENCING CONSTRUCTION.
8. SEE ARCHITECTURAL PLANS FOR SIZES AND LOCATIONS OF ALL DOOR AND WINDOW OPENINGS, LOCATION OF ALL NON-BEARING PARTITIONS, CONCRETE CURBS, FLOOR AND ROOF SLOPES, DRAINS, ELEVATIONS, LOCATIONS OF ALL STAIRWAYS, (IF ANY), MISCELLANEOUS HANDRAILS, LADDERS. HANGERS, STEEL GRATING, LOCATION OF ALL CONCRETE INSERTS, CLIPS, GROOVES, GROUNDS AND VENEER ANCHORS, LOCATION AND DETAIL OF MISCELLANEOUS YARDWORK INCLUDING WALKS, CURBS, DRIVEWAYS, TUNNELS AND FINISHED GRADING PLANS.
9. NO OPENINGS, POCKETS, ETC. SHALL BE PLACED IN SLABS DECKS, BEAMS, JOISTS, WALLS, COLUMNS, ETC. UNLESS SPECIFICALLY DETAILED ON THE STRUCTURAL DRAWINGS, NOTIFY THE STRUCTURAL ENGINEER WHEN (MECH., ELECT.) DRAWINGS SHOW OPENINGS, POCKETS, ETC., THAT ARE NOT LIKEWISE SHOWN ON THE STRUCTURAL DRAWINGS.
10. CONTRACTOR SHALL REPAIR OR REPLACE ALL DAMAGED FINISH MATERIAL AND/OR STRUCTURAL MEMBERS AS REQUIRED AND AS CONFIRMED BY THE BUILDING INSPECTOR AND STRUCTURAL ENGINEER.
11. CONTRACTOR IS RESPONSIBLE FOR ALL TEMPORARY BRACING DURING CONSTRUCTION.
12. FRAMING CONDITIONS NOT SPECIFICALLY SHOWN SHALL BE FRAMED SIMILAR TO TYPICAL DETAILS FOR THE RESPECTIVE MATERIAL.
13. THE CONTRACTOR AND/OR SUB-CONTRACTORS WORK SHALL CONFORM TO ALL APPLICABLE FEDERAL STATE, OR LOCAL BUILDING CODES.
14. TRADE NAMES AND MANUFACTURERS REFERRED TO ARE FOR QUALITY STANDARDS ONLY, EQUIVALENT SUBSTITUTIONS WILL BE PERMITTED.
15. TYPICAL DETAILS SHALL APPLY WHERE NO SPECIFIC DETAILS OR SECTIONS GIVEN.

GENERAL CONSTRUCTION

1. RAFTERS SHALL BE FRAMED DIRECTLY OPPOSITE EACH OTHER RIDGES, VALLEYS AND HIPS. ALL RIDGE BOARDS, MAIN VALLEY AND HIP RAFTERS SHALL BE AT LEAST 2 IN. THICK (NOMINAL). IN NO CASE SHALL THE DEPTH BE LESS THAN THE CUT OF THE END OF THE RAFTER (U.N.O.)
2. WHERE APPLICABLE, RAFTERS SHALL BE NAILED TO ADJACENT PARALLEL CEILING JOIST TO FORM A CONTINUOUS THE BETWEEN EXTERIOR WALLS, (U.N.O.) WHERE CEILING JOISTS ARE NOT PARALLEL, RAFTERS, SHALL BE TIED BY A 1 X 4 (MIN.) CROSS TIE. THE CROSS TIES SHALL BE SPACED NOT MORE THAN 4'-0" O.C.
3. UNLESS SUPPORTED LATERALLY BY ADEQUATE FRAMING, THE MAXIMUM ALLOWABLE HEIGHT SHALL BE 14'-0" FOR 2 X 4 AND 3 X 4 STUD WALLS AND 20'-0" FOR A 2 X 6 STUD WALL (U.N.O.).
4. JOISTS SHALL BE SUPPORTED LATERALLY BY SOLID BLOCKING OR END HANGERS AT EACH END AND AT EACH SUPPORT. SOLID BLOCKING SHALL NOT BE LESS THAN 2" THICK (NOMINAL) AND THE FULL DEPTH OF THE JOISTS.
5. THE ENDS OF JOISTS, BEAMS, AND GIRDERS SHALL HAVE AT LEAST 1 1/2" OF BEARING ON WOOD OR METAL AND 3" OF BEARING ON CONCRETE OF MASONRY, (U.N.O.).
6. WHEN BOLTS ARE IN USE A WASHER NOT LESS THAN A STANDARD CUT WASHER OR A METAL PLATE OR STRAP IN LIEU THEREOF, SHALL BE BETWEEN THE WOOD AND THE BOLT HEAD AND BETWEEN THE WOOD AND THE NUT.
7. MACHINE BOLTS AND ANCHOR BOLTS SHALL CONFORM TO ASTM A307 (U.N.O.)
8. ALL BUILDINGS SHALL BE GRADED SO AS TO PROVIDE 5% POSITIVE DRAINAGE AWAY FROM THE HOUSE.
9. WOOD JOISTS AND FLOORS CLOSER THAN 18" OR WOOD GIRDERS AND SUPPORTS CLOSER THAN 12" TO THE GROUND SHALL BE PRESSURE TREATED WOOD
10. CONTRACTOR SHALL SUBMIT A CERTIFICATION OF CONFORMANCE FOR ALL GLUED-LAMINATED BEAMS TO BUILDING INSPECTION DEPT., PRIOR TO ERECTION.
11. PURLINS SHALL BE 2 X 6 OR THE SAME SIZE AS RAFTERS, WHICHEVER IS GREATER, (U.N.O.).
12. PROVIDE FIRE BLOCKING AT FLOORS, CEILING, COVES AND MID-HEIGHT OF WALLS OVER 10'-0" IN HEIGHT.

NAILING

CONNECTION	NAILING (U.N.O.) ON PLANS
1. JOIST TO SILL OR GIRDER TOENAIL	3-8d
2. BRIDGING TO JOIST, TOENAIL EACH END.	2-8d
3. 1" X 6" SUBFLR. OR LESS TO EA. JOISTS, FACE NAIL	2-8d
4. WINDER THAN 1" X 6" SUBFLR. TO EA. JST. FACE NAIL	3-8d
5. 2" SUBFLR. TO JOIST OF GIRDER BLIND AND FACE NAIL	2-16d
6. SOLE PLATE TO JOIST OR BLD'G.., FACE NAIL.	16d @ 16" O.C.
7. TOP PLATE TO STUD, END NAIL	2-16d
8. STUD TO SOLE PLATE	4-8d TOENAIL OR 2-16d, END NAIL
9. DOUBLE STUDS, FACE NAIL.	16d @ 24" O.C.
10. DOUBLE TOP PLATES, FACE NAIL	16D @ 16" O.C.
11. TOP PLATES, LAPS AND INTERSECTIONS, FACE NAIL	4-16d
12. CEILING JOIST TO PLATE, TOENAIL.	3-8d
13. CONTINUOUS HEADER TO STUD, TOENAIL	4-8d
14. CEILING JOISTS, LAPS OVER PARTITIONS, FACE NAIL.	3-16d
15. CEILING JOISTS TO PARALLEL RAFTERS, FACE NAIL	3-16d
16. RAFTER TO TRUSSES TO PLATE, TOENAIL.	3-16d
17. 1" X 8" SHEATHING OR LESS TO EA. BEARING., FACE NAIL.	2-8D
18. WIDER THAN 1" X 8" SHEATHING TO EA. BEARING, FACE NAIL	3-8d
19. BUILT-UP CORNER STUDS.	16d @ 24" O.C.

CORROSION PROTECTION NOTE:

CORROSION PROTECTION FOR NAILS AND OTHER HARDWARE ATTACHED TO PRESSURE TREATED LUMBER. OF PARTICULAR CONCERN IS THE SHEAR WALL EDGE NAILING INTO A PRESSURE-TREATED SILL PLATE. (NOTE: AS OF JAN. 1, 2004, MOST PRESSURE TREATED LUMBER WILL UTILIZE NEW CHEMICALS THAT ARE MORE CORROSIVE THAN THE TRADITIONAL CCA-C PROCESS.) USE GALVANIZED PRODUCTS, NOTE THAT THEY ARE TO BE HOT DIPPED GALVANIZED.

NO.	REVISIONS
1	1-25-21 MASTER BED. FRMG.

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REGISTERED PROFESSIONAL ENGINEER ROMEO C. CABALAR C 46956 CIVIL STATE OF CALIFORNIA

JANUARY 25, 2021

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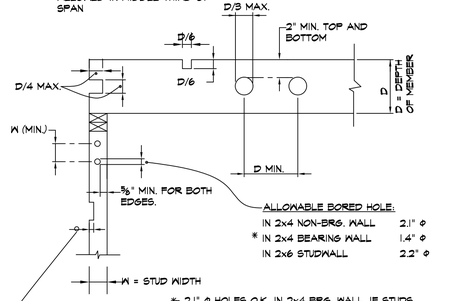
P.O. BOX 2221 LOS GATOS, CA 95031 408-761-1218

SCALE	
NOT TO SCALE, U.N.O.	
DRAWN	CHECKED RC
PROJ. NO. 16-208	DATE 5-24-19
DRAWING NO. SD-1	SHEET(S)

16208-24X36

NOTES:

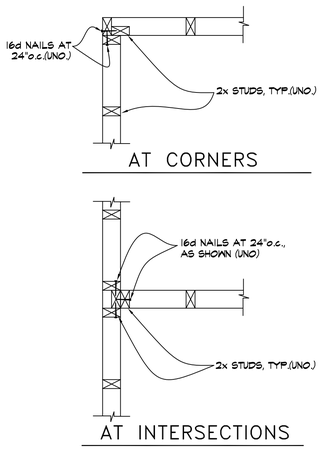
1. HOLES AND NOTCHES ARE NOT PERMITTED IN JOISTS WHERE "D" = 4" OR LESS.
2. NO NOTCHES (TOP OR BOTTOM) ALLOWED IN MIDDLE THIRD OF SPAN



*- 2.1" ø HOLES O.K. IN 2x4 BRG. WALL, IF STUDS ARE DOUBLED. (NOTE: NO MORE THAN 2 SUCCESSIVE DOUBLED STUDS CAN BE BORED IN BRG. WALL.

NOTE
MAY NOT BE USED AT GLU-LAM BEAMS OR ANY PRE-FABRICATED TRUSS OR JOIST MEMBERS WITHOUT PRIOR APPROVAL BY PROJECT ENGINEER AND APPLICABLE TRUSS CO.

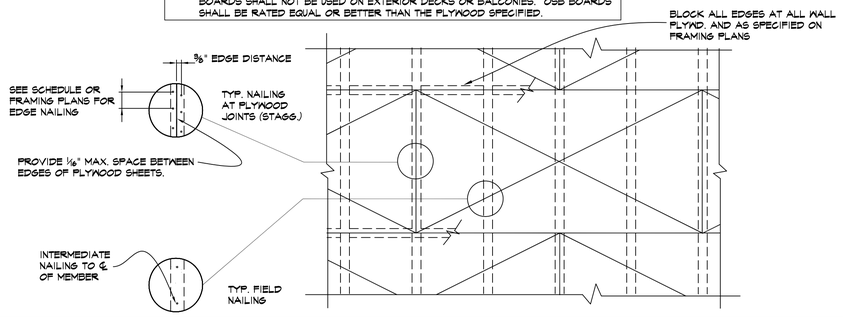
1 JOIST AND STUD CUTOUT DET.



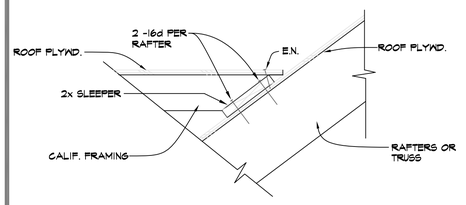
2 TYPICAL STUD LOCATIONS (U.N.O.)

PLYWOOD SHEATHING NOTES:

1. ALL NAILS SHALL BE COMMON NAILS OR HOT DIPPED GALVANIZED BOX NAILS
2. INDIVIDUAL PIECES OF PLYWOOD SHALL NOT BE LESS THAN 24" IN THE LEAST DIMENSION NOR LESS THAN 4'-0" SQ. TOTAL AREA.
3. ALL PLYWOOD MUST BE APA RATED.
4. PRE-DRILL HOLES WHERE PLYWOOD OR FRAMING TENDS TO SPLIT.
5. PROVIDE EDGE NAILING ALONG ALL JOISTS, TRUSSES, BEAMS, COLLECTORS AND BLOCKING OVER OR IN LINE WITH SHEAR WALLS. (2 - ROWS REQUIRED AT EACH OF THESE LOCATIONS.)
6. DO NOT OVER DRIVE NAILS INTO PLYWOOD SHEATHING, ANYMORE THAN TO PROVIDE THE NAIL HEAD FLUSH WITH THE PLYWOOD SURFACE.
7. OSB (ORIENTED STRAND BOARD) APA RATED BOARD MAYBE USED IN LIEU OF PLYWOOD WITH BUILDING OWNERS OR ARCHITECTS APPROVAL. HONEVER, OSB BOARDS SHALL NOT BE USED ON EXTERIOR DECKS OR BALCONIES. OSB BOARDS SHALL BE RATED EQUAL OR BETTER THAN THE PLYWOOD SPECIFIED.



3 PLYWOOD SHEATHING DETAIL



5 TYP. CALIF. FRM'G. CONN.

NO.	REVISIONS
1	1-25-21 MASTER BED. FRMG.

Romeo C. Cabalar, P.E.

consulting engineers inc.
Structural Analysis & Design

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REGISTERED PROFESSIONAL ENGINEER ROMEO C. CABALAR C 46956 CIVIL STATE OF CALIFORNIA

JANUARY 25, 2021

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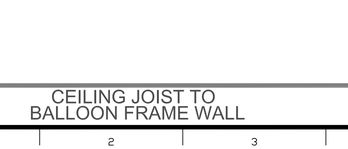
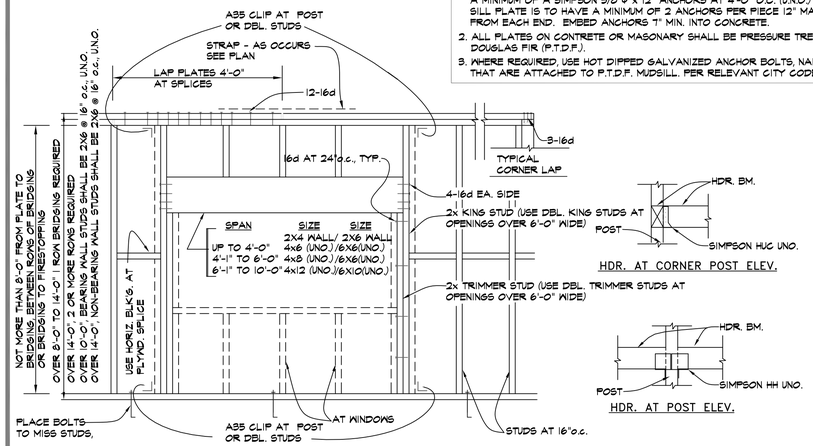


NOTES:
1. PROVIDE PLYWD. EDGE NAIL'G TO TRIMMER JST., HDR. JST. AND CORNER BLOCKS.
2. DETAIL IS APPLICABLE TO MAX. DIMEN. SHOWN.

6 TYP. ROOF FRAMED OPNG. 4'-0" MAX.

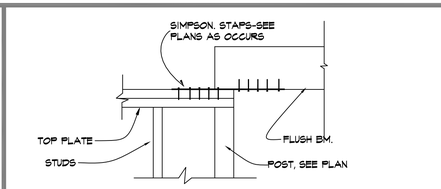
SILL ANCHORS AND P.T.D.F. MUDSILLS:

1. ALL NON-SHEAR WALL SILLS SHALL BE ATTACHED TO THE FOUNDATION WITH A MINIMUM OF A SIMPSON 5/8"ø x 12" ANCHORS AT 4'-0" O.C. (U.N.O.) EACH PIECE OF SILL PLATE IS TO HAVE A MINIMUM OF 2 ANCHORS PER PIECE 12" MAXIMUM FROM EACH END. EMBED ANCHORS 7" MIN. INTO CONCRETE.
2. ALL PLATES ON CONTRETE OR MASONARY SHALL BE PRESSURE TREATED DOUGLAS FIR (P.T.D.F.).
3. WHERE REQUIRED, USE HOT DIPPED GALVANIZED ANCHOR BOLTS, NAILS AND HARDWARES THAT ARE ATTACHED TO P.T.D.F. MUDSILL. PER RELEVANT CITY CODE REQUIREMENTS.

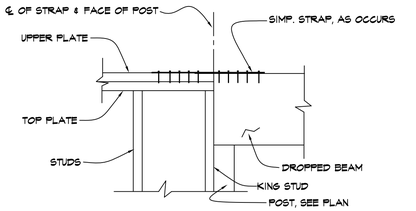


SPAN	SIZE 2x4 WALL/ 2x6 WALL
UP TO 4'-0"	4x8 (UNO.)/6X8(UNO.)
4'-1" TO 6'-0"	4x8 (UNO.)/6X8(UNO.)
6'-1" TO 10'-0"	4x12 (UNO.)/6X10(UNO.)

7 TYP. FRAMED WALL OPENING (UNO.)

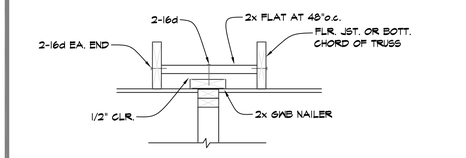


RAISED BEAM

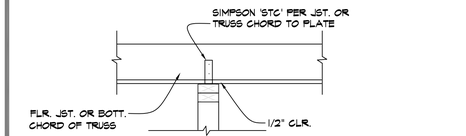


DROPPED BEAM

9 TYP. STRAP TO BEAM

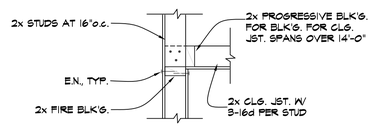


PARALLEL TO INTERIOR

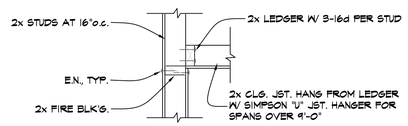


NORMAL TO INTERIOR

10 NON-BRG. WALL DET.

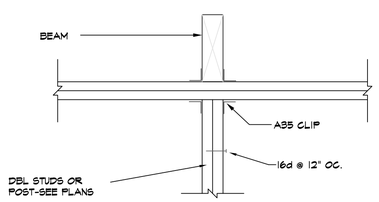


CEILING JOISTS AT 16" OR 24"o.c.



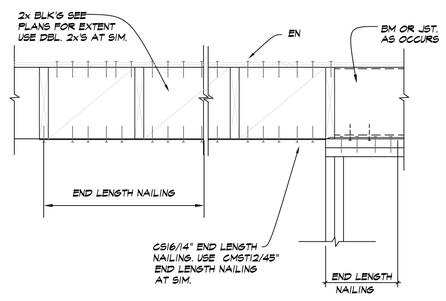
CEILING JOISTS AT 16" OR 24"o.c.

11 CEILING JOIST TO BALLOON FRAME WALL

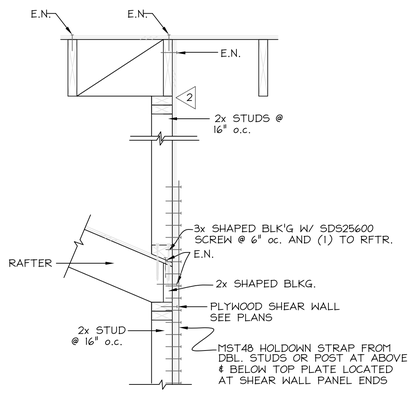


12 TYP. BM SUPPORT DET.

13



14 COLLECTOR STRAP



15 SHEAR TRANSFER DET.

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CONSTRUCTION DOCUMENTS - PLANNING APPLICATION
WWW.LANDMARKDESIGNS.NET
P.O. BOX 2922 SOQUEL, CA 95073 408.761.2118

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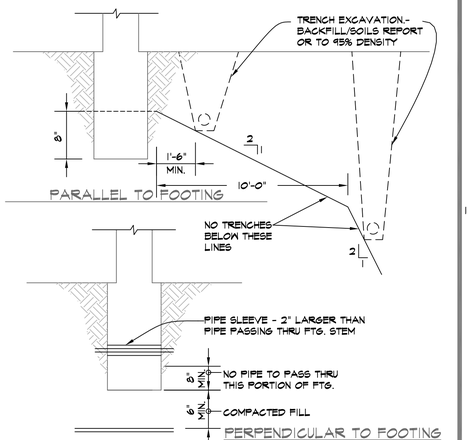
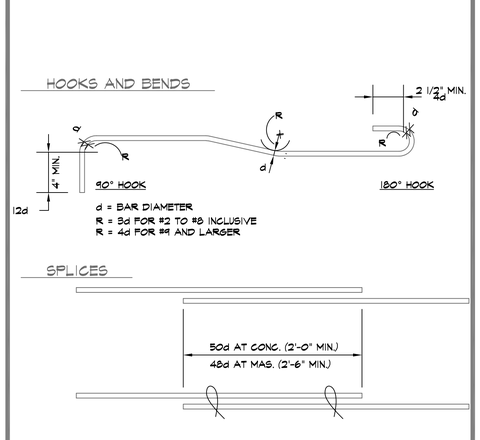
	RC
PROJ. NO.	DATE
16-208	5-24-19

DRAWING NO.
SD-2
SHEET(S)

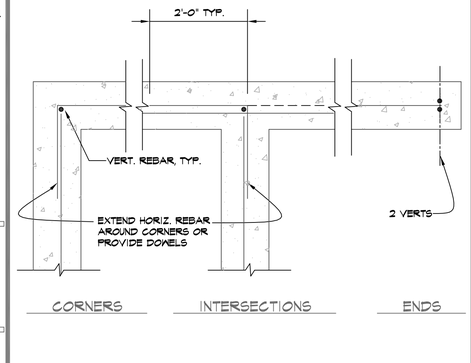
16208-24X36



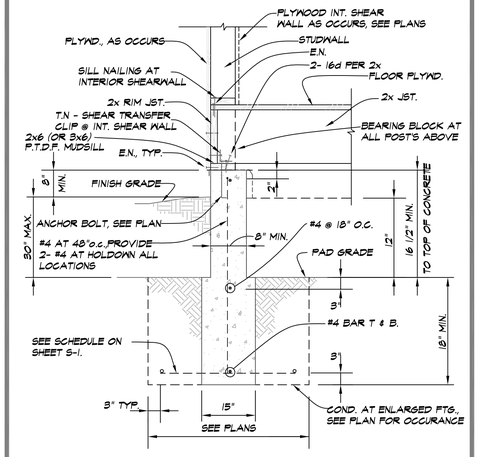
1 TRENCH DETAIL



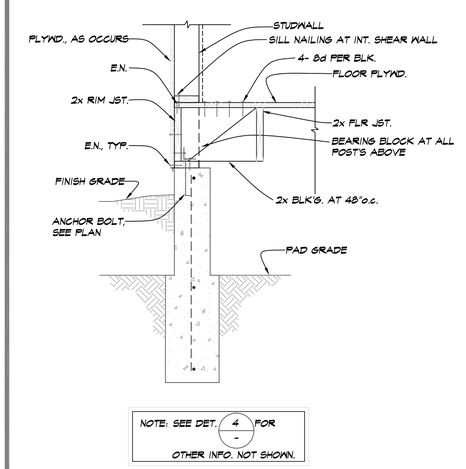
2 TYP. REINF. BAR DET.



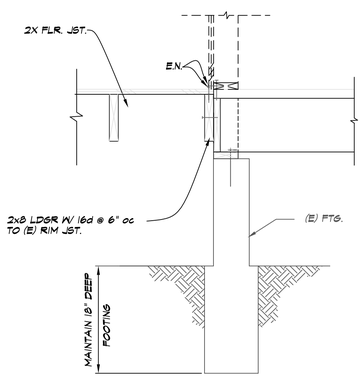
3 TYP. REINF. AT FTG. AND WALL CORNERS AND INTERSECTIONS



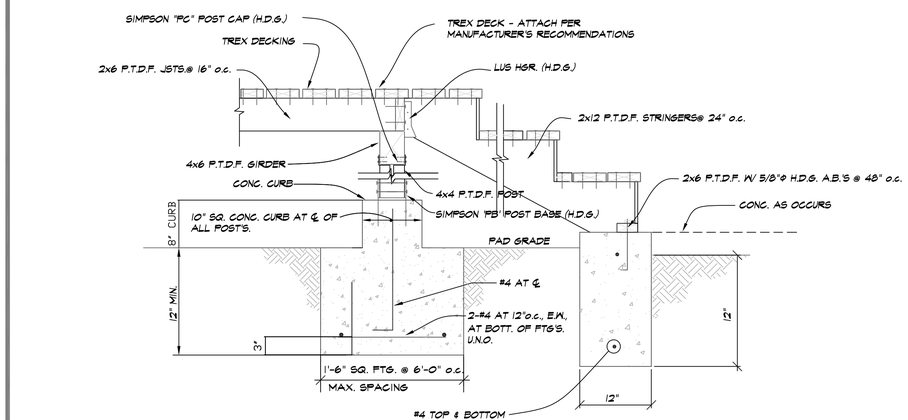
4 TYP. FOOTING DET.



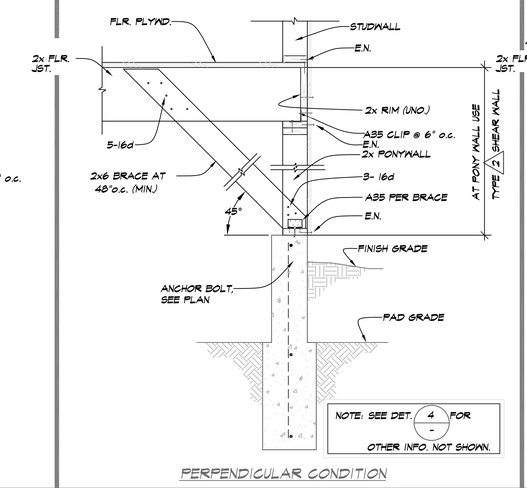
5 TYP. FOOTING DET.



6 TYP. FOOTING DET.

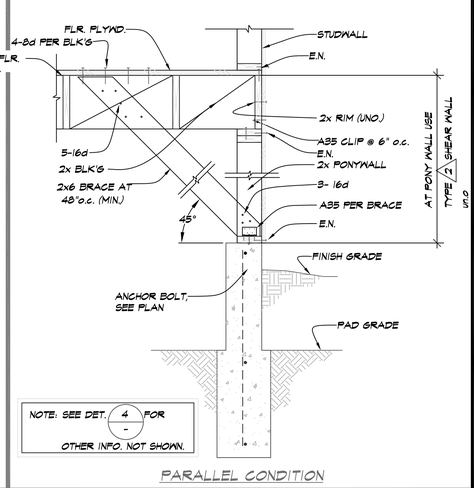


7 DECK FTG. DET.



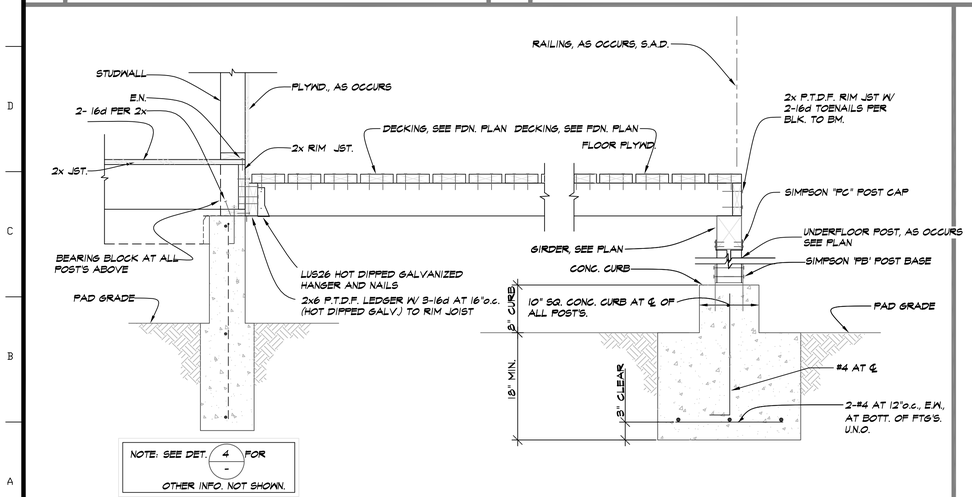
PERPENDICULAR CONDITION

9 TYP. BRACE DET.

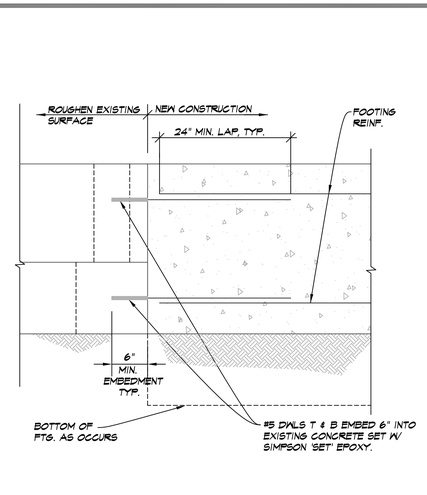


PARALLEL CONDITION

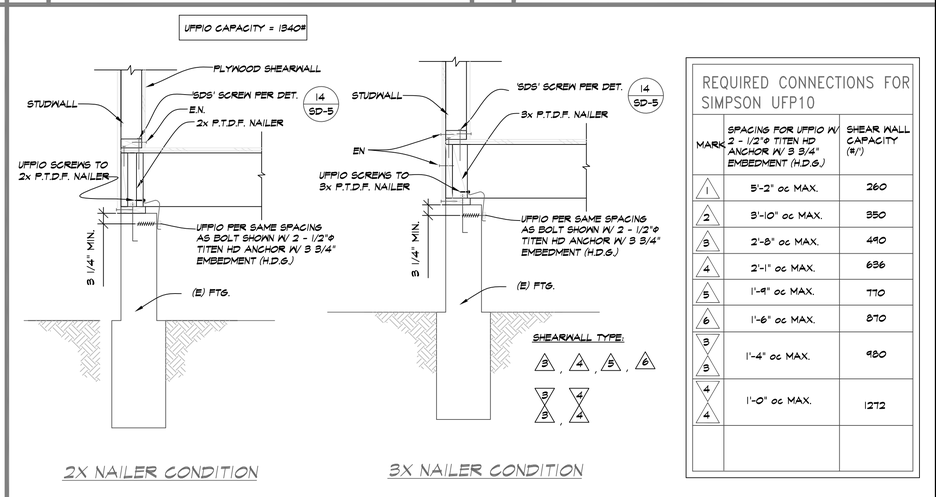
10 TYP. BRACE DET.



11 DECK FTG. DET.



13 (N) TO (E) FOOTING



2X NAILER CONDITION

3X NAILER CONDITION

REQUIRED CONNECTIONS FOR SIMPSON UFP10

MARK	SPACING FOR UFFIO W/ 2 - 1/2"ø TITEN HD ANCHOR W/ 3 3/4" EMBEDMENT (H.D.G.)	SHEAR WALL CAPACITY (#/')
1	5'-2" oc MAX.	260
2	3'-10" oc MAX.	350
3	2'-8" oc MAX.	490
4	2'-1" oc MAX.	636
5	1'-9" oc MAX.	770
6	1'-6" oc MAX.	870
3/3	1'-4" oc MAX.	980
4/4	1'-0" oc MAX.	1272

14 SHEAR TRANSFER DET.

NO.	REVISIONS

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JANUARY 25, 2021

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PHIL ANCHARSKI 831-840-1218
P.O. BOX 1533 SOQUEL, CA 95073

SCALE: NOT TO SCALE, U.N.O.

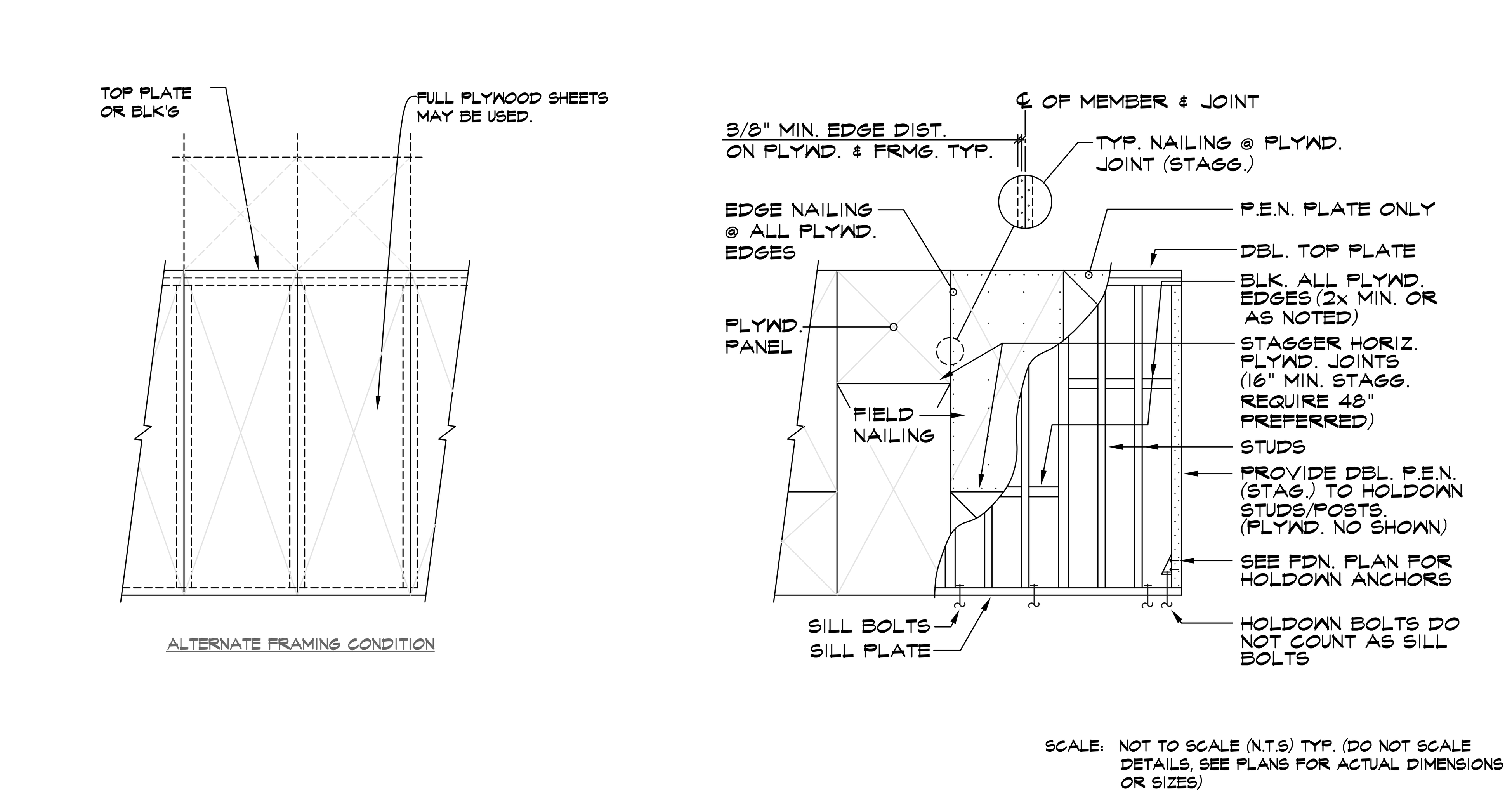
DRAWN | CHECKED: RC

PROJ. NO.: 16-208 | DATE: 5-24-19

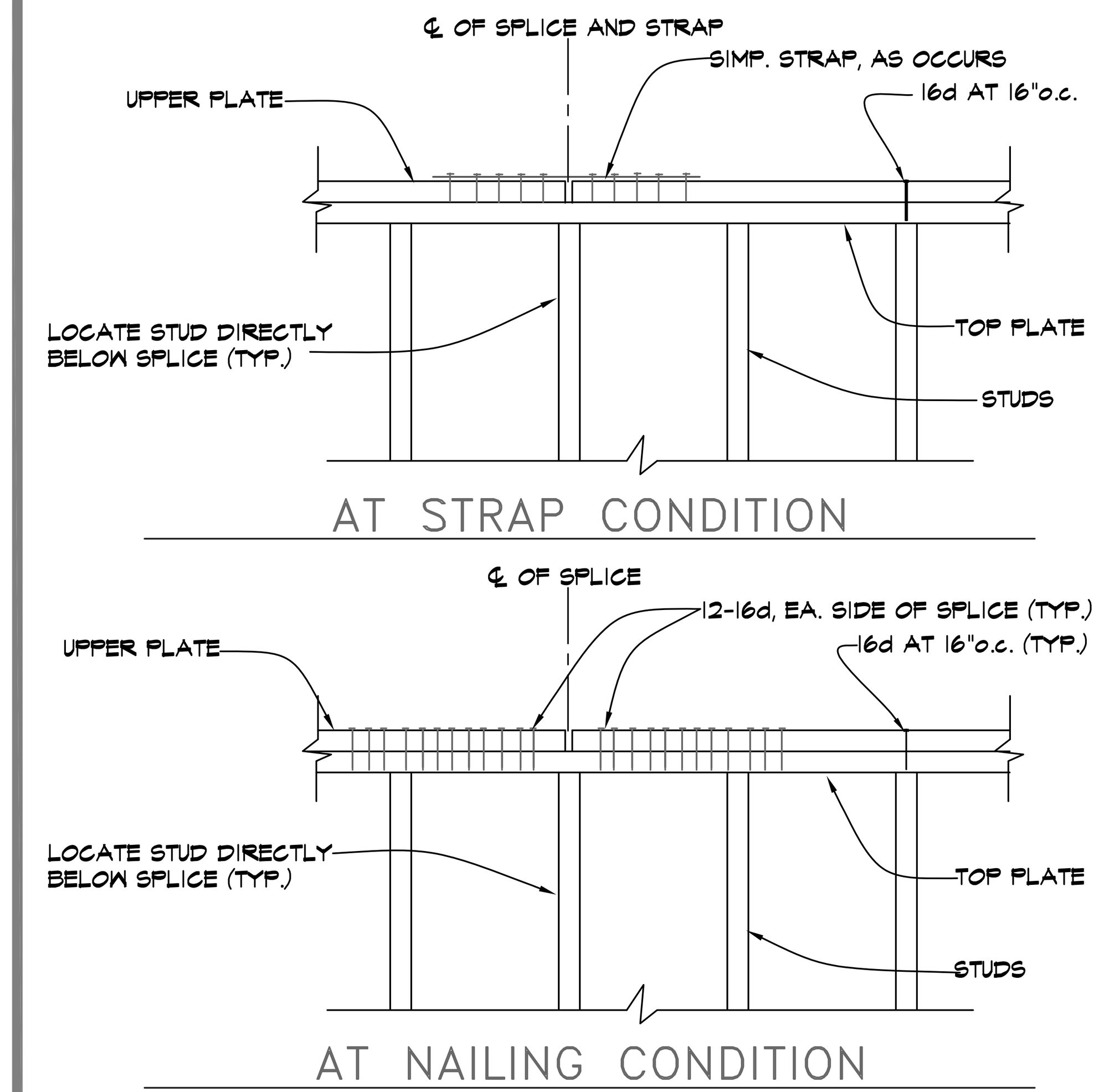
DRAWING NO.: SD-3

SHEET(S)

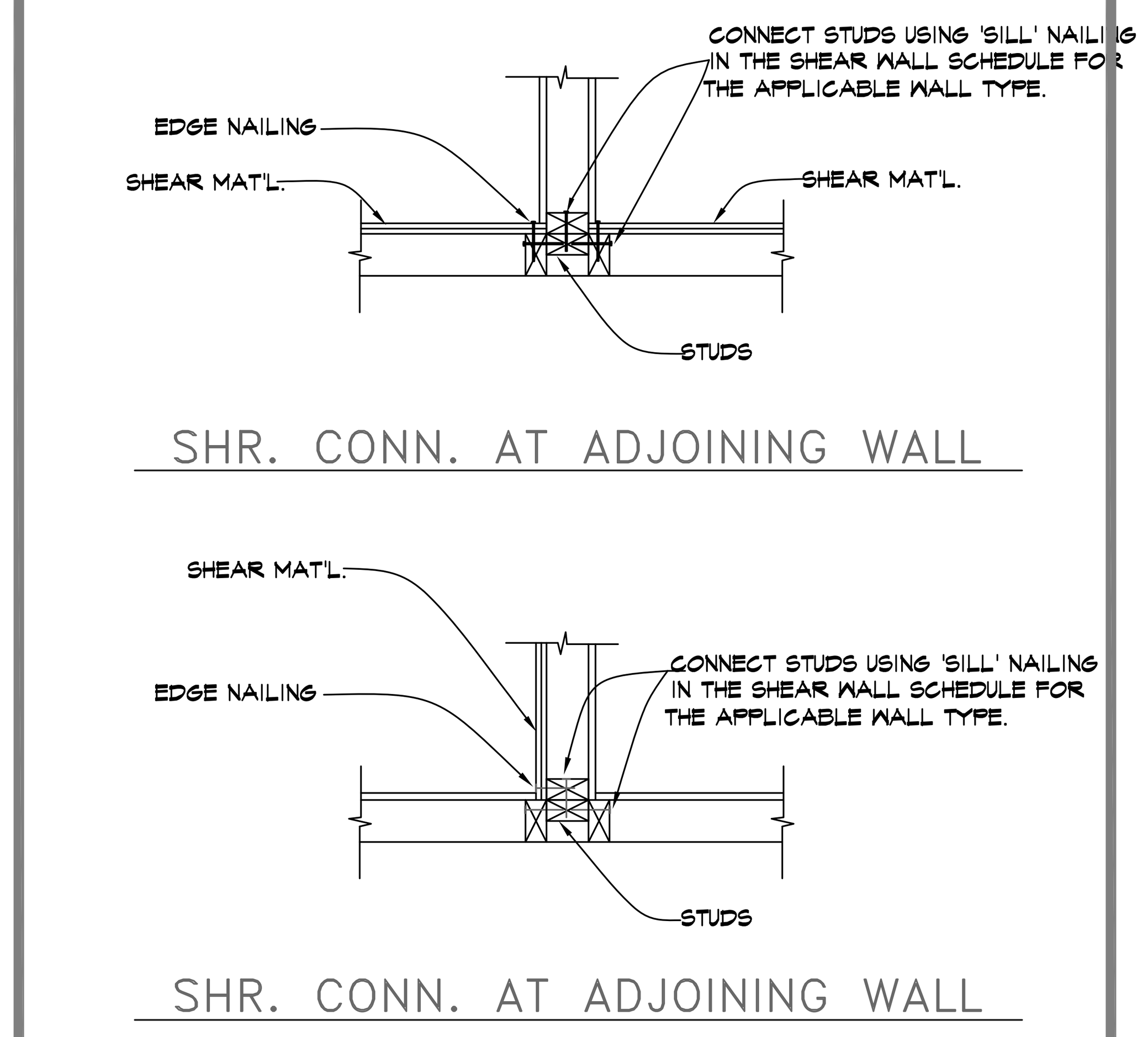
16208-24X36



1 PLYWOOD SHEAR WALLS



3 TOP PL. SPLICE DET.

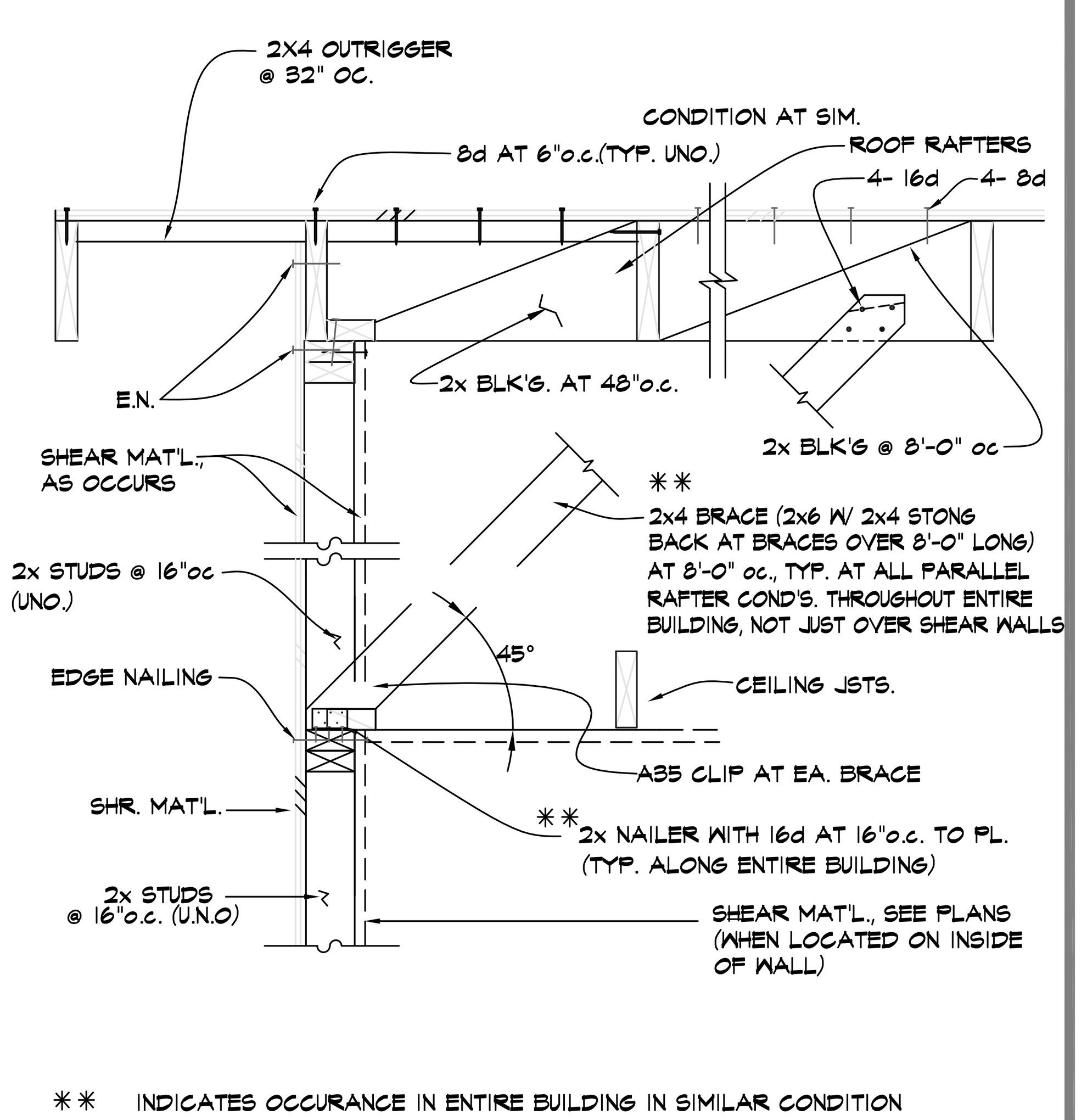


4 SHEAR TRANSFER DET.

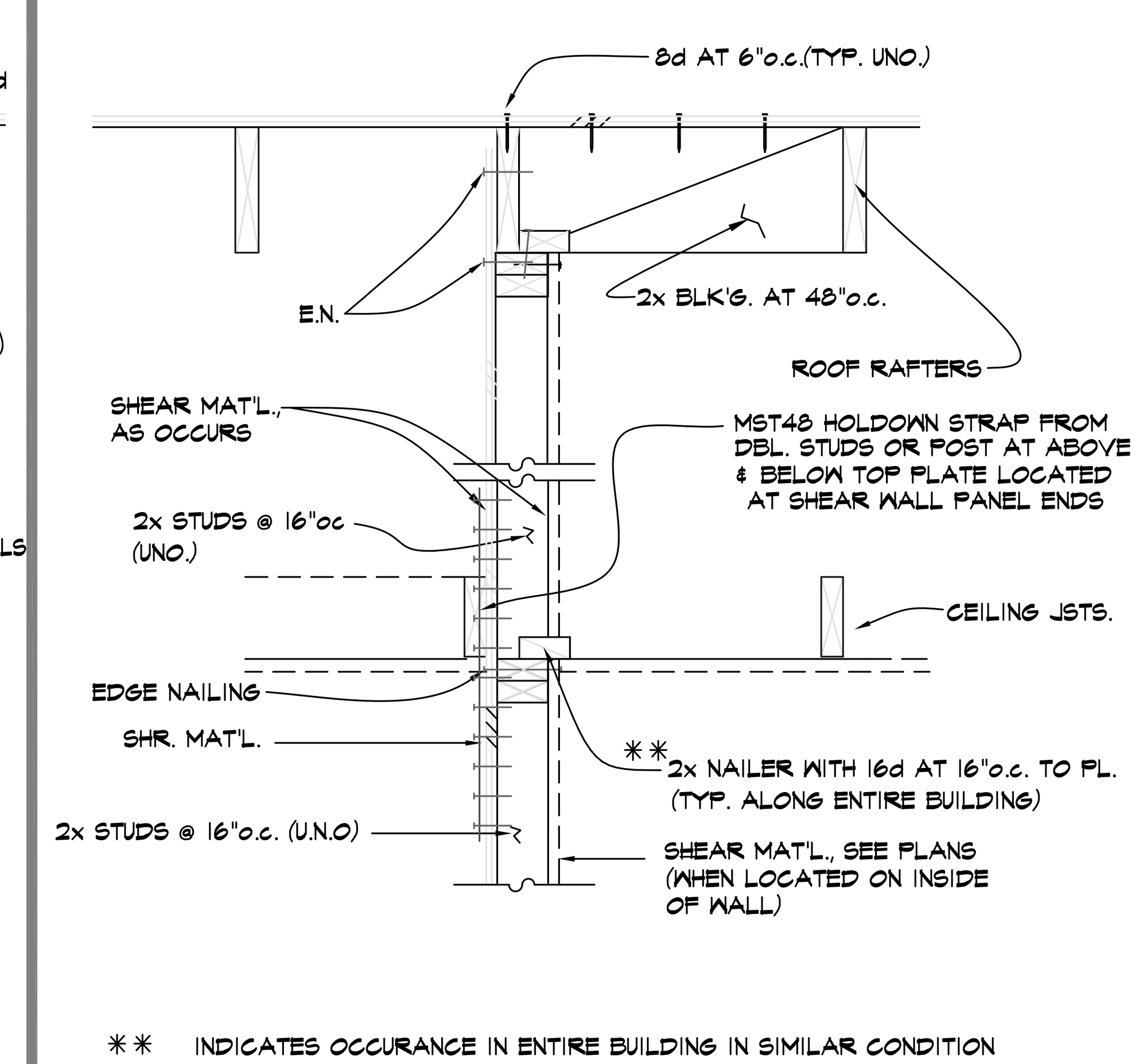
SHEAR WALL NOTES:

1. "-------" SYMBOL INDICATES LOCATION OF SHEAR MATERIAL.
2. " △ " SYMBOL IS A SHEAR WALL IDENTIFIER, AND INDICATES SIDE ON WHICH SHEAR MATERIAL IS TO BE PLACED. SEE SHEAR WALL SCHEDULE FOR MORE INFORMATION.
3. BLOCK AND NAIL ALL JOINTS WITH NAILING SPECIFIED IN SHEAR WALL SCHEDULE.
4. 8d AND 10d NAILS SHALL BE COMMON NAILS OR HOT DIPPED GALVANIZED BOX NAILS.
5. 5/8"φ ANCHORS SHALL BE CAST INTO CONCRETE AT 4'-0" oc MAXIMUM, EXCEPT WHERE SHOWN OTHERWISE (SEE "SHEAR WALL SCHEDULE"). POWER DRIVEN FASTENERS WILL NOT BE PERMITTED ON EXTERIOR WALLS, OR SHEAR WALLS.
6. NAIL ROOF SHEATHING WITH 8d NAILS AT 6" O.C. @ EDGES AND 12" O.C. INTERIOR (U.N.O).
7. ALL HOLDOWNS, STRAPS AND ANGLES CALLED OUT ON THESE PLANS ARE TO BE MANUFACTURED BY SIMPSON CO. OR EQUAL.
8. NAIL SHEAR MATERIAL TO ALL POSTS ATTACHED TO HOLDOWN OR STRAPS WITH 2-ROWS EDGE NAILING.
9. ALL SIMPSON PRODUCTS ARE TO BE INSTALLED PER SIMPSON CO. SPECIFICATIONS.
10. ALL 'PA' TYPE ANCHORS TO BE INSTALLED OVER PLYWOOD SHEAR MATERIAL.
11. DO NOT OVERDRIVE NAILS INTO PLYWOOD. IF NAIL GUN IS USED, GUN SHOULD BE ADJUSTED TO UNDERDRIVE NAIL, THEN NAILS ARE TO BE HAND DRIVEN SO THAT THE HEAD OF THE NAIL IS FLUSH WITH THE FACE OF THE PLYWOOD.

5



6 TYP. PARALLEL RAFTER COND. W/ CEILING JOIST



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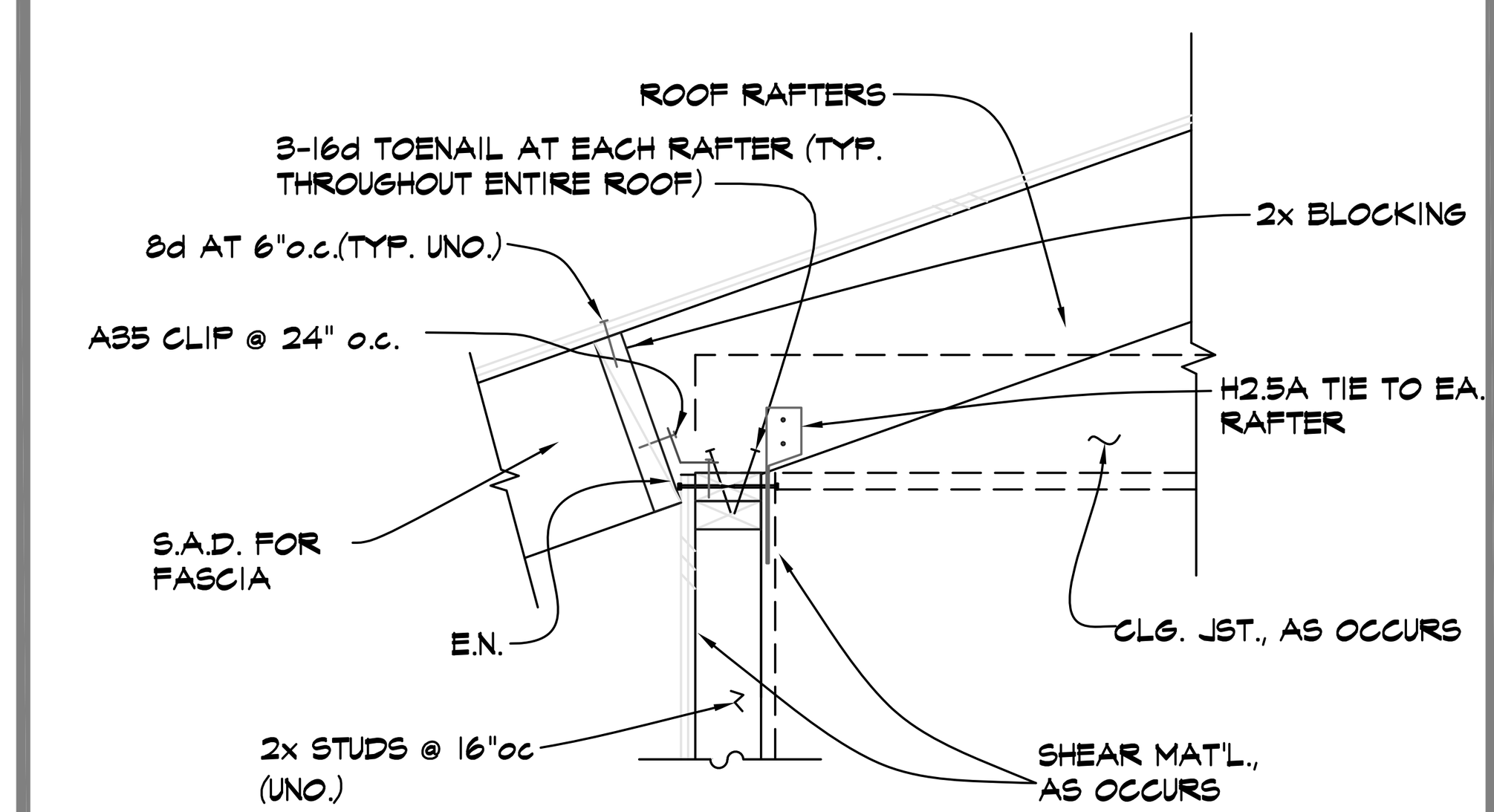
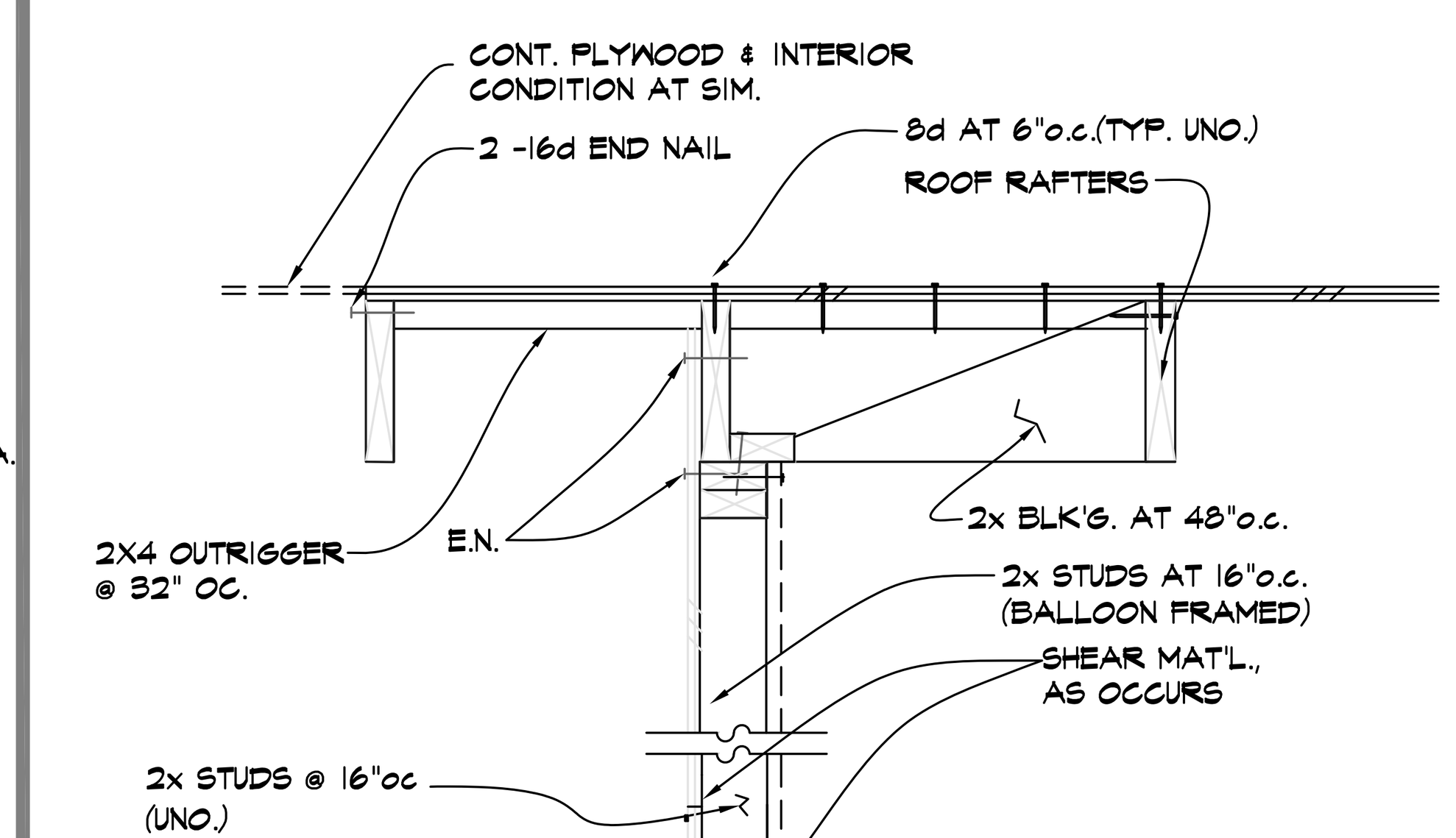


8 PERPENDICULAR RAFTER COND.



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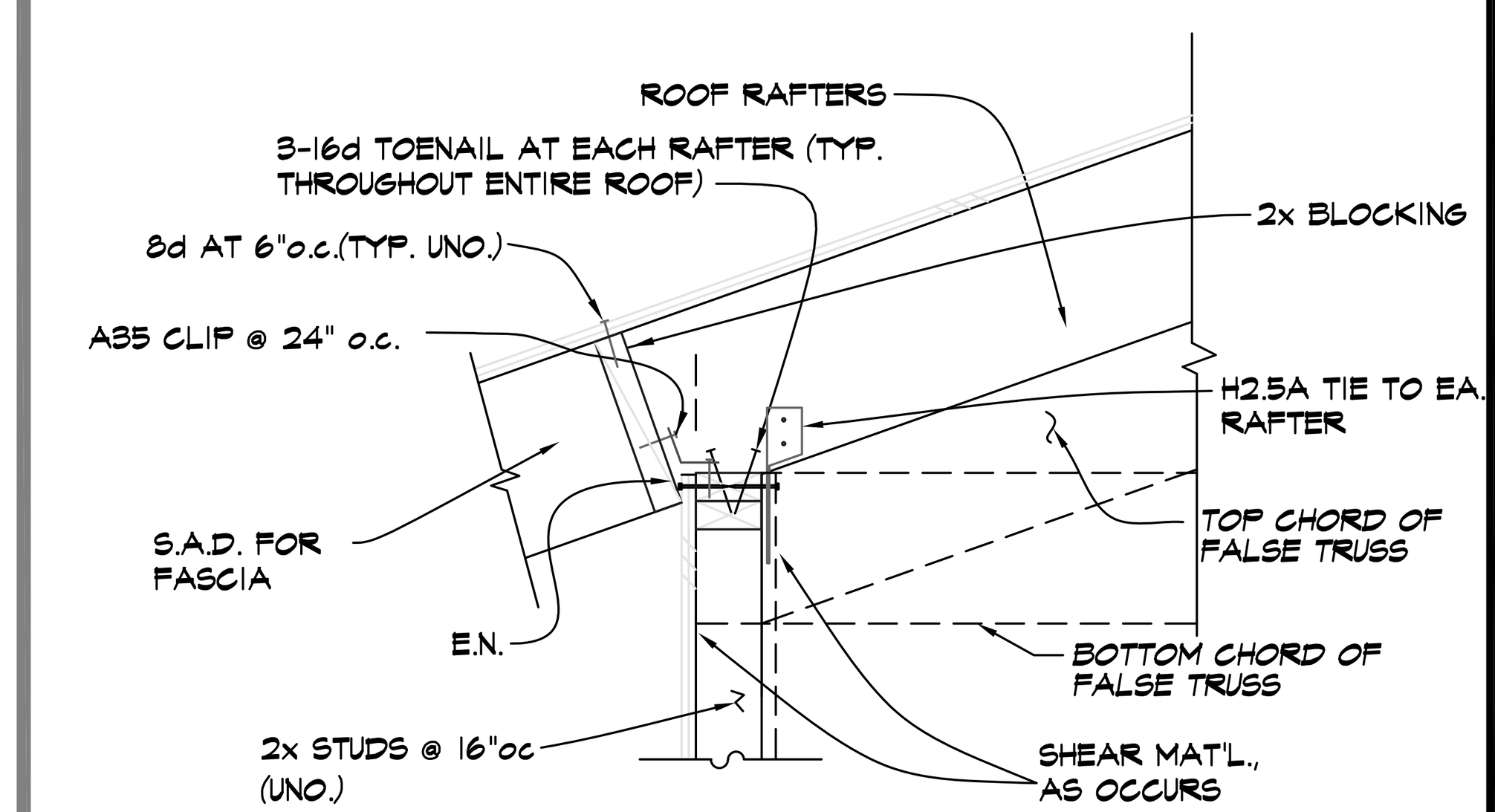

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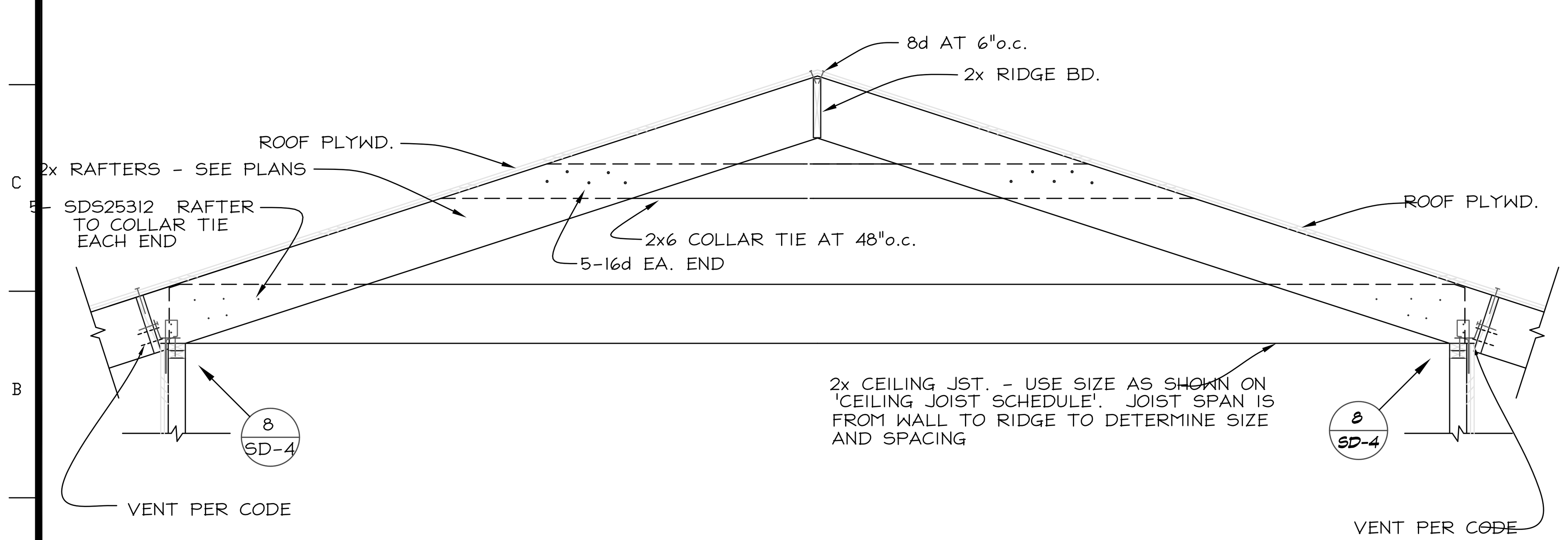

11 TYPICAL ROOF CONVENTIONAL FRAMING DETAIL

NOTES: (U.N.O. ON PLANS)
1. "*" BLOCK ALL EDGES
2. "**" BLOCK ALL ADJOINING PLYWOOD EDGES WITH 3x LUMBER AND STAGGER NAILS (PLATES, STUDS, POST, BLOCKING, ETC.) USE 3x MUDSILL
3. OFFSET PANEL JOINTS ON DIFFERENT FRAMING MEMBERS WHERE PLYWOOD SHEAR MATERIAL OCCURS ON EACH SIDE OF WALL. OTHERWISE USE 3x MIN. LUMBER, NAILS SHALL BE STAGGERED ON BOTH SIDES
4. USE PNEUMATICALLY DRIVEN 16d NAILS FOR ALL SPACING LESS THAN 6"o.c.. IF SILL PLATES SPLITS, NAILS SHALL BE DRIVEN IN PRE-DRILLED HOLES. NAILS SHALL NOT BE UNDERDRIVEN, OVERDRIVEN AND/OR SLANTED.
5. ALL NAILS SHALL BE COMMON.
6. "N/A" INDICATES NOT APPLICABLE WHEN PLYWOOD IN ON THE EXTERIOR FACE OF WALL. SEE PLANS FOR ATTACHMENTS WHEN PLYWOOD IS ON INTERIOR FACE OF WALL.
7. PROVIDE STUDS AT 16" O.C. (MAX.)
8. OSB (ORIENTED STRAND BOARD) APA RATED BOARD MAYBE USED IN LIEU OF PLYWOOD WITH BUILDING OWNERS OR ARCHITECTS APPROVAL. HOWEVER, OSB BOARDS SHALL BE RATED EQUAL OR BETTER THAN THE PLYWOOD SPECIFIED.
9. USE 5/8φ ALL-THREAD ROD EMBED 7" INTO (E) CONCRETE & SET W/ SIMPSON 'SET' EPOXY AT EXISTING FOOTING CONDITIONS ONLY.
10. USE BLK'G OR RIM BOARD EACH SIDE OF WALL FOR LTP4.
11. T.N.- INDICATES TRANSFER NAILING CLIP (DO NOT TOENAIL)
12. ALL SILL NAILING T.N. & S.N. APPLY TO THE EXTENT OF SHEAR WALLS ONLY.
13. ' + ' PRE-DRILL HOLES, IF WOOD SPLITS.
14. USE 3" x 3" x 1/4" WASHER PLATE FOR ALL ANCHOR BOLTS.

SEE DETAIL 14/SD-5 FOR SOLE PLATE ATLERNATE CONNECTION

USE 3x P.T.D.F. MUDSILL AT FOUNDATION FOR SHEAR WALL TYPE BELOW: (OTHERWISE USE 2x P.T.D.F. MUDSILL W/ REDUCED A.B.'S SPACING BY HALF (1/2) AS SHOWN ON SHEAR WALL SCHEDULE W/ 3" SQ. x 1/4" THK. WASHER PLATE)
△3

USE 3x P.T.D.F. MUDSILL AT FOUNDATION FOR SHEAR WALL TYPES BELOW:
△4, △5, △6
▽3/△3, ▽4/△4, ▽6/△6

SHEAR WALL SCHEDULE — NOTE # 12

MARK	MATERIAL	PLYWOOD NAILING	SHEAR TRANSFER NOTE#11: NAILING OR CLIPS (T.N.)	SILL PLATE CONNECTIONS (SEE NOTE # 9 @ EXISTING CONCRETE): NAILING (S.N.) FOR 2x SOLE PLATE ONLY	ANCHOR BOLTS (A.B.'S) REMARKS	SHEAR WALL CAPACITY (#/')
△1	3/8" CDX PLYWOOD P.I.: 24/0 *	8d AT 6"o.c. E.N. 8d AT 12"o.c. F.N.	16d AT 5"o.c. OR A35 @ 16" o.c. OR LTP4 AT 24" o.c	16d AT 5"o.c.	5/8"φ A.B. AT 4'-0"o.c.	260
△2	3/8" CDX PLYWOOD P.I.: 24/0 *	8d AT 4"o.c. E.N. 8d AT 12"o.c. F.N.	16d AT 3"o.c. OR A35 @ 12" o.c. OR LTP4 AT 20" o.c	14/SD-5	5/8"φ A.B. AT 3'-0"o.c.	350
△3	3/8" CDX PLYWOOD P.I.: 24/0 **	8d AT 3"o.c. E.N. 8d AT 12"o.c. F.N.	A35 @ 10" o.c. OR LTP4 AT 16" o.c	14/SD-5	5/8"φ A.B. AT 2'-4"o.c.	490
△4	3/8" CDX PLYWOOD P.I.: 24/0 **	8d AT 2"o.c. E.N. 8d AT 12"o.c. F.N.	A35 @ 10" o.c. OR LTP4 AT 12" o.c	14/SD-5	5/8"φ A.B. AT 1'-8"o.c.	636
△5	1/2" CDX PLYWOOD P.I.: 24/0 **	10d AT 2"o.c. E.N. 10d AT 12"o.c. F.N.	2 - A35 @ 12" o.c. OR LTP4 AT 10" o.c	14/SD-5	5/8"φ A.B. AT 1'-6"o.c.	770
△6	1/2" STR. I PLYWOOD P.I.: 24/0 **	10d AT 2"o.c. E.N. 10d AT 12"o.c. F.N.	2 - A35 @ 12" o.c. OR LTP4 AT 8" o.c	14/SD-5	5/8"φ A.B. AT 1'-4"o.c.	870
▽3/△3	3/8" CDX PLYWOOD ** EACH SIDE P.I.: 24/0	8d AT 3"o.c. E.N. 8d AT 12"o.c. F.N.	2 - A35 @ 12" o.c. OR LTP4 AT 8" o.c	14/SD-5	5/8"φ A.B. AT 1'-2"o.c.	980
▽4/△4	3/8" CDX PLYWOOD ** EACH SIDE P.I.: 24/0	8d AT 2"o.c. E.N. 8d AT 12"o.c. F.N.	NOTE#10 LTP4 AT 12" o.c EACH SIDE, STAGGER	14/SD-5	5/8"φ A.B. AT 11"o.c.	1272
▽6/△6	1/2" STRUCT I PLYWOOD ** EACH SIDE P.I.: 24/0	10d AT 2"o.c. E.N. 10d AT 12"o.c. F.N.	NOTE#10 LTP4 AT 8" o.c EACH SIDE, STAGGER	14/SD-5	5/8"φ A.B. AT 8"o.c.	1740

13 TYPICAL PLYWOOD SHEAR WALL SCHEDULE

NO.	REVISIONS
1	1-25-21 MASTER BED. FRMG.

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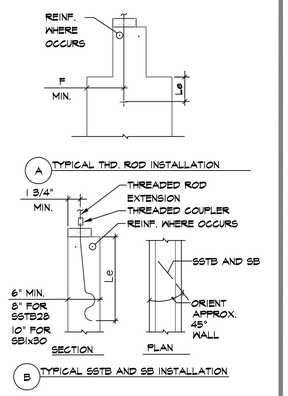
PROJ. NO. 16-208	DATE 5-24-19

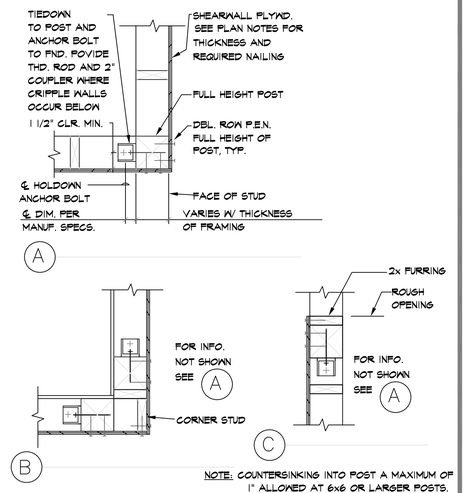
DRAWING NO. SD-4
SHEET(S)

16208-24X36

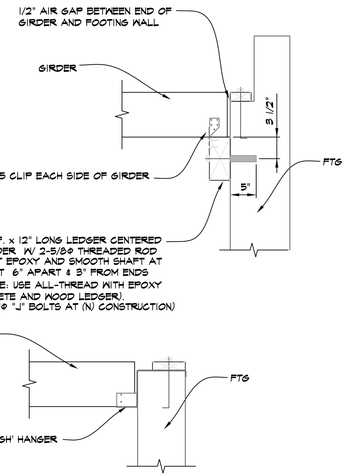
HOLDOWN SIZE	CAPACITY POST SIZE MIN.(INCHES)	OPTION A: THRD. ROD WITH DBL NUT/WASHER				OPTION B: SIMPSON SSTB ANCHOR BOLT		
		ANCHOR BOLT SIZE	MIN. CLEARANCE Le	MIN. CLEARANCE F	REMARKS	ANCHOR BOLT SIZE*	MIN. EMBED. (Le) inches	REMARKS
HDU2	3075# 3"x3 1/2"	5/8" THD. ROD	-	-		SSTB16	12 5/8	
HDU4	4565# 3"x3 1/2"	5/8" DIA. THD. ROD	-	-		SSTB20	16 5/8	FOR INSTALLATION REQUIREMENT SEE (B)
PHD6	5210# 3 1/2"x3 1/2"	7/8" DIA. THD. ROD	-	-		SSTB28	24 7/8	
HDU5	5645# 3"x3 1/2"	5/8" DIA. THD. ROD	-	-		SSTB24	20 5/8	REFER TO SIMPSON CATALOG FOR ADDL. REQUIREMENT
HDU8	7870# 4 1/2"x3 1/2"	7/8" DIA. THD. ROD	-	-		SSTB28	24 7/8	
					SEE (A)			
HDU11	11175# 7 1/4"x3 1/2"	1" DIA. THD. ROD	10"	15"	PROVIDE DBL NUT AND PL 3/8"x 3x3 WASHER AT BOTTOM	SSB1x30	24	
HDU14	14925# 7 1/4"x3 1/2"	1" DIA. THD. ROD	12"	18"				
HD15	15305# 5 1/2"x5 1/2"	1 1/4" DIA. THD. ROD	14"	21"				
HD19	19070# 5 1/2"x5 1/2"	1 1/4" DIA. THD. ROD	24"	24"				* MONO POUR

1 HOLDOWN ANCHOR BOLT SCHEDULE

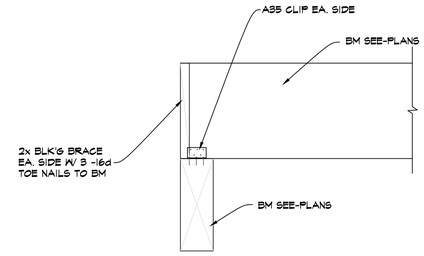




3 TYP. PLAN @ HOLDOWN



4 GIRDER TO FOUNDATION DET.



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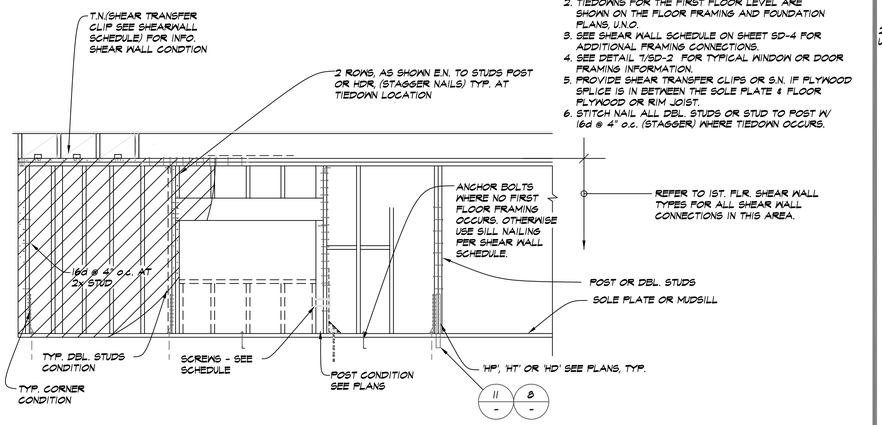
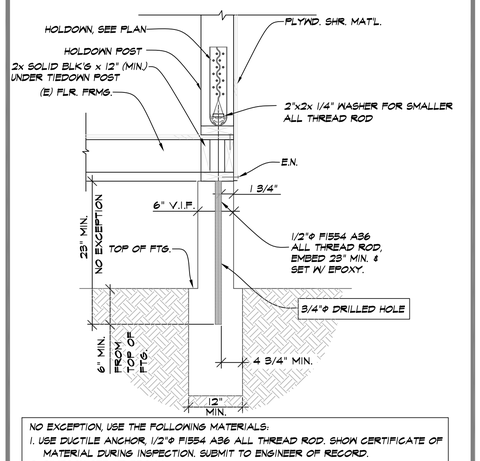


TIEDOWN NOTES:

1. THIS DETAIL SHOW ONLY GENERAL TIEDOWN LOCATIONS. SEE PLANS FOR ACTUAL FRAMING CONDITOINS.
2. TIEDOWNS FOR THE FIRST FLOOR LEVEL ARE SHOWN ON THE FLOOR FRAMING AND FOUNDATION PLANS, U.N.O.
3. SEE SHEAR WALL SCHEDULE ON SHEET SD-4 FOR ADDITIONAL FRAMING CONNECTIONS.
4. SEE DETAIL 7/SD-2 FOR TYPICAL WINDOW OR DOOR FRAMING INFORMATION.
5. PROVIDE SHEAR TRANSFER CLIPS OR S.N. IF PLYWOOD SPLICE IS IN BETWEEN THE SOLE PLATE & FLOOR PLYWOOD OR RIM JOIST.
6. STITCH NAIL ALL DBL. STUDS OR STUD TO POST W/ 16d @ 4" o.c. (STAGGER) WHERE TIEDOWN OCCURS.

6 TYP. HOLDOWN TIEDOWN DET. LOCATION

SCALE: NOT TO SCALE (N.T.S) TYP. (DO NOT SCALE DETAILS, SEE PLANS FOR ACTUAL DIMENSIONS OR SIZES)



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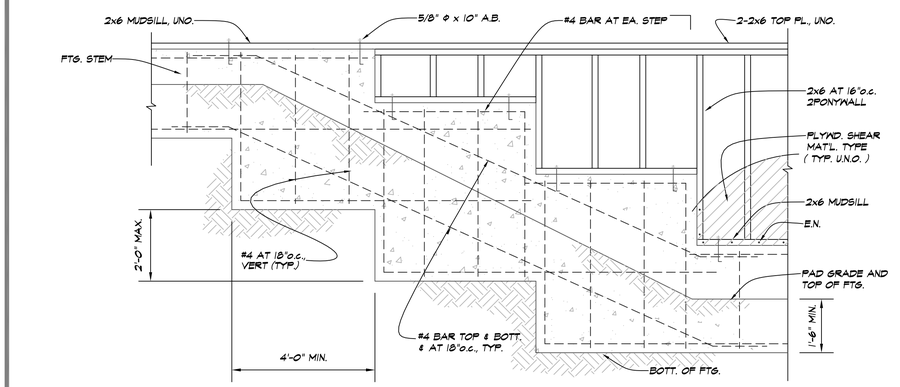

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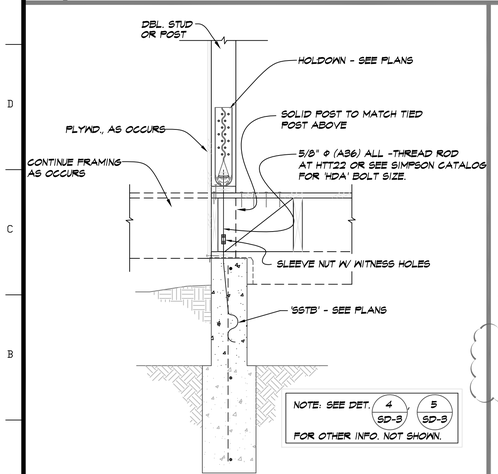

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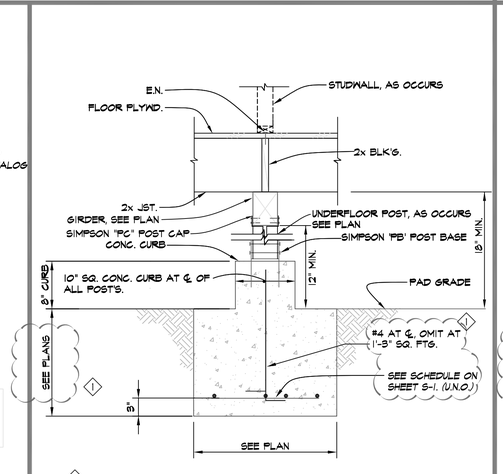
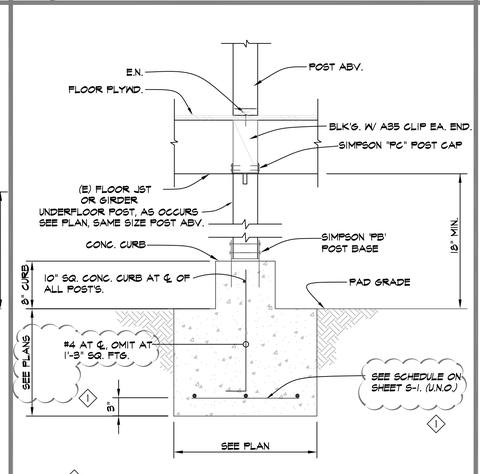


12 TYP. INT. FTG. DET.



13 TYP. INT. FTG. DET.

REQUIRED CONNECTIONS FOR 3x SOLE PLATE & ALTERNATE SOLE PLATE CONNECTION FOR 2x PLATE

MARK	2x SOLE PLATE (W/ 1 1/8" MAX. PLYWOOD SUBFLOOR) W/ SIMPSON SDS25412 LONG SCREWS	3x SOLE PLATE (W/ 1 1/8" MAX. PLYWOOD SUBFLOOR) W/ SIMPSON SDS25600 LONG SCREWS	SHEAR WALL CAPACITY (#/')
1	16" oc	16" oc	260
2	12" oc	12" oc	350
3	8" oc	8" oc	490
4	6" oc	6" oc	636
5	5" oc (STAGGERED)	5" oc	770
6	4" oc (STAGGERED)	4" oc (STAGGERED)	870
3 / 3	N/A	4" oc (STAGGERED)	980
4 / 4	N/A	3" oc (STAGGERED)	1272
6 / 6	N/A	2 ROWS @ 4" oc (STAGGERED)	1740

14 SOLE PLATE SCREWING SCHEDULE

15

NO.	REVISIONS
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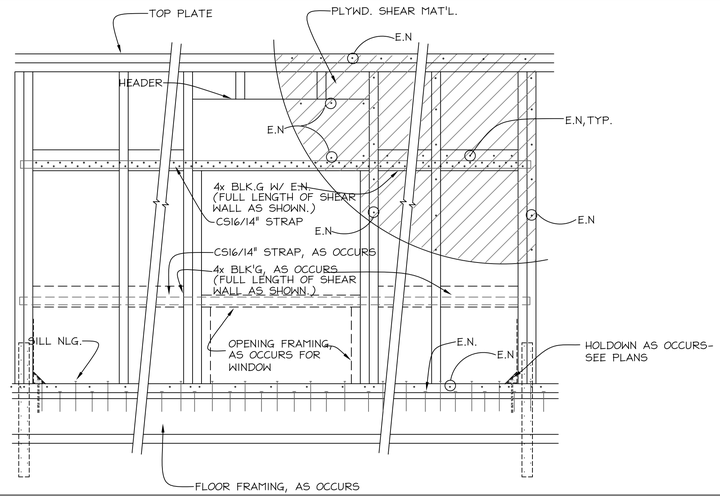
PROJ. NO. 16-208	DATE 5-24-19

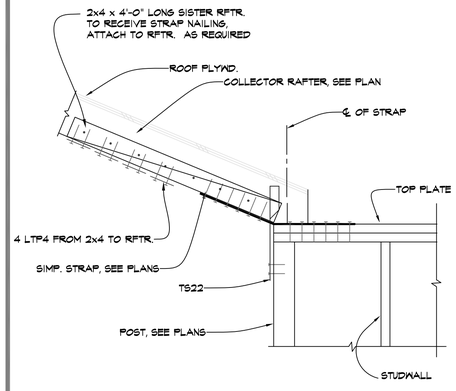
DRAWING NO. SD-5

SHEET(S)

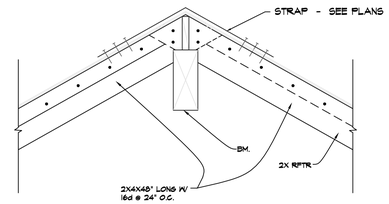
16208-24X36



1 SPECIAL WINDOW / DOOR REINFORCING



3 TYP RAFTER TO PLATE STRAP



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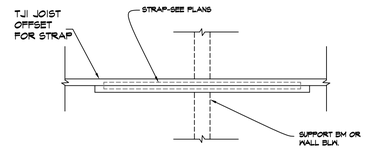

PLAN VIEW

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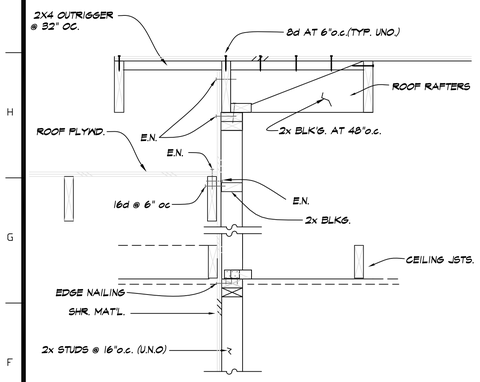

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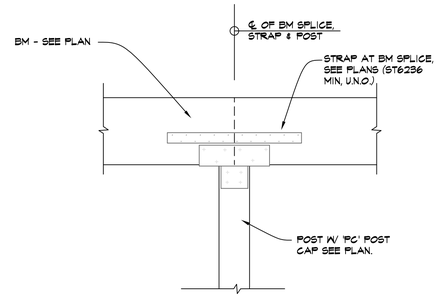
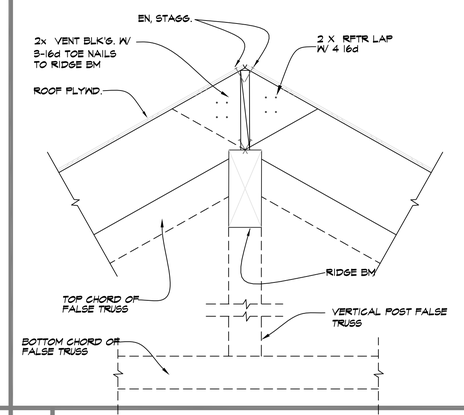
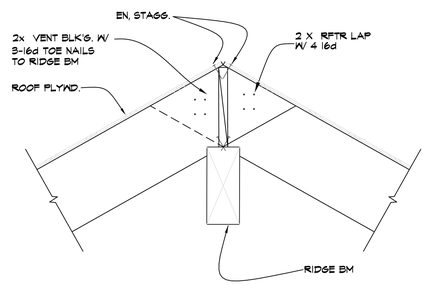


7 TYP. BM. CONN.

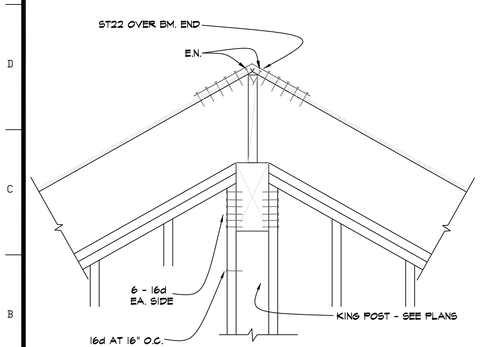


8 TYPICAL RIDGE BEAM FRMG.

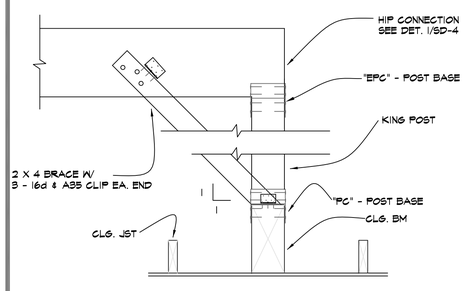


9 TYPICAL RIDGE BEAM FRMG.

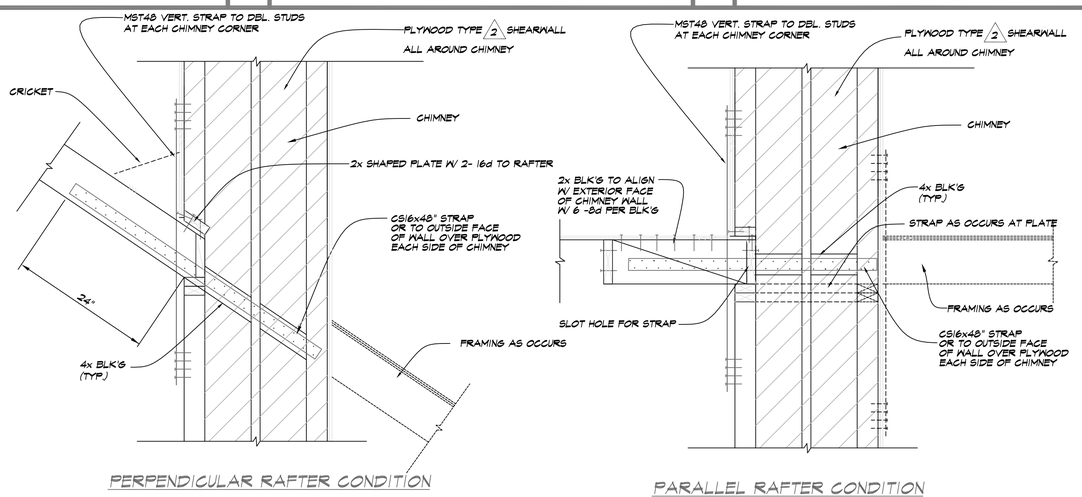
10



11 TYP. RIDGE BM. POCKET FRMG.



12 TYP. CLG. BM./KICKER BRACING



13 CHIMNEY STRAP CONNECTION DETAIL

NO.	REVISIONS
1	1-25-21 MASTER BED. FRMG.

Romeo C. Cabalar, P.E.

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REGISTERED PROFESSIONAL ENGINEER ROMEO C. CABALAR C 46956 CIVIL STATE OF CALIFORNIA

JANUARY 25, 2021

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DRAWING NO.
SD-6
SHEET(S)

16208-24X36

ROOF FRAMING NOTES

1. PROVIDE A 2-2x POST BELOW ALL BEAM ENDS UNLESS A LARGER POST IS SPECIFIED.
2. NAIL ROOF PLYWOOD W/ EDGE NAILING TO ALL FRIEZE BLOCKING AT EXTERIOR WALLS AND RAFTERS IN LINE WITH EXTERIOR WALLS OR INTERIOR SHEAR WALLS
3. EXTEND ALL ROOF PLYWOOD BELOW CALIF. FRAMED AREAS AND EDGE NAIL TO BEAM OR PERIMETER WALL BLOCKING.
4. NAIL SHEAR MATERIAL WITH TWO ROWS OF EDGE NAILING TO ALL POSTS ATTACHED TO HOLDOWN ANCHORS OR STRAPS.
5. AT ALL POSTS, PROVIDE A POST OF IDENTICAL SIZE (UNLESS A LARGER IS SPECIFIED IN FLOOR AND WALLS BELOW.
6. LOCATE ALL FLUSH BEAMS DIRECTLY BELOW BEARING WALL OR POST IN FLOOR ABOVE.
7. NAIL FLOOR PLYWOOD WITH EDGE NAILING TO ALL FLUSH BEAMS, JOISTS OR BLOCKING IN LINE WITH OR OVER EXTERIOR WALLS OR SHEAR WALLS.
8. ALL EXTERIOR PORCH POST'S ARE TO BE SUPPORTED ON A RAISED CONCRETE CURB. SEE FOUNDATION DRAWINGS AND ARCHITECTURAL DRAWINGS (BY OTHERS) FOR MORE INFORMATION.
9. PROVIDE SOLID 2x BLOCKING BETWEEN RAFTERS OVER ALL BEARING WALLS AND BEAMS. ATTACH TO BEAM OR WALL BELOW WITH 3-16d PER BLOCK, UNO. EDGE NAIL PLYWD. TO BLOCKING.
10. SEE DETAIL SHEETS FOR ADDITIONAL NOTES AND DETAILS.
11. DO NOT OVERDRIVE NAILS INTO PLYWOOD. IF NAIL GUN IS USED, GUN SHOULD BE ADJUSTED TO UNDERDRIVE NAIL, THEN NAILS ARE TO BE HAND DRIVEN SO THAT THE HEAD OF THE NAIL IS FLUSH WITH THE FACE OF THE PLYWOOD.
12. AT NAILED CONNECTIONS, CARE IS TO BE TAKEN DURING CONSTRUCTION TO ENSURE THAT SPLITTING OF WOOD DOES NOT OCCUR. ANY SPLIT MEMBERS SHALL BE REMOVED AND REPLACED, USING A METHOD OF ATTACHING THE SPECIFIED CONNECTORS IN A WAY TO PREVENT SPLITTING.
13. ALL SPECIFIED BLOCKING IS TO BE INSTALLED "TIGHT" BETWEEN ADJACENT MEMBERS.
14. WALL, WINDOW, DOOR AND OPENING LOCATIONS SHOWN ON THIS PLAN ARE FOR REFERENCE ONLY. SEE ARCHITECTURAL PLANS FOR ALL DIMENSIONS AND EXACT LOCATIONS.
15. ALL HATCHED AREAS SHOWN ON FRAMING PLANS BELOW INDICATE CALIFORNIA FRAMING W/ 2x6 AT 24"o.c. SUPPORT RIDGE, HIP AND VALLEYS W/ KICKER AT 48"o.c. TO RAFTER BELOW (TYP. UNO.)

LEGEND

- (E) 2x4 AT 16"o.c. STUDWALL BELOW (SEE SHEAR WALL SCHEDULE ON SHEET SD-3 FOR LOCATION OF 3x STUDS). (V.I.F.)
- (E) 4x6 HEADER BM. (U.N.O.), REO'D. AT EXT. WALLS & INT. BRG. WALLS ONLY. (V.I.F.)
- 6x10 HEADER BEAM AT 2x6 STUDWALL LOCATIONS.
- INTERIOR BEARING WALL.
- PROVIDE 3/8" PLYWOOD, NAIL W/ 8d COMMON AT 4"o.c. EDGE AND AT 12"o.c. FIELD. AT EXTERIOR NON-SHEAR WALL LOCATIONS
- SHEAR MATERIAL AND ANCHOR BOLT SPACING IDENTIFIER, (SEE SHEAR WALL SCHEDULE ON SHEET 13 / SD-4).
- INDICATES LOCATION OF SIMPSON ST22 OR CS14x24" BM TO PLATE, JST. TO PLATE, BM TO JST., OR JST. TO JST.

CEILING JOIST SCHEDULE		HANGERS
HORIZ. SPAN	SIZE & SPACING	SIMPSON TYPE
0'0" TO-8'-0"	2X4 DF #2 @ 24" O.C.	U24
8'-1" TO 13'-6"	2X6 DF #2 @ 24" O.C.	U26
13'-7" TO 17'0"	2X8 DF #2 @ 24" O.C.	U28
17'-1" TO 20'-0"	2X10 DF #2 @ 24" O.C.	U210
20'-1" TO 24'-0	2X12 DF# 2 @ 24" O.C.	U210

CEILING JOIST SCHEDULE ALTERNATE TO 24" o.c. SPACING		HANGERS
HORIZ. SPAN	SIZE & SPACING	SIMPSON TYPE
0'0" TO-9-0"	2X4 DF #2 @ 16" O.C.	U24
9'-1" TO 15'-6"	2X6 DF #2 @ 16" O.C.	U26
15'-7" TO 20'-0"	2X8 DF #2 @ 16" O.C.	U28
20'-1" TO 24'-0	2X10 DF #2 @ 16" O.C.	U210
24'-1" TO 28'-0	2X12 DF# 2 @ 16" O.C.	U210

FOUNDATION NOTES:

1. ALL ANCHOR BOLTS NOT SHOWN ARE TO BE 5/8" DIA. x 12" A307 ANCHOR BOLT (MIN. 7" EMBEDMENT) 4'-0"o.c. W/ 3" x 3" x 1/4" WASHER PLATE. SEE PLAN FOR FOR SPECIAL ANCHOR BOLT REFERENCE AT SHEAR WALLS. WHERE REQUIRED, USE HOT DIPPED GALVANIZED ANCHOR BOLTS, NAILS AND HARDWARES THAT ARE ATTACHED TO P.T.D.F. MUDSILL. PER RELEVANT CITY CODE REQUIREMENTS.
2. ALL HOLDOWNS SHOWN ON THIS PLAN TO BE CONNECTED FROM POST IN 1ST. FLOOR WALL TO FOOTING BELOW (UNO) AND TO BE INSTALLED PER SIMPSON CO. SPECIFICATIONS.
3. ALL INTERIOR FOOTING LOCATIONS NOT DIMENSIONED SHALL BE EQUALLY SPACED BETWEEN DIMENSIONED FOOTINGS AND/OR THE PERIMETER FOUNDATION.
4. STITCH NAIL ALL DOUBLE OR TRIPLE MEMBERS W/ 16d @ 4" o.c., STAGGERED (TYP.).
5. SEE DETAIL SHEETS FOR ADDITIONAL NOTES AND DETAILS.

HOLDOWN NOTES:

1. ALL STRAP TYPE ANCHORS TO BE INSTALLED OVER PLYWD. SHEAR MATERIAL.
2. ALL DBL. 2x4 POSTS AT HOLDOWN, 'HD' OR STRAP LOCATIONS TO BE NAILED TOGETHER WITH 16d AT 4"o.c., STAGGERED.
3. IF 2x SHIMS OR 'PAD-OUT' STUDS ARE USED BETWEEN THE HOLDOWN ANCHOR AND THE POST SPECIFIED, ATTACH SHIMS TO THE SPECIFIED POST WITH A MINIMUM OF 16d AT 4"o.c., STAGGERED.

LEGEND:

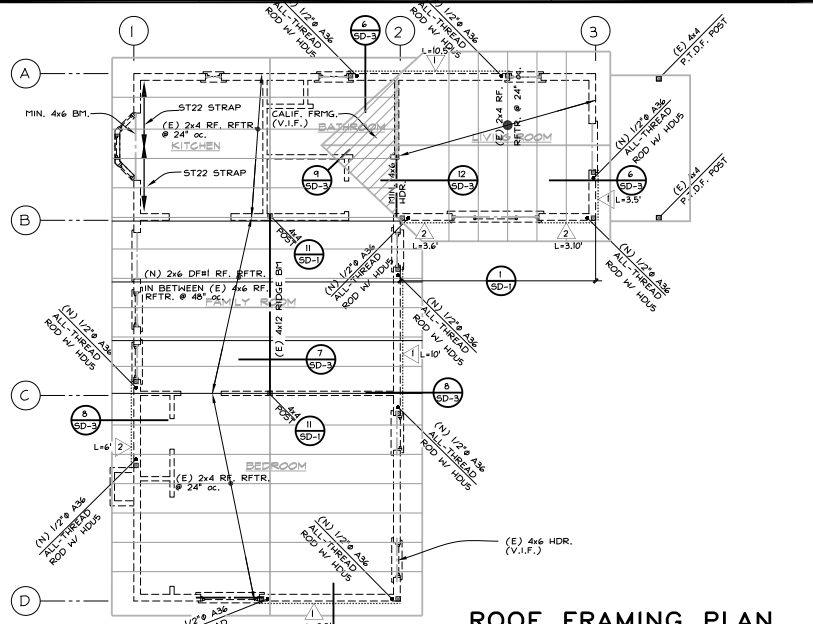
- (E) CONT. FOOTING
- (N) FOOTING
- SHEAR MATERIAL AND ANCHOR BOLT SPACING IDENTIFIER, (SEE SHEAR WALL SCHEDULE ON SHEET SD-3).

CORROSION PROTECTION NOTE:

CORROSION PROTECTION FOR NAILS AND OTHER HARDWARE ATTACHED TO PRESSURE TREATED LUMBER. OF PARTICULAR CONCERN IS THE SHEAR WALL EDGE NAILING INTO A PRESSURE-TREATED SILL PLATE. (NOTE: AS OF JAN. 1, 2004, MOST PRESSURE TREATED LUMBER MILL UTILIZE NEW CHEMICALS THAT ARE MORE CORROSIVE THAN THE TRADITIONAL CCA-C PROCESS.) USE GALVANIZED PRODUCTS, NOTE THAT THEY ARE TO BE HOT DIPPED GALVANIZED. ALSO IF EXPOSED TO WEATHER.

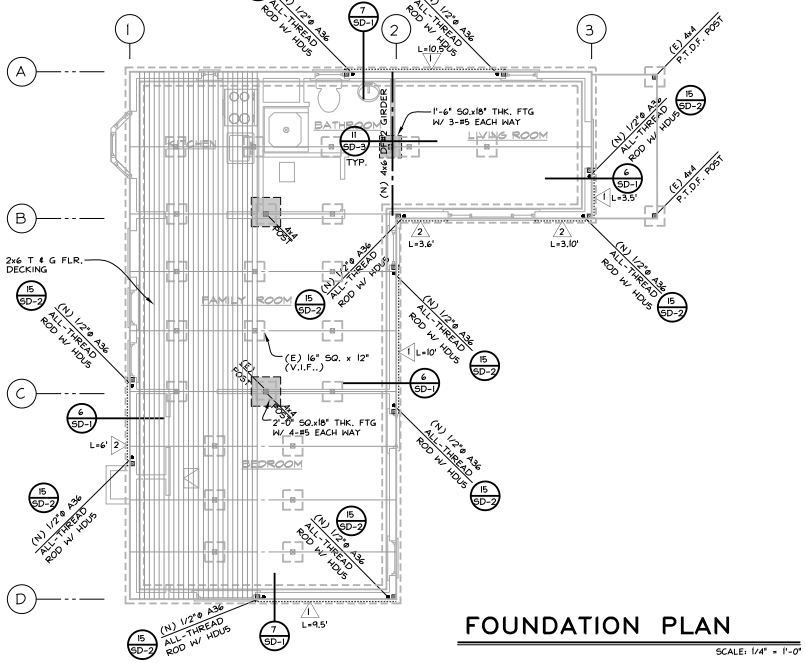
NEW FOOTING SHALL MATCH EXISTING

PRIOR TO THE CONSTRUCTION OF THE NEW FOUNDATION, VERIFICATION IS REQUIRED TO SHOW THAT THE NEW FOUNDATION SYSTEM MATCHES THE EXISTING (E) FOOTINGS. EXCAVATE AS REQUIRED FOR THE FIELD INSPECTOR TO VERIFY THE TYPE OF EXISTING FOUNDATION SYSTEM. PIER AND GRADE BEAM FOUNDATION SYSTEM SHALL BE AS PER THE LATEST CALIFORNIA BUILDING CODE AND SHALL BE DESIGNED BY A CIVIL, OR STRUCTURAL ENGINEER AND APPROVED BY THE CITY BUILDING DIVISION PRIOR TO COMMENCING OF CONSTRUCTION. PIER DEPTH SHALL BE MINIMUM AS EXISTING.



ROOF FRAMING PLAN

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



FOUNDATION PLAN

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

REVISIONS

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REGISTERED PROFESSIONAL ENGINEER — RICHARD C. GUDELJ — C 46956 — CIVIL — STATE OF CALIFORNIA

JULY 31, 2020

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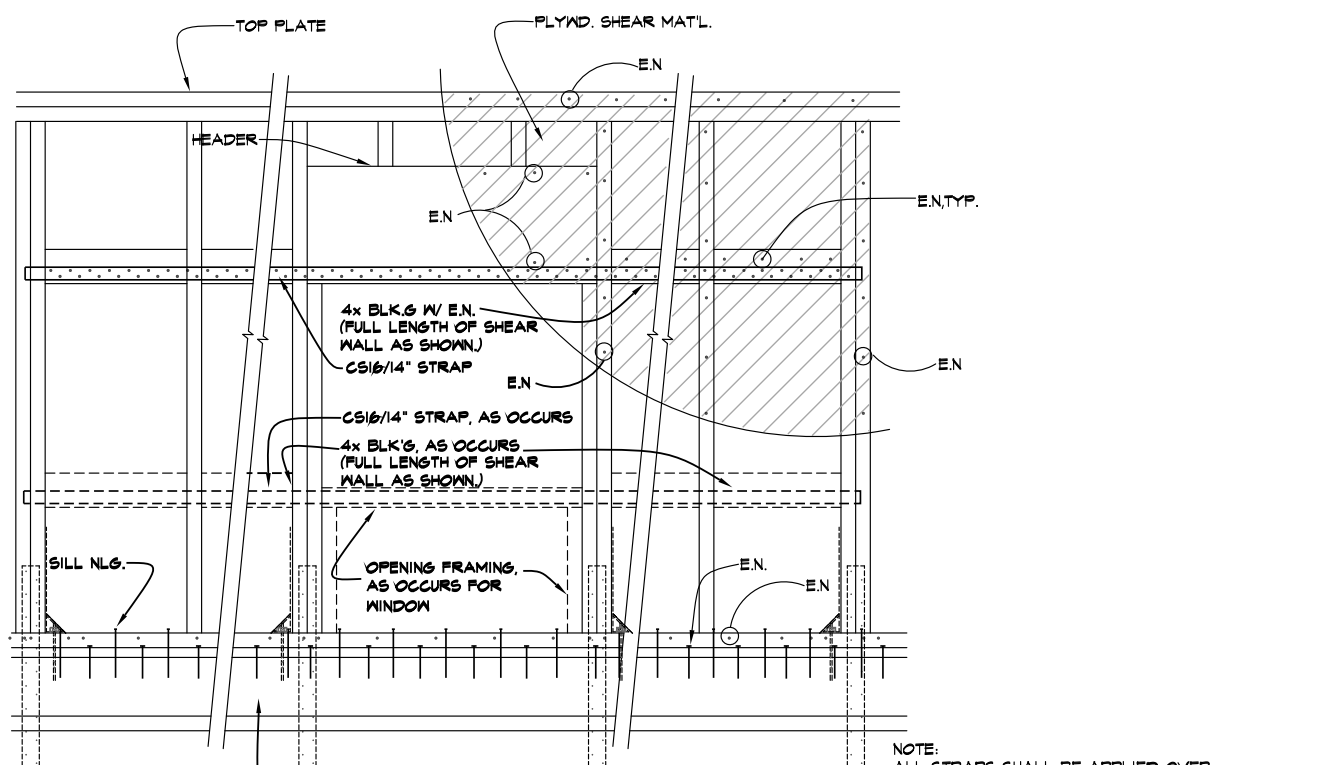
S-1

SHEET(S)

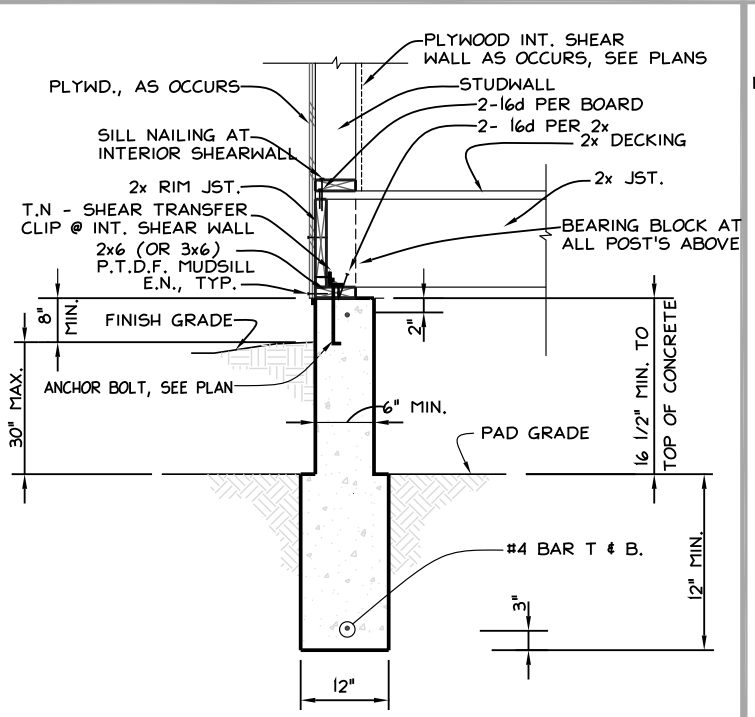
20123-24X36



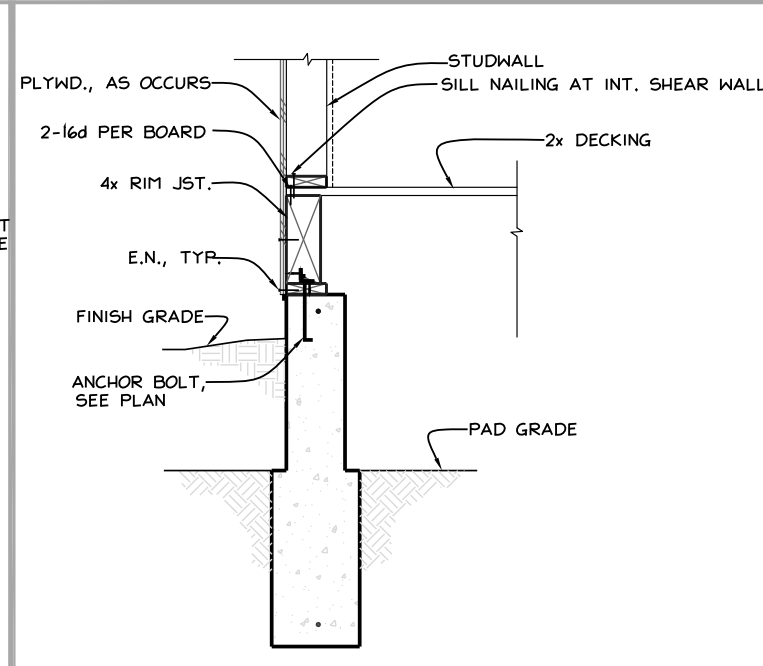
NOTE:
ALL STRAPS SHALL BE APPLIED OVER PLYWOOD AND FULL LENGTH OF SHEARWALL.

SPECIAL WINDOW / DOOR REINFORCING — 2

SCALE: NOT TO SCALE (N.T.S) TYP. (DO NOT SCALE DETAILS, SEE PLANS FOR ACTUAL DIMENSIONS OR SIZES)

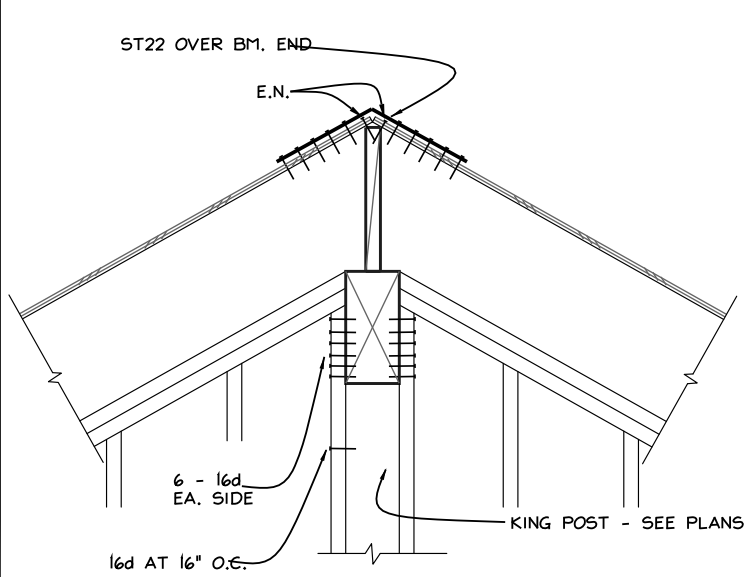


TYP. FOOTING DET. — 6

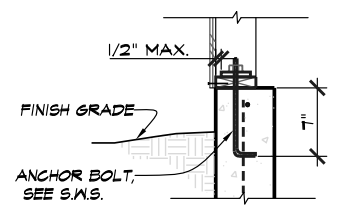


NOTE: SEE DET. 6 FOR OTHER INFO. NOT SHOWN.

TYP. FOOTING DET. — 7



TYP. RIDGE BM. POCKET FRMG. — 11



ANCHOR BOLT DET. — 12

PRESSURE TREATED DOUGLAS FIR WOOD

ALL WOOD SPECIFED AS PRESSURE TREATED SHALL BE PRESSURE TREATED DOUGLAS FIR GRADE NO. 1, OR BETTER, U.N.O., CONFORMING TO AWPA LP-22 WITH .4 #/ CF PRESERVATIVE. ALL ENDS WHICH ARE FIELD CUT SHALL BE TREATED WITH DECAY RESISTANT PRESERVATIVE PRIOR TO INSTALLATION, (CUT ONE END ONLY).

IF NO SOILS REPORT HAS BEEN PROVIDED BY THE OWNER OR TENNANT AUTHORIZING THE CURRENT CONSTRUCTION AS INDICATED BY FOUNDATION NOTES, THE OWNER OR TENNANT AUTHORIZING THE CURRENT CONSTRUCTION BY PROCEDDING WITH CONSTRUCTION, IS PROCEDDING AT THEIR OWN RISK AND THIS ENGINEER ASSUMES NO RESPONSIBILITY FOR THE POSSIBLE MOVEMENT OF THE SOILS SUPPORTING THE BUILDING FOUNDATION.

NEW FOOTING SHALL MATCH EXISTING

PRIOR TO THE CONSTRUCTION OF THE NEW FOUNDATION, VERIFICATION IS REQUIRED TO SHOW THAT THE NEW FOUNDATION SYSTEM MATCHES THE EXISTING (E) FOOTINGS. EXCAVATE AS REQUIRED FOR THE FIELD INSPECTOR TO VERIFY THE TYPE OF EXISTING FOUNDATION SYSTEM. PIER AND GRADE BEAM FOUNDATION SYSTEM SHALL BE AS PER THE LATEST CALIFORNIA BUILDING CODE AND SHALL BE DESIGNED BY A CIVIL, OR STRUCTURAL ENGINEER AND APPROVED BY THE CITY BUILDING DIVISION PRIOR TO COMMENCING OF CONSTRUCTION. PIER DEPTH SHALL BE MINIMUM AS EXISTING.

SHOP DRAWINGS:

SHOP DRAWINGS ARE AN AID FOR FIELD PLACEMENT AND ARE SUPERSEDED BY THE STRUCTURAL DRAWINGS. ANY REVIEW OF SHOP DRAWINGS BY THIS OFFICE **IS ONLY FOR GENERAL CONFORMANCE TO THE STRUCTURAL REQUIREMENTS AND** IN NO WAY GUARANTEES THE ACCURACY OR COMPLETENESS OF INFORMATION THEREON. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO INSURE ALL CONSTRUCTION IS IN FULL COMPLIANCE WITH THE LATEST SET OF STRUCTURAL DRAWINGS.

LUMBER

1. **PLATES, STUDS, JOISTS AND BEAMS. (UNO)**

MEMBERS	GRADE OF WOOD (U.N.O.)
A. 2x OR 3x MUDSILLS	P.T.D.F.
B. 2x, 3x, 4x RAFTER JOIST BEAM SHALL	D.F. NO. 2
C. 6x AND LARGER	D.F. NO. 1
D. ALL STUDS	D.F. NO.2
E. BLKG. & SOLE PLATES	D.F. CONSTR. GRADE
F. GLU LAM BEAMS	24F-V4, 24F-V8 AT CANTILEVER
G. TOP PLATES	D.F. CONSTR. GRADE

NOTE: ALL LUMBER SHALL HAVE A MAXIMUM MOISTURE CONTENT OF 19% AT TIME OF INSTALLATION.

2. PLYWOOD

LOCATION	GRADING		NAILING (U.N.O)
ROOF	- 1/2" CDX	APA (32/16)	8d @ 6" EDGE, 12" FIELD
FLOOR	- 3/4" T&G CDX	APA (32/16)	10d @ 6" EDGE, 10" FIELD

NOTE: ALL GRADE MARKS ON PLYWOOD SHEATHING AND LUMBER SHALL BE LEGIBLE.

WOOD FRAME

1. ALL WOOD BEARING ON CONCRETE OR MASONRY SHALL BE PRESSURE TREATED FIR.
2. ALL METAL CONNECTORS SHALL BE SIMPSON STRONG-TIE CONNECTORS. THE NAILS FOR THESE CONNECTORS SHALL BE JOIST HANGER NAILS AS MANUFACTURED BY THE SIMPSON CO.
3. PROVIDE FIRE STOPS AT ALL INTERSECTIONS OF STUD WALLS AT FLOOR, CEILING AND ROOF. FIRE STOPS SHALL BE 2x NOMINAL THICKNESS OF WOOD AND SHALL BE THE FULL WITH OF THE ENCLOSED SPACE. PLACE FIRE STOPS AT A MAXIMUM SPACING OF 10'-0" IN EACH DIRECTION AND AT THE SAME LINES AS FIRE STOPS IN ADJACENT STUD WALLS.
4. TOP PLATES OF ALL STUD WALLS SHALL BE 2 PIECES THE SAME STUD SIZES. SPLICES TO LAP 4'-0" MINIMUM AND BE NAILED PER THE DETAILS.
5. BOLT HOLES IN WOOD SHALL BE 1/32" TO 1/16" LARGER THAN THE NORMAL BOLT DIAMETER. ALL BOLTS SHALL HAVE STANDARD CUT WASHER UNDER HEAD AND NUT UNLESS NOTED OTHERWISE.
6. ALL BOLTS SHALL BE RETIGHTENED PRIOR TO THE APPLICATION OF SHEATHING PLASTER, ETC.
7. STRUCTURAL MEMBERS SHALL NOT BE CUT FOR PIPES, ETC. UNLESS SPECIFICALLY DETAILED
8. PROVIDE 2x SOLID BLOCKING BETWEEN JOISTS AND RAFTERS AT ALL SUPPORTS BLOCKING SHALL BE ONE PIECE AND THE FULL DEPTH OF THE JOIST RAFTER.
9. CROSS BRIDGING OR SOLID BLOCKING SHALL BE PROVIDED AT 8'-0" O.C. MAXIMUM FOR ALL FLOOR JOISTS MORE THAN 12" DEEP AND AT 10'-0" O.C. MAXIMUM FOR ALL RAFTERS MORE THAN 8" DEEP.
10. PROVIDE DOUBLE JOISTS UNDER PARTITIONS WHICH ARE PARALLEL TO THE FLOOR JOISTS.

ABBREVIATIONS

A.B.	ANCHOR BOLT	M.A.	MST ABOVE
ABV.	ABOVE	M.B.	MACHINE BOLT
BD	BOARD	MFR.	MANUFACTURER
BM.	BEAM	MAX.	MAXIMUM
BLW.	BELOW	MIN.	MINIMUM
BLK.	BLOCK OR BLOCKING	MTL.	METAL
BLK'G	BLOCK OR BLOCKING	(N)	NEW
B.N.	BOUNDRY NAILING	N.T.S..	NOT TO SCALE
C.B.C.	CALIFORNIA BUILDING CODE	OC	ON CENTER
CLG.	CEILING	O.F.	OUTSIDE FACE
C.B.	CEILING BEAM	O.H.	OPPOSITE HAND
OC.	CENTER TO CENTER, ON CENTER	P.A.	POST ABOVE
		PL	PLATE
COL.	COLUMN	PLY.	PLYWOOD
CONC.	CONCRETE	PLYWD.	PLYWOOD
CONT.	CONTINUOUS	P.E.N.	PLYWOOD EDGE NAILING
DL	DEAD LOAD	PLF	POUNDS PER LINEAL FOOT
ɸ	DIAMETER	P.S.I.	POUNDS PER SQ. INCH
D.F.	DOUGLAS FIR	P.S.F.	POUNDS PER SQ. FOOT
D.S.	DOUBLE STUD	PSL	PARALLAM STRAND LUMBER
EA.	EACH	P.T.	PRESSURE TREATED
E.W.	EACH WAY	P.T.D.F	PRESSURE TREATED DOUGLAS FIR
(E)	EXISTING		
E.N.	EDGE NAILING		
EXT.	EXTERIOR	RFTR	RAFTER
F.O.S.	FACE OF STUD	REBAR	DEFORMED REINFORCING BAR
F.O.C.	FACE OF CONCRETE	S.A.D.	SEE ARCHITECTURAL DRAWINGS
F.N.	FIELD NAILING	S.W.S	SHEAR WALL SCHEDULE
FIN.	FINISH	SHTG.	SHEATHING
FHWS	FLAT HEAD WOOD SCREW	SHT.	SHEET
FLR.	FLOOR	SPECS.	SPECIFICATIONS
F.C.B.	FLUSH CEILING BEAM	STD.	STANDARD
FTG.	FOOTING	STL.	STEEL
GYP.	GYPSUM	SQ.	SQUARE
GLB	GLUED, PRESSURE LAMINATED BEAM	THD.	THREAD
		T.O.BM.	TOP OF BEAM., ETC.
H.F.	HEM FIR	T & G	TONGUE & GROOVE
HGR.	HANGER	T & B	TOP & BOTTOM
HDR..	HEADER	TL	TOTAL LOAD
H.A.	HOLDOWN ABOVE	TYP.	TYPICAL
H.D.	HOLDOWN	U.B.C.	UNIFORM BUILDING CODE
HORIZ.	HORIZONTAL		
H.D.G.	HOT DIPPED GALVANIZED	U.N.O.	UNLESS NOTED OTHERWISE
ICC	INTERNATIONAL CODE COUNCIL		
INT.	INTERIOR	U.O.N.	UNLESS OTHERWISE NOTED
JST.	JOIST		
LVL	LAMINATED VENEER LUMBER	VERT.	VERTICAL
L.S.	LAG SCREW	W/	WITH
LL	LIVE LOAD	W.W.F.	WELDED WIRE FABRIC
K.B.	KICK BRACE		
K.P.	KING POST OR KICKER POST		

FOUNDATIONS

1. ALL EXISTING FILL SOIL AND DISTURBED NATURAL SOILS ARE TO BE EXCAVATED AND REPLACED WITH PROPERLY COMPACTED FILL. ALL FILLING, BACKFILLING, RECOMPACTION, ETC. IS TO BE ACCOMPLISHED ONLY UNDER THE SUPERVISION OF A SOILS ENGINEER. COMPACTED FILL SHALL BE 95% DENSITY.
2. FOOTINGS ARE TO BE CARRIED A MINIMUM OF 18" INTO FIRM UNDISTURBED NATURAL SOIL OR APPROVED COMPACTED FILL.
3. DESIGN BEARING PRESSURE IS 1500 PSF WITH A 33% INCREASE FOR SEISMIC OR WIND LOADING.
4. RELATIVELY NON-EXPANSIVE FILL SHOULD BE USED IN BACKFILLING BEHIND WALLS ALL WALLS SHALL BE ADEQUATELY SHORED DURING THE BACKFILL OPERATION.

CONCRETE:

1. CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 2500 PSI AT 28 DAYS.
2. AGGREGATES SHALL BE NATURAL SAND AND ROCK CONFORMING TO ASTM C33 (MAXIMUM AGGREGATE SIZE SHALL BE 3/4")
3. CEMENT SHALL BE PORTLAND CEMENT CONFORMING TO ASTM C-150, TYPE IV. (SULFIDE RESISTANT).
4. THE FOLLOWING MINIMUM CLEAR DISTANCES BETWEEN REINFORCING STEEL AND FACE OF CONCRETE SHALL BE MAINTAINED UNLESS NOTED OTHERWISE
   POURED AGAINST FORMS 2"
   POURED AGAINST EARTH 3"
5. PIPES MAY PASS THROUGH STRUCTURAL CONCRETE IN SLEEVES, BUT SHALL NOT BE EMBEDDED THEREIN. PIPES OF DUCTS EXCEEDING ONE-THIRD THE SLAB OR FOOTING THICKNESS SHALL BE PLACE IN THE STRUCTURAL CONCRETE UNLESS SPECIFICALLY DETAINED.
6. DOWELS, ANCHOR BOLTS AND OTHER EMBEDDED ITEMS ARE TO BE SECURED IN PLACE BEFORE CONCRETE IS POURED.
7. REFER TO ARCHITECTURAL DRAWINGS FOR REVEALS, AREAS OF TEXTURED CONCRETE OR SPECIAL FINISHES, ITEMS REQUIRED TO BE CAST INTO CONCRETE, CURBS AND SLAB DEPRESSIONS.
8. MINIMUM CEMENT CONTENT SHALL BE 5 SACKS PER CUBIC YARD FOR 2500 PSI CONCRETE.
9. MAXIMUM SLUMP SHALL BE 4".
10. OPTIONAL COLD JOINTS MAY BE USED WHERE SHOWN, COLD JOINT EDGES SHALL BE CLEAN, FREE OF EXTRANEOUS AND INTENTIONALLY ROUGHENED.

REINFORCING STEEL:

1. REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 40 FOR SIZES #4 AND SMALLER AND GRADE 60 FOR SIZES #5 AND LARGER.
2. WELDING OF REINFORCING STEEL SHALL CONFORM TO AWA D12-1 USING PROPER LOW HYDROGEN ELECTRODES. ALL BARS TO BE WELDED SHALL CONFORM TO ASTM A706.
3. WELDED FABRIC (MESH, WWF) SHALL CONFORM TO THE LATEST REVISED ASTM A185. SMOOTH WIRE FABRIC SHALL CONFORM TO ASTM A85, YIELD STRENGTH 60 KSI.
4. ALL BARS IN CONCRETE SHALL BE LAPPED A MINIMUM OF 36 BARS DIAMETERS (2'-0" MIN.) AT ALL SPLICES UNLESS NOTED OTHERWISE.
5. SPLICES OF HORIZONTAL REBAR IN FOOTING SHALL BE STAGGERED 4'-0" MINIMUM.
6. ALL BENDING OF REINFORCING STEEL SHALL CONFORM TO THE LATEST EDITION OF THE CALIFORNIA BUILDING CODE.
7. REINFORCING SHALL BE PLACED AND SUPPORTED IN A TRUE LINE AS SHOWN.
8. ALL REINFORCING SHALL BE CLEAN AND FREE OF EXTRANEOUS MATERIAL.

FLOOR I-JOIST

1. FLOOR JOISTS ARE TO BE DESIGNED FOR L/480 (DL & LL) MAXIMUM DEFLECTION CRITERIA.

MICROLAM BEAMS:

MICRO LAM (ML OR LVL) BEAMS ARE TO BE THE SIZE SHOWN ON THE PLANS AND TO BE MANUFACTURED BY TRUSS JOIST CORP. MICRO LAM BEAMS SHALL HAVE THE FOLLOWING ALLOWABLE DESIGN STRESSES.

E = 1,900,000 PSI
Fb = 2,600 PSI
Fv = 285 PSI

PARALLAM BEAMS:

PARALLAM (PSL) BEAMS ARE TO BE THE SIZE SHOWN ON PLANS, AND TO BE MANUFACTURED BY TRUSS JOIST CORP. PARALLAM BEAMS SHALL HAVE THE FOLLOWING ALLOWABLE DESIGN STRESSES.

E = 2,000,000 PSI
Fb = 2,900 PSI
Fv = 290 PSI

TIMBERSTRAND:

TIMBERSTRAND (TS) MEMBERS ARE TO BE THE SIZE SHOWN ON PLANS AND TO BE MANUFACTURED BY TRUSS JOIST CORP.

GLB NOTES:

1. ALL FABRICATION AND WORKMANSHIP SHALL CONFORM TO THE CURRENT EDITION OF THE STANDARD SPECIFICATIONS FOR STRUCTURAL GLUED LAMINATED DOUGLAS FIR (COAST REGION) LUMBER BY THE WEST COAST LUMBER MAN'S ASSOCIATION AND THE CURRENT EDITION OF TIMBER CONSTRUCTION.
2. ALL GLUED LAMINATED MEMBERS SHALL BE DOUGLAS FIR, COMBINATION 24F-V4 (U.N.O.) OR 24F-V8 WITH WATERPROOF RESORCINOL OR PHENOL RESORCINOL GLUE CONFORMING TO THE FEDERAL SPECIFICATIONS MIL-A-397. (USE 24F-V8 AT CANTILEVER CONDITION).
3. FINISH OF THE MEMBERS SHALL BE INDUSTRIAL APPEARANCE GRADE IN CONFORMANCE WITH THE STANDARD APPEARANCE GRADES OF THE A.I.T.C.
4. A CERTIFICATE OF INSPECTION FOR EACH GLU-LAM BEAM FROM AN APPROVED TESTING AGENCY SHALL BE SUBMITTED TO AND APPROVED BY THE LOCAL BUILDING DEPT. AND BY THE ENGINEER PRIOR TO ERECTION.

EPOXY AND ANCHORS: (ICC-ES ESR 2508)

1. EPOXY GROUT USED FOR THE SETTING OR DEFORMED REINFORCING BARS SHALL BE SIMPSON 'SET-XP' EPOXY SURFACE OF EXISTING CONCRETE SHALL BE FREE FROM DUST OR DEBRIS PRIOR TO INJECTION EPOXY PRODUCT TO BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
2. EPOXY USED FOR THE SETTING OF ALL-THREAD ROD BOLTS SHALL BE SIMPSON 'SET-XP' EPOXY. EPOXY SHALL BE INSTALLED WITH MANUFACTURER'S RECOMMENDATIONS AND PROVIDE SPECIAL INSPECTION BY CERTIFIED TESTING AGENCY.

DESIGN LOADS

LIVE LOADS:		
ROOF	20	PSF
LIVE LOAD	40	PSF
WIND LOADS:		
BASIC WIND SPEED, V3S	110	110 MPH (LRFD)
WIND IMPORTANCE FACTOR, Iw	1.0	
EXPOSURE	B	
INTERNAL PRESSURE COEFF, GCPI	0.18	
SEISMIC LOADS:		
SEISMIC IMPORTANCE FACTOR, I	1.0	
RISKY CATEGORY	II	
SHORT PERIOD SPECTRA ACCELERATION, Ss	2.245	
LONG PERIOD SPECTRA ACCELERATION, S1	0.937	
SITE CLASSIFICATION	D	
SHORT PERIOD DESIGN RESPONSE, SDS	1.796	
LONG PERIOD DESIGN RESPONSE, SDI	NULL-SEE SECTION 11.4.8	
SEISMIC DESIGN CATEGORY, SDC	D	
SEISMIC FORCE RESISTING SYSTEM	PLYWOOD SHEAR WALLS: Rx = Ry = 6.5	

GENERAL NOTES:

1. ALL CONSTRUCTION AND WORKMANSHIP SHALL CONFORM TO THE 2019 BUILDING CODE.
2. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS. ELEVATIONS AND CONDITIONS PRIOR TO STARTING CONSTRUCTION.
3. ANY DEVIATIONS FROM THE PLANS. WHICH ARE NECESSITATED BY FIELD CONDITIONS OR ANY CONDITIONS DIFFERENT FROM THOSE INDICATED ON PLAN, SHALL BE CALLED TO THE ATTENTION OF THE STRUCTURAL ENGINEER PRIOR TO CONTINUING CONSTRUCTION. ALL WORK IS TO BE COORDINATED SO THAT COOPERATION BETWEEN THE TRADES, WHERE REQUIRED, IS ACCOMPLISHED.
4. ALL DIMENSIONS TO TAKE PRECEDENCE OVER SCALE SHOWN ON PLANS, ELEVATIONS SECTIONS AND DETAILS.
5. NOTES AND DETAILS ON DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL NOTES AND TYPICAL DETAILS.
6. MATERIAL NOTES AND SPECIFICATIONS ON DRAWINGS SHALL TAKE PRECEDENCE OVER THE PROJECT SPECIFICATIONS.
7. VERIFY ALL OPENINGS THROUGH CONSTRUCTION WITH HEATING AND VENTILATING CONTRACTOR PLUMBING CONTRACTOR AND ELECTRICAL CONTRACTOR FOR SIZE AND LOCATION, PRIOR TO COMMENCING CONSTRUCTION.
8. SEE ARCHITECTURAL PLANS FOR SIZES AND LOCATIONS OF ALL DOOR AND WINDOW OPENINGS, LOCATION OF ALL NON-BEARING PARTITIONS, CONCRETE CURBS, FLOOR AND ROOF SLOPES, DRAINS, ELEVATIONS, LOCATIONS OF ALL STAIRWAYS, (IF ANY), MISCELLANEOUS HANDRAILS, LADDERS. HANGERS, STEEL GRATING, LOCATION OF ALL CONCRETE INSERTS, CLIPS, GROOVES, GROUNDS AND VENEER ANCHORS, LOCATION AND DETAIL OF MISCELLANEOUS YARDWORK INCLUDING WALKS, CURBS, DRIVEWAYS, TUNNELS AND FINISHED GRADING PLANS.
9. NO OPENINGS, POCKETS, ETC. SHALL BE PLACED IN SLABS DECKS, BEAMS, JOISTS, WALLS, COLUMNS, ETC. UNLESS SPECIFICALLY DETAILED ON THE STRUCTURAL DRAWINGS, NOTIFY THE STRUCTURAL ENGINEER WHEN (MECH., ELECT.) DRAWINGS SHOW OPENINGS, POCKETS, ETC., THAT ARE NOT LIKEWISE SHOWN ON THE STRUCTURAL DRAWINGS.
10. CONTRACTOR SHALL REPAIR OR REPLACE ALL DAMAGED FINISH MATERIAL AND/OR STRUCTURAL MEMBERS AS REQUIRED AND AS CONFIRMED BY THE BUILDING INSPECTOR AND STRUCTURAL ENGINEER.
11. CONTRACTOR IS RESPONSIBLE FOR ALL TEMPORARY BRACING DURING CONSTRUCTION.
12. FRAMING CONDITIONS NOT SPECIFICALLY SHOWN SHALL BE FRAMED SIMILAR TO TYPICAL DETAILS FOR THE RESPECTIVE MATERIAL.
13. THE CONTRACTOR AND/OR SUB-CONTRACTORS WORK SHALL CONFORM TO ALL APPLICABLE FEDERAL STATE, OR LOCAL BUILDING CODES.
14. TRADE NAMES AND MANUFACTURERS REFERRED TO ARE FOR QUALITY STANDARDS ONLY, EQUIVALENT SUBSTITUTIONS WILL BE PERMITTED.
15. TYPICAL DETAILS SHALL APPLY WHERE NO SPECIFIC DETAILS OR SECTIONS GIVEN.

GENERAL CONSTRUCTION

1. RAFTERS SHALL BE FRAMED DIRECTLY OPPOSITE EACH OTHER RIDGES, VALLEYS AND HIPS. ALL RIDGE BOARDS, MAIN VALLEY AND HIP RAFTERS SHALL BE AT LEAST 2 IN. THICK (NOMINAL). IN NO CASE SHALL THE DEPTH BE LESS THAN THE CUT OF THE END OF THE RAFTER (U.N.O.)
2. WHERE APPLICABLE, RAFTERS SHALL BE NAILED TO ADJACENT PARALLEL CEILING JOIST TO FORM A CONTINUOUS THE BETWEEN EXTERIOR WALLS, (U.N.O.) WHERE CEILING JOISTS ARE NOT PARALLEL, RAFTERS, SHALL BE TIED BY A 1 X 4 (MIN.) CROSS TIE. THE CROSS TIES SHALL BE SPACED NOT MORE THAN 4'-0" O.C.
3. UNLESS SUPPORTED LATERALLY BY ADEQUATE FRAMING, THE MAXIMUM ALLOWABLE HEIGHT SHALL BE 14'-0" FOR 2 X 4 AND 3 X 4 STUD WALLS AND 20'-0" FOR A 2 X 6 STUD WALL (U.N.O.).
4. JOISTS SHALL BE SUPPORTED LATERALLY BY SOLID BLOCKING OR END HANGERS AT EACH END AND AT EACH SUPPORT. SOLID BLOCKING SHALL NOT BE LESS THAN 2" THICK (NOMINAL) AND THE FULL DEPTH OF THE JOISTS.
5. THE ENDS OF JOISTS, BEAMS, AND GIRDERS SHALL HAVE AT LEAST 1 1/2" OF BEARING ON WOOD OR METAL AND 3" OF BEARING ON CONCRETE OF MASONRY, (U.N.O.).
6. WHEN BOLTS ARE IN USE A WASHER NOT LESS THAN A STANDARD CUT WASHER OR A METAL PLATE OR STRAP IN LIEU THEREOF, SHALL BE BETWEEN THE WOOD AND THE BOLT HEAD AND BETWEEN THE WOOD AND THE NUT.
7. MACHINE BOLTS AND ANCHOR BOLTS SHALL CONFORM TO ASTM A307 (U.N.O.)
8. ALL BUILDINGS SHALL BE GRADED SO AS TO PROVIDE 5% POSITIVE DRAINAGE AWAY FROM THE HOUSE.
9. WOOD JOISTS AND FLOORS CLOSER THAN 18" OR WOOD GIRDERS AND SUPPORTS CLOSER THAN 12" TO THE GROUND SHALL BE PRESSURE TREATED WOOD
10. CONTRACTOR SHALL SUBMIT A CERTIFICATION OF CONFORMANCE FOR ALL GLUED-LAMINATED BEAMS TO BUILDING INSPECTION DEPT., PRIOR TO ERECTION.
11. PURLINS SHALL BE 2 X 6 OR THE SAME SIZE AS RAFTERS, WHICHEVER IS GREATER, (U.N.O.).
12. PROVIDE FIRE BLOCKING AT FLOORS, CEILING, COVES AND MID-HEIGHT OF WALLS OVER 10'-0" IN HEIGHT.

NAILING

CONNECTION	NAILING (U.N.O.) ON PLANS
1. JOIST TO SILL OR GIRDER TOENAIL	3-8d
2. BRIDGING TO JOIST, TOENAIL EACH END.	2-8d
3. 1" X 6" SUBFLR. OR LESS TO EA. JOISTS, FACE NAIL	2-8d
4. WINDER THAN 1" X 6" SUBFLR. TO EA. JST. FACE NAIL	3-8d
5. 2" SUBFLR. TO JOIST OF GIRDER BLIND AND FACE NAIL	2-16d
6. SOLE PLATE TO JOIST OR BLD'G.., FACE NAIL.	16d @ 16" O.C.
7. TOP PLATE TO STUD, END NAIL	2-16d
8. STUD TO SOLE PLATE	4-8d TOENAIL OR 2-16d, END NAIL
9. DOUBLE STUDS, FACE NAIL.	16d @ 24" O.C.
10. DOUBLE TOP PLATES, FACE NAIL	16D @ 16" O.C.
11. TOP PLATES, LAPS AND INTERSECTIONS, FACE NAIL	4-16d
12. CEILING JOIST TO PLATE, TOENAIL.	3-8d
13. CONTINUOUS HEADER TO STUD, TOENAIL	4-8d
14. CEILING JOISTS, LAPS OVER PARTITIONS, FACE NAIL.	3-16d
15. CEILING JOISTS TO PARALLEL RAFTERS, FACE NAIL	3-16d
16. RAFTER TO TRUSSES TO PLATE, TOENAIL.	3-16d
17. 1" X 8" SHEATHING OR LESS TO EA. BEARING., FACE NAIL.	2-8D
18. WIDER THAN 1" X 8" SHEATHING TO EA. BEARING, FACE NAIL	3-8d
19. BUILT-UP CORNER STUDS.	16d @ 24" O.C.

CORROSION PROTECTION NOTE:

CORROSION PROTECTION FOR NAILS AND OTHER HARDWARE ATTACHED TO PRESSURE TREATED LUMBER. OF PARTICULAR CONCERN IS THE SHEAR WALL EDGE NAILING INTO A PRESSURE-TREATED SILL PLATE. (NOTE: AS OF JAN. 1, 2004, MOST PRESSURE TREATED LUMBER WILL UTILIZE NEW CHEMICALS THAT ARE MORE CORROSIVE THAN THE TRADITIONAL CCA-C PROCESS.) USE GALVANIZED PRODUCTS, NOTE THAT THEY ARE TO BE HOT DIPPED GALVANIZED.

NO.	REVISIONS

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JULY 31, 2020

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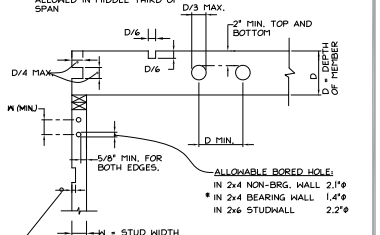
A PROPOSED REMODEL RESIDENCE FOR:
CASASSA RESIDENCE
500 SUMMIT ROAD
MORGAN HILL, CA 95307

SCALE	
NOT TO SCALE, U.N.O.	
DRAWN	CHECKED RC
PROJ. NO. 20-123	DATE 7-31-20
DRAWING NO. SD-1	SHEET(S)

20123-24X36

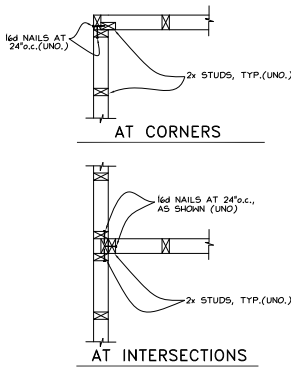
JOIST AND STUD CUTOUT DET. 1

NOTES:
1. HOLES AND NOTCHES ARE NOT PERMITTED IN JOISTS WHERE "D" = 4" OR LESS.
2. NO NOTCHES (TOP OR BOTTOM) ALLOWED IN MIDDLE THIRD OF SPAN



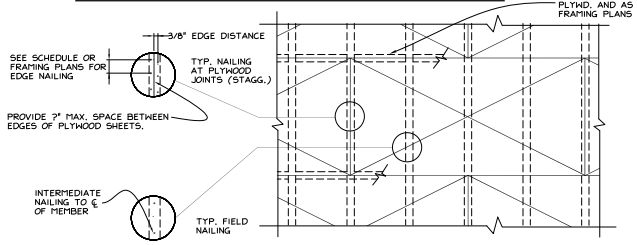
NOTE
MAT NOT BE USED AT GLU-LAM BEAMS OR ANY PRE-FABRICATED TRUSS OR JOIST MEMBERS WITHOUT PRIOR APPROVAL BY PROJECT ENGINEER AND APPLICABLE TRUSS CO.

TYPICAL STUD LOCATIONS (U.N.O.) 2

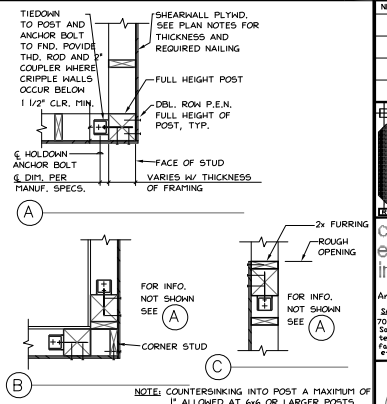


PLYWOOD SHEATHING DETAIL 4

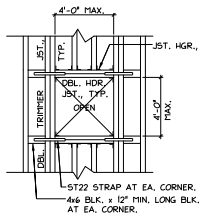
PLYWOOD SHEATHING NOTES:
1. ALL NAILS SHALL BE COMMON NAILS OR HOT DIPPED GALVANIZED BOX NAILS
2. INDIVIDUAL PIECES OF PLYWOOD SHALL NOT BE LESS THAN 24" IN THE LEAST DIMENSION NOR LESS THAN 4'-0" SQ. TOTAL AREA.
3. ALL PLYWOOD MUST BE APA RATED.
4. PRE-DRILL HOLES WHERE PLYWOOD OR FRAMING TENDS TO SPLIT.
5. PROVIDE EDGE NAILING ALONG ALL JOISTS, TRUSSES, BEAMS, COLLECTORS AND BLOCKING OVER OR IN LINE WITH SHEAR WALLS. (2 - ROWS REQUIRED AT EACH OF THESE LOCATIONS.)
6. DO NOT OVER DRIVE NAILS INTO PLYWOOD SHEATHING, ANYMORE THAN TO PROVIDE THE NAIL HEAD FLUSH WITH THE PLYWOOD SURFACE.
7. OSB (ORIENTED STRAND BOARD) APA RATED BOARD MAYBE USED IN LIEU OF PLYWOOD WITH BUILDING OWNERS OR ARCHITECTS APPROVAL. HOWEVER, OSB BOARDS SHALL NOT BE USED ON EXTERIOR DECKS OR BALCONIES. OSB BOARDS SHALL BE RATED EQUAL OR BETTER THAN THE PLYWOOD SPECIFIED.



TYP. PLAN @ HOLDOWN 5



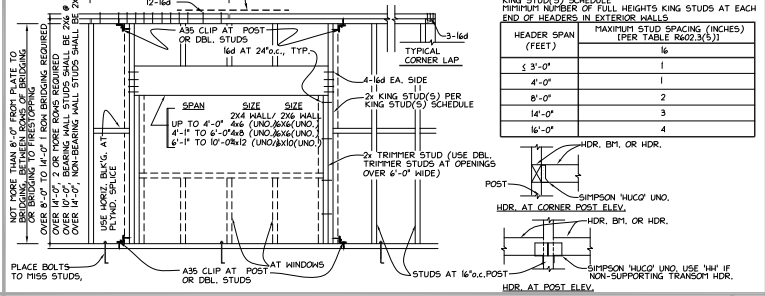
TYP. ROOF FRAMED OPNG. 4'-0" MAX. 6



NOTES:
1. PROVIDE PLYWD. EDGE NAIL'G TO TRIMMER JST., HDR. JST. AND CORNER BLOCKS.
2. DETAIL 15 APPLICABLE TO MAX. DIMEN. SHOWN.

TYP. FRAMED WALL OPENING (UNO.) 8

SILL ANCHORS AND P.T.D.F. MUDSILLS:
1. ALL NON-SHEAR WALL SILLS SHALL BE ATTACHED TO THE FOUNDATION WITH A MINIMUM OF A SIMPSON 5/8"ø x 12" ANCHORS AT 4'-0" O.C. (U.N.O.) EACH PIECE OF SILL PLATE IS TO HAVE A MINIMUM OF 2 ANCHORS PER PIECE 12" MAXIMUM FROM EACH END. EMBED ANCHORS 7" MIN. INTO CONCRETE. MIN. EDGE DISTANCE SHALL BE 1 3/4"
2. ALL PLATES ON CONTRETE OR MASONARY SHALL BE PRESSURE TREATED DOUGLAS FIR (P.T.D.F.).
3. WHERE REQUIRED, USE HOT DIPPED GALVANIZED ANCHOR BOLTS, NAILS AND HARDWARES THAT ARE ATTACHED TO P.T.D.F. MUDSILL. PER RELEVANT CITY CODE REQUIREMENTS.

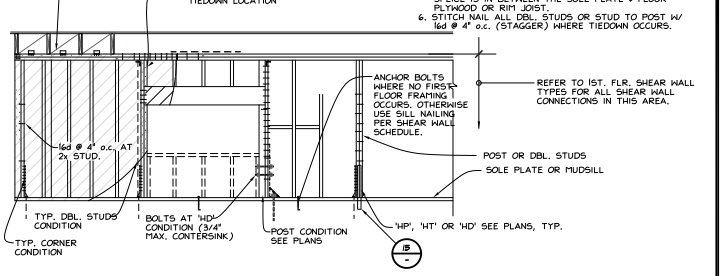


KING STUD(S) SCHEDULE
MINIMUM NUMBER OF FULL HEIGHTS KING STUDS AT EACH END OF HEADERS IN EXTERIOR WALLS

HEADER SPAN (FEET)	MAXIMUM STUD SPACING (INCHES) (PER TABLE R602.3(5))
	16
≤ 3'-0"	1
4'-0"	1
8'-0"	2
14'-0"	3
16'-0"	4

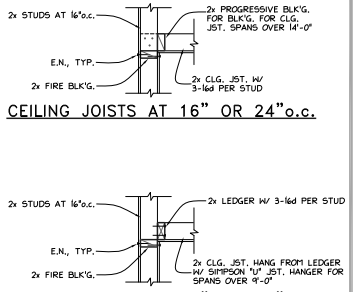
TYP. HOLDOWN TIEDOWN DET. LOCATION 10

TIEDOWN NOTES:
1. THIS DETAIL SHOW ONLY GENERAL TIEDOWN LOCATIONS. SEE PLANS FOR ACTUAL FRAMING CONDITIONS.
2. TIEDOWNS FOR THE FIRST FLOOR LEVEL ARE SHOWN ON THE FLOOR FRAMING AND FOUNDATION PLANS, U.N.O.
3. SEE SHEAR WALL SCHEDULE ON SHEET SD-4 FOR ADDITIONAL FRAMING CONNECTIONS.
4. SEE DETAIL 7/SD-2 FOR TYPICAL WINDOW OR DOOR FRAMING INFORMATION.
5. PROVIDE SHEAR TRANSFER CLIPS OR S.N. IF PLYWOOD SPLICE IS IN BETWEEN THE SOLE PLATE ℄ FLOOR PLYWOOD OR RIM JOIST.
6. STITCH NAIL ALL DBL. STUDS OR STUD TO POST W/ 16d @ 4" o.c. (STAGGER) WHERE TIEDOWN OCCURS.



SCALE: NOT TO SCALE (N.T.S) TYP. (DO NOT SCALE DETAILS, SEE PLANS FOR ACTUAL DIMENSIONS OR SIZES)

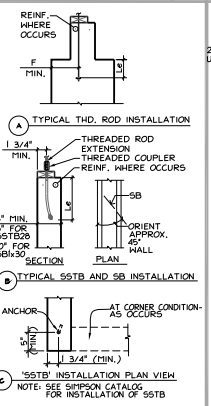
CEILING JOIST TO BALLOON FRAME WALL 11



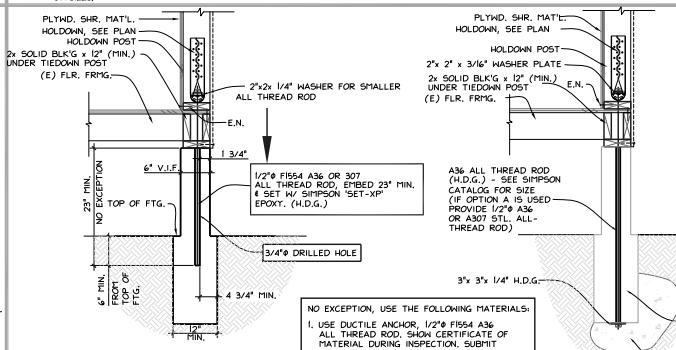
HOLDOWN ANCHOR BOLT SCHEDULE 13

HOLDOWN SIZE	CAPACITY POST SIZE MIN.(INCHES)	OPTION A: THRD. ROD WITH DBL NUT/WASHER ANCHOR BOLT SIZE	MIN. CLEARANCE Le	F	REMARKS	OPTION B: SIMPSON SSTB ANCHOR BOLT ANCHOR BOLT SIZE*	MIN. EMBED. (Le) inches	REMARKS
HDU2	3075# 3"x3 1/2"	5/8" THD. ROD	-	-		SB5/8x24	18	
HDU4	4565# 3"x3 1/2"	5/8" DIA. THD. ROD	-	-		SB5/8x24	18	FOR INSTALLATION REQUIREMENT SEE (B)
HDU5	5645# 3"x3 1/2"	5/8" DIA. THD. ROD	-	-		SB5/8x24	18	
HDU8	7870# 5 1/2"x3 1/2"	7/8" DIA. THD. ROD	-	-		SB7/8x24	18	REFER TO SIMPSON CATALOG FOR ADDL. REQUIREMENT
HDU11	11175# 7 1/4"x3 1/2"	1" DIA. THD. ROD	10"	15"	SEE (A) PROVIDE DBL NUT AND PL 3/8x 3x3 WASHER AT BOTTOM	-	-	
HDU14	14925# 7 1/4"x3 1/2"	1" DIA. THD. ROD	12"	18"				
HDI5	15305# 5 1/2"x5 1/2"	1 1/4" DIA. THD. ROD	14"	21"				
HDI9	19070# 5 1/2"x5 1/2"	1 1/4" DIA. THD. ROD	24"	24"				

• MONO POUR



TYP. HOLDOWN DET. 15



NO EXCEPTION, USE THE FOLLOWING MATERIALS:
1. USE DUCTILE ANCHOR, 1/2"ø F1554 A36 ALL THREAD ROD, SHOW CERTIFICATE OF MATERIAL DURING INSPECTION. SUBMIT TO ENGINEER OF RECORD.
2. SIMPSON SET-XP EPOXY.

NO.	REVISIONS

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REGISTERED PROFESSIONAL ENGINEER C 46956 RENEWAL 08/31/2021 STATE OF CALIFORNIA

JULY 31, 2020

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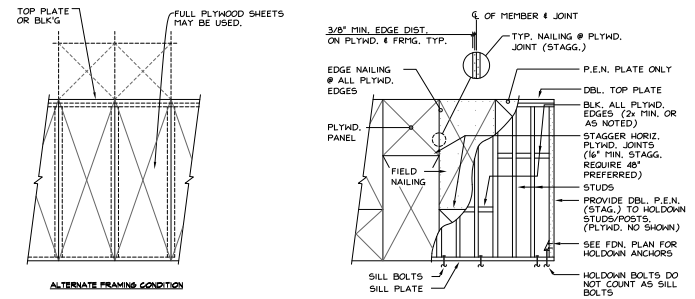
A PROPOSED REMODEL RESIDENCE FOR:
CASASSA RESIDENCE
500 SUMMIT ROAD
MORGAN HILL, CA 95307

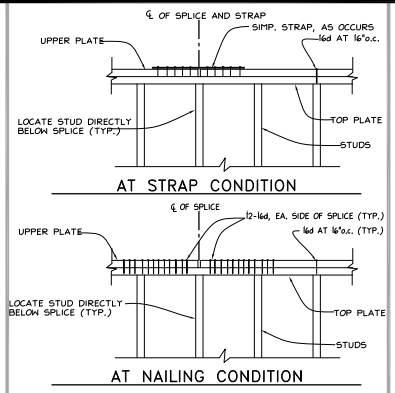
SCALE: NOT TO SCALE, U.N.O.
DRAWN: RC | CHECKED: RC
PROJ. NO.: 20-123 | DATE: 7-31-20
DRAWING NO.: SD-2
SHEET(S)

20123-24X36

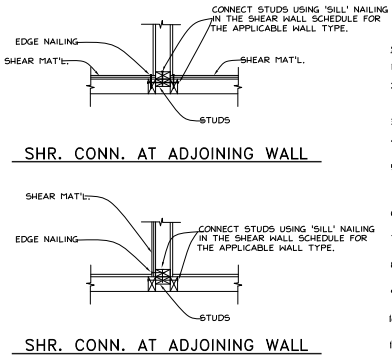


SCALE: NOT TO SCALE (N.T.S) TYP. (DO NOT SCALE DETAILS, SEE PLANS FOR ACTUAL DIMENSIONS OR SIZES)

PLYWOOD SHEAR WALLS 2



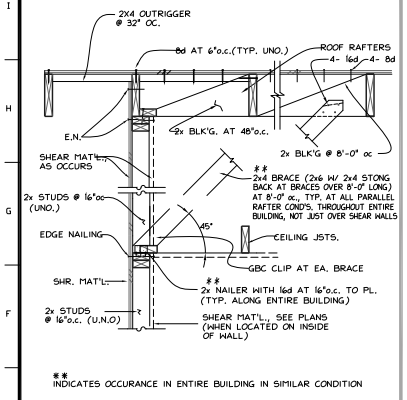
TOP PL. SPLICE DET. 3



SHEAR TRANSFER DET. 5

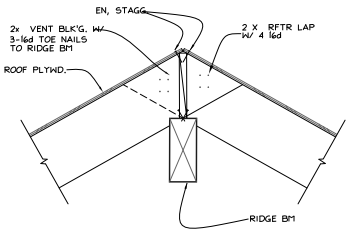
SHEAR WALL NOTES:

1. " ---------- " SYMBOL INDICATES LOCATION OF SHEAR MATERIAL.
2. " △ " SYMBOL IS A SHEAR WALL IDENTIFIER, AND INDICATES SIDE ON WHICH SHEAR MATERIAL IS TO BE PLACED. SEE SHEAR WALL SCHEDULE FOR MORE INFORMATION.
3. BLOCK AND NAIL ALL JOINTS WITH NAILING SPECIFIED IN SHEAR WALL SCHEDULE.
4. 8d AND 10d NAILS SHALL BE COMMON NAILS OR HOT DIPPED GALVANIZED BOX NAILS.
5. 5/8"ø ANCHORS SHALL BE CAST INTO CONCRETE AT 4'-0" oc MAXIMUM, EXCEPT WHERE SHOWN OTHERWISE (SEE "SHEAR WALL SCHEDULE"). POWER DRIVEN FASTENERS WILL NOT BE PERMITTED ON EXTERIOR WALLS, OR SHEAR WALLS.
6. NAIL ROOF SHEATHING WITH 8d NAILS AT 6" O.C. @ EDGES AND 12" O.C. INTERIOR (U.N.O.).
7. ALL HOLDOWNS, STRAPS AND ANGLES CALLED OUT ON THESE PLANS ARE TO BE MANUFACTURED BY SIMPSON CO. OR EQUAL.
8. NAIL SHEAR MATERIAL TO ALL POSTS ATTACHED TO HOLDOWN OR STRAPS WITH 2-ROWS EDGE NAILING.
9. ALL SIMPSON PRODUCTS ARE TO BE INSTALLED PER SIMPSON CO. SPECIFICATIONS.
10. ALL 'PA' TYPE ANCHORS TO BE INSTALLED OVER PLYWOOD SHEAR MATERIAL.
11. DO NOT OVERDRIVE NAILS INTO PLYWOOD. IF NAIL GUN IS USED, GUN SHOULD BE ADJUSTED TO UNDERDRIVE NAIL, THEN NAILS ARE TO BE HAND DRIVEN SO THAT THE HEAD OF THE NAIL IS FLUSH WITH THE FACE OF THE PLYWOOD.

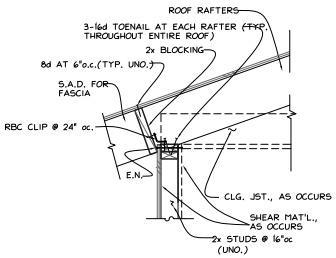


** INDICATES OCCURANCE IN ENTIRE BUILDING IN SIMILAR CONDITION

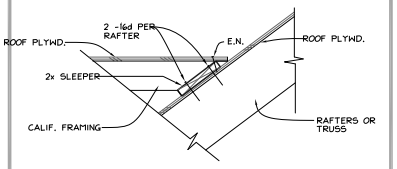
TYP. PARALLEL RAFTER COND. W/ CEILING JOIST 6



TYPICAL RIDGE BEAM FRMG. 7



PERPENDICULAR RAFTER COND. 8

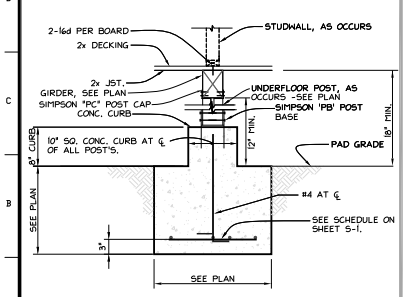


TYP. CALIF. FRM'G. CONN. 9

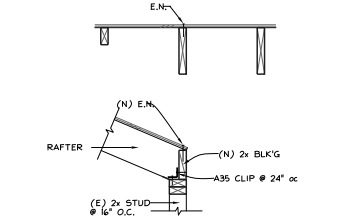
REQUIRED CONNECTIONS FOR 3x SOLE PLATE & ALTERNATE SOLE PLATE CONNECTION FOR 2x PLATE

MARK	2x SOLE PLATE (W/ 1 1/8" MAX. PLYWOOD SUBFLOOR) W/ SIMPSON SDS25412 LONG SCREWS	3x SOLE PLATE (W/ 1 1/8" MAX. PLYWOOD SUBFLOOR) W/ SIMPSON SDS25600 LONG SCREWS	SHEAR WALL CAPACITY (#/')
1	16" oc	16" oc	310
2	12" oc	12" oc	460
3	8" oc	8" oc	600
4	5" oc (STAGGERED)	5" oc	770
5	4" oc (STAGGERED)	4" oc (STAGGERED)	870
3 / 3	N/A	3" oc (STAGGERED)	1200
5 / 5	N/A	2 ROWS @ 4" oc (STAGGERED)	1740

SOLE PLATE SCREWING SCHEDULE 10



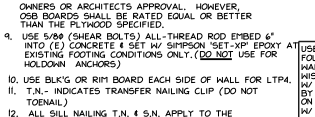
TYP. INT. FTG. DET. 11



SHEAR TRANSFER DET. 12

NOTES: (U.N.O. ON PLANS)

1. '•' BLOCK ALL EDGES
2. '••' BLOCK ALL ADJOINING PLYWOOD EDGES WITH 3x LUMBER AND STAGGER NAILS (PLATES, STUDS, POST, BLOCKING, ETC.) USE 3x MUDSILL
3. OFFSET PANEL JOINTS ON DIFFERENT FRAMING MEMBERS WHERE PLYWOOD SHEAR MATERIAL OCCURS ON EACH SIDE OF WALL. OTHERWISE USE 3x MIN. LUMBER, NAILS SHALL BE STAGGERED ON BOTH SIDES
4. USE PNEUMATICALLY DRIVEN 16d NAILS FOR ALL SPACING LESS THAN 6"o.c., IF SILL PLATES SPLITS, NAILS SHALL BE DRIVEN IN PRE-DRILLED HOLES. NAILS SHALL NOT BE UNDERDRIVEN, OVERDRIVEN AND/OR SLANTED.
5. ALL NAILS SHALL BE COMMON.
6. 'N/A' INDICATES NOT APPLICABLE WHEN PLYWOOD IN ON THE EXTERIOR FACE OF WALL. SEE PLANS FOR ATTACHMENTS WHEN PLYWOOD IS ON INTERIOR FACE OF WALL.
7. PROVIDE STUDS AT 16" O.C. (MAX.)
8. OSB (ORIENTED STRAND BOARD) APA RATED BOARD MAYBE USED IN LIEU OF PLYWOOD WITH BUILDING OWNERS OR ARCHITECTS APPROVAL. HOWEVER, OSB BOARDS SHALL BE RATED EQUAL OR BETTER THAN THE PLYWOOD SPECIFIED.
9. USE 5/8ø (SHEAR BOLTS) ALL-THREAD ROD EMBED 6" INTO (E) CONCRETE ℄ SET W/ SIMPSON 'SET-XP' EPOXY AT EXISTING FOOTING CONDITIONS ONLY.. (DO NOT USE FOR HOLDOWN ANCHORS)
10. USE BLK'G OR RIM BOARD EACH SIDE OF WALL FOR LTP4.
11. T.N.- INDICATES TRANSFER NAILING CLIP (DO NOT TOENAIL)
12. ALL SILL NAILING T.N. ℄ S.N. APPLY TO THE EXTENT OF SHEAR WALLS ONLY.
13. '•' PRE-DRILL HOLES, IF WOOD SPLITS.
14. USE 3" x 3" x 1/4" WASHER PLATE FOR ALL ANCHOR BOLTS/



SHEAR WALL SCHEDULE NOTE # 12

MARK	SHEAR WALL CONNECTION: MATERIAL	SHEAR WALL CONNECTION: PLYWOOD NAILING	SHEAR TRANSFER NOTE#11: NAILING OR CLIPS (T.N.)	SILL PLATE CONNECTIONS (SEE NOTE # 9 @ EXISTING CONCRETE): NAILING (S.N.) FOR 2x SOLE PLATE ONLY	SILL PLATE CONNECTIONS: ANCHOR BOLTS (A.B.'S) REMARKS: SHEAR BOLTS	SHEAR WALL CAPACITY (#/')
1	1/2" CDX PLYWOOD P.1.: 24/0 •	10d AT 6"o.c. E.N. 10 AT 12"o.c. F.N.	16d AT 5"o.c. OR A35 @ 24" o.c. OR LTP4 AT 24" o.c	16d AT 5"o.c.	5/8"ø A.B. AT 4'-0"o.c.	310
2	1/2" CDX PLYWOOD P.1.: 24/0 •	10d AT 4"o.c. E.N. 10d AT 12"o.c. F.N.	16d AT 3"o.c. OR A35 @ 16" o.c. OR LTP4 AT 16" o.c	10 -	5/8"ø A.B. AT 3'-0"o.c.	460
3	1/2" CDX PLYWOOD P.1.: 24/0 ••	10d AT 3"o.c. E.N. 10d AT 12"o.c. F.N.	A35 @ 12" o.c. OR LTP4 AT 12" o.c	10 -	5/8"ø A.B. AT 2'-4"o.c.	600
4	1/2" CDX PLYWOOD P.1.: 24/0 ••	10d AT 2"o.c. E.N. 10d AT 12"o.c. F.N.	A35 @ 10" o.c. OR LTP4 AT 10" o.c	10 -	5/8"ø A.B. AT 1'-6"o.c.	770
5	1/2" STR. 1 PLYWOOD P.1.: 24/0 ••	10d AT 2"o.c. E.N. 10d AT 12"o.c. F.N.	A35 @ 8" o.c. OR LTP4 AT 8" o.c	10 -	5/8"ø A.B. AT 1'-4"o.c.	870
3 / 3	1/2" CDX PLYWOOD •• EACH SIDE P.1.: 24/0	10d AT 3"o.c. E.N. 10d AT 12"o.c. F.N.	NOTE#10 LTP4 AT 8" o.c EACH SIDE, STAGGER	10 -	5/8"ø A.B. AT 1'-2"o.c.	1200
5 / 5	1/2" STRUCT 1 PLYWOOD EACH SIDE P.1.: 24/0	••10d AT 2"o.c. E.N. 10d AT 12"o.c. F.N.	NOTE#10 LTP4 AT 8" o.c EACH SIDE, STAGGER	10 -	5/8"ø A.B. AT 8"o.c.	1740

TYPICAL PLYWOOD SHEAR WALL SCHEDULE 15

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C 46956 — Structural — STATE OF CALIFORNIA

JULY 31, 2020

A PROPOSED REMODEL RESIDENCE FOR:
CASASSA RESIDENCE
500 SUMMIT ROAD
MORGAN HILL, CA 95307

NO.	REVISIONS

SCALE: NOT TO SCALE, U.N.O.
DRAWN: — CHECKED: RC
PROJ. NO.: 20-123 DATE: 7-31-20
DRAWING NO.: SD-3
SHEET(S)

20123-24X36

GENERAL INFORMATION

01	**Project Name**	Residence Addition			
02	**Calculation Description**	Title 24 Analysis			
03	**Project Location**	500 Summit Road			
04	**City**	Morgan Hill	05	**Standards Version**	Compliance 2017
06	**Zip Code**	95037	07	**Compliance Manager Version**	BEMCmpMgr 2016.3.1 (1149)
08	**Climate Zone**	CZ4	09	**Software Version**	EnergyPro 7.2
10	**Building Type**	Single Family	11	**Front Orientation (deg/Cardinal)**	210
12	**Project Scope**	Addition and/or Alteration	13	**Number of Dwelling Units**	1
14	**Total Cond. Floor Area (ft^2)**	3002	15	**Number of Zones**	2
16	**Slab Area (ft^2)**	0	17	**Number of Stories**	1
18	**Addition Cond. Floor Area (ft^2)**	1231	19	**Natural Gas Available**	No
20	**Addition Slab Area (ft^2)**	0	21	**Glazing Percentage (%)**	18.1%

COMPLIANCE RESULTS

01	**Building Complies with Computer Performance**
02	**This building incorporates features that require field testing and/or verification by a certified HERS rater under the supervision of a CEC-approved HERS provider.**
03	**This building incorporates one or more Special Features shown below**

ENERGY USE SUMMARY

04	05	06	07	08
Energy Use (kTDV/ft^2-yr)	**Standard Design**	**Proposed Design**	**Compliance Margin**	**Percent Improvement**
Space Heating	51.34	49.65	1.69	3.3%
Space Cooling	30.01	25.32	4.69	15.6%
IAQ Ventilation	0.96	0.96	0.00	0.0%
Water Heating	11.64	10.19	1.45	12.5%
Photovoltaic Offset	----	0.00	0.00	----
Compliance Energy Total	**93.95**	**86.12**	**7.83**	**8.3%**

REQUIRED SPECIAL FEATURES

The following are features that must be installed as condition for meeting the modeled energy performance for this computer analysis.

- **Ducts in crawl space**

HERS FEATURE SUMMARY

The following is a summary of the features that must be field-verified by a certified HERS Rater as a condition for meeting the modeled energy performance for this computer analysis. Additional detail is provided in the building components tables below.

Building-level Verifications:
- **IAQ mechanical ventilation**

Cooling System Verifications:
- **Minimum Airflow**
- **Verified Refrigerant Charge**
- **Fan Efficacy Watts/CFM**

HVAC Distribution System Verifications:
- **Duct Sealing**

Domestic Hot Water System Verifications:
- **-- None --**

BUILDING - FEATURES INFORMATION

01	02	03	04	05	06	07
Project Name	**Conditioned Floor Area (ft^2)**	**Number of Dwelling Units**	**Number of Bedrooms**	**Number of Zones**	**Number of Ventilation Cooling Systems**	**Number of Water Heating Systems**
Residence Addition	3002	1	3	2	0	2

ZONE INFORMATION

01	02	03	04	05	06	07
Zone Name	**Zone Type**	**HVAC System Name**	**Zone Floor Area (ft^2)**	**Avg. Ceiling Height**	**Water Heating System 1**	**Water Heating System 2**
Existing/Altered	Conditioned	Heating/Cooling - New1	1771	9	DHW Sys 1	DHW Sys 2 n/a
Addition	Conditioned	Heating/Cooling - New1	1231	9	DHW Sys 1	DHW Sys 2

OPAQUE SURFACES

01	02	03	04	05	06	07	08	09	10	11
Name	**Zone**	**Construction**	**Azimuth**	**Orientation**	**Gross Area (ft^2)**	**Window & Door Area (ft^2)**	**Tilt (deg)**	**Wall Exception**	**Status**	**Verified Existing Condition**
North Frame Wall	Existing/Altered	Wall Prior to 1978	30	Back	716	100.6	90	n/a	Existing	No
East Frame Wall	Existing/Altered	Wall Prior to 1978	120	Right	668	104	90	n/a	Existing	No
South Frame Wall	Existing/Altered	Wall Prior to 1978	210	Front	428	59.1	90	n/a	Existing	No
West Frame Wall	Existing/Altered	Wall Prior to 1978	300	Left	668	75.7	90	n/a	Existing	No
Roof Attic	Existing/Altered	Roof Attic Prior to 1978			1231			n/a	Existing	No
Floor Raised Foundation	Existing/Altered	Floor Crawlspace Prior To			1231			n/a	Existing	No
North Frame Wall 2	Addition	R-15 Wall	30	Back	404	128.8	90	none	New	n/a
East Frame Wall 2	Addition	R-15 Wall	120	Right	60	0	90	none	New	n/a
South Frame Wall 2	Addition	R-15 Wall	210	Front	404	63.5	90	none	New	n/a
West Frame Wall 2	Addition	R-15 Wall	300	Left	208	12	90	none	New	n/a
Wall to Exist.	Addition>>Existing/Altered	R-0 Wall			160	0		n/a	New	n/a
R-30 Roof Att.	Addition	R-30 Roof Attic			170			n/a	New	n/a
R-19 Floor Raised Fl.	Addition	R-19 Floor Raised Foundat			1231			n/a	New	n/a

OPAQUE SURFACES – Cathedral Ceilings

01	02	03	04	05	06	07	08	09	10	11	12
Name	**Zone**	**Type**	**Orientation**	**Area (ft^2)**	**Skylight Area (ft2)**	**Roof Rise (x in 12)**	**Roof Reflectance**	**Roof Emittance**	**Cool Roof**	**Status**	**Verified Existing Condition**
R-30 Roof Cath.	Addition	R-30 Roof Cathedral	- specify -	1063	0	6	0.1	0.85	No	New	n/a

ATTIC

01	02	03	04	05	06	07	08	09	10
Name	**Construction**	**Type**	**Roof Rise**	**Roof Reflectance**	**Roof Emittance**	**Radiant Barrier**	**Cool Roof**	**Status**	**Verified Existing Condition**
Attic Existing/Altered	Attic RoofExisting/Altered	Ventilated	6	0.1	0.85	No	No	Existing	No
Attic Addition	Attic RoofAddition	Ventilated	6	0.1	0.85	No	No	New	No

FENESTRATION / GLAZING

01	02	03	04	05	06	07	08	09	10	11
Name	**Surface (Orientation-Azimuth)**	**Width (ft)**	**Height (ft)**	**Multiplier**	**Area (ft^2)**	**U-factor**	**SHGC**	**Exterior Shading**	**Status**	**Verified Existing Condition**
Existing Window	North Frame Wall (Back-30)	----	----	1	12.0	0.58	0.65	Insect Screen (default)	Existing	No
Existing Window 2	North Frame Wall (Back-30)	----	----	1	12.0	0.58	0.65	Insect Screen (default)	Existing	No
Existing Window 3	North Frame Wall (Back-30)	----	----	1	12.0	0.58	0.65	Insect Screen (default)	Existing	No
Existing Window 4	North Frame Wall (Back-30)	----	----	1	12.0	0.58	0.65	Insect Screen (default)	Existing	No
Existing Glass Door	North Frame Wall (Back-30)	----	----	1	16.6	0.53	0.65	Insect Screen (default)	Existing	No
Existing Window 5	North Frame Wall (Back-30)	----	----	1	12.0	0.58	0.65	Insect Screen (default)	Existing	No
Existing Window 6	North Frame Wall (Back-30)	----	----	1	12.0	0.58	0.65	Insect Screen (default)	Existing	No
Existing Window 7	North Frame Wall (Back-30)	----	----	1	12.0	0.58	0.65	Insect Screen (default)	Existing	No
Existing Window 8	East Frame Wall (Right-120)	----	----	1	12.0	0.58	0.65	Insect Screen (default)	Existing	No
Existing Window 9	East Frame Wall (Right-120)	----	----	1	12.0	0.58	0.65	Insect Screen (default)	Existing	No
Existing Window 10	East Frame Wall (Right-120)	----	----	1	10.0	0.58	0.65	Insect Screen (default)	Existing	No
Existing Window 11	East Frame Wall (Right-120)	----	----	1	10.0	0.58	0.65	Insect Screen (default)	Existing	No
Existing Window 12	East Frame Wall (Right-120)	----	----	1	6.3	0.58	0.65	Insect Screen (default)	Existing	No
Existing Window 13	East Frame Wall (Right-120)	----	----	1	12.0	0.58	0.65	Insect Screen (default)	Existing	No
Existing Window 14	East Frame Wall (Right-120)	----	----	1	12.0	0.58	0.65	Insect Screen (default)	Existing	No
Existing Window 15	East Frame Wall (Right-120)	----	----	1	12.0	0.58	0.65	Insect Screen (default)	Existing	No
Existing Glass Door 2	East Frame Wall (Right-120)	----	----	1	17.7	0.53	0.65	Insect Screen (default)	Existing	No
Existing Window 16	South Frame Wall (Front-210)	----	----	1	12.0	0.58	0.65	Insect Screen (default)	Existing	No
Existing Glass Door 3	South Frame Wall (Front-210)	----	----	1	36.6	0.53	0.65	Insect Screen (default)	Existing	No
Existing Window 17	South Frame Wall (Front-210)	----	----	1	10.5	0.58	0.65	Insect Screen (default)	Existing	No
Existing Window 18	West Frame Wall (Left-300)	----	----	1	5.9	0.58	0.65	Insect Screen (default)	Existing	No
Existing Glass Door 4	West Frame Wall (Left-300)	----	----	1	20.0	0.53	0.65	Insect Screen (default)	Existing	No
Existing Window 19	West Frame Wall (Left-300)	----	----	1	7.5	0.58	0.65	Insect Screen (default)	Existing	No
Existing Window 20	West Frame Wall (Left-300)	----	----	1	7.5	0.58	0.65	Insect Screen (default)	Existing	No
Existing Window 21	West Frame Wall (Left-300)	----	----	1	7.5	0.58	0.65	Insect Screen (default)	Existing	No
Existing Window 22	West Frame Wall (Left-300)	----	----	1	11.3	0.58	0.65	Insect Screen (default)	Existing	No
Existing Window 23	West Frame Wall (Left-300)	----	----	1	3.0	0.58	0.65	Insect Screen (default)	Existing	No
Existing Window 24	West Frame Wall (Left-300)	----	----	1	1.0	0.58	0.65	Insect Screen (default)	Existing	No

Existing Window 25	West Frame Wall (Left-300)	----	----	1	12.0	0.58	0.65	Insect Screen (default)	Existing	No
2 - Swing Glass Door	North Frame Wall 2 (Back-30)	----	----	1	36.2	0.32	0.25	Insect Screen (default)	New	n/a
D - Wind.	North Frame Wall 2 (Back-30)	----	----	1	10.1	0.32	0.25	Insect Screen (default)	New	n/a
2 - Swing Glass Door 2	North Frame Wall 2 (Back-30)	----	----	1	36.2	0.32	0.25	Insect Screen (default)	New	n/a
D - Wind. 2	North Frame Wall 2 (Back-30)	----	----	1	10.1	0.32	0.25	Insect Screen (default)	New	n/a
2 - Swing Glass Door 3	North Frame Wall 2 (Back-30)	----	----	1	36.2	0.32	0.25	Insect Screen (default)	New	n/a
Door 1	South Frame Wall 2 (Front-210)	----	----	1	33.5	0.32	0.25	Insect Screen (default)	New	n/a
Window - A	South Frame Wall 2 (Front-210)	----	----	1	12.0	0.32	0.25	Insect Screen (default)	New	n/a
Window - A 2	South Frame Wall 2 (Front-210)	----	----	1	12.0	0.32	0.25	Insect Screen (default)	New	n/a
Window - B	South Frame Wall 2 (Front-210)	----	----	1	6.0	0.32	0.25	Insect Screen (default)	New	n/a
Window - A 3	West Frame Wall 2 (Left-300)	----	----	1	12.0	0.32	0.25	Insect Screen (default)	New	n/a

OPAQUE SURFACE CONSTRUCTIONS

01	02	03	04	05	06	07
Construction Name	**Surface Type**	**Construction Type**	**Framing**	**Total Cavity R-value**	**Winter Design U-factor**	**Assembly Layers**
Attic RoofExisting/Altered	Attic Roofs	Wood Framed Ceiling	2x4 @ 24 in. O.C.	none	0.644	• *Cavity / Frame: no insul. / 2x4* • *Roof Deck: Wood Siding/sheathing/decking* • *Roofing: Light Roof (Asphalt Shingle)*
Roof Attic Prior to 1978	Ceilings (below attic)	Wood Framed Ceiling	2x4 @ 16 in. O.C.	R 11	0.083	• *Inside Finish: Gypsum Board* • *Cavity / Frame: R-9.1 / 2x4* • *Over Ceiling Joists: R-1.9 insul.*
Wall Prior to 1978	Exterior Walls	Wood Framed Wall	2x4 @ 16 in. O.C.	none	0.361	• *Inside Finish: Gypsum Board* • *Cavity / Frame: no insul. / 2x4* • *Exterior Finish: 3 Coat Stucco*
Floor Crawlspace Prior To	Floors Over Crawlspace	Wood Framed Floor	2x12 @ 16 in. O.C.	none	0.216	• *Floor Surface: Carpeted* • *Floor Deck: Wood Siding/sheathing/decking* • *Cavity / Frame: no insul. / 2x12*
Attic RoofAddition	Attic Roofs	Wood Framed Ceiling	2x4 @ 24 in. O.C.	none	0.644	• *Cavity / Frame: no insul. / 2x4* • *Roof Deck: Wood Siding/sheathing/decking* • *Roofing: Light Roof (Asphalt Shingle)*
R-30 Roof Cathedral	Cathedral Ceilings	Wood Framed Ceiling	2x10 @ 16 in. O.C.	R 30	0.037	• *Inside Finish: Gypsum Board* • *Cavity / Frame: R-30 / 2x10* • *Roof Deck: Wood Siding/sheathing/decking* • *Roofing: Light Roof (Asphalt Shingle)*
R-30 Roof Attic	Ceilings (below attic)	Wood Framed Ceiling	2x6 @ 16 in. O.C.	R 30	0.032	• *Inside Finish: Gypsum Board* • *Cavity / Frame: R-14.3 / 2x6* • *Over Ceiling Joists: R-15.7 insul.*
R-15 Wall	Exterior Walls	Wood Framed Wall	2x4 @ 16 in. O.C.	R 15	0.095	• *Inside Finish: Gypsum Board* • *Cavity / Frame: R-15 / 2x4* • *Exterior Finish: 3 Coat Stucco*
R-19 Floor Raised Foundat	Floors Over Crawlspace	Wood Framed Floor	2x6 @ 16 in. O.C.	R 19 in 5-1/2 in. cavity (R-18)	0.050	• *Floor Surface: Carpeted* • *Floor Deck: Wood Siding/sheathing/decking* • *Cavity / Frame: R-19 in 5-1/2 in. (R-18) / 2x6*
R-0 Wall	Interior Walls	Wood Framed Wall	2x4 @ 16 in. O.C.	none	0.277	• *Inside Finish: Gypsum Board* • *Cavity / Frame: no insul. / 2x4* • *Other Side Finish: Gypsum Board*

BUILDING ENVELOPE - HERS VERIFICATION

01	02	03	04
Quality Insulation Installation (QII)	**Quality Installation of Spray Foam Insulation**	**Building Envelope Air Leakage**	**CFM50**
Not Required	Not Required	Not Required	n/a

TITLE 24 ENERGY ANALYSIS

DRAWN BY
CHECKED BY
DATE
SCALE
JOB NO.
SHEET

T24-1

OF 2 SHEETS

WATER HEATING SYSTEMS

01 Name	02 System Type	03 Distribution Type	04 Water Heater	05 Number of Heaters	06 Solar Fraction (%)	07 Status	08 Verified Existing Condition
DHW Sys 1	DHW	Standard	DHW Heater 1	1	0	Altered	No
DHW Sys 2	DHW	Standard	DHW Heater 2	1	0	New	No

WATER HEATERS

01 Name	02 Heater Element Type	03 Tank Type	04 Number of Units	05 Tank Volume (gal)	06 Uniform Energy Factor / Energy Factor / Efficiency	07 Input Rating / Pilot / Thermal Efficiency	08 Tank Insulation R-value (Int/Ext)	09 Standby Loss / Recovery Eff	10 First Hour Rating / Flow Rate	11 NEEA Heat Pump Brand / Model	12 Tank Location or Ambient Condition
DHW Heater 1	Gas	Consumer Instantaneous (UEF)	1	0	0.91 UEF	<= 200 kBtu/hr	0	n/a	8 GPM	n/a	n/a
DHW Heater 2	Gas	Consumer Instantaneous (UEF)	1	0	0.91 UEF	<= 200 kBtu/hr	0	n/a	8 GPM	n/a	n/a

SPACE CONDITIONING SYSTEMS

01 SC Sys Name	02 System Type	03 Heating Unit Name	04 Cooling Unit Name	05 Fan Name	06 Distribution Name	07 Status	08 Verified Existing Condition
Heating/Cooling - New1	Heat Pump Heating and Cooling System	Heat Pump System 1	Heat Pump System 1	HVAC Fan 1	Air Distribution System 1	New	No

HVAC - HEAT PUMPS

01 Name	02 System Type	03 Number of Units	04 Heating HSPF/COP	05 Heating Cap 47	06 Heating Cap 17	07 Cooling SEER	08 Cooling EER	09 Zonally Controlled	10 Compressor Type	11 HERS Verification
Heat Pump System 1	SplitHeatPump	2	8.2	60000	40000	14	11.7	Not Zonal	Single Speed	Heat Pump System 1-hers-cool

HVAC COOLING - HERS VERIFICATION

01 Name	02 Verified Airflow	03 Airflow Target	04 Verified EER	05 Verified SEER	06 Verified Refrigerant Charge
Heat Pump System 1-hers-cool	Required	350	Not Required	Not Required	Required

HVAC - DISTRIBUTION SYSTEMS

01 Name	02 Type	03 Duct Leakage	04 Insulation R-value	05 Supply Duct Location	06 Return Duct Location	07 Bypass Duct	08 Status	09 Verified Existing Condition	10 HERS Verification
Air Distribution System 1	Ducts located in a crawl space	Sealed and tested	6.0	Crawl Space	Crawl Space	None	New	No	Air Distribution System 1-hers-dist

HVAC DISTRIBUTION - HERS VERIFICATION

01 Name	02 Duct Leakage Verification	03 Duct Leakage Target (%)	04 Verified Duct Location	05 Verified Duct Design	06 Buried Ducts	07 Deeply Buried Ducts	08 Low-leakage Air Handler
Air Distribution System 1-hers-dist	Required	5.0	Not Required	Not Required	Not Required	Not Required	n/a

HVAC - FAN SYSTEMS & HERS VERIFICATION

01 Name	02 Type	03 Fan Power (Watts/CFM)	04 HERS Verification
HVAC Fan 1	Single Speed PSC Furnace Fan	0.58	Required

IAQ (Indoor Air Quality) FANS

01 Dwelling Unit	02 IAQ CFM	03 IAQ Watts/CFM	04 IAQ Fan Type	05 IAQ Recovery Effectiveness(%)	06 HERS Verification
SFam IAQVentRpt	60	0.25	Default	0	Required

PROJECT NOTES

Attached Heating & Cooling load summary is submitted as part of the calculations required by the current regulations. DO NOT USE FOR ACTUAL HEATING & AC DESIGN

Registration Number: 219-P010259742A-000-000-0000000-0000 Registration Date/Time: 2019-12-13 15:30:32 HERS Provider: CalCERTS inc.
CA Building Energy Efficiency Standards - 2016 Residential Compliance Report Version - CF1R-06232018-1149 Report Generated at: 2019-12-13 08:21:35

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

1. I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name:	Documentation Author Signature:
Milos Sojic	Milos Sojic
Company: Solargy, Inc.	Signature Date: 2019-12-13 08:32:04
Address: 22028 Ventura Bl., Ste. 207	CEA/HERS Certification Identification (If applicable): na
City/State/Zip: Woodland Hills, CA 91364	Phone: 818-347-6096

RESPONSIBLE PERSON'S DECLARATION STATEMENT

I certify the following under penalty of perjury, under the laws of the State of California:
1. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design identified on this Certificate of Compliance.
2. I certify that the energy features and performance specifications identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
3. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.

Responsible Designer Name:	Responsible Designer Signature:
Krista Brassfield	Krista Brassfield
Company: Landmark Designs	Date Signed: 2019-12-13 15:30:32
Address: P.O. Box 2221	License: na
City/State/Zip: Los Gatos, CA 95031	Phone: 408-761-1218

Digitally signed by CalCERTS. This digital signature is provided in order to secure the content of this registered document, and in no way implies Registration
Provider responsibility for the accuracy of the information.

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Registration Number: 219-P010259742A-000-000-0000000-0000 Registration Date/Time: 2019-12-13 15:30:32 HERS Provider: CalCERTS inc.
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RESIDENTIAL MEASURES SUMMARY — RMS-1

Project Name	Building Type		Date
Residence Addition	☑ Single Family ☐ Multi Family	☐ Addition Alone ☑ Existing+ Addition/Alteration	12/13/2019
Project Address	**California Energy Climate Zone**	**Total Cond. Floor Area** / **Addition** / **# of Units**	
500 Summit Road Morgan Hill	CA Climate Zone 04	3,002 / 1,231 / 1	

INSULATION

Construction	Type	Cavity	Area (ft^2)	Special Features	Status
Roof	Wood Framed Attic	R 11	1,231		Existing
Wall	Wood Framed	- no insulation	615		Existing
Wall	Wood Framed	- no insulation	564		Existing
Wall	Wood Framed	- no insulation	369		Existing
Wall	Wood Framed	- no insulation	592		Existing
Floor	Wood Framed w/Crawl Space	- no insulation	1,231		Existing
Roof	Wood Framed Rafter	R 30	1,063		New
Roof	Wood Framed Attic	R 30	170		New

FENESTRATION — Total Area: 544 | Glazing Percentage: 18.1% | New/Altered Average U-Factor: 0.32

Orientation	Area(ft^2)	U-Fac	SHGC	Overhang	Sidefins	Exterior Shades	Status
Rear (NE)	84.0	0.580	0.65	none	none	Bug Screen	Existing
Rear (NE)	16.6	0.530	0.65	none	none	Bug Screen	Existing
Right (SE)	86.3	0.580	0.65	none	none	Bug Screen	Existing
Right (SE)	17.7	0.530	0.65	none	none	Bug Screen	Existing
Front (SW)	22.5	0.580	0.65	none	none	Bug Screen	Existing
Front (SW)	36.6	0.530	0.65	none	none	Bug Screen	Existing
Left (NW)	55.7	0.580	0.65	none	none	Bug Screen	Existing
Left (NW)	20.0	0.530	0.65	none	none	Bug Screen	Existing
Rear (NE)	108.6	0.320	0.25	none	none	Bug Screen	New
Rear (NE)	20.2	0.320	0.25	none	none	Bug Screen	New
Front (SW)	33.5	0.320	0.25	none	none	Bug Screen	New
Front (SW)	30.0	0.320	0.25	none	none	Bug Screen	New
Left (NW)	12.0	0.320	0.25	none	none	Bug Screen	New

HVAC SYSTEMS

Qty.	Heating	Min. Eff	Cooling	Min. Eff	Thermostat	Status
2	Split Heat Pump	8.20 HSPF	Split Heat Pump	14.0 SEER	Setback	New

HVAC DISTRIBUTION

Location	Heating	Cooling	Duct Location	Duct R-Value	Status
Heating/Cooling - New	Ducted	Ducted	Crawlspace	6.0	New

WATER HEATING

Qty.	Type	Gallons	Min. Eff	Distribution	Status
1	Small Instantaneous Gas	0	0.91	Standard	Altered
1	Small Instantaneous Gas	0	0.91	Standard	New

RESIDENTIAL MEASURES SUMMARY — RMS-1

Project Name	Building Type		Date
Residence Addition	☑ Single Family ☐ Multi Family	☐ Addition Alone ☑ Existing+ Addition/Alteration	12/13/2019
Project Address	**California Energy Climate Zone**	**Total Cond. Floor Area** / **Addition** / **# of Units**	
500 Summit Road Morgan Hill	CA Climate Zone 04	3,002 / 1,231 / 1	

INSULATION

Construction	Type	Cavity	Area (ft^2)	Special Features	Status
Wall	Wood Framed	R 15	872		New
Floor	Wood Framed w/Crawl Space	R 19 in 5-1/2 ir	1,231		New
Demising	Wood Framed	- no insulation	160		New

FENESTRATION — Total Area: 544 | Glazing Percentage: 18.1% | New/Altered Average U-Factor: 0.32

Orientation	Area(ft^2)	U-Fac	SHGC	Overhang	Sidefins	Exterior Shades	Status

HVAC SYSTEMS

Qty.	Heating	Min. Eff	Cooling	Min. Eff	Thermostat	Status

HVAC DISTRIBUTION

Location	Heating	Cooling	Duct Location	Duct R-Value	Status

WATER HEATING

Qty.	Type	Gallons	Min. Eff	Distribution	Status

TITLE 24 ENERGY ANALYSIS

DRAWN BY	
CHECKED BY	
DATE	
SCALE	
JOB NO.	
SHEET	T24-2
OF	2 SHEETS

General Notes

1. Compliance information The builder shall leave in the building, copies of the completed, signed and submitted compliance documents for the building owner at occupancy. For low-rise residential buildings, such information shall, at a minimum, include copies of all Certificate of Compliance, Certificate of Installation, and Certificate of Verification documentation submitted. . [10-103(b)1]

2. Operating information. The builder shall provide the building owner at occupancy, operating information for all applicable features, materials, components, and mechanical devices installed in the building. Operating information shall include instructions on how to operate the features, materials, components, and mechanical devices correctly and efficiently. The instructions shall be consistent with specifications set forth by the Executive Director. For residential buildings, such information shall be contained in a folder or manual which provides all Certificate of Compliance, Certificate of Installation, and Certificate of Verification documentations. This operating information shall be in paper or electronic format. [10-103(b)2]

3. Maintenance information. The builder shall provide to the building owner at occupancy, maintenance information for all features, materials, components, and manufactured devices that require routine maintenance for efficient operation. Required routine maintenance actions shall be clearly stated and incorporated on a readily accessible label. The label may be limited to identifying, by title and/or publication number, the operation and maintenance manual for that particular model and type of feature, material, component or manufactured device. [10-103(b)3]

4. Ventilation information. The builder shall provide to the building owner at occupancy, a description of the quantities of outdoor air that the ventilation system(s) are designed to provide to the building's conditioned space, and instructions for proper operation and maintenance of the ventilation system. [10-103(b)4]

5. All systems, equipment, appliances and building components shall comply with the applicable manufacturing, construction, and installation provisions of Sections 110.0 through 110.11 for newly constructed buildings.

6. Any appliance regulated by the Appliance Efficiency Regulations, Title 20 California Code of Regulations, Section 1601 et seq., may be installed only if the appliance fully complies with Section 1608(a) of those regulations. [110.1(a)]

7. Service water-heating systems shall be equipped with automatic temperature controls capable of adjustment from the lowest to the highest acceptable temperature settings for the intended use as listed in Table 3, Chapter 50 of the ASHRAE Handbook, HVAC Applications Volume. [110.3(a)1]

8. On systems that have a total capacity greater than 167,000 Btu/hr, outlets that require higher than service water temperatures as listed in the ASHRAE Handbook, Applications Volume, shall have separate remote heaters, heat exchangers, or boosters to supply the outlet with the higher temperature. [110.3(c)1]

9. Service hot water systems with circulating pumps or with electrical heat trace systems shall be capable of automatically turning off the system. [110.3(c)2]

10. Controls for service water-heating systems shall limit the outlet temperature at public lavatories to 110°F. [110.3(c)3]

11. Unfired service water-heater storage tanks and backup tanks for solar water-heating systems shall have:

a. External insulation with an installed R-value of at least R-12, or

b. Internal and external insulation with a combined R-value of at least R-16, or

c. The heat loss of the tank surface based on an 80°F water-air temperature difference shall be less than 6.5 Btu/hr per square foot. [110.3 (c)4]

12. For Nonresidential, high-rise residential, and hotel/motel buildings, space conditioning systems shall meet the efficiency standards specified Section 120.2.

13. Continuously burning pilot light shall be prohibited for the following natural gas system or equipment listed below: [110.5]

a. Fan-type central furnaces

b. Household cooking appliances, except for household cooking appliances without an electrical supply voltage connection and in which each pilot consumes less than 150 Btu/hr

c. Pool heaters d. Spa heaters

14. Any pool or spa heating system or equipment shall: [110.4]

a. A thermal efficiency that complies with the Appliance Efficiency Regulations

b. Have a readily accessible on-off switch, mounted on the outside of the heater that allows shutting off the heater without adjusting the thermostat setting.

c. Not utilize electric resistance heating.

d. Have a cover for outdoor pools or spas that have a heat pump or gas heater.

e. Have a permanent, easily readable, and weatherproof instruction card that gives instructions for the energy efficient operation of the pool or spa heater and for the proper care of pool or spa water when a cover is used.

f. Have at least 36 inches of pipe installed between the filter and heater or dedicated suction and return lines, or built-in or built-up connections shall be installed to allow for the future addition of solar heating equipment.

g. Have directional inlets for the pool or spa that adequately mix the pool water.

h. A time switch or similar control mechanism shall be installed as part of a pool water circulation control system that will allow all pumps to be set or programmed to run only during the off-peak electric demand period and for the minimum time necessary to maintain the water in the condition required by applicable public health standards.

15. Manufactured fenestration products & exterior doors shall have air infiltration rates not exceeding 0.3 cfm/ft2 of window area, 0.3 cfm/ft2 of residential door area, 0.3 cfm/ft2 of nonresidential single door area, & 1.0 cfm/ft2 of nonres double door area. [110.6(a)1]

16. Fenestration products shall be rated in accordance with NFRC 100 for U-factor, NFRC 200 for SHGC, and VT or use the applicable default value. Fenestration products shall have a temporary label for manufactured fenestration products or a label certificate when the Component Modeling Approach is used and for site-built fenestration meeting the requirements of Section 10-111(a)1. [110.6(a)2, 110.6(a)3, 110.6(a)4, 110.6(a)5]

17. Field-fabricated fenestration products and exterior doors, other than unframed glass doors and fire doors, shall be caulked between the fenestration products or exterior door and the building, & shall be weatherstripped. [110.6(b)]

18. Joints, penetrations & openings in building envelope may be potential sources of air leakage shall be caulked, gasketed, weather stripped or otherwise sealed to limit infiltration & exfiltration. [110.7]

19. Insulation shall be certified by Department of Consumer Affairs, Bureau of Home Furnishing and Thermal Insulation that the insulation conductive thermal performance is approved pursuant to the California Code of Regulations, Title 24, Part 12, Chapter 12-13, Article 3, "Standards for Insulating Material." [110.8(a)]

20. Urea formaldehyde foam insulation may only be used in exterior side walls, & requires a four-mil-thick plastic polyethylene vapor barrier between the urea formaldehyde foam insulation & the interior space in all applications. [110.8(b)]

21. Insulating material shall be installed in compliance with the flame spread rating and smoke density requirements of the CBC. [110.8(c)]

22. Insulation installed on an existing space conditioning duct, it shall comply with Section 604.0 of the CMC. [110.8(d)3]

23. External insulation installed on an existing unfired water storage tank or on an existing back-up tank for a solar water-heating system, it shall have an R-value of at least R-12, or the heat loss of the tank surface based on an 80 EF water-air temperature difference shall be less than 6.5 Btu per hour per square foot. . [110.8(d)2] E.

Residential Notes:

1. A masonry or factory-built fireplace shall have the following: [150.0(e)1]

a. Closeable metal or glass doors covering the entire opening of the firebox;

b. A combustion air intake to draw air from the outside of the building directly into the firebox, which is at least six square inches in area and is equipped with a readily accessible, operable, and tight-fitting damper or combustion-air control device (Exception: An outside combustion-air intake is not required if the fireplace will be installed over concrete slab flooring and the fireplace will not be located on an exterior wall.); and

c. A flue damper with a readily accessible control. [150.0 (e)C]

2. Heating or cooling systems shall be equipped with a setback thermostat that meet the requirements of Section 110.2(c). [150.0(i)]

3. Gas or propane water heaters shall have: [150.0(n)]

a. A 120V electrical receptacle that is within 3 feet from the water heater.

b. A Category III or IV vent, or a Type B vent with straight pipe.

c. Condensate drain that is no more than 2 inches higher than the base.

d. A gas supply line with a capacity of at least 200,000 Btu/hr

4. All pumps and pump motors installed shall be listed in the Commission's directory of certified equipment and shall comply with the Appliance Efficiency Regulations. [150.0(p)1.A]

5. The minimum installed weight per square foot of any loose-fill insulation shall conform with the insulation manufacturer's labeled R-value. [150.0 (b)]

6. The minimum depth of concrete-slab floor perimeter insulation shall be 16 inches or the depth of the footing of the building, whichever is less. [150.1(c)(1)(D)]

7. The crawl space shall be covered with a vapor retarder over the entire floor. [150.1(c)1.D]

8. Insulations are required for: [150.0(j)2.A]

a. All hot water pipes from the heating source to the kitchen fixtures.

b. All piping with a nominal diameter of 3/4 inch or larger.

c. The first 5 feet (1.5 meters) of hot and cold water pipes from the storage tank.

d. All piping associated with a domestic hot water recirculation system.

e. Piping from the heating source to storage tank or between tanks.

f. Piping buried below grade.

9. Insulation shall be provided for water heaters as follows:

a. Unfired hot water tanks, such as storage tanks and backup storage tanks for solar water-heating systems, shall be externally wrapped with insulation having an installed thermal resistance of R-12 or greater or have internal insulation of at least R-16 and a label on the exterior of the tank showing the insulation R-value. [150.0 (j)1]

10. Lighting [150.0(k)]

a. Installed luminaires shall be classified as high-efficacy in accordance with TABLE 150.0-A.

b. Exhaust fans shall be switched separately from lighting systems.

c. Luminaries shall be switched with readily accessible controls that permit the luminaries to be manually switched ON and OFF.

d. Lighting installed in attached and detached garages, laundry rooms, and utility rooms, at least one luminaire in each of these spaces shall be controlled by vacancy sensors.

e. Dimmers or vacancy sensors shall control all luminaires required to have light sources compliant with Reference Joint Appendix JA8.

EXCEPTION 1: Luminaires in closets less than 70 square feet.

EXCEPTION 2: Luminaires in hallways.

f. A. In a low-rise multifamily residential building where the total interior common area in a single building equals 20 percent or less of the floor area, permanently installed lighting for the interior common areas in that building shall be high efficacy luminaires or controlled by an occupant sensor.

g. In a low-rise multifamily residential building where the total interior common area in a single building equals more than 20 percent of the floor area, permanently installed lighting in that building shall:

i) Comply with the applicable requirements in Sections 110.9, 130.0, 130.1, 140.6 and 141.0; and

ii) Lighting installed in corridors and stairwells shall be controlled by occupant sensors that reduce the lighting power in each space by at least 50 percent. The occupant sensors shall be capable of turning the light fully On and Off from all designed paths of ingress and egress.

2016 Low-Rise Residential Mandatory Measures Summary

NOTE: Low-rise residential buildings subject to the Energy Standards must comply with all applicable mandatory measures, regardless of the compliance approach used. Review the respective section for more information. "Exceptions may apply.
(Revised 04/2017)

Building Envelope Measures:	
§ 110.6(a)1:	**Air Leakage.** Manufactured fenestration, exterior doors, and exterior pet doors must limit air leakage to 0.3 cfm/ft² or less when tested per NFRC-400 or ASTM E283 or AAMA/WDMA/CSA 101/I.S.2/A440-2011.'
§ 110.6(a)5:	**Labeling.** Fenestration products must have a label meeting the requirements of § 10-111(a).
§ 110.6(b):	**Field fabricated exterior doors and fenestration** products must use U-factors and solar heat gain coefficient (SHGC) values from TABLES 110.6-A and 110.6-B for compliance and must be caulked and/or weatherstripped.'
§ 110.7:	**Air Leakage.** All joints, penetrations, and other openings in the building envelope that are potential sources of air leakage must be caulked, gasketed, or weather stripped.
§ 110.8(a):	**Insulation Certification by Manufacturers.** Insulation specified or installed must meet Standards for Insulating Material.
§ 110.8(g):	**Insulation Requirements for Heated Slab Floors.** Heated slab floors must be insulated per the requirements of § 110.8(g).
§ 110.8(i):	**Roofing Products Solar Reflectance and Thermal Emittance.** The thermal emittance and aged solar reflectance values of the roofing material must meet the requirements of § 110.8(i) when the installation of a cool roof is specified on the CF1R.
§ 110.8(j):	**Radiant Barrier.** A radiant barrier must have an emittance of 0.05 or less and be certified to the Department of Consumer Affairs.
§ 150.0(a):	**Ceiling and Rafter Roof Insulation.** Minimum R-22 insulation in wood-frame ceiling; or the weighted average U-factor must not exceed 0.043. Minimum R-19 or weighted average U-factor of 0.054 or less in a rafter roof alteration. Attic access doors must have permanently attached insulation using adhesive or mechanical fasteners. The attic access must be gasketed to prevent air leakage. Insulation must be installed in direct contact with a continuous roof or ceiling which is sealed to limit infiltration and exfiltration as specified in § 110.7, including but not limited to placing insulation either above or below the roof deck or on top of a drywall ceiling.'
§ 150.0(b):	**Loose-fill Insulation.** Loose fill insulation must meet the manufacturer's required density for the labeled R-value.
§ 150.0(c):	**Above Grade Wall Insulation.** Minimum R-13 insulation in 2x4 inch wood framing wall or have a U-factor of 0.102 or less (R-19 in 2x6 or U-factor of 0.074 or less). Opaque non-framed assemblies must have an overall assembly U-factor not exceeding 0.102, equivalent to an installed value of R-13 in a wood framed assembly.'
§ 150.0(d):	**Raised-floor Insulation.** Minimum R-19 insulation in raised wood framed floor or 0.037 maximum U-factor.'
§ 150.0(f):	**Slab Edge Insulation.** Slab edge insulation must meet all of the following: have a water absorption rate, for the insulation material alone without facings, no greater than 0.3%; have a water vapor permeance no greater than 2.0 perm/inch; be protected from physical damage and UV light deterioration; and, when installed as part of a heated slab floor, meet the requirements of § 110.8(g).
§ 150.0(g)1:	**Vapor Retarder.** In Climate Zones 1-16, the earth floor of unvented crawl space must be covered with a Class I or Class II vapor retarder. This requirement also applies to controlled ventilation crawl space for buildings complying with the exception to § 150.0(d).
§ 150.0(g)2:	**Vapor Retarder.** In Climate Zones 14 and 16, a Class I or Class II vapor retarder must be installed on the conditioned space side of all insulation in all exterior walls, vented attics, and unvented attics with air-permeable insulation.
§ 150.0(q):	**Fenestration Products.** Fenestration, including skylights, separating conditioned space from unconditioned space or outdoors must have a maximum U-factor of 0.58; or the weighted average U-factor of all fenestration must not exceed 0.58.'
Fireplaces, Decorative Gas Appliances, and Gas Log Measures:	
§ 150.0(e)1A:	**Closable Doors.** Masonry or factory-built fireplaces must have a closable metal or glass door covering the entire opening of the firebox.
§ 150.0(e)1B:	**Combustion Intake.** Masonry or factory-built fireplaces must have a combustion outside air intake, which is at least six square inches in area and is equipped with a readily accessible, operable, and tight-fitting damper or combustion-air control device.'
§ 150.0(e)1C:	**Flue Damper.** Masonry or factory-built fireplaces must have a flue damper with a readily accessible control.'
§ 150.0(e)2:	**Pilot Light.** 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:	
§ 110.0-§ 110.3:	**Certification.** Heating, ventilation and air conditioning (HVAC) equipment, water heaters, showerheads, faucets, and all other regulated appliances must be certified by the manufacturer to the Energy Commission.'
§ 110.2(a):	**HVAC Efficiency.** Equipment must meet the applicable efficiency requirements in TABLE 110.2-A through TABLE 110.2-K.'
§ 110.2(b):	**Controls for Heat Pumps with Supplementary Electric Resistance Heaters.** Heat pumps with supplementary electric resistance heaters must have controls that prevent supplementary heater operation when the heating load can be met by the heat pump alone; and in which the cut-on temperature for compression heating is higher than the cut-on temperature for supplementary heating, and the cut-off temperature for compression heating is higher than the cut-off temperature for supplementary heating.'
§ 110.2(c):	**Thermostats.** All unitary heating or cooling systems not controlled by a central energy management control system (EMCS) must have a setback thermostat.'
§ 110.3(c)5:	**Water Heating Recirculation Loops Serving Multiple Dwelling Units.** Water heating recirculation loops serving multiple dwelling units must meet the air release valve, backflow prevention, pump priming, pump isolation valve, and recirculation loop connection requirements of § 110.3(c)5.
§ 110.3(c)7:	**Isolation Valves.** Instantaneous water heaters with an input rating greater than 6.8 kBTU/hr (2 kW) must have isolation valves with hose bibbs or other fittings on both cold water and hot water lines of water heating systems to allow for water tank flushing when the valves are closed.
§ 110.5:	**Pilot Lights.** Continuously burning pilot lights are prohibited for natural gas: fan-type central furnaces; household cooking appliances (appliances without an electrical supply voltage connection with pilot lights that consume less than 150 Btu/hr are exempt); and pool and spa heaters.'
§ 150.0(h)1:	**Building Cooling and Heating Loads.** Heating and/or cooling loads are calculated in accordance with ASHRAE Handbook, Equipment Volume, Applications Volume, and Fundamentals Volume; SMACNA Residential Comfort System Installation Standards Manual; or ACCA Manual J using design conditions specified in § 150.0(h)2.

2016 Low-Rise Residential Mandatory Measures Summary

§ 150.0(m)13:	**Duct System Sizing and Air Filter Grille Sizing.** Space conditioning systems that use forced air ducts to supply cooling to an occupiable space must have a hole for the placement of a static pressure probe (HSPP), or a permanently installed static pressure probe (PSPP) in the supply plenum. The space conditioning system must also demonstrate airflow ≥ 350 CFM per ton of nominal cooling capacity through the return grilles, and an air-handling unit fan efficacy ≤ 0.58 W/CFM as confirmed by field verification and diagnostic testing, in accordance with Reference Residential Appendix RA3.3. This applies to both single zone central forced air systems and every zone for zonally controlled central forced air systems.'
§150.0(o):	**Ventilation for Indoor Air Quality.** All dwelling units must meet the requirements of ASHRAE Standard 62.2. Neither window operation nor continuous operation of central forced air system air handlers used in central fan integrated ventilation systems are permissible methods of providing whole-building ventilation.
§ 150.0(o)1A:	**Field Verification and Diagnostic Testing.** Whole-building ventilation airflow must be confirmed through field verification and diagnostic testing, in accordance with Reference Residential Appendix RA3.7.
Pool and Spa Systems and Equipment Measures:	
§ 110.4(a):	**Certification by Manufacturers.** Any pool or spa heating system or equipment must be certified to have all of the following: a thermal efficiency that complies with the Appliance Efficiency Regulations; an on-off switch mounted outside of the heater that allows shutting off the heater without adjusting the thermostat setting; a permanent weatherproof plate or card with operating instructions; and must not use electric resistance heating.'
§ 110.4(b)1:	**Piping.** Any pool or spa heating equipment must be installed with at least 36 inches of pipe between the filter and the heater, or dedicated suction and return lines, or built-in or built-up connections to allow for future solar heating.
§ 110.4(b)2:	**Covers.** Outdoor pools or spas that have a heat pump or gas heater must have a cover.
§ 110.4(b)3:	**Directional inlets and time switches for pools.** Pools must 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.
§ 110.5:	**Pilot Light.** Natural gas pool and spa heaters must not have a continuously burning pilot light.
§ 150.0(p):	**Pool Systems and Equipment Installation.** Residential pool systems or equipment must meet the specified requirements for pump sizing, flow rate, piping, filters, and valves.'
Lighting Measures:	
§ 110.9:	**Lighting Controls and Components.** All lighting control devices and systems, ballasts, and luminaires must meet the applicable requirements of § 110.9.'
§ 110.9(e):	**JA8 High Efficacy Light Sources.** To qualify as a JA8 high efficacy light source for compliance with § 150.0(k), a residential light source must be certified to the Energy Commission according to Reference Joint Appendix JA8.
§ 150.0(k)1A:	**Luminaire Efficacy.** All installed luminaires must be high efficacy in accordance with TABLE 150.0-A.
§ 150.0(k)1B:	**Blank Electrical Boxes.** The number of electrical boxes that are more than 5 feet above the finished floor and do not contain a luminaire or other device must be no greater than the number of bedrooms. These electrical boxes must be served by a dimmer, vacancy sensor control, or fan speed control.
§ 150.0(k)1C:	**Recessed Downlight Luminaires in Ceilings.** Luminaires recessed into ceilings must meet all of the requirements for: insulation contact (IC) labeling; air leakage; sealing; maintenance; and socket and light source as described in § 150.0(k)1C. A JA8-2016-E light source rated for elevated temperature must be installed by final inspection in all recessed downlight luminaires in ceilings.
§ 150.0(k)1D:	**Electronic Ballasts.** Ballasts for fluorescent lamps rated 13 watts or greater must be electronic and must have an output frequency no less than 20 kHz.
§ 150.0(k)1E:	**Night Lights.** Permanently installed night lights and night lights integral to installed luminaires or exhaust fans must be rated to consume no more than 5 watts of power per luminaire or exhaust fan as determined in accordance with § 130.0(c). Night lights do not need to be controlled by vacancy sensors.
§ 150.0(k)1F:	**Lighting Integral to Exhaust Fans.** Lighting integral to exhaust fans (except when installed by the manufacturer in kitchen exhaust hoods) must meet the applicable requirements of § 150.0(k).'
§ 150.0(k)1G:	**Screw based luminaires.** Screw based luminaires must not be recessed downlight luminaires in ceilings and must contain lamps that comply with Reference Joint Appendix JA8. Installed lamps must be marked with "JA8-2016" or "JA8-2016-E" as specified in Reference Joint Appendix JA8.'
§ 150.0(k)1H:	**Enclosed Luminaires.** Light sources installed in enclosed luminaires must be JA8 compliant and must be marked with "JA8-2016-E."
§ 150.0(k)2A:	**Interior Switches and Controls.** All forward phase cut dimmers used with LED light sources must comply with NEMA SSL 7A.
§ 150.0(k)2B:	**Interior Switches and Controls.** Exhaust fans must be switched separately from lighting systems.'
§ 150.0(k)2C:	**Interior Switches and Controls.** Luminaires must be switched with readily accessible controls that permit the luminaires to be manually switched ON and OFF.
§ 150.0(k)2D:	**Interior Switches and Controls.** Controls and equipment must be installed in accordance with manufacturer's instructions.
§ 150.0(k)2E:	**Interior Switches and Controls.** No control must bypass a dimmer or vacancy sensor function if the control is installed to comply with § 150.0(k).
§ 150.0(k)2F:	**Interior Switches and Controls.** Lighting controls must comply with the applicable requirements of § 110.9.
§ 150.0(k)2G:	**Interior Switches and Controls.** An energy management control system (EMCS) may be used to comply with dimmer requirements if it: functions as a dimmer according to § 110.9; meets the Installation Certificate requirements of § 130.4; meets the EMCS requirements of § 130.5(f); and meets all other requirements in § 150.0(k)2.
§ 150.0(k)2H:	**Interior Switches and Controls.** An EMCS may be used to comply with vacancy sensor requirements in § 150.0(k) if it meets all of the following: it functions as a vacancy sensor according to § 110.9; the Installation Certificate requirements of § 130.4; the EMCS requirements of § 130.5(f); and all other requirements in § 150.0(k)2.
§ 150.0(k)2I:	**Interior Switches and Controls.** A multiscene programmable controller may be used to comply with dimmer requirements in § 150.0(k) if it provides the functionality of a dimmer according to § 110.9, and complies with all other applicable requirements in § 150.0(k)2.

2016 Low-Rise Residential Mandatory Measures Summary

§ 150.0(h)3A:	**Clearances.** Installed air conditioner and heat pump outdoor condensing units must have a clearance of at least 5 feet from the outlet of any dryer vent.
§ 150.0(h)3B:	**Liquid Line Drier.** Installed air conditioner and heat pump systems must be equipped with liquid line filter driers if required, as specified by manufacturer's instructions.
§ 150.0(j)1:	**Storage Tank Insulation.** Unfired hot water tanks, such as storage tanks and backup storage tanks for solar water-heating systems, must have R-12 external insulation or R-16 internal insulation where the internal insulation R-value is indicated on the exterior of the tank.
§ 150.0(j)2A:	**Water piping and cooling system line insulation.** For domestic hot water system piping, whether buried or unburied, all of the following must be insulated according to the requirements of TABLE 120.3-A: the first 5 feet of hot and cold water pipes from the storage tank; all piping with a nominal diameter of 3/4 inch or larger; all piping associated with a domestic hot water recirculation system regardless of the pipe diameter; piping from the heating source to storage tank or between tanks; piping buried below grade; and all hot water pipes from the heating source to kitchen fixtures.'
§ 150.0(j)2B:	**Water piping and cooling system line insulation.** All domestic hot water pipes that are buried below grade must be installed in a water proof and non-crushable casing or sleeve.'
§ 150.0(j)2C:	**Water piping and cooling system line insulation.** Pipe for cooling system lines must be insulated as specified in § 150.0(j)2A. Distribution piping for steam and hydronic heating systems or hot water systems must meet the requirements in TABLE 120.3-A.'
§ 150.0(j)3:	**Insulation Protection.** Insulation must be protected from damage, including that due to sunlight, moisture, equipment maintenance, and wind.
§ 150.0(j)3A:	**Insulation Protection.** Insulation exposed to weather must be installed with a cover suitable for outdoor service. For example, protected by aluminum, sheet metal, painted canvas, or plastic cover. The cover must be water retardant and provide shielding from solar radiation that can cause degradation of the material.
§ 150.0(j)3B:	**Insulation Protection.** Insulation covering chilled water piping and refrigerant suction piping located outside the conditioned space must have a Class I or Class II vapor retarder.
§ 150.0(n)1:	**Gas or Propane Systems.** Systems using gas or propane water heaters to serve individual dwelling units must include all of the following: a 120V electrical receptacle within 3 feet of the water heater; a Category III or IV vent, or a Type B vent with straight pipe between the outside termination and the space where the water heater is installed; a condensate drain that is no more than 2 inches higher than the base of the water heater, and allows natural draining without pump assistance; and a gas supply line with a capacity of at least 200,000 Btu/hr.
§ 150.0(n)2:	**Recirculating Loops.** Recirculating loops serving multiple dwelling units must meet the requirements of § 110.3(c)5.
§ 150.0(n)3:	**Solar Water-heating Systems.** Solar water-heating systems and collectors must be certified and rated by the Solar Rating and Certification Corporation (SRCC) or by a listing agency that is approved by the Executive Director.
Ducts and Fans Measures:	
§ 110.8(d)3:	**Ducts.** Insulation installed on an existing space-conditioning duct must comply with § 604.0 of the California Mechanical Code (CMC). If a contractor installs the insulation, the contractor must certify to the customer, in writing, that the insulation meets this requirement.
§ 150.0(m)1:	**CMC Compliance.** All air-distribution system ducts and plenums must be installed, sealed, and insulated to meet the requirements of CMC §§ 601.0, 602.0, 603.0, 604.0, 605.0 and ANSI/SMACNA-006-2006 HVAC Duct Construction Standards Metal and Flexible 3rd Edition. Portions of supply-air and return-air ducts and plenums must be insulated to a minimum installed level of R-6.0 (or higher if required by CMC § 605.0) or a minimum installed level of R-4.2 when entirely in conditioned space as confirmed through field verification and diagnostic testing (RA3.1.4.3.8). Connections of metal ducts and inner core of flexible ducts must be mechanically fastened. Openings must 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 ¼ inch, the combination of mastic and either mesh or tape must be used. Building cavities, support platforms for air handlers, and plenums designed or constructed with materials other than sealed sheet metal, duct board or flexible duct must not be used for conveying conditioned air. Building cavities and support platforms may contain ducts. Ducts installed in cavities and support platforms must not be compressed to cause reductions in the cross-sectional area of the ducts.'
§ 150.0(m)2:	**Factory-Fabricated Duct Systems.** Factory-fabricated duct systems must comply with applicable requirements for duct construction, connections, and closures; joints and seams of duct systems and their components must not be sealed with cloth back rubber adhesive duct tapes unless such tape is used in combination with mastic and draw bands.
§ 150.0(m)3:	**Field-Fabricated Duct Systems.** Field-fabricated duct systems must comply with applicable requirements for: pressure-sensitive tapes, mastics, sealants, and other requirements specified for duct construction.
§ 150.0(m)7:	**Backdraft Dampers.** All fan systems that exchange air between the conditioned space and the outside of the building must have backdraft or automatic dampers.
§ 150.0(m)8:	**Gravity Ventilation Dampers.** Gravity ventilating systems serving conditioned space must have either automatic or readily accessible, manually operated dampers in all openings to the outside, except combustion inlet and outlet air openings and elevator shaft vents.
§ 150.0(m)9:	**Protection of Insulation.** Insulation must be protected from damage, including that due to sunlight, moisture, equipment maintenance, and wind. Insulation exposed to weather must be suitable for outdoor service. For example, protected by aluminum, sheet metal, painted canvas, or plastic cover. Cellular foam insulation must be protected as above or painted with a coating that is water retardant and provides shielding from solar radiation.
§ 150.0(m)10:	**Porous Inner Core Flex Duct.** Porous inner core flex duct must have a non-porous layer between the inner core and outer vapor barrier.
§ 150.0(m)11:	**Duct System Sealing and Leakage Test.** When space conditioning systems use forced air duct systems to supply conditioned air to an occupiable space, the ducts must be sealed and duct leakage tested, as confirmed through field verification and diagnostic testing, in accordance with § 150.0(m)11and Reference Residential Appendix RA3.
§ 150.0(m)12:	**Air Filtration.** Mechanical systems that supply air to an occupiable space through ductwork exceeding 10 feet in length and through a thermal conditioning component, except evaporative coolers, must be provided with air filter devices that meet the design, installation, efficiency, pressure drop, and labeling requirements of § 150.0(m)12.

2016 Low-Rise Residential Mandatory Measures Summary

§ 150.0(k)2J:	**Interior Switches and Controls.** In bathrooms, garages, laundry rooms, and utility rooms, at least one luminaire in each of these spaces must be controlled by a vacancy sensor.
§ 150.0(k)2K:	**Interior Switches and Controls.** Dimmers or vacancy sensors must control all luminaires required to have light sources compliant with Reference Joint Appendix JA8, except luminaires in closets less than 70 square feet and luminaires in hallways.'
§ 150.0(k)2L:	**Interior Switches and Controls.** Undercabinet lighting must be switched separately from other lighting systems.
§ 150.0(k)3A:	**Residential Outdoor Lighting.** For single-family residential buildings, outdoor lighting permanently mounted to a residential building, or to other buildings on the same lot, must meet the requirement in item § 150.0(k)3Ai (ON and OFF switch) and the requirements in either item § 150.0(k)3Aii (photocell and motion sensor) or item § 150.0(k)3Aiii (photo control and automatic time switch control, astronomical time clock, or EMCS).
§ 150.0(k)3B:	**Residential Outdoor Lighting.** For low-rise multifamily residential buildings, outdoor lighting for private patios, entrances, balconies, and porches; and outdoor lighting for residential parking lots and residential carports with less than eight vehicles per site must comply with either § 150.0(k)3A or with the applicable requirements in §§ 110.9, 130.0, 130.2, 130.4, 140.7 and 141.0.
§ 150.0(k)3C:	**Residential Outdoor Lighting.** For low-rise residential buildings with four or more dwelling units, outdoor lighting not regulated by § 150.0(k)3B or § 150.0(k)3D must comply with the applicable requirements in §§ 110.9, 130.0, 130.2, 130.4, 140.7 and 141.0.
§ 150.0(k)3D:	**Residential Outdoor Lighting.** Outdoor lighting for residential parking lots and residential carports with a total of eight or more vehicles per site must comply with the applicable requirements in §§ 110.9, 130.0, 130.2, 130.4, 140.7, and 141.0.
§ 150.0(k)4:	**Internally illuminated address signs.** Internally illuminated address signs must comply with § 140.8; or must consume no more than 5 watts of power as determined according to § 130.0(c).
§ 150.0(k)5:	**Residential Garages for Eight or More Vehicles.** Lighting for residential parking garages for eight or more vehicles must comply with the applicable requirements for nonresidential garages in §§ 110.9, 130.0, 130.1, 130.4, 140.6, and 141.0.
§ 150.0(k)6A:	**Interior Common Areas of Low-rise Multi-Family Residential Buildings.** In a low-rise multifamily residential building where the total interior common area in a single building equals 20 percent or less of the floor area, permanently installed lighting for the interior common areas in that building must be high efficacy luminaires and controlled by an occupant sensor.
§ 150.0(k)6B:	**Interior Common Areas of Low-rise Multi-Family Residential Buildings.** In a low-rise multifamily residential building where the total interior common area in a single building equals more than 20 percent of the floor area, permanently installed lighting in that building must: i. Comply with the applicable requirements in §§ 110.9, 130.0, 130.1, 140.6 and 141.0; and ii. Lighting installed in corridors and stairwells must be controlled by occupant sensors that reduce the lighting power in each space by at least 50 percent. The occupant sensors must be capable of turning the light fully on and off from all designed paths of ingress and egress.
Solar Ready Buildings:	
§ 110.10(a)1:	**Single Family Residences.** Single family residences located in subdivisions with ten or more single family residences and where the application for a tentative subdivision map for the residences has been deemed complete by the enforcement agency must comply with the requirements of § 110.10(b) through § 110.10(e).
§ 110.10(a)2:	**Low-rise Multi-family Buildings.** Low-rise multi-family buildings must comply with the requirements of § 110.10(b) through § 110.10(d).
§ 110.10(b)1:	**Minimum Area.** The solar zone must have a minimum total area as described below. The solar zone must comply with access, pathway, smoke ventilation, and spacing requirements as specified in Title 24, Part 9 or other Parts of Title 24 or in any requirements adopted by a local jurisdiction. The solar zone total area must be comprised of areas that have no dimension less than 5 feet and are no less than 80 square feet each for buildings with roof areas less than or equal to 10,000 square feet or no less than 160 square feet each for buildings with roof areas greater than 10,000 square feet. For single family residences the solar zone must be located on the roof or overhang of the building and have a total area no less than 250 square feet. For low-rise multi-family buildings the solar zone must be located on the roof or overhang of the building, or on the roof or overhang of another structure located within 250 feet of the building, or on covered parking installed with the building project, and have a total area no less than 15 percent of the total roof area of the building excluding any skylight area.'
§ 110.10(b)2:	**Orientation.** All sections of the solar zone located on steep-sloped roofs must be oriented between 110 degrees and 270 degrees of true north.
§ 110.10(b)3A:	**Shading.** The solar zone must not contain any obstructions, including but not limited to: vents, chimneys, architectural features, and roof mounted equipment.'
§ 110.10(b)3B:	**Shading.** Any obstruction located on the roof or any other part of the building that projects above a solar zone must be located at least twice the distance, measured in the horizontal plane, of the height difference between the highest point of the obstruction and the horizontal projection of the nearest point of the solar zone, measured in the vertical plane.'
§ 110.10(b)4:	**Structural Design Loads on Construction Documents.** For areas of the roof designated as solar zone, the structural design loads for roof dead load and roof live load must be clearly indicated on the construction documents.
§ 110.10(c):	**Interconnection Pathways.** The construction documents must indicate: a location for inverters and metering equipment and a pathway for routing of conduit from the solar zone to the point of interconnection with the electrical service (for single family residences the point of interconnection will be the main service panel); and a pathway for routing of plumbing from the solar zone to the water-heating system.
§ 110.10(d):	**Documentation.** A copy of the construction documents or a comparable document indicating the information from § 110.10(b) through § 110.10(c) must be provided to the occupant.
§ 110.10(e)1:	**Main Electrical Service Panel.** The main electrical service panel must have a minimum busbar rating of 200 amps.
§ 110.10(e)2:	**Main Electrical Service Panel.** The main electrical service panel must have a reserved space to allow for the installation of a double pole circuit breaker for a future solar electric installation. The reserved space must be: positioned at the opposite (load) end from the input feeder location or main circuit location; and permanently marked as "For Future Solar Electric".

TITLE 24 ENERGY ANALYSIS

DRAWN BY

CHECKED BY

DATE

SCALE

JOB NO.

SHEET

T24-3

OF 2 SHEETS

GENERAL INFORMATION

01	Project Name	Residence Addition			
02	Calculation Description	Title 24 Analysis			
03	Project Location	500 Summit Road			
04	City	Morgan Hill	05	Standards Version	Compliance 2017
06	Zip Code	95037	07	Compliance Manager Version	BEMCmpMgr 2016.3.1 (1149)
08	Climate Zone	CZ4	09	Software Version	EnergyPro 7.2
10	Building Type	Single Family	11	Front Orientation (deg/Cardinal)	210
12	Project Scope	Addition and/or Alteration	13	Number of Dwelling Units	1
14	Total Cond. Floor Area (ft²)	3002	15	Number of Zones	2
16	Slab Area (ft²)	0	17	Number of Stories	1
18	Addition Cond. Floor Area (ft²)	1687.5	19	Natural Gas Available	No
20	Addition Slab Area (ft²)	0	21	Glazing Percentage (%)	18.1%

COMPLIANCE RESULTS

01	Building Complies with Computer Performance
02	This building incorporates features that require field testing and/or verification by a certified HERS rater under the supervision of a CEC-approved HERS provider.
03	This building incorporates one or more Special Features shown below

ENERGY USE SUMMARY

04	05	06	07	08
Energy Use (kTDV/ft²-yr)	Standard Design	Proposed Design	Compliance Margin	Percent Improvement
Space Heating	49.76	52.05	-2.29	-4.6%
Space Cooling	27.32	26.37	0.95	3.5%
IAQ Ventilation	0.96	0.96	0.00	0.0%
Water Heating	11.64	10.19	1.45	12.5%
Photovoltaic Offset	----	0.00	0.00	----
Compliance Energy Total	**89.68**	**89.57**	**0.11**	**0.1%**

REQUIRED SPECIAL FEATURES

The following are features that must be installed as condition for meeting the modeled energy performance for this computer analysis.

- **Ducts in crawl space**

HERS FEATURE SUMMARY

The following is a summary of the features that must be field-verified by a certified HERS Rater as a condition for meeting the modeled energy performance for this computer analysis. Additional detail is provided in the building components tables below.

Building-level Verifications:
- **IAQ mechanical ventilation**

Cooling System Verifications:
- **Minimum Airflow**
- **Verified Refrigerant Charge**
- **Fan Efficacy Watts/CFM**

HVAC Distribution System Verifications:
- **Duct Sealing**

Domestic Hot Water System Verifications:
- **-- None --**

BUILDING - FEATURES INFORMATION

01	02	03	04	05	06	07
Project Name	Conditioned Floor Area (ft²)	Number of Dwelling Units	Number of Bedrooms	Number of Zones	Number of Ventilation Cooling Systems	Number of Water Heating Systems
Residence Addition	3002	1	3	2	0	2

ZONE INFORMATION

01	02	03	04	05	06	07
Zone Name	Zone Type	HVAC System Name	Zone Floor Area (ft²)	Avg. Ceiling Height	Water Heating System 1	Water Heating System 2
Existing/Altered	Conditioned	Heating/Cooling - New1	1314.5	8	DHW Sys 1	DHW Sys 2 n/a
Addition	Conditioned	Heating/Cooling - New1	1687.5	9	DHW Sys 1	DHW Sys 2

OPAQUE SURFACES

01	02	03	04	05	06	07	08	09	10	11
Name	Zone	Construction	Azimuth	Orientation	Gross Area (ft²)	Window & Door Area (ft²)	Tilt (deg)	Wall Exception	Status	Verified Existing Condition
North Frame Wall	Existing/Altered	Wall Prior to 1978	30	Back	593	60	90	n/a	Existing	No
East Frame Wall	Existing/Altered	Wall Prior to 1978	120	Right	674	92	90	n/a	Existing	No
South Frame Wall	Existing/Altered	Wall Prior to 1978	210	Front	428	59.1	90	n/a	Existing	No
West Frame Wall	Existing/Altered	Wall Prior to 1978	300	Left	507	59.7	90	n/a	Existing	No
Roof Attic	Existing/Altered	Roof Attic Prior to 1978			1314.5			n/a	Existing	No
Floor Raised Foundation	Existing/Altered	Floor Crawlspace Prior To			1314.5			n/a	Existing	No
North Frame Wall/ext	Addition	R-15 Wall	30	Back	143	40.6	90	Ex. w/ Siding	New	n/a
East Frame Wall/ext	Addition	R-15 Wall	120	Right	261	12	90	Ex. w/ Siding	New	n/a
West Frame Wall/ext	Addition	R-15 Wall	300	Left	261	16	90	Ex. w/ Siding	New	n/a
North Frame Wall 2	Addition	R-15 Wall	30	Back	404	128.8	90	none	New	n/a
East Frame Wall 2	Addition	R-15 Wall	120	Right	60	0	90	none	New	n/a
South Frame Wall 2	Addition	R-15 Wall	210	Front	404	63.5	90	none	New	n/a
West Frame Wall 2	Addition	R-15 Wall	300	Left	208	12	90	none	New	n/a
Wall to Exist.	Addition>>Existing/Altered	R-0 Wall			143	0		n/a	New	n/a
Wall to Exist. 2	Addition>>Existing/Altered	R-0 Wall			160	0		n/a	New	n/a
R-30 Roof Att.	Addition	R-30 Roof Attic			170			n/a	New	n/a
R-19 Floor Raised Fl.	Addition	R-19 Floor Raised Foundat			456.5			n/a	New	n/a
R-19 Floor Raised Fl. 2	Addition	R-19 Floor Raised Foundat			1231			n/a	New	n/a

OPAQUE SURFACES – Cathedral Ceilings

01	02	03	04	05	06	07	08	09	10	11	12
Name	Zone	Type	Orientation	Area (ft²)	Skylight Area (ft2)	Roof Rise (x in 12)	Roof Reflectance	Roof Emittance	Cool Roof	Status	Verified Existing Condition
R-21 Roof Cath. w/ins	Addition	R-21 Roof Cathedral w/ins	- specify -	1063	0	6	0.1	0.85	No	New	n/a
R-30 Roof Cath.	Addition	R-30 Roof Cathedral	- specify -	1063	0	6	0.1	0.85	No	New	n/a

ATTIC

01	02	03	04	05	06	07	08	09	10
Name	Construction	Type	Roof Rise	Roof Reflectance	Roof Emittance	Radiant Barrier	Cool Roof	Status	Verified Existing Condition
Attic Existing/Altered	Attic RoofExisting/Altered	Ventilated	6	0.1	0.85	No	No	Existing	No
Attic Addition	Attic RoofAddition	Ventilated	6	0.1	0.85	No	No	New	No

FENESTRATION / GLAZING

01	02	03	04	05	06	07	08	09	10	11
Name	Surface (Orientation-Azimuth)	Width (ft)	Height (ft)	Multiplier	Area (ft²)	U-factor	SHGC	Exterior Shading	Status	Verified Existing Condition
Existing Window	North Frame Wall (Back-30)	----	----	1	12.0	0.58	0.65	Insect Screen (default)	Existing	No
Existing Window 2	North Frame Wall (Back-30)	----	----	1	12.0	0.58	0.65	Insect Screen (default)	Existing	No
Existing Window 3	North Frame Wall (Back-30)	----	----	1	12.0	0.58	0.65	Insect Screen (default)	Existing	No
Existing Window 4	North Frame Wall (Back-30)	----	----	1	12.0	0.58	0.65	Insect Screen (default)	Existing	No
Existing Window 5	North Frame Wall (Back-30)	----	----	1	12.0	0.58	0.65	Insect Screen (default)	Existing	No
Existing Window 6	East Frame Wall (Right-120)	----	----	1	12.0	0.58	0.65	Insect Screen (default)	Existing	No
Existing Window 7	East Frame Wall (Right-120)	----	----	1	10.0	0.58	0.65	Insect Screen (default)	Existing	No
Existing Window 8	East Frame Wall (Right-120)	----	----	1	10.0	0.58	0.65	Insect Screen (default)	Existing	No
Existing Window 9	East Frame Wall (Right-120)	----	----	1	6.3	0.58	0.65	Insect Screen (default)	Existing	No
Existing Window 10	East Frame Wall (Right-120)	----	----	1	12.0	0.58	0.65	Insect Screen (default)	Existing	No
Existing Window 11	East Frame Wall (Right-120)	----	----	1	12.0	0.58	0.65	Insect Screen (default)	Existing	No
Existing Window 12	East Frame Wall (Right-120)	----	----	1	12.0	0.58	0.65	Insect Screen (default)	Existing	No
Existing Glass Door	East Frame Wall (Right-120)	----	----	1	17.7	0.53	0.65	Insect Screen (default)	Existing	No
Existing Window 13	South Frame Wall (Front-210)	----	----	1	12.0	0.58	0.65	Insect Screen (default)	Existing	No
Existing Glass Door 2	South Frame Wall (Front-210)	----	----	1	36.6	0.53	0.65	Insect Screen (default)	Existing	No
Existing Window 14	South Frame Wall (Front-210)	----	----	1	10.5	0.58	0.65	Insect Screen (default)	Existing	No
Existing Window 15	West Frame Wall (Left-300)	----	----	1	5.9	0.58	0.65	Insect Screen (default)	Existing	No
Existing Glass Door 3	West Frame Wall (Left-300)	----	----	1	20.0	0.53	0.65	Insect Screen (default)	Existing	No
Existing Window 16	West Frame Wall (Left-300)	----	----	1	7.5	0.58	0.65	Insect Screen (default)	Existing	No
Existing Window 17	West Frame Wall (Left-300)	----	----	1	7.5	0.58	0.65	Insect Screen (default)	Existing	No
Existing Window 18	West Frame Wall (Left-300)	----	----	1	7.5	0.58	0.65	Insect Screen (default)	Existing	No
Existing Window 19	West Frame Wall (Left-300)	----	----	1	11.3	0.58	0.65	Insect Screen (default)	Existing	No
Swing Glass Door	North Frame Wall/ext (Back-30)	----	----	1	16.6	0.30	0.24	Insect Screen (default)	New	n/a
Wind.	North Frame Wall/ext (Back-30)	----	----	1	12.0	0.30	0.24	Insect Screen (default)	New	n/a
Wind. 2	North Frame Wall/ext (Back-30)	----	----	1	12.0	0.30	0.24	Insect Screen (default)	New	n/a
Wind. 3	East Frame Wall/ext (Right-120)	----	----	1	12.0	0.30	0.24	Insect Screen (default)	New	n/a
Wind. 4	West Frame Wall/ext (Left-300)	----	----	1	3.0	0.30	0.24	Insect Screen (default)	New	n/a
Wind. 5	West Frame Wall/ext (Left-300)	----	----	1	1.0	0.30	0.24	Insect Screen (default)	New	n/a
Wind. 6	West Frame Wall/ext (Left-300)	----	----	1	12.0	0.30	0.24	Insect Screen (default)	New	n/a
2 - Swing Glass Door	North Frame Wall 2 (Back-30)	----	----	1	36.2	0.32	0.25	Insect Screen (default)	New	n/a
D - Wind.	North Frame Wall 2 (Back-30)	----	----	1	10.1	0.32	0.25	Insect Screen (default)	New	n/a
2 - Swing Glass Door 2	North Frame Wall 2 (Back-30)	----	----	1	36.2	0.32	0.25	Insect Screen (default)	New	n/a
D - Wind. 2	North Frame Wall 2 (Back-30)	----	----	1	10.1	0.32	0.25	Insect Screen (default)	New	n/a
2 - Swing Glass Door 3	North Frame Wall 2 (Back-30)	----	----	1	36.2	0.32	0.25	Insect Screen (default)	New	n/a
Door 1	South Frame Wall 2 (Front-210)	----	----	1	33.5	0.32	0.25	Insect Screen (default)	New	n/a
Window - A	South Frame Wall 2 (Front-210)	----	----	1	12.0	0.32	0.25	Insect Screen (default)	New	n/a
Window - A 2	South Frame Wall 2 (Front-210)	----	----	1	12.0	0.32	0.25	Insect Screen (default)	New	n/a
Window - B	South Frame Wall 2 (Front-210)	----	----	1	6.0	0.32	0.25	Insect Screen (default)	New	n/a
Window - A 3	West Frame Wall 2 (Left-300)	----	----	1	12.0	0.32	0.25	Insect Screen (default)	New	n/a

TITLE 24 ENERGY ANALYSIS

DRAWN BY
CHECKED BY
DATE
SCALE
JOB NO.
SHEET

T24-1

OF 2 SHEETS

OPAQUE SURFACE CONSTRUCTIONS

01 Construction Name	02 Surface Type	03 Construction Type	04 Framing	05 Total Cavity R-value	06 Winter Design U-factor	07 Assembly Layers
Attic Roof/Existing/Altered	Attic Roofs	Wood Framed Ceiling	2x4 @ 24 in. O.C.	none	0.644	• *Cavity / Frame: no insul. / 2x4* • *Roof Deck: Wood Siding/sheathing/decking* • *Roofing: Light Roof (Asphalt Shingle)*
Roof Attic Prior to 1978	Ceilings (below attic)	Wood Framed Ceiling	2x4 @ 16 in. O.C.	R 11	0.083	• *Inside Finish: Gypsum Board* • *Cavity / Frame: R-9.1 / 2x4* • *Over Ceiling Joists: R-1.9 insul.*
Wall Prior to 1978	Exterior Walls	Wood Framed Wall	2x4 @ 16 in. O.C.	none	0.361	• *Inside Finish: Gypsum Board* • *Cavity / Frame: no insul. / 2x4* • *Exterior Finish: 3 Coat Stucco*
Floor Crawlspace Prior To	Floors Over Crawlspace	Wood Framed Floor	2x12 @ 16 in. O.C.	none	0.216	• *Floor Surface: Carpeted* • *Floor Deck: Wood Siding/sheathing/decking* • *Cavity / Frame: no insul. / 2x12*
Attic RoofAddition	Attic Roofs	Wood Framed Ceiling	2x4 @ 24 in. O.C.	none	0.644	• *Cavity / Frame: no insul. / 2x4* • *Roof Deck: Wood Siding/sheathing/decking* • *Roofing: Light Roof (Asphalt Shingle)*
R-21 Roof Cathedral w/ins	Cathedral Ceilings	Wood Framed Ceiling	2x6 @ 16 in. O.C.	R 21	0.040	• *Inside Finish: Gypsum Board* • *Sheathing / Insulation: R5 Sheathing* • *Cavity / Frame: R-21 / 2x6* • *Roof Deck: Wood Siding/sheathing/decking* • *Roofing: Light Roof (Asphalt Shingle)*
R-15 Wall	Exterior Walls	Wood Framed Wall	2x4 @ 16 in. O.C.	R 15	0.095	• *Inside Finish: Gypsum Board* • *Cavity / Frame: R-15 / 2x4* • *Exterior Finish: 3 Coat Stucco*
R-19 Floor Raised Foundat	Floors Over Crawlspace	Wood Framed Floor	2x6 @ 16 in. O.C.	R 19 in 5-1/2 in. cavity (R-18)	0.050	• *Floor Surface: Carpeted* • *Floor Deck: Wood Siding/sheathing/decking* • *Cavity / Frame: R-19 in 5-1/2 in. (R-18) / 2x6*
R-0 Wall	Interior Walls	Wood Framed Wall	2x4 @ 16 in. O.C.	none	0.277	• *Inside Finish: Gypsum Board* • *Cavity / Frame: no insul. / 2x4* • *Other Side Finish: Gypsum Board*
R-30 Roof Cathedral	Cathedral Ceilings	Wood Framed Ceiling	2x10 @ 16 in. O.C.	R 30	0.037	• *Inside Finish: Gypsum Board* • *Cavity / Frame: R-30 / 2x10* • *Roof Deck: Wood Siding/sheathing/decking* • *Roofing: Light Roof (Asphalt Shingle)*
R-30 Roof Attic	Ceilings (below attic)	Wood Framed Ceiling	2x6 @ 16 in. O.C.	R 30	0.032	• *Inside Finish: Gypsum Board* • *Cavity / Frame: R-14.3 / 2x6* • *Over Ceiling Joists: R-18.7 insul.*

BUILDING ENVELOPE - HERS VERIFICATION

01 Quality Insulation Installation (QII)	02 Quality Installation of Spray Foam Insulation	03 Building Envelope Air Leakage	04 CFM50
Not Required	Not Required	Not Required	n/a

WATER HEATING SYSTEMS

01 Name	02 System Type	03 Distribution Type	04 Water Heater	05 Number of Heaters	06 Solar Fraction (%)	07 Status	08 Verified Existing Condition
DHW Sys 1	DHW	Standard	DHW Heater 1	1	0	Altered	No
DHW Sys 2	DHW	Standard	DHW Heater 2	1	0	New	No

WATER HEATERS

01 Name	02 Heater Element Type	03 Tank Type	04 Number of Units	05 Tank Volume (gal)	06 Uniform Energy Factor / Energy Factor / Efficiency	07 Input Rating / Pilot / Thermal Efficiency	08 Tank Insulation R-value (Int/Ext)	09 Standby Loss / Recovery Eff	10 First Hour Rating / Flow Rate	11 NEEA Heat Pump Brand / Model	12 Tank Location or Ambient Condition
DHW Heater 1	Gas	Consumer Instantaneous (UEF)	1	0	0.91 UEF	<= 200 kBtu/hr	0	n/a	8 GPM	n/a	n/a
DHW Heater 2	Gas	Consumer Instantaneous (UEF)	1	0	0.91 UEF	<= 200 kBtu/hr	0	n/a	8 GPM	n/a	n/a

SPACE CONDITIONING SYSTEMS

01 SC Sys Name	02 System Type	03 Heating Unit Name	04 Cooling Unit Name	05 Fan Name	06 Distribution Name	07 Status	08 Verified Existing Condition
Heating/Cooling - New1	Heat Pump Heating and Cooling System	Heat Pump System 1	Heat Pump System 1	HVAC Fan 1	Air Distribution System 1	New	No

HVAC - HEAT PUMPS

01 Name	02 System Type	03 Number of Units	04 Heating HSPF/COP	05 Heating Cap 47	06 Heating Cap 17	07 Cooling SEER	08 Cooling EER	09 Zonally Controlled	10 Compressor Type	11 HERS Verification
Heat Pump System 1	SplitHeatPump	2	8.2	60000	40000	14	11.7	Not Zonal	Single Speed	Heat Pump System 1-hers-cool

HVAC COOLING - HERS VERIFICATION

01 Name	02 Verified Airflow	03 Airflow Target	04 Verified EER	05 Verified SEER	06 Verified Refrigerant Charge
Heat Pump System 1-hers-cool	Required	350	Not Required	Not Required	Required

HVAC - DISTRIBUTION SYSTEMS

01 Name	02 Type	03 Duct Leakage	04 Insulation R-value	05 Supply Duct Location	06 Return Duct Location	07 Bypass Duct	08 Status	09 Verified Existing Condition	10 HERS Verification
Air Distribution System 1	Ducts located in a crawl space	Sealed and tested	6.0	Crawl Space	Crawl Space	None	New	No	Air Distribution System 1-hers-dist

HVAC DISTRIBUTION - HERS VERIFICATION

01 Name	02 Duct Leakage Verification	03 Duct Leakage Target (%)	04 Verified Duct Location	05 Verified Duct Design	06 Buried Ducts	07 Deeply Buried Ducts	08 Low-leakage Air Handler
Air Distribution System 1-hers-dist	Required	5.0	Not Required	Not Required	Not Required	Not Required	n/a

HVAC - FAN SYSTEMS & HERS VERIFICATION

01 Name	02 Type	03 Fan Power (Watts/CFM)	04 HERS Verification
HVAC Fan 1	Single Speed PSC Furnace Fan	0.58	Required

IAQ (Indoor Air Quality) FANS

01 Dwelling Unit	02 IAQ CFM	03 IAQ Watts/CFM	04 IAQ Fan Type	05 IAQ Recovery Effectiveness(%)	06 HERS Verification
SFam IAQVentRpt	60	0.25	Default	0	Required

PROJECT NOTES

Attached Heating & Cooling load summary is submitted as part of the calculations required by the current regulations. DO NOT USE FOR ACTUAL HEATING & AC DESIGN

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

1. I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name:	Documentation Author Signature:
Milos Sojic	Milos Sojic
Company:	Signature Date:
Solargy, Inc.	2020-12-30 11:34:36
Address:	CEA/HERS Certification Identification (If applicable):
22028 Ventura Bl., Ste. 207	na
City/State/Zip:	Phone:
Woodland Hills, CA 91364	818-347-6096

RESPONSIBLE PERSON'S DECLARATION STATEMENT

I certify the following under penalty of perjury, under the laws of the State of California:
1. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design identified on this Certificate of Compliance.
2. I certify that the energy features and performance specifications identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
3. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.

Responsible Designer Name:	Responsible Designer Signature:
Krista Brassfield	Krista Brassfield
Company:	Date Signed:
Landmark Designs	2020-12-31 11:39:00
Address:	License:
P.O. Box 2221	na
City/State/Zip:	Phone:
Los Gatos, CA 95031	408-761-1218

Digitally signed by CalCERTS. This digital signature is provided in order to secure the content of this registered document, and in no way implies Registration Provider responsibility for the accuracy of the information.

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RESIDENTIAL MEASURES SUMMARY — RMS-1

Project Name	Building Type	Date
Residence Addition	☑ Single Family ☐ Addition Alone ☐ Multi Family ☑ Existing+ Addition/Alteration	*12/30/2020*

Project Address	California Energy Climate Zone	Total Cond. Floor Area	Addition	# of Units
500 Summit Road Morgan Hill	*CA Climate Zone 04*	*3,002*	*1,688*	*1*

INSULATION

Construction	Type	Cavity	Area (ft^2)	Special Features	Status
Roof	*Wood Framed Attic*	*R 11*	*1,315*		*Existing*
Wall	*Wood Framed*	*- no insulation*	*533*		*Existing*
Wall	*Wood Framed*	*- no insulation*	*582*		*Existing*
Wall	*Wood Framed*	*- no insulation*	*369*		*Existing*
Wall	*Wood Framed*	*- no insulation*	*447*		*Existing*
Floor	*Wood Framed w/Crawl Space*	*- no insulation*	*1,315*		*Existing*
Roof	*Wood Framed Ratter*	*R 21*	*1,063*	*Add=R-5.0*	*New*
Wall	*Wood Framed*	*R 15*	*102*		*New*

FENESTRATION Total Area: *544* Glazing Percentage: *18.1%* New/Altered Average U-Factor: *0.31*

Orientation	Area(ft^2)	U-Fac	SHGC	Overhang	Sidefins	Exterior Shades	Status
Rear (NE)	*60.0*	*0.580*	*0.65*	*none*	*none*	*Bug Screen*	*Existing*
Right (SE)	*74.3*	*0.580*	*0.65*	*none*	*none*	*Bug Screen*	*Existing*
Right (SE)	*17.7*	*0.530*	*0.65*	*none*	*none*	*Bug Screen*	*Existing*
Front (SW)	*22.5*	*0.580*	*0.65*	*none*	*none*	*Bug Screen*	*Existing*
Front (SW)	*36.6*	*0.530*	*0.65*	*none*	*none*	*Bug Screen*	*Existing*
Left (NW)	*39.7*	*0.580*	*0.65*	*none*	*none*	*Bug Screen*	*Existing*
Left (NW)	*20.0*	*0.530*	*0.65*	*none*	*none*	*Bug Screen*	*Existing*
Rear (NE)	*16.6*	*0.300*	*0.24*	*none*	*none*	*Bug Screen*	*New*
Rear (NE)	*24.0*	*0.300*	*0.24*	*none*	*none*	*Bug Screen*	*New*
Right (SE)	*12.0*	*0.300*	*0.24*	*none*	*none*	*Bug Screen*	*New*
Left (NW)	*16.0*	*0.300*	*0.24*	*none*	*none*	*Bug Screen*	*New*
Rear (NE)	*108.6*	*0.320*	*0.25*	*none*	*none*	*Bug Screen*	*New*
Rear (NE)	*20.2*	*0.320*	*0.25*	*none*	*none*	*Bug Screen*	*New*
Front (SW)	*33.5*	*0.320*	*0.25*	*none*	*none*	*Bug Screen*	*New*

HVAC SYSTEMS

Qty.	Heating	Min. Eff	Cooling	Min. Eff	Thermostat	Status
2	*Split Heat Pump*	*8.20 HSPF*	*Split Heat Pump*	*14.0 SEER*	*Setback*	*New*

HVAC DISTRIBUTION

Location	Heating	Cooling	Duct Location	Duct R-Value	Status
Heating/Cooling - New	*Ducted*	*Ducted*	*Crawlspace*	*6.0*	*New*

WATER HEATING

Qty.	Type	Gallons	Min. Eff	Distribution	Status
1	*Small Instantaneous Gas*	*0*	*0.91*	*Standard*	*Altered*
1	*Small Instantaneous Gas*	*0*	*0.91*	*Standard*	*New*

RESIDENTIAL MEASURES SUMMARY — RMS-1

Project Name	Building Type	Date
Residence Addition	☑ Single Family ☐ Addition Alone ☐ Multi Family ☑ Existing+ Addition/Alteration	*12/30/2020*

Project Address	California Energy Climate Zone	Total Cond. Floor Area	Addition	# of Units
500 Summit Road Morgan Hill	*CA Climate Zone 04*	*3,002*	*1,688*	*1*

INSULATION

Construction	Type	Cavity	Area (ft^2)	Special Features	Status
Wall	*Wood Framed*	*R 15*	*249*		*New*
Wall	*Wood Framed*	*R 15*	*245*		*New*
Floor	*Wood Framed w/Crawl Space*	*R 19 in 5-1/2 ir*	*1,688*		*New*
Demising	*Wood Framed*	*- no insulation*	*303*		*New*
Roof	*Wood Framed Rafter*	*R 30*	*1,063*		*New*
Roof	*Wood Framed Attic*	*R 30*	*170*		*New*
Wall	*Wood Framed*	*R 15*	*872*		*New*

FENESTRATION Total Area: *544* Glazing Percentage: *18.1%* New/Altered Average U-Factor: *0.31*

Orientation	Area(ft^2)	U-Fac	SHGC	Overhang	Sidefins	Exterior Shades	Status
Front (SW)	*30.0*	*0.320*	*0.25*	*none*	*none*	*Bug Screen*	*New*
Left (NW)	*12.0*	*0.320*	*0.25*	*none*	*none*	*Bug Screen*	*New*

HVAC SYSTEMS

Qty.	Heating	Min. Eff	Cooling	Min. Eff	Thermostat	Status

HVAC DISTRIBUTION

Location	Heating	Cooling	Duct Location	Duct R-Value	Status

WATER HEATING

Qty.	Type	Gallons	Min. Eff	Distribution	Status

TITLE 24 ENERGY ANALYSIS

DRAWN BY
CHECKED BY
DATE
SCALE
JOB NO.
SHEET
T24-2
OF 2 SHEETS

General Notes

1. Compliance information The builder shall leave in the building, copies of the completed, signed and submitted compliance documents for the building owner at occupancy. For low-rise residential buildings, such information shall, at a minimum, include copies of all Certificate of Compliance, Certificate of Installation, and Certificate of Verification documentation submitted. . [10-103(b)1]

2. Operating information. The builder shall provide the building owner at occupancy, operating information for all applicable features, materials, components, and mechanical devices installed in the building. Operating information shall include instructions on how to operate the features, materials, components, and mechanical devices correctly and efficiently. The instructions shall be consistent with specifications set forth by the Executive Director. For residential buildings, such information shall be contained in a folder or manual which provides all Certificate of Compliance, Certificate of Installation, and Certificate of Verification documentations. This operating information shall be in paper or electronic format. [10-103(b)2]

3. Maintenance information. The builder shall provide to the building owner at occupancy, maintenance information for all features, materials, components, and manufactured devices that require routine maintenance for efficient operation. Required routine maintenance actions shall be clearly stated and incorporated on a readily accessible label. The label may be limited to identifying, by title and/or publication number, the operation and maintenance manual for that particular model and type of feature, material, component or manufactured device. [10-103(b)3]

4. Ventilation information. The builder shall provide to the building owner at occupancy, a description of the quantities of outdoor air that the ventilation system(s) are designed to provide to the building's conditioned space, and instructions for proper operation and maintenance of the ventilation system. [10-103(b)4]

5. All systems, equipment, appliances and building components shall comply with the applicable manufacturing, construction, and installation provisions of Sections 110.0 through 110.11 for newly constructed buildings.

6. Any appliance regulated by the Appliance Efficiency Regulations, Title 20 California Code of Regulations, Section 1601 et seq., may be installed only if the appliance fully complies with Section 1608(a) of those regulations. [110.1(a)]

7. Service water-heating systems shall be equipped with automatic temperature controls capable of adjustment from the lowest to the highest acceptable temperature settings for the intended use as listed in Table 3, Chapter 50 of the ASHRAE Handbook, HVAC Applications Volume. [110.3(a)1]

8. On systems that have a total capacity greater than 167,000 Btu/hr, outlets that require higher than service water temperatures as listed in the ASHRAE Handbook, Applications Volume, shall have separate remote heaters, heat exchangers, or boosters to supply the outlet with the higher temperature. [110.3(c)1]

9. Service hot water systems with circulating pumps or with electrical heat trace systems shall be capable of automatically turning off the system. [110.3(c)2]

10. Controls for service water-heating systems shall limit the outlet temperature at public lavatories to 110°F. [110.3(c)3]

11. Unfired service water-heater storage tanks and backup tanks for solar water-heating systems shall have:

a. External insulation with an installed R-value of at least R-12, or

b. Internal and external insulation with a combined R-value of at least R-16, or

c. The heat loss of the tank surface based on an 80°F water-air temperature difference shall be less than 6.5 Btu/hr per square foot. [110.3 (c)4]

12. For Nonresidential, high-rise residential, and hotel/motel buildings, space conditioning systems shall meet the efficiency standards specified Section 120.2.

13. Continuously burning pilot light shall be prohibited for the following natural gas system or equipment listed below: [110.5]

a. Fan-type central furnaces

b. Household cooking appliances, except for household cooking appliances without an electrical supply voltage connection and in which each pilot consumes less than 150 Btu/hr

c. Pool heaters d. Spa heaters

14. Any pool or spa heating system or equipment shall: [110.4]

a. A thermal efficiency that complies with the Appliance Efficiency Regulations

b. Have a readily accessible on-off switch, mounted on the outside of the heater that allows shutting off the heater without adjusting the thermostat setting.

c. Not utilize electric resistance heating.

d. Have a cover for outdoor pools or spas that have a heat pump or gas heater.

e. Have a permanent, easily readable, and weatherproof instruction card that gives instructions for the energy efficient operation of the pool or spa heater and for the proper care of pool or spa water when a cover is used.

f. Have at least 36 inches of pipe installed between the filter and heater or dedicated suction and return lines, or built-in or built-up connections shall be installed to allow for the future addition of solar heating equipment.

g. Have directional inlets for the pool or spa that adequately mix the pool water.

h. A time switch or similar control mechanism shall be installed as part of a pool water circulation control system that will allow all pumps to be set or programmed to run only during the off-peak electric demand period and for the minimum time necessary to maintain the water in the condition required by applicable public health standards.

15. Manufactured fenestration products & exterior doors shall have air infiltration rates not exceeding 0.3 cfm/ft2 of window area, 0.3 cfm/ft2 of residential door area, 0.3 cfm/ft2 of nonresidential single door area, & 1.0 cfm/ft2 of nonres double door area. [110.6(a)1]

16. Fenestration products shall be rated in accordance with NFRC 100 for U-factor, NFRC 200 for SHGC, and VT or use the applicable default value. Fenestration products shall have a temporary label for manufactured fenestration products or a label certificate when the Component Modeling Approach is used and for site-built fenestration meeting the requirements of Section 10-111(a)1. [110.6(a)2, 110.6(a)3, 110.6(a)4, 110.6(a)5]

17. Field-fabricated fenestration products and exterior doors, other than unframed glass doors and fire doors, shall be caulked between the fenestration products or exterior door and the building, & shall be weatherstripped. [110.6(b)]

18. Joints, penetrations & openings in building envelope may be potential sources of air leakage shall be caulked, gasketed, weather stripped or otherwise sealed to limit infiltration & exfiltration. [110.7]

19. Insulation shall be certified by Department of Consumer Affairs, Bureau of Home Furnishing and Thermal Insulation that the insulation conductive thermal performance is approved pursuant to the California Code of Regulations, Title 24, Part 12, Chapter 12-13, Article 3, "Standards for Insulating Material." [110.8(a)]

20. Urea formaldehyde foam insulation may only be used in exterior side walls, & requires a four-mil-thick plastic polyethylene vapor barrier between the urea formaldehyde foam insulation & the interior space in all applications. [110.8(b)]

21. Insulating material shall be installed in compliance with the flame spread rating and smoke density requirements of the CBC. [110.8(c)]

22. Insulation installed on an existing space conditioning duct, it shall comply with Section 604.0 of the CMC. [110.8(d)3]

23. External insulation installed on an existing unfired water storage tank or on an existing back-up tank for a solar water-heating system, it shall have an R-value of at least R-12, or the heat loss of the tank surface based on an 80 EF water-air temperature difference shall be less than 6.5 Btu per hour per square foot. . [110.8(d)2] E.

Residential Notes:

1. A masonry or factory-built fireplace shall have the following: [150.0(e)1]

a. Closeable metal or glass doors covering the entire opening of the firebox;

b. A combustion air intake to draw air from the outside of the building directly into the firebox, which is at least six square inches in area and is equipped with a readily accessible, operable, and tight-fitting damper or combustion-air control device (Exception: An outside combustion-air intake is not required if the fireplace will be installed over concrete slab flooring and the fireplace will not be located on an exterior wall.); and

c. A flue damper with a readily accessible control. [150.0 (e)C]

2. Heating or cooling systems shall be equipped with a setback thermostat that meet the requirements of Section 110.2(c). [150.0(i)]

3. Gas or propane water heaters shall have: [150.0(n)]

a. A 120V electrical receptacle that is within 3 feet from the water heater.

b. A Category III or IV vent, or a Type B vent with straight pipe.

c. Condensate drain that is no more than 2 inches higher than the base.

d. A gas supply line with a capacity of at least 200,000 Btu/hr

4. All pumps and pump motors installed shall be listed in the Commission's directory of certified equipment and shall comply with the Appliance Efficiency Regulations. [150.0(p)1.A]

5. The minimum installed weight per square foot of any loose-fill insulation shall conform with the insulation manufacturer's labeled R-value. [150.0 (b)]

6. The minimum depth of concrete-slab floor perimeter insulation shall be 16 inches or the depth of the footing of the building, whichever is less. [150.1(c)(1)(D)]

7. The crawl space shall be covered with a vapor retarder over the entire floor. [150.1(c)1.D]

8. Insulations are required for: [150.0(j)2.A]

a. All hot water pipes from the heating source to the kitchen fixtures.

b. All piping with a nominal diameter of 3/4 inch or larger.

c. The first 5 feet (1.5 meters) of hot and cold water pipes from the storage tank.

d. All piping associated with a domestic hot water recirculation system.

e. Piping from the heating source to storage tank or between tanks.

f. Piping buried below grade.

9. Insulation shall be provided for water heaters as follows:

a. Unfired hot water tanks, such as storage tanks and backup storage tanks for solar water-heating systems, shall be externally wrapped with insulation having an installed thermal resistance of R-12 or greater or have internal insulation of at least R-16 and a label on the exterior of the tank showing the insulation R-value. [150.0 (j)1]

10. Lighting [150.0(k)]

a. Installed luminaires shall be classified as high-efficacy in accordance with TABLE 150.0-A.

b. Exhaust fans shall be switched separately from lighting systems.

c. Luminaries shall be switched with readily accessible controls that permit the luminaries to be manually switched ON and OFF.

d. Lighting installed in attached and detached garages, laundry rooms, and utility rooms, at least one luminaire in each of these spaces shall be controlled by vacancy sensors.

e. Dimmers or vacancy sensors shall control all luminaires required to have light sources compliant with Reference Joint Appendix JA8.

EXCEPTION 1: Luminaires in closets less than 70 square feet.

EXCEPTION 2: Luminaires in hallways.

f. A. In a low-rise multifamily residential building where the total interior common area in a single building equals 20 percent or less of the floor area, permanently installed lighting for the interior common areas in that building shall be high efficacy luminaires or controlled by an occupant sensor.

g. In a low-rise multifamily residential building where the total interior common area in a single building equals more than 20 percent of the floor area, permanently installed lighting in that building shall:

i) Comply with the applicable requirements in Sections 110.9, 130.0, 130.1, 140.6 and 141.0; and

ii) Lighting installed in corridors and stairwells shall be controlled by occupant sensors that reduce the lighting power in each space by at least 50 percent. The occupant sensors shall be capable of turning the light fully On and Off from all designed paths of ingress and egress.

2016 Low-Rise Residential Mandatory Measures Summary

NOTE: Low-rise residential buildings subject to the Energy Standards must comply with all applicable mandatory measures, regardless of the compliance approach used. Review the respective section for more information. "Exceptions may apply.
(Revised 04/2017)

Building Envelope Measures:	
§ 110.6(a)1:	**Air Leakage.** Manufactured fenestration, exterior doors, and exterior pet doors must limit air leakage to 0.3 cfm/ft² or less when tested per NFRC-400 or ASTM E283 or AAMA/WDMA/CSA 101/I.S.2/A440-2011.'
§ 110.6(a)5:	**Labeling.** Fenestration products must have a label meeting the requirements of § 10-111(a).
§ 110.6(b):	**Field fabricated exterior doors and fenestration** products must use U-factors and solar heat gain coefficient (SHGC) values from TABLES 110.6-A and 110.6-B for compliance and must be caulked and/or weatherstripped.'
§ 110.7:	**Air Leakage.** All joints, penetrations, and other openings in the building envelope that are potential sources of air leakage must be caulked, gasketed, or weather stripped.
§ 110.8(a):	**Insulation Certification by Manufacturers.** Insulation specified or installed must meet Standards for Insulating Material.
§ 110.8(g):	**Insulation Requirements for Heated Slab Floors.** Heated slab floors must be insulated per the requirements of § 110.8(g).
§ 110.8(i):	**Roofing Products Solar Reflectance and Thermal Emittance.** The thermal emittance and aged solar reflectance values of the roofing material must meet the requirements of § 110.8(i) when the installation of a cool roof is specified on the CF1R.
§ 110.8(j):	**Radiant Barrier.** A radiant barrier must have an emittance of 0.05 or less and be certified to the Department of Consumer Affairs.
§ 150.0(a):	**Ceiling and Rafter Roof Insulation.** Minimum R-22 insulation in wood-frame ceiling; or the weighted average U-factor must not exceed 0.043. Minimum R-19 or weighted average U-factor of 0.054 or less in a rafter roof alteration. Attic access doors must have permanently attached insulation using adhesive or mechanical fasteners. The attic access must be gasketed to prevent air leakage. Insulation must be installed in direct contact with a continuous roof or ceiling which is sealed to limit infiltration and exfiltration as specified in § 110.7, including but not limited to placing insulation either above or below the roof deck or on top of a drywall ceiling.'
§ 150.0(b):	**Loose-fill Insulation.** Loose fill insulation must meet the manufacturer's required density for the labeled R-value.
§ 150.0(c):	**Above Grade Wall Insulation.** Minimum R-13 insulation in 2x4 inch wood framing wall or have a U-factor of 0.102 or less (R-19 in 2x6 or U-factor of 0.074 or less). Opaque non-framed assemblies must have an overall assembly U-factor not exceeding 0.102, equivalent to an installed value of R-13 in a wood framed assembly.'
§ 150.0(d):	**Raised-floor Insulation.** Minimum R-19 insulation in raised wood framed floor or 0.037 maximum U-factor.'
§ 150.0(f):	**Slab Edge Insulation.** Slab edge insulation must meet all of the following: have a water absorption rate, for the insulation material alone without facings, no greater than 0.3%; have a water vapor permeance no greater than 2.0 perm/inch; be protected from physical damage and UV light deterioration; and, when installed as part of a heated slab floor, meet the requirements of § 110.8(g).
§ 150.0(g)1:	**Vapor Retarder.** In Climate Zones 1-16, the earth floor of unvented crawl space must be covered with a Class I or Class II vapor retarder. This requirement also applies to controlled ventilation crawl space for buildings complying with the exception to § 150.0(d).
§ 150.0(g)2:	**Vapor Retarder.** In Climate Zones 14 and 16, a Class I or Class II vapor retarder must be installed on the conditioned space side of all insulation in all exterior walls, vented attics, and unvented attics with air-permeable insulation.
§ 150.0(q):	**Fenestration Products.** Fenestration, including skylights, separating conditioned space from unconditioned space or outdoors must have a maximum U-factor of 0.58; or the weighted average U-factor of all fenestration must not exceed 0.58.'
Fireplaces, Decorative Gas Appliances, and Gas Log Measures:	
§ 150.0(e)1A:	**Closable Doors.** Masonry or factory-built fireplaces must have a closable metal or glass door covering the entire opening of the firebox.
§ 150.0(e)1B:	**Combustion Intake.** Masonry or factory-built fireplaces must have a combustion outside air intake, which is at least six square inches in area and is equipped with a readily accessible, operable, and tight-fitting damper or combustion-air control device.'
§ 150.0(e)1C:	**Flue Damper.** Masonry or factory-built fireplaces must have a flue damper with a readily accessible control.'
§ 150.0(e)2:	**Pilot Light.** 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:	
§ 110.0-§ 110.3:	**Certification.** Heating, ventilation and air conditioning (HVAC) equipment, water heaters, showerheads, faucets, and all other regulated appliances must be certified by the manufacturer to the Energy Commission.'
§ 110.2(a):	**HVAC Efficiency.** Equipment must meet the applicable efficiency requirements in TABLE 110.2-A through TABLE 110.2-K.'
§ 110.2(b):	**Controls for Heat Pumps with Supplementary Electric Resistance Heaters.** Heat pumps with supplementary electric resistance heaters must have controls that prevent supplementary heater operation when the heating load can be met by the heat pump alone; and in which the cut-on temperature for compression heating is higher than the cut-on temperature for supplementary heating, and the cut-off temperature for compression heating is higher than the cut-off temperature for supplementary heating.'
§ 110.2(c):	**Thermostats.** All unitary heating or cooling systems not controlled by a central energy management control system (EMCS) must have a setback thermostat.'
§ 110.3(c)5:	**Water Heating Recirculation Loops Serving Multiple Dwelling Units.** Water heating recirculation loops serving multiple dwelling units must meet the air release valve, backflow prevention, pump priming, pump isolation valve, and recirculation loop connection requirements of § 110.3(c)5.
§ 110.3(c)7:	**Isolation Valves.** Instantaneous water heaters with an input rating greater than 6.8 kBTU/hr (2 kW) must have isolation valves with hose bibbs or other fittings on both cold water and hot water lines of water heating systems to allow for water tank flushing when the valves are closed.
§ 110.5:	**Pilot Lights.** Continuously burning pilot lights are prohibited for natural gas: fan-type central furnaces; household cooking appliances (appliances without an electrical supply voltage connection with pilot lights that consume less than 150 Btu/hr are exempt); and pool and spa heaters.'
§ 150.0(h)1:	**Building Cooling and Heating Loads.** Heating and/or cooling loads are calculated in accordance with ASHRAE Handbook, Equipment Volume, Applications Volume, and Fundamentals Volume; SMACNA Residential Comfort System Installation Standards Manual; or ACCA Manual J using design conditions specified in § 150.0(h)2.

2016 Low-Rise Residential Mandatory Measures Summary

§ 150.0(m)13:	**Duct System Sizing and Air Filter Grille Sizing.** Space conditioning systems that use forced air ducts to supply cooling to an occupiable space must have a hole for the placement of a static pressure probe (HSPP), or a permanently installed static pressure probe (PSPP) in the supply plenum. The space conditioning system must also demonstrate airflow ≥ 350 CFM per ton of nominal cooling capacity through the return grilles, and an air-handling unit fan efficacy ≤ 0.58 W/CFM as confirmed by field verification and diagnostic testing, in accordance with Reference Residential Appendix RA3.3. This applies to both single zone central forced air systems and every zone for zonally controlled central forced air systems.'
§150.0(o):	**Ventilation for Indoor Air Quality.** All dwelling units must meet the requirements of ASHRAE Standard 62.2. Neither window operation nor continuous operation of central forced air system air handlers used in central fan integrated ventilation systems are permissible methods of providing whole-building ventilation.
§ 150.0(o)1A:	**Field Verification and Diagnostic Testing.** Whole-building ventilation airflow must be confirmed through field verification and diagnostic testing, in accordance with Reference Residential Appendix RA3.7.
Pool and Spa Systems and Equipment Measures:	
§ 110.4(a):	**Certification by Manufacturers.** Any pool or spa heating system or equipment must be certified to have all of the following: a thermal efficiency that complies with the Appliance Efficiency Regulations; an on-off switch mounted outside of the heater that allows shutting off the heater without adjusting the thermostat setting; a permanent weatherproof plate or card with operating instructions; and must not use electric resistance heating.'
§ 110.4(b)1:	**Piping.** Any pool or spa heating equipment must be installed with at least 36 inches of pipe between the filter and the heater, or dedicated suction and return lines, or built-in or built-up connections to allow for future solar heating.
§ 110.4(b)2:	**Covers.** Outdoor pools or spas that have a heat pump or gas heater must have a cover.
§ 110.4(b)3:	**Directional inlets and time switches for pools.** Pools must 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.
§ 110.5:	**Pilot Light.** Natural gas pool and spa heaters must not have a continuously burning pilot light.
§ 150.0(p):	**Pool Systems and Equipment Installation.** Residential pool systems or equipment must meet the specified requirements for pump sizing, flow rate, piping, filters, and valves.'
Lighting Measures:	
§ 110.9:	**Lighting Controls and Components.** All lighting control devices and systems, ballasts, and luminaires must meet the applicable requirements of § 110.9.'
§ 110.9(e):	**JA8 High Efficacy Light Sources.** To qualify as a JA8 high efficacy light source for compliance with § 150.0(k), a residential light source must be certified to the Energy Commission according to Reference Joint Appendix JA8.
§ 150.0(k)1A:	**Luminaire Efficacy.** All installed luminaires must be high efficacy in accordance with TABLE 150.0-A.
§ 150.0(k)1B:	**Blank Electrical Boxes.** The number of electrical boxes that are more than 5 feet above the finished floor and do not contain a luminaire or other device must be no greater than the number of bedrooms. These electrical boxes must be served by a dimmer, vacancy sensor control, or fan speed control.
§ 150.0(k)1C:	**Recessed Downlight Luminaires in Ceilings.** Luminaires recessed into ceilings must meet all of the requirements for: insulation contact (IC) labeling; air leakage; sealing; maintenance; and socket and light source as described in § 150.0(k)1C. A JA8-2016-E light source rated for elevated temperature must be installed by final inspection in all recessed downlight luminaires in ceilings.
§ 150.0(k)1D:	**Electronic Ballasts.** Ballasts for fluorescent lamps rated 13 watts or greater must be electronic and must have an output frequency no less than 20 kHz.
§ 150.0(k)1E:	**Night Lights.** Permanently installed night lights and night lights integral to installed luminaires or exhaust fans must be rated to consume no more than 5 watts of power per luminaire or exhaust fan as determined in accordance with § 130.0(c). Night lights do not need to be controlled by vacancy sensors.
§ 150.0(k)1F:	**Lighting Integral to Exhaust Fans.** Lighting integral to exhaust fans (except when installed by the manufacturer in kitchen exhaust hoods) must meet the applicable requirements of § 150.0(k).'
§ 150.0(k)1G:	**Screw based luminaires.** Screw based luminaires must not be recessed downlight luminaires in ceilings and must contain lamps that comply with Reference Joint Appendix JA8. Installed lamps must be marked with "JA8-2016" or "JA8-2016-E" as specified in Reference Joint Appendix JA8.'
§ 150.0(k)1H:	**Enclosed Luminaires.** Light sources installed in enclosed luminaires must be JA8 compliant and must be marked with "JA8-2016-E."
§ 150.0(k)2A:	**Interior Switches and Controls.** All forward phase cut dimmers used with LED light sources must comply with NEMA SSL 7A.
§ 150.0(k)2B:	**Interior Switches and Controls.** Exhaust fans must be switched separately from lighting systems.'
§ 150.0(k)2C:	**Interior Switches and Controls.** Luminaires must be switched with readily accessible controls that permit the luminaires to be manually switched ON and OFF.
§ 150.0(k)2D:	**Interior Switches and Controls.** Controls and equipment must be installed in accordance with manufacturer's instructions.
§ 150.0(k)2E:	**Interior Switches and Controls.** No control must bypass a dimmer or vacancy sensor function if the control is installed to comply with § 150.0(k).
§ 150.0(k)2F:	**Interior Switches and Controls.** Lighting controls must comply with the applicable requirements of § 110.9.
§ 150.0(k)2G:	**Interior Switches and Controls.** An energy management control system (EMCS) may be used to comply with dimmer requirements if it: functions as a dimmer according to § 110.9; meets the Installation Certificate requirements of § 130.4; meets the EMCS requirements of § 130.5(f); and meets all other requirements in § 150.0(k)2.
§ 150.0(k)2H:	**Interior Switches and Controls.** An EMCS may be used to comply with vacancy sensor requirements in § 150.0(k) if it meets all of the following: it functions as a vacancy sensor according to § 110.9; the Installation Certificate requirements of § 130.4; the EMCS requirements of § 130.5(f); and all other requirements in § 150.0(k)2.
§ 150.0(k)2I:	**Interior Switches and Controls.** A multiscene programmable controller may be used to comply with dimmer requirements in § 150.0(k) if it provides the functionality of a dimmer according to § 110.9, and complies with all other applicable requirements in § 150.0(k)2.

2016 Low-Rise Residential Mandatory Measures Summary

§ 150.0(h)3A:	**Clearances.** Installed air conditioner and heat pump outdoor condensing units must have a clearance of at least 5 feet from the outlet of any dryer vent.
§ 150.0(h)3B:	**Liquid Line Drier.** Installed air conditioner and heat pump systems must be equipped with liquid line filter driers if required, as specified by manufacturer's instructions.
§ 150.0(j)1:	**Storage Tank Insulation.** Unfired hot water tanks, such as storage tanks and backup storage tanks for solar water-heating systems, must have R-12 external insulation or R-16 internal insulation where the internal insulation R-value is indicated on the exterior of the tank.
§ 150.0(j)2A:	**Water piping and cooling system line insulation.** For domestic hot water system piping, whether buried or unburied, all of the following must be insulated according to the requirements of TABLE 120.3-A: the first 5 feet of hot and cold water pipes from the storage tank; all piping with a nominal diameter of 3/4 inch or larger; all piping associated with a domestic hot water recirculation system regardless of the pipe diameter; piping from the heating source to storage tank or between tanks; piping buried below grade; and all hot water pipes from the heating source to kitchen fixtures.'
§ 150.0(j)2B:	**Water piping and cooling system line insulation.** All domestic hot water pipes that are buried below grade must be installed in a water proof and non-crushable casing or sleeve.'
§ 150.0(j)2C:	**Water piping and cooling system line insulation.** Pipe for cooling system lines must be insulated as specified in § 150.0(j)2A. Distribution piping for steam and hydronic heating systems or hot water systems must meet the requirements in TABLE 120.3-A.'
§ 150.0(j)3:	**Insulation Protection.** Insulation must be protected from damage, including that due to sunlight, moisture, equipment maintenance, and wind.
§ 150.0(j)3A:	**Insulation Protection.** Insulation exposed to weather must be installed with a cover suitable for outdoor service. For example, protected by aluminum, sheet metal, painted canvas, or plastic cover. The cover must be water retardant and provide shielding from solar radiation that can cause degradation of the material.
§ 150.0(j)3B:	**Insulation Protection.** Insulation covering chilled water piping and refrigerant suction piping located outside the conditioned space must have a Class I or Class II vapor retarder.
§ 150.0(n)1:	**Gas or Propane Systems.** Systems using gas or propane water heaters to serve individual dwelling units must include all of the following: a 120V electrical receptacle within 3 feet of the water heater; a Category III or IV vent, or a Type B vent with straight pipe between the outside termination and the space where the water heater is installed; a condensate drain that is no more than 2 inches higher than the base of the water heater, and allows natural draining without pump assistance; and a gas supply line with a capacity of at least 200,000 Btu/hr.
§ 150.0(n)2:	**Recirculating Loops.** Recirculating loops serving multiple dwelling units must meet the requirements of § 110.3(c)5.
§ 150.0(n)3:	**Solar Water-heating Systems.** Solar water-heating systems and collectors must be certified and rated by the Solar Rating and Certification Corporation (SRCC) or by a listing agency that is approved by the Executive Director.
Ducts and Fans Measures:	
§ 110.8(d)3:	**Ducts.** Insulation installed on an existing space-conditioning duct must comply with § 604.0 of the California Mechanical Code (CMC). If a contractor installs the insulation, the contractor must certify to the customer, in writing, that the insulation meets this requirement.
§ 150.0(m)1:	**CMC Compliance.** All air-distribution system ducts and plenums must be installed, sealed, and insulated to meet the requirements of CMC §§ 601.0, 602.0, 603.0, 604.0, 605.0 and ANSI/SMACNA-006-2006 HVAC Duct Construction Standards Metal and Flexible 3rd Edition. Portions of supply-air and return-air ducts and plenums must be insulated to a minimum installed level of R-6.0 (or higher if required by CMC § 605.0) or a minimum installed level of R-4.2 when entirely in conditioned space as confirmed through field verification and diagnostic testing (RA3.1.4.3.8). Connections of metal ducts and inner core of flexible ducts must be mechanically fastened. Openings must 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 ¼ inch, the combination of mastic and either mesh or tape must be used. Building cavities, support platforms for air handlers, and plenums designed or constructed with materials other than sealed sheet metal, duct board or flexible duct must not be used for conveying conditioned air. Building cavities and support platforms may contain ducts. Ducts installed in cavities and support platforms must not be compressed to cause reductions in the cross-sectional area of the ducts.'
§ 150.0(m)2:	**Factory-Fabricated Duct Systems.** Factory-fabricated duct systems must comply with applicable requirements for duct construction, connections, and closures; joints and seams of duct systems and their components must not be sealed with cloth back rubber adhesive duct tapes unless such tape is used in combination with mastic and draw bands.
§ 150.0(m)3:	**Field-Fabricated Duct Systems.** Field-fabricated duct systems must comply with applicable requirements for: pressure-sensitive tapes, mastics, sealants, and other requirements specified for duct construction.
§ 150.0(m)7:	**Backdraft Dampers.** All fan systems that exchange air between the conditioned space and the outside of the building must have backdraft or automatic dampers.
§ 150.0(m)8:	**Gravity Ventilation Dampers.** Gravity ventilating systems serving conditioned space must have either automatic or readily accessible, manually operated dampers in all openings to the outside, except combustion inlet and outlet air openings and elevator shaft vents.
§ 150.0(m)9:	**Protection of Insulation.** Insulation must be protected from damage, including that due to sunlight, moisture, equipment maintenance, and wind. Insulation exposed to weather must be suitable for outdoor service. For example, protected by aluminum, sheet metal, painted canvas, or plastic cover. Cellular foam insulation must be protected as above or painted with a coating that is water retardant and provides shielding from solar radiation.
§ 150.0(m)10:	**Porous Inner Core Flex Duct.** Porous inner core flex duct must have a non-porous layer between the inner core and outer vapor barrier.
§ 150.0(m)11:	**Duct System Sealing and Leakage Test.** When space conditioning systems use forced air duct systems to supply conditioned air to an occupiable space, the ducts must be sealed and duct leakage tested, as confirmed through field verification and diagnostic testing, in accordance with § 150.0(m)11and Reference Residential Appendix RA3.
§ 150.0(m)12:	**Air Filtration.** Mechanical systems that supply air to an occupiable space through ductwork exceeding 10 feet in length and through a thermal conditioning component, except evaporative coolers, must be provided with air filter devices that meet the design, installation, efficiency, pressure drop, and labeling requirements of § 150.0(m)12.

2016 Low-Rise Residential Mandatory Measures Summary

§ 150.0(k)2J:	**Interior Switches and Controls.** In bathrooms, garages, laundry rooms, and utility rooms, at least one luminaire in each of these spaces must be controlled by a vacancy sensor.
§ 150.0(k)2K:	**Interior Switches and Controls.** Dimmers or vacancy sensors must control all luminaires required to have light sources compliant with Reference Joint Appendix JA8, except luminaires in closets less than 70 square feet and luminaires in hallways.'
§ 150.0(k)2L:	**Interior Switches and Controls.** Undercabinet lighting must be switched separately from other lighting systems.
§ 150.0(k)3A:	**Residential Outdoor Lighting.** For single-family residential buildings, outdoor lighting permanently mounted to a residential building, or to other buildings on the same lot, must meet the requirement in item § 150.0(k)3Ai (ON and OFF switch) and the requirements in either item § 150.0(k)3Aii (photocell and motion sensor) or item § 150.0(k)3Aiii (photo control and automatic time switch control, astronomical time clock, or EMCS).
§ 150.0(k)3B:	**Residential Outdoor Lighting.** For low-rise multifamily residential buildings, outdoor lighting for private patios, entrances, balconies, and porches; and outdoor lighting for residential parking lots and residential carports with less than eight vehicles per site must comply with either § 150.0(k)3A or with the applicable requirements in §§ 110.9, 130.0, 130.2, 130.4, 140.7 and 141.0.
§ 150.0(k)3C:	**Residential Outdoor Lighting.** For low-rise residential buildings with four or more dwelling units, outdoor lighting not regulated by § 150.0(k)3B or § 150.0(k)3D must comply with the applicable requirements in §§ 110.9, 130.0, 130.2, 130.4, 140.7 and 141.0.
§ 150.0(k)3D:	**Residential Outdoor Lighting.** Outdoor lighting for residential parking lots and residential carports with a total of eight or more vehicles per site must comply with the applicable requirements in §§ 110.9, 130.0, 130.2, 130.4, 140.7, and 141.0.
§ 150.0(k)4:	**Internally illuminated address signs.** Internally illuminated address signs must comply with § 140.8; or must consume no more than 5 watts of power as determined according to § 130.0(c).
§ 150.0(k)5:	**Residential Garages for Eight or More Vehicles.** Lighting for residential parking garages for eight or more vehicles must comply with the applicable requirements for nonresidential garages in §§ 110.9, 130.0, 130.1, 130.4, 140.6, and 141.0.
§ 150.0(k)6A:	**Interior Common Areas of Low-rise Multi-Family Residential Buildings.** In a low-rise multifamily residential building where the total interior common area in a single building equals 20 percent or less of the floor area, permanently installed lighting for the interior common areas in that building must be high efficacy luminaires and controlled by an occupant sensor.
§ 150.0(k)6B:	**Interior Common Areas of Low-rise Multi-Family Residential Buildings.** In a low-rise multifamily residential building where the total interior common area in a single building equals more than 20 percent of the floor area, permanently installed lighting in that building must: i. Comply with the applicable requirements in §§ 110.9, 130.0, 130.1, 140.6 and 141.0; and ii. Lighting installed in corridors and stairwells must be controlled by occupant sensors that reduce the lighting power in each space by at least 50 percent. The occupant sensors must be capable of turning the light fully on and off from all designed paths of ingress and egress.
Solar Ready Buildings:	
§ 110.10(a)1:	**Single Family Residences.** Single family residences located in subdivisions with ten or more single family residences and where the application for a tentative subdivision map for the residences has been deemed complete by the enforcement agency must comply with the requirements of § 110.10(b) through § 110.10(e).
§ 110.10(a)2:	**Low-rise Multi-family Buildings.** Low-rise multi-family buildings must comply with the requirements of § 110.10(b) through § 110.10(d).
§ 110.10(b)1:	**Minimum Area.** The solar zone must have a minimum total area as described below. The solar zone must comply with access, pathway, smoke ventilation, and spacing requirements as specified in Title 24, Part 9 or other Parts of Title 24 or in any requirements adopted by a local jurisdiction. The solar zone total area must be comprised of areas that have no dimension less than 5 feet and are no less than 80 square feet each for buildings with roof areas less than or equal to 10,000 square feet or no less than 160 square feet each for buildings with roof areas greater than 10,000 square feet. For single family residences the solar zone must be located on the roof or overhang of the building and have a total area no less than 250 square feet. For low-rise multi-family buildings the solar zone must be located on the roof or overhang of the building, or on the roof or overhang of another structure located within 250 feet of the building, or on covered parking installed with the building project, and have a total area no less than 15 percent of the total roof area of the building excluding any skylight area.'
§ 110.10(b)2:	**Orientation.** All sections of the solar zone located on steep-sloped roofs must be oriented between 110 degrees and 270 degrees of true north.
§ 110.10(b)3A:	**Shading.** The solar zone must not contain any obstructions, including but not limited to: vents, chimneys, architectural features, and roof mounted equipment.'
§ 110.10(b)3B:	**Shading.** Any obstruction located on the roof or any other part of the building that projects above a solar zone must be located at least twice the distance, measured in the horizontal plane, of the height difference between the highest point of the obstruction and the horizontal projection of the nearest point of the solar zone, measured in the vertical plane.'
§ 110.10(b)4:	**Structural Design Loads on Construction Documents.** For areas of the roof designated as solar zone, the structural design loads for roof dead load and roof live load must be clearly indicated on the construction documents.
§ 110.10(c):	**Interconnection Pathways.** The construction documents must indicate: a location for inverters and metering equipment and a pathway for routing of conduit from the solar zone to the point of interconnection with the electrical service (for single family residences the point of interconnection will be the main service panel); and a pathway for routing of plumbing from the solar zone to the water-heating system.
§ 110.10(d):	**Documentation.** A copy of the construction documents or a comparable document indicating the information from § 110.10(b) through § 110.10(c) must be provided to the occupant.
§ 110.10(e)1:	**Main Electrical Service Panel.** The main electrical service panel must have a minimum busbar rating of 200 amps.
§ 110.10(e)2:	**Main Electrical Service Panel.** The main electrical service panel must have a reserved space to allow for the installation of a double pole circuit breaker for a future solar electric installation. The reserved space must be: positioned at the opposite (load) end from the input feeder location or main circuit location; and permanently marked as "For Future Solar Electric".

TITLE 24 ENERGY ANALYSIS

DRAWN BY

CHECKED BY

DATE

SCALE

JOB NO.

SHEET

T24-3

OF 2 SHEETS

GENERAL INFORMATION

01	Project Name	Casassa Residence			
02	Calculation Description	Title 24 Analysis			
03	Project Location	500 Summit Road			
04	City	Watsonville	05	Standards Version	Compliance 2017
06	Zip Code	95076	07	Compliance Manager Version	BEMCmpMgr 2016.3.1 (1149)
08	Climate Zone	CZ3	09	Software Version	EnergyPro 7.2
10	Building Type	Single Family	11	Front Orientation (deg/Cardinal)	0
12	Project Scope	Newly Constructed (Addition Alone)	13	Number of Dwelling Units	1
14	Total Cond. Floor Area (ft^2)	794	15	Number of Zones	1
16	Slab Area (ft^2)	0	17	Number of Stories	1
18	Addition Cond. Floor Area(ft^2)	794	19	Natural Gas Available	No
20	Addition Slab Area (ft^2)	0	21	Glazing Percentage (%)	11.6%

ADDITION ALONE PROJECT ANALYSIS PARAMETERS

01	02	03	04	05	06
Existing Area (excl. new addition) (ft^2)	Addition Area (excl. existing) (ft^2)	Total Area	Existing Bedrooms	Addition Bedrooms	Total Bedrooms
1771	794	2565	2	1	3

COMPLIANCE RESULTS

01	Building Complies with Computer Performance
02	This building incorporates features that require field testing and/or verification by a certified HERS rater under the supervision of a CEC-approved HERS provider.
03	This building incorporates one or more Special Features shown below

ENERGY USE SUMMARY

04	05	06	07	08
Energy Use (kTDV/ft^2-yr)	Standard Design	Proposed Design	Compliance Margin	Percent Improvement
Space Heating	15.17	19.38	-4.21	-27.8%
Space Cooling	0.80	0.00	0.80	--
IAQ Ventilation	0.00	0.00	0.00	0.0%
Water Heating	33.36	28.84	4.52	13.5%
Photovoltaic Offset	----	0.00	0.00	----
Compliance Energy Total	49.33	48.22	1.11	2.3%

REQUIRED SPECIAL FEATURES

The following are features that must be installed as condition for meeting the modeled energy performance for this computer analysis.

- **Ceiling has high level of insulation**
- **Window overhangs and/or fins**

HERS FEATURE SUMMARY

The following is a summary of the features that must be field-verified by a certified HERS Rater as a condition for meeting the modeled energy performance for this computer analysis. Additional detail is provided in the building components tables below.

Building-level Verifications:
- **High quality insulation installation (QII)**

Cooling System Verifications:
- **-- None --**

HVAC Distribution System Verifications:
- **-- None --**

Domestic Hot Water System Verifications:
- **-- None --**

ZONE INFORMATION

01	02	03	04	05	06	07
Zone Name	Zone Type	HVAC System Name	Zone Floor Area (ft^2)	Avg. Ceiling Height	Water Heating System 1	Water Heating System 2
ADU	Conditioned	Mini Split Unit1	794	8	DHW Sys 1	n/a

OPAQUE SURFACES

01	02	03	04	05	06	07	08	09
Name	Zone	Construction	Azimuth	Orientation	Gross Area (ft^2)	Window & Door Area (ft^2)	Tilt (deg)	Wall Exception
Front Wall	ADU	R-15 Wall	0	Front	289.33	43.314	90	none
Left Wall	ADU	R-15 Wall	90	Left	253.28	30.157	90	none
Rear Wall	ADU	R-15 Wall	180	Back	289.33	47.0533	90	none
Right Wall	ADU	R-15 Wall	270	Right	253.28	11.28	90	none
Roof 2	ADU	R-38 Roof Attic	n/a	n/a	585	n/a	n/a	n/a
Raised Floor	ADU	R-19 Floor Crawlspace	n/a	n/a	794	n/a	n/a	n/a

OPAQUE SURFACES – Cathedral Ceilings

01	02	03	04	05	06	07	08	09	10
Name	Zone	Type	Orientation	Area (ft^2)	Skylight Area (ft2)	Roof Rise (x in 12)	Roof Reflectance	Roof Emittance	Cool Roof
Roof	ADU	R-19 Roof No Attic	Front	209	0	0	0.1	0.85	No

ATTIC

01	02	03	04	05	06	07	08
Name	Construction	Type	Roof Rise	Roof Reflectance	Roof Emittance	Radiant Barrier	Cool Roof
Attic ADU	Attic RoofADU	Ventilated	0	0.1	0.85	Yes	No

FENESTRATION / GLAZING

01	02	03	04	05	06	07	08	09	10
Name	Type	Surface (Orientation-Azimuth)	Width (ft)	Height (ft)	Multiplier	Area (ft^2)	U-factor	SHGC	Exterior Shading
Window 7	Window	Front Wall (Front-0)	2.3	4.0	1	9.3	0.31	0.30	Insect Screen (default)
Window 1	Window	Front Wall (Front-0)	2.3	3.0	1.001	7.0	0.31	0.30	Insect Screen (default)
Window 1 2	Window	Front Wall (Front-0)	2.3	3.0	1.001	7.0	0.31	0.30	Insect Screen (default)
Window 3	Window	Left Wall (Left-90)	5.9	3.9	0.998	23.2	0.31	0.30	Insect Screen (default)
Window 1 3	Window	Left Wall (Left-90)	2.3	3.0	1.001	7.0	0.31	0.30	Insect Screen (default)
Window 6	Window	Rear Wall (Back-180)	2.3	3.4	1.004	8.0	0.31	0.30	Insect Screen (default)
Window 5	Window	Rear Wall (Back-180)	4.6	4.2	1	19.1	0.31	0.30	Insect Screen (default)
Window 8	Window	Right Wall (Right-270)	1.1	3.0	1	3.2	0.31	0.30	Insect Screen (default)
Window 2	Window	Right Wall (Right-270)	2.2	3.8	1	8.1	0.31	0.30	Insect Screen (default)

OPAQUE DOORS

01	02	03	04
Name	Side of Building	Area (ft^2)	U-factor
Door 1	Front Wall	20.0	0.10
Door 1 2	Rear Wall	20.0	0.10

OVERHANGS AND FINS

01	02	03	04	05	06	07	08	09	10	11	12	13	14
	Overhang					Left Fin				Right Fin			
Window	Depth	Dist Up	Left Extent	Right Extent	Flap Ht.	Depth	Top Up	Dist L	Bot Up	Depth	Top Up	Dist R	Bot Up
Window 7	2	0.1	2	2	0	0	0	0	0	0	0	0	0
Window 1	2	0.1	2	2	0	0	0	0	0	0	0	0	0
Window 1 2	2	0.1	2	2	0	0	0	0	0	0	0	0	0
Window 3	2	0.1	2	2	0	0	0	0	0	0	0	0	0
Window 1 3	2	0.1	2	2	0	0	0	0	0	0	0	0	0
Window 6	2	0.1	2	2	0	0	0	0	0	0	0	0	0
Window 5	2	0.1	2	2	0	0	0	0	0	0	0	0	0
Window 8	2	0.1	2	2	0	0	0	0	0	0	0	0	0
Window 2	2	0.1	2	2	0	0	0	0	0	0	0	0	0

OPAQUE SURFACE CONSTRUCTIONS

01	02	03	04	05	06	07
Construction Name	Surface Type	Construction Type	Framing	Total Cavity R-value	Winter Design U-factor	Assembly Layers
Attic RoofADU	Attic Roofs	Wood Framed Ceiling	2x4 @ 24 in. O.C.	none	0.644	• *Cavity / Frame: no insul. / 2x4* • *Roof Deck: Wood Siding/sheathing/decking* • *Roofing: Light Roof (Asphalt Shingle)*
R-15 Wall	Exterior Walls	Wood Framed Wall	2x4 @ 16 in. O.C.	R 15	0.095	• *Inside Finish: Gypsum Board* • *Cavity / Frame: R-15 / 2x4* • *Exterior Finish: 3 Coat Stucco*
R-19 Floor Crawlspace	Floors Over Crawlspace	Wood Framed Floor	2x10 @ 16 in. O.C.	R 19	0.046	• *Floor Surface: Carpeted* • *Floor Deck: Wood Siding/sheathing/decking* • *Cavity / Frame: R-19 / 2x10*
R-19 Roof No Attic	Cathedral Ceilings	Wood Framed Ceiling	2x8 @ 16 in. O.C.	R 30	0.039	• *Inside Finish: Gypsum Board* • *Cavity / Frame: R-30 / 2x8* • *Roof Deck: Wood Siding/sheathing/decking* • *Roofing: Light Roof (Asphalt Shingle)*
R-38 Roof Attic	Ceilings (below attic)	Wood Framed Ceiling	2x4 @ 24 in. O.C.	R 38	0.025	• *Inside Finish: Gypsum Board* • *Cavity / Frame: R-9.1 / 2x4* • *Over Ceiling Joists: R-28.9 insul.*

BUILDING ENVELOPE - HERS VERIFICATION

01	02	03	04
Quality Insulation Installation (QII)	Quality Installation of Spray Foam Insulation	Building Envelope Air Leakage	CFM50
Required	Not Required	Not Required	n/a

WATER HEATING SYSTEMS

01	02	03	04	05	06	07
Name	System Type	Distribution Type	Water Heater	Number of Heaters	Solar Fraction (%)	Status
DHW Sys 1	DHW	Standard	DHW Heater 1 (1)	1	.0%	New

WATER HEATERS

01	02	03	04	05	06	07	08	09	10	11	12
Name	Heater Element Type	Tank Type	Number of Units	Tank Volume (gal)	Uniform Energy Factor / Energy Factor / Efficiency	Input Rating / Pilot / Thermal Efficiency	Tank Insulation R-value (Int/Ext)	Standby Loss / Recovery Eff	First Hour Rating / Flow Rate	NEEA Heat Pump Brand / Model / Other	Tank Location or Ambient Condition
DHW Heater 1	Gas	Consumer Instantaneous (UEF)	1	1	0.92 UEF	<= 200 kBtu/hr	R-0/R-0	0	8 GPM	n/a	n/a

SPACE CONDITIONING SYSTEMS

01	02	03	04	05	06	07
SC Sys Name	System Type	Heating Unit Name	Cooling Unit Name	Fan Name	Distribution Name	Status
Mini Split Unit1	Heat Pump Heating and Cooling System	Heat Pump System 1	Heat Pump System 1	None	- none -	New

HVAC - HEAT PUMPS

01	02	03	04	05	06	07	08	09	10	11
			Heating			Cooling		Zonally	Compressor	HERS
Name	System Type	Number of Units	HSPF/COP	Cap 47	Cap 17	SEER	EER	Controlled	Type	Verification
Heat Pump System 1	DuctlessMiniSplitHeatPump	1	10	60000	50000	23	12.5	Not Zonal	Single Speed	Heat Pump System 1-hers-cool

HVAC COOLING - HERS VERIFICATION

01	02	03	04	05	06
Name	Verified Airflow	Airflow Target	Verified EER	Verified SEER	Verified Refrigerant Charge
Heat Pump System 1-hers-cool	Not Required	n/a	Not Required	Not Required	Not Required

IAQ (Indoor Air Quality) FANS

01	02	03	04	05	06
Dwelling Unit	IAQ CFM	IAQ Watts/CFM	IAQ Fan Type	IAQ Recovery Effectiveness(%)	HERS Verification
SFam IAQVentRpt	0	0.25	Default	0	Not Required

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

1. I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name: Mufeed Alshakhori	Documentation Author Signature: *Mufeed Alshakhori*
Company: Balanced Comfort	Signature Date: 07/09/2020
Address: 5452 West Misson Avenue	CEA/HERS Certification Identification (If applicable):
City/State/Zip: Fresno, CA 93722	Phone: 559-304-3016

RESPONSIBLE PERSON'S DECLARATION STATEMENT

I certify the following under penalty of perjury, under the laws of the State of California:
1. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design identified on this Certificate of Compliance.
2. I certify that the energy features and performance specifications identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
3. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.

Responsible Designer Name: Mufeed Alshakhori	Responsible Designer Signature: *Mufeed Alshakhori*
Company: Balanced Comfort	Date Signed: 07/09/2020
Address: 5452 West Misson Avenue	License:
City/State/Zip: Fresno, CA 93722	Phone: 559-304-3016

NOTICE: This certificate has been generated by CHEERS using information uploaded by third parties not affiliated or related to CHEERS. Therefore, CHEERS is not responsible for, and cannot guarantee, the accuracy or completeness of the

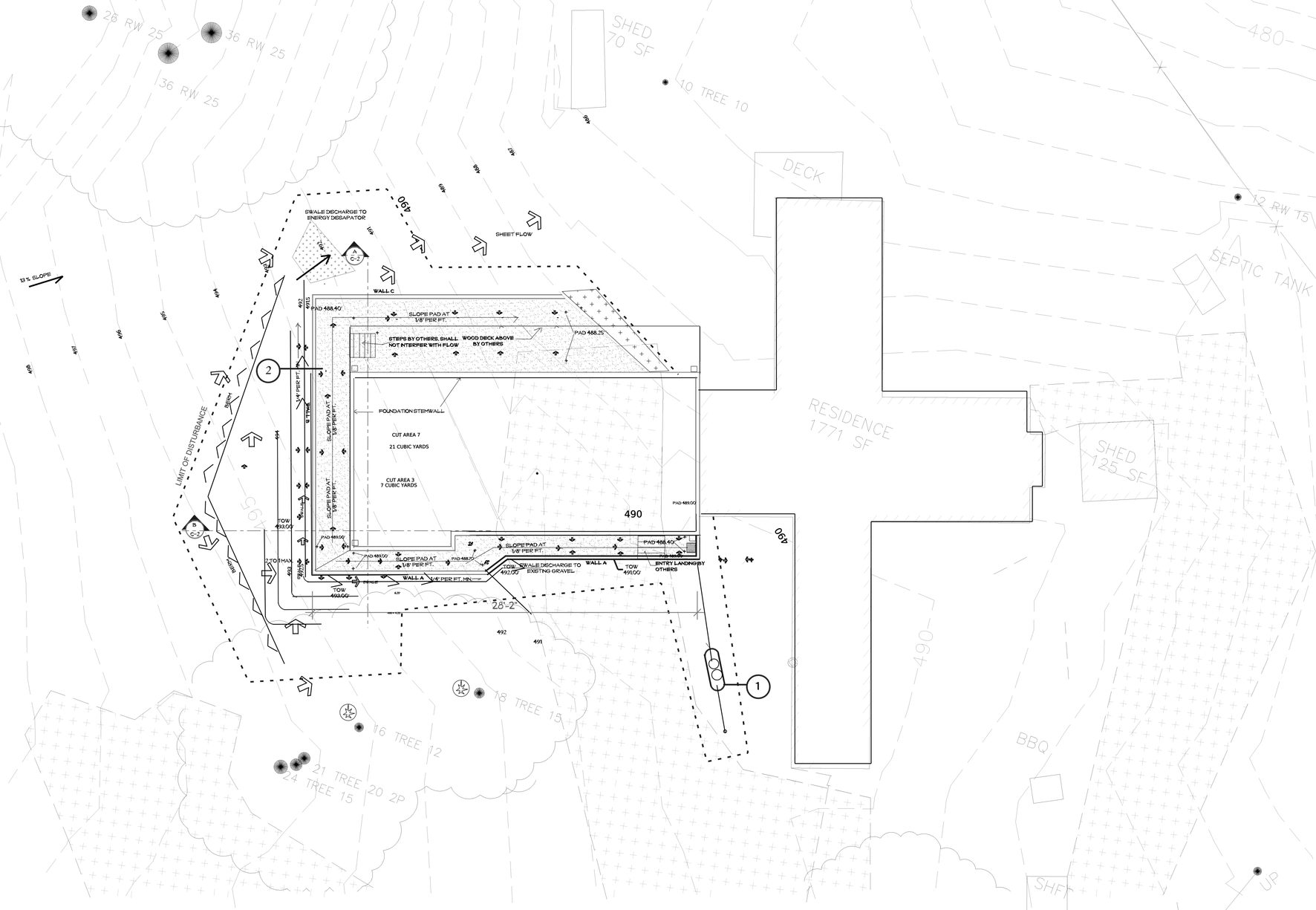
CHECKER #:
DATE: 07/09/2020
DRAFTER:
SUBMITTED BY:
DESIGNER:
JOB #:

BALANCED COMFORT
5452 W MISSION AVE, FRESNO, CA 93722
559-421-8814

Casassa Residence
500 Summit Road, Watsonville, CA 95076

TITLE-24 ENERGY DOCUMENTS

SHEET 1 OF 1
T1

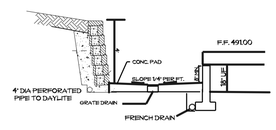


PROPERTY LINE
TOPO LINE NEW / EXISTING
LIMIT OF DISTURBANCE
DOWNSPOUT
FINAL DRAINAGE
RETAINING WALL
GRAVEL
CONCRETE
DOWNSPOUT
BERM
TREE PROTECTION
SILT FENCE (SF)
FIBER ROLL (FR)
GRAVEL ENTRANCE/EXIT
CURB INLET PROTECTION
TOPSOIL STOCK PILE
SLOPE 1/8" PER FT

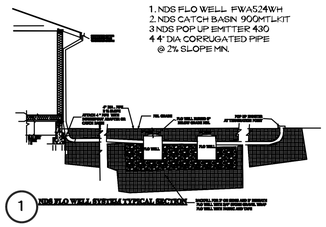
GRADING AND DRAINAGE PLAN

1/8"=1'-0"

DOWNSPOUTS WITH 4" DIA PIPE AND CONNECT TO 6" DIA. PIPE TO FLO WELLTYPICAL PROVIDE CLEANOUT AT EACH PIPE RUN. MINIMUM SLOPE 2%



2 KEYSTONE BLOCK PRE ENGINEERED 4' RETAINING WALL



1 NDS FLO WELL SYSTEM TYPICAL SECTION

General Notes

MINOR GRADING PLAN
FOR
THE CASASSA FAMILY
500 SUMMIT ROAD
MORGAN HILL CALIF. 95307

No.	Revision/Issue	Date

Orientation:

LICENSED ARCHITECT RONALD RAGSDALE LIC. #30794 RENEWAL DATE 01/31/2022 STATE OF CALIFORNIA

Stamp:

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CONTRACTOR TO CHECK AND VERIFY ALL DIMENSIONS BEFORE COMMENCING WORK AND TO REPORT ANY DISCREPANCIES TO THE DESIGNER.

Ron Ragsdale Architect
831-419-6197

Project Name and Address:
CASASSA MIN GRADING
Brooktree Lane

Client:
CASASSA FAMILY

Sheet:
GRADING AND DRAINAGE

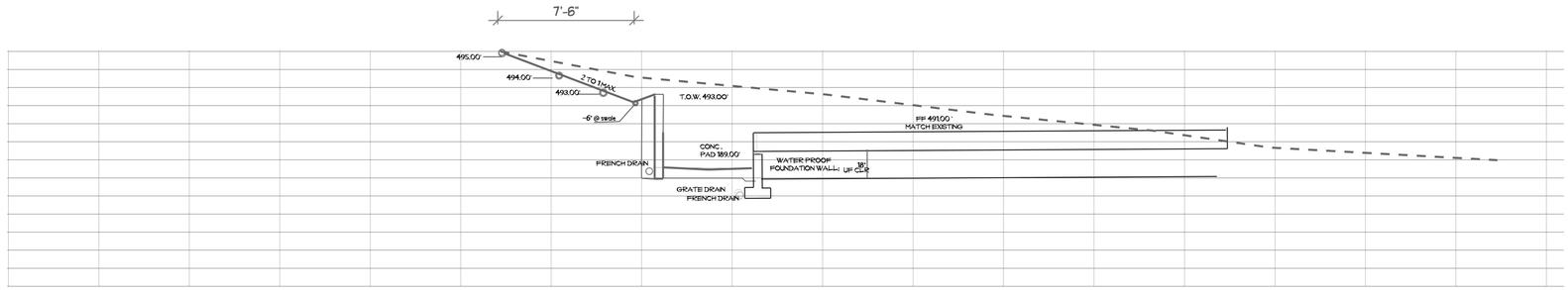
Scale: AS NOTED
Date: OCT 15 2020

Drawn By: RAR
Checked By:
Approved By:

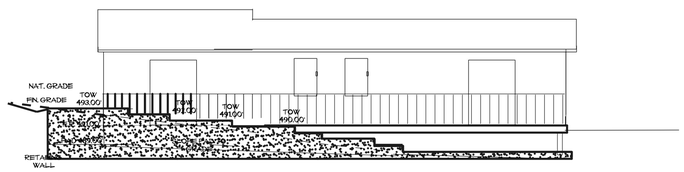
Sheet:
C1



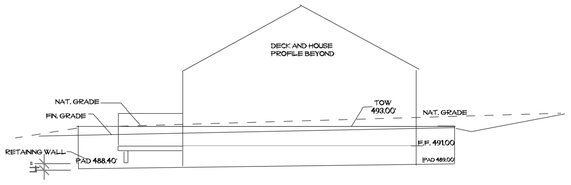
SECTION A-A



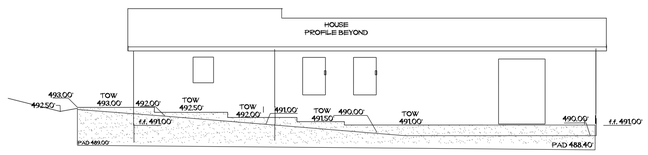
SECTION B-B



WALL C



WALL B



WALL A

GENERAL NOTES

1. DESIGNATE A "DISTURBANCE COORDINATOR" TO RESPOND TO CITIZEN COMPLAINTS AND INJURIES REGARDING CONSTRUCTION NOISE AND DUST. THE NAME,PUPOSE AND TELEPHONE NUMBERS OF THE DISTURBANCE COORDINATOR SHALL BE POSTED ON A SIGN EASILY VISIBLE FROM THEOFF SITE DURING ENTIRE TIME OF THE PROJECT GRADING AN DCONSTRUCTION OCCURS. tHE DISTURBANCE COORDINATOR SHALL INVESTIGATETHE CONCERN AND AND TAKE REMEDIAL ACTION ,IF NEEDED ,WITH IN TWNETY FOUR HOURS OF RECIEVING A CONTACT.

2.NO LAND CLEARING,GRADING, OR EXCAVATING SHALL TAKE PLACE BETWEEN OCTOBER 15 AND APRIL 15 UNLESS A SEPARATE WINTER EROSION CONTROL PLAN IS APPROVED BY THE PLANNING DIRECTOR

3.NO LAND DISTURBANCE SHALL OCCUR BEFORE THE BUILDING PERRMIT IS ISSUED,EXCEPT THE MINIMUM REQUIRED TO INSTALL STREET IMPROVEMENTS,PROVIDE ACCESS FOR COUNTY REQUIRED TESTS OR TO CARRY OUT OTHER WORK REQUIRED BY ANOTHER PART OF THESE CONDITIONS

4.THE BUILDER SHALL APPLY WATER TO ALL EXPOSED EARTH SURFACE AT INTERVALS SUFFICENT TO PREVENT AIRBORNE DUST FROM LEAVING THE PROJECT SITE. ALL EXPOSED EARTH SHALL BE WATERED DOWN AT THE END OF THE DAY.

5.WHILE IN TRANSIT TO AND FROM THE PROJECT SITE, ALL TRUCKS TRANSPORTING FILL SHALL BE EQUIPPED WITH TARPS.

6.PURSUANT TO SECTIONS 16.40.040 OF THE COUNTY CODE,IF AT ANY TIME DURING SITE PREPERATION, EXCAVATION, OR OTHER GROUND DISTURBANCE ASSOCIATED WITH THIS DEVELOPEMENT, ANY ARTIFACT OR OTHER GROUND DISTURBANCE ASSOCIATED WITH THIS DEVELOPEMENT, ANY ARTIFACT OR OTHER EVIDENCE OF AN HISTORIC ARCHEOLOGICAL RESOURCE OR A NATIVE AMERICAN CULTURAL SITE IS DISCOVERED, THE RESPONSIBLE PERSONS SHALL IMEDIATELY CEASE AND DESIST FROM ALL FURTHER SITE EXCAVATION AND NOTIFY THE SHERIFF-CORONER IF THE DISCOVERY CONTAINS HUMAN REMAINS, OR THE PLANNING DIRECTOR IF THE DISCOVERY CONTAINS NO HUMAN REMAINS . THE PROCEDURES ESTABLISHED IN SECTIONS 16.40.010 AND 16.42.100 SHALL BE OBSERVED.

7.BETWEEN OCTOBER 15 AND APRIL 15 ,EXPOSED SOIL SHALL BE PROTECTED FROM EROSION AT ALL TIMES. DURING CONSTRUCTION SUCH PROTECTION SHALL CONSIST OF MULCHING AND/OR PLANTING OF NATIVE VEGATATION OF ADEQUATE DENSITY BEFORE COMPLETION OF THE PROJECT,ANY EXPOSED SOIL OR DISTURBED SLOPES SHALL BE PERMANTLY PROTECTED FROM EROSION.

EROSION CONTROL NOTES

1.BETWEEN OCTOBER 15 AND APRIL 15,EXPOSED SOIL SHALL BE PROTECTED FROM EROSION AT ALL TIMES. HAY BALES, FILTER BERMS ,AND OTHER WAYS SHALL BE PROVIDED TO PREVENT RUNOFF TO ADJOINING PROPERTY

2.ALL AREAS ON AND OFF SITE THAT ARE EXPOSED DURING CONSTRUCTION SHALL BE PROTECTED BY MULCHING AND PLANTINGOF THE FOLLOWING APPROVED EROSION CONTROL MIX,AT A RATE OF 35 POUNDS PER ACRE.UNLESS PERMANENTLY LANDSCAPED.

BLANDO BROME	50%
ROSE CLOVER (PELLET INNOCULATED)	35%
CREEPING RED FESCUE	15%
ZORRO ANNUAL FESCUE	TRACE
WILDFLOWERS	TRACE

3.UNNECESSARY GRADING AND DISTURBING SOIL SHALL BE AVOIDED.

4.ANY EXCESS MATERIAL SHALL BE DISPOSED OF OFF-SITE OR STOCKPILED IN A MANNER TO AVOID RUNOFF ONTO ADJOINING PROPERTIES.

5.UPON COMPLETION OF CONSTRUCTION ,ALL REMAINING EXPOSED AREAS SHALL BE PEMANENTLY REVEGETATED .

7.DURING CONSTRUCTION NO TURBID WATER SHALL BE PERMITTED TO ENTER THE STORM DRAIN. USE OF SILT TRAPS AND GREASE TRAPS, FILTER BERMS OR HAY BALES MAY BE USED TO PREVENT SUCH DISCHARGE.

8.THE BUILDER SHALLL NOTIFY DSA 48 HOURS BEFORE ANY EARTHWORK IS BEGUN.

9. ALL CONSTRUCTION SHALL CONFORM "EXCAVATION, GRADING, EROSION AND SEDIMENT CONTROL REGULATIONS" PER DSA,nO CLEARING OR GRADING SHALL BE TAKE PLACE BETWEEN OCTOBER 15, AND APRIL 15 UNLESS THERE IS AN APPROVED WINTER EROSION CONTROL PLAN. ALL DISTURBED SOIL SHALL BE SEEDED, MULCHED, OR OTHERWISE PROTECTED BY OCT.

General Notes

MINOR GRADING PLAN
FOR
THE CASASSA FAMILY
500 SUMMIT ROAD
MORGAN HILL CALIF. 95307

No.	Revision/Issue	Date

Orientation:

Stamp:

LICENSED ARCHITECT
RONALD RAGSDALE
LIC. #30794
11/30/2020
RENEWAL DATE
STATE OF CALIFORNIA

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CONTRACTOR TO CHECK AND VERIFY ALL DIMENSIONS BEFORE COMMENCING WORK AND TO REPORT ANY DISCREPANCIES TO THE DESIGNER.

Ron Ragsdale Architect
831-419-6197

Project Name and Address:

CASASSA MIN GRADING
Brooktree Lane

Client:

CASASSA FAMILY

Drawing:

SECTIONS AND PROFILES

Scale: AS NOTED

Date: OCT 15 2020

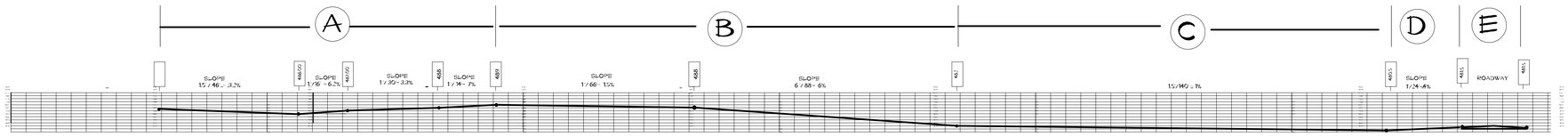
Drawn By: RAR

Checked By:

Approved By:

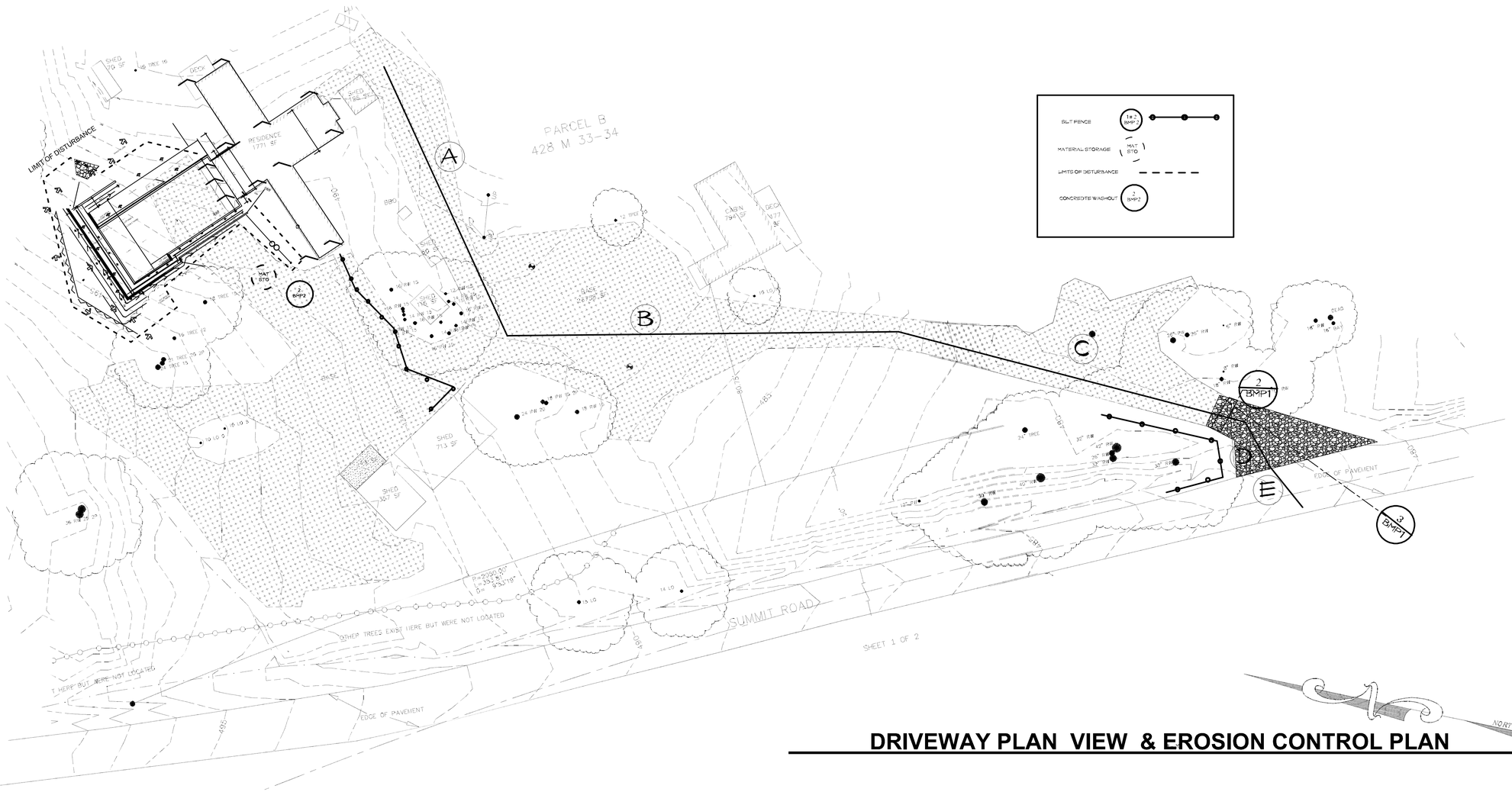
Sheet:

C2



DRIVEWAY PROFILE

1" = 20'



DRIVEWAY PLAN VIEW & EROSION CONTROL PLAN

General Notes

MINOR GRADING PLAN FOR THE CASASSA FAMILY 500 SUMMIT ROAD MORGAN HILL CALIF. 95307

No.	Revision/Issue	Date

Orientation:

Stamp:

ALL DRAWINGS ARE THE PROPERTY OF THE DESIGNER AND THEY ARE NOT TO BE REPRODUCED IN WHOLE OR IN PART WITHOUT THE WRITTEN CONSENT OF THE DESIGNER.

CONTRACTOR TO CHECK AND VERIFY ALL DIMENSIONS BEFORE COMMENCING WORK AND TO REPORT ANY DISCREPANCIES TO THE DESIGNER.

Ron Ragsdale Architect
831-419-6197

Project Name and Address:
CASASSA MIN GRADING

Client:
CASASSA FAMILY

Drawing: profile

Scale: AS NOTED

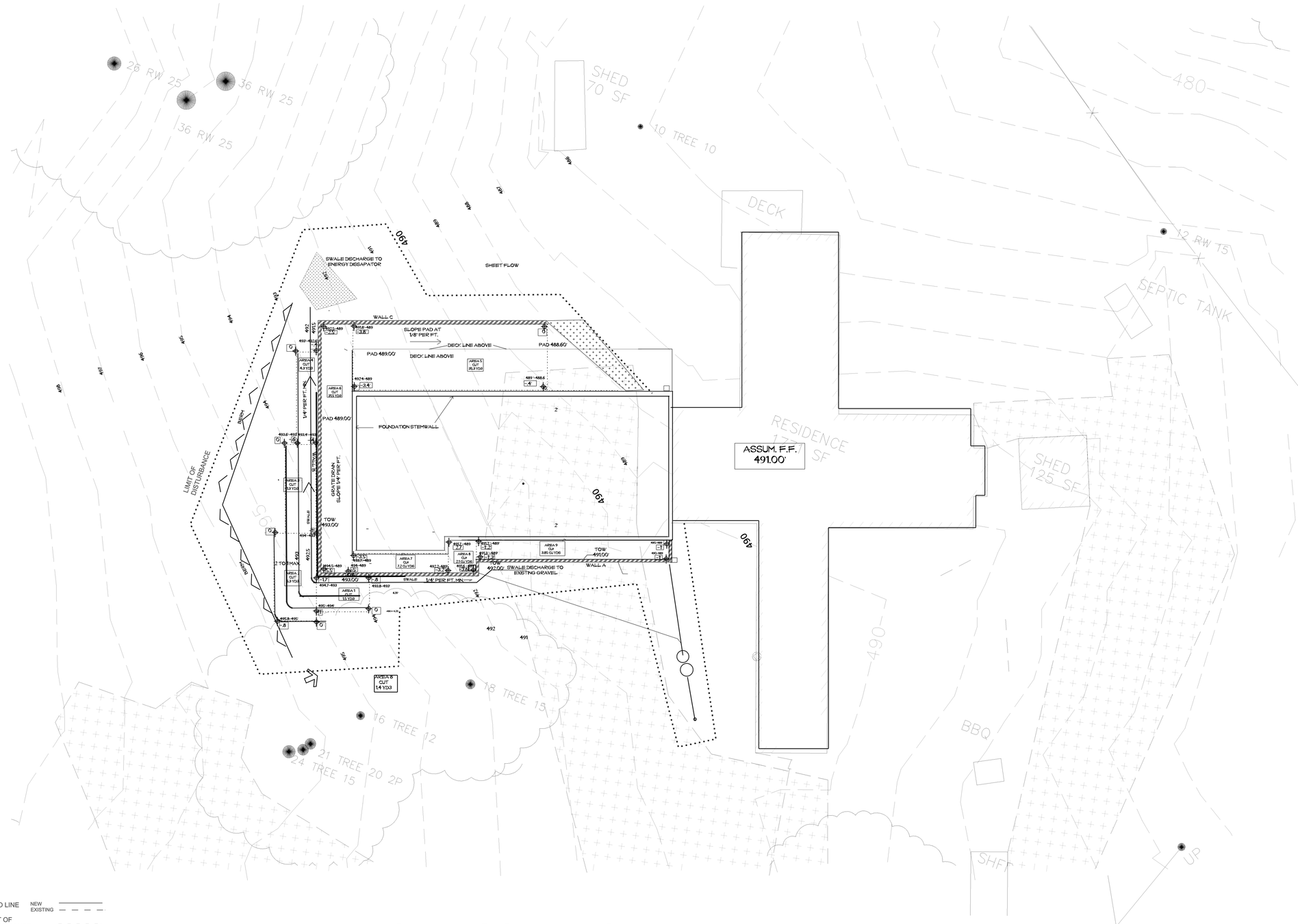
Date: OCT 15 2020

Drawn By: RAR

Checked By:

Approved By:

Sheet: C3



TOPO LINE NEW / EXISTING

LIMIT OF DISTURBANCE

DOWNSPOUT

FINAL DRAINAGE

RETAINING WALL

GRAVEL

GRADING QUANITIES

1/8"=1'-0"

EARTH WORK QUANITIES

	CUT	FILL	NET	MAX CUT HT.	MAX FILL
BUILDING PADS	NA				
DRIVEWAY	NA				
SITE GRADING	92.9 CU. YDS			4.5'	
TOTAL	92.9 CU. YDS	0	0		

SOIL TO BE MEDIATLY REMOVED FROM SITE
AND TAKE TO AN APPROVED LOCATION

General Notes

MINOR GRADING PLAN
FOR
THE CASASSA FAMILY
500 SUMMIT ROAD
MORGAN HILL CALIF. 95307

No.	Revision/Issue	Date

Orientation:

LICENSED ARCHITECT
RONALD RAGSDALE
LIC. #30794
11/30/2020
RENEWAL DATE
STATE OF CALIFORNIA

Stamp:

ALL DRAWINGS ARE THE PROPERTY OF THE DESIGNER AND THEY ARE NOT TO BE REPRODUCED IN WHOLE OR IN PART WITHOUT THE WRITTEN CONSENT OF THE DESIGNER.

CONTRACTOR TO CHECK AND VERIFY ALL DIMENSIONS BEFORE COMMENCING WORK AND TO REPORT ANY DISCREPANCIES TO THE DESIGNER.

Ron Ragsdale Architect
831-419-6197

Project Name and Address:

CASASSA MIN GRADING
Brooktree Lane

Client:

CASASSA FAMILY

Drawing: GRADING QUANITY

Scale: AS NOTED

Date: OCT 15 2020

Drawn By: RAR

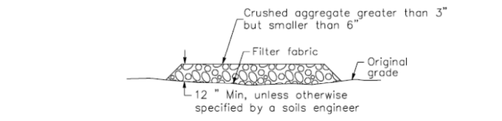
Checked By:

Approved By:

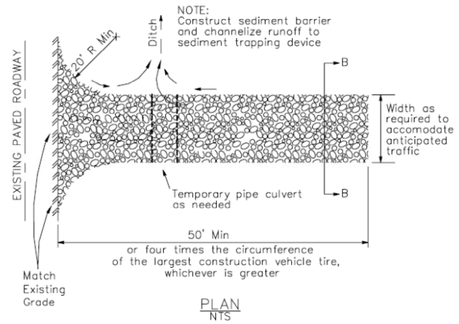
Sheet: C4

3 Stabilized Construction Entrance/Exit TC-1

CASQA Detail TC-1



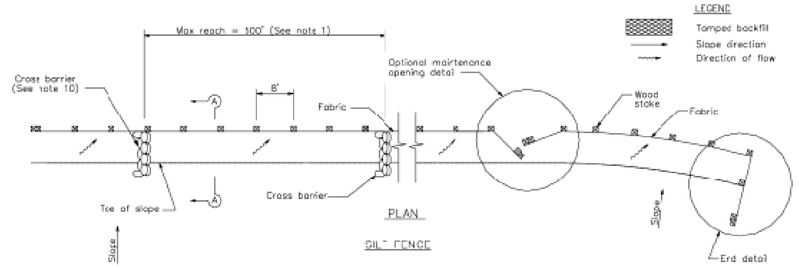
SECTION B–B
NTS



PLAN
NTS

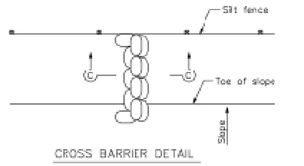
1 Silt Fence

CASQA Detail SE-1

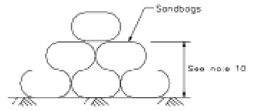


NOTES

1. Construct the length of each reach so that the change in base elevation along the reach does not exceed 1/3 the height of the linear barrier, in no case shall the reach length exceed 500'
2. The last 8'–0" of fence shall be turned up slope.
3. Stake dimensions are nominal.
4. Dimension may vary to fit field conditiar.
5. Stakes shall be spaced at 8'–0" maximum and shall be positioned on downstream side of fence.
6. Stakes to overlap and fence fabric to fold around each stake one full turn. Secure fabric to stake with 4 staples.
7. Stakes shall be driven tightly together to prevent potential flow–through of sediment at joint. The tops of the stakes shall be secured with wire.
8. For end stake, fence fabric shall be folded around two stakes one full turn and secured with 4 staples.
9. Minimum 4 staples per stake. Dimensions shown are typical.
10. Cross barriers shall be a minimum of 1/3 and a maximum of 1/2 the height of the linear barrier.
11. Maintenance openings shall be constructed in a manner to ensure sediment remains behind silt fence.
12. Joining sections shall not be placed at sump locations.
13. Sandbag rows and layers shall be offset to eliminate gaps.



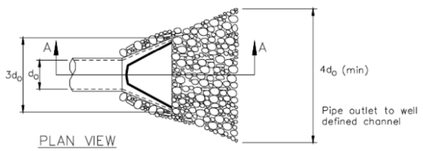
CROSS BARRIER DETAIL



SECTION C–C

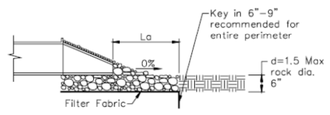
4 EC-10 Velocity Dissipation Devices

CASQA Detail EC-10



PLAN VIEW

L*



SECTION A–A

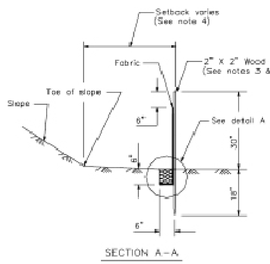
* Length per ABAG Design Standards

Pipe Diameter inches	Discharge ft³/s	Apron Length, La ft	Rip Rap D_{50} Diameter Min inches
12	5	10	4
	10	13	6
18	10	10	6
	20	16	8
	30	23	12
	40	26	16
24	30	16	8
	40	26	8
	50	26	12
	60	30	16

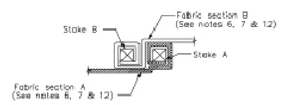
For larger or higher flows consult a Registered Civil Engineer
Source: USDA - SCS

2 Silt Fence

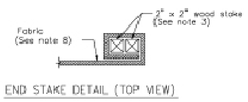
CASQA Detail SE-1



SECTION A–A

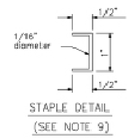


JOINING SECTION DETAIL (TOP VIEW)

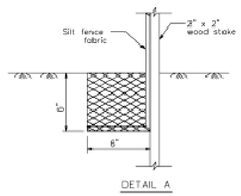


END STAKE DETAIL (TOP VIEW)

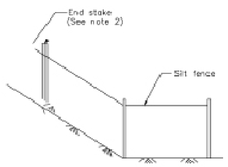




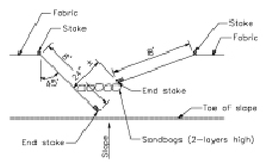
STAPLE DETAIL
(SEE NOTE 9)



DETAIL A



END DETAIL



OPTIONAL MAINTENANCE OPENING DETAIL
(SEE NOTE 11)

STANDARD BEST MANAGEMENT PRACTICE NOTES

1. Solid and Demolition Waste Management: Provide designated waste collection areas and containers on site away from streets, gutters, storm drains, and waterways, and arrange for regular disposal.Waste containers must be watertight and covered at all times except when waste is deposited. Refer to Erosion & Sediment Control Field Manual, 4th Edition (page C3) or latest.
2. Hazardous Waste Management Provide proper handling and disposal of hazardous wastes by a licensed hazardous waste material hauler. Hazardous wastes shall be stored and properly labeled in sealed containers constructed of suitable materials. Refer to Erosion & Sediment Control Field Manual, 4th Edition (pages C-5 to C-6) or latest.
3. Spill Prevention and Control : Provide proper storage areas for liquid and solid materials, including chemicals and hazardous substances, away from streets, gutters, storm drains, and waterways. Spill control materials must be kept on site where readily accessibleSpills must be cleaned up immediately and contaminated soil disposed properly. Refer to Erosion & Sediment Control Field Manual, 4th Edition (pages C-7 to C-8, C-13 to C-14) or latest.
4. Vehicle and Construction Equipment Service and Storage An area shall be designated for the maintenance, where on-site maintenance is required, and storage of equipment that is protected from stormwater run-on and runoff.Measures shall be provided to capture any waste oils, lubricants, or other potential pollutants and these wastes shall be properly disposed of off site. Fueling and major maintenance/repair, and washing shall be conducted off-site whenever feasible. Refer to Erosion & Sediment Control Field Manual, 4th Edition (page C9) or latest.
5. Material Delivery, Handling and Storage general, materials should not be stockpiled on site.Where temporary stockpiles are necessary and approved by the County, they shall be covered with secured plastic sheeting or tarp and located in designated areas near construction entrances and away from drainage paths and waterways. Barriers shall be provided around storage areas where materials are potentially in contact with runoff. Refer to Erosion & Sediment Control Field Manual, 4th Edition (pages C-11 to C-12) or latest.
6. Handling and Disposal of Concrete and Cement: When concrete trucks and equipment are washed on-site, concrete wastewater shall be contained in designated containers or in a temporary lined and watertight pit where wasted concrete can harden for later removal. If possible have concrete contractor remove concrete wash water from site.In no case shall fresh concrete be washed into the road right-of-way. Refer to Erosion & Sediment Control Field Manual, 4th Edition (pages C-15 to C-16) or latest.
7. Pavement Construction Management: Prevent or reduce the discharge of pollutants from paving operations, using measures to prevent run-on and runoff pollution and properly disposing of wastes. Avoid paving in the wet season and reschedule paving when rain is in the forecast. Residue from saw-cutting shall be vacuumed for proper disposal. Refer to Erosion & Sediment Control Field Manual, 4th Edition (pages C-17 to C-18) or latest.
8. Contaminated Soil and Water Management Inspections to identify contaminated soils should occur prior to construction and at regular intervals during construction. Remediating contaminated soil should occur promptly after identification and be specific to the contaminant identified, which may include hazardous waste removal. Refer to Erosion & Sediment Control Field Manual, 4th Edition (pages C-19 to C-20) or latest.
9. Sanitary/Septic Water Management Temporary sanitary facilities should be located away from drainage paths, waterways, and traffic areas.Only licensed sanitary and septic waste haulers should be used. Secondary containment should be provided for all sanitary facilities.Refer to Erosion & Sediment Control Field Manual, 4th Edition (page C-21) or latest.
10. Inspection & Maintenance Areas of material and equipment storage sites and temporary sanitary facilities must be inspected weekly. Problem areas shall be identified and appropriate additional and/or alternative control measures implemented immediately, within 24 hours of the problem being identified.

STANDARD EROSION CONTROL NOTES

1. Sediment Control Management

   Tracking Prevention & Clean Up Activities shall be organized and measures taken as needed to prevent or minimize tracking of soil onto the public street system. A gravel or proprietary device construction entrance/exit is required for all sites. Clean up of tracked material shall be provided by means of a street sweeper prior to an approaching rain event, or at least once at the end of each workday that material is tracked, or, more frequently as determined by the County Inspector. Refer to Erosion & Sediment Control Field Manual, 4th Edition (pages B-31 to B-33) or latest.

   Storm Drain Inlet and Catch Basin Inlet Protection All inlets within the vicinity of the project and within the project limits shall be protected with gravel bags placed around inlets or other inlet protection. At locations where exposed soils are present, staked fiber roles or staked silt fences can be usedInlet filters are not allowed due to clogging and subsequent flooding. Refer to Erosion & Sediment Control Field Manual, 4th Edition (pages B-49 to B-51) or latest.

   Storm Water Runoff No storm water runoff shall be allowed to drain in to the existing and/or proposed underground storm drain system or other above ground watercourses until appropriate erosion control measures are fully installed.

   Dust Control The contractor shall provide dust control in graded areas as required by providing wet suppression or chemical stabilization of exposed soils, providing for rapid clean up of sediments deposited on paved roads, furnishing construction road entrances and vehicle wash down areas, and limiting the amount of areas disturbed by clearing and earth moving operations by scheduling these activities in phases.

   Stockpiling Excavated soils shall not be placed in streets or on paved areas.Borrow and temporary stockpiles shall be protected with appropriate erosion control measures(tarps, straw bales, silt fences, ect.) to ensure silt does not leave the site or enter the storm drain system or neighboring watercourse.
2. Erosion Control During the rainy season, all disturbed areas must include an effective combination of erosion and sediment controls required that temporary erosion control measures are applied to all disturbed soil areas prior to a rain event. During the non-rainy season, erosion control measures must be applied sufficient to control wind erosion at the site.
3. Inspection & Maintenance Disturbed areas of the Project's site, locations where vehicles enter or exit the site, and all erosion and sediment controls that are identified as part of the Erosion Control Plans must be inspected by the Contractor before, during, and after storm events, and at least weekly during seasonal wet periods. Problem areas shall be identified and appropriate additional and/or alternative control measures implemented immediately, within 24 hours of the problem being identified.
4. Project Completion Prior to project completion and signoff by the County Inspector, all disturbed areas shall be reseeded, planted, or landscaped to minimize the potential for erosion on the subject site.
5. It shall be the Owner's/Contractor's responsibility to maintain control of the entire construction operation and to keep the entire site in compliance with the erosion control plan.
6. Erosion and sediment control best management practices shall be operable year round or until vegetation is fully established on landscaped surfaces.

MINOR GRADING PLAN
FOR
THE CASASSA FAMILY
500 SUMMIT ROAD
MORGAN HILL CALIF. 95307

Project Information

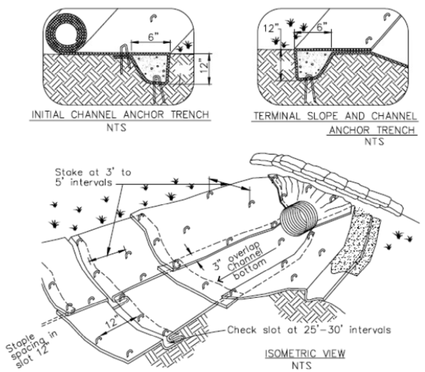
Source for Graphics: California Stormwater BMP Handbook, California Stormwater Quality Association, January 2003.
Available from www.cabmphandbooks.com.

Best Management Practices and Erosion Control Details Sheet 1
County of Santa Clara

BMP-1

7 Geotextiles and Mats — EC-7

CASQA Detail EC-7

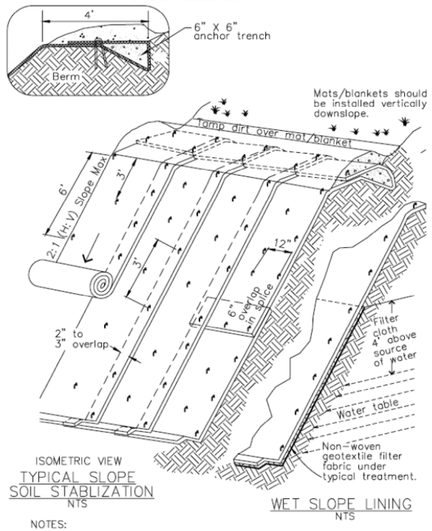


NOTES:
1. Check slots to be constructed per manufacturers specifications.
2. Staking or stapling layout per manufacturers specifications.
3. Install per manufacturer's recommendations

TYPICAL INSTALLATION DETAIL

4 EC-7 Geotextiles and Mats

CASQA Detail EC-7

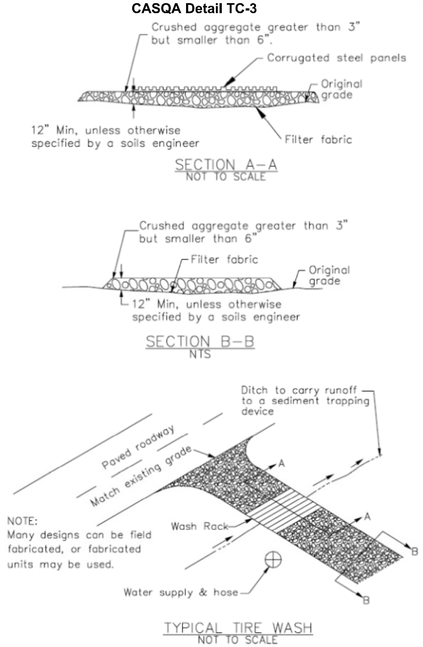


NOTES:
1. Slope surface shall be free of rocks, clods, sticks and grass. Mats/blankets shall have good soil contact.
2. Lay blankets loosely and stake or staple to maintain direct contact with the soil. Do not stretch.
3. Install per manufacturer's recommendations

TYPICAL INSTALLATION DETAIL

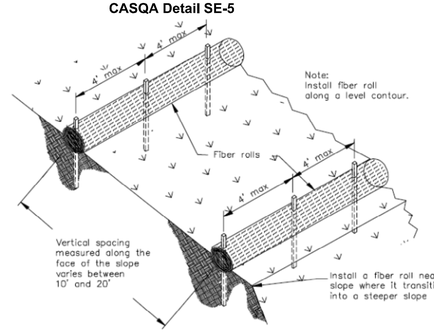
3 Entrance/Outlet Tire Wash — TC-3

CASQA Detail TC-3



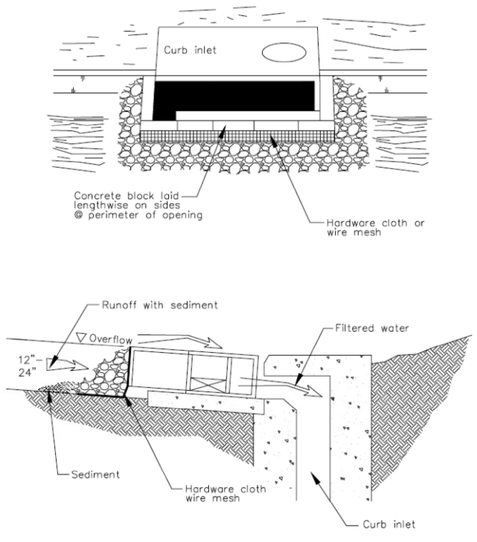
1 SE-5 Fiber Rolls — Fiber Rolls

CASQA Detail SE-5



8 Storm Drain Inlet Protection

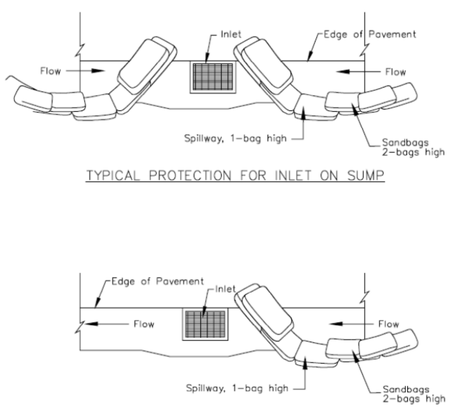
CASQA Detail SE-10



Source for Graphics: California Stormwater BMP Handbook, California Stormwater Quality Association, January 2003.
Available from www.cabmphandbooks.com.

6 Storm Drain Inlet Protection

CASQA Detail SE-10

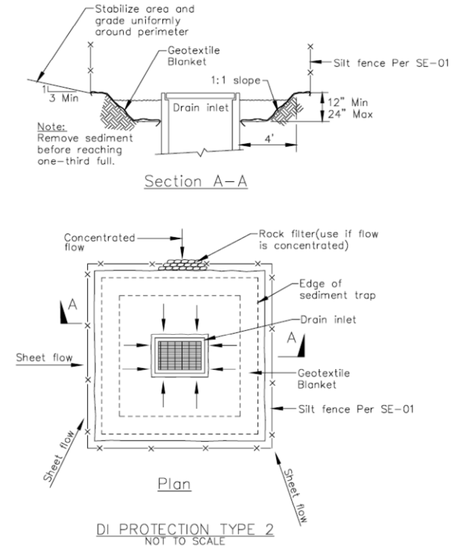


NOTES:
1. Intended for short-term use.
2. Use to inhibit non-storm water flow.
3. Allow for proper maintenance and cleanup.
4. Bags must be removed after adjacent operation is completed
5. Not applicable in areas with high silts and clays without filter fabric.

DI PROTECTION TYPE 3
NOT TO SCALE

4 Storm Drain Inlet Protection

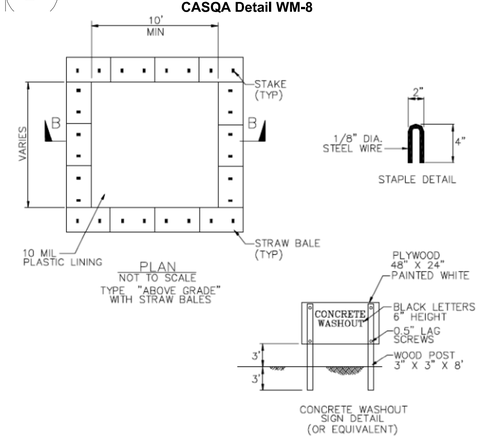
CASQA Detail SE-10



Notes
1. For use in cleared and grubbed and in graded areas.
2. Shape basin so that longest inflow area faces longest length of trap.
3. For concentrated flows, shape basin in 2:1 ratio with length oriented towards direction of flow.

2 Concrete Waste Management

CASQA Detail WM-8



NOTES
1. ACTUAL LAYOUT DETERMINED IN FIELD.
2. THE CONCRETE WASHOUT SIGN SHALL BE INSTALLED WITHIN 30 FT. OF THE TEMPORARY CONCRETE WASHOUT FACILITY.

MINOR GRADING PLAN
FOR
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500 SUMMIT ROAD
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Project Information

Best Management Practices and Erosion Control Details Sheet 2
County of Santa Clara

BMP-2