Grading, Erosion Control, and Construction Process Details
from NexGen for Winter Grading for Lots 9 and 10
Date: October 29, 2019

NOTE ON LOT 11: There will be no work (vegetation/tree removal, grading, etc.) on Lot 11 until Spring 2020. No materials or trash shall be stored on Lot 11 until a building permit is issued for construction on that lot. The applicant will notify the County when work will begin on Lot 11; a separate Exception to the Winter Grading Moratorium from the Community Development Director is required for any work that will occur during the wet season (October 1 – April 30).

NexGen (Noel Chamberlain and Bob Pellegrine): We will start work on Lot 9 first. Overall grading duration is expected to be approximately 8-10 weeks to complete building pads on Lots 9 and 10.

1. Clearing and Grubbing (1 week): First stage of grading will be tree removal, clearing and grubbing of the pad site. Green waste will be trucked off site to Ox Mountain for disposal.

2. Excavation of Keyway (1 week): After clearing, we will excavate approximately 800 yards in order to establish our grading key way. The 800 yards will be stock piled and covered until the key is established. Soil will be sorted by spreading and raking soils to remove organics and unsuitable soil. Organics and unsuitable soil will be off-hauled to Ox Mountain and suitable soil will be stockpiled and re-used. The stockpile will be located in flatter areas of the site in the area of the building pad. Over the weekends and in the event of rain, NexGen will use geotextile blankets secured by U-shaped pins to protect stockpiles and all graded areas, as well as fiber rolls along the perimeter of stockpiles and graded areas. All grading activities will cease prior to the onset of rain, with adequate time for the site to be fully protected.

3. Fill Importation and Soil Compaction (4 weeks): After completion of the key, we will compact the onsite 800 c.y. stock pile. We will need an additional 1100 yards of fill from an offsite source. NexGen will use 6-wheelers, high-sided dump trucks (approx. capacity 11 c.y.), which are smaller than the standard 8-wheeler dump trucks (approx. 15 c.y.) and can better navigate the residential streets. We will bring up the pad in vertical lifts of 1foot in depth. NexGen will compact all lifts by end of day and ensure that all remaining stock piled materials are securely covered and contained. After the 800 cubic yards of stockpiled materials have been used, NexGen will only import as much soil per day as can be applied to the site and protected that day. The onsite equipment will be an excavator, compactor, and skip loader backhoe. During the compaction stage, NexGen will use visqueen to cover compacted areas, along with fiber rolls along the edges of the visqueen, where fiber rolls are weighed down by rock/sand bags every 3-5 feet. All grading activities will cease prior to the onset of rain, with adequate time for the site to be fully protected.

4. Pier Drilling (2 weeks): Pier sizes for the project are a combination of 24", 18" and 12" in diameter. Depth of piers will be determined by the soils engineer, who will observe pier construction. Pier drilling will take approximately 5 days to complete per house. Pier spoils (approximately 70 c.y. per house) will be collected and stockpiled and securely covered and contained daily. Usable piers spoil material will be stockpiled on-site and re-used. Unsuitable material will be stockpiled and off-hauled to Ox Mountain. Stockpiles will be located in flatter areas of the site in the area of the building pad. No drilling or other earth moving activities will occur in the event of rain.

5. Pier Pouring and Curing (2 weeks): Each house will require 2 pours (1 for the upper level and 1 for the lower level). Each pour will take about 2-3 days (time includes 1 day for pier inspection). There will be 30 days between each pour. Piers will be poured in by a concrete boom pump. The pump and concrete trucks will stage on the construction entrance. Piers do not need to be protected from the rain; rain does not affect their curing. NexGen will continue to protect exposed/disturbed soil as described above.

We agree to carry out construction of houses on Lots 9 and 10 according to the above process, as well as to comply with "Chamberlain Lots 9-10, Construction and Grading Requirements Reminder, dated October 29, 2019". Both documents will be included in the construction plans.

10/31/2019
Noel Chamberlain Date

10-31-2019
Bob Pellegrine Date

APPROVED
PLANNING
NOV 12 2019
BY:
County of San Mateo

Height Verification
Required ☐
Not Required ☐
Benchmark Elev
Garage Elev. see pg
1st Floor Elev.
Ridge Elev. Arch 9

SETBACK REQUIREMENTS

	MINIMUM	APPROVED
Front		47.91
Rear		53.68
Rt. Side		24.58
Lt. Side		15.25
Other		

REVIEWED FOR CODE COMPLIANCE
This review does not authorize violation of State or County building laws.

NOV 13 2019
SAN MATEO CO. BLDG. INSP. DIV.

FILE COPY

2016-00160

Chamberlain Lots 9 and 10, Construction and Grading Requirements Reminder
Date: October 29, 2019

Grading:

1. Applicant shall obtain authorization from the Community Development Director or his designee, prior to the initiation of each phase of the winter grading plan, in order to confirm that no rain events are predicted to occur during the planned duration of that phase.
2. If the grading period for any phase must be extended, provide an updated schedule to the project planner.
3. Grading may occur only on dry days. No grading shall occur within 24-hours after a rain event.
4. All grading work shall stop 48-hours prior to a predicted major rain event and the site shall be stabilized.
5. After a major rain event, prior to re-start of grading work, the Building Inspection Section Manager or his designee shall inspect the site and identify necessary corrections. Corrections shall be completed prior to re-start of grading.
6. Applicant shall send photos of final stabilization to the project planner within one week of completion of grading.

Grading/Construction Traffic:

1. DPW has approved the construction management plan which limits construction traffic on Ticonderoga Road to the hours of 9:00 a.m. to 2:00 p.m. during weekdays.

2. Per the City of San Mateo Department of Public Works, use of De Anza Boulevard is prohibited, as De Anza Boulevard is not a designated truck route.

Dust Control/Air Quality Guidelines:

Upon the start of grading activities and through to the completion of the project, the applicant shall be responsible for ensuring that the following dust control guidelines are implemented:

a. All graded surfaces and materials, whether filled, excavated, transported or stockpiled, shall be wetted, protected or contained in such a manner as to prevent any significant nuisance from dust, or spillage upon adjoining water body, property, or streets. Equipment and materials on the site shall be used in such a manner as to avoid excessive dust. A dust control plan may be required at anytime during the course of the project.

b. A dust palliative shall be applied to the site when required by the County. The type and rate of application shall be recommended by the soils engineer and approved by the Department of Public Works, the Planning and Building Department's Geotechnical Section, and the Regional Water Quality Control Board.

Mitigation Measure AQ-1: The Project Applicant shall require that the following BAAQMD recommended and additional PM10 reduction practices be implemented by including them in the contractor construction documents:

The first phase of construction shall require 30 percent of construction equipment to meet Tier 1 EPA certification standards for clean technology. The remainder of construction equipment (70 percent), which would consist of older technologies, shall be required to use emulsified fuels.

- The second phase of construction shall require 30 percent of construction equipment to meet Tier 2 EPA certification standards for clean technology and 50 percent to meet Tier 1 EPA certification standards. The remaining 20 percent of construction equipment, which would consist of older technologies, shall use emulsified fuels.
- For all larger vehicles, including cement mixers or other devices that must be delivered by large trucks, vehicles shall be equipped with CARB level three verified control devices.
- Water all active construction areas at least twice daily.
- Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least two feet of freeboard.
- Pave, apply water three times daily, or apply non-toxic soil stabilizers on all unpaved access roads, parking areas, and staging areas at the construction sites.
- Sweep daily (with water sweepers) all paved access roads, parking areas, and staging areas at the construction sites.
- Sweep public streets adjacent to construction sites daily (with water sweepers) if visible soil material is carried onto the streets.
- Hydroseed or apply non-toxic soil stabilizers to inactive construction areas (previously graded areas inactive for ten days or more).
- Enclose, cover, water twice daily, or apply non-toxic soil binders to exposed stockpiles (dirt, sand, etc.). Limit traffic speeds on unpaved roads to 15 miles per hour.
- Limit traffic speeds on unpaved roads to 15 miles per hour.
- Install sandbags or other erosion control measures to prevent silt runoff to public roadways.
- Replant vegetation in disturbed areas as soon as possible.
- Install wheel washers for all exiting trucks or wash off the tires or tracks of all trucks and equipment leaving the construction site.
- Install wind breaks at the windward sides of the construction areas.
- Suspend excavation and grading activities when wind (as instantaneous gusts) exceeds 25 miles per hour.

Noise Control:

Mitigation Measure NOI-1: The Project Applicant shall require that the following noise reduction practices be implemented by including them in the contractor construction documents:

- Equipment and trucks used for project grading and construction would utilize the best available noise control techniques (e.g., improved exhaust mufflers, equipment redesign, use of intake silencers, ducts, engine enclosures, and acoustically-attenuating shields or shrouds) in order to minimize construction noise impacts.
- Equipment used for project grading and construction would be hydraulically or electrically powered impact tools (e.g., jack hammers and pavement breakers) wherever possible to avoid noise associated with compressed air exhaust from pneumatically-powered tools. Compressed air exhaust silencers would be used on other equipment. Other quieter procedures would be used such as drilling rather than impact equipment whenever feasible.
- The grading and construction activity would be kept to the hours of 7:00 AM to 7:00 PM, Monday through Friday. Saturday hours (8:00 AM to 5:00 PM) are permitted upon the discretion of County approval based on input from nearby residents and businesses. Saturday construction (8:00 AM to 5:00 PM) would be allowed once the buildings are fully enclosed. Noise generating grading and construction activities shall not occur at any time on Sundays, Thanksgiving and Christmas.

RESUBMITTAL
OCT 31 2019
San Mateo County
Building Inspection

THE CHAMBERLAIN GROUP

'HIGHLAND ESTATES, LOT 9'

2185 COBBLEHILL PLACE

SAN MATEO COUNTY, CALIFORNIA

INDEX:

NOTES: △

1. NO PLASTIC PIPING IS ALLOWED WITHIN THE BUILDING FOOTPRINT OR FOR THE WATER SERVICE.
2. PRIOR TO THE BUILDING PERMIT FINAL APPROVAL, THE PROPERTY SHALL BE IN A COMPLIANCE WITH THE VEGETATION MANAGEMENT REQUIREMENTS PRESCRIBED IN CALIFORNIA FIRE CODE SECTION 4906, INCLUDING CALIFORNIA PUBLIC RESOURCES CODE 4291 OR CALIFORNIA GOVERNMENT CODE SECTION 51182 PER CRC R327.1.5.
3. TRUSSES WILL BE A DEFERRED SUBMITTAL.
4. THE ENGINEER SHALL REVIEW THE TRUSS CALCULATIONS AND LAYOUT SHEET AND SUBMIT A LETTER TO THE CITY OR PROVIDE A REVIEW STAMP STATING THAT THE TRUSSES ARE IN GENERAL CONFORMANCE WITH THE DESIGN OF THE BUILDING.

SCOPE OF WORK: △

1. PROPOSED NEW SINGLE FAMILY, TWO-STORY RESIDENCE WITH 4 BEDROOMS, 3-1/2 BATHS AND A 2-CAR GARAGE WITH A TANDEM SPACE.

OWNER:

THE CHAMBERLAIN GROUP
655 SKY WAY, SUITE 230
SAN CARLOS, CA. 94070

PH. 650-2595-5582 FAX 605-595-5066

ARCHITECT:

MARK GROSS & ASSOCIATES, INC.
8881 RESEARCH DRIVE
IRVINE, CALIFORNIA 92618

PH. 949/387-3800 FAX 949/387-7800

STRUCTURAL ENGINEER:

ESI / FME, INC.
1800 E. 16th STREET
SANTA ANA, CALIFORNIA 92701

PH. 714/835-2800 FAX 714/835-2819

TITLE 24:

RICK MAURER
7544 EAST SADDLEHILL TRAIL
ORANGE, CALIFORNIA 92869

PH. 714/771-1507 FAX 714/771-2939

APPLICABLE CODES:

2013 CALIFORNIA BUILDING CODE
2013 CALIFORNIA RESIDENTIAL CODE
2013 CALIFORNIA ELECTRICAL CODE
2013 CALIFORNIA MECHANICAL CODE
2013 CALIFORNIA PLUMBING CODE
2013 BUILDING ENERGY EFFICIENCY STANDARDS
2013 CALIFORNIA FIRE CODE
2013 CALIFORNIA GREEN BUILDING STANDARDS CODE

PROJECT DATA:

* OCCUPANCY GROUP:	R-3, U
* TYPE OF CONSTRUCTION:	V-B
* STORIES:	2

* THE RESIDENCE WILL REQUIRE AN NFPA 13D AUTOMATIC FIRE SPRINKLER SYSTEM. A LICENSED C-16 CONTRACTOR WILL NEED TO SUBMIT A SEPARATE SET OF PLANS TO THE SAN MATEO COUNTY PLANNING AND BUILDING DIVISION.
* SEE SHEETS T-24.2 & CG-2 FOR ENERGY REQUIREMENTS FOR THIS PROJECT.

AREA TABULATION:

LOT No. 9

LOWER LEVEL FLOOR PLAN	:	1,936 SQ.FT.
MAIN LEVEL FLOOR PLAN	:	1,454 SQ.FT.
TOTAL	:	3,390 SQ.FT.
2-CAR GARAGE	:	481 SQ.FT.
TANDEM GARAGE	:	290 SQ.FT.
MAIN LEVEL DECK	:	362 SQ.FT.
LOWER LEVEL DECK	:	242 SQ.FT.
ENTRY PORCH	:	161 SQ.FT.
LAUNDRY ROOM PORCH	:	43 SQ.FT.

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REVIEWED FOR CODE COMPLIANCE
This review does not authorize violation of State or County building laws.
NOV 13 2019
SAN MATEO CO. BLDG. INSP. DIV.

RESIDENTIAL
FEB 16 2017
San Mateo County Building Inspection

Mark Gross & Associates, Inc.
8881 Research Drive, Irvine, California 92618
(949) 387-3800 Fax (949) 387-7800
Architecture • Planning

"HIGHLAND ESTATES, LOT 9"
2185 COBBLEHILL PLACE
SAN MATEO COUNTY, CALIFORNIA
THE CHAMBERLAIN GROUP
655 SKY WAY - SUITE 230
SAN CARLOS, CALIFORNIA 94070
PHONE (650) 595-5582 FAX (650) 595-5066

COVER SHEET
LOT No. 9

REVISIONS
△ JAN. 6, 2017 P.C. 1
△ - -
△ - -
△ - -
△ - -
△ - -
△ - -

LICENSED ARCHITECT
MARK H. GROSS
C-24313
Exp. 8-31-17
STATE OF CALIFORNIA

ALL DIMENSIONS & CONDITIONS ARE TO BE VERIFIED BY CONTRACTOR BEFORE START OF CONSTRUCTION.

DESIGNED BY
DRAWN BY
CHECKED BY
JOB NO. 4236
DATE NOVEMBER 3, 2014
SHEET NO.
A

GENERAL

1. THE WORD "CONTRACTOR" AS USED HEREIN SHALL MEAN THE GENERAL CONTRACTOR, SUBCONTRACTORS AND ALL PERSONS DIRECTLY OR INDIRECTLY EMPLOYED BY ANY OF THEM.
2. CONTRACTOR SHALL COMPLY WITH ALL ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AGENCY HAVING JURISDICTION ON THIS PROJECT AND SHALL NOTIFY OWNER IMMEDIATELY UPON BECOMING AWARE THAT ANY ASPECT OF THE PROJECT DESCRIBED HEREIN IS AT THE VARIANCE THEREWITH.
3. CONTRACTOR SHALL PROVIDE CERTIFICATES OF INSURANCE ACCEPTABLE TO OWNER PRIOR TO COMMENCEMENT OF WORK.
4. BY SUBMITTAL OF BID CONTRACTOR WARRANTS TO OWNER THAT ALL MATERIALS AND EQUIPMENT TO BE FURNISHED ARE NEW UNLESS NOTED OTHERWISE AND ALL WORK WILL BE OF GOOD QUALITY AND FREE FROM FAULTS AND DEFECTS.
5. CONTRACTOR SHALL VISIT SITE AND VERIFY ALL EXISTING CONDITIONS PRIOR TO SUBMITTAL OF BID.
6. CONTRACTOR SHALL VERIFY ALL DIMENSIONS SHOWN HEREIN AND REPORT ALL DISCREPANCIES TO OWNER/BUILDER PRIOR TO SUBMITTAL OF BID.
7. ALL STANDARD NOTES CONTAINED HEREIN ARE TYPICAL UNLESS NOTED OTHERWISE.
8. ALL TRADE NAMES AND BRAND NAMES CONTAINED HEREIN ESTABLISH QUALITY STANDARDS, SUBSTITUTIONS ARE PERMITTED WITH PRIOR APPROVAL BY OWNER/BUILDER.
9. WHERE CONSTRUCTION DETAILS FOR A PART OF THIS PROJECT ARE NOT SHOWN THE WORK SHALL BE THE SAME AS OTHER SIMILAR WORK FOR WHICH DETAILS ARE SHOWN.
10. INSULATION SHALL BE PROTECTED FROM DAMAGE, INCLUDING THAT DUE TO SUNLIGHT, MOISTURE, EQUIPMENT MAINTENANCE, AND WIND.
11. FACTORY BUILT FIREPLACES SHALL COMPLY AND BE INSTALLED PER MANUFACTURERS SPECIFICATIONS AND CALIFORNIA GREEN BUILDING STANDARDS CODE, SECTION 4.503.1.
12. FOR INFILTRATION CONTROL ALL OPENINGS AND PENETRATIONS MUST BE CAULKED AND SEALED, SUCH AS AROUND WINDOWS, AT SOLE PLATES AND AROUND OPENINGS FOR UTILITY PIPES AND WIRES.

USE AND OCCUPANCY CLASSIFICATION

1. CLASSIFICATION OF STRUCTURES AS TO USE AND OCCUPANCY ARE AS FOLLOWS:

GROUP R-3	AS DESCRIBE IN C.B.C. SECTION 310
GROUP U	AS DESCRIBE IN C.B.C. SECTION 312

SPECIAL DETAILED REQUIREMENTS BASED ON USE AND OCCUPANCY

1. GARAGES SHALL CONTAIN NO OPENINGS INTO ROOMS USED FOR SLEEPING PURPOSES. DOOR OPENINGS BETWEEN A GARAGE AND THE DWELLING UNIT SHALL BE EQUIPPED WITH A 20 MINUTE RATED DOOR NOT LESS THAN 1 3/8" THICK. DOORS SHALL BE SELF-CLOSING AND SELF-LATCHING PER C.R.C. SECTION R302.5.1.
2. GARAGES SHALL BE SEPARATED FROM THE DWELLING UNIT AND ITS ATTIC AREA BY MEANS OF A MINIMUM 1/2" GYPSUM BOARD APPLIED TO THE GARAGE SIDE. GARAGES BENEATH HABITABLE ROOMS SHALL BE SEPARATED FROM ALL HABITABLE ROOMS ABOVE BY NOT LESS THAN 5/8" TYPE 'X' GYPSUM BOARD PER C.R.C. SECTION R302.6.
3. DUCTS IN A GARAGE AND DUCTS PENETRATING THE WALLS OR CEILINGS SEPARATING THE DWELLING UNIT FROM GARAGE SHALL BE CONSTRUCTED OF A MINIMUM NO. 26 GAGE SHEET STEEL AND HAVE NO OPENINGS INTO THE GARAGE PER C.R.C. SECTION R302.5.2.
4. AUTOMATIC GARAGE DOOR OPENERS SHALL BE LISTED IN ACCORDANCE WITH U.L. 325 PER C.R.C. SECTION R309.4.
5. CARBON MONOXIDE ALARMS ARE REQUIRED IN DWELLING UNITS AND SHALL BE INSTALLED PER C.R.C. SECTION R315.

GENERAL BUILDING HEIGHTS AND AREAS

1. THE HEIGHT AND SQUARE FOOTAGE FOR STRUCTURES ON THIS PROJECT SHALL BE LIMITED PER THIS CHAPTER. PLANS SHALL COMPLY WITH LOCAL BUILDING CODE ORDINANCES.
2. BUILDINGS SHALL BE PROVIDED WITH APPROVED ADDRESS NUMBERS OR LETTERS AND SHALL BE A MINIMUM 4" HIGH AND A MINIMUM OF 1/2" WIDE. THEY SHALL BE INSTALLED ON A CONTRASTING BACKGROUND AND BE PLAINLY VISIBLE FROM THE STREET FRONTING THE PROPERTY PER C.R.C. SECTION R319.

TYPES OF CONSTRUCTION

1. TYPE OF CONSTRUCTION FOR THIS PROJECT IS TYPE V-B.
2. WALLS BETWEEN 3'-0" AND LESS THAN 5'-0" TO THE PROPERTY LINE SHALL BE ONE-HOUR RATED CONSTRUCTED AND HAVE A MAXIMUM OF 25% OF UNPROTECTED/ PROTECTED OPENINGS PER TABLES R302.1(1) AND R302.1(2).
3. GROUP R-3 AND GROUP U OCCUPANCIES WHEN USED AS ACCESSORY TO GROUP R-3 OCCUPANCIES, SHALL NOT BE REQUIRED TO HAVE A FIRE-RESISTANCE RATING WHERE THE FIRE SEPARATION DISTANCE IS 5'-0" OR MORE; OR WHEN EQUIPPED THROUGHOUT WITH AN AUTOMATIC RESIDENTIAL FIRE SPRINKLER SYSTEM INSTALLED IN ACCORDANCE WITH C.R.C. SECTION R302.3 AND R302.6 THE FIRE-RESISTANCE RATING SHALL NOT BE REQUIRED WHERE THE FIRE SEPARATION DISTANCE IS 3'-0" OR MORE.
4. WALLS CLOSER THAN 3'-0" TO THE PROPERTY LINE SHALL BE ONE-HOUR RATED CONSTRUCTION AND HAVE NO OPENINGS.

FIRE AND SMOKE PROTECTION FEATURES

C.B.C. SECTION 703

1. THE FIRE-RESISTANCE RATING OF BUILDING ELEMENTS SHALL BE AS SET FORTH IN THIS SECTION.

C.B.C. SECTION 704

1. THE FIRE-RESISTANCE RATING OF STRUCTURAL MEMBERS AND ASSEMBLIES SHALL COMPLY WITH THIS SECTION.

C.R.C. SECTION R302

1. EXTERIOR WALLS SHALL COMPLY WITH THIS SECTION.

C.R.C. SECTION R302.11

1. FIREBLOCKING. IN COMBUSTIBLE CONSTRUCTION, FIREBLOCKING SHALL BE INSTALLED TO CUT OFF ALL CONCEALED DRAFT OPENINGS (BOTH VERTICAL AND HORIZONTAL) AND FORM AN EFFECTIVE BARRIER BETWEEN FLOORS, BETWEEN A TOP STORY AND A ROOF OR ATTIC SPACE. FIREBLOCKING SHALL BE INSTALLED IN THE LOCATIONS SPECIFIED IN C.R.C. SECTION R302.11.
2. FIREBLOCKS, WHERE REQUIRED, SHALL BE PROVIDED IN THE FOLLOWING LOCATIONS:
   - A. IN CONCEALED SPACES OF STUD WALLS AND PARTITIONS, INCLUDING FURRED SPACES, AT THE CEILING AND FLOOR LEVELS AND AT 10'-0" INTERVALS BOTH VERTICAL AND HORIZONTAL.
   - B. AT ALL INTERCONNECTIONS BETWEEN CONCEALED VERTICAL AND HORIZONTAL SPACES SUCH AS OCCUR AT SOFFITS, DROP CEILINGS AND COVE CEILINGS.
   - C. IN CONCEALED SPACES BETWEEN STAIR STRINGERS AT THE TOP AND BOTTOM OF THE RUN AND BETWEEN STUDS ALONG AND IN LINE WITH THE RUN OF STAIRS IF THE WALLS UNDER THE STAIRS.
   - D. IN OPENINGS AROUND VENTS, PIPES, DUCTS, CHIMNEYS, FIREPLACES AND SIMILAR OPENINGS WHICH AFFORD A PASSAGE FOR FIRE AT CEILING AND FLOOR LEVELS, WITH NON COMBUSTIBLE MATERIALS.
   - E. AT OPENINGS BETWEEN ATTIC SPACES AND CHIMNEY CHASES FOR FACTORY-BUILT CHIMNEYS PER UL 103 AND UL 127.
3. FIREBLOCK AND CONSTRUCTION:
   - A. FIRE BLOCKING SHALL CONSIST OF 2 INCHES NOMINAL LUMBER OR TWO THICKNESSES OF 1-INCH NOMINAL LUMBER WITH BROKEN LAP JOINTS OR ONE THICKNESS OF 23/32-INCH WOOD STRUCTURAL PANEL WITH JOINTS BACKED BY 23/32-INCH WOOD STRUCTURAL PANEL OR ONE THICKNESS OF 3/4-INCH PARTICLEBOARD WITH JOINTS BACKED BY 3/4-INCH PARTICLEBOARD.
   - B. FIRE BLOCKS MAY ALSO BE OF 1/2-INCH GYPSUM BOARD, 1/4-INCH CEMENT-BASED MILLBOARD, BATTS OR BLANKETS OF MINERAL WOOL, MINERAL FIBER OR OTHER APPROVED MATERIALS INSTALLED IN SUCH A MANNER AS TO BE SECURELY RETAINED IN PLACE.

C.R.C. SECTIONS R302.10.1 AND R302.10.5

1. ALL INSULATION SHALL HAVE A FLAME-SPREAD INDEX OF NOT MORE THAN 25 AND A SMOKE-DEVELOPED INDEX OF MORE THAN 450 WHEN TESTED IN ACCORDANCE WITH ASTME 84 OR UL 723.

MATERIALS AND CONSTRUCTION METHODS FOR EXTERIOR WILDFIRE EXPOSURE

C.B.C. CHAPTER 7A

1. ONLY APPLIES IF THE PROJECT IS LOCATED WITHIN A WILDLAND-URBAN INTERFACE FIRE AREA AS DEFINED IN SECTION 702A.

INTERIOR FINISHES

1. INTERIOR WALL AND CEILING FINISH MATERIALS SHALL BE CLASSIFIED IN ACCORDANCE WITH ASTM E 84 OR UL 723. GROUP R-3 INTERIOR WALL AND CEILING FINISH SHALL BE A CLASS 'C' PER C.R.C. SECTION 302.9. CLASS 'C' - FLAME SPREAD INDEX = 76 - 200; SMOKE-DEVELOPED INDEX = 0 - 450.

FIRE PROTECTION SYSTEMS

1. AN AUTOMATIC SPRINKLER SYSTEM INSTALLED IN ACCORDANCE WITH SECTION 903.3.1.3 SHALL BE PROVIDED THROUGHOUT ALL BUILDINGS WITH A GROUP R FIRE AREA PER C.R.C. SECTION R313.
2. ATTACHED GARAGES, ACCESSORY TO GROUP R-3 OCCUPANCIES, SHALL BE PROTECTED BY RESIDENTIAL FIRE SPRINKLERS IN ACCORDANCE WITH THIS SECTION. RESIDENTIAL FIRE SPRINKLERS SHALL BE CONNECTED TO, AND INSTALLED IN ACCORDANCE WITH, AN AUTOMATIC RESIDENTIAL FIRE SPRINKLER SYSTEM THAT COMPLIES WITH SECTION R313 OF THE CALIFORNIA RESIDENTIAL CODE OR WITH NFPA 13D PER C.R.C. SECTION R309.6.
3. SPRINKLER PROTECTION SHALL BE PROVIDED FOR EXTERIOR BALCONIES, DECKS AND GROUND FLOOR PATIOS OF DWELLING UNITS WHERE THE BUILDING IS OF TYPE V CONSTRUCTION, PROVIDED THERE IS A ROOF OR DECK ABOVE PER C.R.C. SECTION R313.3.1.1.
4. SINGLE- OR MULTIPLE-STATION SMOKE ALARMS SHALL BE INSTALLED AND MAINTAINED AT ALL THE FOLLOWING LOCATIONS PER C.R.C. SECTION R314.3.
   - a. ON THE CEILING OR WALL OUTSIDE OF EACH SEPARATE SLEEPING AREA IN THE IMMEDIATE VICINITY OF BEDROOMS.
   - b. IN EACH ROOM USED FOR SLEEPING PURPOSES
   - c. IN EACH STORY WITHIN A DWELLING UNIT, INCLUDING BASEMENTS.
5. SMOKE ALARMS TO BE INTERCONNECTED IN SUCH A MANNER THAT THE ACTIVATION OF ONE ALARM WILL ACTIVATE ALL THE ALARMS IN THE INDIVIDUAL UNIT PER C.R.C. SECTION R314.5.
6. SMOKE ALARMS SHALL RECEIVE THEIR PRIMARY POWER FROM THE BUILDING WIRING WHERE SUCH WIRING IS SERVED FROM A COMMERCIAL SOURCE AND SHALL BE EQUIPPED WITH A BATTERY BACKUP PER C.R.C. SECTION R314.4.

MEANS OF EGRESS

1. ALL REQUIRED EXITS SHALL BE OPENABLE FROM THE INSIDE WITHOUT THE USE OF A KEY OR ANY SPECIAL KNOWLEDGE OR EFFORT PER C.R.C. SECTION R311.2
2. IN GROUP R-3 OCCUPANCIES, THE MAXIMUM RISER HEIGHT SHALL BE 7 3/4"; THE MINIMUM TREAD DEPTH SHALL BE 10"; AND THE MINIMUM WINDER TREAD DEPTH AT THE WALKLINE SHALL BE 10" AND THE MINIMUM WINDER TREAD DEPTH SHALL BE 6". A NOSING NOT LESS THAN 3/4" BUT NOT MORE THAN 1-1/4" SHALL BE PROVIDED ON STAIRWAYS WITH SOLID RISERS WHERE THE TREAD IS LESS THAN 11 INCHES. C.R.C. SECTION R311.7.4
3. THE RADIUS OF CURVATURE AT THE LEADING EDGE OF THE TREAD SHALL NOT BE GREATER THAN 9/16". PER C.R.C. SECTION R311.7.5.3.
4. ALL STAIRWAYS SHALL BE BUILT OF MATERIALS CONSISTENT WITH THE TYPES PERMITTED FOR THE TYPE OF CONSTRUCTION OF THE BUILDING PER C.B.C. SECTION 1009.6.
5. SPACES UNDER STAIRWAYS SERVING AND CONTAINED WITHIN A SINGLE RESIDENTIAL DWELLING UNIT IN GROUP R-3 SHALL BE PROTECTED ON THE ENCLOSED SIDE WITH 1/2" GYPSUM BOARD PER C.R.C. SECTION R302.7.
6. HANDRAILS SHALL BE PLACED NOT LESS THAN 34" OR MORE THAN 38" PER C.R.C. SECTION R311.7.8.1.
7. HANDRAILS SHALL BE TYPE I IN ACCORDANCE WITH C.R.C. SECTION 311.7.8.3, TYPE II IN ACCORDANCE WITH C.R.C. SECTION 311.7.8.3.
8. CLEAR SPACE BETWEEN A HANDRAIL AND A WALL OR OTHER SURFACE SHALL BE A MINIMUM OF 1-1/2" PER C.R.C. SECTION 311.7.8.2.
9. REQUIRED GUARDS AT OPEN-SIDED WALKING SURFACES, INCLUDING STAIRS, PORCHES, BALCONIES OR LANDINGS, SHALL BE NOT LESS THAN 42 INCHES (1067 MM) HIGH MEASURED VERTICALLY ABOVE THE ADJACENT WALKING SURFACE, ADJACENT FIXED SEATING OR THE LINE CONNECTING THE LEADING EDGES OF THE TREADS PER C.R.C. SECTION R312.1.2.

   EXCEPTIONS: 1. GUARDS ON THE OPEN SIDES OF STAIRS SHALL HAVE A HEIGHT NOT LESS THAN 34" (864 MM) MEASURED VERTICALLY FROM A LINE CONNECTING THE LEADING EDGES OF THE TREADS.

   2. WHERE THE TOP OF THE GUARD ALSO SERVES AS A HANDRAIL ON THE OPEN SIDES OF STAIRS, THE TOP OF THE GUARD SHALL NOT BE LESS THAN 34 INCHES (864 MM) AND NOT MORE THAN 38 INCHES (965 MM) MEASURED VERTICALLY FROM A LINE CONNECTING THE LEADING EDGES OF THE TREADS.
10. REQUIRED GUARDS SHALL NOT HAVE OPENINGS FROM THE WALKING SURFACE TO THE REQUIRED GUARD HEIGHT WHICH ALLOW PASSAGE OF A SPHERE 4 4 INCHES (102 MM) IN DIAMETER, PER C.R.C., SECTION 312.1.3.

    EXCEPTIONS: 1. THE TRIANGULAR OPENINGS AT THE OPEN SIDE OF STAIR, FORMED BY THE RISER, TREAD AND BOTTOM RAIL OF A GUARD, SHALL NOT ALLOW PASSAGE OF A SPHERE 6 INCHES (153 MM) IN DIAMETER.

    2. GUARDS ON THE OPEN SIDE OF STAIRS SHALL NOT HAVE OPENINGS WHICH ALLOW PASSAGE OF A SPHERE 4-3/8 INCHESS (111 MM) IN DIAMETER.
11. ALL EMERGENCY ESCAPE AND RESCUE OPENINGS SHALL HAVE A MINIMUM NET CLEAR OPENABLE AREA OF 5.7 SQUARE FEET. THE MINIMUM NET CLEAR OPENABLE HEIGHT DIMENSION SHALL BE 24". THE MINIMUM NET CLEAR OPENABLE WIDTH DIMENSION SHALL BE 20". WHEN WINDOWS ARE PROVIDED AS A MEANS OF ESCAPE OR RESCUE, THEY SHALL HAVE THE BOTTOM OF THE CLEAR OPENING NOT MORE THAN 44" ABOVE T HE FLOOR PER C.R.C. SECTION R310.1.
12. ALL EMERGENCY ESCAPE AND RESCUE OPENINGS SHALL HAVE A MINIMUM NET CLEAR OPENING OF 5.7 SQUARE FEET (0.530 M^2) PER C.R.C., SECTION R310.1.1.

    EXCEPTIONS: GRADE FLOOR OPENINGS SHALL HAVE A MINIMUM NET CLEAR OPENING OF 5 SQUARE FEET (0.465 M^2).

INTERIOR ENVIRONMENT

1. PROVIDE A MINIMUM 22" X 30" ATTIC ACCESS OPENING IN ATTIC AREAS EXCEEDING 30 SQ. FT. AND WHOSE MAXIMUM CLEAR HEIGHT EXCEEDS 30". PROVIDE 30" MINIMUM HEADROOM ABOVE EACH SUCH OPENING PER C.R.C. SECTION R807.1 AND C.P.C. SECTION 504.9.

EXTERIOR WALLS

1. EXTERIOR WALLS SHALL PROVIDE THE BUILDING WITH A WEATHER-RESISTANT EXTERIOR ENVELOPE. THE EXTERIOR WALL ENVELOPE SHALL INCLUDE FLASHING, AS DESCRIBED IN C.R.C. SECTION R703.8. THE EXTERIOR WALL ENVELOPE SHALL BE DESIGNED AND CONSTRUCTED IN SUCH A MANNER AS TO PREVENT THE ACCUMULATION OF WATER WITHIN THE WALL ASSEMBLY BY PROVIDING A WATER-RESISTIVE BARRIER BEHIND THE EXTERIOR VENEER, AS DESCRIBED IN C.R.C. SECTION R703.2, AND A MEANS FOR DRAINING WATER THAT ENTERS THE ASSEMBLY TO THE EXTERIOR. PROTECTION AGAINST CONDENSATION IN THE EXTERIOR WALL ASSEMBLY SHALL BE PROVIDED IN ACCORDANCE WITH C.R.C. SECTION R703.1.
2. ONE LAYER OF NO. 15 ASPHALT FELT, FREE FROM HOLES AND BREAKS, COMPLYING WITH ASTM D 226 FOR TYPE 1 FELT OR OTHER APPROVED WATER-RESISTIVE BARRIER SHALL BE APPLIED OVER STUDS OR SHEATHING OF ALL EXTERIOR WALLS. SUCH FELT OR MATERIAL SHALL BE APPLIED HORIZONTALLY WITH THE UPPER LAYER LAPPED OVER THE LOWER LAYER NOT LESS THAN 2 INCHES (51 MM). WHERE JOINTS OCCUR, FELT SHALL BE LAPPED NOT LESS 6 INCHES (152 MM). THE FELT OR OTHER APPROVED MATERIAL SHALL BE CONTINUOUS TO THE TOP OF WALLS AND TERMINATED AT PENETRATIONS AND BUILDING APPENDAGES IN A MANNER TO MEET THE REQUIREMENTS OF THE EXTERIOR WALL ENVELOPE AS DESCRIBED IN THE C.R.C., SECTION R703.1, PER THE C.R.C., SECTION R703.2.
3. PROTECTION OF WOOD AND WOOD BASED PRODUCTS FROM DECAY SHALL BE PROVIDED IN THE FOLLOWING LOCATIONS BY THE USE OF NATURALLY DURABLE WOOD OR WOOD THAT IS PERSERVATIVE-TREATED IN ACCORDANCE WITH AWPA U1 FOR THE SPECIES, PRODUCT, PRESERVATIVE AND END USE. PRESERVATIVES SHALL BE LISTED IN SECTION 4 OF AWPA U1, PER C.R.C., SECTION R317.1.
   - 1.) WOOD JOISTS OR THE BOTTOM OF A WOOD STRUCTURAL FLOOR WHEN CLOSER THAN 18 INCHES (457 MM) OR WOOD GIRDERS WHEN CLOSER THAN 12 INCHES (305 MM) TO THE EXPOSED GROUND IN CRAWL SPACES OR UNEXCAVATED AREA LOCATED WITHIN THE PERIPHERY OF THE BUILDING FOUNDATION.
   - 2.) ALL WOOD FRAMING MEMEBERS THAT REST ON CONCRETE OR MASONRY EXTERIOR FOUNDATION WALLS AND ARE LESS THAN 8 INCHES (203 MM) FROM THE EXPOSED GROUND.
   - 3.) SILLS AND SLEEPERS ON A CONCRETE OR MASONRY SLAB THAT IS IN DIRECT CONTACT WITH THE GROUND UNLESS SEPARATED FROM SUCH SLAB BY AN IMPERVIOUS MOISTURE BARRIER.
   - 4.) THE ENDS OF WOOD GIRDERS ENTERING EXTERIOR MASONRY OR CONCRETE WALLS HAVING CLEARANCES OF LESS THAN 1/2 INCH (12.7 MM) ON TOPS, SIDES AND ENDS.
   - 5.) WOOD SIDING, SHEATHING AND WALL FRAMING ON THE EXTERIOR OF A BUILDING HAVING A CLEARANCE OF LESS THAN 6 INCHES (152 MM) FROM THE GROUND OR LESS THAN 2 INCHES (51 MM) MEASURED VERTICALLY FROM CONCRETE STEPS, PORCH SLABS, PATIO SLABS AND SIMILAR HORIZONTAL SURFACES EXPOSED TO THE WEATHER.
   - 6.) WOOD STRUCTURAL MEMBERS SUPPORTING MOISTURE-PERMEABLE FLOORS OR ROOFS THAT ARE EXPOSED TO THE WEATHER, SUCH AS CONCRETE OR MASONRY SLABS, UNLESS SEPARATED FROM SUCH FLOORS OR ROOFS BY AND IMPERVIOUS MOISTURE BARRIER.
   - 7.) WOOD FURRING STRIPS OR OTHER WOOD FRAMING MEMBERS ATTACHED DIRECTLY TO THE INTERIOR OF EXTERIOR MASONRY WALLS OR CONCRETE WALLS BELOW GRADE EXCEPT WHERE AN APPROVED VAPOR RETARDER IS APPLIED BETWEEN THE WALL AND THE FURRING STRIPS OR FRAMING MEMBERS.
4. GYPSUM BOARD AND EXTERIOR PLASTER SHALL BE INSTALLED PER C.R.C. CHAPTER 7.
5. WATER-RESISTIVE BARRIERS SHALL BE INSTALLED AS REQUIRED IN C.R.C. SECTION R703.6.3 AND, WHERE APPLIED OVER WOOD-BASED SHEATHING, SHALL INCLUDE A WATER-RESISTIVE VAPOR-PERMEABLE BARRIER WITH A PERFORMANCE AT LEAST EQUIVALENT TO 2 LAYERS OF GRADE D PAPER.

   EXCEPTION: WHERE THE WATER-RESISTIVE BARRIER IS APPLIED OVER WOOD-BASED SHEATHING HAS A WATER RESISTANCE EQUAL TO OR GREATER THAN THAT OF 60-MINUTE GRADE D PAPER AND IS SEPARATED FROM THE STUCCO BY AN INTERVENING, SUBSTANTIALLY NONWATER-ABSORBING LAYER OR DRAINAGE SPACE.

ROOF ASSEMBLIES AND ROOFTOP STRUCTURES

1. ROOF DECKS SHALL BE COVERED WITH AN APPROVED ROOF COVERINGS SECURED TO THE BUILDING OR STRUCTURE IN ACCORDANCE WITH THE PROVISIONS OF THIS CHAPTER. ROOF COVERINGS SHALL BE DESIGNED AND INSTALLED IN ACCORDANCE WITH THE C.R.C AND THE APPROVED MANUFACTURER'S INSTRUCTIONS SUCH THAT THE ROOF COVERING SHALL SERVE TO PROTECT THE BUILDING OR STRUCTURE. C.R.C. SECTION R903.1.
2. ROOF DECKS AND ROOF COVERINGS SHALL BE DESIGNED FOR WIND LOADS IN ACCORDANCE WITH C.R.C. CHAPTER 9, SECTION R905.
3. TYPE V CONSTRUCTION REQUIRES A MINIMUM CLASS 'C' ROOF ASSEMBLY PER C.R.C CHAPTER 8 ROOF-CEILING CONSTRUCTION AND C.R.C. SECTION R902.1 ROOF COVERING MATERIALS REQUIRED TO BE LISTED BY THIS SECTION SHALL BE TESTED IN ACCORDANCE WITH ASTM E 108 OR UL 790. LOCAL CODES MAY REQUIRE UP TO A CLASS 'A' ROOF ASSEMBLY.
4. ROOF COVERINGS SHALL BE APPLIED IN ACCORDANCE WITH THE APPLICABLE PROVISIONS OF THIS SECTION AND THE MANUFACTURER'S INSTALLATION INSTRUCTIONS. C.R.C. SECTION R905.1.

GLAZING

1. ALL GLAZING SHALL CONFORM TO C.R.C. SECTION R308.
2. EACH PANE SHALL BEAR THE MANUFACTURER'S MARK DESIGNATING THE TYPE AND THICKNESS OF THE GLASS OR GLAZING MATERIAL PER C.R.C. SECTION R308.1 AND MINIMUM GLAZING REQUIREMENTS PER C.R.C. TABLES R308.3.1(1) AND R308.3.1(2).
3. SAFETY GLAZING SHALL BE PROVIDED IN ALL LOCATIONS SUBJECT TO HUMAN IMPACT AS SPECIFIED IN C.R.C. SECTION R308.3.
4. MIRRORS SHALL BE A MINIMUM OF 3/16" POLISHED PLATE GLASS.
5. HINGED GLAZED SHOWER DOORS MUST SWING OUTWARD AND SHALL BE MADE WITH TEMPERED GLASS. SHOWER DOORS SHALL OPEN SO AS TO MAINTAIN NOT LESS THAN A 22 INCH NON-OBSTRUCTED OPENING FOR EGRESS, PER C.P.C., SECTION 408.5.
6. FENESTRATION PRODUCTS (EXCEPT FIELD-FABRICATED WINDOWS) SHALL HAVE A LABEL LISTING THE CERTIFIED U-FACTOR, CERTIFIED SOLAR HEAT GAIN COEFFICIENT (SHGC), AND INFILTRATION THAT MEETS THE REQUIREMENTS OF C.R.C. SECTION 612.9.1.
7. EXTERIOR WINDOWS AND SLIDING DOORS SHALL BE TESTED AND LABELED AS CONFORMING TO AAMA/WDMA/CSA101/I.S.2/A440. THE LABEL SHALL STATE THE NAME OF THE MANUFACTURER, THE APPROVED LABELING AGENCY AND THE PROJECT DESIGNATION AS SPECIFIED IN AAMA/WDMA/CSA101/I.S.2/A440. EXTERIOR SIDE-HINGED DOORS SHALL BE TESTED AND LABELED AS CONFORMING TO AAMA/WDMA/CSA101/I.S.2/A440 ORT COMPLY WITH SECTION 1714A.5.2. PRODUCTS TESTED AND LABELED AS CONFORMING TO AAMA/WDMA/CSA101/I.S.2/A440 SHALL NOT BE SUBJECT TO THE REQUIREMENTS OF C.R.C. SECTION R612.6.
8. EXTERIOR WINDOW AND DOOR ASSEMBLIES SHALL BE TESTED IN ACCORDANCE WITH ASTM E 330. EXTERIOR WINDOW AND DOOR ASSEMBLIES CONTAINING GLASS SHALL COMPLY WITH C.R.C. SECTION R612.8. THE DESIGN PRESSURE FOR TESTING SHALL BE CALCULATED IN ACCORDANCE WITH C.R.C. TABLES R301.2(2) AND R301.2(3). EACH ASSEMBLY SHALL BE TESTED FOR 10 SECONDS AT A LOAD EQUAL TO 1.5 TIMES THE DESIGN PRESSURE.

PLUMBING

CHAPTER 3

1. ALL PIPE, PIPE FITTINGS, TRAPS, FIXTURES, MATERIAL AND DEVICES USED IN A PLUMBING SYSTEM SHALL BE LISTED OR LABELED (THIRD-PARTY CERTIFIED) BY A LISTING AGENCY (ACCREDITED CONFORMITY ASSESSMENT BODY) AND SHALL CONFORM TO APPROVED APPLICABLE RECOGNIZED STANDARDS REFERENCED IN THIS CODE, AND SHALL BE FREE FROM DEFECTS, UNLESS OTHERWISE PROVIDED IN THIS CODE, ALL MATERIALS, FIXTURES OR DEVICES USED OR ENTERING INTO THE CONSTRUCTION OF PLUMBING SYSTEMS, OR PARTS THEREOF, SHALL BE SUBMITTED TO THE AUTHORITY HAVING JURISDICTION FOR APPROVAL. C.P.C. SECTION 301.1.1.

CHAPTER 4

1. FLOW RATES FOR SHOWER HEADS, FAUCETS AND WATER CLOSETS ARE TO PER THE 2013 GREEN BUILDING STANDARDS REFER TO SECTION 4.303.1 OF THE GREEN BUILDING STANDARDS CODE FOR FIXTURE FLOW RATES.
2. EACH TOILET SHALL BE LOCATED IN A CLEAR SPACE NOT LESS THAN 30" WIDE AND SHALL HAVE A CLEAR SPACE IN FRONT OF NOT LESS THAN 24". PER C.P.C. SECTION 402.5.
3. THE MAXIMUM HOT WATER TEMPERATURE DISCHARGING FROM THE BATHTUB FILLER SHALL BE LIMITED TO 120 DEGREES FAHRENHEIT BY A DEVICE THAT CONFORMS TO ASSE 1070. THE WATER HEATER THERMOSTAT SHALL NOT BE CONSIDERED A CONTROL MEETING THIS PROVISION. C.P.C. SECTION 409.4.
4. CONTROL VALVE FOR SHOWERS AND TUB-SHOWERS SHALL BE OF THE PRESSURE BALANCE OR THERMOSTATIC MIXING VALVE TYPE PER C.P.C. SECTION 408.3.

CHAPTER 5

1. AIR FOR COMBUSTION FOR GAS APPLIANCES INSTALLED IN BUILDINGS SHALL BE OBTAINED BY METHODS IN THIS SECTION. STANDARD METHOD IS THE REQUIRED VOLUME SHALL NOT BE LESS THAN 50 CUBIC FEET PER 1,000 BTU/HOUR. [NFPA 54.9.3.2.1] C.P.C. SECTION 506.2.1.
2. WATER HEATERS SHALL BE ANCHORED OR STRAPPED TO RESIST HORIZONTAL DISPLACEMENT DUE TO EARTHQUAKE MOTION PER C.P.C. SECTION 507.2.
3. ALL WATER HEATERS SHALL BE ANCHORED OR STRAPPED TO RESIST HORIZONTAL DISPLACEMENT DUE TO EARTHQUAKE MOTION. STRAPPING SHALL BE AT POINTS WITHIN THE UPPER ONE THIRD AND LOWER ONE-THIRD OF ITS VERTICAL DIMENSIONS. AT THE LOWER POINT, A MINIMUM DISTANCE OF 4" SHALL BE MAINTAINED ABOVE THE CONTROLS WITH THE STRAPPING PER C.P.C., SECTION 507.2.
4. WATER HEATERS LOCATED IN RESIDENTIAL GARAGES SHALL BE INSTALLED SO THAT THE BURNERS AND BURNER-IGNITION DEVICES ARE LOCATED NOT LESS THAN 18" ABOVE THE FLOOR UNLESS LISTED AS A FLAMMABLE VAPOR IGNITION RESISTANT. [NFPA 54:9.1.10.1] PER C.P.C. SECTION 507.13.
5. ALL HOT WATER LINES RUNNING FROM TANK TO THE KITCHEN MUST BE INSULATED. INSULATION REQUIREMENTS ARE DEPENDANT ON THE PIPE DIAMETER PER B.E.S., SECTION 151(f)8D..
6. PARALLEL PIPING SYSTEMS THAT FEATURE A MANIFOLD WILL REQUIRE A 15-FOOT MAXIMUM PIPE LENGTH BETWEEN WATER HEATER AND MANIFOLD.
7. RECIRCULATION SYSTEMS REQUIRE PIPE INSULATION PER B.E.S., SECTION 150(j).
8. FIRST FIVE FEET OF PIPE FROM THE WATER HEATER SHALL BE INSULATED (HOT AND COLD).

   EXCEPTION: - PIPING IN EXTERIOR WALLS.
   PIPING BURIED UNDER 4" OF CEILING INSULATION.
9. PROVIDE PLUMBING FOR HOT AND COLD WATER AND WASTE LINE AT THE WASHING MACHINE LOCATION PER PLAN.
10. WHERE ANY 2" VENT RUNS HORIZONTALLY THROUGH WALL STUDS, THE MINIMUM STUD SIZE OF 2X6 SHALL BE USED FOR THE PLUMBING WALL.
11. FRACTORY-BUJILT CHIMNEYS SHALL BE INSTALLED IN ACCORDANCE WITH THEIR LISTINGS AND THE MANUFACTURER'S INSTRUCTIONS. C.P.C. SECTION 510.5
12. A GAS VENT PASSING THROUGH A ROOF SHALL EXTEND THROUGH THE ENTIRE ROOF FLASHING, ROOF JACK OR ROOF THIMBLE AND BE TERMINATED WITH A LISTED TERMINATION CAP. [NFPA 54:12.7.2(6)] C.P.C. SECTION 509.6. GAS VENTS 12" IN SIZE OR SMALLER SHALL TERMINATE IN ACCORDANCE WITH FIGURE 5-2, PROVIDED THEY ARE AT LEAST 8'-0" FROM A VERTICAL WALL OR SIMILAR OBSTRUCTION. C.P.C. SECTION 510.6.2

CHAPTER 6

1. ALL HOSE BIBBS AND IRRIGATION SYSTEMS SHALL BE EQUIPPED WITH APPROVED BACKFLOW / ANTI-SIPHON DEVICES. DEVICES INSTALLED FOR THE PREVENTION OF BACKFLOW OR SIPHONAGE SHALL CONFORM TO C.P.C. SECTION 603.0.
2. PIPE, TUBE AND FITTINGS CARRYING WATER USED IN POTABLE WATER SYSTEMS INTENDED TO SUPPLY DRINKING WATER SHALL MEET THE REQUIREMENTS OF NSF 61, STANDARD FOR DRINKING WATER SYSTEM COMPONENTS, AS FOUND IN TABLE 604.1. C.P.C. SECTION 604.0
3. VALVES UP TO AND INCLUDING 2" IN SIZE SHALL BE BRASS OR OTHER APPROVED MATERIAL. C.P.C. SECTION 606.1
4. JOINTS AND CONNECTIONS TO BE PER C.P.C. SECTION 605.
5. WATER HEATERS SHALL BE PROVIDED WITH AN APPROVED TEMPERATURE AND PRESSURE RELIEF (PTR) VALVE SET AT NOT MORE THAN 150 PSI, WITH UN-TRAPPED, GRAVITY-FRAINED DISCHARGE PIPING OF THE SAME DIAMETER TERMINATING OUTSIDE THE BUILDING NOT MORE THAN 2'-0" NOR LESS THAN 6" ABOVE THE GROUND AND POINTING DOWNWARD PER C.P.C. SECTIONS 608.3, 608.4, 608.5 AND 608.6.
6. PROVIDE DEVICES TO ABSORB HIGH PRESSURES RESULTING FROM THE QUICK CLOSING OF THE QUICK-ACTING VALVES FROM THE WASHER AND DISHWASHER, ETC. PER C.P.C. SECTION 609.10.

CHAPTER 7

1. DRAINAGE SYSTEMS TO BE PER C.P.C. CHAPTER 7, SECTION 701.0 THROUGH SECTION 712.0
2. BUILDING SEWER TO BE PER C.P.C. CHAPTER 7, SECTION 713.0 THROUGH SECTION 723.0

CHAPTER 9

1. EACH PLUMBING FIXTURE TRAP, EXCEPT AS OTHERWISE PROVIDED IN THE CALIFORNIA PLUMBING CODE, SHALL BE PROTECTED AGAINST SIPHONAGE AND BACK-PRESSURE, AND AIR CIRCULATION SHALL BE ENSURED THROUGHOUT ALL PARTS OF THE DRAINAGE SYSTEM BY MEANS OF VENT PIPES INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF CHAPTER 9 OF THE CALIFORNIA PLUMBING CODE.
2. EACH VENT PIPE OR STACK SHALL EXTEND THROUGH ITS FLASHING AND SHALL TERMINATE VERTICALLY NOT LESS THAN 6" ABOVE THE ROOF NOR LESS THAN 1'-0" FROM ANY VERTICAL SURFACE. C.P.C. SECTION 906.1
3. EACH VENT SHALL TERMINATE NOT LESS THAN 10'-0" FROM, OR NOT LESS THAN 3'-0" ABOVE, ANY OPENABLE WINDOW, DOOR, OPENING, AIR INTAKE, OR VENT SHAFT, OR NOT LESS THAN 3'-0" IN EVERY DIRECTION FROM ANY LOT LINE, ALLEY AND STREET EXCEPTED. C.P.C. SECTION 906.2

CHAPTER 10

1. EACH PLUMBING FIXTURE, EXCEPTING THOSE HAVING INTEGRAL TRAPS OR AS PERMITTED IN SECTION 1001.2 IN THE CALIFORNIA PLUMBING CODE, SHALL BE SEPARATELY TRAPPED BY AN APPROVED TYPE OF WATER SEAL TRAP. NOT MORE THAN ONE TRAP SHALL BE PERMITTED ON A TRAP ARM. C.P.C. SECTION 1001.1.

MATERIALS AND CONSTRUCTION METHODS FOR EXTERIOR WILDFIRE EXPOSURE

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CHAPTER 7A

1. MATERIALS AND MATERIAL ASSEMBLIES TESTED IN ACCORDANCE WITH THE REQUIREMENTS OF SECTION 703A SHALL BEAR AN IDENTIFICATION LABEL SHOWING THE FIRE TEST RESULTS. THAT IDENTIFICATION LABEL SHALL BE ISSUED BY A TESTING AND/ OR INSPECTING AGENCY APPROVED BY THE STATE FIRE MARSHALL.
2. THE USE OF PAINTS, COATINGS, STAINS OR OTHER SURFACE TREATMENTS ARE NOT AN APPROVED METHOD OF PROTECTION AS REQUIRED IN CHAPTER 7A.
3. WHERE THE ROOF PROFILE ALLOWS A SPACE BETWEEN THE ROOF COVERING AND THE ROOF DECKING, THE SPACES SHALL BE CONSTRUCTED TO PREVENT THE INTRUSION OF FLAMES AND EMBERS, BE FIRESTOPPED WITH AN APPROVED MATERIALS OR HAVE ONE LAYER OF MINIMUM 72 POUND MINERAL-SURFACED NONPERFORATED CAP SHEET COMPLYING WITH ASTM D 3909 INSTALLED OVER THE COMBUSTIBLE DECKING.
4. WHEN GUTTERS ARE USED, THEY SHALL BE PROVIDED WITH A MEANS TO PREVENT THE ACCUMULATION OF LEAVES AND DEBRIS IN THE GUTTER.
5. THE ENFORCING AGENCY MAY ACCEPT OR APPROVE SPECIAL EAVE AND CORNICE VENTS THAT RESIST THE INTRUSION OF FLAME AND BURNING EMBERS, OTHERWISE VENTS SHALL NOT BE INSTALLED ON THE UNDERSIDE OF EAVES AND CORNICES.
6. EXTERIOR WALL COVERINGS SHALL EXTEND FROM THE TOP OF THE FOUNDATION TO THE ROOF, AND TERMINATE AT 2 INCH NOMINAL SOLID WOOD BLOCKING BETWEEN RAFTERS AT ALL ROOF OVERHANGS, OR IN THE CASE OF ENCLOSED EAVES, TERMINATE AT THE ENCLOSURE.
7. EXTERIOR PORCH CEILINGS, FLOOR PROJECTIONS AND THE UNDERSIDE OF APPENDAGES SHALL BE PROTECTED BY ONE OF THE FOLLOWING:
   1. NONCOMBUSTIBLE MATERIAL.
   2. IGNITION-RESISTANT MATERIAL.
   3. ONE LAYER OF 5/8-INCH TYPE X GYPSUM SHEATHING APPLIED BEHIND THE EXTERIOR COVERING.
8. ALL GLAZING IN WINDOWS, WINDOW WALLS, AND GLAZING WITHIN DOORS SHALL HAVE ONE OF THE DUAL PANES OF GLASS TEMPERED.
9. EXTERIOR DOORS SHALL HAVE A FIRE-RESISTANCE RATING OF NOT LESS THAN 20 MINUTES WHEN TESTED ACCORDING TO NFPA 252.
10. ROOFING MATERIALS SHALL BE NON-COMBUSTIBLE OR HAVE A CLASS 'A' TYPE ROOFING.

RESUBMITTAL
FEB 16 2017
San Mateo County
Building Inspection

REVIEWED FOR CODE COMPLIANCE
This review does not authorize violation of State or County building laws.
NOV 13 2019
SAN MATEO CO. BLDG. INSP. DIV.
John Brennan

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GENERAL NOTES

REVISIONS	
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MARK H. GROSS
C-24313
Ren. 9-30-17

ALL DIMENSIONS & CONDITIONS ARE TO BE VERIFIED BY CONTRACTOR BEFORE START OF CONSTRUCTION.

DESIGNED BY

DRAWN BY

CHECKED BY

JOB NO.
4276

DATE
NOVEMBER 3, 2014

SHEET NO.
GN-1

ELECTRICAL

1. ALL SYSTEMS, CIRCUITS AND EQUIPMENT SHALL BE GROUNDED PER C.E.C. ARTICLE 250-52.
   SYSTEM GROUNDING:
   PROVIDE ACCESSIBLE JUNCTION BOX AND WIRING FOR GROUNDING EACH MAIN ELECTRICAL SERVICES TO REINFORCING BARS IN CONCRETE FOOTING (ONE ADDITIONAL #4 BAR - 20' LONG IN FOOTING FOR UFER GROUND).
2. ALL 125-VOLT, SINGLE-PHASE, 15- AND 20- AMPERE RECEPTACLES INSTALLED IN BATHROOMS, GARAGES, ACCESSORY BUILDINGS - THAT HAVE A FLOOR LOCATED AT OR BELOW GRADE LEVEL NOT INTENDED AS HABITABLE ROOMS AND LIMITED TO STORAGE AREAS, WORK AREAS AND AREAS OF SIMILAR USE, OUTDOORS, CRAWL SPACES - AT OR BELOW GRADE LEVEL, UNFINISHED BASEMENTS, KITCHENS, SINKS -LOCATED IN AREAS OTHER THAN KITCHENS WHERE RECEPTACLES ARE INSTALLED WITHIN 1.8 M (6 FT) OF THE OUTSIDE EDGE OF THE SINK, AND BOATHOUSES SHALL HAVE GROUND-FAULT CIRCUIT-INTERRUPTER PROTECTION FOR PERSONNEL, PER C.E.C. SECTION 210.8(A)
3. ALL CONDUCTORS CLOSER THAN 1 1/4" TO THE EDGE OF THE FRAMING MEMBERS SHALL BE PROTECTED WITH A STEEL PLATE AT LEAST 1/16" THICK.
4. ANY FIXTURE WEIGHING MORE THAN 50 LBS. SHALL BE SUPPORTED INDEPENDENTLY OF THE OUTLET BOX. C.E.C. ARTICLE 314.27(A)(2).
5. ALL FIXTURES INSTALLED IN WET LOCATIONS SHALL BE MARKED "SUITABLY FOR WET LOCATIONS". ALL FIXTURES INSTALLED IN DAMP LOCATIONS SHALL BE MARKED "SUITABLE FOR WET LOCATIONS" OR "SUITABLE FOR DAMP LOCATIONS" PER C.E.C. ARTICLE 410.10 (A).
6. ALL ELECTRICAL MATERIALS AND CONSTRUCTION METHODS SHALL COMPLY WITH THE 2013 CALIFORNIA ELECTRICAL CODE.
7. SMOKE DETECTORS SHALL BE LOCATED PER C.R.C., SECTION R314.3 AND SECTION R314.3.4:
   A. IN EACH SLEEPING ROOM.
   B. OUTSIDE EACH SEPARATE SLEEPING AREA IN THE IMMEDIATE VICINITY OF THE BEDROOMS.
   C. ON EACH ADDITIONAL STORY OF THE DWELLING, INCLUDING BASEMENTS AND HABITABLE ATTICS BUT NOT INCLUDING CRAWL SPACES AND UNINHABITABLE ATTICS. IN DWELLINGS OR DWELLING UNITS WITH SPLIT LEVELS AND WITHOUT AN INTERVENING DOOR BETWEEN THE ADJACENT LOWER LEVEL PROVIDED THAT THE LOWER LEVEL IS LESS THAN ONE FULL STORY BELOW THE UPPER LEVEL.
   D. SMOKE ALARMS AND SMOKE DETECTORS SHALL NOT BE LOCATED WHERE AMBIENT CONDITIONS, INCLUDING HUMIDITY AND TEMPERATURE, ARE OUTSIDE THE LIMITS SPECIFIED BY THE MANUFACTURER'S PUBLISHED INSTRUCTIONS.
   E. SMOKE ALARMS AND SMOKE DETECTORS SHALL NOT BE LOCATED WITHIN UNFINISHED ATTICS OR GARAGES OR IN OTHER SPACES WHERE TEMPERATURES CAN FALL BELOW 40 DEGREES F (4 DEGREES C) OR EXCEED 100 DEGREES F (38 DEGREES C).
   F. WHERE THE MOUNTING SURFACE COULD BECOME CONSIDERABLY WARMER OR COOLER THAN THE ROOM, SUCH AS A POORLY INSULATED CEILING BELOW AN UNFINISHED ATTIC OR AN EXTERIOR WALL, SMOKE ALARMS AND SMOKE DETECTORS SHALL BE MOUNTED ON AN INSIDE WALL.
   G. SMOKE ALARMS OR SMOKE DETECTORS SHALL BE INSTALLED A MINIMUM OF 20 FEET HORIZONTAL DISTANCE FROM A PERMANENTLY INSTALLED COOKING APPLIANCE.
   EXCEPTION: IONIZATION SMOKE ALARMS WITH AN ALARMSILENCING SWITCH OR PHOTOELECTRIC SMOKE ALARMS SHALL BE PERMITTED TO BE INSTALLED 10 FEET (3 M) OR GREATER FROM A PERMANENTLY INSTALLED COOKING APPLIANCE.
   PHOTOELECTRIC SMOKE ALARMS SHALL BE PERMITTED TO BE INSTALLED GREATER THAN 6 FEET (1.8 M) FROM A PERMANENTLY INSTALLED COOKING APPLIANCE WHERE THE KITCHEN OR COOKING AREA AND ADJACENT SPACES HAVE NO CLEAR INTERIOR PARTITIONS AND THE 10 FEET DISTANCES WOULD PROHIBIT THE PLACEMENT OF A SMOKE ALARM OR SMOKE DETECTOR REQUIRED BY OTHER SECTIONS OF THE CODE. SMOKE ALARMS LISTED FOR USE IN CLOSE PROXIMITY TO A PERMANENTLY INSTALLED APPLIANCE.
   H. INSTALLATION NEAR BATHROOMS. SMOKE ALARMS SHALL BE INSTALLED NOT LESS THAN A 3 FOOT (0.91 M) HORIZONTAL DISTANCE FROM THE DOOR OR OPENING OF A BATHROOM THAT CONTAINS A BATHTUB OR SHOWER UNLESS THIS WOULD PREVENT PLACEMENT OF A SMOKE ALARM REQUIRED BY OTHER SECTIONS OF THE CODE.
   I. SMOKE ALARMS SHALL NOT BE INSTALLED WITHIN A 36 INCH (910 MM) HORIZONTAL PATH FROM THE SUPPLY REGISTERS OF A FORCED AIR HEATING OR COOLING SYSTEM AND SHALL BE INSTALLED OUTSIDE OF THE DIRECT AIRFLOW FROM THOSE REGISTERS.
   J. SMOKE ALARMS AND SMOKE DETECTORS SHALL NOT BE INSTALLED WITHIN A 36 INCH (910 MM) HORIZONTAL PATH FROM THE TIP OF THE BLADE OF A CEILING-SUSPENDED (PADDLE) FAN.
   K. WHERE STAIRS LEAD TO OTHER OCCUPIED LEVELS, A SMOKE ALARM OR SMOKE DETECTOR SHALL BE LOCATED SO THAT SMOKE RISING IN THE STAIRWAY CANNOT BE PREVENTED FROM REACHING THE SMOKE ALARM OR SMOKE DETECTOR BY AN INTERVENING DOOR OR OBSTRUCTION.
   L. FOR STAIRWAYS LEADING UP FROM A BASEMENT, SMOKE ALARMS AND SMOKE DETECTORS SHALL BE LOCATED ON THE BASEMENT CEILING NEAR THE ENTRY TO THE STAIRS.
   M. FOR TRAY-SHAPED CEILINGS (COFFERED CEILINGS), SMOKE ALARMS OR SMOKE DETECTORS SHALL BE INSTALLED ON THE HIGHEST PORTION OF THE CEILING OR ON THE SLOPED PORTION OF THE CEILING WITHIN 12 INCHES (300 MM) VERTICALLY DOWN FROM THE HIGHEST POINT.
   N. SMOKE ALARMS OR SMOKE DETECTORS INSTALLED IN ROOMS WITH JOISTS OR BEAMS SHALL COMPLY WITH THE REQUIREMENTS OF N.F.P.A. 72, SECTION 17.7.3.2.4.
   O. HEAT ALARMS AND DETECTORS INSTALLED IN ROOMS WITH JOISTS OR BEAMS SHALL COMPLY WITH THE REQUIREMENTS OF N.F.P.A. 72, SECTION 17.6.3.
8. SMOKE ALARMS SHALL RECEIVE THEIR PRIMARY POWER FROM THE BUILDING WIRING PROVIDED THAT SUCH WIRING IS SERVED FROM A COMMERCIAL SOURCE AND SHALL BE EQUIPPED WITH A BATTERY BACKUP. SMOKE ALARMS EQUIPPED WITH INTEGRAL STROBES THAT ARE NOT EQUIPPED WITH BATTERY BACKUP SHALL BE CONNECTED TO AN EMERGENCY ELECTRICAL SYSTEM. SMOKE ALARMS SHALL EMIT A SIGNAL WHEN THE BATTERIES ARE LOW. WIRING SHALL BE PERMANENT AND WITHOUT A DISCONNECTING SWITCH OTHER THAN AS REQUIRED FOR OVERCURRENT PROTECTION. C.R.C. SECTION R314.4.
   A. WHERE MORE THAN ONE SMOKE ALARM IS REQUIRED TO BE INSTALLED WITHIN AN INDIVIDUAL DWELLING OR SLEEPING UNIT, THE SMOKE ALARMS SHALL BE INTERCONNECTED IN SUCH A MANNER THAT THE ACTIVATION OF ONE ALARM WILL ACTIVATE ALL OF THE ALARMS IN THE INDIVIDUAL UNIT. THE ALARM SHALL BE CLEARLY AUDIBLE IN ALL BEDROOMS OVER BACKGROUND NOISE LEVELS WITH ALL INTERVENING DOORS CLOSED PER C.R.C., SECTION 314.5.
   B. COMPLY WITH MANUFACTURERS SPECIFICATIONS FOR INSTALLATION.
9. DEDICATED 20 AMP CIRCUIT SHALL BE PROVIDED TO SERVE THE REQUIRED BATHROOM RECEPTACLES PER C.E.C. ARTICLE 210.11(C)3.
10. TWO OR MORE 20 AMP SMALL APPLIANCE BRANCH CIRCUITS SHALL BE PROVIDED FOR THE KITCHEN AREA C.E.C. ARTICLE 210.52(B).
11. AT LEAST 1 ADDITIONAL 20 AMP BRANCH CIRCUIT SHALL BE PROVIDED TO SUPPLY THE LAUNDRY RECEPTACLE OUTLET REQUIRED BY C.E.C. ARTICLE 210.52(F).
12. FIXTURES IN CLOSETS SHALL COMPLY WITH C.E.C. ARTICLE 410.16.
13. ELECTRICAL CLOTHES DRYERS AND RANGES SHALL HAVE A 4 WIRE GROUNDED ELECTRICAL OUTLET PER C.E.C. ARTICLE 250.140.
14. ALL 120-VOLT, SINGLE PHASE, 15- AND 20-AMPERE BRANCH CIRCUITS SUPPLYING OUTLETS INSTALLED IN DWELLING UNIT FAMILY ROOMS, DINING ROOMS, LIVING ROOMS, PARLORS, LIBRARIES, DENS, BEDROOMS, SUNROOMS, RECREATION ROOMS, CLOSETS, HALLWAYS OR SIMILAR ROOMS SHALL BE PROTECTED BY A LISTED ARC-FAULT CIRCUIT INTERRUPTER, COMBINATION-TYPE INSTALLED TO PROVIDE PROTECTION OF THE BRANCH CIRCUIT. C.E.C. ARTICLE 210.12(A).
15. APPLIANCES ARE TO BE HARD WIRED UNLESS A FACTORY CHORD IS SUPPLIED.
16. OUTLET BOXES IN THE GARAGE CEILING SHOULD BE RATED WHEN THERE IS A SECOND FLOOR ABOVE.
17. EXTERIOR FIXTURES, DISCONNECTS, ETC. ARE TO BE CAULKED.
18. ALL WIRING SYSTEMS ARE TO BE INSTALLED PRIOR TO ROUGH INSPECTION.
19. RECEPTACLE SPACING TO COMPLY WITH C.E.C. ARTICLE 210.52.
20. A 125-VOLT, SINGLE PHASE, 15- OR 20-AMP RATED RECEPTACLE OUTLET SHALL BE INSTALLED AT AN ACCESSIBLE LOCATION FOR THE SERVICE OF HEATING, AIR CONDITIONING EQUIPMENT IN ATTICS. THE RECEPTACLE SHALL BE LOCATED ON THE SAME LEVEL AND WITHIN 25'-0" OF THE HEATING AND AIR CONDITIONING EQUIPMENT. THE RECEPTACLE SHALL NOT BE CONNECTED TO THE LOAD SIDE OF THE EQUIPMENT

    DISCONNECTING MEANS.
21. ALL AIR CONDITIONING DISCONNECTS REQUIRE A MINIMUM OF 36" WORKING CLEARANCE FOR THE DISCONNECT.
22. THE SERVICE CABLE T.V. BOX AND PHONE BOX SHALL NOT BE INSTALLED IN A REQUIRED SHEAR PANEL.
23. A MINIMUM OF 50 PERCENT OF THE TOTAL RATED WATTAGE OF PERMANENTLY INSTALLED LIGHTING IN KITCHENS SHALL BE HIGH EFFICACY.
24. PERMANENTLY INSTALLED LUMINAIRESS IN BATHROOMS, ATTACHED AND DETACHED GARAGES, LAUNDRY ROOMS, CLOSETS AND UTILITY ROOMS SHALL BE HIGH EFFICACY LUMINAIRES CONTROLLED BY A VACANCY SENSOR. 2013 CALIFORNIA ENERGY CODE, SECTION 15.

ELECTRICAL

25. PERMANENTLT INSTALLED LUMINAIRES LOCATED IN ROOMS OR AREAS OTHER THAN IN KITCHENS, BATHROOMS, GARAGES, LAUNDRY ROOMS, CLOSETS AND UTILITY ROOMS SHALL BE HIGH EFFICACY LUMINAIRES.
    EXCEPTION 1. PERMANENTLY INSTALLED LOW EFFICACY LUMINAIRES SHALL BE ALLOWED PROVIDED THAT THEY ARE CONTROLLED BY EITHER A DIMMER SWITCH THAT COMPLIES WITH THE APPLICABLE REQUIREMENTS OF SECTION 410, OR BY A MANUAL-ON OCCUPANT SENSOR THAT COMPLIES WITH THE APPLICABLE REQUIREMENTS OF SECTION 410 OF THE 2013 CALIFORNIA ENERGY CODE.
26. LUMINAIRES RECESSED INTO INSULATED CEILINGS SHALL MEET ALL OF THE FOLLOWING CONDITIONS:
    A. BE LISTED, AS DEFINED IN SECTION 410-X, FOR ZERO CLEARANCE INSULATION CONTACT (IC) BY RECOGNIZED TESTING/RATING LABORATORIES; AND
    B. HAVE A LABEL THAT CERTIFIES THAT THE LUMINAIRE IS AIRTIGHT WITH AIR LEAKAGE LESS THAN 2.0 CFM AT 75 PASCALS WHEN TESTED IN ACCORDANCE WITH ASTM E283; AND
    C. BE SEALED WITH A GASKET OR CAULK BETWEEN THE LUMINAIRE HOUSING AND CEILING, AND SHALL HAVE ALL AIR LEAK PATHS BETWEEN CONDITIONED AND UNCONDITIONED SPACES SEALED WITH A GASKET OR CAULK; AND
    D. FOR RECESSED LUMINAIRES WITH BALLASTS TO QUALIFY AS HIGH EFFICACY FOR COMPLIANCE WITH SECTION 410-XII, THE BALLASTS SHALL BE CERTIFIED TO THE COMMISSION TO COMPLY WITH SECTION 410.130(E) OF THE CALIFORNIA ENERGY CODE; AND (ELECTRONIC BALLAST)
    E. ALLOW BALLAST MAINTENANCE AND REPLACEMENT TO BE READILY ACCESSIBLE TO BUILDING OCCUPANTS FROM BELOW THE CEILING WITHOUT REQUIRING THE CUTTING OF HOLES IN THE CEILING.
27. LUMINAIRES PROVIDING OUTDOOR LIGHTING SHALL BE HIGH EFFICACY LUMINAIRES.
    EXCEPTION 1. PERMANENTLY INSTALLED OUTDOOR LOW EFFICACY LUMINAIRES SHALL BE ALLOWED, PROVIDED THAT THEY ARE CONTROLLED BY A MANUAL ON/OFF SWITCH, A MOTION SENSOR NOT HAVING AN OVER-RIDE OR BYPASS SWITCH THAT DISABLES THE MOTION SENSOR, AND ONE OF THE FOLLOWING METHODS:
    A. PHOTOCONTROL NOT HAVING AN OVER-RIDE OR BYPASS SWITCH THAT DISABLES THE PHOTOCONTROL; OR
    B. ASTRONOMICAL TIME CLOCK NOT HAVING AN OVER-RIDE OR BYPASS SWITCH THAT DISABLES THE ASTRONOMICAL TIME CLOCK; OR
    C. ENERGY MANAGEMENT CONTROL SYSTEM (EMCS) NOT HAVING AN OVER-RIDE OR BYPASS SWITCH THAT ALLOWS THE LUMINAIRE TO BE ALWAYS ON.
28. A HIGH EFFICACY LUMINAIRE OR LED LIGHT ENGINE WITH INTEGRAL HEAT SINK HAS AN EFFICACY THAT IS NO LOWER THAN THE EFFICACIES CONTAINED IN SECTION 220-18(B) AND IS NOT A LOW EFFICACY LUMINAIRE AS SPECIFIED BY SECTION 410-X IN THE 2013 CALIFORNIA BUILDING ENERGY EFFICIENCY STANDARDS.
29. ELECTRONIC BALLASTS. BALLASTS FOR FLUORESCENT LAMPS RATED 13 WATTS OR GREATER SHALL BE ELECTRONIC AND SHALL HAVE AN OUTPUT FREQUENCY NO LESS THAN 20 kHz.
30. A RESIDENTIAL MANUAL-ON OCCUPANT SENSOR SHALL TURN OFF THE LIGHTING WITHIN 30 MINUTES OR LESS AFTER THE ROOM HAS BEEN VACATED, HAS A VISIBLE STATUS SIGNAL, SHALL NOT TURN ON THE LIGHTING AUTOMATICALLY, EXCEPT THE SENSOR SHALL HAVE A GRACE PERIOD OF 15 TO 30 SECONDS TO TURN ON THE LIGHTING AUTOMATICALLY AFTER THE SENSOR HAS TIMED OUT, SHALL NOT HAVE AN OVER-RIDE SWITCH THAT DISABLES THE OCCUPANT SENSOR AND SHALL NOT HAVE AN OVER-RIDE SWITCH THAT CONVERTS THE SENSOR FROM A MANUAL-ON TO AN AUTOMATIC-ON SYSTEM.
31. NON-REGRESSIVE TECHNOLOGY - A FIXTURE USING COMPONENTS WHICH CAN ONLY BE UTILIZED WITH HIGH EFFICACY LAMPS. (I.E. PIN-BASED vs SCREW-BASED CFL LAMPS).
32. SWITCHING - HIGH EFFICACY FIXTURES MUST BE SWITCHED SEPARATELY FROM NON-HIGH EFFICACY FIXTURES.
33. INTERGRATED EXHAUST VENTS AND LIGHTS MUST BE CONTROLLED BY SEPARATE SWITCHES.
34. INTERNALLY ILLUMINATED ADDRESS SIGNS SHALL COMPLY WITH SECTION 410-XII; OR NOT CONTAIN A SCREW-BASE SOCKET, AND CONSUME NO MORE THAN FIVE WATTS OF POWER AS DETERMINED ACCORDING TO SECTION410-XIII OF THE 2013 CALIFORNIA BUILDING ENERGY EFFICIENCY STANDARDS.
35. ALL 125-VOLT, 15-AND 20-AMPERE RECEPTACLE OUTLETS SHALL BE LISTED TAMPER-RESISTANT RECEPTACLES PER CEC 406.11. △1
36. BATHROOM LIGHTING REQUIREMENTS:
    A. A MINIMUM OF ONE HIGH EFFICACY LUMINAIRE SHALL BE INSTALLED IN EACH BATHROOM.
    B. ALL OTHER LIGHTING INSTALLED IN EACH BATHROOM SHALL BE HIGH EFFICACY OR CONTROLLED BY VACANCY SENSORS. △1

MECHANICAL

1. DRAWINGS FOR OWNER'S/BUILDER APPROVAL PRIOR TO ORDERING MATERIALS OR EQUIPMENT. HEATING SYSTEMS SHALL BE SIZED TO ACCOMMODATE STANDARD AIR CONDITIONS.
2. ALL EQUIPMENT INSTALLED IN THIS PROJECT SHALL COMPLY WITH THE REFERENCED STANDARDS LISTED IN CHAPTER 17 OF THE C.M.C.
3. ALL MATERIALS AND CONSTRUCTION METHODS SHALL COMPLY WITH 2013 EDITIONS OF THE C.R.C, C.E.C., C.M.C. AND C.P.C. △1
4. ROOMS CONTAINING BATHTUBS, SHOWERS, SPAS AND SIMILAR BATHING FIXTURES SHALL BE MECHANICALLY VENTILATED IN ACCORDANCE WITH THE CALIFORNIA MECHANICAL CODE AND THE CALIFORNIA GREEN BUILDING STANDARDS CODE, SECTION 4.506.1..
   1. FOR THE PURPOSED OF THIS SECTION, A BATHROOM IS A ROOM WHICH CONTAINS A BATHTUB, SHOWER, OR TUB/SHOWER COMBINATION.
   2. LIGHTING INTEGRAL TO BATHROOM EXHAUST FANS SHALL COMPLY WITH THE CALIFORNIA ENERGY CODE.
5. GAS VENTS AND NONCOMBUSTIBLE PIPING MUST BE EFFECTIVELY DRAFT-STOPPED AT EACH FLOOR AND CEILING THROUGH WHICH IT PASSES.
6. EXHAUST FANS AND DRYER VENTS MUST BE DUCTED TO OUTSIDE AIR AND BE EQUIPPED WITH APPROVED BACKDRAFT DAMPERS.
7. CLOTHES DRYERS. MOISTURE EXHAUST DUCTS SHALL TERMINATE ON THE OUTSIDE OF THE BUILDING AND SHALL BE EQUIPPED WITH A BACK DRAFT DAMPER. SCREENS SHALL NOT BE INSTALLED AT THE DUCT TERMINATION. DUCTS FOR EXHAUSTING CLOTHES DRYERS SHALL NOT BE CONNECTED OR INSTALLED WITH SHEET METAL SCREWS OR OTHER FASTENERS THAT WILL OBSTRUCT THE FLOW, CLOTHES DRYER MOISTURE EXHAUST DUCTS SHALL NOT BE CONNECTED TO A GAS VENT CONNECTOR, GAS VENT, OR CHIMNEY, AND SHALL ONLY SERVE CLOTHES DRYERS. CLOTHES DRYER MOISTURE EXHAUST DUCTS SHALL NOT EXTEND INTO OR THROUGH DUCTS OR PLENUMS.

   WHEN A COMPARTMENT OR SPACE FOR A DOMESTIC CLOTHES DRYER IS PROVIDED, A MINIMUM OF FOUR (4) INCH DIAMETER (102 MM) MOISTURE EXHAUST DUCT OF APPROVED MATERIAL SHALL BE INSTALLED IN ACCORDANCE WITH THIS SECTION AND SECTION 504.3.1 OF THE C.M.C.

   WHEN A CLOSET IS DESIGNED FOR THE INSTALLATION OF A CLOTHES DRYER, A MINIMUM OPENING OF 100 SQUARE INCHES (64,516 MM) FOR MAKEUP AIR SHALL BE PROVIDED IN THE DOOR OR BY OTHER APPROVED MEANS.

   DOMESTIC CLOTHES DRYER MOISTURE EXHAUST DUCTS SHALL BE OF METAL AND SHALL HAVE SMOOTH INTERIOR SURFACES. C.M.C. SECTION 504.3.1.1.

   EXCEPTION: LISTED CLOTHES DRYER TRANSITION DUCTS NOT MORE THAN SIX (6) FEET (1,829 MM) IN LENGTH MAY BE USED IN CONNECTION WITH DOMESTIC DRYER EXHAUSTS.

   FLEXIBLE CLOTHES DRYER TRANSITION DUCTS SHALL NOT BE CONCEALED WITHIN CONSTRUCTION.

   UNLESS OTHERWISE PERMITTED OR REQUIRED BY THE DRYER MANUFACTURER'S INSTALLATION INSTRUCTIONS AND APPROVED BY THE AUTHORITY HAVING JURISDICTION, DOMESTIC DRYER MOISTURE EXHAUST DUCTS SHALL NOT EXCEED A TOTAL COMBINED HORIZONTAL AND VERTICAL LENGTH OF FOURTEEN (14) FEET (4,263 MM), INCLUDING TWO (2) 90 DEGREE (1.57 RAD) ELBOWS. TWO (2) FEET (610 MM) SHALL BE DEDUCTED FOR EACH 90 DEGREE (1.57 RAD) ELBOW IN EXCESS OF TWO. C.M.C. SECTION 504.3.1.1.
8. ALL AIR DISTRIBUTION SYSTEM DUCTS AND PLENUMS INSTALLED, ARE TO BE SEALED AND INSULATED TO MEET THE REQUIREMENTS OF THE C.M.C. SECTIONS 601, 602, 603, 604, 605 AND STANDARD 6-5; SUPPLY AIR AND RETURN AIR DUCTS AND PLENUMS ARE INSULATED TO A MINIMUM INSTALLED LEVEL OF R-6 OR ENCLOSED ENTIRELY IN A CONDITIONED SPACE. OPENINGS SHALL BE SEALED WITH TAPES, MASTICS, GASKETING OR OTHER MEANS THAT MEET THE APPLICABLE REQUIREMENTS OF UL 181, UL 181A, OR UL 181B OR AEROSOL SEALANT THAT MEETS THE REQUIREMENTS OF UL 723. IF MASTIC OR TAPE IS USED TO SEAL OPENINGS GREATER THAN 1/4 INCH, THE COMBINATION OF MASTIC AND EITHER MESH OR TAPE SHALL BE USED. SHALL BE USED.
   1. CRIMP JOINTS FOR ROUND DUCTS SHALL HAVE A CONTACT LAP OF NOT LESS THAN 1-1/2 INCHES (38 MM) AND SHALL BE MECHANICALLY FASTENED BY MEANS OF NOT LESS THAN THREE SHEET-METAL SCREWS EQUALLY SPACED AROUND THE JOINT, OR AN EQUIVALENT FASTENING METHOD. C.M.C., SECTION 602.4.
   2. JOINTS AND SEAMS FOR 0.016 OF AN INCH (0.41 MM) (NO. 28 GAUGE) AND 0.013 OF AN INCH (0.33 MM) (NO. 30 GAUGE) RESIDENTIAL RECTANGULAR DUCTS SHALL COMPLY WITH SMACNA HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE FOR 0..19 OF AN INCH (0.48 MM) (NO. 26 GAUGE) MATERIAL. C.M.C., SECTION 602.4.
   3. JOINTS AND SEAMS FOR RECTANGULAR DUCT SYSTEMS SHALL COMPLY WITH SMANCNA HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE. C.M.C., SECTION 602.4.
   4. JOINTS AND SEAMS FOR FLAT OVAL DUCTS AND ROUND DUCTS IN OTHER THAN SINGLE-DWELLING UNITS SHALL COMPLY WITH SMACNA HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE. C.M.C., SECTION 602.4.
   5. JOINTS AND SEAMS AND REINFORCEMENTS FOR FACTORY-MADE AIR DUCTS AND PLENUMS SHALL COMPLY WITH THE CONDITIONS OF PRIOR APPROVAL IN ACCORDANCE WITH THE INSTALLATION INSTRUCTIONS THAT SHALL ACCOMPANY THE PRODUCT. CLOSURE SYSTEMS FOR RIGID AIR DUCTS AND PLENUMS SHALL BE LISTED IN ACCORDANCE WITH UL 181A. CLOSURE SYSTEMS FOR FLEXIBLE AIR DUCTS SHALL BE LISTED IN ACCORDANCE WITH UL 181B. C.M.C., SECTION 602.4.
9. BUILDING CAVITIES, SUPPORT PLATFORMS FOR AIR HANDLERS, AND PLENUMS DEFINED OR CONSTRUCTED WITH MATERIALS OTHER THAN SEALED SHEET METAL, DUCT BOARD OR FLEXIBLE DUCT SHALL NOT BE USED FOR CONVEYING CONDITIONED AIR, BUILDING CAVITIES AND SUPPORT PLATFORMS MAY CONTAIN DUCTS. DUCTS INSTALLED IN CAVITIES AND SUPPORT PLATFORMS SHALL NOT BE COMPRESSED TO CAUSE REDUCTIONS IN THE CROSS-SECTIONAL AREA OF THE DUCTS.
10. JOINTS AND SEAMS OF DUCT SYSTEMS AND THEIR COMPONENTS SHALL NOT BE SEALED WITH CLOTH BACK RUBBER ADHESIVE DUCT TAPE UNLESS SUCH TAPE IS USED IN COMBINATION WITH MASTIC AND DRAW BANDS.
11. FLEXIBLE DUCTS CANNOT HAVE POROUS INNER CORES.
12. HEATING SYSTEMS ARE EQUIPPED WITH THERMOSTATS THAT MEET THE SETBACK REQUIREMENTS OF SECTION 112(c) OF 2013 CALIFORNIA ENERGY CODE.
13. <u>INDOOR AIR QUALITY AND MECHANICAL VENTILATION</u>
    ALL DWELLING UNITS SHALL MEET THE REQUIREMENTS OF ANSI/ASHRAE STANDARD 62.2-2007 VENTILATION AND ACCEPTABLE INDOOR AIR QUALITY IN LOW-RISE RESIDENTIAL BUILDINGS. WINDOW OPERATION IS NOT A PERMISSIBLE METHOD OF PROVIDING THE WHOLE BUILDING VENTILATION REQUIRED IN SECTION 4 OF THAT STANDARD.
    THE APPLICABLE SECTIONS ARE § 150(o) FOR NEW CONSTRUCTION AND S152(a) FOR ADDITIONS.
    A. EXHAUST FAN SYSTEMS SHALL HAVE BACK DRAFT OR AUTOMATIC DAMPERS WITH 1/2" CLEARANCE UNDER DOOR.
    B. KITCHENS AND BATHROOMS SHALL HAVE LOCAL EXHAUST SYSTEMS VENTED TO THE OUTDOORS.
    C. VENTILATION AIR SHALL COME FROM THE OUTDOORS AND SHALL NOT BE TRANSFERRED FROM ADJACENT DWELLING UNITS, GARAGES OR CRAWLSPACES.
    D. VENTILATION SYSTEM CONTROLS SHALL BE LABELED AND THE HOME OWNER SHALL BE PROVIDED WITH INSTRUCTIONS ON HOW TO OPERATE THE SYSTEM.
    E. COMBUSTION APPLIANCES SHALL BE PROPERLY VENTED AND AIR SYSTEMS SHALL BE DESIGNED TO PREVENT BACK DRAFTING.
    F. THE WALL AND OPENINGS BETWEEN THE HOUSE AND THE GARAGE SHALL BE SEALED.
    G. HABITABLE ROOMS SHALL HAVE WINDOWS WITH A VENTILATION AREA OF AT LEAST 4% OF THE FLOOR AREA.
    H. MECHANICAL SYSTEMS INCLUDING HEATING AND AIR CONDITIONING SYSTEMS THAT SUPPLY AIR TO HABITABLE SPACES SHALL HAVE <u>MERV</u> 6 FILTERS OR BETTER.
    I. AIR INLETS (NOT EXHAUST) SHALL BE LOCATED AWAY FROM KNOWN CONTAMINANTS.
    J. AIR MOVING EQUIPMENT USED TO MEET EITHER THE WHOLE-BUILDING VENTILATION REQUIREMENT OR THE LOCAL VENTILATION EXHAUST REQUIREMENT SHALL BE RATED IN TERMS OF AIRFLOW AND SOUND.
       a. ALL CONTINUOUSLY OPERATING FANS SHALL BE RATED AT A MAXIMUM OF 1.0 SONE.
       b. INTERMITTENTLY OPERATED WHOLE-BUILDING VENTILATION FANS SHALL BE RATED AT A MAXIMUM OF 1.0 SONE. THE SIZE OF FAN MUST BE GREATER THAN OR EQUAL TO THE REQUIRED CAPACITY OF TABLE 4-7.
       c. INTERMITTENTLY OPERATED LOCAL EXHAUST FANS SHALL BE RATED AT A MAXIMUM OF 3.0 SONE.
       d. REMOTELY LOCATED AIR-MOVING EQUIPMENT (MOUNTED OUTSIDE OF THE HABITABLE SPACES) NEED NOT MEET SOUND REQUIREMENTS IF THERE IS AT LEAST 4 FEET OF DUCTWORK BETWEEN THE FAN AND THE INTAKE GRILL.
    K. A MINIMUM INTERMITTENT VENTILATION AIRFLOW OF 100 cfm IS REQUIRED FOR THE KITCHEN RANGE HOOD AND A MINIMUM INTERMITTENT VENTILATION AIRFLOW OF 50 cfm IS REQUIRED FOR THE BATH FAN.
    L. FAN TO BE SWITCHED SEPARATELY FROM LIGHT.
14. CONTINUOUSLY BURNING PILOT LIGHTS ARE PROHIBITED FOR NATURAL GAS: FAN-TYPE CENTRAL FURNACES, HOUSEHOLD COOKING APPLIANCES (APPLIANCES WITH AN ELECTRICAL SUPPLY VOLTAGE CONNECTION WITH PILOT LIGHTS THAT CONSUME LESS THAN 150 btu/hr ARE EXEMPT).
15. HVAC INSTALLERS SHALL BE TRAINED AND CERTIFIED IN THE PROPER INSTALLATION OF HVAC SYSTEMS INCLUDING DUCTS AND EQUIPMENT BY A NATIONALLY OR REGIONALLY RECOGNIZED TRAINING OR CERTIFICATION PROGRAM.

REVIEWED FOR CODE COMPLIANCE
This review does not authorize violation of State or County building laws.
NOV 13 2019
SAN MATEO CO. BLDG. INSP. DIV.

RESUBMITTAL
FEB 16 2017
San Mateo County Building Inspection

Mark Gross & Associates, Inc.
Architecture • Planning

"HIGHLAND ESTATES, LOT 9"
2165 COBBLEHILL PLACE
SAN MATEO COUNTY, CALIFORNIA
THE CHAMBERLAIN GROUP

GENERAL NOTES

REVISIONS	
△1 JAN. 6, 2017	P.C. 1
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LICENSED ARCHITECT MARK H. GROSS C-24313 Ren. 9-30-17 STATE OF CALIFORNIA

ALL DIMENSIONS & CONDITIONS ARE TO BE VERIFIED BY CONTRACTOR BEFORE START OF CONSTRUCTION.

DESIGNED BY
DRAWN BY
CHECKED BY
JOB NO.
DATE
SHEET NO.
GN-2

GREEN BUILDING STANDARDS

1. PROJECTS WHICH DISTURB LESS THAN ONE ACRE OF SOIL AND ARE NOT PART OF A LARGER COMMON PLAN OF DEVELOPMENT WHICH IN TOTAL DISTURBS ONE ACRE OR MORE, SHALL MANAGE STORM WATER DRAINAGE DURING CONSTRUCTION. CALIFORNIA GREEN BUILDING STANDARDS CODE SECTION 4.106.2.
2. THE SITE SHALL BE PLANNED AND DEVELOPED TO KEEP SURFACE WATER FROM ENTERING BUILDINGS. THE GROUND IMMEDIATELY ADJACENT TO THE FOUNDATION SHALL BE SLOPED AWAY FROM THE BUILDING AT A SLOPE NOT LESS THAN ONE VERTICAL UNIT IN TWENTY UNITS HORIZONTAL (5% SLOPE) FOR A MINIMUM DISTANCE OF 10'-0" MEASURED PERPENDICULAR TO THE FACE OF THE WALL. IF PHYSICAL OBSTRUCTIONS OR LOT LINES PROHIBIT 10'-0" OF HORIZONTAL DISTANCE, A 5% SLOPE SHALL BE PROVIDED TO AN APPROVED ALTERNATIVE METHOD OF DIVERTING WATER AWAY FROM THE FOUNDATION. SWALES USED FOR THIS PURPOSE SHALL BE SLOPED A MINIMUM OF 2% WHERE LOCATED WITHIN 10'-0" OF THE BUILDING FOUNDATION. IMPERVIOUS SURFACES WITHIN 10'-0" OF THE BUILDING FOUNDATION SHALL BE SLOPED A MINIMUM OF 2% AWAY FROM THE BUILDING. CALIFORNIA GREEN BUILDING STANDARDS CODE SECTION 4.106.3.
3. THERE SHALL BE NO DRAINAGE TO ADJACENT PROPERTY.
4. PLUMBING FIXTURES (WATER CLOSETS AND URINALS) AND FITTINGS (FAUCETS AND SHOWERHEADS) SHALL COMPLY WITH THE FOLLOWING, PER C.G.B.S.C., SECTION 4.303.1:
    1. THE EFFECTIVE FLUSH VOLUME OF ALL WATER CLOSETS SHALL NOT EXCEED 1.28 GALLONS PER FLUSH. TANK TYPE WATER CLOSETS SHALL BE CERTIFIED TO THE PERFORMANCE CRITERIA OF THE U.S. EPA WATERSENSE SPECIFICATION FOR TANK TYPE TOILETS PER C.G.B.S.C., SECTION 4.303.1.1.

       NOTE: THE EFFECTIVE FLUSH VOLUME OF DUAL FLUSH TOILETS IS DEFINED AS THE COMPOSITE, AVERAGE FLUSH VOLUME OF TWO REDUCED FLUSHES AND ONE FULL FLUSH.
    2. THE EFFECTIVE FLUSH VOLUME OF URINALS SHALL NOT EXCEED 0.5 GALLONS PER FLUSH, PER C.G.B.S.C., SECTION 4.303.1.2.
    3. SHOWERHEADS:
        a. SHOWERHEADS SHALL HAVE A MAXIMUM FLOW RATE OF NOT MORE THAN 2.0 GALLONS PER MINUTE AT 80 PSI. SHOWERHEADS SHALL BE CERTIFIED TO THE PERFORMANCE CRITERIA OF THE U.S. EPA WATERSENSE SPECIFICATION FOR SHOWERHEADS PER C.G.B.S.C., SECTION 4.303.1.3.1.
        b. WHEN A SHOWER IS SERVED BY MORE THAN ONE SHOWERHEAD, THE COMBINED FLOW RATE OF ALL SHOWERHEADS AND/OR OTHER SHOWER OUTLETS CONTROLLED BY A SINGLE VALVE SHALL NOT EXCEED 2.0 GALLONS PER MINUTE AT 80 PSI, OR THE SHOWER SHALL BE DESIGNED TO ALLOW ONLY ONE SHOWER OUTLET TO BE IN OPERATION AT A TIME PER C.G.B.S.C., SECTION 4.303.1.3.2.

           NOTE: A HAND-HELD SHOWER SHALL BE CONSIDERED A SHOWERHEAD.
    4. FAUCETS:
        a. THE MAXIMUM FLOW RATE OF RESIDENTIAL LAVATORY FAUCETS SHALL NOT EXCEED 1.5 GALLONS PER MINUTE AT 60 PSI. THE MINUMUM FLOW RATE OF RESIDENTIAL LAVATORY FAUCETS SHALL NOT BE LESS THAN 0.8 GALLONS PER MINUTE AT 20 PSI, PER C.P.C., SECTION 4.303.1.4.1.
        b. THE MAXIMUM FLOW RATE OF LAVATORY FAUCETS INSTALLED IN COMMON AND PUBLIC USE AREAS (OUTSIDE OF DWELLINGS OR SLEEPING UNITS) IN RESIDENTIAL BUILDINGS SHALL NOT EXCEED 0.5 GALLONS PER MINUTE AT 60 PSI, PER C.G.B.S.C., SECTION 4.303.1.4.2.
        c. METERING FAUCETS WHEN INSTALLED IN RESIDENTIAL BUILDINGS SHALL NOT DELIVER MORE THAN 0.25 GALLONS PER CYCLE, PER C.G.B.S.C., SECTION 4.303.1.4.3.
        d. THE MAXIMUM FLOW RATE OF KITCHEN FAUCETS SHALL NOT EXCEED 1.8 GALLONS PER MINUTE AT 60 PSI. KITCHEN FAUCETS MAY TEMPORARILY INCREASE THE FLOW RATE ABOVE THE MAXIMUM RATE, BUT NOT TO EXCEED 2.2 GALLONS PER MINUTE AT 60 PSI, AND MUST DEFAULT TO A MAXIMUM FLOW RATE OF 1.8 GALLONS PER MINUTE AT 60 PSI, PER C.G.B.S.C., SECTION 4.303.1.4.4.

           NOTE: WHERE COMPLYING FAUCETS ARE UNAVAILABLE, AERATORS OR OTHER MEANS MAY BE USED TO ACHIEVE REDUCTION.
5. PLUMBING FIXTURES AND FITTINGS SHALL BE INSTALLED IN ACCORDANCE WITH THE CALIFORNIA PLUMBING CODE, AND SHALL MEET THE APPLICABLE STANDARDS REFERENCED IN TABLE 1401.1 OF THE CALIFORNIA PLUMBING CODE.
6. <u>OUTDOOR WATER USE</u>: AUTOMATIC IRRIGATION SYSTEM CONTROLLERS FOR LANDSCAPING PROVIDED BY THE BUILDER AND INSTALLED AT THE TIME OF FINAL INSPECTION SHALL COMPLY WITH THE FOLLOWING:
    1. CONTROLLERS SHALL BE WEATHER- OR SOIL MOISTURE-BASED CONTROLLERS THAT AUTOMATICALLY ADJUST IRRIGATION IN RESPONSE TO CHANGES IN PLANTS NEED AS WEATHER CONDITIONS CHANGE.
    2. WEATHER-BASED CONTROLLERS WITHOUT INTEGRAL RAIN SENSORS OR COMMUNICATION SYSTEMS THAT ACCOUNT FOR LOCAL RAINFALL SHALL HAVE A SEPARATE WIRED OF WIRELESS RAIN SENSOR WHICH CONNECTS OR COMMUNICATES WITH THE CONTROLLERS. SOIL MOISTURE-BASED CONTROLLERS ARE NOT REQUIRED TO HAVE RAIN SENSOR INPUT. MORE INFORMATION AVAILABLE FROM THE IRRIGATION ASSOCIATION.
7. RECYCLE AND/OR SALVAGE FOR REUSE A MINIMUM OF 50% OF THE NONHAZARDOUS CONSTRUCTION AND DEMOLITION WASTE IN ACCORDANCE WITH EITHER SECTION 4.408.2, 4.408.3 OR 4.408.4, OR MEET A MORE STRINGENT LOCAL CONSTRUCTION AND DEMOLITION WASTE MANAGEMENT ORDINANCE. C.G.B.S.C., SECTION 4.408.1

   EXCEPTIONS: 1. EXCAVATED SOIL AND LAND-CLEARING DEBRIS.
   2. ALTERNATE WASTE REDUCTION METHODS DEVELOPED BY WORKING WITH LOCAL AGENCIES IF DIVERSION OR RECYCLE FACILITIES CAPABLE OF COMPLIANCE WITH THIS ITEM DO NOT EXIST OR ARE NOT LOCATED REASONBLE CLOSE TO THE JOB SITE.
   3. THE ENFORCING AGENCY MAY MAKE EXCEPTION TO THE BOUNDARY REQUIREMENTS OF THIS SECTION WHEN ISOLATED JOBSITES ARE LOCATED IN AREAS BEYOND THE HAUL BOUNDARIES OF THE DIVERSION FACILITY, PER C.G.B.S.C., SECTION
8. SUBMIT A CONSTRUCTION WASTE MANAGEMENT PLAN IN CONFORMANCE WITH ITEMS 1 THROUGH 5. THE CONSTRUCTION WASTE MANAGEMENT PLAN SHALL BE UPDATED AS NECESSARY AND SHALL BE AVAILABLE DURING CONSTRUCTION FOR EXAMINATION BY THE ENFORCING AGENCY, PER C.G.B.S.C., SECTION 4.408.2:
    1. IDENTIFY THE CONSTRUCTION AND DEMOLITION WASTE MATERIALS TO BE DIVERTED FROM DISPOSAL BY RECYCLING, REUSE ON THE PROJECT OR OR SALVAGE FOR FUTURE USE OR SALE.
    2. SPECIFIES IF CONSTRUCTION AND DEMOLITION WASTE MATERIALS WILL BE SORTED ON-SITE (SOURCE-SEPARATED) OR BULK MIXED (SINGLE STREAM).
    3. IDENTIFY DIVERSION FACILITIES WHERE THE CONSTRUCTION AND DEMOLITION WASTE MATERIAL WILL BE TAKEN.
    4. IDENTIFY CONSTRUCTION METHODS EMPLOYED TO REDUCE THE AMOUNT OF CONSTRUCTION AND DEMOLITION WASTE GENERATED.
    5. SPECIFY THAT THE AMOUNT OF CONSTRUCTION AND DEMOLITION WASTE MATERIALS DIVERTED SHALL BE CALCULATED BY WEIGHT OR VOLUME, BUT NOT BY BOTH.
9. OPERATION AND MAINTENANCE MANUAL: AT THE TIME OF FINAL INSPECTION A MANUAL, COMPACT DISC, WEB-BASED REFERENCE OR OTHER MEDIA WHICH INCLUDES ALL THE FOLLOWING SHALL BE PLACED IN THE BUILDING, PER CALIFORNIA GREEN BUILDING STANDARDS CODE, SECTION 4.410.1:
    1. DIRECTIONS TO THE OWNER THAT THE MANUAL SHALL REMAIN WITH THE BUILDING THROUGHOUT THE LIFE CYCLE OF THE STRUCTURE.
    2. DIRECTIONS AND MAINTENANCE INSTRUCTIONS FOR THE FOLLOWING:
        a. EQUIPMENT AND APPLIANCES, INCLUDING WATER-SAVING DEVICES AND SYSTEMS, HVAC SYSTEMS, WATER-HEATING SYSTEMS AND OTHER MAJOR APPLIANCES AND EQUIPMENT..
        b. ROOF AND YARD DRAINAGE, INCLUDING GUTTERS AND DOWNSPOUTS.
        c. SPACE CONDITIONING SYSTEMS, INCLUDING CONDENSERS AND AIR FILTERS.
        d. LANDSCAPE IRRIGATION SYSTEMS.
        e. WATER REUSE SYSTEMS.
    3. INFORMATION FROM LOCAL UTILITY, WATER AND WASTE RECOVERY PROVIDERS ON METHODS TO FURTHER REDUCE RESOURCE CONSUMPTION, INCLUDING RECYCLE PROGRAMS AND LOCATIONS.
    4. PUBLIC TRANSPORTATION AND/ OR CARPOOL OPTIONS AVAILABLE IN THE AREA.
    5. EDUCATIONAL MATERIAL ON THE POSITIVE IMPACTS OF AN INTERIOR RELATIVE HUMIDITY BETWEEN 30-60% AND WHAT METHODS AN OCCUPANT MAY USE TO MAINTAIN THE RELATIVE HUMIDITY LEVEL IN THAT RANGE.
    6. INFORMATION ABOUT WATER-CONSERVING LANDSCAPE AND IRRIGATION DESIGN AND CONTROLLERS WHICH CONSERVE WATER.
    7. INSTRUCTIONS FOR MAINTAINING GUTTERS AND DOWNSPOUTS AND THE IMPORTANCE OF DIVERTING WATER AT LEAST 5'-0" AWAY FROM THE FOUNDATION
    8. INFORMATION ON THE REQUIRED ROUTINE MAINTENANCE MEASURES, INCLUDING, BUT NOT LIMITED TO CAULKING, PAINTING, GRADING AROUND THE BUILDING, ETC.
    9. INFORMATION ABOUT STATE SOLAR ENERGY AND INCENTIVE PROGRAMS AVAILABLE.
    10. A COPY OF ALL SPECIAL INSPECTION VERIFICATIONS REQUIRED BY THE ENFORCING AGENCY OR THIS CODE.
10. ANY INSTALLED GAS FIREPLACE SHALL BE A DIRECT-VENT SEALED-COMBUSTION TYPE. PER CA. GREEN BUILDING STANDARDS, SECTION 4.503.1.
11. ALL DUCT AND OTHER RELATED AIR DISTRIBUTION COMPONENT OPENINGS SHALL BE COVERED TO REDUCED THE AMOUNT OF DUST OR DEBRIS WHICH MAY COLLECT IN THE SYSTEM PER CA. GREEN BUILDING STANDARDS CODE, SECTION 4.504.1.
12. ADHESIVES, SEALANTS AND CAULKS USED ON THE PROJECT SHALL MEET THE REQUIREMENTS SPECIFIED IN SECTION 4.504.2.1 OF THE CA. GREEN BUILDING STANDARDS CODE.
13. ARCHITECTURAL PAINTS AND COATINGS SHALL COMPLY WITH VOC LIMITS IN TABLE 1 OF THE ARB ARCHITECTURAL SUGGESTED CONTROL MEASURE, AS SHOWN IN TABLE 4.504.3, UNLESS MORE STRINGENT LOCAL LIMITS APPLY. BUILDING STANDARDS CODE, SECTION 4.504.2.2.
14. AEROSOL PAINTS AND COATINGS SHALL MEET THE PRODUCT-WEIGHTED MIR LIMITS FOR ROC IN SECTION 94522(a)(3) AND OTHER REQUIREMENTS. BUILDING STANDARDS CODE, SECTION 4.504.2.3.
15. ALL CARPET INSTALLED IN THE BUILDING INTERIOR SHALL MEET THE TESTING AND PRODUCT REQUIREMENTS OF SECTION 4.504.3 IN THE CA. GREEN BUILDING STANDARDS CODE.
16. CONCRETE SLAB FOUNDATIONS REQUIRED TO HAVE A VAPOR RETARDER BY CA. GREEN BUILDING STANDARDS CODE, SECTION 4.505.2
17. A CAPILLARY BREAK SHALL BE INSTALLED IN COMPLIANCE WITH AT LEAST ONE OF THE FOLLOWING, AS PER CALIFORNIA GREEN STANDARDS CODE, SECTION 4.505.2.1:
    1. A 4-INCH (101.6 MM) THICK BASE OF 1/2 INCH (12.7 MM) OR LARGER CLEAN AGGREGATE SHALL BE PROVIDED WITH A VAPOR RETARDER IN DIRECT CONTACT WITH CONCRETE AND A CONCRETE MIX DESIGN, WHICH WILL ADDRESS BLEADING, SHRINKAGE, AND CURLING, SHALL BE USED. FOR ADDITIONAL INFORMATION, SEE AMERICAN CONCRETE OF INSTITUTE, ACI 302.2R-06.
    2. OTHER EQUIVALENT METHODS APPROVED BY THE ENFORCING AGENCY.
    3. A SLAB DESIGN SPECIFIED BY A LICENSED DESIGN PROFESSIONAL.
18. BUILDING MATERIALS WITH VISIBLE SIGNS OF WATER DAMAGE SHALL NOT BE INSTALLED. WALL AND FLOOR FRAMING SHALL NO BE ENCLOSED WHEN THE FRAMING MEMBERS EXCEED 19 PERCENT MOISTURE CONTENT. MOISTURE CONTENT SHALL BE VERIFIED IN COMPLIANCE WITH THE FOLLOWING, AS THE CALIFORNIA GREEN BUILDING STANDARDS CODE, SECTION 4.505.3:
    1. MOISTURE CONTENT SHALL BE DETERMINED WITH EITHER A PROBE-TYPE OR CONTACT-TYPE MOISTURE METER.
    2. MOISTURE READINGS SHALL BE TAKEN AT A POINT 2 FEET (610 MM) TO 4 FEET (1219 MM) FROM THE GRADE STAMPED END OF EACH PIECE TO BE VERIFIED.
    3. AT LEAST THREE RANDOM MOISTURE READINGS SHALL BE PERFORMED ON WALL AND FLOOR FRAMING WITH DOCUMENTATION ACCEPTABLE TO THE ENFORCING AGENCY PROVIDED AT THE TIME OF APPROVAL TO ENCLOSE THE WALL AND FLOOR FRAMING.

    INSULATION PRODUCTS WHICH ARE VISIBLY WET OR HAVE A HIGH MOISTURE CONTENT SHALL BE REPLACED OR ALLOWED TO DRY PRIOR TO ENCLOSURE IN WALL OR FLOOR CAVITIES. WET-APPLIED INSULATION PRODUCTS SHALL FOLLOW THE MANUFACTURERS' DRYING RECOMMENDATIONS PRIOR TO ENCLOSURE.

GREEN BUILDING STANDARDS (CONTINUED)

19. EACH BATHROOM SHALL BE MECHANICALLY VENTILATED AND SHALL COMPLY WITH THE FOLLOWING PER C.G.B.S.C., SECTION 4.506.1:
    1. FANS SHALL BE ENERGY STAR COMPLIANT AND BE DUCTED TO TERMINATE OUTSIDE THE BUILDING.
    2. UNLESS FUNCTIONING AS A COMPONENT OF A WHOLE HOUSE VENTILATION SYSTEM, FANS MUST BE CONTROLLED BY A HUMIDITY CONTROL.
        a. HUMIDITY CONTROLS SHALL BE CAPABLE OF ADJUSTMENT BETWEEN A RELATIVE HUMIDITY RANGE OF ≤ 50% TO A MAXIMUM OF 80%. A HUMIDITY CONTROL MAY UTILIZE MANUAL OR AUTOMATIC MEANS OF ADJUSTMENT.
        b. A HUMIDITY CONTROL MAY BE A SEPARATE COMPONENT TO THE EXHAUST FAN AND IS NOT REQUIRED TO BE INTEGRAL (I.E., BUILT-IN).
20. WHOLE HOUSE EXHAUST FANS SHALL HAVE INSULATED LOUVERS OR COVERS WHICH CLOSED WHEN THE FAN IS OFF. COVERS OR LOUVERS SHALL HAVE A MINIMUM INSULATION VALUE OF R-4.2. CA. GREEN BUILDING STANDARDS CODE, SECTION 4.507.1.
21. HEATING AND AIR-CONDITIONING SYSTEMS SHALL BE SIZED, DESIGNED AND HAVE THEIR EQUIPMENT SELECTED USING THE FOLLOWING METHODS, PER C.G.B.S.C., SECTION 4.507.2:
    1. THE HEAT LOSS AND HEAT GAIN IS ESTABLISHED ACCORDING TO ANSI/ACCA 2 MANUAL J - 2004 (RESIDENTIAL LOAD CALCULATION), ASHRAE HANDBOOKS OR OTHER EQUIVALENT DESIGN SOFTWARE OR METHODS.
    2. DUCT SYSTEMS ARE SIZED ACCORDING TO ANSI/ACCA 1 MANUAL D - 2009 (RESIDENTIAL DUCT SYSTEMS), ASHRAE HANDBOOKS OR OTHER EQUIVALENT DESIGN SOFTWARE OR METHODS.
    3. SELECT HEATING AND COOLING EQUIPMENT ACCORDING TO ANSI/ACCA 3 MANUAL S - 2004 (RESIDENTIAL EQUIPMENT SELECTION) OR OTHER EQUIVALENT DESIGN SOFTWARE OR METHODS.

       EXCEPTION: USE OF ALTERNATE DESIGN TEMPERATURES NECESSARY TO ENSURE THE SYSTEMS FUNCTION ARE ACCEPTABLE.

REVIEWED FOR CODE COMPLIANCE
This review does not authorize violation
of State or County building laws.

NOV 13 2019

SAN MATEO CO. BLDG. INSP. DIV.

RESUBMITTAL
FEB 16 2017
San Mateo County
Building Inspection

MGA
Architecture • Planning

Mark Gross &
Associates, Inc.
8881 Research Drive
Irvine, California 92618
(949) 387-3800 Fax (949) 387-7800

"HIGHLAND ESTATES, LOT 9"
2185 COBBLEHILL PLACE
SAN MATEO COUNTY, CALIFORNIA
THE CHAMBERLAIN GROUP
655 SKY WAY , SUITE 230
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PHONE (650) 595-5582 FAX (650) 595-5066

GENERAL NOTES

REVISIONS	
△ JAN. 6, 2017	P.C. 1
△ -	-
△ -	-
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△ -	-

MARK H. GROSS
C-24313
Ren. 9-30-17

ALL DIMENSIONS & CONDITIONS ARE TO BE VERIFIED BY CONTRACTOR BEFORE START OF CONSTRUCTION.

DESIGNED BY

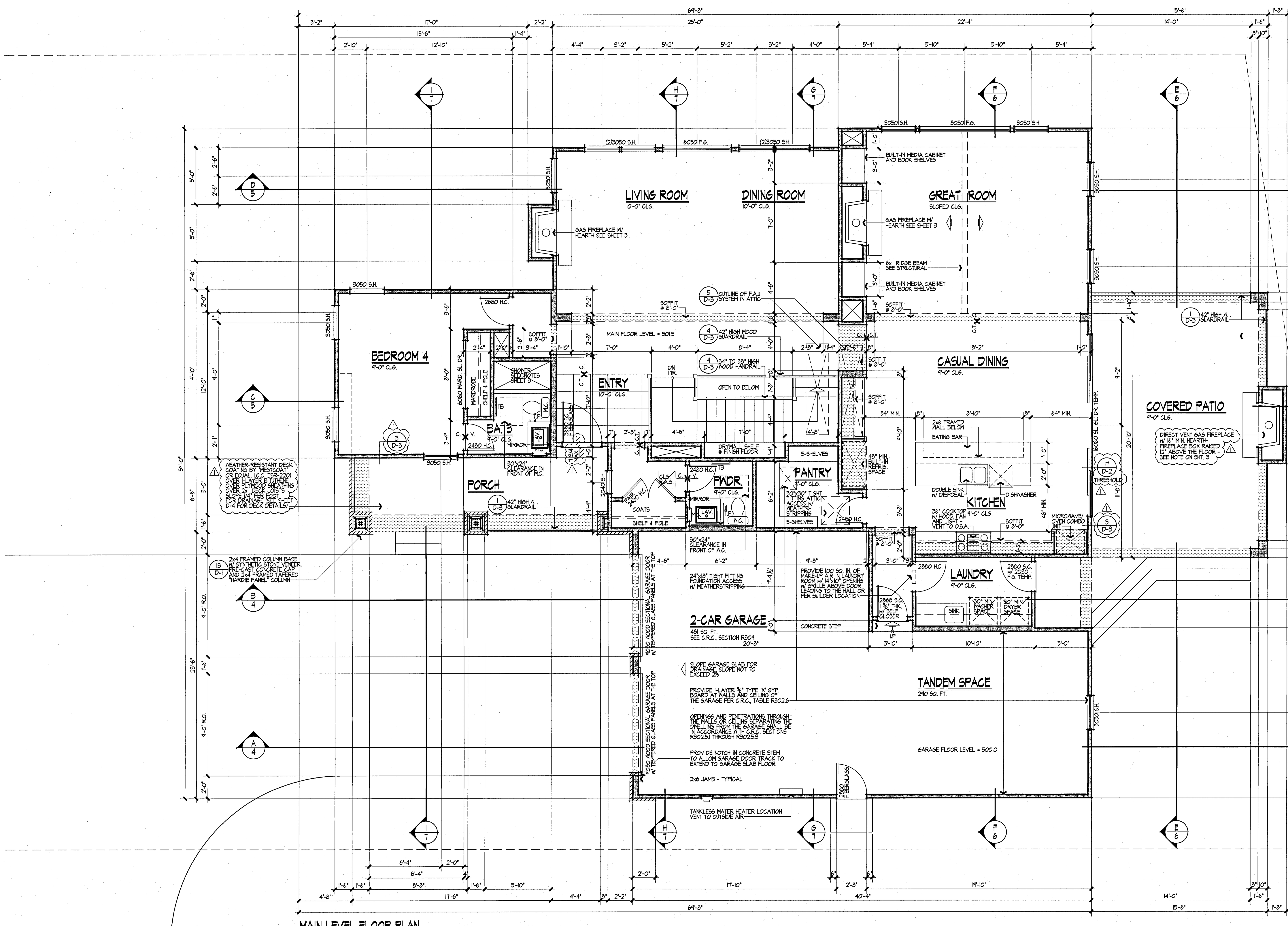
DRAWN BY

CHECKED BY

JOB NO.
8228

DATE
NOVEMBER 10, 2008

SHEET NO.
GN-3



MAIN LEVEL FLOOR PLAN 1,936 SQ. FT.

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

RESUBMITTAL

San Mateo County Building Inspection

REVIEWED FOR CODE COMPLIANCE
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LOT No. 9
3,390 SQ. FT.

MAIN LEVEL FLOOR PLAN

REVISIONS	
JAN. 6, 2017	P.C. 1

LICENSED ARCHITECT MARK H. GROSS C-24313 Ren. 9-30-17 STATE OF CALIFORNIA

ALL DIMENSIONS & CONDITIONS ARE TO BE VERIFIED BY CONTRACTOR BEFORE START OF CONSTRUCTION.

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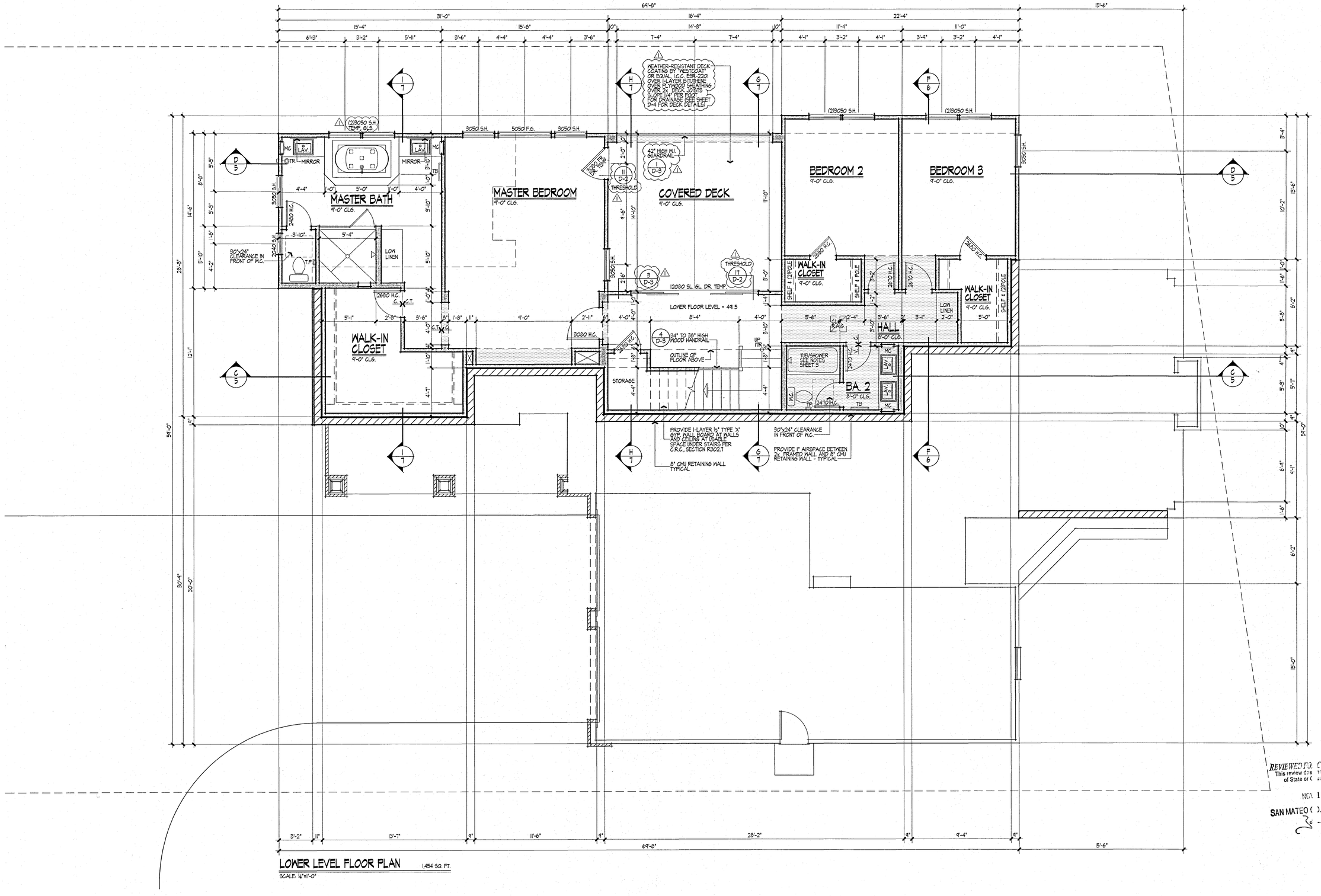
CHECKED BY

JOB NO. 4276

DATE NOVEMBER 3, 2014

SHEET NO. 1



LOWER LEVEL FLOOR PLAN 1,454 SQ. FT.

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

REVIEWED FO. CODE COMPLIANCE
This review doe ot authorize v olation
of State or C unty building laws.

NOV 1 8 2019

SAN MATEO C . BLDG. INSP. DIV.

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OCT 31 2017
San Mateo County
Building Inspection

MGA Architecture • Planning

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LOT No. 9
3,390 SQ. FT.

LOWER LEVEL FLOOR PLAN

REVISIONS
- JAN. 6, 2017 P.C. 1
- MAR. 31, 2017 P.C. 2
- JUNE 19TH PLANNING C.C.
- -
- -
- -
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- -

LICENSED ARCHITECT
MARK N. GROSS
C-24313
Exp. 6-30-17
STATE OF CALIFORNIA

ALL DIMENSIONS & CONDITIONS ARE TO BE VERIFIED BY CONTRACTOR BEFORE START OF CONSTRUCTION.

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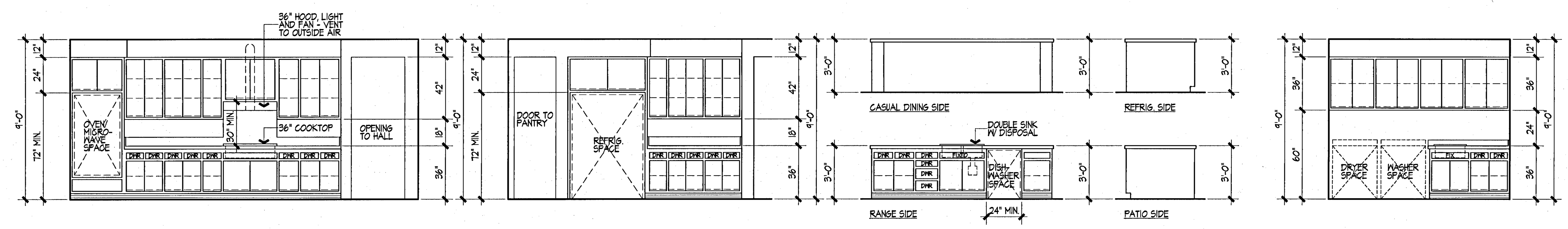
JOB NO. 4216
DATE NOVEMBER 3, 2014
SHEET NO. 2

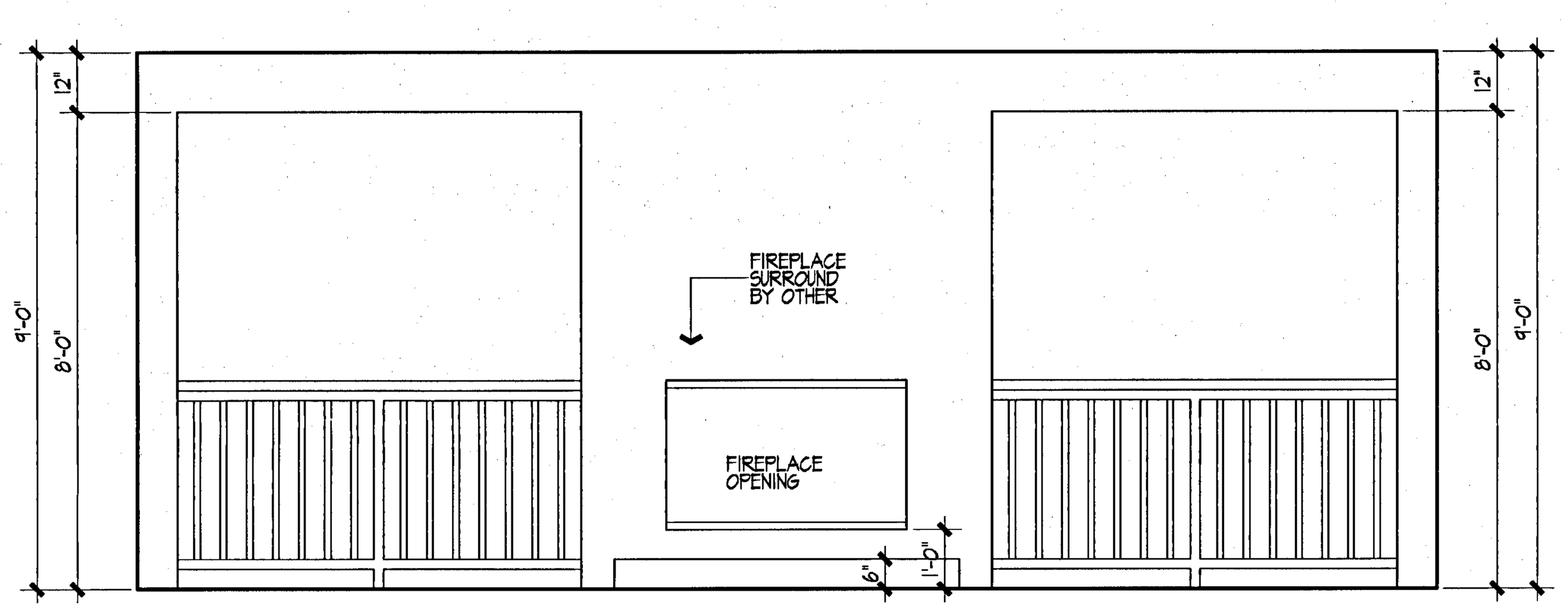


OVEN & COOKTOP WALL

REFRIGERATOR WALL

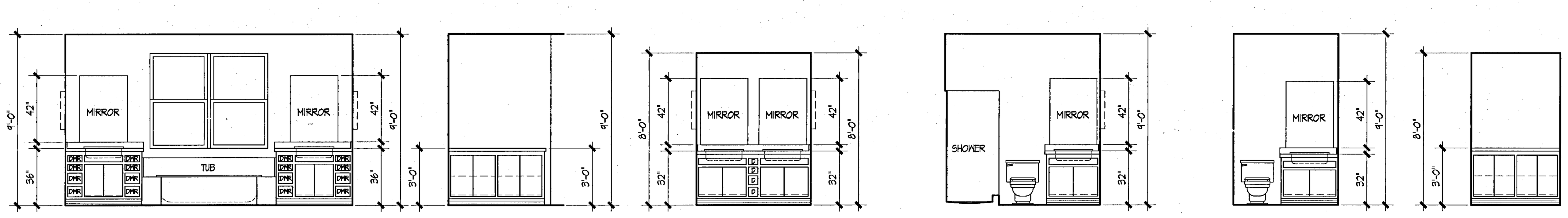
ISLAND COUNTER

LAUNDRY



FIREPLACE @ COVERED PATIO

SCALE: ⅜"=1'-0"



MASTER BATH

BATH 2

BATH 3

POWDER

LINEN

INTERIOR ELEVATIONS

SCALE: ¼"=1'-0" UNLESS NOTED OTHERWISE

NOTE:

ALL INTERIOR FINISHES, INCLUDING COUNTER TOPS, SPLASHES AND CABINTRY TO BE PER THE BUILDERS SPECIFICATIONS.

ALL INTERIOR COVERINGS OR WALL FINISHES SHALL BE INSTALLED ACCORDANCE WITH SECTION R702 OF THE 2010 C.R.C.

REVIEWED FOR CODE COMPLIANCE
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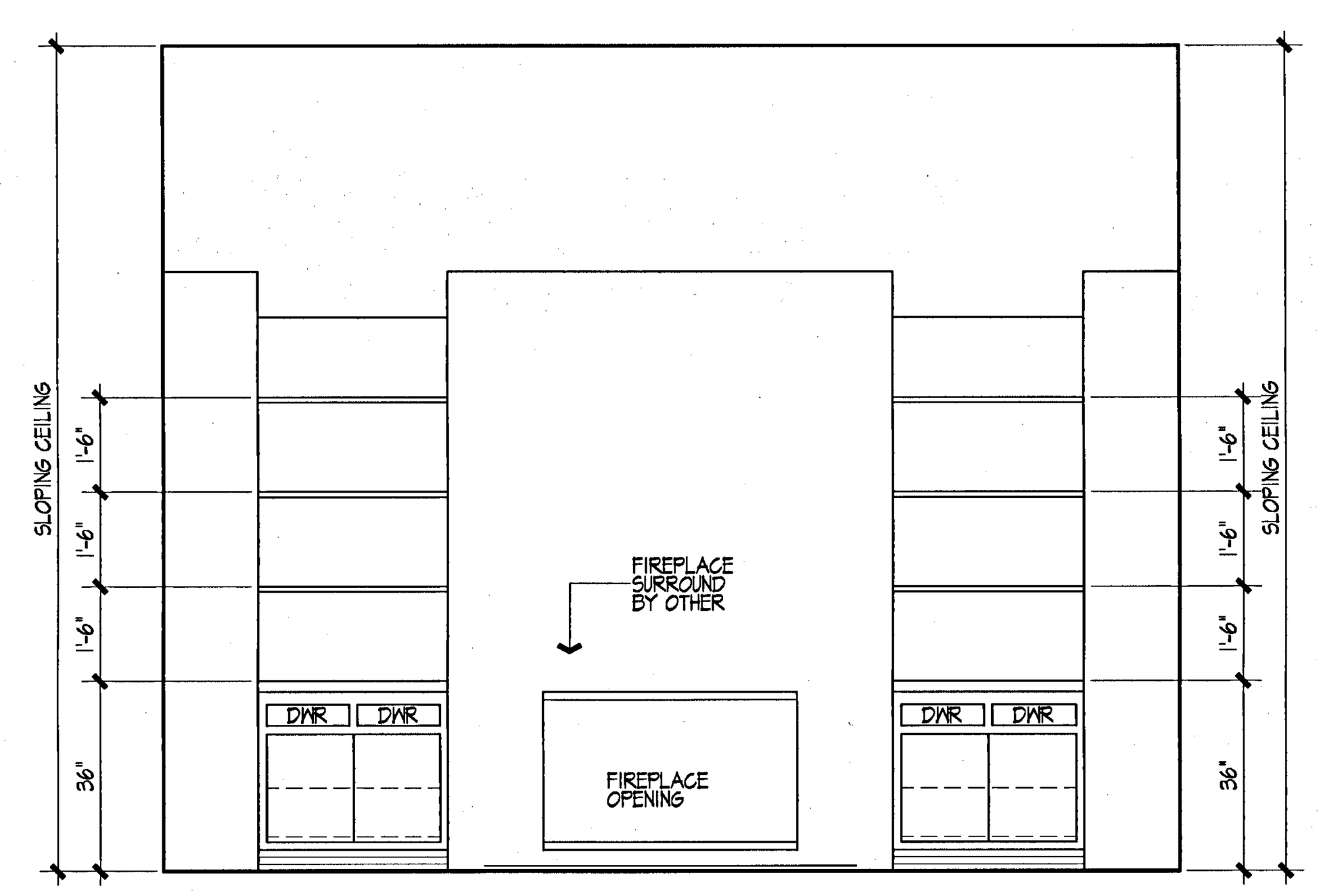
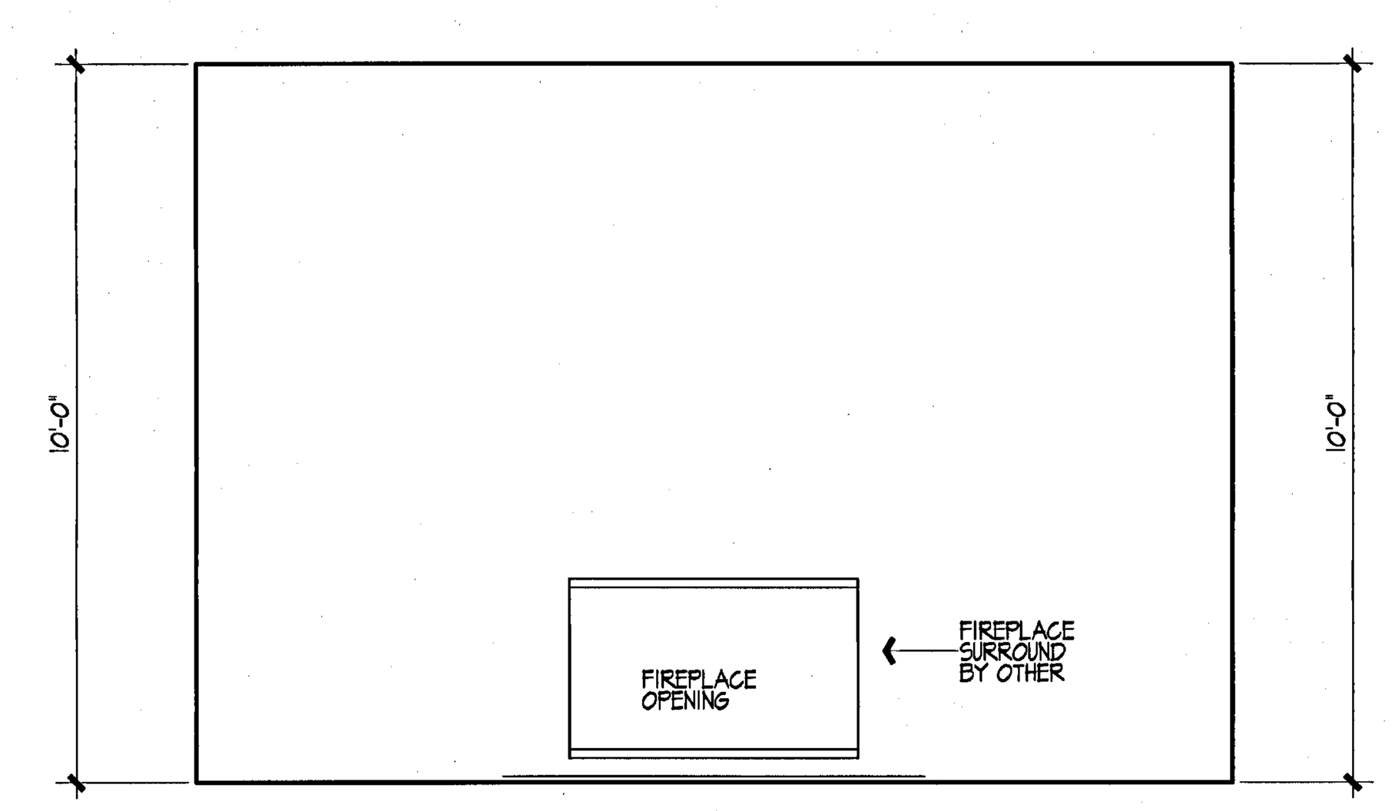


FIREPLACE @ GREAT ROOM

SCALE: ⅜"=1'-0"



FIREPLACE @ LIVING ROOM

SCALE: ⅜"=1'-0"

TUB/SHOWER NOTE (MASTER BATH)

PROVIDE 60" X 42" ACRYLIC OVAL TUB ON CULTURED MARBLE PLATFORM W/ 12" WAINSCOT

PROVIDE 42"x42" 'FLORESTONE' SHOWER PAN W/ 84" HIGH CULTURED MARBLE WAINSCOT

PROVIDE SHATTER-PROOF GLASS ENCLOSURE.

PROVIDE 1-PIECE TRAP AT TUB IN LIEU OF PLUMBING ACCESS.

△1 PROVIDE A MINIMUM 72" NON-ABSORBENT FINISH AT THE WALLS OF THE SHOWER COMPARTMENT.

TUB w/SHOWER NOTE (BATH #2)

PROVIDE 60" X 30" 1-PIECE FIBERGLASS TUB W/ SHOWER.

PROVIDE SHOWER CURTAIN ROD.

PROVIDE 1-PIECE TRAP AT TUB IN LIEU OF PLUMBING ACCESS.

△1 PROVIDE A MINIMUM 72" NON-ABSORBENT FINISH AT THE WALLS OF THE SHOWER COMPARTMENT.

SHOWER NOTE (BATH #3)

PROVIDE 42" X 34" X72" 1-PIECE FIBERGLASS SHOWER.

PROVIDE SHATTER-PROOF GLASS ENCLOSURE.

△1 PROVIDE A MINIMUM 72" NON-ABSORBENT FINISH AT THE WALLS OF THE SHOWER COMPARTMENT.

FIREPLACE NOTE

FIREPLACE BY: "MARCO" OR EQ.

MODEL NO.: CCT36O (DIRECT VENT) GAS FIREPLACE

WARNOCK HERSEY REPORT No. 13955A-231
COMPLIES WITH ANZI Z21.50b 1990 AND ANSI Z 21.44 1995

FIREPLACE SHALL BE CONSTRUCTED AS A SINGLE COMPLETE ASSEMBLY READILY ATTACHABLE TO OTHER COMPONENTS.

INSTALLED AS PER MANUFACTURER'S SPECIFICATIONS AND RECOMENDATIONS.

FIREPLACE TO HAVE TIGHT FITTING GLASS DOORS AND SHALL

INTERIOR FINISH SCHEDULE

ROOM	FLOOR	WALLS	CEILING	REMARKS
ENTRY	CERAMIC TILE	KNOCKDOWN	KNOCKDOWN	PAINT WALLS & CLG.
DINING ROOM	CARPET			
FAMILY ROOM				
LIVING ROOM				
HALL				
MASTER BEDROOM				
BEDROOM #2				
BEDROOM #3				
BEDROOM #4				
BEDROOM #5 OPT.				
RETREAT OPTION				
LOFT OPTION				
BUNK ROOM OPT.				
1. MASTER BATH				
BATH #2	VINYL			
BATH #3				
KITCHEN				
NOOK				
LAUNDRY				

▫ WARDROBES, CLOSETS AND STORAGES TO HAVE SAME FLOOR COVERING AS ADJACENT ROOM. (U.N.O.)

▫ BULLNOSE ALL CORNERS EXCEPT WINDOWS AND CLOSETS.

1. WATER CLOSET COMPARTMENT TO HAVE VINYL FLOOR COVER.

RESUBMITTAL
FEB 16 2017
San Mateo County Building Inspection

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1551 North Tustin Avenue, Suite 640
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Architecture • Planning

"HIGHLAND ESTATES, LOT 9"
2185 COBBLEHILL PLACE
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THE CHAMBERLAIN GROUP
655 SKY WAY, SUITE 230
SAN CARLOS, CALIFONIA 94070
PHONE (650) 595-5582 FAX (650) 595-5066

LOT No. 9

INTERIOR ELEVATIONS, NOTES AND SCHEDULE

REVISIONS
△1 JAN. 6, 2017 P.C. 1

LICENSED ARCHITECT
MARK H. GROSS
C-24313
Ren. 9-30-17
STATE OF CALIFORNIA

ALL DIMENSIONS & CONDITIONS ARE TO BE VERIFIED BY CONTRACTOR BEFORE START OF CONSTRUCTION.

DESIGNED BY

DRAWN BY

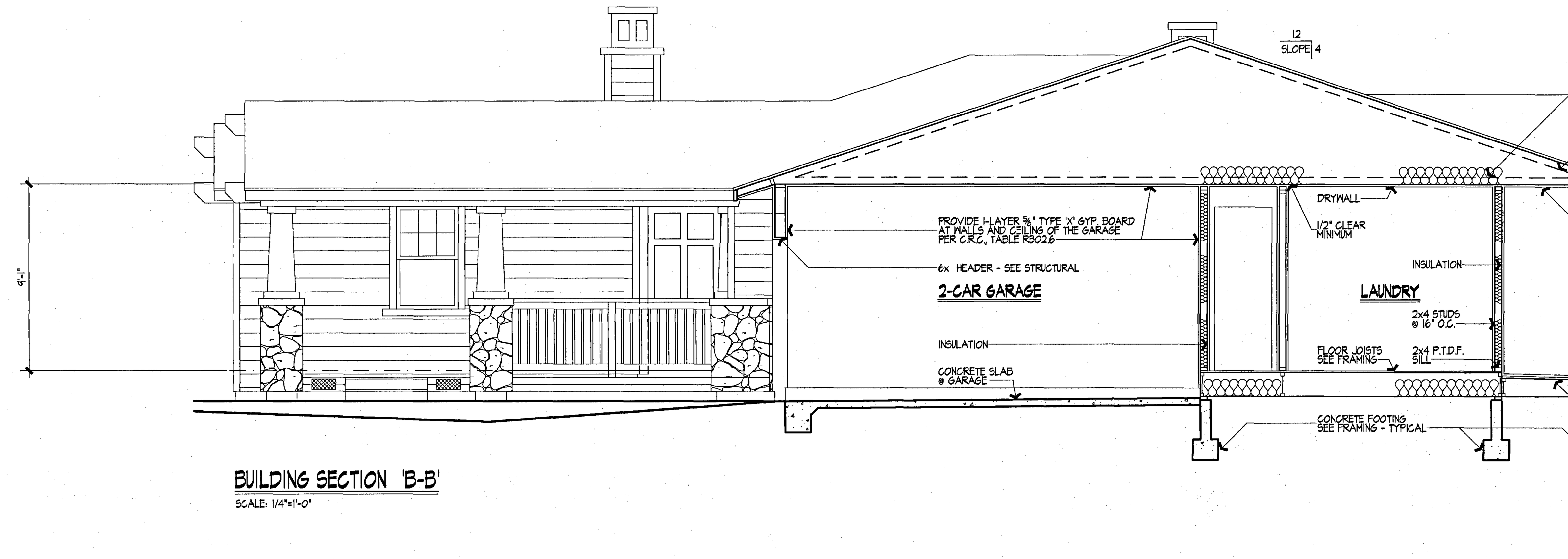
CHECKED BY

JOB NO. 4276

DATE NOVEMBER 3, 2014

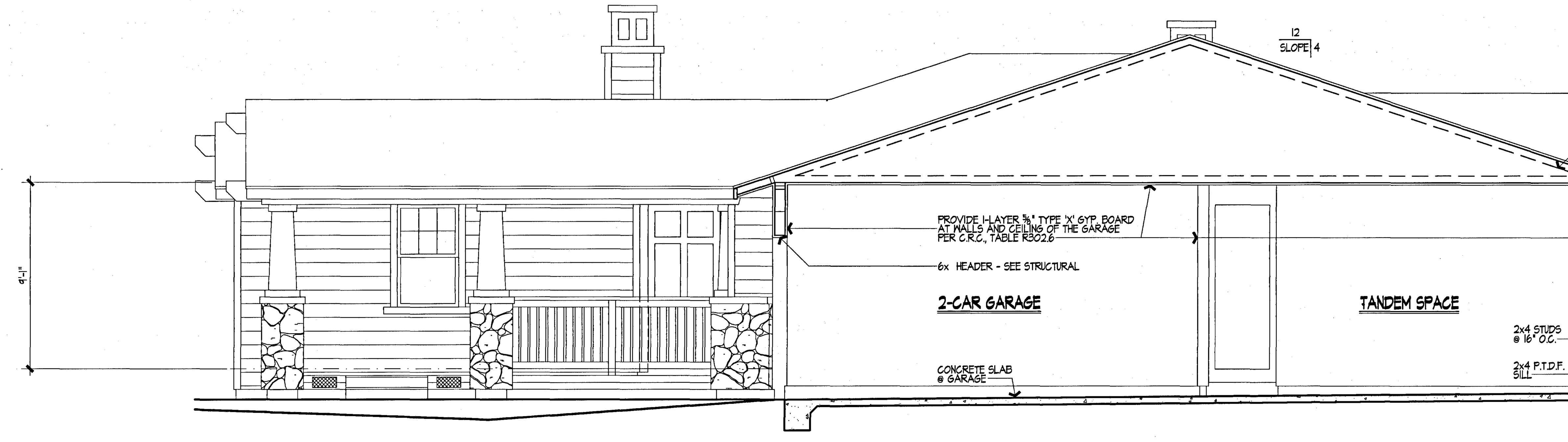
SHEET NO.

3



BUILDING SECTION 'B-B'

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



BUILDING SECTION 'A-A'

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

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LOT No. 9

BUILDING SECTIONS

REVISIONS	
JAN. 6, 2017	P.C. 1

LICENSED ARCHITECT MARK H. GROSS C-24313 Ren. 9-30-17 STATE OF CALIFORNIA

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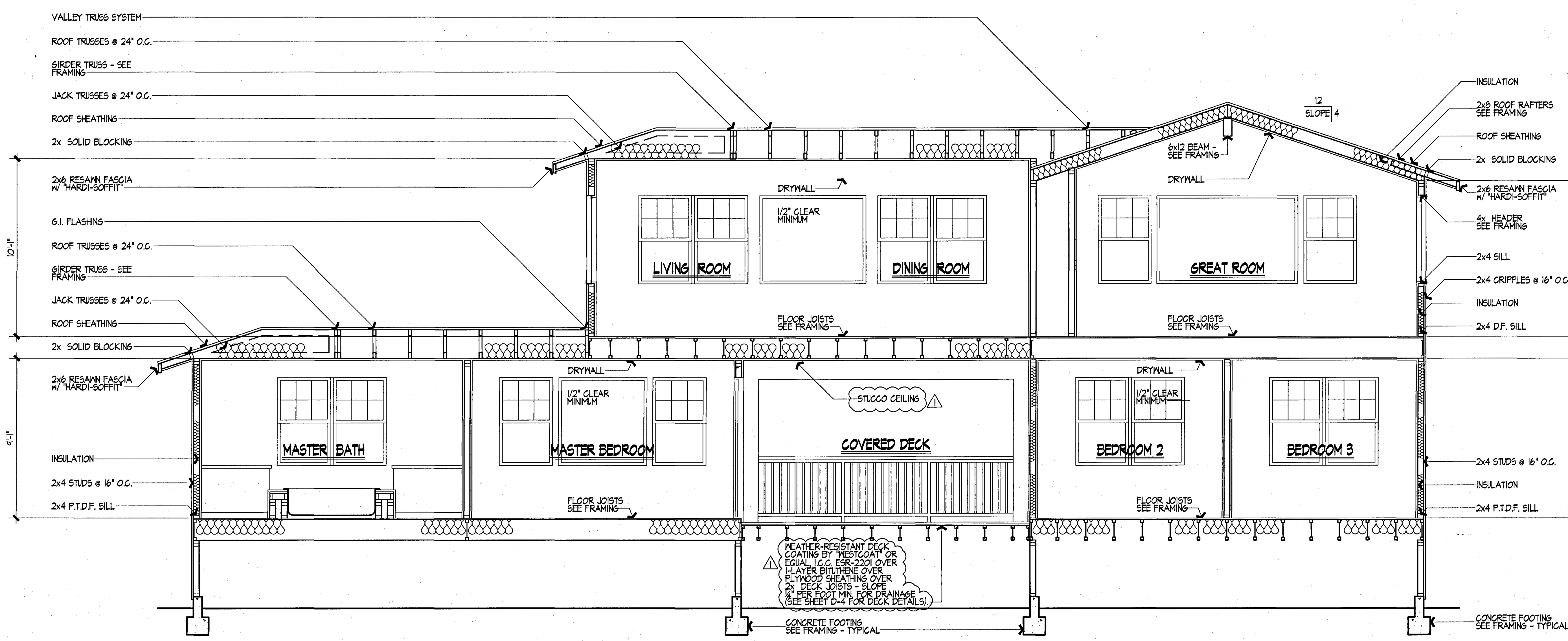
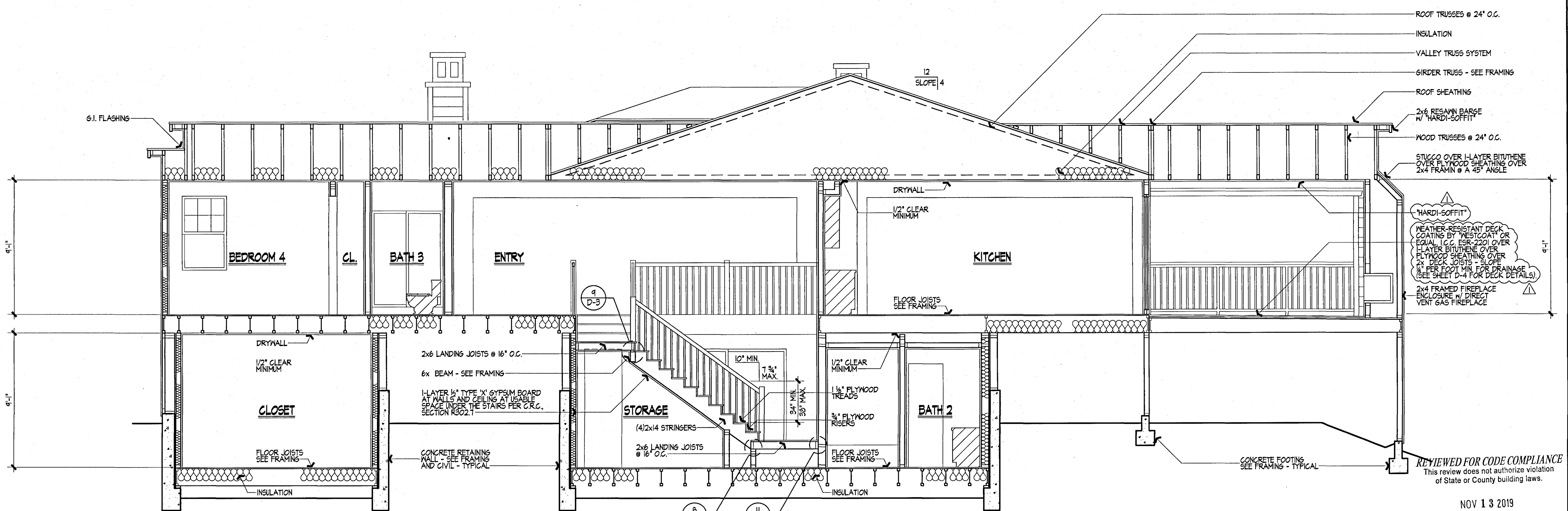


BUILDING SECTION 'D-D'

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



BUILDING SECTION 'C-C'

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

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NOV 13 2019
SAN MATEO CO. BLDG. INSP. DIV.

RESUBMITTAL
FEB 16 2017
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Building Inspection

Mark Gross & Associates, Inc.
Architecture • Planning

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2185 COBBLEHILL PLACE
SAN MATEO COUNTY, CALIFORNIA
THE CHAMBERLAIN GROUP

LOT No. 9

BUILDING SECTIONS

REVISIONS
JAN. 6, 2017 P.C. 1

LICENSED ARCHITECT
MARK R. GROSS
C-24313
STATE OF CALIFORNIA

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CHECKED BY
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SHEET NO.
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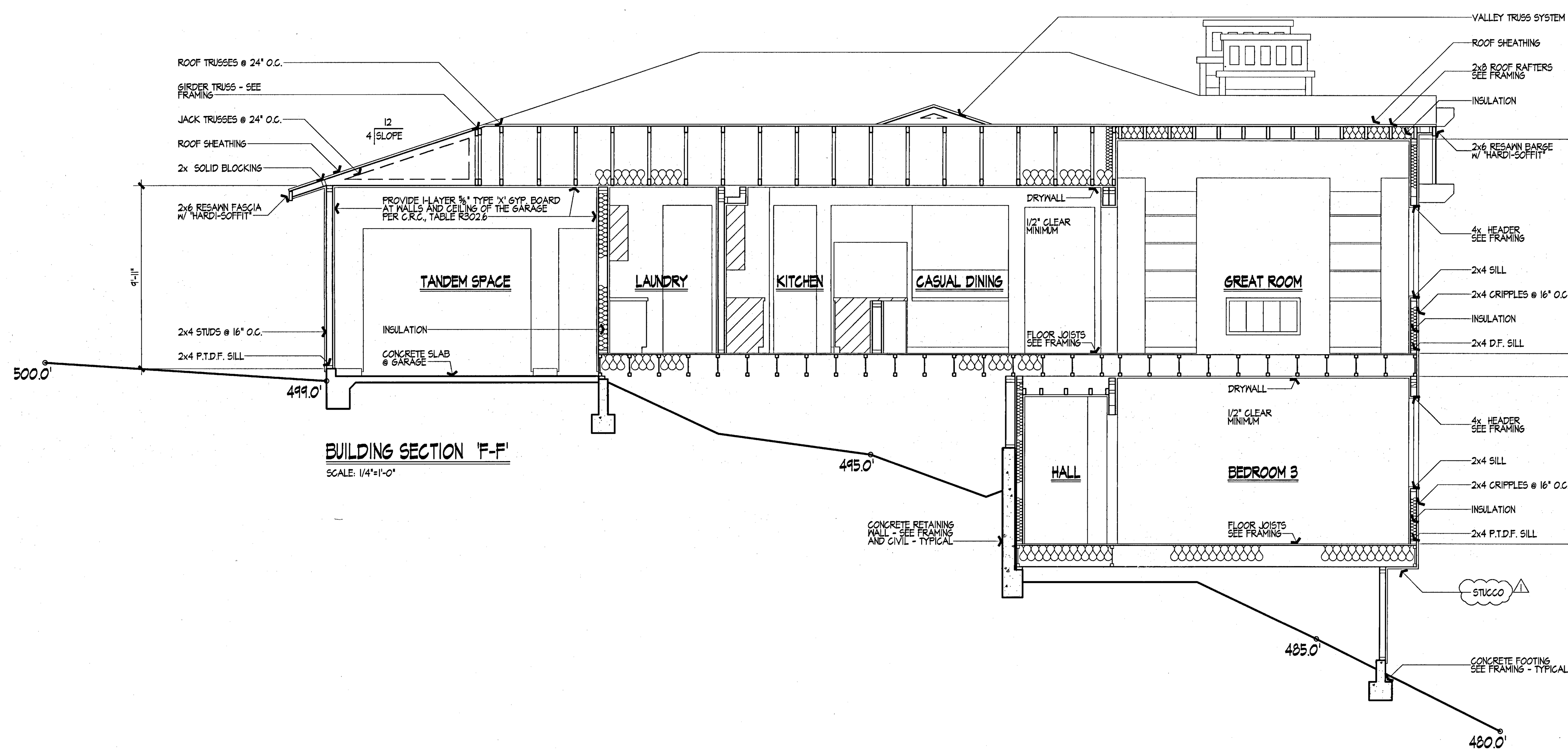
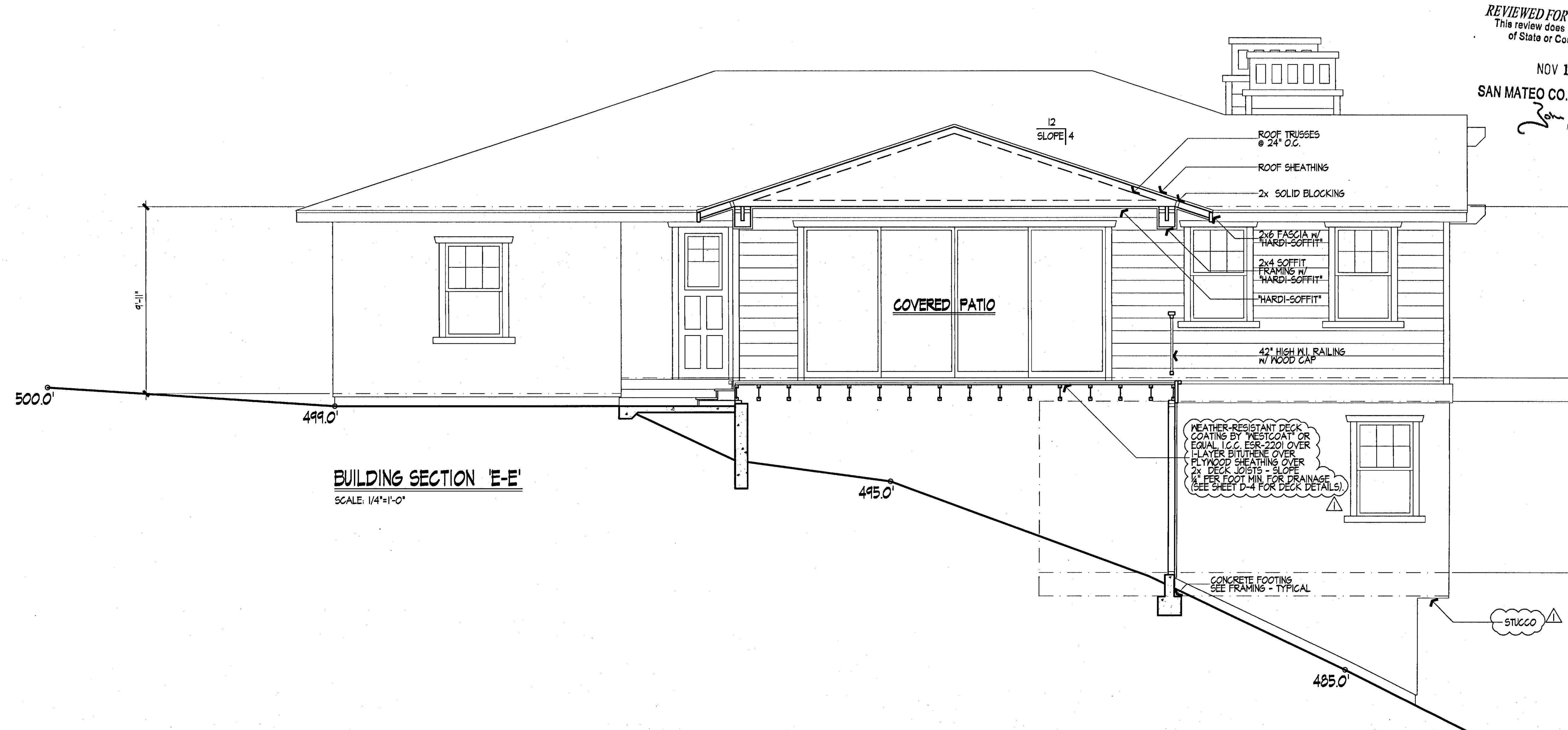


BUILDING SECTION 'F-F'

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



BUILDING SECTION 'E-E'

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

REVIEWED FOR CODE COMPLIANCE
This review does not authorize violation of State or County building laws.
NOV 13 2019
SAN MATEO CO. BLDG. INSP. DIV.

RESUBMITTAL
FEB 2017
San Mateo County
Building Inspection

MGA
Architecture • Planning
Mark Gross & Associates, Inc.
Irvine, California

"HIGHLAND ESTATES, LOT 9"
2185 COBBLEHILL PLACE
SAN MATEO COUNTY, CALIFORNIA
THE CHAMBERLAIN GROUP
SAN CARLOS, CALIFORNIA

LOT No. 9

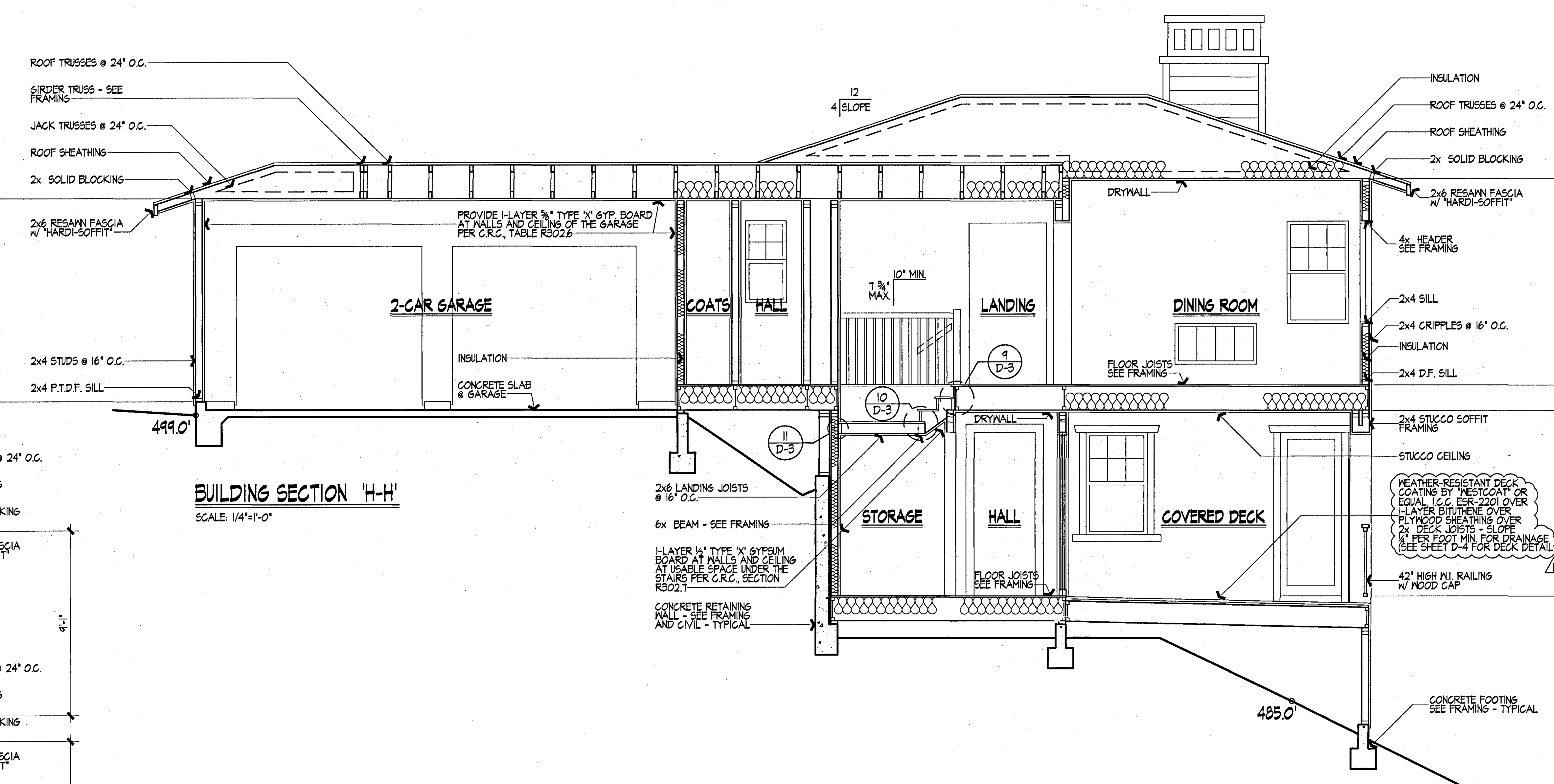
BUILDING SECTIONS

REVISIONS
JAN. 8, 2017 P.C. 1

LICENSED ARCHITECT
STATE OF CALIFORNIA
C-24313

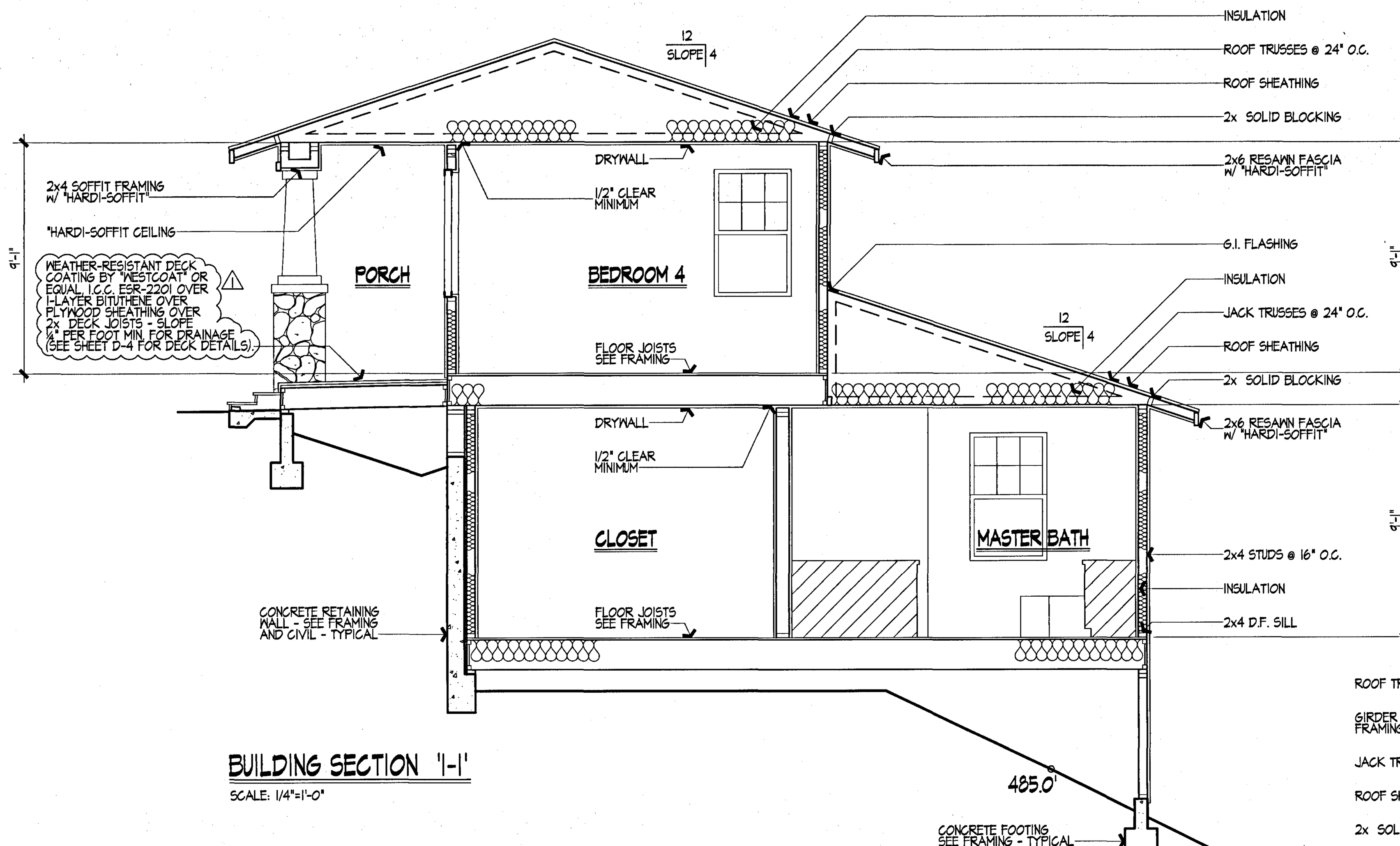
ALL DIMENSIONS & CONDITIONS ARE TO BE VERIFIED BY CONTRACTOR BEFORE START OF CONSTRUCTION.

DESIGNED BY
DRAWN BY
CHECKED BY
JOB NO.
4276
DATE
NOVEMBER 5, 2014
SHEET NO.
6



BUILDING SECTION 'H-H'

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



BUILDING SECTION 'I-I'

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

REVIEWED FOR CODE COMPLIANCE
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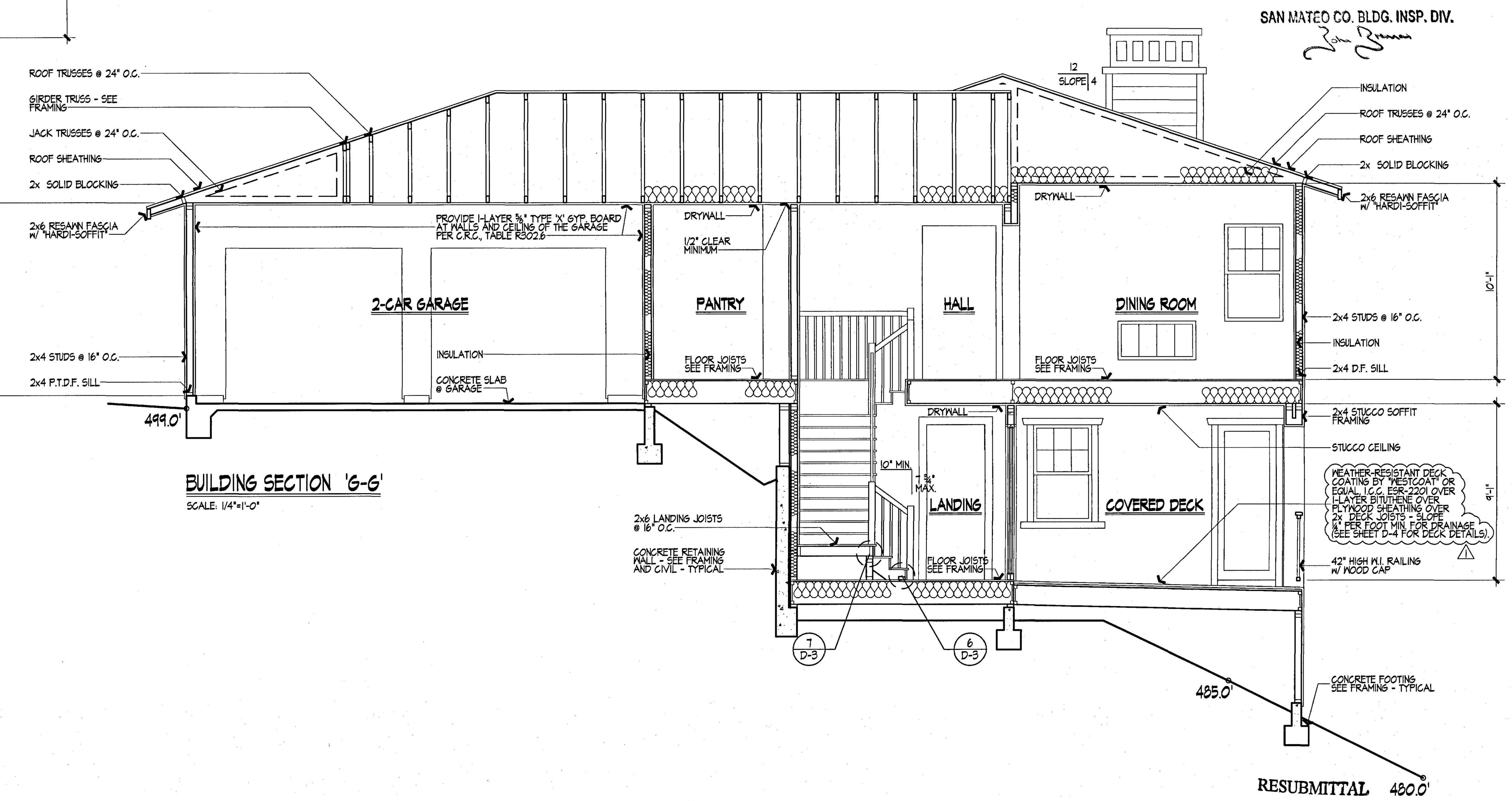
NOV 1 8 2019
SAN MATEO CO. BLDG. INSP. DIV.



BUILDING SECTION 'G-G'

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

RESUBMITTAL

San Mateo County Building Inspection

"HIGHLAND ESTATES, LOT 9"
2185 COBBLEHILL PLACE
SAN MATEO COUNTY, CALIFORNIA
THE CHAMBERLAIN GROUP
655 SKY WAY, SUITE 230
SAN CARLOS, CALIFORNIA 94070
PHONE (650) 595-5582 FAX (650) 595-5066

Mark Gross & Associates, Inc.
8881 Research Drive
Irvine, California 92618
(949) 387-3800 Fax (949) 387-7800

Architecture • Planning

LOT No. 9
BUILDING SECTIONS

REVISIONS	
△1 JAN. 6, 2017	P.C. 1

LICENSED ARCHITECT MARK H. GROSS C-24313 Ren. 9-30-17 STATE OF CALIFORNIA

ALL DIMENSIONS & CONDITIONS ARE TO BE VERIFIED BY CONTRACTOR BEFORE START OF CONSTRUCTION.

DESIGNED BY

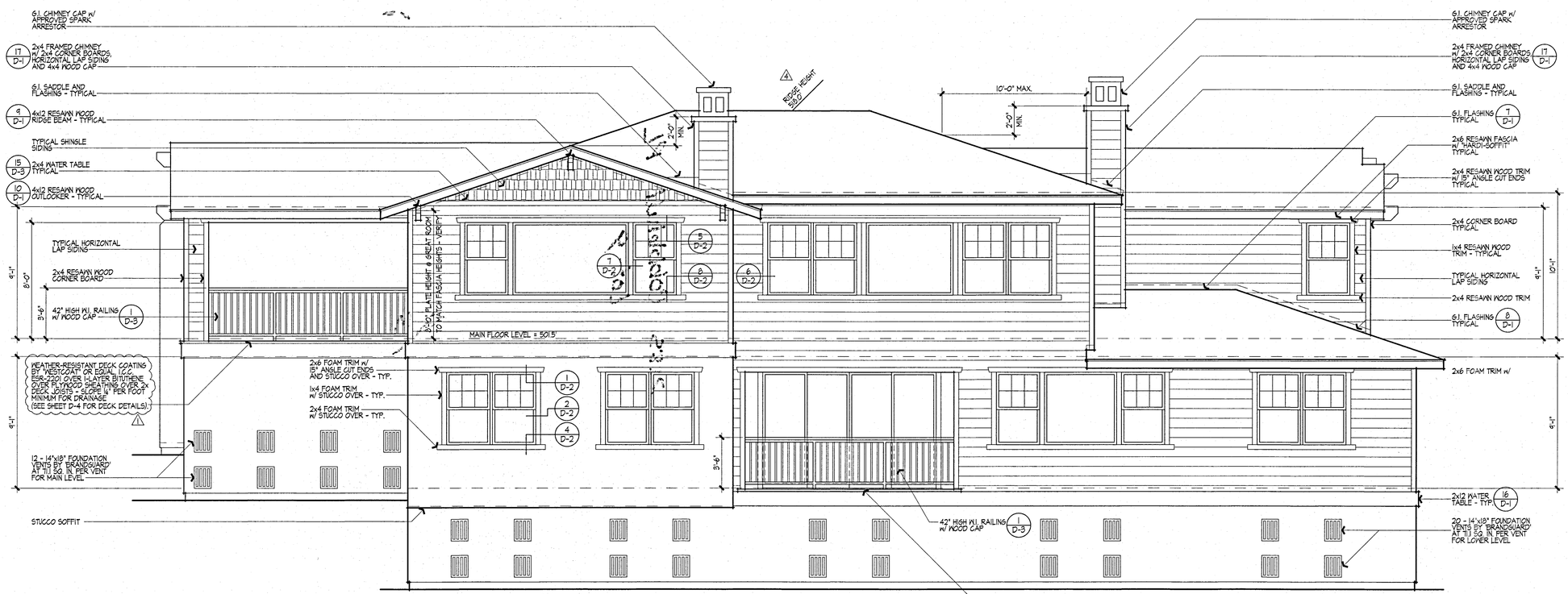
DRAWN BY

CHECKED BY

JOB NO. 4276

DATE NOVEMBER 3, 2014

SHEET NO. 7



REAR ELEVATION - NORTH SIDE

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

ELEVATION NOTES:

ALL FASCIAS & BARGES TO BE 2x6 RESAWN UNLESS NOTED OTHERWISE

ALL EXPOSED WOOD TO BE RE/S (U.N.O.)

LAPPED SIDING TO BE 'HARDIPLANK' SIDING BY JAMES HARDIE BUILDING PRODUCTS OR EQUAL, OVER A MIN. 1-LAYER OF 15# BUILDING PAPER OVER 5/8" TYPE 'X' SHEETROCK. SIDING TO HAVE 8" EXPOSURE.
LISTING NUMBER: 8140-2026-0002
CATEGORY: 8140-EXTERIOR WALL SIDING AND SHEATHING FOR WILD-LAND URBAN INTERFACE (WUI.)
ICC-ES REPORT - ESR-2290
NFPA-251 FIRE TESTS OF BUILDING CONSTRUCTION AND MATERIALS.

SHINGLE SIDING TO BE 'HARDISHINGLE' SIDING BY JAMES HARDIE BUILDING PRODUCTS OR EQUAL, OVER A MIN. 1-LAYER OF 15# BUILDING PAPER OVER 5/8" TYPE 'X' SHEETROCK.
LISTING NUMBER: 8140-2026-0004
CATEGORY: 8140-EXTERIOR WALL SIDING AND SHEATHING FOR WILD-LAND URBAN INTERFACE (WUI.)
ICC-ES REPORT - ESR-2290
NFPA-251 FIRE TESTS OF BUILDING CONSTRUCTION AND MATERIALS.

ALL EXTERIOR CEILINGS TO BE 'HARDI-SOFFIT' BY JAMES HARDIE. ESR-2273.

ALL SOFFITS AT THE EAVE AND BARGE OVERHANGS TO BE 'HARDI-SOFFIT' BY JAMES HARDIE. ESR-2273.

PROVIDE 'MOISTOP' FLASHING AROUND ALL EXTERIOR WALL OPENINGS AND PENETRATIONS.

BUILDING ENVELOPE PENETRATIONS SHOULD BE SEALED WITH QUICKFLASH PANELS OR OTHER SIMILAR PRODUCT. PRE-MANUFACTURED FLASHING IN LIEU OF FIELD-FABRICATED SHEET METAL FLASHING AND SEALANT AT ELECTRICAL, MECHANICAL AND PLUMBING PENETRATIONS. NOTE THAT PRE-MANUFACTURED FLASHING PANELS DO NOT PRECLUDE RODENT-PROOFING AS DEFINED IN C.R.C. R602.3.4.1.

ALL STONE VENEER TO BE BY 'CORONADO' OR EQ. LEDGESTONE SERIES / OLD WORLD LEDGE
ICC THE INTERNATIONAL CONFERENCE OF BUILDING OFFICIALS. REPORT ESR-2568.

ALL ROOF COVERINGS TO BE A CLASS 'A' RATING

ALL 7/8" STUCCO TO BE A 3-COAT SYSTEM w/ A LIGHT LACE FINISH.

DOWNSPOUT ATTACHMENTS AND OTHER INCIDENTAL FIXTURES THAT PENETRATE THE EXTERIOR WALL MEMBRANE SHALL HAVE ALL HOLES PRE-DRILLED AND FILLED WITH SEALANT PRIOR TO DRIVING FASTENERS.

SEE MATERIAL AND COLOR SCHEDULE FOR PAINT AND COLORS

TRIM APPLIED OVER STUCCO TO BE FOAM w/ STUCCO FINISH COAT OVER UNLESS NOTED OTHERWISE

ALL TRIM OVER SIDING TO BE RE/S WOOD TRIM (U.N.O.)

A WATER-RESISTIVE BARRIER SHALL BE INSTALLED BETWEEN WOOD-BASED SHEATHING & STUCCO WITH A PERFORMANCE EQUIVALENT TO AT LEAST 2 LAYERS OF GRADE 'D' PAPER CBC 2510.6

SEE T-24 SHEETS FOR WINDOW REQUIREMENTS

VERY HIGH FIRE SEVERITY ZONE NOTES:

1. DRIP EDGE FLASHING USED AT THE FREE EDGES OF ROOFING MATERIALS SHALL BE NON-COMBUSTIBLE. CBC 705A.4.1.
2. VALLEY FLASHINGS SHALL BE NOT LESS THAN 0.019-INCH (No. 26 GALVANIZED SHEET GAGE) CORROSION-RESISTANT METAL INSTALLED OVER A MINIMUM 36-INCH-WIDE UNDERLAYMENT CONSISTING OF ONE LAYER OF NO. 72 ASTM CAP SHEET RUNNING THE FULL LENGTH OF THE VALLEY. CBC 705A.3.
3. ALL VENT OPENINGS (ATTIC, UNDERFLOOR, COMBUSTION AIR, ETC.) ARE TO BE PROTECTED BY NONCOMBUSTIBLE CORROSION RESISTANT MESH THAT MEETS THE FOLLOWING REQUIREMENTS:
   - INDIVIDUAL VENT OPENINGS SHALL NOT EXCEED 144 SQUARE INCHES
   - THE DIMENSIONS OF THE OPENINGS SHALL BE A MINIMUM OF 1/16-INCH INCH AND SHALL NOT EXCEED 1/8-INCH.
4. CHIMNEYS, FLUES OR STOVEPIPES ATTACHED TO ANY FIREPLACE, STOVE, BARBEQUE OR OTHER SOLID OR LIQUID FUEL BURNING EQUIPMENT OR DEVICE SHALL BE EQUIPPED WITH AN APPROVED SPARK ARRESTOR. CBC 1114.1.
5. GLAZING FRAMES MADE OF VINYL MATERIALS SHALL HAVE WELDED CORNERS, METAL REINFORCEMENT IN THE INTERLOCK AREA, AND BE CERTIFIED TO THE MOST CURRENT EDITION OF ANSI/AAMA/NWWDA 101/I.S.2 STRUCTURAL REQUIREMENTS. CBC 708A.2.2.1.
6. EXTERIOR WINDOW AND EXTERIOR GLAZED DOOR ASSEMBLIES SHALL COMPLY WITH ONE OF THE FOLLOWING:
   - BE CONSTRUCTED OF MULTIPANE GLAZING WITH A MINIMUM OF ONE TEMPERED PANE MEETING THE REQUIREMENTS OF CBC SECTION 2406 FOR SAFETY GLAZING.
   - HAVE A FIRE-RESISTANCE RATING OF NOT LESS THAN 20 MINUTES WHEN TESTED ACCORDING TO NFPA 257.
   - BE TESTED TO MEET THE PERFORMANCE REQUIREMENTS OF SFM STANDARD 12-7A-2.
7. EXTERIOR DOOR SHALL COMPLY WITH ONE OF THE FOLLOWING:
   - THE EXTERIOR SURFACE OR CLADDING SHALL BE OF NONCOMBUSTIBLE OR IGNITION-RESISTANT MATERIAL.
   - HAVE A MINIMUM 20- MINUTE FIRE-RESISTANCE RATING.
   - TESTED TO MEET THE PERFORMANCE REQUIREMENTS OF SFM STANDARD 12-7A-1.
   - CONSTRUCTED OF SOLID CORE WOOD THAT COMPLIES WITH THE FOLLOWING REQUIREMENTS:
     - STILES AND RAILS SHALL NOT BE LESS THAN 1 3/8 INCHES THICK.
     - RAISED PANELS SHALL NOT BE LESS THA 1 1/4 INCHES THICK. THE EXTERIOR PERIMETER OF THE RAISED PANEL MAY TAPER TO A TONGUE NOT LESS THAN 3/8 INCH THICK.
8. CONSTRUCTION OF WALKING SURFACES OF DECKS, PORCHES, BALCONIES AND STAIRS SHALL COMPLY WITH ONE OF THE FOLLOWING:
   - IGNITION RESISTANT MATERIAL THAT COMPLIES WITH THE PERFORMANCE REQUIREMENTS OF BOTH SFM STANDARD 12-7A-4, AND SFM STANDARD 12-7A-5.
   - EXTERIOR FIRE TREATED WOOD.
   - NON COMBUSTIBLE MATERIAL.
   - ANY MATERIAL THAT COMPLIES WITH THE PERFORMANCE REQUIREMENTS OF SFM STANDARD 12-7A-4A (WHEN ATTACHED EXTERIOR WALL COVERING IS ALSO EITHER NONCOMBUSTIBLE OR IGNITION-RESISTANT MATERIAL.

MAIN LEVEL UNDERFLOOR AREA = 1,073 SQ. FT.
PROVIDE 4 - 14"x 6" FOUNDATION VENTS BY 'BRANDSUARD' AT 23.4 SQ. IN. PER VENT
PROVIDE 3 - 14"x 12" FOUNDATION VENTS BY 'BRANDSUARD' AT 45.3 SQ. IN. PER VENT
PROVIDE 12 - 12"x 18" FOUNDATION VENTS BY 'BRANDSUARD' AT 71.1 SQ. IN. PER VENT
PROVIDE 1 SQ. FT. OF VENTILATION FOR EVERY 150 SQ. FT. OF FLOOR AREA
VENTILATION PROVIDED = 1,082.7 SQ. IN.
REQUIRED UNDER FLOOR VENTILATION = 1,073 SQ. IN.
SEE ELEVATIONS FOR APPROXIMATE LOCATION OF VENTS.

LOWER LEVEL UNDERFLOOR AREA = 1,668 SQ. FT.
PROVIDE 6 - 14"x 12" FOUNDATION VENTS BY 'BRANDSUARD' AT 45.3 SQ. IN. PER VENT
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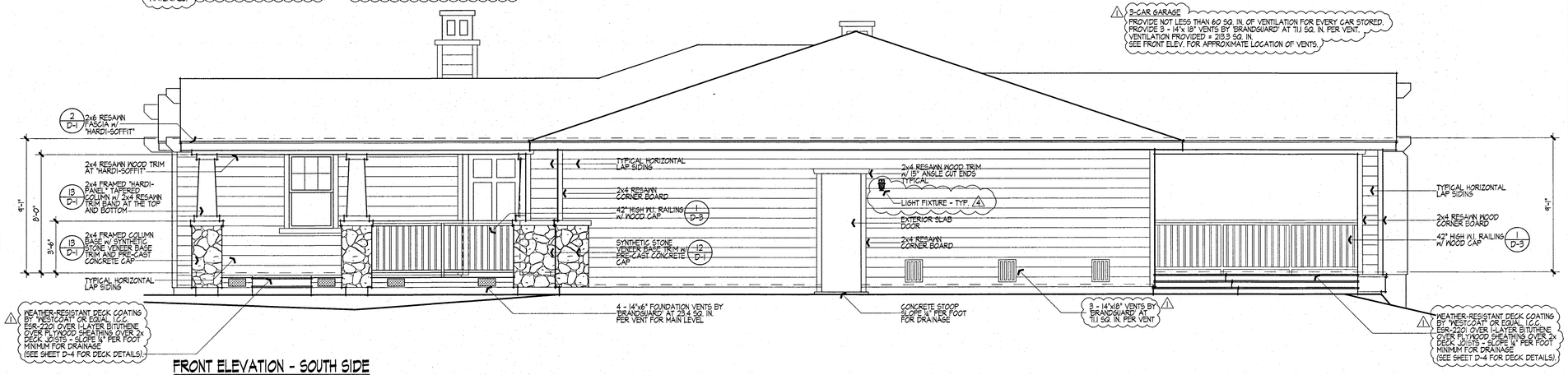
PROVIDE 1 SQ. FT. OF VENTILATION FOR EVERY 150 SQ. FT. OF FLOOR AREA
VENTILATION PROVIDED = 1,613.8 SQ. IN.
REQUIRED UNDER FLOOR VENTILATION = 1,668 SQ. IN.
SEE ELEVATIONS FOR APPROXIMATE LOCATION OF VENTS.

3-CAR GARAGE
PROVIDE NOT LESS THAN 60 SQ. IN. OF VENTILATION FOR EVERY CAR STORED.
PROVIDE 3 - 14"x 18" VENTS BY 'BRANDSUARD' AT 71.1 SQ. IN. PER VENT.
VENTILATION PROVIDED = 213.3 SQ. IN.
SEE FRONT ELEV. FOR APPROXIMATE LOCATION OF VENTS.



FRONT ELEVATION - SOUTH SIDE

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

REVIEWED FOR CODE COMPLIANCE
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NOV 13 2019
SAN MATEO CO. BLDG. INSP. DIV.

RESUBMITTAL
MAY 6 2018
San Mateo County
Building Inspection

Mark Gross & Associates, Inc.
8681 Research Drive
Irvine, California 92618
(949) 387-3080 Fax (949) 387-7800

MGA Architecture • Planning

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THE CHAMBERLAIN GROUP
655 SKY WAY - SUITE 230
SAN CARLOS, CALIFORNIA 94070
PHONE (650) 595-5582 FAX (650) 595-5068

LOT No. 9

EXTERIOR ELEVATIONS

REVISIONS
1 JAN. 6, 2017 P.C. 1
2 MAR. 21, 2017 P.C. 2
3 JUNE 5TH PLANNING 2.2
4 NOV. 15, 2017 PLANNING
5 -
6 -
7 -

LICENSED ARCHITECT MARK H. GROSS C-24313 Exp. 8-30-17 STATE OF CALIFORNIA

ALL DIMENSIONS & CONDITIONS ARE TO BE VERIFIED BY CONTRACTOR BEFORE START OF CONSTRUCTION.

DESIGNED BY
DRAWN BY
CHECKED BY
JOB NO. 4216
DATE NOVEMBER 3, 2014
SHEET NO. 8

△1 VERY HIGH FIRE SEVERITY ZONE NOTES:

1. DRIP EDGE FLASHING USED AT THE FREE EDGES OF ROOFING MATERIALS SHALL BE NON-COMBUSTIBLE. CBC 705A.4.1.
2. VALLEY FLASHINGS SHALL BE NOT LESS THAN 0.019-INCH (No. 26 GALVANIZED SHEET GAGE) CORROSION-RESISTANT METAL INSTALLED OVER A MINIMUM 36-INCH-WIDE UNDERLAYMENT CONSISTING OF ONE LAYER OF No. 72 ASTM CAP SHEET RUNNING THE FULL LENGTH OF THE VALLEY. CBC 705A.3.
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5. GLAZING FRAMES MADE OF VINYL MATERIALS SHALL HAVE WELDED CORNERS, METAL REINFORCEMENT IN THE INTERLOCK AREA, AND BE CERTIFIED TO THE MOST CURRENT EDITION OF ANSI/AAMA/NWWDA 101/I.S.2 STRUCTURAL REQUIREMENTS. CBC 708A.2.2.1.
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   - HAVE A FIRE-RESISTANCE RATING OF NOT LESS THAN 20 MINUTES WHEN TESTED ACCORDING TO NFPA 257.
   - BE TESTED TO MEET THE PERFORMANCE REQUIREMENTS OF SFM STANDARD 12-7A-2.
7. EXTERIOR DOOR SHALL COMPLY WITH ONE OF THE FOLLOWING:
   - THE EXTERIOR SURFACE OR CLADDING SHALL BE OF NONCOMBUSTIBLE OR IGNITION-RESISTANT MATERIAL.
   - HAVE A MINIMUM 20- MINUTE FIRE-RESISTANCE RATING WHEN TESTED ACCORDING TO NFPA 252.
   - TESTED TO MEET THE PERFORMANCE REQUIREMENTS OF SFM STANDARD 12-8A-1.
   - CONSTRUCTED OF SOLID CORE WOOD THAT COMPLIES WITH THE FOLLOWING REQUIREMENTS:
   - STILES AND RAILS SHALL NOT BE LESS THAN 1 3/8 INCHES THICK
   - RAISED PANELS SHALL NOT BE LESS THA 1 1/4 INCHES THICK; THE EXTERIOR PERIMETER OF THE RAISED PANEL MAY TAPER TO A TONGUE NOT LESS THAN 3/8 INCH THICK.
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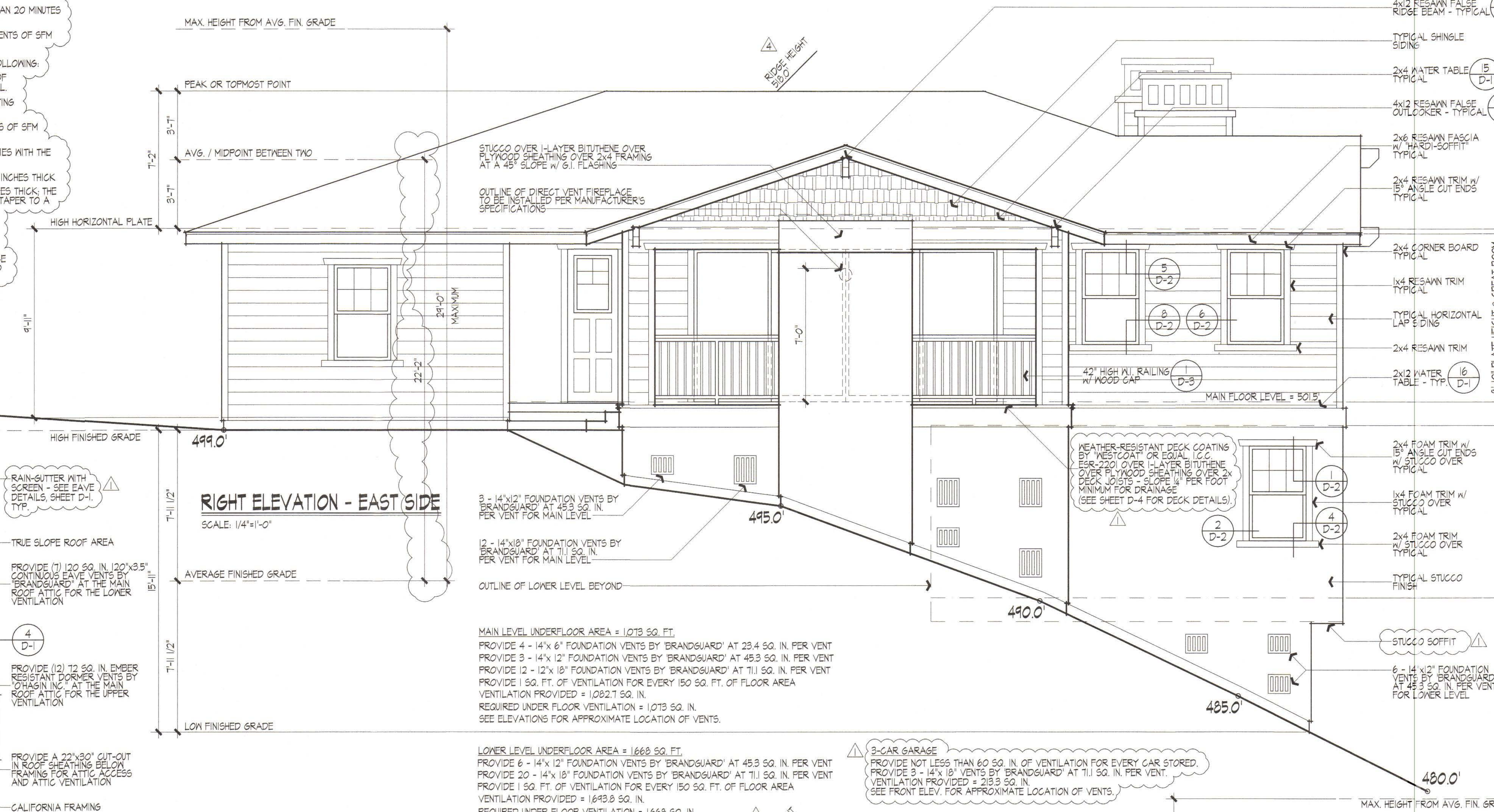
   - EXTERIOR FIRE TREATED WOOD.
   - NON COMBUSTIBLE MATERIAL.
   - ANY MATERIAL THAT COMPLIES WITH THE PERFORMANCE REQUIREMENTS OF SFM STANDARD 12-7A-4A WHEN ATTACHED EXTERIOR WALL COVERING IS ALSO EITHER NONCOMBUSTIBLE OR IGNITION-RESISTANT MATERIAL.



MAIN LEVEL UNDERFLOOR AREA = 1,073 SQ. FT.

PROVIDE 4 - 14"x 6" FOUNDATION VENTS BY 'BRANDGUARD' AT 23.4 SQ. IN. PER VENT
PROVIDE 3 - 14"x 12" FOUNDATION VENTS BY 'BRANDGUARD' AT 45.3 SQ. IN. PER VENT
PROVIDE 12 - 12"x 18" FOUNDATION VENTS BY 'BRANDGUARD' AT 71.1 SQ. IN. PER VENT
PROVIDE 1 SQ. FT. OF VENTILATION FOR EVERY 150 SQ. FT. OF FLOOR AREA
VENTILATION PROVIDED = 1,082.7 SQ. IN.
REQUIRED UNDER FLOOR VENTILATION = 1,073 SQ. IN.
SEE ELEVATIONS FOR APPROXIMATE LOCATION OF VENTS.

LOWER LEVEL UNDERFLOOR AREA = 1,668 SQ. FT.

PROVIDE 6 - 14"x 12" FOUNDATION VENTS BY 'BRANDGUARD' AT 45.3 SQ. IN. PER VENT
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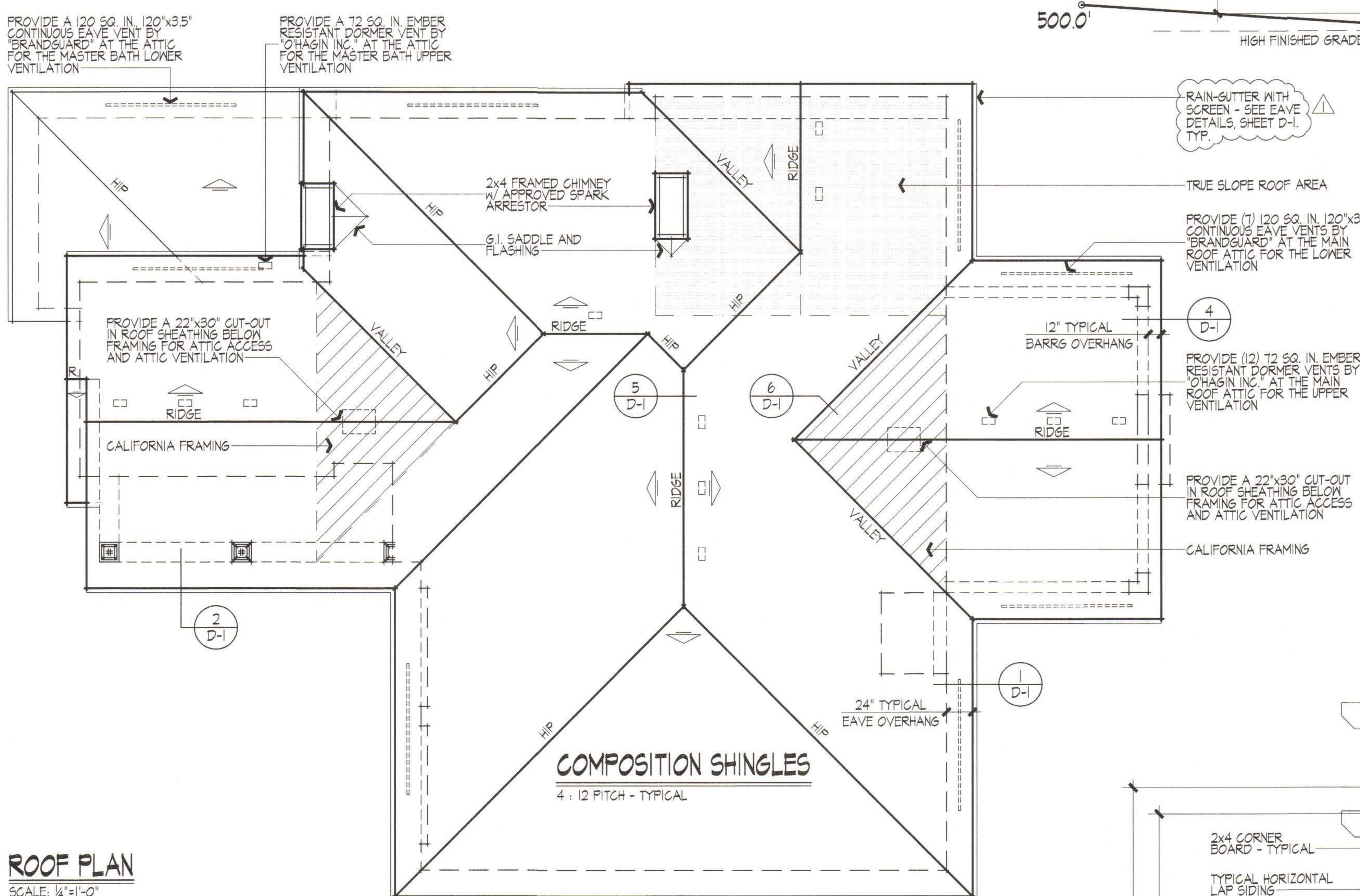
VENTILATION PROVIDED = 1,693.8 SQ. IN.
REQUIRED UNDER FLOOR VENTILATION = 1,668 SQ. IN.
SEE ELEVATIONS FOR APPROXIMATE LOCATION OF VENTS.

△1 3-CAR GARAGE

PROVIDE NOT LESS THAN 60 SQ. IN. OF VENTILATION FOR EVERY CAR STORED.
PROVIDE 3 - 14"x 18" VENTS BY 'BRANDGUARD' AT 71.1 SQ. IN. PER VENT.
VENTILATION PROVIDED = 213.3 SQ. IN.
SEE FRONT ELEV. FOR APPROXIMATE LOCATION OF VENTS.



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

ROOF VENTILATION DATA: MAIN FLOOR ATTIC

3,357 SQ. FT. ATTIC/300 = 11.2 SQ. FT. x 144 SQ. IN. = 1,613 SQ. IN. VENTILATION AREA REQUIRED

TOTAL VENTILATION REQUIRED TO BE DIVIDED EQUALLY AMONG UPPER AND LOWER VENTILATION PER C.R.C. SECTION R806.

REQUIRED UPPER VENTILATION : 807 SQ. IN.

PROVIDE

* 12 - 'O'HAGIN' EMBER RESISTANT DORMER VENTS WITH 72 SQ. IN. OF FREE VENTILATION FOR EACH VENT.		864 SQ. IN.
TOTAL	=	864 SQ. IN.

REQUIRED LOWER VENTILATION : 807 SQ. IN.

PROVIDE

* 7 - "BRANDGUARD" 120"x3.5" CONTINUOUS EAVE VENTS WITH 120 SQ. IN. OF FREE VENTILATION FOR EACH VENT.	=	840 SQ. IN.
TOTAL	=	840 SQ. IN.

ROOF VENTILATION DATA: MASTER BATH ATTIC

275 SQ. FT. ATTIC/300 = .92 SQ. FT. x 144 SQ. IN. = 133 SQ. IN. VENTILATION AREA REQUIRED

TOTAL VENTILATION REQUIRED TO BE DIVIDED EQUALLY AMONG UPPER AND LOWER VENTILATION PER C.R.C. SECTION R806.

REQUIRED UPPER VENTILATION : 67 SQ. IN.

PROVIDE

* 1 - 'O'HAGIN' EMBER RESISTANT DORMER VENTS WITH 72 SQ. IN. OF FREE VENTILATION FOR EACH VENT.		72 SQ. IN.
TOTAL	=	72 SQ. IN.

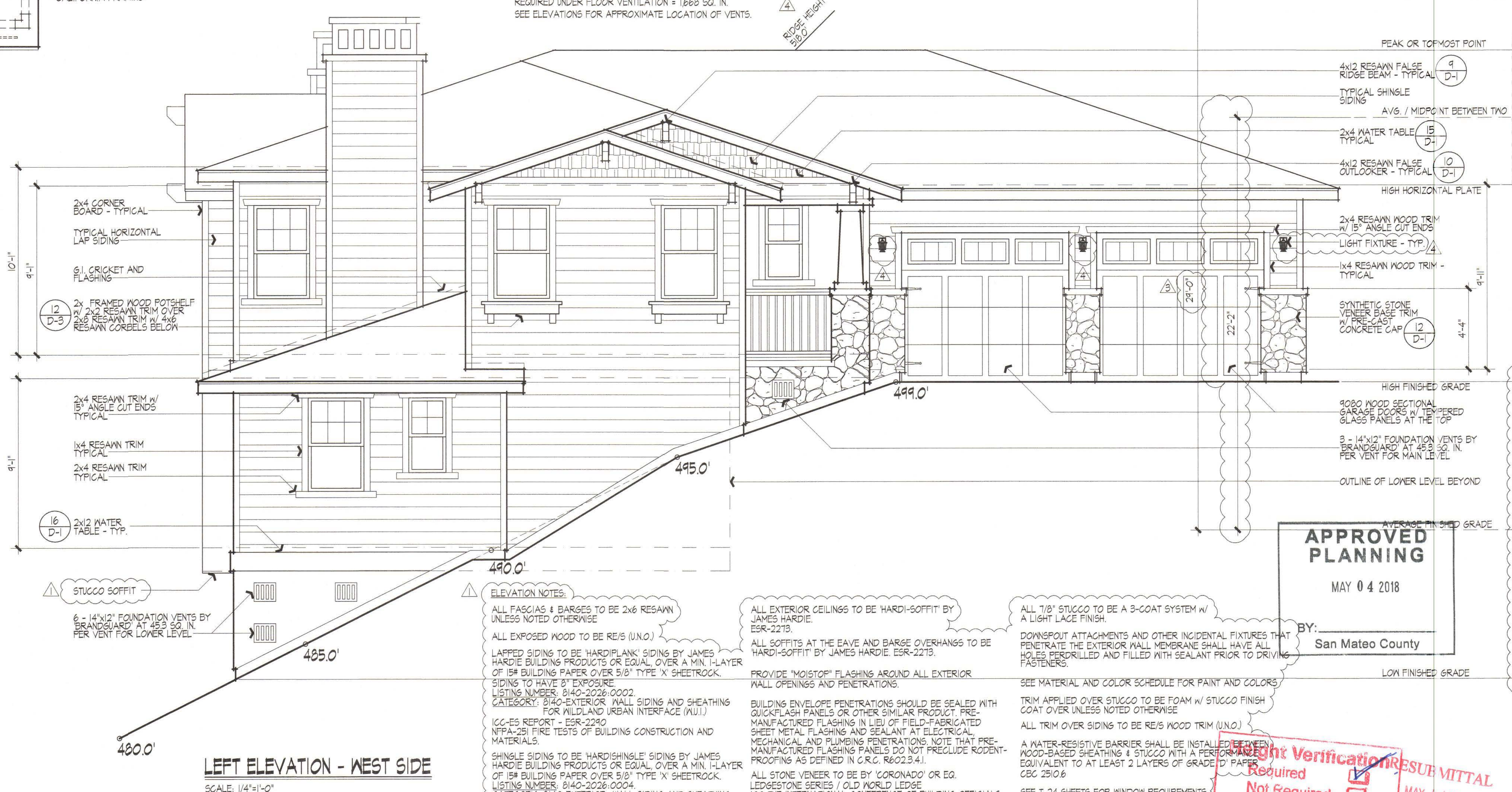
REQUIRED LOWER VENTILATION : 67 SQ. IN.

PROVIDE

* 1 - "BRANDGUARD" 120"x3.5" CONTINUOUS EAVE VENT WITH 120 SQ. IN. OF FREE VENTILATION EACH VENT.	=	72 SQ. IN.
TOTAL	=	72 SQ. IN.

△1 ROOF NOTES:

1. REFER TO SHEET D-1 FOR COMPLETE ROOFING NOTES AND DETAILS
2. ROOF SHEATHING TO BE SOLID. SEE STRUCTURAL ENGINEER'S SHEETS FOR SPECIFICATIONS.
3. COMPOSITION ROOF SHINGLE TO HAVE A CLASS 'A' RATING.
4. COMPOSITION SHINGLES INSTALLATION SHALL BE PER MANUFACTURER'S SPECIFICATIONS AND COMPLY WITH C.R.C., SECTION R905..2.
5. UNDERLAYMENT APPLICATION.
   FOR ROOF SLOPES FROM 2 : 12 UP TO 4 : 12, UNDERLAYMENT SHALL BE 2 LAYERS APPLIED IN THE FOLLOWING MANNER. APPLY A 19-INCH STRIP OF 30# FELT PARALLEL TO AND STARTING AT THE EAVES, FASTENED SUFFICIENTLY TO HOLD IN PLACE. STARTING AT THE EAVE, APPLY 36-INCH WIDE SHEETS OF 30# UNDERLAYMENT, OVERLAPPING SUCCESSIVE SHEETS 19-INCHES, AND FASTENED SUFFICIENTLY TO HOLD IN PLACE. FOR ROOF SLOPES GREATER THAN 4 : 12, UNDERLAYMENT SHALL BE ONE LAYER OF 30# FELT APPLIED IN THE FOLLOWING MANNER. UNDERLAYMENT SHALL BE APPLIED SHINGLE FASHION, PARALLEL TO AND STARTING FROM THE EAVE AND LAPPED 2 INCHES, FASTENED SUFFICIENTLY TO HOLD IN PLACE. END LAPS SHALL BE OFFSET BY 6 FEET.
6. SHINGLE ATTACHMENT.
   ASPHALT SHINGLES SHALL HAVE THE MINIMUM NUMBER OF FASTENERS REQUIRED BY THE MANUFACTURER, BUT NOT LESS THAN 4 FASTENERS PER STRIP SHINGLE OR 2 FASTENERS PER INDIVIDUAL SHINGLE. WHERE THE ROOF SLOPE EXCEEDS 21 : 12 PITCH, SHINGLES SHALL BE INSTALLED AS REQUIRED BY THE MANUFACTURER.
7. FASTENERS.
   FASTENERS FOR ASPHALT SHINGLES SHALL BE GALVANIZED STEEL, ALUMINUM OR COPPER ROOFING NAILS, MINIMUM 12 GAGE SHANK WITH A MINIMUM 3/8" DIAMETER HEAD, ASTM F 1667, OF A LENGTH TO PENETRATE TROUGH THE ROOFING MATERIALS AND A MINIMUM OF 3/4" INTO THE ROOF SHEATHING. WHERE THE ROOF SHEATHING IS LESS THAN 3/4" THICK, THE FASTENERS SHALL PENETRATE THROUGH THE SHEATHING. FASTENERS SHALL COMPLY WITH ASTM F 1667.
8. THIS WILL BE A COOL ROOF APPLICATION BY "CERTAINTEED", MODEL "PRESIDENTIAL SOLARIS".
   PRODUCT I.D. No. 0668-0076.
   COLOR TO BE "MAX. DEF. WEATHERED WOOD".
   SOLAR REFLECTANCE = .25
   THERMAL EMITTANCE = .93
9. PROVIDE DIVERTERS AS REQUIRED.
10. ALL ROOF GUTTERS SHALL BE PROVIDED WITH A MEANS TO PREVENT ACCUMULATION OF LEAVES AND DEBRIS.
11. PROVIDE A MINIMUM 22"x 30" ACCESS OPENING IN THE ROOF SHEATHING TO OVER FRAMED ATTIC AREAS WITH 30" MINIMUM HEAD CLEARANCE - PROVIDE A 12"x 12" OPENING IN ROOF SHEATRHING TO OVER FRAMED ATTIC AREAS WITH LESS THAN 30" HEAD CLEARANCE FOR VENTILATION.
12. RADIANT BARRIER IS NOT REQUIRED. SEE SHEET T-24.4
13. A HEIGHT CERTIFICATION WILL BE REQUIRED PRIOR TO THE ROOF NAILING / FRAMING INSPECTION.
14. ROOF COVERINGS THAT CREATE A SPACE BETWEEN THE ROOF COVERING AND THE ROOF DECK SHALL HAVE ONE LAYER OF 72# MINERAL SURFACED CAP SHEET INSTALLED OVER THE COMBUSTIBLE ROOF DECK.
15. VENTILATION OPENINGS FOR ENCLOSED ATTICS, ENCLOSED EAVE SOFFIT SPACES, ENCLOSED RAFTER SPACES FORMED WHERE CEILINGS ARE APPLIED DIRECTLY TO THE UNDERSIDE OF ROOF RAFTERS, AND UNDER FLOOR VENTILATION OPENINGS SHALL BE FULLY COVERED WITH METAL WIRE MESH, VENTS, OTHER MATERIALS OR OTHER DEVICES THAT MEET THE FOLLOWING REQUIREMENTS PER CRC 327.6.2:
    A. THE DIMENSIONS OF THE OPENINGS SHALL BE A MINIMUM OF 1/16TH INCH AND SHALL NOT EXCEED 1/8TH INCH.
    B. THE MATERIALS USED SHALL BE NON-COMBUSTIBLE AND CORROSION RESISTANT.



△1 ELEVATION NOTES:

ALL FASCIAS & BARGES TO BE 2x6 RESAWN UNLESS NOTED OTHERWISE

ALL EXPOSED WOOD TO BE RE/S (U.N.O.)

LAPPED SIDING TO BE 'HARDIPLANK' SIDING BY JAMES HARDIE BUILDING PRODUCTS OR EQUAL, OVER A MIN. 1-LAYER OF 15# BUILDING PAPER OVER 5/8" TYPE 'X' SHEETROCK. SIDING TO HAVE 8" EXPOSURE.
LISTING NUMBER: 8140-2026:0002.
CATEGORY: 8140-EXTERIOR WALL SIDING AND SHEATHING FOR WILDLAND URBAN INTERFACE (W.U.I.)
ICC-ES REPORT - ESR-2290
NFPA-251 FIRE TESTS OF BUILDING CONSTRUCTION AND MATERIALS.

SHINGLE SIDING TO BE 'HARDISHINGLE' SIDING BY JAMES HARDIE BUILDING PRODUCTS OR EQUAL, OVER A MIN. 1-LAYER OF 15# BUILDING PAPER OVER 5/8" TYPE 'X' SHEETROCK.
LISTING NUMBER: 8140-2026:0004.
CATEGORY: 8140-EXTERIOR WALL SIDING AND SHEATHING FOR WILDLAND URBAN INTERFACE (W.U.I.)
ICC-ES REPORT - ESR-2290
NFPA-251 FIRE TESTS OF BUILDING CONSTRUCTION AND MATERIALS.

ALL EXTERIOR CEILINGS TO BE 'HARDI-SOFFIT' BY JAMES HARDIE. ESR-2273.

ALL SOFFITS AT THE EAVE AND BARGE OVERHANGS TO BE 'HARDI-SOFFIT' BY JAMES HARDIE. ESR-2273.

PROVIDE "MOISTOP" FLASHING AROUND ALL EXTERIOR WALL OPENINGS AND PENETRATIONS.

BUILDING ENVELOPE PENETRATIONS SHOULD BE SEALED WITH QUICKFLASH PANELS OR OTHER SIMILAR PRODUCT. PRE-MANUFACTURED FLASHING IN LIEU OF FIELD-FABRICATED SHEET METAL FLASHING AND SEALANT AT ELECTRICAL, MECHANICAL AND PLUMBING PENETRATIONS. NOTE THAT PRE-MANUFACTURED FLASHING PANELS DO NOT PRECLUDE RODENT-PROOFING AS DEFINED IN C.R.C. R602.3.4.1.

ALL STONE VENEER TO BE BY 'CORONADO' OR EQ. LEDGESTONE SERIES / OLD WORLD LEDGE
ICC THE INTERNATIONAL CONFERENCE OF BUILDING OFFICIALS. REPORT ESR-2598.

ALL ROOF COVERINGS TO BE A CLASS 'A' RATING

ALL 7/8" STUCCO TO BE A 3-COAT SYSTEM w/ A LIGHT LACE FINISH.

DOWNSPOUT ATTACHMENTS AND OTHER INCIDENTAL FIXTURES THAT PENETRATE THE EXTERIOR WALL MEMBRANE SHALL HAVE ALL HOLES PERDRILLED AND FILLED WITH SEALANT PRIOR TO DRIVING FASTENERS.

SEE MATERIAL AND COLOR SCHEDULE FOR PAINT AND COLORS

TRIM APPLIED OVER STUCCO TO BE FOAM w/ STUCCO FINISH COAT OVER UNLESS NOTED OTHERWISE

ALL TRIM OVER SIDING TO BE RE/S WOOD TRIM (U.N.O.)

A WATER-RESISTIVE BARRIER SHALL BE INSTALLED BETWEEN WOOD-BASED SHEATHING & STUCCO WITH A PERFORMANCE EQUIVALENT TO AT LEAST 2 LAYERS OF GRADE 'D' PAPER. CBC 2510.6

SEE T-24 SHEETS FOR WINDOW REQUIREMENTS

APPROVED PLANNING
MAY 04 2018
BY: San Mateo County

Height Verification
Required
Not Required
Benchmark Elev. 502.33
Garage Elev. 500
1st Floor Elev. 501.50
Ridge Elev. 518.0

RESUBMITTAL
MAY 04 2018
San Mateo County Planning

REVIEWED FOR CODE COMPLIANCE
This review does not authorize violation of State or County Building laws.
NOV 13 2019
SAN MATEO CO. BLDG. INSP. DIV.

Mark Gross & Associates, Inc.
Architecture • Planning
8881 Research Drive
Irvine, California 92618
(949) 387-3800 Fax (949) 387-7800

"HIGHLAND ESTATES, LOT 9"
2185 COBBLEHILL PLACE
SAN MATEO COUNTY, CALIFORNIA
THE CHAMBERLAIN GROUP
655 SKY WAY, SUITE 230
SAN CARLOS, CALIFONIA 94070
PHONE (650) 595-5582 FAX (650) 595-5066

LOT No. 9
EXTERIOR ELEVATIONS AND ROOF PLAN

REVISIONS	
△1 JAN. 6, 2017	P.C. 1
△2 MAR. 21, 2017	P.C. 2
△3 JUNE 13'17	PLANN'G C.2
△4 NOV. 15, 2017	PLANNING
△ -	-
△ -	-
△ -	-
△ -	-
△ -	-

LICENSED ARCHITECT MARK H. GROSS C-24313 Ren. 9-30-17 STATE OF CALIFORNIA

ALL DIMENSIONS & CONDITIONS ARE TO BE VERIFIED BY CONTRACTOR BEFORE START OF CONSTRUCTION.

DESIGNED BY

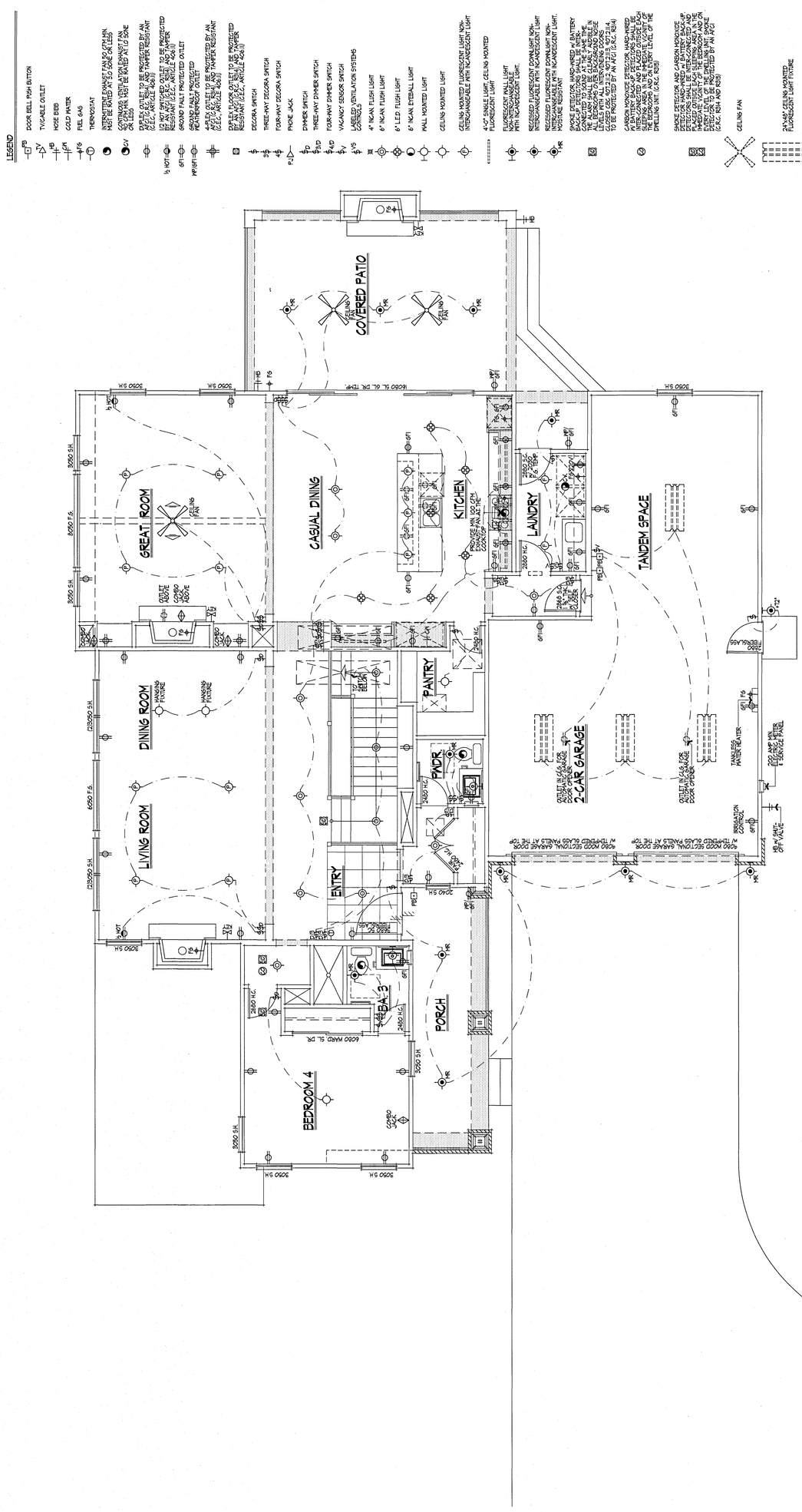
DRAWN BY

CHECKED BY

JOB NO. 4276

DATE NOVEMBER 3, 2014

SHEET NO. 9



MAIN LEVEL UTILITY PLAN

SCALE: ¼"=1'-0"

LEGEND

PB	DOOR BELL PUSH BUTTON
TV	TV/CABLE OUTLET
HB	HOSE BIBB
CW	COLD WATER
FG	FUEL GAS
(T)	THERMOSTAT
◐	INTERMITTENT EXHAUST FAN 50 CFM MIN. MUST BE RATED AT 3.0 SONE OR LESS
◐ CV	CONTINUOUS VENTILATION EXHAUST FAN 90 CFM MIN. MUST BE RATED AT 1.0 SONE OR LESS
⊖	DUPLEX OUTLET TO BE PROTECTED BY AN AFCI (C.R.C. R314), AND TAMPER RESISTANT (C.E.C., ARTICLE 406.11)
½ HOT	1/2 HOT SWITCHED OUTLET TO BE PROTECTED BY AN AFCI (C.R.C. R314), AND TAMPER RESISTANT (C.E.C., ARTICLE 406.11)
GFI	GROUND FAULT PROTECTED OUTLET
WP/GFI	GROUND FAULT PROTECTED WEATHERPROOF OUTLET
⊕	4-PLEX OUTLET TO BE PROTECTED BY AN AFCI (C.R.C. R314), AND TAMPER RESISTANT (C.E.C., ARTICLE 406.11)
⊟	DUPLEX FLOOR OUTLET TO BE PROTECTED BY AN AFCI (C.R.C. R314), AND TAMPER RESISTANT (C.E.C., ARTICLE 406.11)
$	DECORA SWITCH
3$	THREE-WAY DECORA SWITCH
4$	FOUR-WAY DECORA SWITCH
PJ ▷	PHONE JACK
$D	DIMMER SWITCH
$3/D	THREE-WAY DIMMER SWITCH
$4/D	FOUR-WAY DIMMER SWITCH
$V	VACANCY SENSOR SWITCH
$VS	LABELED VENTILATION SYSTEMS CONTROLS
⊠	4" INCAN. FLUSH LIGHT
◎	6" INCAN. FLUSH LIGHT
❀	6" L.E.D. FLUSH LIGHT
◐	6" INCAN. EYEBALL LIGHT
├○	WALL MOUNTED LIGHT
○	CEILING MOUNTED LIGHT
(F)	CEILING MOUNTED FLUORESCENT LIGHT NON-INTERCHANGEABLE WITH INCANDESCENT LIGHT
▭	4'-0" SINGLE LIGHT, CEILING MOUNTED FLUORESCENT LIGHT
├◉	FLUORESCENT WALL LIGHT NON-INTERCHANGEABLE WITH INCANDESCENT LIGHT.
◉	RECESSED FLUORESCENT DOWNLIGHT NON-INTERCHANGEABLE WITH INCANDESCENT LIGHT
◉ MR	RECESSED FLUORESCENT DOWNLIGHT NON-INTERCHANGEABLE WITH INCANDESCENT LIGHT. MOISTURE RESISTANT
SD	SMOKE DETECTOR, HARD-WIRED w/ BATTERY BACK-UP. DETECTORS SHALL BE INTER-CONNECTED TO SOUND AT THE SAME TIME. THE ALARM SHALL BE CLEARLY AUDIBLE IN ALL BEDROOMS OVER BACKGROUND NOISE LEVELS WITH ALL INTERVENEING DOORS CLOSED CBC 907.2.11.2, 907.2.11.3, 907.2.11.4. TO BE PROTECTED BY AN AFCI (C.R.C. R314)
CO	CARBON MONOXIDE DETECTOR, HARD-WIRED W/ BATTERY BACK-UP. DETECTORS SHALL BE INTER-CONNECTED AND PLACED OUTSIDE EACH SLEEPING AREA IN THE IMMEDIATE VICINITY OF THE BEDROOMS AND ON EVERY LEVEL OF THE DWELLING UNIT. (C.R.C. R315)
SD CO	SMOKE DETECTOR AND CARBON MONOXIDE DETECTOR HARD-WIRED w/ BATTERY BACK-UP. DETECTORS SHALL BE INTER-CONNECTED AND PLACED OUTSIDE EACH SLEEPING AREA IN THE IMMEDIATE VICINITY OF THE BEDROOM AND ON EVERY LEVEL OF THE DWELLING UNIT. SMOKE DETECTOR TO BE PROTECTED BY AN AFCI (C.R.C. R314 AND R315)
✕	CEILING FAN
▯	24"x48" CEILING MOUNTED FLUORESCENT LIGHT FIXTURE
◇	COMBO MEDIA JACK
(P)	LED PENDANT LIGHT FIXTURE △1

REVIEWED FOR CODE COMPLIANCE
This review does not authorize violation of State or County building laws.

NOV 13 2019

SAN MATEO CO. BLDG. INSP. DIV.

RESUBMITTAL

FEB 16 2017

San Mateo County
Building Inspection

Mark Gross &
Associates, Inc.
8881 Research Drive
Irvine, California 92618
(949) 387-3800 Fax (949) 387-7800

Architecture • Planning

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THE CHAMBERLAIN GROUP
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SAN CARLOS, CALIFONIA 94070
PHONE (650) 595-5582 FAX (650) 595-5066

LOT No. 9

MAIN LEVEL UTILITY PLAN

REVISIONS	
△1 JAN. 6, 2017	P.C. 1
△ -	-
△ -	-
△ -	-
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LICENSED ARCHITECT
MARK H. GROSS
C-24313
Ren. 9-30-17
STATE OF CALIFORNIA

ALL DIMENSIONS & CONDITIONS ARE TO BE VERIFIED BY CONTRACTOR BEFORE START OF CONSTRUCTION.

DESIGNED BY

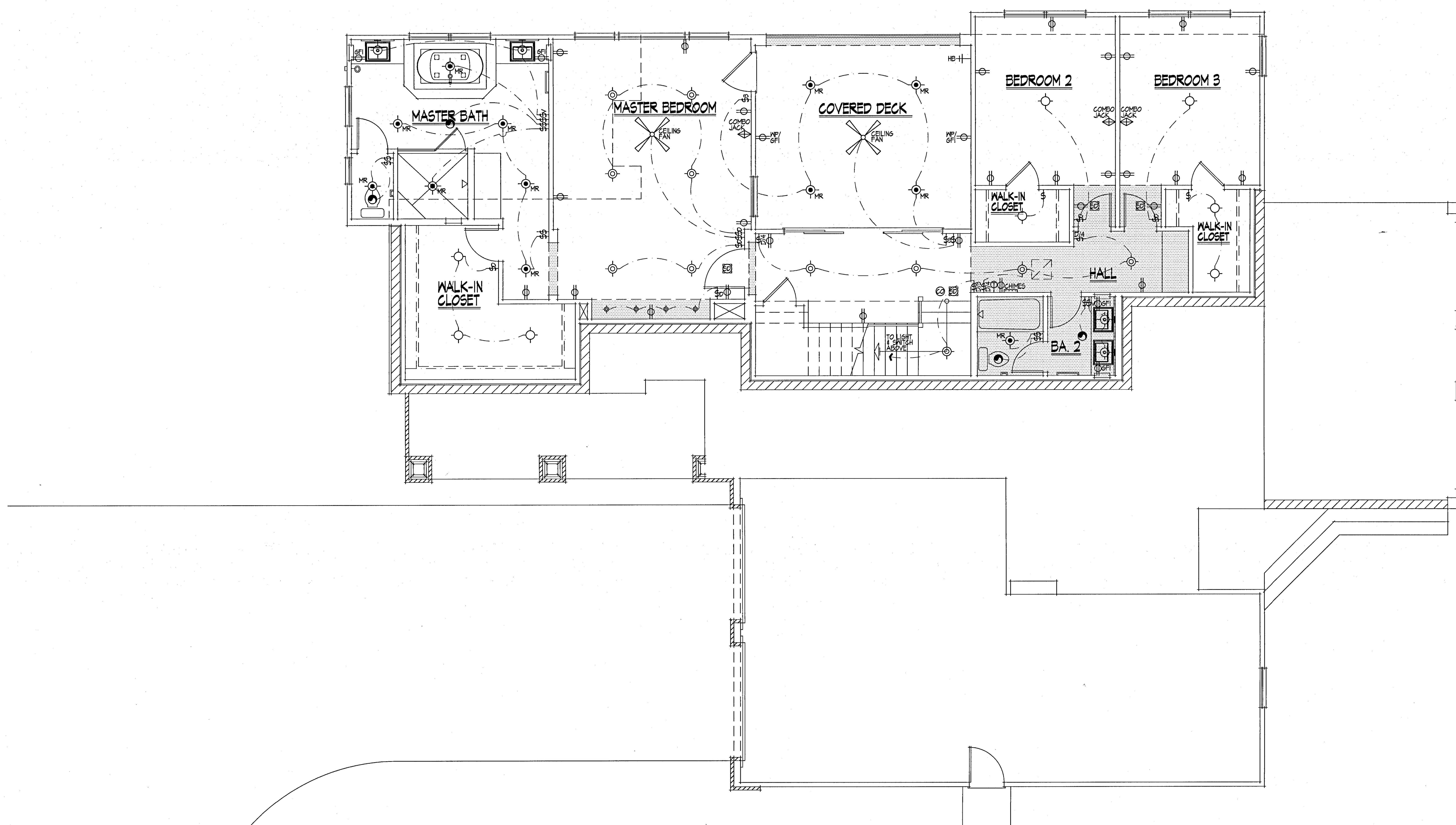
DRAWN BY

CHECKED BY

JOB NO.
4276

DATE
NOVEMBER 3, 2014

SHEET NO.
10



LOWER LEVEL UTILITY PLAN
SCALE: 1/4"=1'-0"

LEGEND

Symbol	Description
PB	DOOR BELL PUSH BUTTON
TV	TV/CABLE OUTLET
HB	HOSE BIBB
CW	COLD WATER
FG	FUEL GAS
T	THERMOSTAT
	INTERMITTENT EXHAUST FAN 50 CFM MIN. MUST BE RATED AT 3.0 SONE OR LESS
CV	CONTINUOUS VENTILATION EXHAUST FAN 90 CFM MIN. MUST BE RATED AT 1.0 SONE OR LESS
	DUPLEX OUTLET TO BE PROTECTED BY AN AFCI (C.R.C. R314), AND TAMPER RESISTANT (C.E.C., ARTICLE 406.11)
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	DUPLEX FLOOR OUTLET TO BE PROTECTED BY AN AFCI (C.R.C. R314), AND TAMPER RESISTANT (C.E.C., ARTICLE 406.11)
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3$	THREE-WAY DECORA SWITCH
4$	FOUR-WAY DECORA SWITCH
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$3/D	THREE-WAY DIMMER SWITCH
$4/D	FOUR-WAY DIMMER SWITCH
$V	VACANCY SENSOR SWITCH
$VS	LABELED VENTILATION SYSTEMS CONTROLS
	4" INCAN. FLUSH LIGHT
	6" INCAN. FLUSH LIGHT
	6" L.E.D. FLUSH LIGHT
	6" INCAN. EYEBALL LIGHT
	WALL MOUNTED LIGHT
	CEILING MOUNTED LIGHT
F	CEILING MOUNTED FLUORESCENT LIGHT NON-INTERCHANGEABLE WITH INCANDESCENT LIGHT
	4'-0" SINGLE LIGHT, CEILING MOUNTED FLUORESCENT LIGHT
	FLUORESCENT WALL LIGHT NON-INTERCHANGEABLE WITH INCANDESCENT LIGHT.
	RECESSED FLUORESCENT DOWNLIGHT NON-INTERCHANGEABLE WITH INCANDESCENT LIGHT
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SD CO	SMOKE DETECTOR AND CARBON MONOXIDE DETECTOR HARD-WIRED w/ BATTERY BACK-UP. DETECTORS SHALL BE INTER-CONNECTED AND PLACED OUTSIDE EACH SLEEPING AREA IN THE IMMEDIATE VICINITY OF THE BEDROOM AND ON EVERY LEVEL OF THE DWELLING UNIT. SMOKE DETECTOR TO BE PROTECTED BY AN AFCI (C.R.C. R314 AND R315)
	CEILING FAN
	24"x48" CEILING MOUNTED FLUORESCENT LIGHT FIXTURE
	COMBO MEDIA JACK
P	LED PENDANT LIGHT FIXTURE ⚠1

REVIEWED FOR CODE COMPLIANCE
This review does not authorize violation of State or County building laws.
NOV 1 C 2019
SAN MATEO CO. BLDG. INSP. DIV.

RESUBMITTAL
FEB 16 2017
San Mateo County Building Inspection

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LOT No. 9

LOWER LEVEL UTILITY PLAN

REVISIONS

1	JAN. 6, 2017	P.C. 1
	-	-
	-	-
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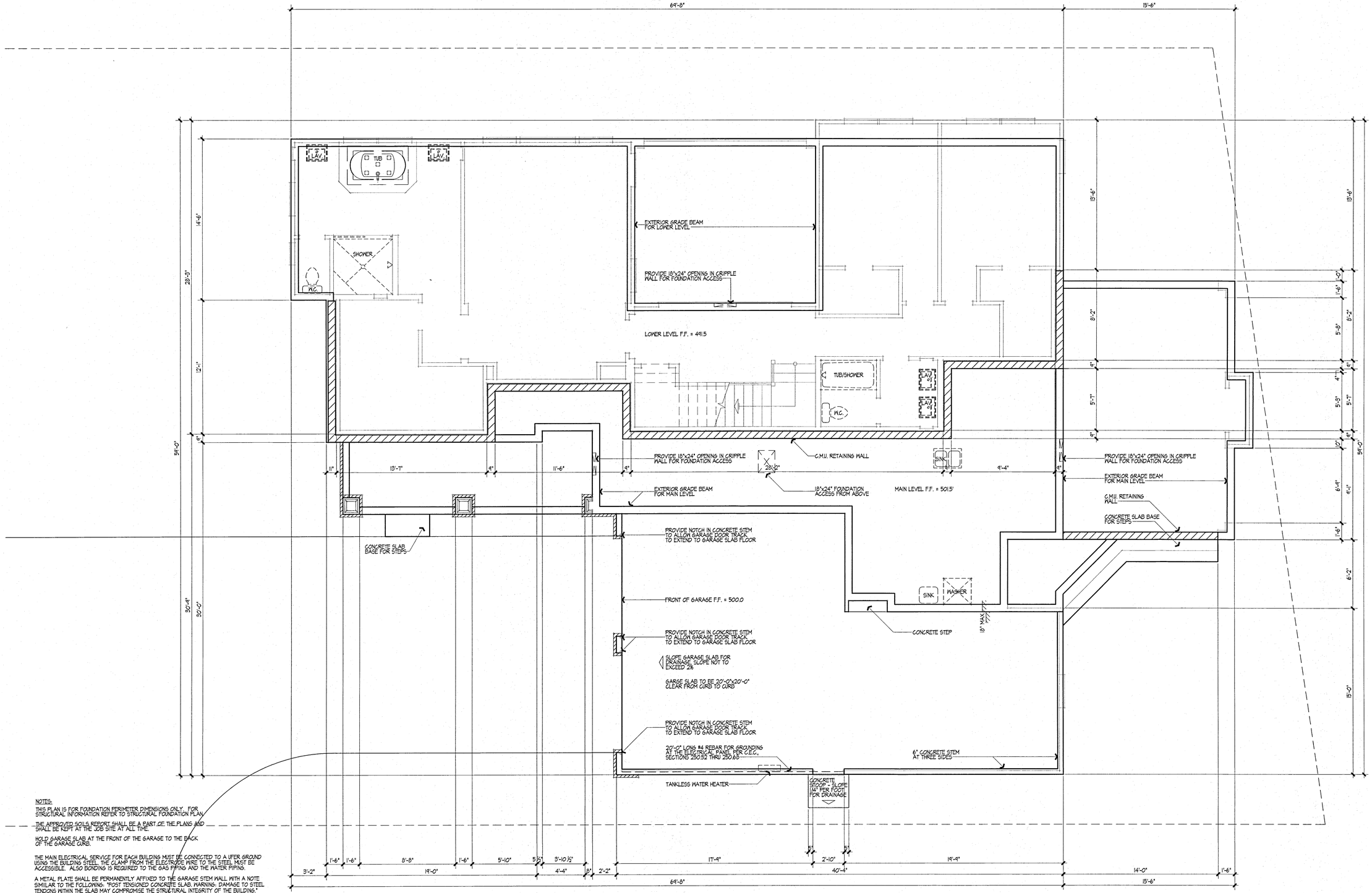
	-	-
	-	-

LICENSED ARCHITECT MARK H. GROSS C-24313 Ren. 9-30-17 STATE OF CALIFORNIA

ALL DIMENSIONS & CONDITIONS ARE TO BE VERIFIED BY CONTRACTOR BEFORE START OF CONSTRUCTION.

DESIGNED BY
DRAWN BY
CHECKED BY
JOB NO. 4276
DATE NOVEMBER 3, 2014
SHEET NO.
11



NOTES:

THIS PLAN IS FOR FOUNDATION PERIMETER DIMENSIONS ONLY. FOR STRUCTURAL INFORMATION REFER TO STRUCTURAL FOUNDATION PLAN.

THE APPROVED SOILS REPORT SHALL BE A PART OF THE PLANS AND SHALL BE KEPT AT THE JOB SITE AT ALL TIME.

HOLD GARAGE SLAB AT THE FRONT OF THE GARAGE TO THE BACK OF THE GARAGE CURB.

THE MAIN ELECTRICAL SERVICE FOR EACH BUILDING MUST BE CONNECTED TO A UFER GROUND USING THE BUILDING STEEL. THE CLAMP FROM THE ELECTRODE WIRE TO THE STEEL MUST BE ACCESSIBLE. ALSO BONDING IS REQUIRED TO THE GAS PIPING AND THE WATER PIPING.

A METAL PLATE SHALL BE PERMANENTLY AFFIXED TO THE GARAGE STEM WALL WITH A NOTE SIMILAR TO THE FOLLOWING: "POST TENSIONED CONCRETE SLAB. WARNING: DAMAGE TO STEEL TENDONS WITHIN THE SLAB MAY COMPROMISE THE STRUCTURAL INTEGRITY OF THE BUILDING."

SURFACE WATER WILL DRAIN AWAY FROM BUILDING SEE GRADING PLAN FOR DRAINAGE PATTERN. THE GRADE SHALL FALL A MINIMUM OF 5% WITHIN THE FIRST 10 FEET (2% FOR IMPERVIOUS SURFACES). SECTION R401.3.

SLAB PLAN

SCALE: ¼"=1'-0"

MGA Mark Gross & Associates, Inc.
Architecture • Planning
8881 Research Drive
Irvine, California 92618
(949) 387-2800 Fax (949) 387-7800

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2185 COBBLEHILL PLACE
SAN MATEO COUNTY, CALIFORNIA
THE CHAMBERLAIN GROUP
855 SKY WAY SUITE 230
SAN CARLOS, CALIFORNIA 94070
PHONE (650) 595-5582 FAX (650) 595-5066

REVIEWED FOR CODE COMPLIANCE
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NOV 13 '19
SAN MATEO CO. BLDG. INSP. DIV.

LOT No. 9 SLAB PLAN

REVISIONS
- JAN. 6, 2017 P.C. 1
- MAR. 31, 2017 P.C. 2
- JUNE 5TH PLANNING C.C.
- -
- -
- -
- -
- -

LICENSED ARCHITECT
MARK N. GROSS
C-24313
REG. 8-30-17
STATE OF CALIFORNIA

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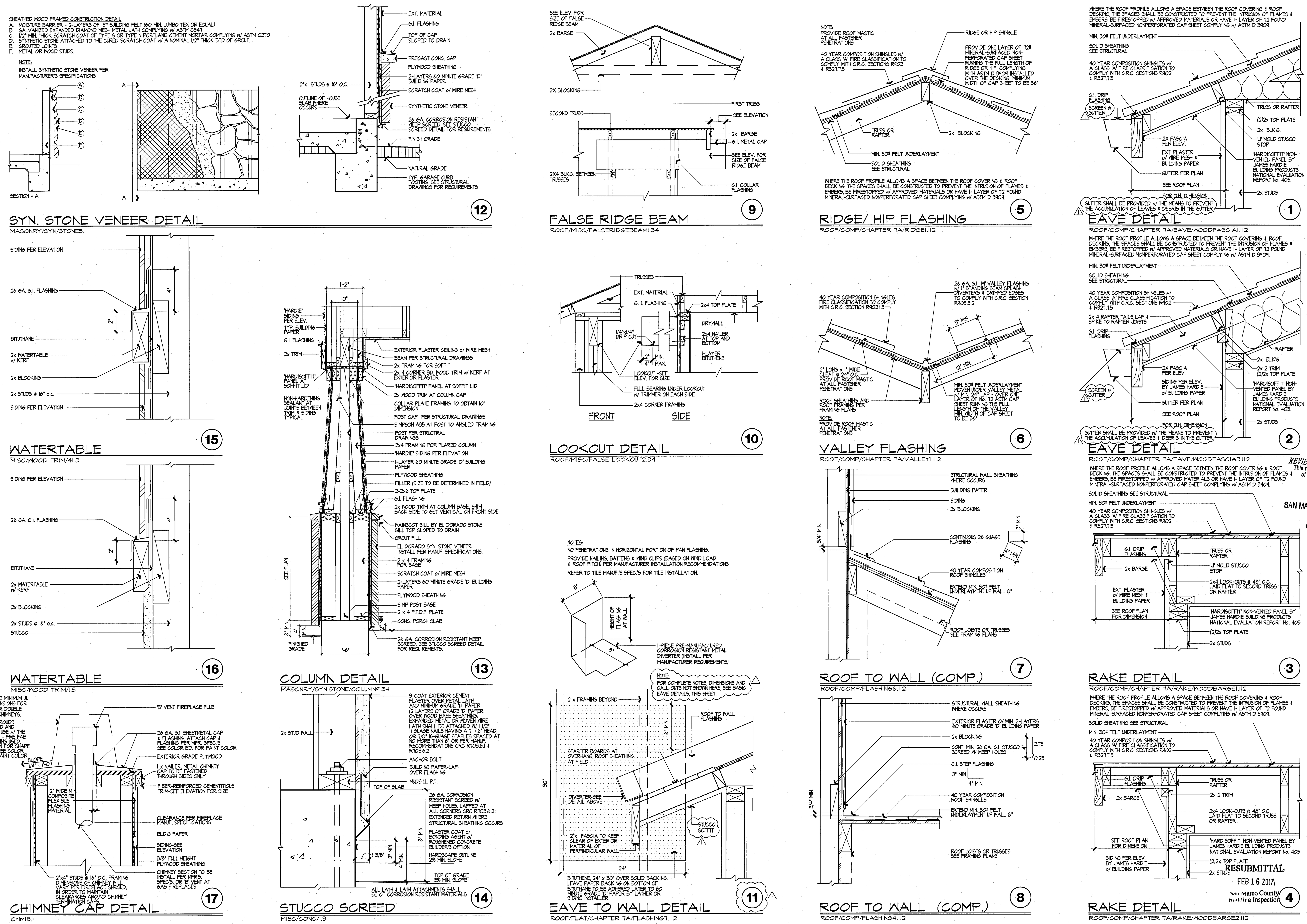
DESIGNED BY
DRAWN BY
CHECKED BY
JOB NO. 4216
DATE NOVEMBER 3, 2014
SHEET NO. 12

RESUBMITTAL
OCT 31 2017
San Mateo County Building Inspection


SHEATHED WOOD FRAMED CONSTRUCTION DETAIL
A. MOISTURE BARRIER - 2-LAYERS OF 15# BUILDING FELT (60 MIN. JUMBO TEX OR EQUAL)
B. GALVANIZED EXPANDED DIAMOND MESH METAL LATH COMPLYING w/ ASTM C847
C. 1/2" MIN. THICK SCRATCH COAT OF TYPE S OR TYPE N PORTLAND CEMENT MORTAR COMPLYING w/ ASTM C270
D. SYNTHETIC STONE ATTACHED TO THE CURED SCRATCH COAT w/ A NOMINAL 1/2" THICK BED OF GROUT.
E. GROUTED JOINTS
F. METAL OR WOOD STUDS.
NOTE:
INSTALL SYNTHETIC STONE VENEER PER MANUFACTURER'S SPECIFICATIONS
SECTION - A
SYN. STONE VENEER DETAIL 12
MASONRY/SYN/STONES.1
FALSE RIDGE BEAM 9
ROOF/MISC/FALSERIDGEBEAM1.34
RIDGE/ HIP FLASHING 5
ROOF/COMP/CHAPTER 7A/RIDGE1.112
EAVE DETAIL 1
ROOF/COMP/CHAPTER 7A/EAVE/WOODFASCIA1.112
WATERTABLE 15
MISC/WOOD TRIM/41.3
LOOKOUT DETAIL 10
ROOF/MISC/FALSE LOOKOUT2.34
VALLEY FLASHING 6
ROOF/COMP/CHAPTER 7A/VALLEY1.112
EAVE DETAIL 2
ROOF/COMP/CHAPTER 7A/EAVE/WOODFASCIA3.112
WATERTABLE 16
MISC/WOOD TRIM/1.3
COLUMN DETAIL 13
MASONRY/SYNSTONE/COLUMN9.34
ROOF TO WALL (COMP.) 7
ROOF/COMP/FLASHING6.112
RAKE DETAIL 3
ROOF/COMP/CHAPTER 7A/RAKE/WOODBARGE1.112
CHIMNEY CAP DETAIL 17
Chim18.1
STUCCO SCREED 14
MISC/CONC/1.3
EAVE TO WALL DETAIL 11
ROOF/FLAT/CHAPTER 7A/FLASHING7.112
ROOF TO WALL (COMP.) 8
ROOF/COMP/FLASHING4.112
RAKE DETAIL 4
ROOF/COMP/CHAPTER 7A/RAKE/WOODBARGE2.112
RESUBMITTAL
FEB 1 6 2017
San Mateo County
Building Inspection

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CONSTRUCTION DETAILS

REVIEWED FOR CODE COMPLIANCE
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NOV 1 3 2019
SAN MATEO CO. BLDG. INSP. DIV.

REVISIONS	
1 JAN. 6, 2017	P.C. 1

LICENSED ARCHITECT MARK H. GROSS C-24313 Ren. 9-30-17 STATE OF CALIFORNIA

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DESIGNED BY

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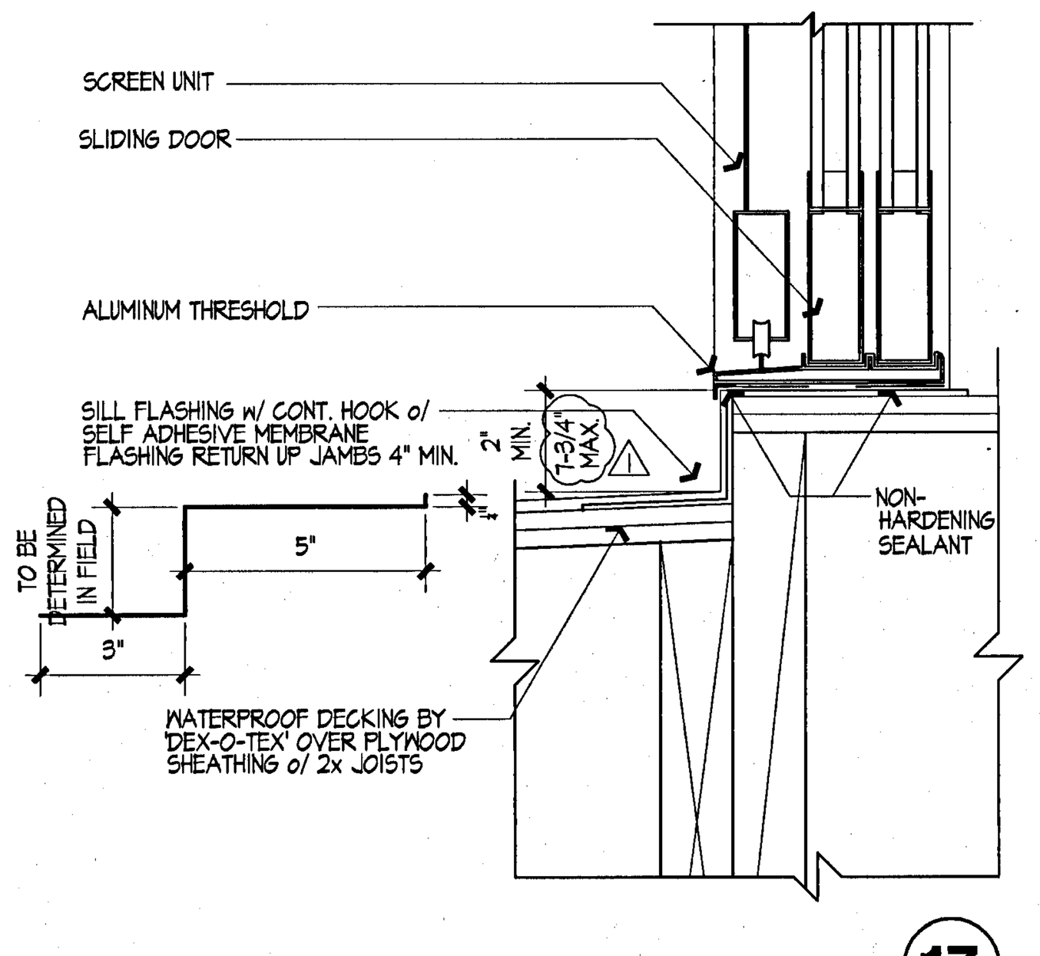
CHECKED BY

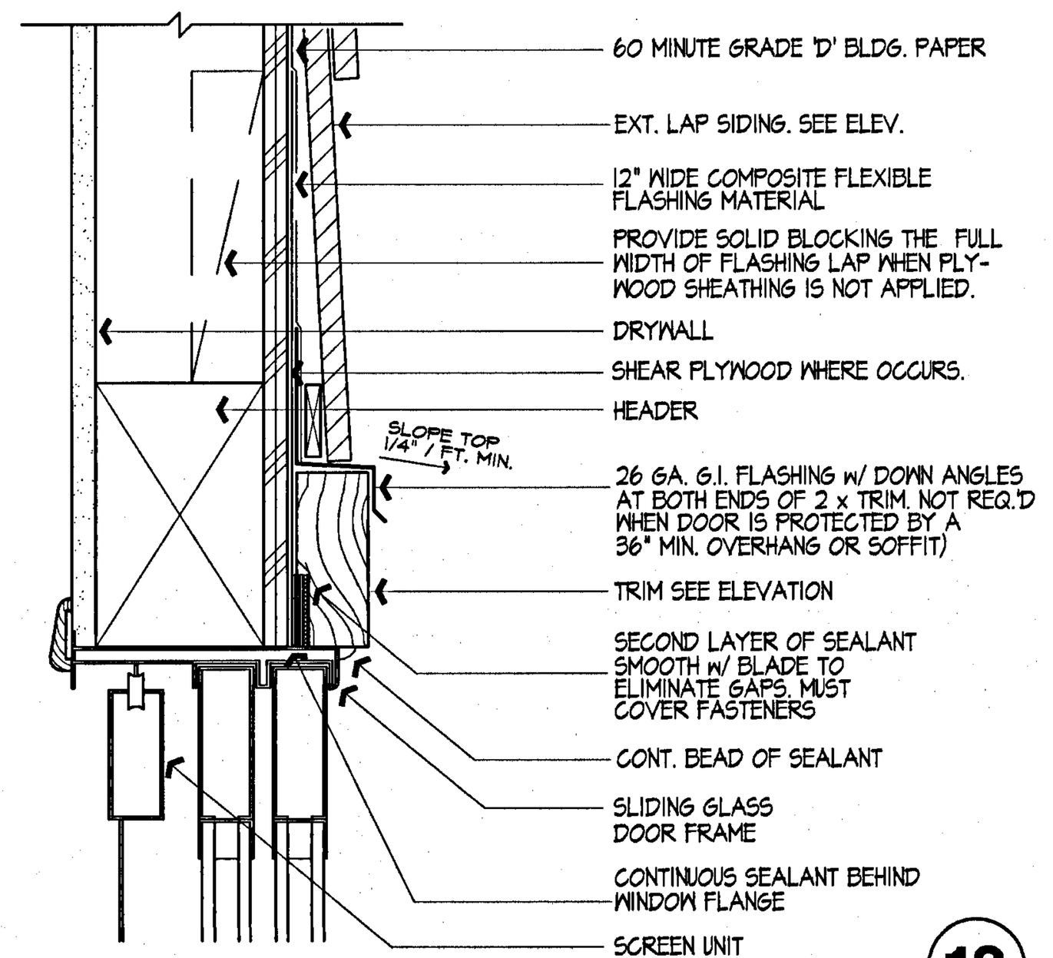
JOB NO. 4216

DATE NOVEMBER 3, 2014

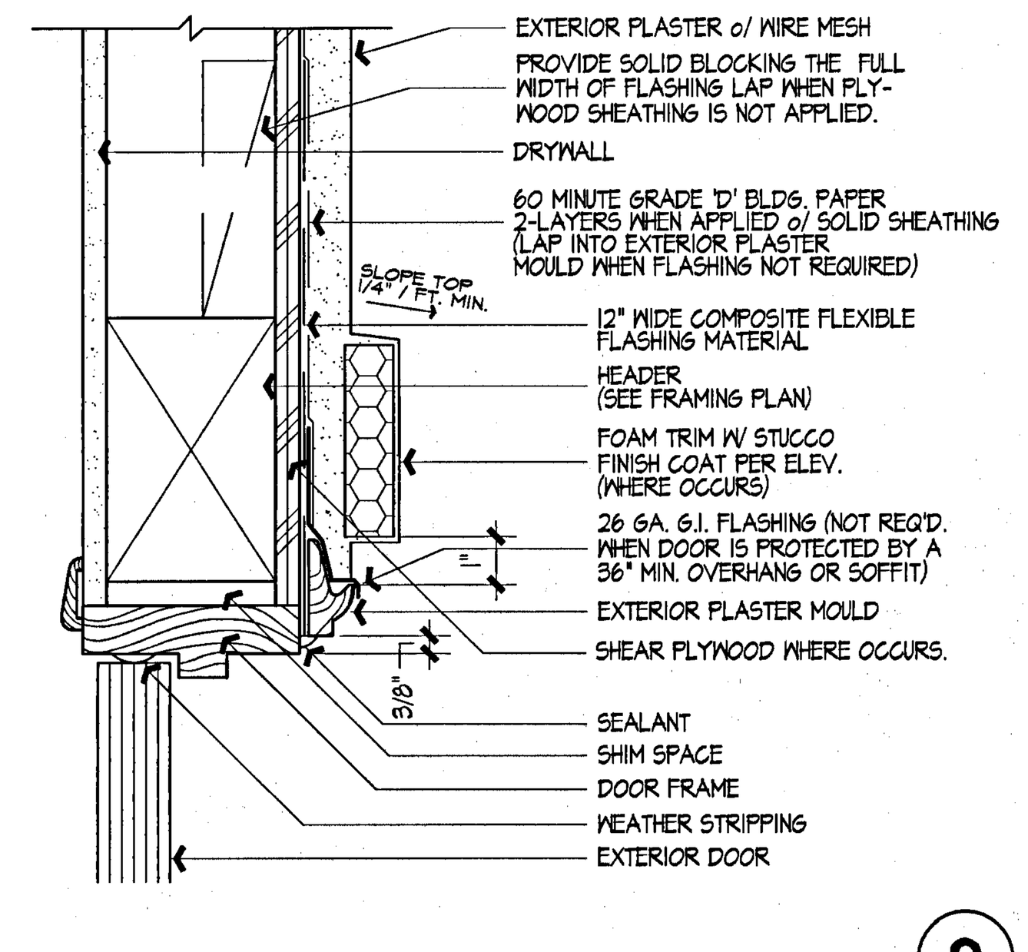
SHEET NO. D-1



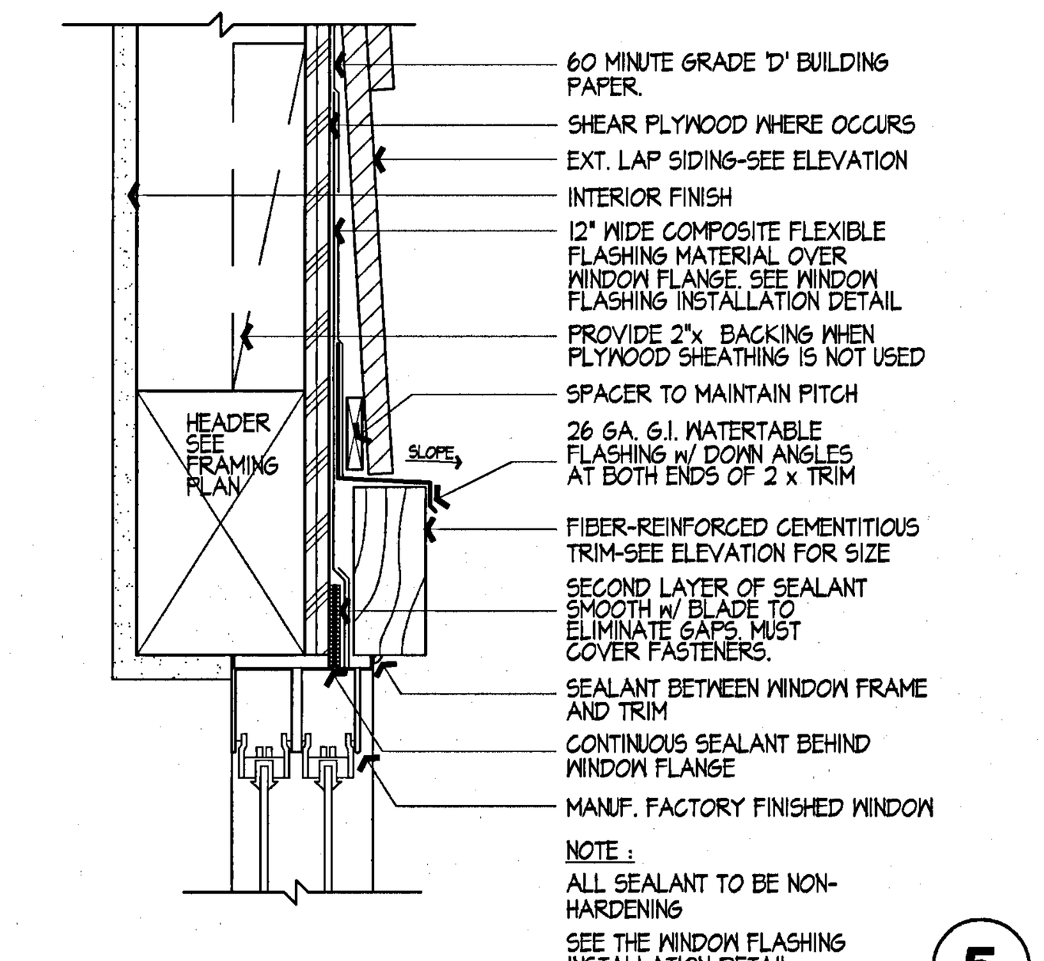
SLIDING DOOR THRESHOLD (17)
DOOR/THRESHOLD9.3



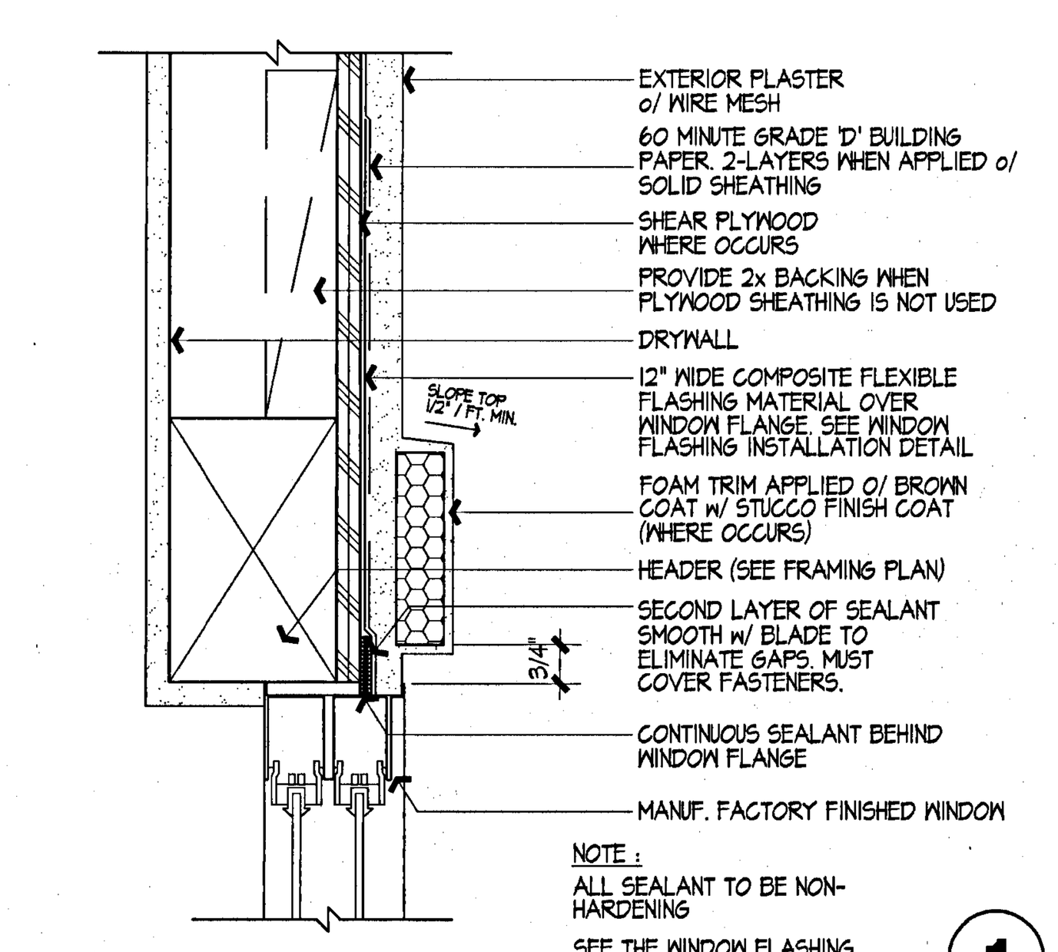
SLIDING GL. DOOR HEAD (13)
DOOR/HEAD16.3



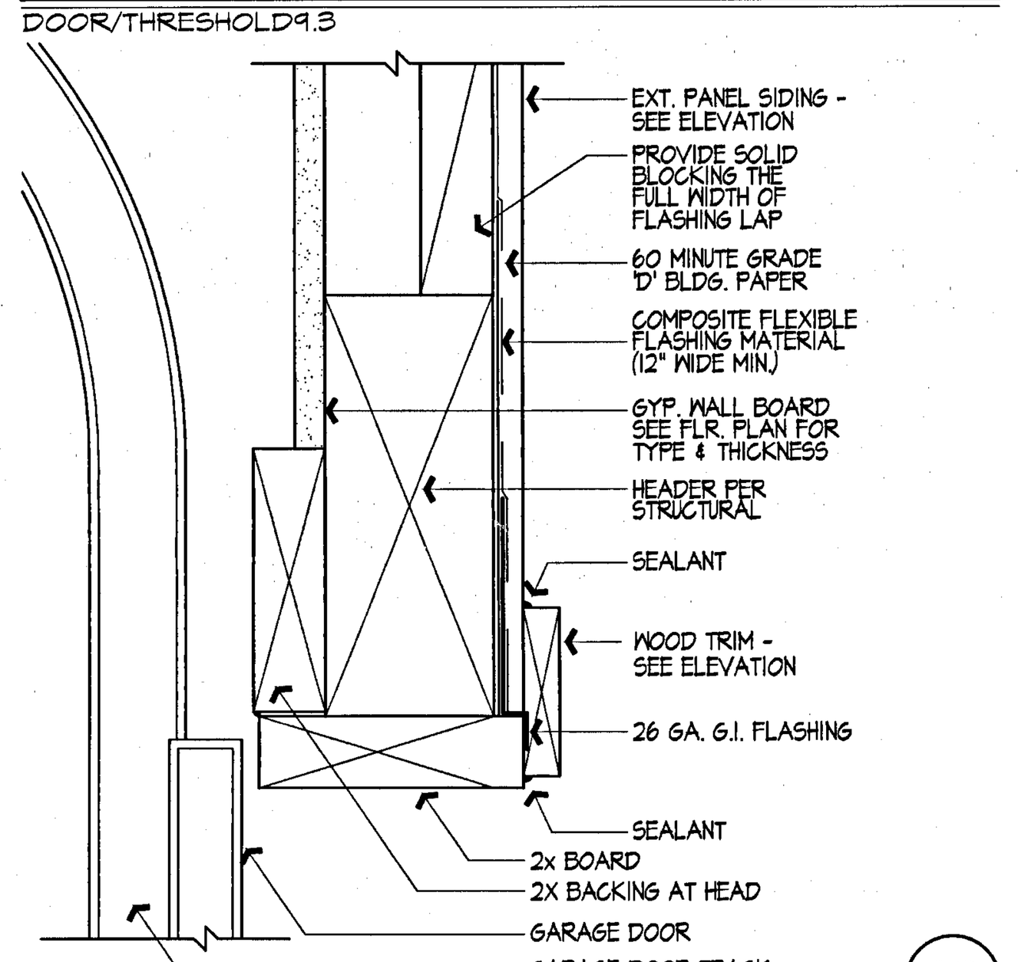
EXTERIOR DOOR HEAD (9)
DOOR/HEAD3.3



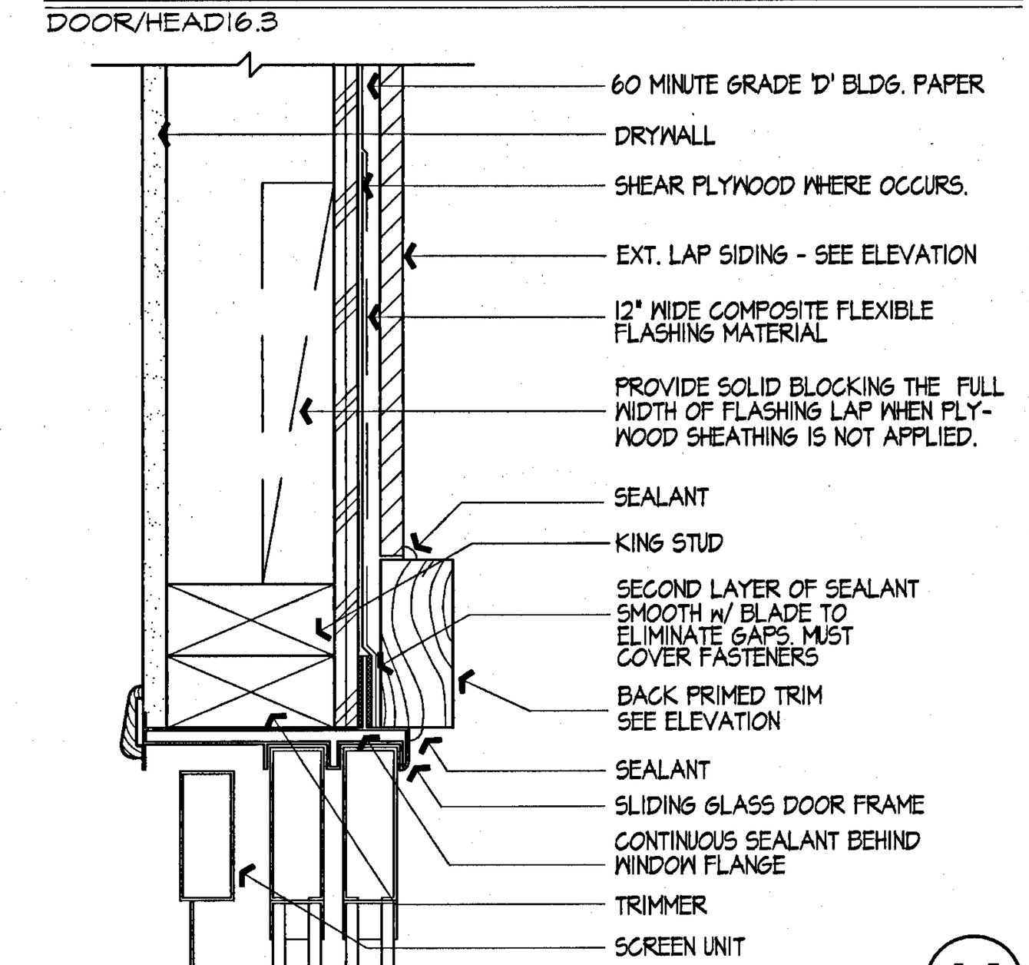
WINDOW HEAD (WOOD) (5)
WINDOW/HEAD4.3



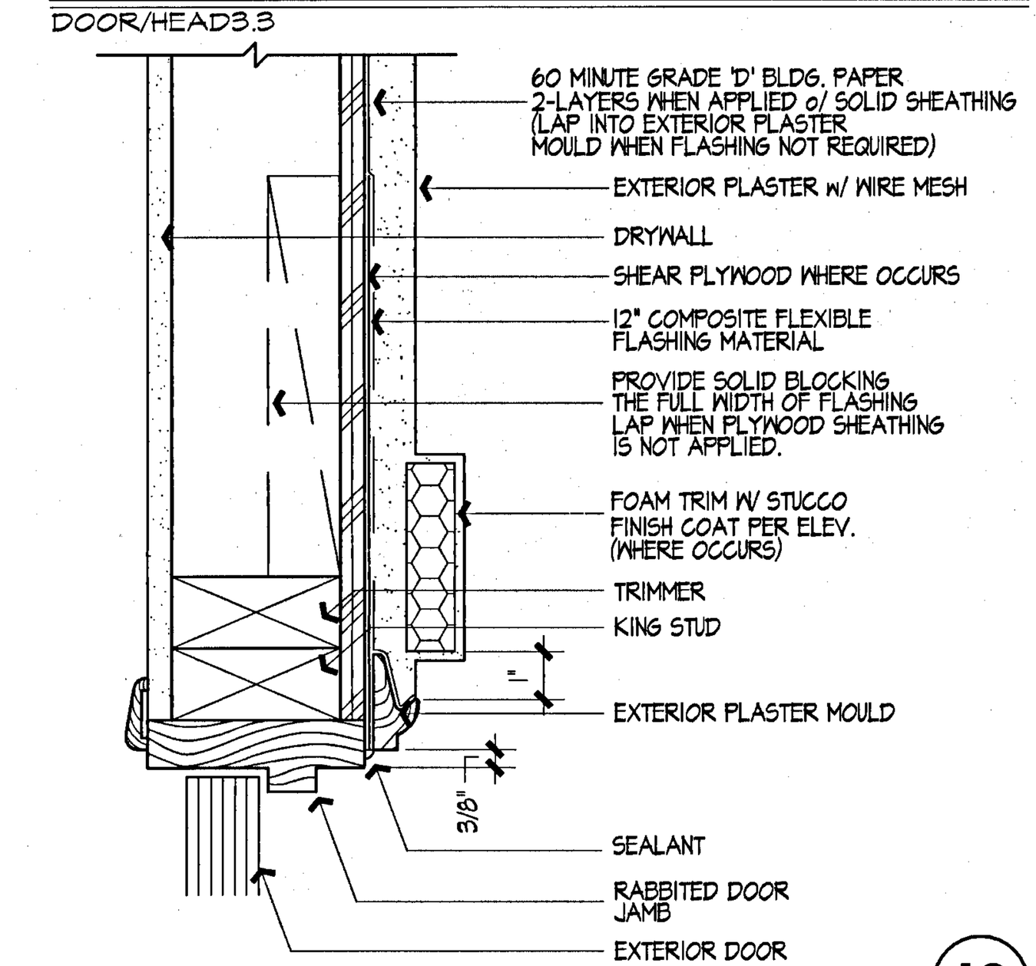
WINDOW HEAD (1)
WINDOW/HEAD1.3



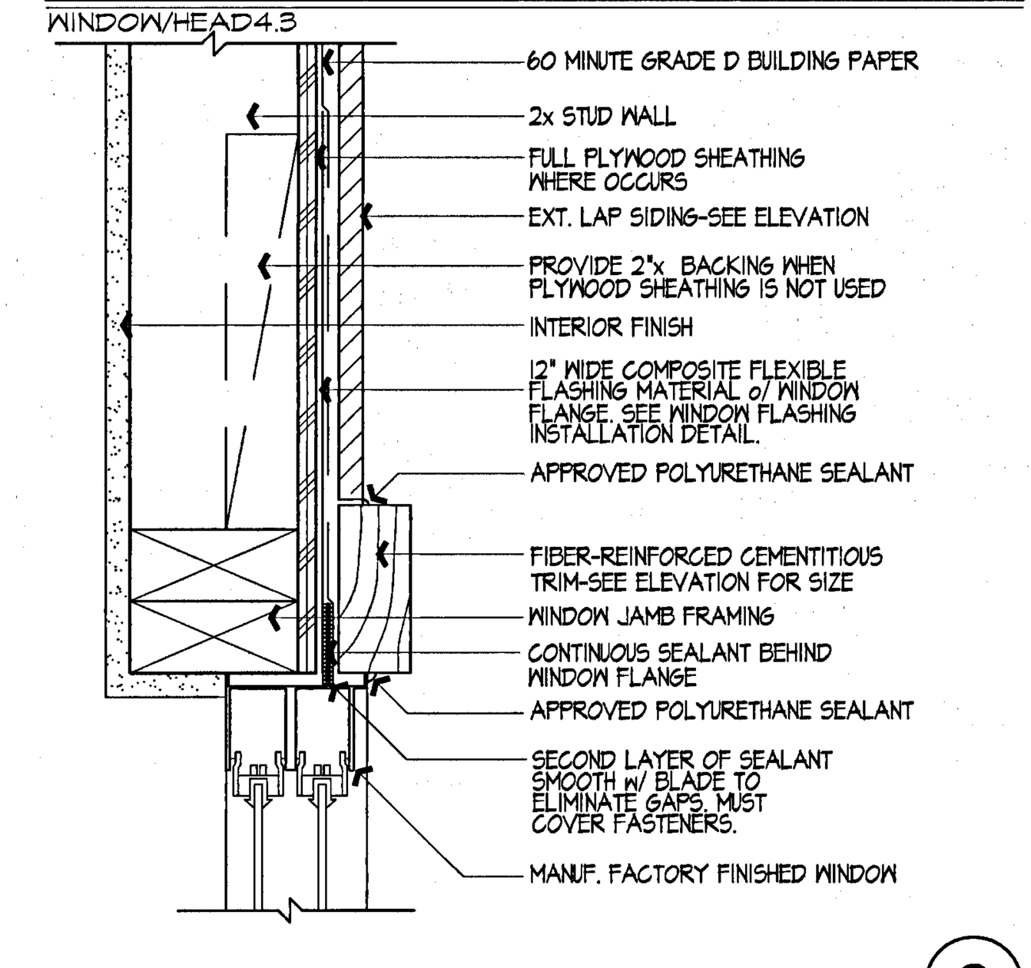
GARAGE DOOR HEAD (18)
DOOR/GARAGE/HEAD32.3



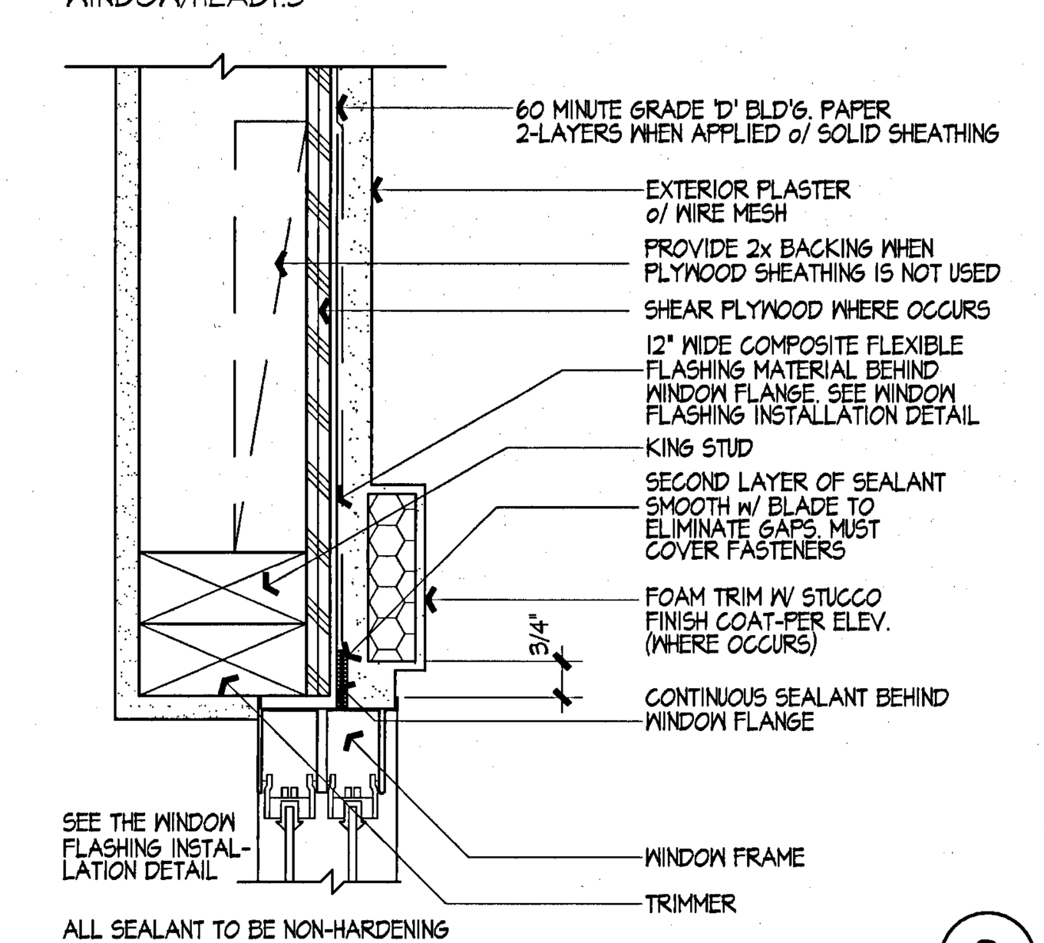
SLIDING GL. DOOR JAMB (14)
DOOR/JAMB12.3



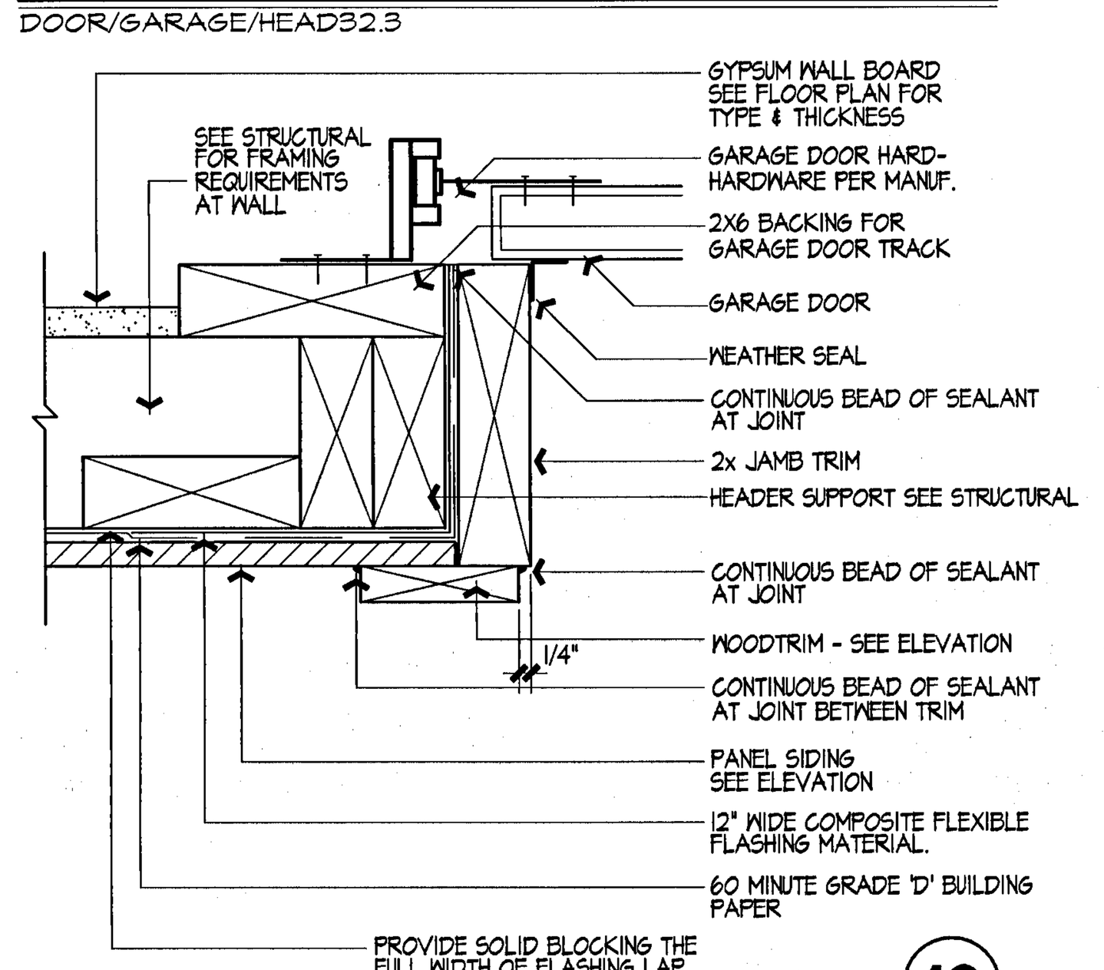
EXTERIOR DOOR JAMB (10)
DOOR/JAMB3.3



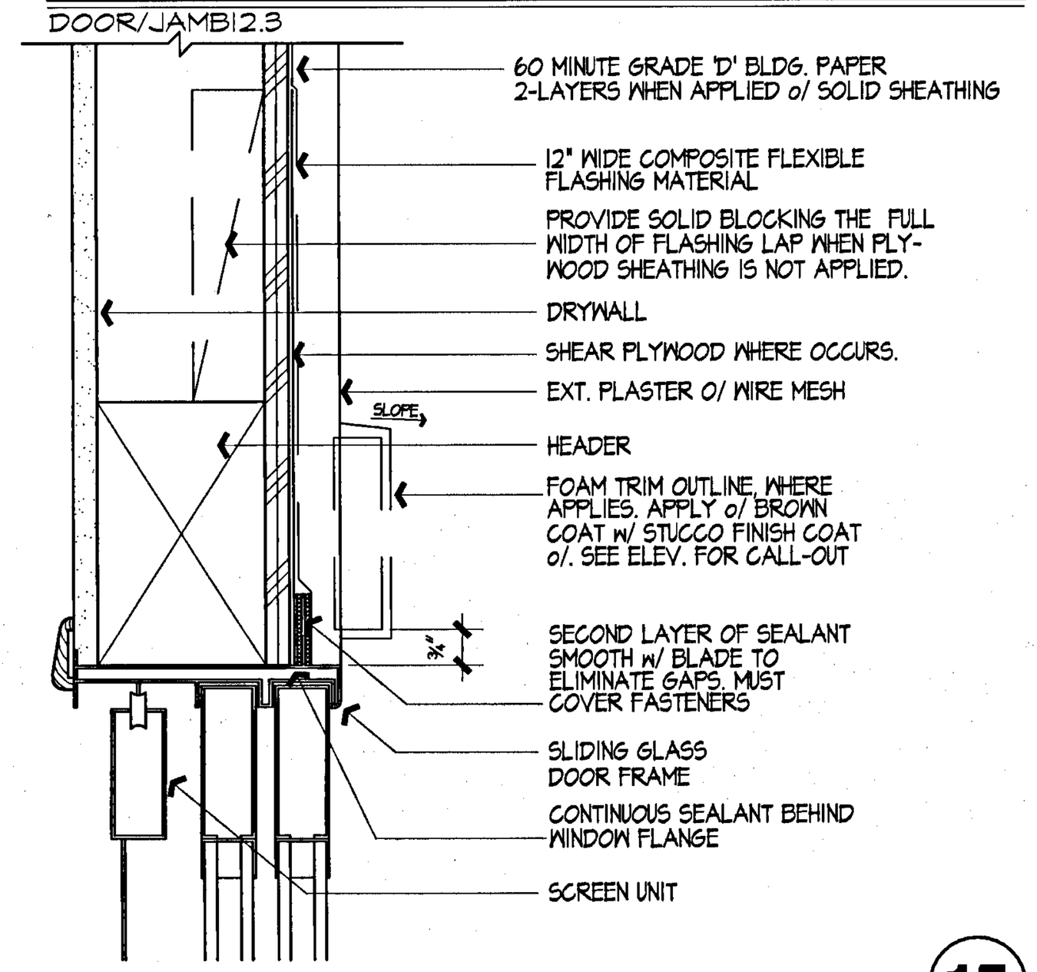
WINDOW JAMB (WOOD) (6)
WINDOW/JAMB4.3



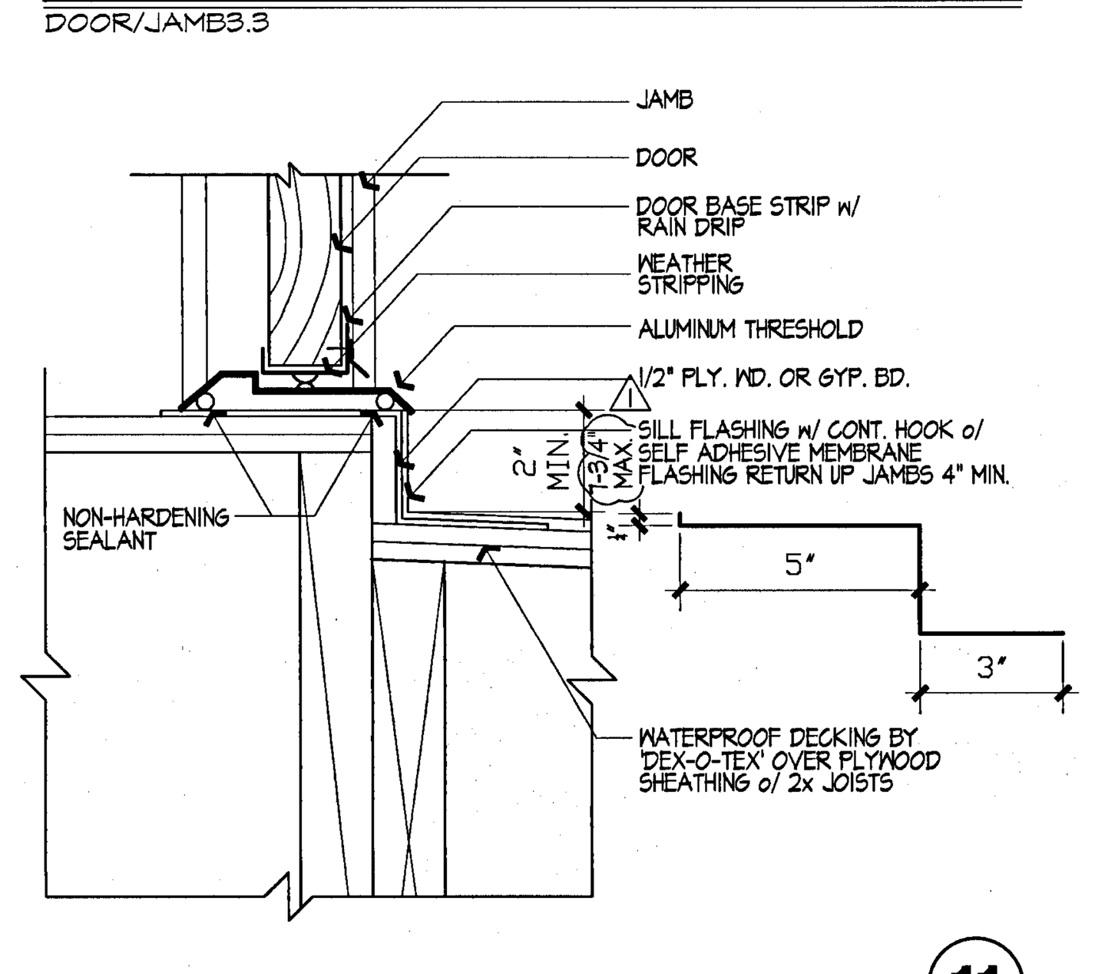
WINDOW JAMB (2)
WINDOW/JAMB1.3



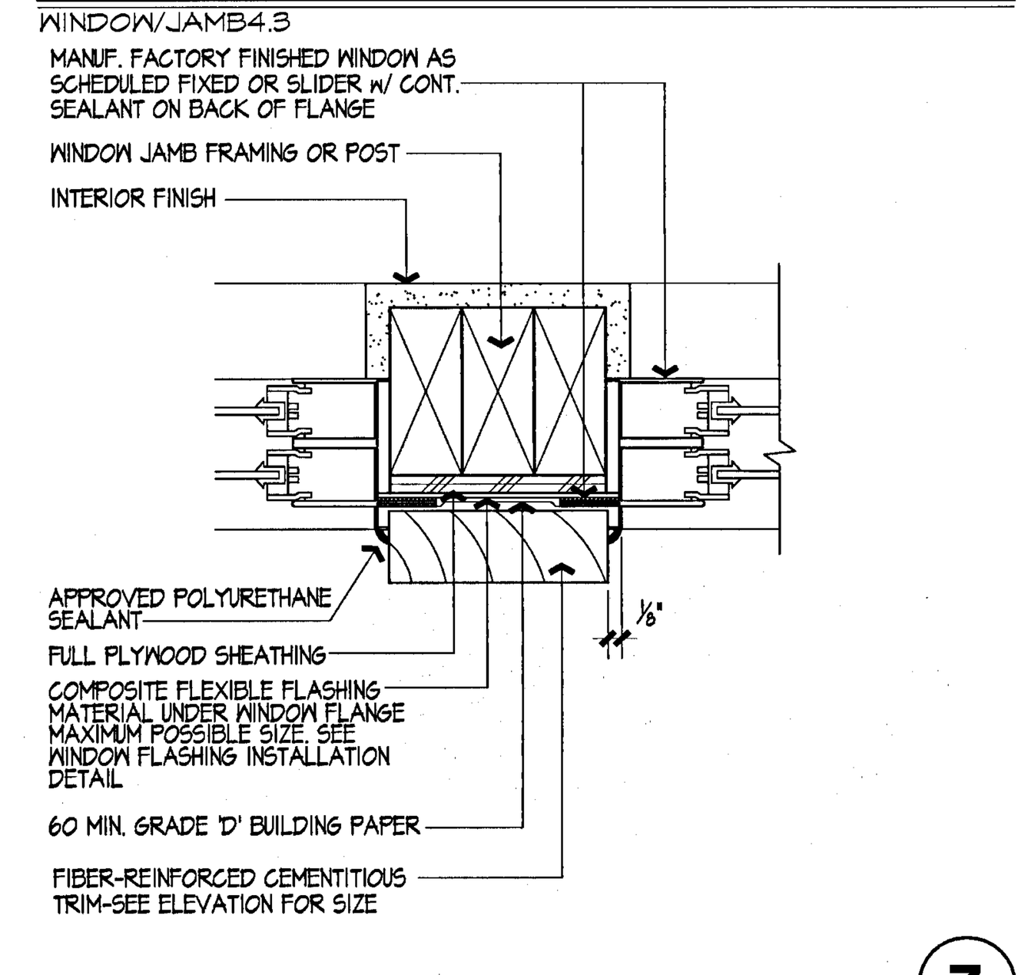
GARAGE DOOR JAMB (19)
DOOR/GARAGE/JAMB22.3



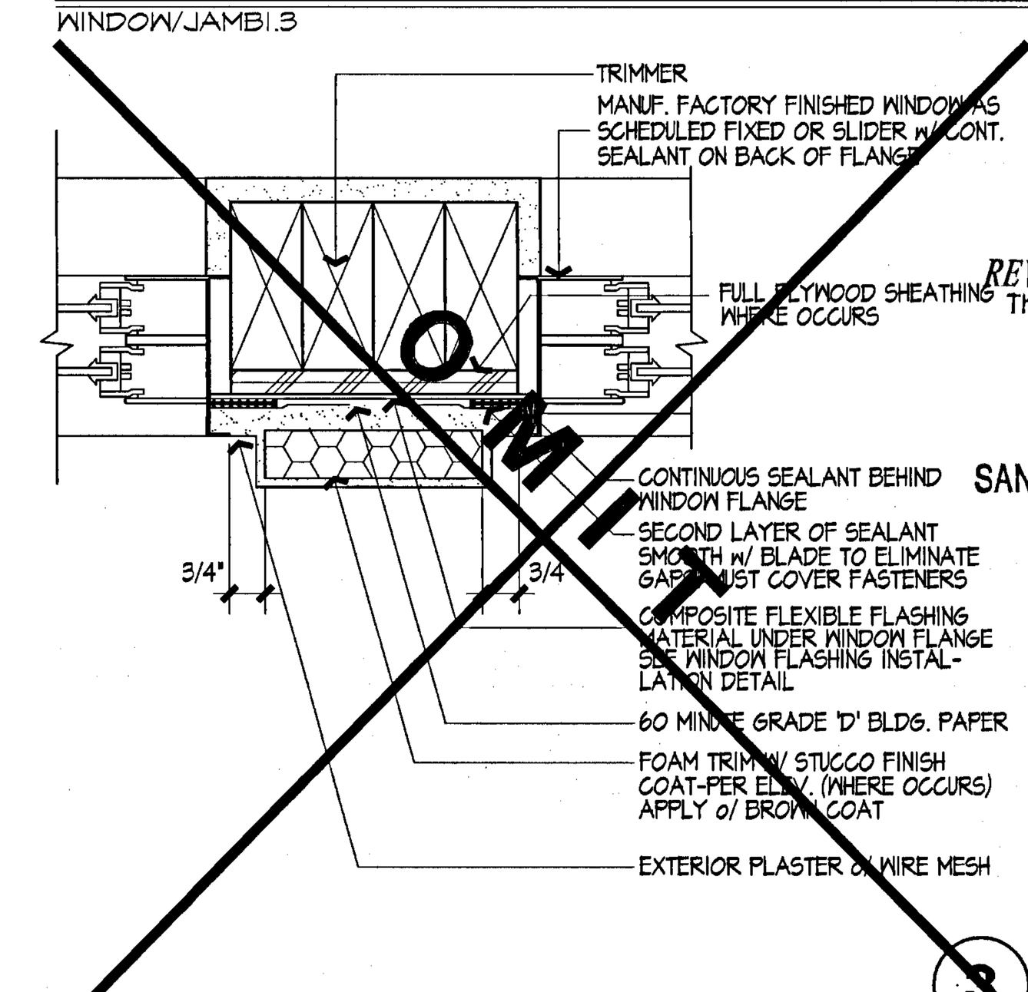
SLIDING GL. DOOR HEAD (15)
DOOR/HEAD14.3



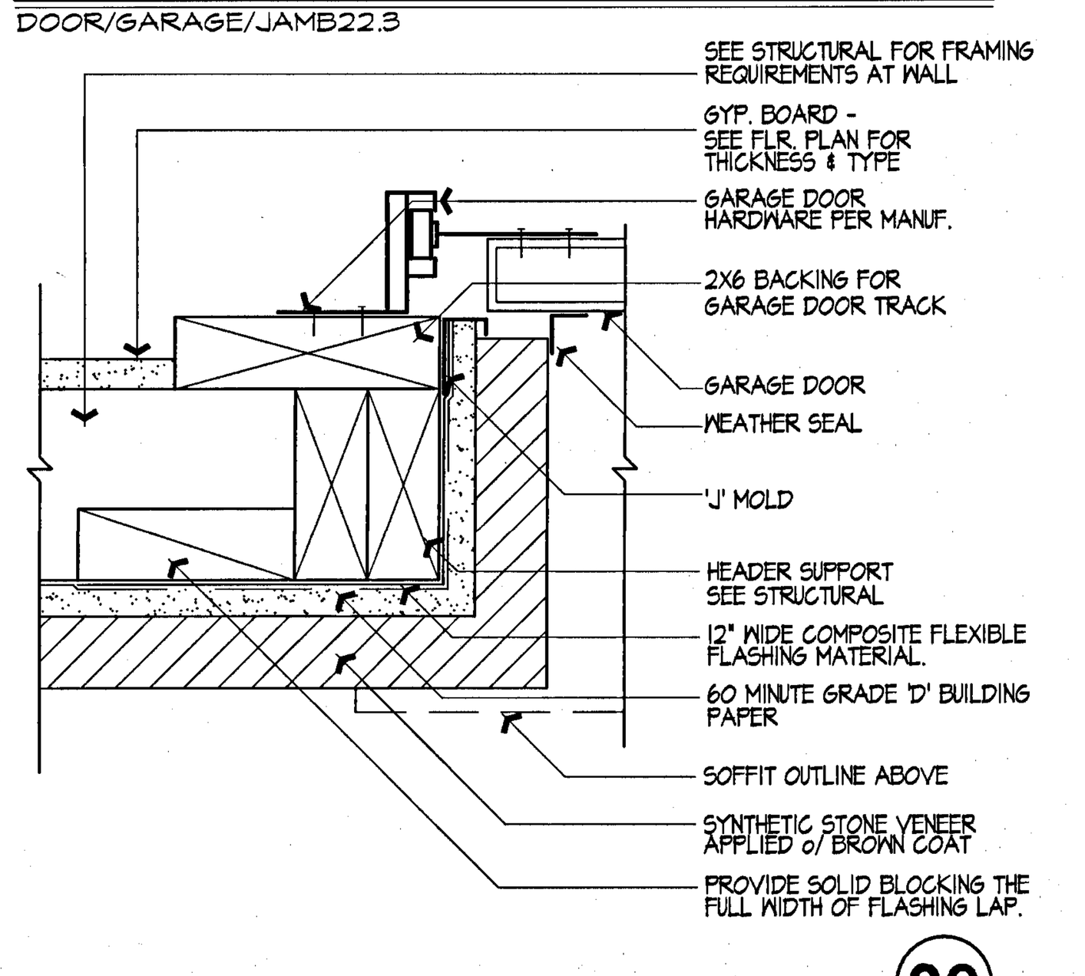
DOOR THRESHOLD @ DECK (11)
DOOR/THRESHOLD7.3



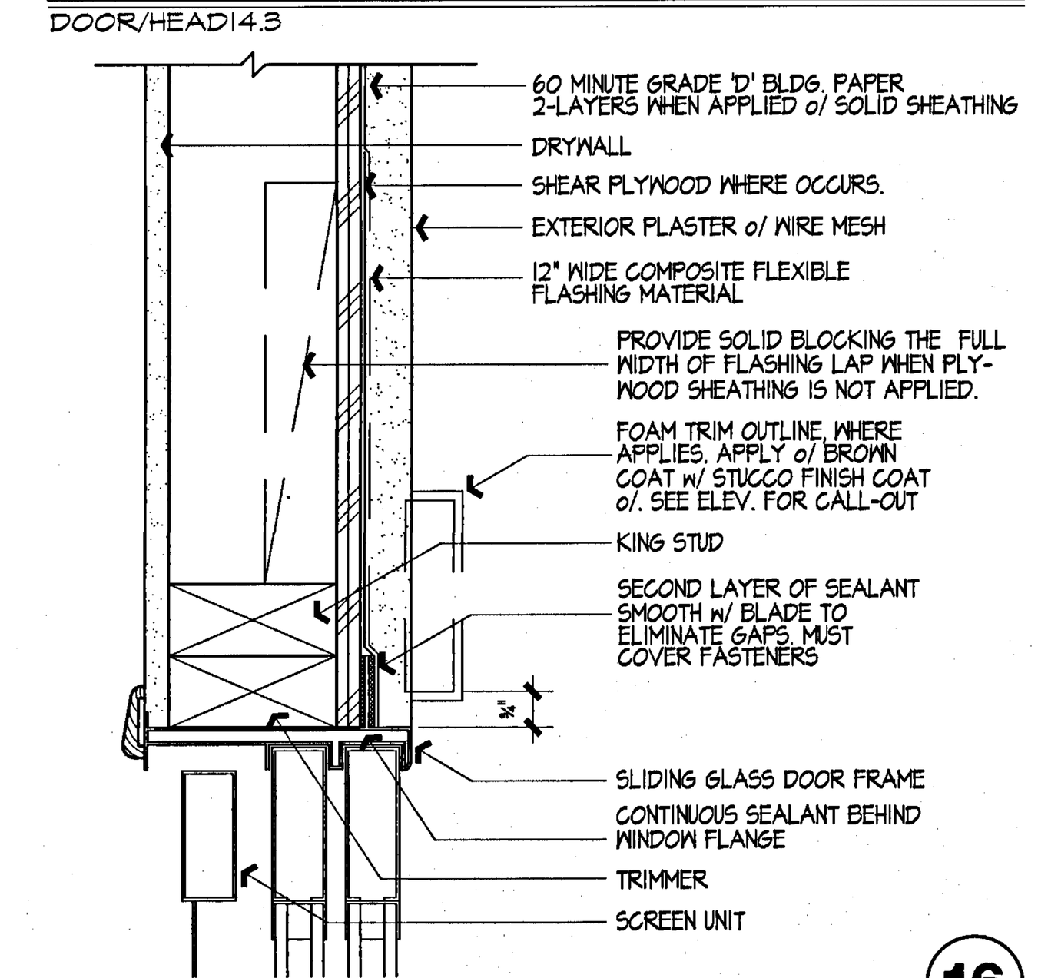
MULLION WINDOW / WINDOW (7)
WINDOW/JAMB10.3



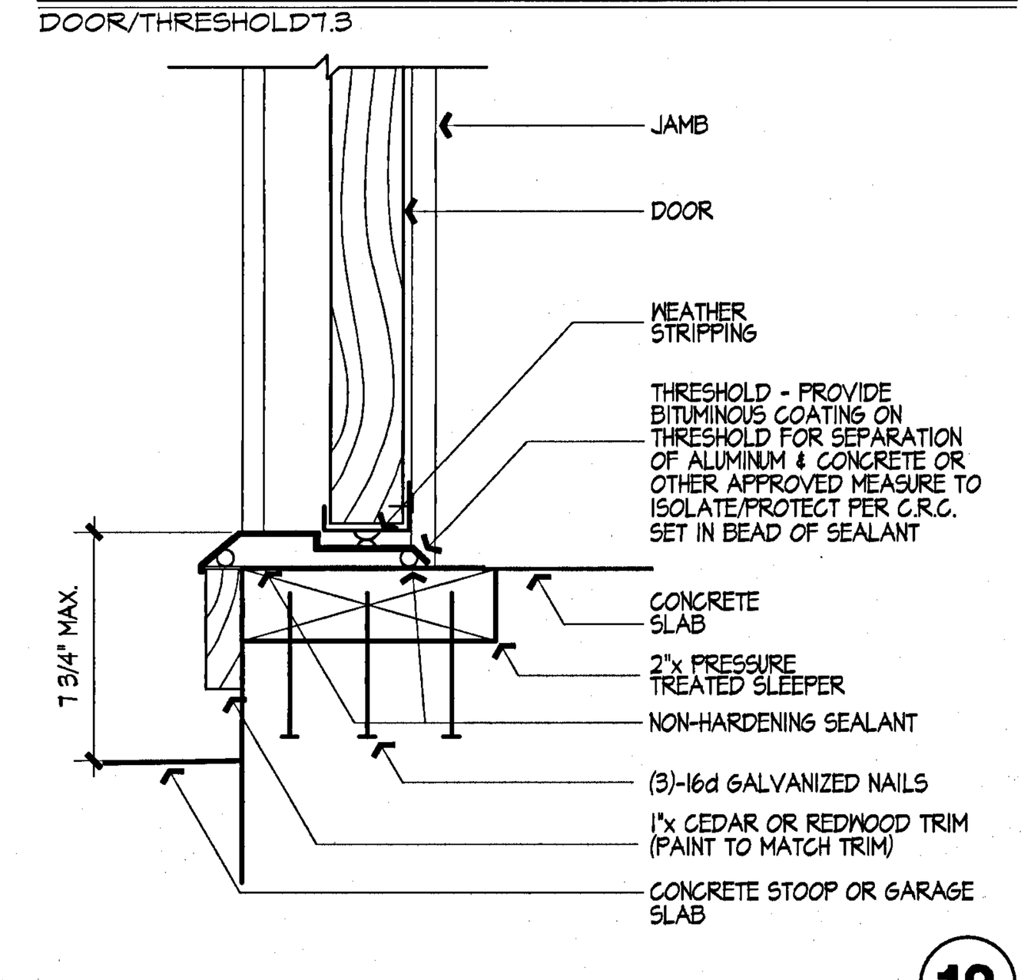
WINDOW JAMBS IN SERIES (3)
WINDOW/JAMB8.3



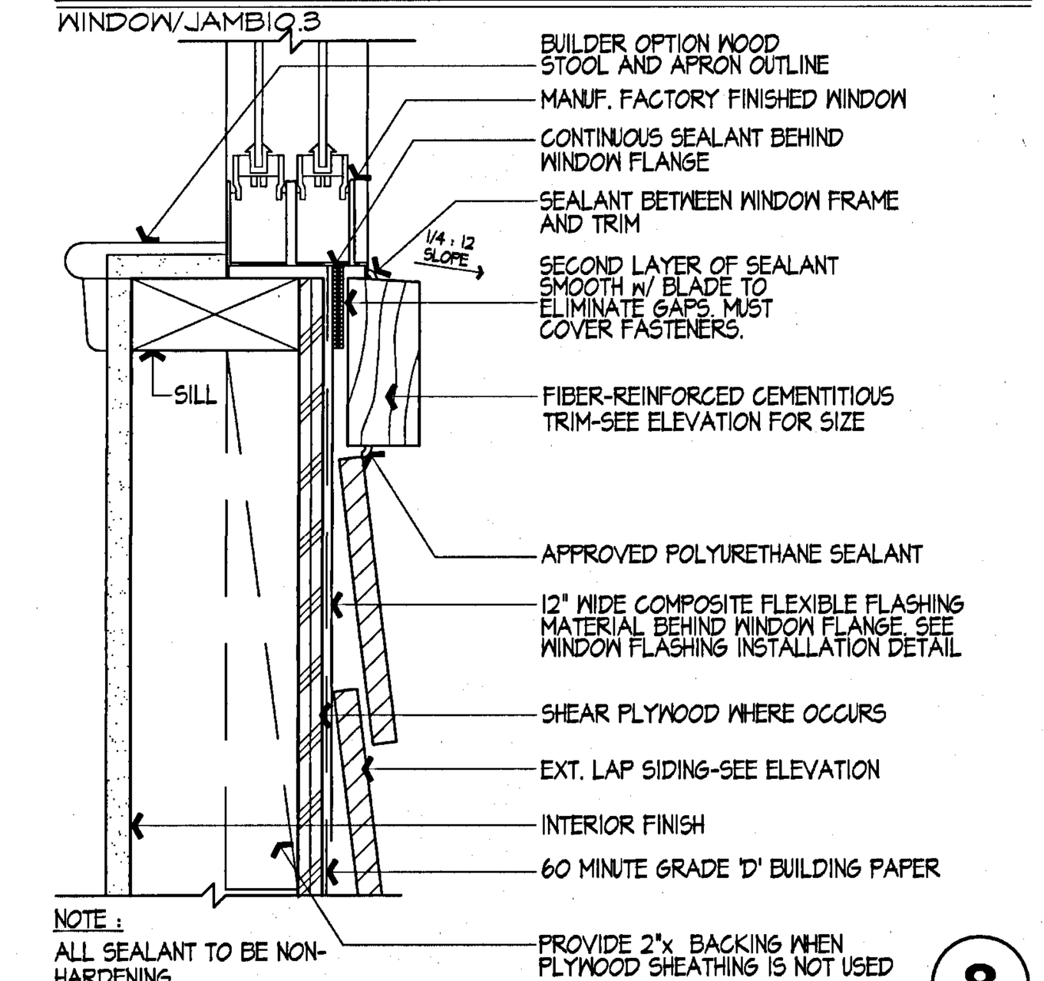
GARAGE DOOR JAMB (20)
DOOR/GARAGE/JAMB26.3



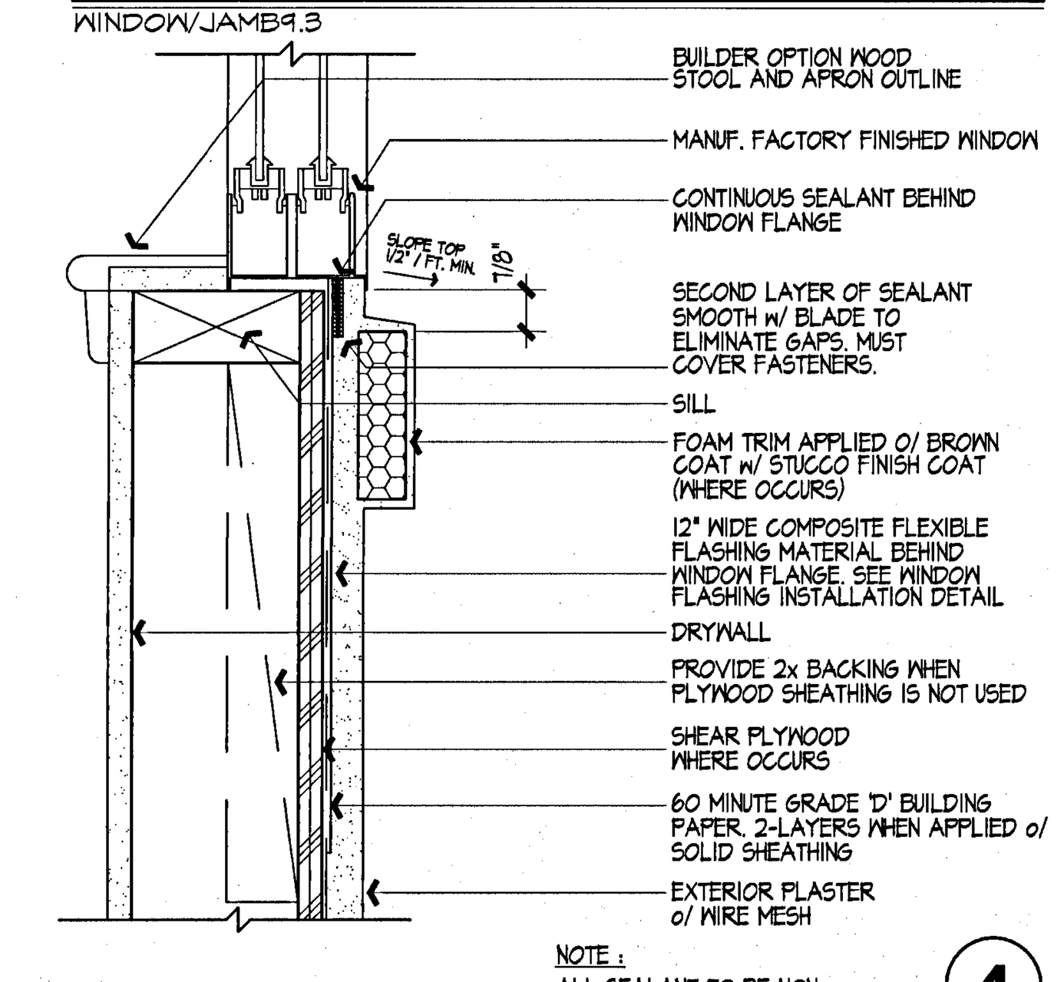
SLIDING GL. DOOR JAMB (16)
DOOR/JAMB10.3



EXTERIOR THRESHOLD (12)
DOOR/THRESHOLD4.3



WINDOW SILL (8)
WINDOW/SILL4.3



WINDOW SILL (4)
WINDOW/SILL1.3

REVIEWED FOR CODE COMPLIANCE
This review does not authorize violation of San Mateo County building laws.
13 2019
SAN MATEO CO. BLDG. INSP. DIV.

RESUBMITTAL
FEB 16 2017
County Building Inspection

Mark Gross & Associates, Inc.
8801 Research Drive
Irvine, California 92618
(949) 357-2050 Fax (949) 357-7000
MGA Architecture • Planning

"HIGHLAND ESTATES, LOT 9"
2165 COBBLEHILL PLACE
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THE CHAMBERLAIN GROUP
655 SKY WAY, SUITE 230
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CONSTRUCTION DETAILS

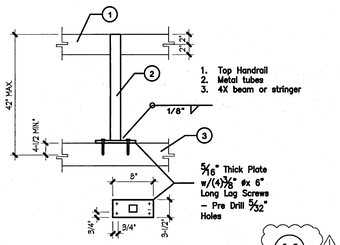
REVISIONS
JAN. 6, 2017 P.C. 1

LICENSED ARCHITECT C-24315 STATE OF CALIFORNIA

ALL DIMENSIONS & CONDITIONS ARE TO BE VERIFIED BY CONTRACTOR BEFORE START OF CONSTRUCTION.

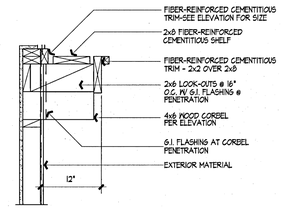
DESIGNED BY
DRAWN BY
CHECKED BY
JOB NO. 4276
DATE NOVEMBER 3, 2014
SHEET NO.

D-2



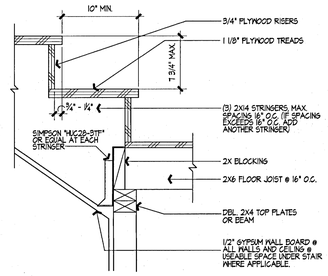
GUARDRAIL CONNECTION 14

HANDRAIL CONNECTION



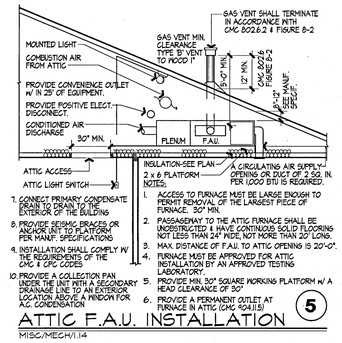
POTSHELF DETAIL 12

POTSHELF/POTSHELF-WOOD-CANTIT.1



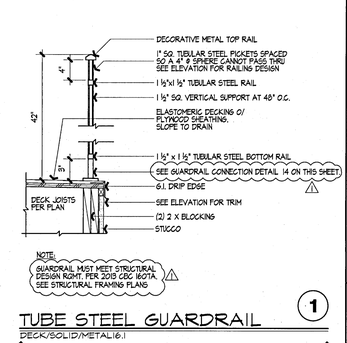
STAIR @ LANDING 8

ST49F.112



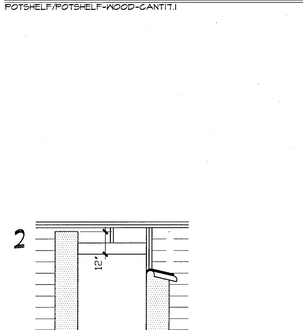
ATTIC F.A.U. INSTALLATION 5

MISC/MECH/1.14



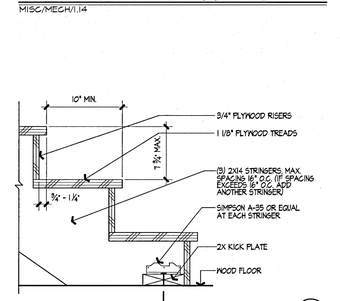
TUBE STEEL GUARDRAIL 1

DECK/SOLID/METAL16.1



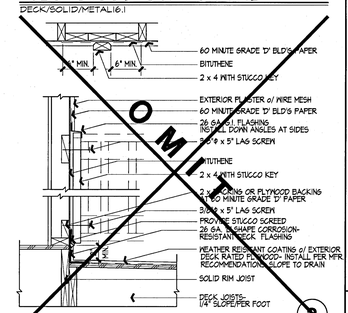
STAIR @ LANDING 9

ST50BB.112



STAIR AT FLOOR 6

ST47A.112



DECK FLASHING DETAIL 3

DECK/CONN/SOLID/1.3

STAIR @ LANDING 10

ST49B.112

STAIR @ LAND'G/2ND. FLR. 7

ST48B.112

DECK FLASHING DETAIL 3

DECK/CONN/SOLID/1.3

STAIR @ LANDING TO WALL 11

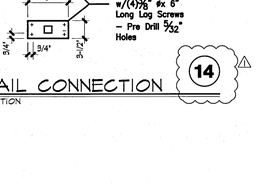
ST51.112

HANDRAIL/GUARDRAIL DETAIL 4

ST6A.112

RESUBMITTAL

San Mateo County Building Inspection



ATTACH A SILL STRIP OF COMPOSITE FLEXIBLE FLASHING MATERIAL AT LEAST 12" WIDE WITH THE TOP EDGE EVEN WITH THE TOP EDGE OF THE ROUGH SILL. EXTEND THIS SILL STRIP AT LEAST 14" BEYOND THE EDGE OF THE ROUGH OPENING FOR WINDOW. ATTACH FLASHING WITH GALVANIZED ROOFING NAILS OR RUST - RESISTANT STAPLES.

AFTER SILL STRIP IS IN PLACE ATTACH JAMB STRIPS (SIDE OF OPENING) AT LEAST 12" WIDE WITH INSIDE EDGE OF FLASHING FLUSH WITH EDGE OF WINDOW OPENING. START JAMB STRIPS 2" BELOW THE SILL STRIP AND EXTEND JAMB STRIPS 12" ABOVE THE LOWER EDGE OF THE HEADER (TOP OF WINDOW OPENING)

APPLY A CONTINUOUS BEAD OF SEALANT TO THE BACK SURFACES OF THE WINDOW FLANGE. THEN PLACE THE WINDOW INTO THE ROUGH OPENING WITH FLANGES OVER THE INSTALLED FLASHING STRIPS. AFTER WINDOW IS PLACED, INSTALL THE HEAD FLASHING OVER THE WINDOW FLANGE. THIS IS ANOTHER STRIP OF FLASHING AT LEAST 12" WIDE.

CAULK HEAD FLASH TO WINDOW FLANGE w/ SEALANT.

APPLY SECOND BEAD OF SEALANT AT WINDOW FLANGE AND FLASHING JOINT. THEN SMOOTH WITH BLADE TO ELIMINATE ALL GAPS.

STARTING AT THE BOTTOM OF THE WALL (SOLE PLATE) LAY 60 MINUTE GRADE 'D' PAPER UNDER THE SILL STRIP, CUT ANY EXCESS WATER-RESISTANT PAPER THAT MAY EXTEND ABOVE THE SILL FLANGE ON EACH SIDE OF THE OPENING. (SHOWN IN DIAGRAM AS SHORT DASH LINES). INSTALL SUCCEEDING COURSES OF WATER-RESISTANT PAPER OVER JAMB AND HEAD FLANGES IN SHINGLE-BOARD FASHION. PAPER SHOULD RUN CONTINUOUSLY OVER HEAD WITH NO SPLICES ABOVE WINDOW.

NOTES, CALIFORNIA RESIDENTIAL CODE, SECTION R703.8 CALLS FOR FLASHING AT THE PERIMETERS OF EXT. DOOR AND WINDOW ASSEMBLIES, PENETRATIONS AND TERMINATIONS OF EXTERIOR WALL ASSEMBLIES, EXT. WALL INTRESECTIONS WITH ROOFS, CHIMNEYS, PORCHES, DECKS, BALCONIES AND SIMILAR PROJECTIONS AND AT BUILT-IN GUTTERS AND SIMILAR LOCATIONS WHERE MOISTURE COULD ENTER THE WALL. FLASHING WITH PROJECTING FLANGES SHALL BE INSTALLED ON BOTH SIDES AND THE ENDS OF COPINGS, UNDER SILL AND CONTINUOUSLY ABOVE PROJECTING TRIM.

26 GA. G.I. FLASHING REQUIRED AS SHOWN IN OTHER WINDOW DETAILS TO BE INSTALLED BY SHEET METAL CONTRACTOR.

AT WINDOW HEAD, JAMBS AND SILL ALL FASTENERS ARE TO BE NAILED THROUGH FIN NO CLOSER THAN 3 INCHES AND WITHIN 10 INCHES FROM CORNERS

NAILS TO BE NO MORE THAN 16 INCHES ON CENTER

NO NAILS SHALL BE BENT OVER THE NAILING FIN TO SECURE WINDOW

LINE WIRE, WHEN USED AS BACKING TO SUPPORT WATER-RESISTANT BUILDING PAPER OR FELT BENEATH LATH FOR STUCCO SHOULD BE INSTALLED ACCORDING TO INDUSTRY STANDARDS AND PRACTICE. NO ATTACHMENT DEVICE NOR THE WIRE BACKING SHOULD COVER OR PENETRATE FLASHING MATERIAL. PERIPHERAL FLASHING AT ALL EDGES OF WALL OPENING MUST COVER WIRE BACKING.

WHEN APPLICABLE, FLEXIBLE FLASHING MATERIAL SHALL BE INSTALLED WITH THE DULL SIDE OUT AND SHINY SIDE IN.

ALL SEALANT TO BE OF THE NON-HARDENING TYPE.

WINDOW FLASHING INSTALLATION 13

WINDOW.1.SS

Mark Gross & Associates, Inc.
2185 Cobblehill Place, Irvine, California 92618
(949) 387-3800 Fax (949) 387-7890
MGA Architecture • Planning

"HIGHLAND ESTATES, LOT 9"
2185 COBBLEHILL PLACE
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THE CHAMBERLAIN GROUP
650 SIX WAY, SUITE 230
SAN LUIS OBISPO, CA 93401
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CONSTRUCTION DETAILS

REVISED FOR CODE COMPLIANCE
This review does not authorize violation of State or County building laws.
NOV 13 2019
SAN MATEO CO. BLDG. INSP. DIV.

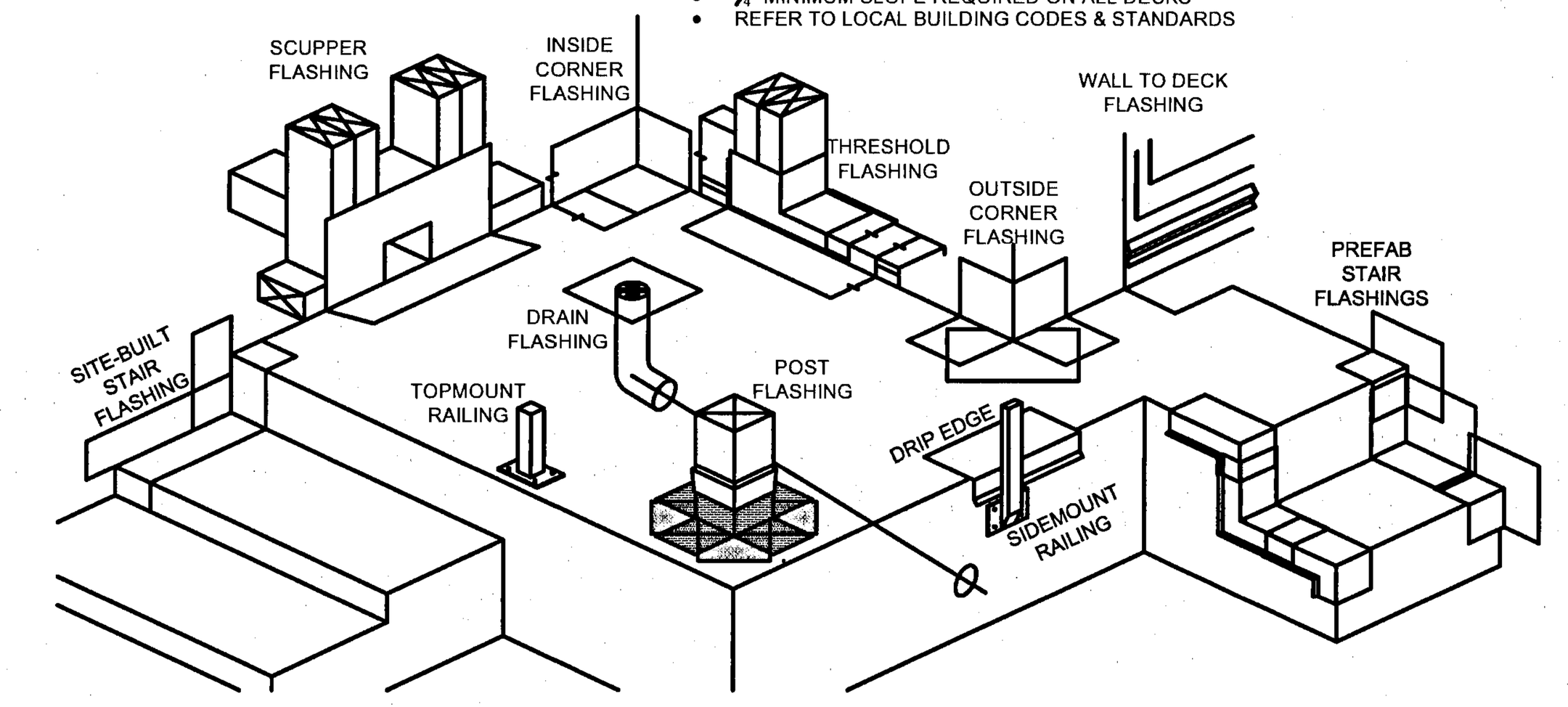
REVISIONS
1 JAN. 6, 2017 P/C 1
2 - -
3 - -
4 - -
5 - -
6 - -
7 - -

LICENSED ARCHITECT M. S. C-24313 8-31-17 STATE OF CALIFORNIA

ALL DIMENSIONS & CONDITIONS ARE TO BE VERIFIED BY CONTRACTOR BEFORE START OF CONSTRUCTION.

DESIGNED BY
DRAWN BY
CHECKED BY
JOB NO. 4219
DATE NOVEMBER 3, 2014
SHEET NO. D-3

NOTES:
- APPLY WP-51 ON ALL FLASHING SEAMS AND OVERLAPS. STANDARD OVERLAP IS BOTTOM TO TOP WITH A 4" OVERLAP.
- 2500 PSI MINIMUM FOR CONCRETE SUBSTRATES
- 5/8" EXTERIOR GRADE MINIMUM FOR PLYWOOD SUBSTRATE
- 1/4" MINIMUM SLOPE REQUIRED ON ALL DECKS
- REFER TO LOCAL BUILDING CODES & STANDARDS

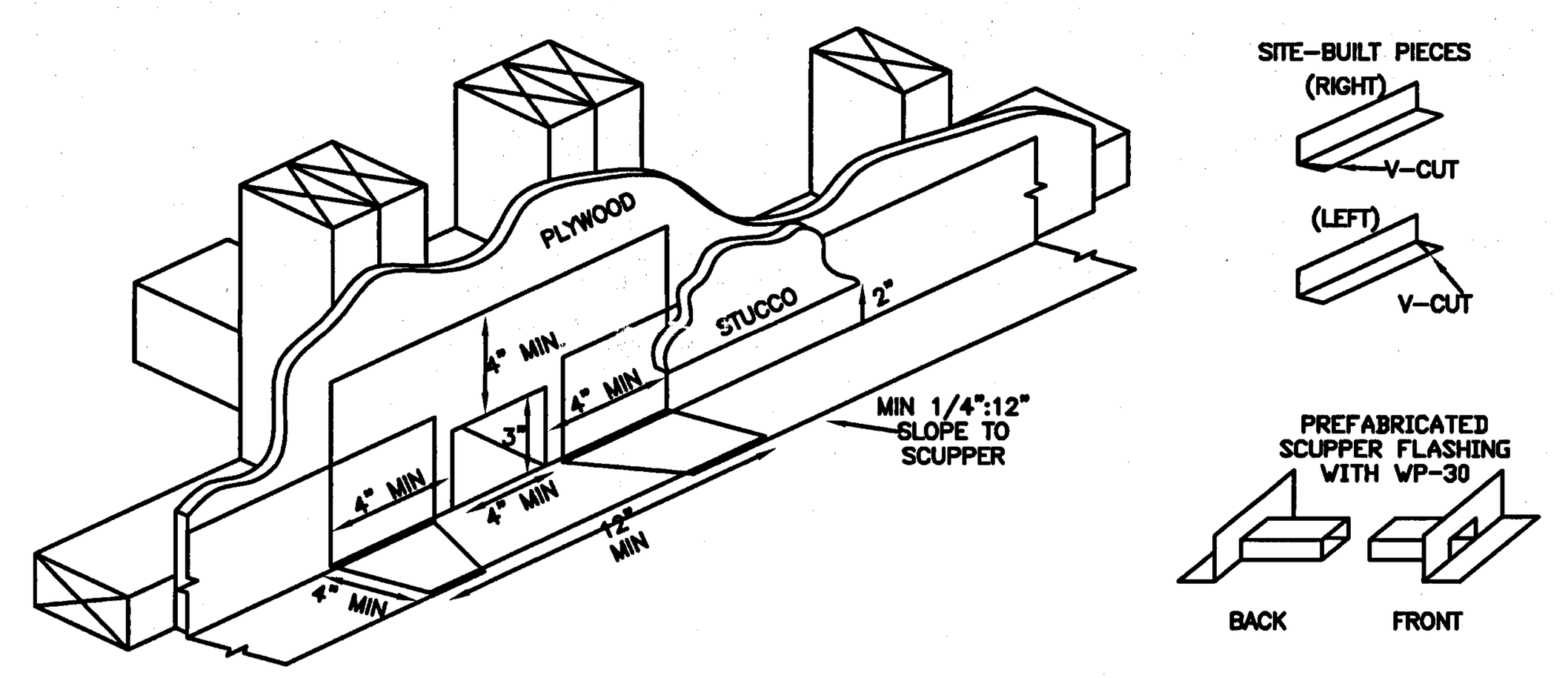


1

WESTCOAT - MULTIPLE FLASHING DETAILS

NO SCALE

NOTES:
- APPLY WP-51 ON ALL FLASHING SEAMS AND OVERLAPS. STANDARD OVERLAP IS BOTTOM TO TOP WITH A 4" OVERLAP.
- 2500 PSI MINIMUM FOR CONCRETE SUBSTRATES
- 5/8" EXTERIOR GRADE MINIMUM FOR PLYWOOD SUBSTRATE
- 1/4" MINIMUM SLOPE REQUIRED ON ALL DECKS
- REFER TO LOCAL BUILDING CODES & STANDARDS

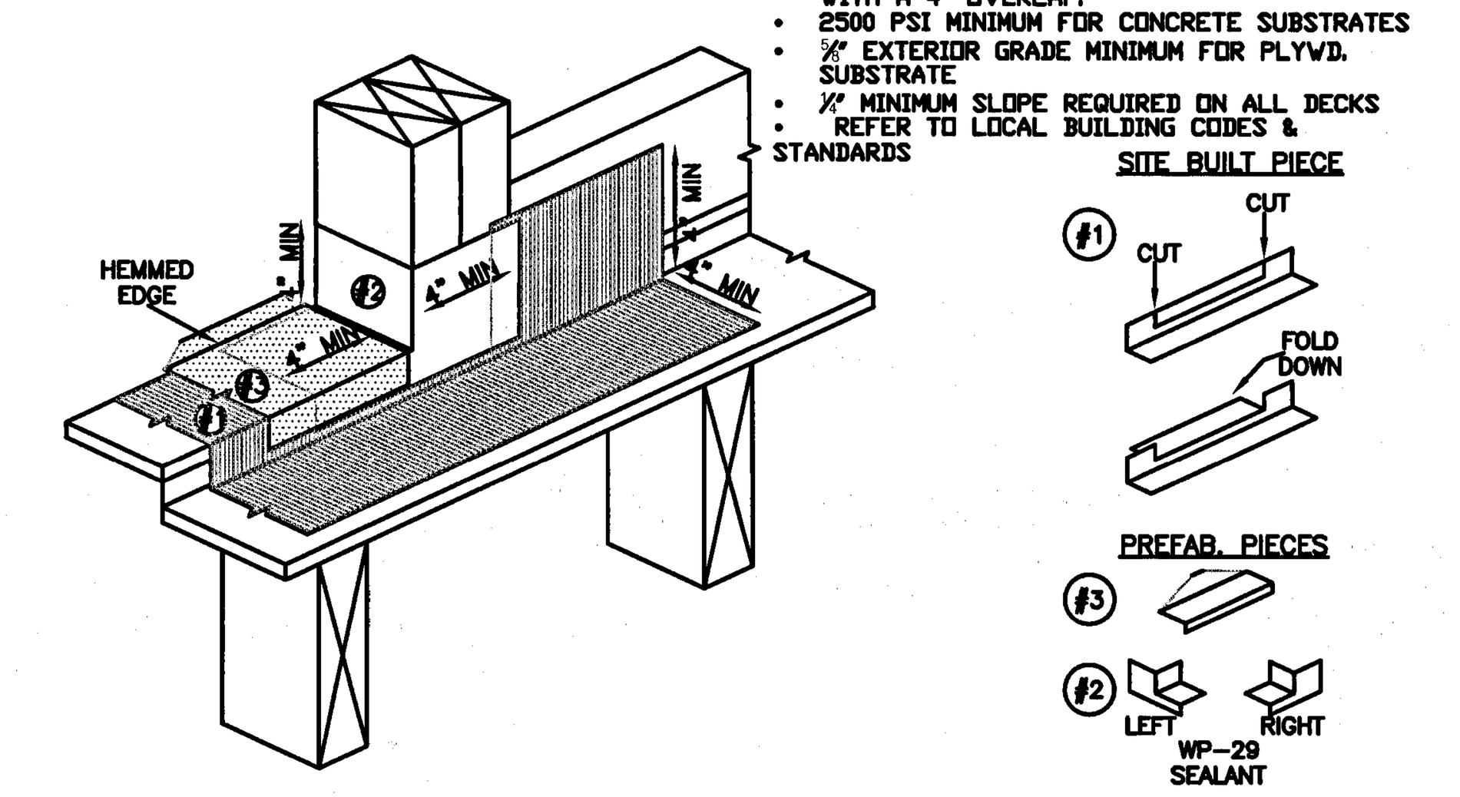


2

WESTCOAT - SCUPPER FLASHING DETAIL

NO SCALE

NOTES:
- APPLY WP-51 ON ALL FLASHING SEAMS AND OVERLAPS. STD. OVERLAP IS BOTTOM TO TOP WITH A 4" OVERLAP.
- 2500 PSI MINIMUM FOR CONCRETE SUBSTRATES
- 5/8" EXTERIOR GRADE MINIMUM FOR PLYWD. SUBSTRATE
- 1/4" MINIMUM SLOPE REQUIRED ON ALL DECKS
- REFER TO LOCAL BUILDING CODES & STANDARDS

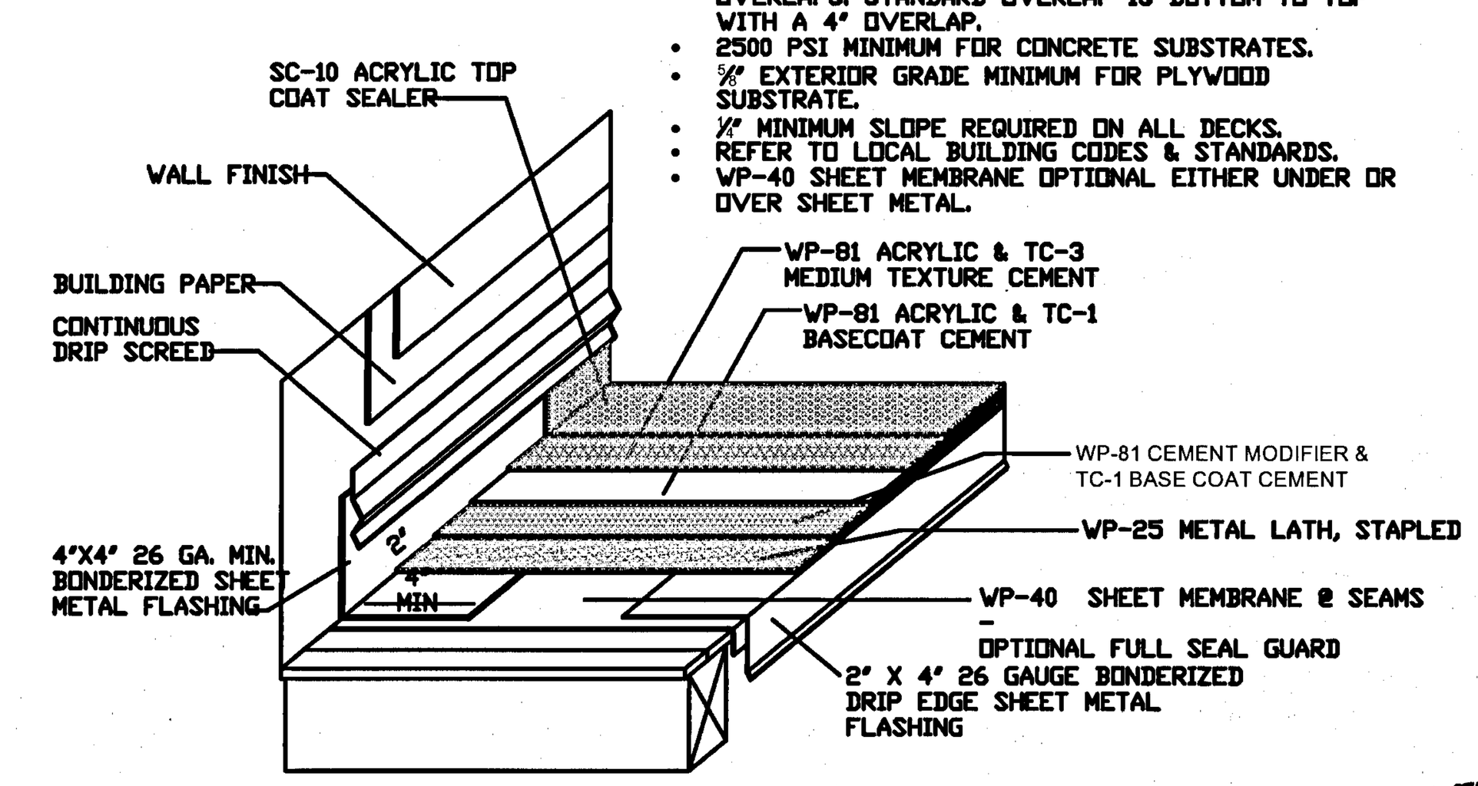


3

WESTCOAT - THRESHOLD FLASHING DETAIL

NO SCALE

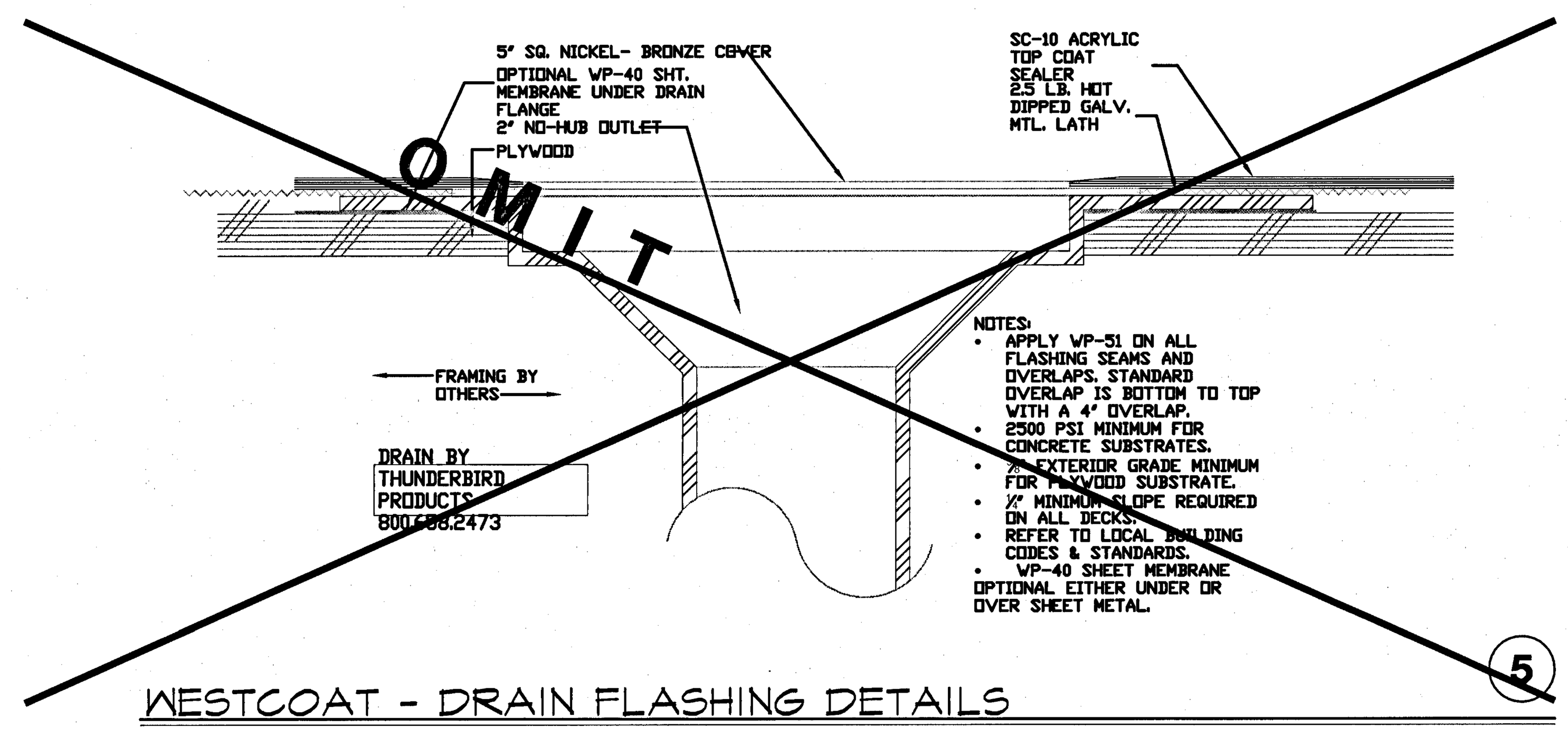
NOTES:
- APPLY WP-51 ON ALL FLASHING SEAMS AND OVERLAPS. STANDARD OVERLAP IS BOTTOM TO TOP WITH A 4" OVERLAP.
- 2500 PSI MINIMUM FOR CONCRETE SUBSTRATES.
- 5/8" EXTERIOR GRADE MINIMUM FOR PLYWOOD SUBSTRATE.
- 1/4" MINIMUM SLOPE REQUIRED ON ALL DECKS.
- REFER TO LOCAL BUILDING CODES & STANDARDS.
- WP-40 SHEET MEMBRANE OPTIONAL EITHER UNDER OR OVER SHEET METAL.



4

WESTCOAT - DECK EDGE & WALL TO DECK DETAIL

NO SCALE

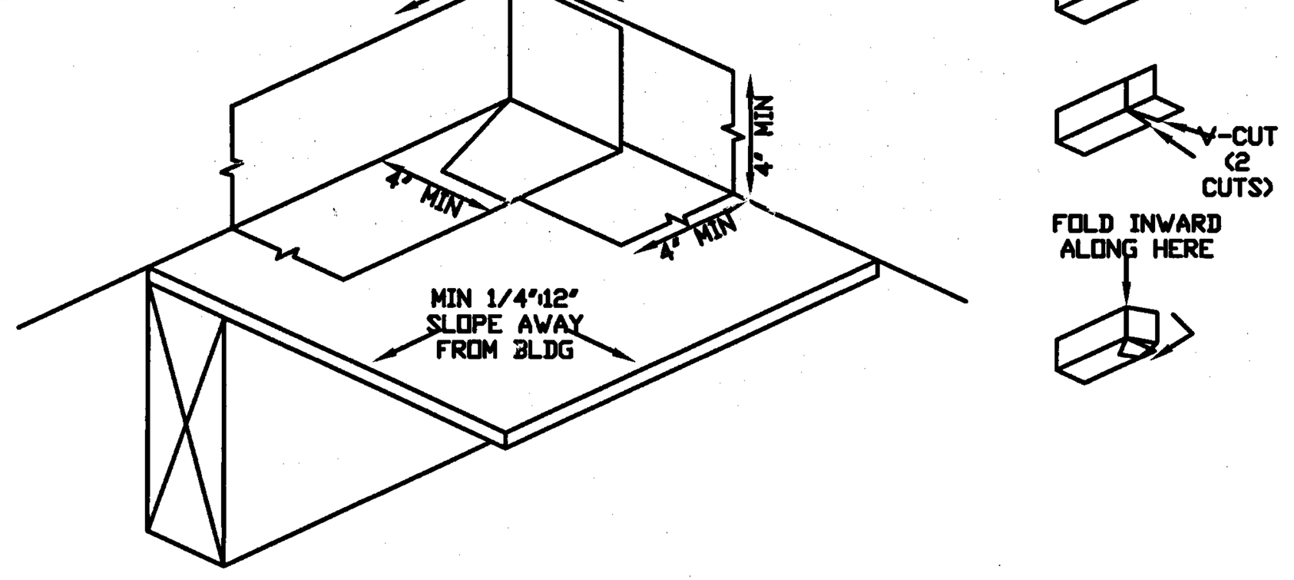


5

WESTCOAT - DRAIN FLASHING DETAILS

NO SCALE

NOTES:
- APPLY WP-51 ON ALL FLASHING SEAMS AND OVERLAPS. STANDARD OVERLAP IS BOTTOM TO TOP WITH A 4" OVERLAP.
- 2500 PSI MINIMUM FOR CONCRETE SUBSTRATES.
- 5/8" EXTERIOR GRADE MINIMUM FOR PLYWOOD SUBSTRATE.
- 1/4" MINIMUM SLOPE REQUIRED ON ALL DECKS.
- REFER TO LOCAL BUILDING CODES & STANDARDS.
- WP-40 SHEET MEMBRANE OPTIONAL EITHER UNDER OR OVER SHEET METAL.

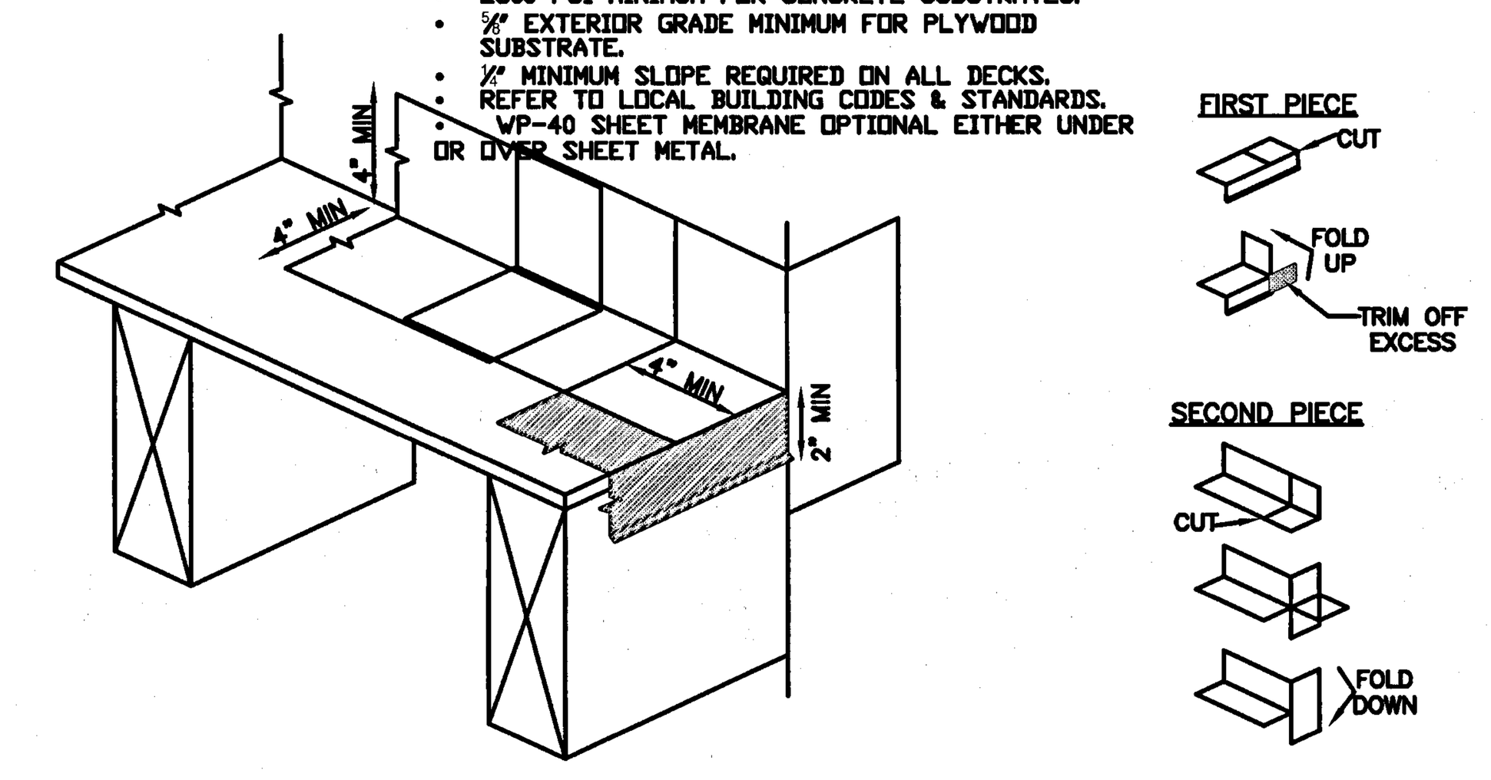


6

WESTCOAT - INSIDE CORNER FLASHING DETAIL

NO SCALE

NOTES:
- APPLY WP-51 ON ALL FLASHING SEAMS AND OVERLAPS. STANDARD OVERLAP IS BOTTOM TO TOP WITH A 4" OVERLAP.
- 2500 PSI MINIMUM FOR CONCRETE SUBSTRATES.
- 5/8" EXTERIOR GRADE MINIMUM FOR PLYWOOD SUBSTRATE.
- 1/4" MINIMUM SLOPE REQUIRED ON ALL DECKS.
- REFER TO LOCAL BUILDING CODES & STANDARDS.
- WP-40 SHEET MEMBRANE OPTIONAL EITHER UNDER OR OVER SHEET METAL.

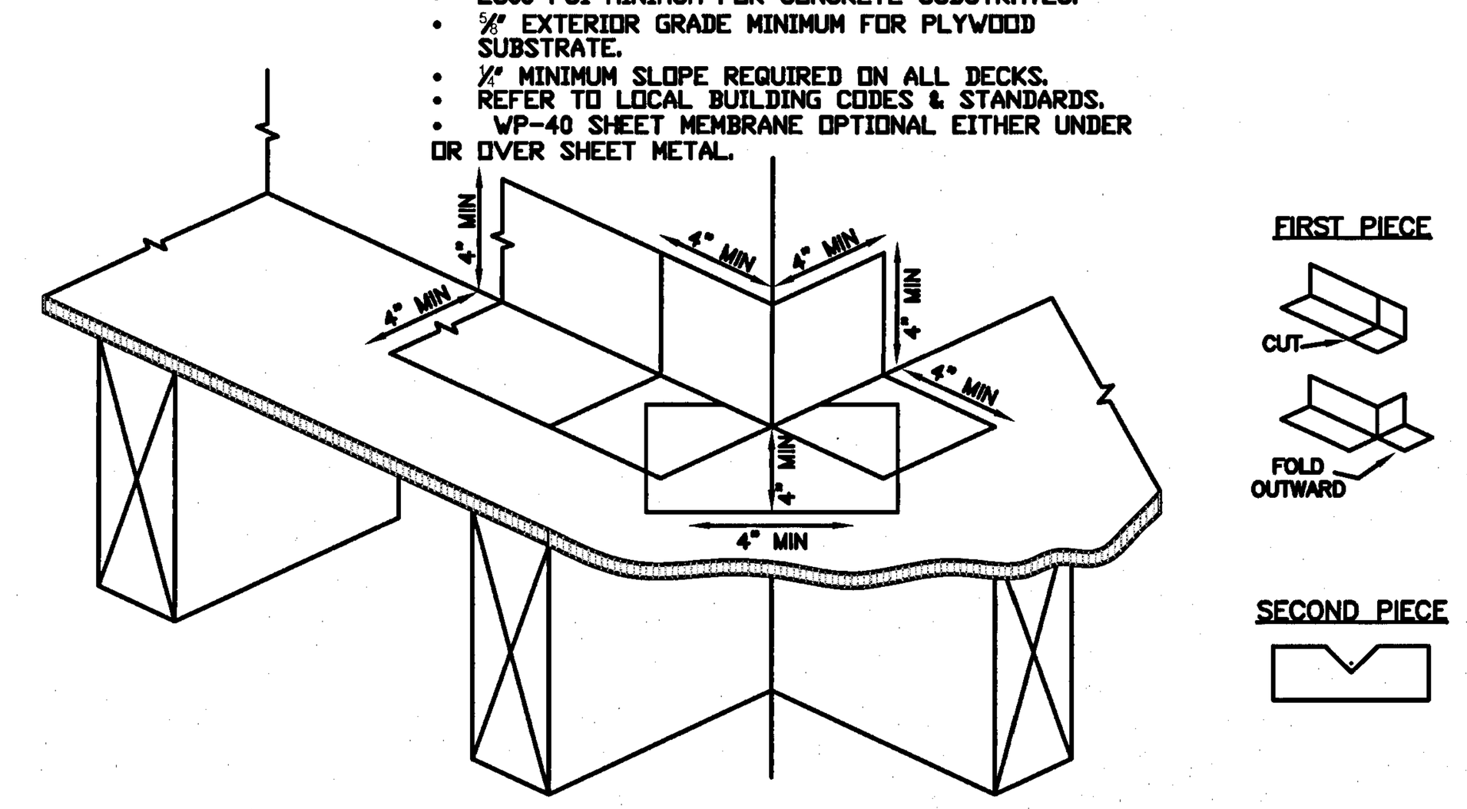


7

WESTCOAT - OUTSIDE CORNER FLASHING DETAIL

NO SCALE

NOTES:
- APPLY WP-51 ON ALL FLASHING SEAMS AND OVERLAPS. STANDARD OVERLAP IS BOTTOM TO TOP WITH A 4" OVERLAP.
- 2500 PSI MINIMUM FOR CONCRETE SUBSTRATES.
- 5/8" EXTERIOR GRADE MINIMUM FOR PLYWOOD SUBSTRATE.
- 1/4" MINIMUM SLOPE REQUIRED ON ALL DECKS.
- REFER TO LOCAL BUILDING CODES & STANDARDS.
- WP-40 SHEET MEMBRANE OPTIONAL EITHER UNDER OR OVER SHEET METAL.



8

WESTCOAT - OUTSIDE CORNER FLASHING DECK DETAIL

NO SCALE

MGA Architecture • Planning

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CONSTRUCTION DETAILS

REVIEWED FOR CODE COMPLIANCE
This review does not authorize violation of State or County building laws.
NOV 18 2019
SAN MATEO CO. BLDG. INSP. DIV.

REVISIONS	
1 JAN. 6, 2017	P.C. 1
-	-
-	-
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-	-
-	-

LICENSED ARCHITECT MARK H. GROSS C-24313 Ren. 9-30-17 STATE OF CALIFORNIA

ALL DIMENSIONS & CONDITIONS ARE TO BE VERIFIED BY CONTRACTOR BEFORE START OF CONSTRUCTION.

DESIGNED BY

DRAWN BY

CHECKED BY

JOB NO. 4276

DATE NOVEMBER 3, 2014

SHEET NO.

D-4 1

RESUBMITTAL
FEB 16 2017
San Mateo County

ENFORCEMENT REQUIREMENTS FOR DOCUMENTATION BY OTHERS

Certificate of Installation. For all buildings, the person in charge of the construction or installation, who is eligible under Division 3 of the Business and Professions Code to accept responsibility for the construction or installation of features, materials, components, or manufactured devices regulated by Part 6 or the Appliance Efficiency Regulations (*responsible person*) shall sign and submit Certificate of Installation documentation as specified in Section 10-103(a)3 to certify conformance with Part 6. If more than one person has responsibility for the construction or installation, each person shall sign and submit the Certificate of Installation documentation applicable to the portion of the construction or installation for which they are responsible; alternatively, the person with chief responsibility for the construction or installation shall sign and submit the Certificate of Installation documentation for the entire construction or installation scope of work for the project. Subject to the requirements of Section 10-103(a)3, persons who prepare Certificate of Installation documentation (*documentation authors*) shall sign a declaration statement on the documents they prepare to certify the information provided on the documentation is accurate and complete. In accordance with applicable requirements of 10-103(a)3, the signatures provided by *responsible persons* and *documentation authors* shall be original signatures on paper documents or electronic signatures on electronic documents conforming to the electronic signature specifications in Reference Joint Appendix JA7.

Certificate of Field Verification and Diagnostic Testing (Certificate of Verification). For all buildings for which compliance requires HERS field verification, a certified HERS Rater shall conduct all required HERS field verification and diagnostic testing in accordance with applicable procedures specified in Reference Appendices RA2, RA3, NA1, and NA2. All applicable Certificate of Verification documentation shall be completed, signed, and submitted by the certified HERS Rater who performed the field verification and diagnostic testing services (*responsible person*) in accordance with the requirements of Section 10- 103(a)5, and Reference Appendices RA2, and NA1, to certify conformance with Part 6. If more than one rater has responsibility for the HERS verification for the building, each rater shall sign and submit the Certificate of Verification documentation applicable to the portion of the building for which they are responsible. Subject to the requirements of Section 10-103(a)5, persons who prepare Certificate of Verification documentation (*documentation authors*) shall sign a declaration statement on the documents they prepare to certify the information provided on the documentation is accurate and complete. The signatures provided by *responsible persons* and *documentation authors* shall be electronic signatures on electronic documents.

Compliance, Operating, Maintenance, and Ventilation Information to be provided by Builder.

1. **Compliance Information.**
   A. For low-rise residential buildings, at final inspection, the enforcement agency shall require the builder to 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. These documents shall be in paper or electronic format and shall conform to the applicable requirements of Section 10-103(a).
   B. For nonresidential buildings, high-rise residential buildings and hotels and motels, at final inspection, the enforcement agency shall require the builder to leave in the building, copies of the completed, signed, and submitted compliance documents for the building owner at occupancy. For nonresidential buildings, high-rise residential buildings and hotels and motels, such information shall include copies of all Certificate of Compliance, Certificate of Installation, Certificate of Acceptance and Certificate of Verification documentation submitted. These documents shall be in paper or electronic format and shall conform to the applicable requirements of Section 10-103(a).
2. **Operating Information.** At final inspection, the enforcement agency shall require the builder to leave in the building, for 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 low-rise residential buildings, such information shall be contained in a folder or manual which provides all information specified in Section 10-103(b). This operating information shall be in paper or electronic format.

   For dwelling units, buildings or tenant spaces that are not individually owned and operated, or are centrally operated, such information shall be provided to the person(s) responsible for operating the feature, material, component or mechanical device installed in the building. This operating information shall be in paper or electronic format.
3. **Maintenance information.** At final inspection, the enforcement agency shall require the builder to leave in the building, for 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.

   For dwelling units, buildings or tenant spaces that are not individually owned and operated, or are centrally operated, such information shall be provided to the person(s) responsible for maintaining the feature, material, component or mechanical device installed in the building. This information shall be in paper or electronic format.
4. **Ventilation Information.** For low-rise residential buildings, the enforcement agency shall require the builder to leave in the building, for 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. For buildings or tenant spaces that are not individually owned and operated, or are centrally operated, such information shall be provided to the person(s) responsible for operating and maintaining the feature, material, component or mechanical ventilation device installed in the building. This information shall be in paper or electronic format. For nonresidential buildings, high-rise residential buildings and hotels and motels, the enforcement agency shall require the builder to provide the building owner at occupancy a description of the quantities of outdoor and recirculated air that the ventilation systems are designed to provide to each area. For buildings or tenant spaces that are not individually owned and operated, or are centrally operated, such information shall be provided to the person(s) responsible for operating and maintaining the feature, material, component or mechanical device installed in the building. This information shall be in paper or electronic format.

150.0(j)2: PIPE INSULATION FOR NEW RESIDENTIAL BUILDINGS

Water piping and cooling system line insulation thickness and conductivity shall be insulated to the thicknesses as follows:

A. All domestic hot water system piping conditions listed below, whether buried or unburied, must be insulated and the insulation thickness shall be selected based on the conductivity range in TABLE 120.3-A and the insulation level shall be selected from the fluid temperature range based on the thickness requirements in TABLE 120.3A:
   1. The first 5 feet (1.5 meters) of hot and cold water pipes from the storage tank.
   2. All piping with a nominal diameter of 3/4 inch (19 millimeter) or larger.
   3. All piping associated with a domestic hot water recirculation system regardless of the pipe diameter.
   4. Piping from the heating source to storage tank or between tanks.
   5. *Piping* buried below grade.
   6. All hot water pipes from the heating source to the kitchen fixtures.
B. In addition to insulation requirements, all domestic hot water pipes that are buried below grade must be installed in a water proof and non-crushable casing or sleeve that allows for installation, removal, and replacement of the enclosed pipe and insulation.
C. Pipe for cooling system lines shall be insulated as specified in subsection A. Piping for steam and hydronic heating systems or hot water systems with pressure above 15 psig (103 kPa) shall meet the requirements in TABLE 120.3-A.

150.0(n)1: HIGH EFFICIENCY WATER HEATER READY

Systems using gas or propane water heaters to serve individual dwelling units shall include the following components:

A. A 120V electrical receptacle that is within 3 feet from the water heater and accessible to the water heater with no obstructions; and
B. 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; and
C. A condensate drain that is no more than 2 inches higher than the base of the installed water heater, and allows natural draining without pump assistance, and
D. A gas supply line with a capacity of at least 200,000 Btu/hr.

110.10(A) SOLAR READY REQUIREMENTS FOR NEW RESIDENTIAL BUILDINGS

7.2.1 Single Family Residences
The solar ready requirements are applicable to newly constructed single family residences located in subdivisions with 10 or more residences and where the application for a tentative subdivision map for the residences has been deemed complete by the enforcement agency on or after January 1, 2014.
7.2.2 Low-rise Multifamily Buildings
The solar ready requirements are applicable to newly constructed low-rise multifamily buildings which have three stories or fewer.

INDOOR AIR QUALITY AND MECHANICAL VENTILATION

§150.0(o): ***Ventilation for Indoor Air Quality.*** *All dwelling units shall meet the requirements of ASHRAE Standard 62.2 – Ventilation and Acceptable Indoor Air Quality in Low-Rise Residential Buildings. Window operation is not apermissible method of providing the Whole-Building Ventilation airflow required in Section 4 of ASHRAE 62.2. Additionally, all dwelling units shall meet the following requirements:*

Field Verification and Diagnostic Testing of Airflow Performance
The Whole-Building Ventilation airflow required by Section 4 of the ASHRAE Standard 62.2 shall be confirmed through field verification and diagnostic testing in accordance with the applicable procedures specified in Reference Residential Appendix RA3.7.

§150.2(a)1C and§150.2(a)2C: *Additions larger than 1,000 square feet shall meet the ASHRAE Standard 62.2 Section 4 requirement to provide whole-building ventilation airflow. The whole building ventilation airflow rate shall be based on the conditioned floor area for the entire dwelling unit comprised of the existing dwelling conditioned floor area plus the addition conditioned floor area.*

The whole building ventilation airflow requirement in ASHRAE 62.2 is required in new buildings and in buildings with additions greater than 1,000 sq. ft.. All other mechanical ventilation requirements in §150.0(o), including local exhaust, must be met (as applicable) in all additions and alterations.

The following summarizes the key requirements for most newly constructed residences.

1. A whole-building mechanical ventilation system shall be provided.
2. Kitchens and bathrooms shall have local exhaust systems vented to the outdoors.
3. Clothes dryers shall be vented to the outdoors.
4. Ventilation air shall come from the outdoors and shall not be transferred from adjacent dwelling units, garages or crawlspaces.
5. Ventilation system controls shall be labeled and the home owner shall be provided with instructions on how to operate the system.
6. Combustion appliances shall be properly vented and air systems shall be designed to prevent back drafting.
7. The walls and openings between the house and the garage shall be sealed.
8. Habitable rooms shall have windows with a ventilation area of at least 4 percent of the floor area.
9. Mechanical systems including heating and air conditioning systems that supply air to habitable spaces shall have MERV 6 filters or better.
10. Dedicated air inlets (not exhaust) that are part of the ventilation system design shall be located away from known contaminants.
11. A carbon monoxide alarm shall be installed in each dwelling unit in accordance with NFPA 720, *Standard for the Installation of Carbon Monoxide (CO) Detection and Warning Equipment*
12. Air moving equipment used to meet the whole-building ventilation requirement and the local ventilation exhaust requirement shall be rated in terms of airflow and sound.
    a. All continuously operating fans shall be rated at a maximum of 1.0 sone.
    b. Intermittently operated whole-building ventilation fans shall be rated at a maximum of 1.0 sone.
    c. Intermittently operated local exhaust fans shall be rated at a maximum of 3.0 sones with prescriptive duct sizing per Table 4-16.
    d. Remotely located air-moving equipment (mounted outside of habitable spaces) need not meet sound requirements if there is at least 4 feet of ductwork between the fan and the intake grill.

Table 4-16 – Prescriptive Duct Sizing for Single Fan Exhaust Systems (from 62.2,Table 7.1)

Duct Type	Flex Duct				Smooth Duct			
Fan Rating 62 Pa (cfm@ 0.25 in. w.c.)	50	80	100	125	50	80	100	125
Diameter Inch	Maximum Length ft.							
3	X	X	X	X	5	X	X	X
4	70	3	X	X	105	35	5	X
5	NL	70	35	20	NL	135	85	55
6	NL	NL	125	95	NL	NL	NL	145
7 and above	NL	NL	NL	NL	NL	NL	NL	NL

This table assumes no elbows. Deduct 15 feet of allowable duct length for each elbow.
NL = no limit on duct length of this size.
X = not allowed, any length of duct of this size with assumed turns and fitting will exceed the rated pressure drop.

Continuous Ventilation Calculation

Each whole building ventilation system must meet the minimum CFM required and field verified with diagnostic testing of airflow performance. In addition, the fan must be certified with a maximum sone rating of 1.0 or less.

CFA + 100 + 7.5 (# of Bedrooms +1) = Ventilation Rate (Min. CFM @ .25" W.C.)

Lot 9 3390 + 100 + 7.5 (4 + 1) = 33.90 + 37.5 = **71.40 Min. CFM**

MANDATORY MEASURES SUMMARY

NOTE: Low-rise residential buildings subject to the Standards must comply with all applicable mandatory measures listed, regardless of the compliance approach used. More stringent energy measures listed on the Certificate of Compliance (CF1R-PRF, CF1R-NCB, CF1R-ADD, or CF1R-ALT Form) shall supersede any mandatory measure of lesser values. This Mandatory Measures Summary shall be incorporated into the permit documents, and the applicable features shall be considered by all parties as minimum component performance specifications whether they are shown elsewhere in the documents or in this summary.

Building Envelope Measures:
§110.6(a)1: Doors and windows between conditioned and unconditioned spaces are manufactured to limit air leakage.
§110.6(a)4: Fenestration products (except field-fabricated windows) have a label listing the certified U-Factor, certified Solar Heat Gain Coefficient (SHGC), and infiltration that meets the requirements of §10-111(a).
§110.7: Exterior doors, windows and attic access doors are weather-stripped; all joints, penetrations and openings to the exterior are caulked and sealed.
§110.8(a): Insulation specified or installed meets Standards for Insulating Material and shall be certified.
§110.8(i): A cool roof shall be certified, tested and labeled by the Cool Roof Rating Council (CRRC) in accordance with this section.
§110.8(j): A radiant barrier shall be certified and tested in accordance with this section and have an emittance of 0.05 or less.
§150.(a): Minimum R-30 (R-19 for Additions/Alterations) insulation in wood-frame ceiling or equivalent U-factor (.031).
§150.0(b): Loose fill insulation shall conform with manufacturer's installed design labeled R-Value.
§150.0(c): Minimum R-13 insulation (.102) in 2x4 wood-frame wall and R-19 insulation (.074) in 2x6 wood framed wall or equivalent U-factor.
§150.0(d): Minimum R-19 insulation in raised wood-frame floor or equivalent U-factor (.049 or.037).
§150.0(g): Mandatory Vapor retarder installed in Climate Zones 14 or 16.
§150.0(l): Water absorption rate for slab edge insulation material alone without facings is no greater than 0.3%; water vapor permeance rate is no greater than 2.0 perm/inch and shall be protected from physical damage and UV light deterioration.

Fireplaces, Decorative Gas Appliances and Gas Log Measures:
§150.0(e)1A: Masonry or factory-built fireplaces have a closable metal or glass door covering the entire opening of the firebox.
§150.0(e)1B: Masonry or factory-built fireplaces have a combustion outside air intake, which is at least six square inches in area and is equipped with a with a readily accessible, operable, and tight-fitting damper and or a combustion-air control device.
§150.0(e)2: Continuous burning pilot lights and the use of indoor air for cooling a firebox jacket, when that indoor air is vented to the outside of the building, are prohibited.

Space Conditioning, Water Heating and Plumbing System Measures:
§110.0-§110.3: HVAC equipment, water heaters, showerheads, faucets and all other regulated appliances are certified by the Energy Commission.
§110.3(c)5: Water heating recirculation loops serving multiple dwelling units and High-Rise residential occupancies meet the air release valve, backflow prevention, pump isolation valve, and recirculation loop connection requirements of §110.3(c)5.
§110.5: Continuously burning pilot lights are prohibited for natural gas: fan-type central furnaces, household cooking appliances (appliances with an electrical supply voltage connection with pilot lights that consume less than 150 Btu/hr are exempt), and pool and spa heaters.
§150.0(h)1&2: Heating and/or cooling loads are calculated in accordance with ASHRAE, SMACNA or ACCA and design conditions specified in this section.
§150.0(h)3: Outdoor condensing units or heat/pumps shall not be placed within 5 feet of a dryer vent outlet.
§150.0(i): Heating systems are equipped with thermostats that meet the setback requirements of §110.2(c).
§150.0(j)1A: Storage gas water heaters rated with an Energy Factor no greater than the federal minimal standard are externally wrapped with insulation having an installed thermal resistance of R-12 or greater.
§150.0(j)1B: Unfired storage tanks, such as storage tanks or backup tanks for solar water-heating system, or other indirect hot water tanks have R-12 external insulation or R-16 internal insulation where the internal insulation R-value is indicated on the exterior of the tank.
§150.0(j)2: Hot water and cooling system piping shall be insulated per this Section and Table 120.3-A.
§150.0(j)3A: Insulation is protected from damage, including that due to sunlight, moisture, equipment maintenance, and wind.
§150.0(j)3A: Insulation for chilled water piping and refrigerant suction lines includes a vapor retardant or is enclosed entirely in conditioned space.
§150.0(m)1: All air-distribution system ducts and plenums installed, are sealed and insulated to meet the requirements of CMC Sections 601, 602, 603, 604, 605 and Standard 6-5; supply-air and return-air ducts and plenums are insulated to a minimum installed level of R-6 or enclosed entirely in conditioned space. Openings shall be sealed with mastic, tape or other duct-closure system that meets the applicable requirements of UL 181, UL 181A, or UL 181B or aerosol sealant that meets the requirements of UL 723. If mastic or tape is used to seal openings greater than 1/4 inch, the combination of mastic and either mesh or tape shall be used
§150.0(m)1: Building cavities, support platforms for air handlers, and plenums defined or constructed with materials other than sealed sheet metal, duct board or flexible duct shall not be used for conveying conditioned air. Building cavities and support platforms may contain ducts. Ducts installed in cavities and support platforms shall not be compressed to cause reductions in the cross-sectional area of the ducts.
§150.0(m)2: Joints and seams of duct systems and their components shall not be sealed with cloth back rubber adhesive duct tapes unless such tape is used in combination with mastic and draw bands.
§150.0(m)7: Exhaust fan systems have back draft or automatic dampers.
§150.0(m)8: Gravity ventilating systems serving conditioned space have either automatic or readily accessible, manually operated dampers.
§150.0(m)9: Insulation shall be protected from damage, including that due to sunlight, moisture, equipment maintenance, and wind. Cellular foam insulation shall be protected as above or painted with a coating that is water retardant and provides shielding from solar radiation that can cause degradation of the material.
§150.0(m)10: Flexible ducts cannot have porous inner cores.
§150.0(m)11: When space conditioning systems utilize forced air duct systems to supply conditioned air to an occupiable space, the ducts shall be sealed, as confirmed through field verification and diagnostic testing.
§150.0(m)12: Mechanical systems that supply air to an occupiable space through ductwork exceeding 10 ft. (3m) in length and through a thermal conditioning component, except evaporative coolers, shall be provided with air filter devices in accordance with minimum system design and installation, MERV 6 filters, maximum pressure drop and filter labeling requirements.
§150.0(m)13A: Space conditioning systems that utilize forced air ducts to supply cooling to an occupied space shall have a hole for a static pressure probe in the supply plenum.
§150.0(m)13B: Space conditioning systems that utilize forced air ducts to supply cooling to an occupied space shall have a minimum air flow of 350 CFM per ton with a maximum fan efficacy of .58 watts per CFM as confirmed through field verification and diagnostic testing.
ALTERNATIVE: Return air ducts and grills may comply by meeting the requirements of Table 150.0-C or 150.0-D as confirmed through field verification.
§150.0(n)1: New gas or propane water heaters that serve individual dwelling units must comply with this section in order to facilitate future high efficiency equipment.
§150.0(n)3: Solar water heating systems and/or collectors are certified by the Solar Rating and Certification Corporation.
§150.0(o): All dwelling units shall meet the requirements of ANSI/ASHRAE Standard 62.2-2007 Ventilation and Acceptable Indoor Air Quality in Low-Rise Residential Buildings. Window operation is not a permissible method of providing the Whole Building Ventilation required in Section 4 of that Standard.
§150.0(r): All newly constructed buildings shall meet the requirements of Section 110.10 for solar ready buildings.

Pool and Spa Heating Systems and Equipment Measures:
§110.4(a): Any pool or spa heating system shall be certified to have: a thermal efficiency that complies with the Appliance Efficiency Regulations; an on-off switch mounted outside of the heater; a permanent weatherproof plate or card with operating instructions; and shall not use electric resistance heating or a pilot light.
§110.4(b)1: Any pool or spa heating equipment shall be installed with at least 36" of pipe between filter and heater, or dedicated suction and return lines, or built-up connections for future solar heating.
§110.4(b)2: Outdoor pools or spas that have a heat pump or gas heater shall have a cover.
§110.4(b)3: Pools shall have directional inlets that adequately mix the pool water, and a time switch that will allow all pumps to be set or programmed to run only during off-peak electric demand periods.
§150.0(p): Residential pool systems or equipment meet the pump sizing, flow rate, piping, filters, and valve requirements of §150.0(p).

Residential Lighting Measures:
§150.0(k)1A: Installed luminaires shall be classified as high-efficacy or low-efficacy for compliance with Section 150.0(k) in accordance with TABLE 150.0-A or TABLE 150.0-B, as applicable.
§150.0(k)1C: The wattage of permanently installed luminaires shall be determined as specified by §130.0(c).
§150.0(k)1D: Ballasts for fluorescent lamps rated 13 Watts or greater shall be electronic and shall have an output frequency no less than 20 kHz.
§150.0(k)1E: Permanently installed night lights and night lights integral to installed luminaires or exhaust fans shall be rated to consume no more than five watts of power per luminaire or exhaust fan as determined in accordance with Section 130.0(c). Night lights shall not be required to be controlled by vacancy sensors.
§150.0(k)1F: Lighting integral to exhaust fans, in rooms other than kitchens, shall meet the applicable requirements of §150.0(k).
§150.0(k)2: All switching devices and controls shall meet the requirements of §150.0(k)2.
§150.0(k)2: All switching devices and controls shall meet the requirements of §150.0(k)2.
§150.0(k)2A: High efficacy luminaires shall be switched separately from low efficacy luminaires.
§150.0(k)2B: Exhaust fans shall be switched separately from lighting system.
NOTE: Any luminaire that contains a socket that can be fitted with an incandescent lamp is classified as low efficacy, even if a compact fluorescent or LED lamp is installed into the socket. The Standards do not recognize any socket adaptors as permanent, even when classified as permanent by the manufacturer.
§150.0(k)3: A minimum of 50 percent of the total rated wattage of permanently installed lighting in kitchens shall be high efficacy.
EXCEPTION: Up to 50 watts for dwelling units less than or equal to 2,500 ft² or 100 watts for dwelling units larger than 2,500 ft² may be exempt from the 50 percent high efficacy requirement when all lighting in the kitchen is controlled in accordance with the applicable provisions in Section 150.0(k)2, and is also controlled by vacancy sensors or dimmers.
§150.0(k)4: Permanently installed lighting that is internal to cabinets shall use no more than 20 watts of power per linear foot of illuminated cabinet.
§150.0(k)5: Lighting installed in bathrooms shall meet the following requirements:
A. A minimum of one high efficacy luminaire shall be installed in each bathroom; and
B. All other lighting installed in each bathroom shall be high efficacy or controlled by vacancy sensors.
§150.0(k)6: Lighting installed in attached and detached garages, laundry rooms, and utility rooms shall be high efficacy luminaires and controlled by vacancy sensors.
§160.0(k)7: Lighting installed in rooms or areas other than in kitchens, bathrooms, garages, laundry rooms, and utility rooms shall be high efficacy, or shall be controlled by either dimmers or vacancy sensors.
EXCEPTION 1: Luminaires in closets less than 70 square feet.
EXCEPTION 2: Lighting in detached storage building less than 1000 square feet located on a residential site.

MANDATORY MEASURES SUMMARY

§150.0(k)8: Luminaires recessed into insulated ceilings shall be listed for zero clearance insulation contact (IC) by Underwriters Laboratories or other nationally recognized testing/rating laboratory; and have a label that certifies the luminaire is airtight with air leakage less than 2.0 CFM at 75 Pascals when tested in accordance with ASTM E283; and be sealed with a gasket or caulk between the luminaire housing and ceiling.
§150.0(k)9A: For single-family residential buildings, outdoor lighting permanently mounted to a residential building or other buildings on the same lot shall be high efficacy, or may be low efficacy if it meets all of the following requirements:
   i. Controlled by a manual ON and OFF switch that does not override to ON the automatic actions of items ii or iii below; and
   ii. Controlled by a motion sensor not having an override or bypass switch that disables the motion sensor, or controlled by a motion sensor having a temporary override switch which temporarily bypasses the motion sensing function and automatically reactivates the motion sensor within 6 hours
   iii. Controlled by one of the following methods:
      a. Photocontrol not having an override or bypass switch that disables the photocontrol; or
      b. Astronomical time clock not having an override or bypass switch that disables the astronomical time clock, and which is programmed to automatically turn the outdoor lighting OFF during daylight hours; or
      c. Energy management control system which meets all of the following requirements:
         At a minimum provides the functionality of an astronomical time clock in accordance with Section 110.9; meets the Installation Certification requirements in Section 130.4; meets the requirements for an EMCS in Section 130.5; does not have an override or bypass switch that allows the luminaire to be always ON; and, is programmed to automatically turn the outdoor lighting OFF during daylight hours.

§150.0(k)9B: For low-rise multi-family 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 shall comply with one of the following requirements:
   i. Shall comply with Section 150.0(k)9A; or
   ii. Shall comply with the applicable requirements in Sections 110.9, 130.0, 130.2, 130.4, 140.7, and 141.0.
§150.0(k)9C: For low-rise residential buildings with four or more dwelling units, outdoor lighting not regulated by Section 150.0(k)9B or Section 150.0(k)9D shall comply with the applicable requirements in Sections 110.9, 130.0, 130.4, 140.7, and 141.0.
§150.0(k)9D: Outdoor lighting for residential parking lots and residential carports with a total of eight or more vehicles per site shall comply with the applicable requirements in Sections 110.9, 130.0, 130.2, 130.4, 140.7, and 141.0.
§150.0(k)10: Internally illuminated address signs shall comply with Section 140.8; OR not contain a screw-base socket, and consume no more than five watts of power as determined according to §130.0(d).
§150.0(k)11: Lighting for residential parking garages for eight or more vehicles shall comply with the applicable requirements for nonresidential garages in Sections 110.9, 130.0, 130.1, 130.4, 140.6, and 141.0.
§150.0(k)12A. In a low-rise multi-family 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.
§150.0(k)12B. In a low-rise multi-family 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.

§10-111: All fenestration shall comply with this section when implementing temporary and permanent labeling using National Fenestration Rating Council (NFRC) certification requirements relating to U-factors, Solar Heat Gain Coefficients (SHGC), Visible Transmittance (VT) and Air Leakage for fenestration products under Section 110.6(a) of Part 6.

REVIEWED FOR CODE COMPLIANCE
This review does not authorize violation or state or County building laws.
NOV 13 2019
SAN MATEO CO. BLDG. INSP. DIV.

For Energy Features that require HERS field verification, registered copies of the following checked CF3R verification and diagnostic testing certificates shall be posted or made available to the enforcement agency.

Prior to final inspection a copy of the following checked CF2R installation certificates shall be posted or made available to the enforcement agency.

Verification Certificate CF3R (HERS)	Installation Certificate CF2R	Document Category	Category Description	Document Description
	X	ENV-01	Envelope Non HERS	Fenestration/Glazing
	X	ENV-02	Envelope Non HERS	Envelope Air Sealing Joints & Openings
	X	ENV-03	Envelope Non HERS	Insulation Installation
	X	ENV-04	Envelope Non HERS	Cool Roof - Radiant Barrier
		ENV-20H	Envelope HERS	Building Envelope Air Leakage Blower Door Test
		ENV-21H-24H	Envelope HERS	Quality Insulation Installation (QII)
	X	LTG-01	Lighting Non HERS	Single Family Lighting
		LTG-02	Lighting Non HERS	Multi-Family Lighting
	X	MCH-01	Mechanical Non HERS	HVAC Systems & Ducts Return Air Filter Labeling
		MCH-02	Mechanical Non HERS	Whole House Fan
X	X	MCH-20H	Mechanical HERS	Duct Leakage Test Low Leakage Air Handler (LLAH)
		MCH-21H	Mechanical HERS	Duct Location Conditioned Space
X	X	MCH-22H	Mechanical HERS	Fan Watt Draw Efficacy (FWD) (.58 Watts/CFM)
X	X	MCH-23H	Mechanical HERS	Cooling Coil Airflow (CCA) (350 CFM/Ton)
		MCH-24H	Mechanical HERS	Building Envelope Air Leakage Blower Door Test w/Ducts in Conditioned Space
		MCH-25H	Mechanical HERS	Refrigerant Charge Verification
		MCH-26H	Mechanical HERS	SEER & EER Verification
X	X	MCH-27H	Mechanical HERS	Indoor Air Quality & Mechanical Ventilation ASHRAE 62.2 (Continuous Fan)
		MCH-28H	Mechanical HERS	Return Duct & Filter Grille Sizing (Alternate to FWD & CCA)
		MCH-29H	Mechanical HERS	Supply Duct Surface Area, R-Values & Buried Ducts
		PLB-01 PLB-21H	Plumbing Non HERS HERS	Multi-Family Hot Water Distribution System
	X	PLB-02 PLB-22H	Plumbing Non HERS HERS	Single Family Hot Water Distribution System

SUPERINTENDENTS
Please coordinate with you subcontractors and HERS rater the importance of having the above checked certificates filled out on time to prevent any hold-ups during final inspection. Keep in mind that some of these items need to be inspected by the HERS rater prior to drywall.

STATEMENT OF CONFORMANCE

These Calculations contain all the building features and performance specifications required for compliance by the California Code of Regulations Title 24, Part 1, Administrative Requirements; Part 6, Building Energy Efficiency Standards; and portions of Title 20, Appliance Efficiency Standards. When these features are incorporated into the architectural plans the design will be in compliance with the 2013 Energy Efficiency Standards as they apply in the specified Climate Zone for residential buildings using EnergyPro, a California Energy Commission approved computer performance method program.

RESUBMITTAL
FEB 16 2017

CABEC California Association of Building Energy Consultants CERTIFIED ENERGY ANALYST Rick Maurer R05-80-343 & NR08-90-637

Prepared By: Rick Maurer
Energy Plans Examiner
Certificate No. R05-88-1601 and NR08-88-3583

EQUIPMENT (OR EQUAL)

TICONDEROGA PARTNERS
"HIGHLAND ESTATES"
SAN MATEO COUNTY, CA.

BLDR.-SPEC'D. WATER HEATER
MECH.-SPEC'D. HEATING & A/C

	LOT: 9 HOUSE
GAS FURNACE	MECH. SPEC'D.
AFUE (MIN.)	80%
BTU INPUT	—
BTU OUTPUT	—
CFM	—
LOW LEAKAGE FAN	REQ'D.
FAN WATT DRAW	REQ'D.
COOLING COIL	MECH. SPEC'D.
TXV	—
VERIFIED AIRFLOW	REQ'D.
CONDENSER	MECH. SPEC'D.
SEER/EER (MIN.)	14.0/11.7
TONS	—
BTU'S @ 95°	—
SENS. @ 95°	—
VERIFIED EER	—
REFRIG. CHARGE	N/R
WATER HEATER	TANKLESS
GALLONS	0
BTUH INPUT	≤ 200,000
RECOVERY EFFIC.	N/A
STAND BY LOSS	N/A
ENERGY FACTOR	.82 MIN.
FIRST HR. RATING	50 GAL.
HOT H2O PIPE INS.	REQ'D.
HVAC DUCT INSUL.	R-6.0
HVAC DUCT TEST	REQ'D.

*NIGHT SET-BACK THERMOSTAT REQUIRED.
*VERIFY SOUND ORDINANCE (IF ANY) PRIOR TO A/C SET.
*HVAC EQUIPMENT SIZING & SPECIFICATION BY OTHERS.

REVISIONS	BY

Designer: Mark Gross & Associates, Inc.
8881 Research Drive
Irvine, CA 92618

Owner: Ticonderoga Partners, LLC
695 Skyway, Suite #230
San Carlos, CA 94070

Project: "Highland Estates"
Lot #9
San Mateo County, California

RICK MAURER, TITLE 24, INC.
7544 E. Saddlehill Trail • Orange, CA 92869
Phone: (714) 771-1507
Fax: (714) 771-2939
T-24@socal.rr.com

Date 12/7/15
Drawn R.A.M.
Job # 4276

Sheet
T-24.1
2013 Energy Code
2013 Energy Standards

LOT: 9

Lot: 9

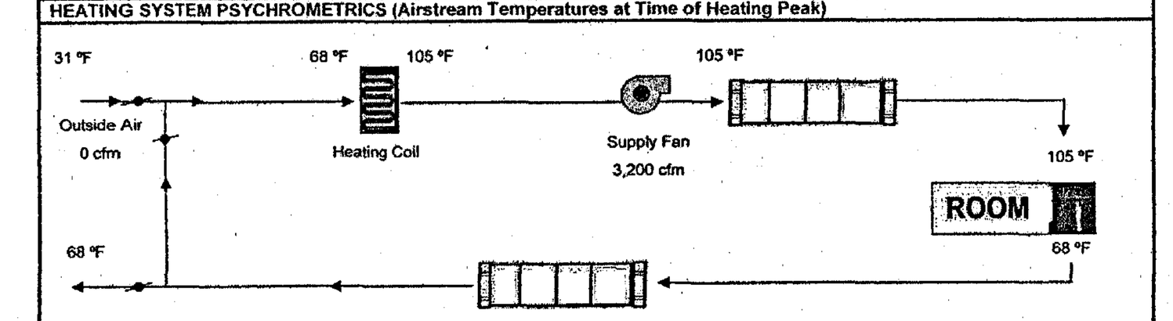
CF-1R

HVAC SYSTEM HEATING AND COOLING LOADS SUMMARY

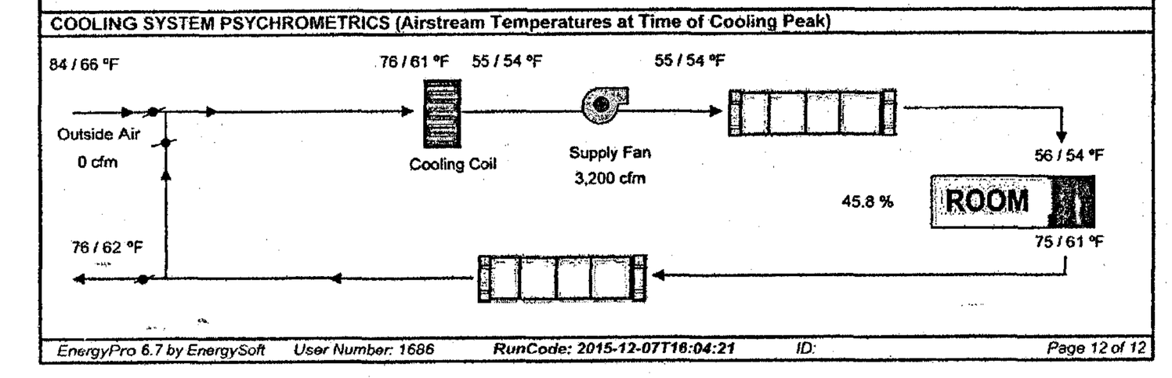
Project Name	Date
Ticonderoga Partners, LLC - Lot #9	12/7/2015
System Name: House	Floor Area: 3,390

ENGINEERING CHECKS		SYSTEM LOAD	COIL COOLING PEAK CFM	Sensible	Latent	COIL HTG. PEAK CFM	Sensible
Number of Systems	2	Total Room Loads	2,519	52,892	1,728	840	33,171
Heating System		Return Vented Lighting		0			
Output per System	64,000	Return Air Ducts		1,873			1,370
Total Output (Btuh)	128,000	Return Fan		0			0
Output (Btuh/sqft)	37.8	Ventilation	0	0	0	0	0
Cooling System		Supply Fan		0			0
Output per System	42,000	Supply Air Ducts		1,873			1,370
Total Output (Btuh)	84,000						
Total Output (Tons)	7.0						
Total Output (Btuh/sqft)	24.8						
Total Output (sqft/Ton)	484.3	TOTAL SYSTEM LOAD		56,637	1,728		35,910
Air System		HVAC EQUIPMENT SELECTION					
CFM per System	1,600	HVAC Equipment Selection & Sizing by Others		62,107	19,061		128,000
Airflow (cfm)	3,200						
Airflow (cfm/sqft)	0.94						
Airflow (cfm/Ton)	457.1						
Outside Air (%)	0.0 %	Total Adjusted System Output (Adjusted for Peak Design conditions)		62,107	19,061		128,000
Outside Air (cfm/sqft)	0.00						
Note: values above given at ARI conditions		TIME OF SYSTEM PEAK			Aug 3 PM		Jan 1 AM

HEATING SYSTEM PSYCHROMETRICS (Airstream Temperatures at Time of Heating Peak)



COOLING SYSTEM PSYCHROMETRICS (Airstream Temperatures at Time of Cooling Peak)



EnergyPro 6.7 by EnergySoft User Number: 1686 RunCode: 2015-12-07T16:04:21 ID: Page 12 of 12

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD — CF1R-PRF-01 — Page 1 of 9

Project Name: Highland Estates - Lot #9 — **Calculation Date/Time:** 16:03, Mon, Dec 07, 2015

Calculation Description: Title 24 Analysis — **Input File Name:** Ticonder5.xml

GENERAL INFORMATION					
01	Project Name	Highland Estates - Lot #9			
02	Calculation Description	Title 24 Analysis			
03	Project Location	Highland Estates			
04	City	San Mateo	05	Standards Version	Compliance 2015
06	Zip Code		07	Compliance Manager Version	BEMCmpMgr 2013-4 (744)
08	Climate Zone	CZ3	09	Software Version	EnergyPro 6.6
10	Building Type	Single Family	11	Front Orientation (deg/Cardinal)	315
12	Project Scope	Newly Constructed	13	Number of Dwelling Units	1
14	Total Cond. Floor Area (ft²)	3390	15	Number of Zones	1
16	Slab Area (ft²)	0	17	Number of Stories	2
18	Addition Cond. Floor Area	N/A	19	Natural Gas Available	Yes
20	Addition Slab Area (ft²)	N/A	21	Glazing Percentage (%)	22.7%

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 Energy Use (kTDV/ft²-yr)	05 Standard Design	06 Proposed Design	07 Compliance Margin	08 Percent Improvement
Space Heating	12.94	11.10	1.84	14.2%
Space Cooling	1.41	4.33	-2.92	-207.1%
IAQ Ventilation	0.98	0.98	0.00	0.0%
Water Heating	9.16	7.03	2.13	23.3%
Photovoltaic Offset	—	0.00	0.00	—
Compliance Energy Total	24.49	23.44	1.05	4.3%

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CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD — CF1R-PRF-01 — Page 4 of 9

Project Name: Highland Estates - Lot #9 — **Calculation Date/Time:** 16:03, Mon, Dec 07, 2015

Calculation Description: Title 24 Analysis — **Input File Name:** Ticonder5.xml

ATTIC

01 Name	02 Construction	03 Type	04 Roof Rise	05 Roof Reflectance	06 Roof Emittance	07 Radiant Barrier	08 Cool Roof
Attic __Garage__	Attic Garage Roof Cons	Ventilated	4	0.1	0.85	No	No
Attic House	Attic RoofHouse	Ventilated	4	0.1	0.85	No	No

WINDOWS

01 Name	02 Type	03 Surface (Orientation-Azimuth)	04 Width (ft)	05 Height (ft)	06 Multiplier	07 Area (ft²)	08 U-factor	09 SHGC	10 Exterior Shading
Front Openable	Window	Front Wall (Front-315)	—	—	1	15.0	0.32	0.50	Insect Screen (default)
Front Glass Door	Window	Front Wall (Front-315)	—	—	1	28.0	0.32	0.50	Insect Screen (default)
Left Openable	Window	Left Wall (Left-45)	—	—	1	68.0	0.32	0.50	Insect Screen (default)
Left Openable 2	Window	Left Wall (Left-45)	—	—	1	8.0	0.32	0.50	Insect Screen (default)
Back Openable	Window	Back Wall (Back-135)	—	—	1	250.0	0.32	0.50	Insect Screen (default)
Back Fixed	Window	Back Wall (Back-135)	—	—	1	70.0	0.32	0.50	Insect Screen (default)
Large Back Glass Door	Window	Back Wall (Back-135)	—	—	1	96.0	0.32	0.50	Insect Screen (default)
Right Openable	Window	Right Wall (Right-225)	—	—	1	45.0	0.32	0.50	Insect Screen (default)
Large Right Glass Door	Window	Right Wall (Right-225)	—	—	1	128.0	0.32	0.50	Insect Screen (default)
Right Glass Door	Window	Right Wall (Right-225)	—	—	1	45.4	0.32	0.50	Insect Screen (default)
Right Openable 2	Window	Right Wall (Right-225)	—	—	1	15.0	0.32	0.50	Insect Screen (default)

DOORS

01 Name	02 Side of Building	03 Area (ft²)	04 U-factor
Front Garage Door	Front Garage Wall	18.0	0.50
Car Door	LG Wall	144.0	0.50

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CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD — CF1R-PRF-01 — Page 2 of 9

Project Name: Highland Estates - Lot #9 — **Calculation Date/Time:** 16:03, Mon, Dec 07, 2015

Calculation Description: Title 24 Analysis — **Input File Name:** Ticonder5.xml

REQUIRED SPECIAL FEATURES

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

- Cathedral Ceiling
- Ceiling has high level of insulation
- Floor has high level of insulation

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
- Fan Efficacy Watts/CFM

HVAC Distribution System Verifications:
- Duct Sealing
- Low-leakage Air Handling Unit

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

ENERGY DESIGN RATING

This is the sum of the annual TDV energy consumption for energy use components included in the performance compliance approach for the Standard Design Building (Energy Budget) and the annual TDV energy consumption for lighting and components not regulated by Title 24, Part 6 (such as domestic appliances and consumer electronics) and accounting for the annual TDV energy offset by an on-site renewable energy system.

	Reference Energy Use	Energy Design Rating	Margin	Percent Improvement
Total Energy (kTDV/f2-yr)*	66.14	65.09	1.05	1.6%

* includes calculated Appliances and Miscellaneous Energy Use (AMEU)

BUILDING - FEATURES INFORMATION

01 Project Name	02 Conditioned Floor Area (ft2)	03 Number of Dwelling Units	04 Number of Bedrooms	05 Number of Zones	06 Number of Ventilation Cooling Systems	07 Number of Water Heating Systems
Highland Estates - Lot #9	3390	1	4	1	0	1

ZONE INFORMATION

01 Zone Name	02 Zone Type	03 HVAC System Name	04 Zone Floor Area (ft²)	05 Avg. Ceiling Height	06 Water Heating System 1	07 Water Heating System 2
House	Conditioned	House1	3390	9	DHW Sys 1	

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Project Name: Highland Estates - Lot #9 — **Calculation Date/Time:** 16:03, Mon, Dec 07, 2015

Calculation Description: Title 24 Analysis — **Input File Name:** Ticonder5.xml

OPAQUE SURFACE CONSTRUCTIONS

01 Construction Name	02 Surface Type	03 Construction Type	04 Framing	05 Total Cavity R-value	06 Winter Design U-value	07 Assembly Layers
R-0 Garage Attic No Radia	Ceilings (below attic)	Wood Framed Ceiling	2x4 @ 24 in. O.C.	none	0.481	Inside Finish: Gypsum Board; Cavity / Frame: no insul. / 2x4
R-0 Wall	Exterior Walls	Wood Framed Wall	2x4 @ 16 in. O.C.	none	0.302	Inside Finish: Gypsum Board; Cavity / Frame: no insul. / 2x4; Exterior Finish: Wood Siding/sheathing/decking
Attic Garage Roof Cons	Attic Roofs	Wood Framed Ceiling	2x4 Top Chord of Roof Truss @ 24 in. O.C.	none	0.644	Cavity / Frame: no insul. / 2x4 Top Chrd; Roof Deck: Wood Siding/sheathing/decking; Roofing: Light Roof (Asphalt Shingle)
Attic RoofHouse	Attic Roofs	Wood Framed Ceiling	2x4 Top Chord of Roof Truss @ 24 in. O.C.	none	0.644	Cavity / Frame: no insul. / 2x4 Top Chrd; Roof Deck: Wood Siding/sheathing/decking; Roofing: Light Roof (Asphalt Shingle)
R-38 Attic NoRadiant	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 Floor Joists: R-28.9 insul.
R-21 FAU NoRadiant	Ceilings (below attic)	Wood Framed Ceiling	2x4 @ 24 in. O.C.	R 21	0.044	Inside Finish: Gypsum Board; Cavity / Frame: R-9.1 / 2x4; Over Floor Joists: R-11.9 insul.
R-21 Roof Vault	Cathedral Ceilings	Wood Framed Ceiling	2x8 @ 16 in. O.C.	R 21	0.050	Inside Finish: Gypsum Board; Cavity / Frame: R-21 / 2x8; 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	0.089	Inside Finish: Gypsum Board; Cavity / Frame: R-15 / 2x4; Exterior Finish: Wood Siding/sheathing/decking
R-21 Wall	Exterior Walls	Wood Framed Wall	2x6 @ 16 in. O.C.	R 21	0.066	Inside Finish: Gypsum Board; Cavity / Frame: R-21 / 2x6; Exterior Finish: Wood Siding/sheathing/decking
R-15 Wall House/Garage	Interior Walls	Wood Framed Wall	2x4 @ 16 in. O.C.	R 15	0.086	Inside Finish: Gypsum Board; Cavity / Frame: R-15 / 2x4; Other Side Finish: Gypsum Board
R-21 Wall House/Garage	Interior Walls	Wood Framed Wall	2x6 @ 16 in. O.C.	R 21	0.064	Inside Finish: Gypsum Board; Cavity / Frame: R-21 / 2x6; Other Side Finish: Gypsum Board

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Project Name: Highland Estates - Lot #9 — **Calculation Date/Time:** 16:03, Mon, Dec 07, 2015

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HVAC - HEATING UNIT TYPES

01 Name	02 Type	03 Efficiency
Heating Component 1	CntrlFurnace - Fuel-fired central furnace	80 AFUE

HVAC - COOLING UNIT TYPES

01 Name	02 System Type	03 Efficiency EER	04 Efficiency SEER	05 Zonally Controlled	06 Multi-speed Compressor	07 HERS Verification
Cooling Component 1	SplitAirCond	11.7	14	Not Zonal	Single Speed	Cooling Component 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
Cooling Component 1-hers-cool	Required	350	Not Required	Not Required	Not Required

HVAC - DISTRIBUTION SYSTEMS

01 Name	02 Type	03 Duct Leakage	04 Insulation R-value	05 Duct Location	06 Bypass Duct	07 HERS Verification
Air Distribution System 1	DuctsAttic	Specified Lower Leakage Target	6	Attic	None	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	Required

HVAC - FAN SYSTEMS

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

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** SUMMARY SHEET **

Project: Ticonderoga Partners, LLC – San Mateo County, CA **Zone:** 3

"Highland Estates"
Lot 9

Wall Insulation: R-15 in 2x4 Exterior Walls
R-21 in 2x6 or Greater Exterior Walls

Ceiling Insulation: R-21 Below Furnace Platform and Catwalk
R-21 in True Vaulted Rafter/Ceiling Joists
R-38 Typical

Radiant Foil Barrier: Not Required

Cool Roof (CRRC): Not Required

Raised Floor Insulation: R-30

Slab Edge Insulation: N/A

Glazing Type: All glass is DUAL PANE with Low-E Glass. (See Notes)

Whole House Fan: Not Required

Minimum Furnace AFUE: 80% AFUE

Minimum Heating Capacity: 35,910 BTUH

Minimum A/C SEER: 14.0 SEER/11.7 EER
Adequate Cooling Coil Airflow to be Rater Verified
Fan Watt Draw to be Rater Verified

A/C Tonnage: Min.Sens.= 56,637 @ 95° (A/C Size By Mechanical Contractor)

Duct Insulation: R-6.0 For Ducts & Plenums in Unconditioned Spaces
Duct Leakage Test Required

Note(s):
1) All hot water lines will be insulated with a minimum of 1 inch insulation. This is in addition to the insulation required by the mandatory requirements per Sec. 150.0(j)2.
2) The water heater for this house will have a hot water demand type recirculating system with manual control.
3) This house will have a tankless water heater with an energy factor of .82 or greater and sized per the owner's specifications.
4) All windows and glass doors will have non-metal frames with a weighted average NFRC U-factor of .32 or less and a weighted average SHGC of .50 or less with Low-E glass.

REVIEWED FOR CODE COMPLIANCE
This review does not authorize violation of State or County building laws.
NOV 13 2019
SAN MATEO CO. BLDG. INSP. DIV.

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Project Name: Highland Estates - Lot #9 — **Calculation Date/Time:** 16:03, Mon, Dec 07, 2015

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OPAQUE SURFACES

01 Name	02 Zone	03 Construction	04 Azimuth	05 Orientation	06 Gross Area (ft²)	07 Window & Door Area (ft²)	08 Tilt (deg)
Front Wall	House	R-15 Wall	315	Front	983	43	90
Front 2x6 Wall	House	R-21 Wall	315	Front	27		90
Left Wall	House	R-15 Wall	45	Left	830	76	90
Back Wall	House	R-15 Wall	135	Back	1360	416	90
Right Wall	House	R-15 Wall	225	Right	838	233.4	90
Right 2x6 Wall	House	R-21 Wall	225	Right	72		90
Front Garage Wall	House>>__Garage__	R-15 Wall House/Garage			162	18	
Front 2x6 Garage Wall	House>>__Garage__	R-21 Wall House/Garage			153		
Left Garage Wall	House>>__Garage__	R-15 Wall House/Garage			72		
Ceiling Below Attic	House	R-38 Attic NoRadiant			1636		
Ceiling Below Attic-FAU	House	R-21 FAU NoRadiant			140		
Floor o/Crawlspace	House	R-30 Floor Crawlspace			2226		
FG Wall	__Garage__	R-0 Wall	315	Front	360		90
LG Wall	__Garage__	R-0 Wall	45	Left	207	144	90
BG Wall	__Garage__	R-0 Wall	135	Back	45		90
RG Wall	__Garage__	R-0 Wall	225	Right	135		90
Garage Ceiling	__Garage__	R-0 Garage Attic No Radia			771		

OPAQUE SURFACES – Cathedral Ceilings

01 Name	02 Zone	03 Type	04 Orientation	05 Area (ft²)	Skylight Area (ft2)	06 Roof Rise (x in 12)	07 Roof Pitch	08 Roof Tilt (deg)	09 Roof Reflectance	10 Roof Emittance	11 Framing Factor
Left Vaulted Roof	House	R-21 Roof Vault	Left	225	0	4	0.33	18.43	0.1	0.85	0.1
Right Vaulted Roof	House	R-21 Roof Vault	Right	225	0	4	0.33	18.43	0.1	0.85	0.1

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Project Name: Highland Estates - Lot #9 — **Calculation Date/Time:** 16:03, Mon, Dec 07, 2015

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R-30 Floor Crawlspace	Floors Over Crawlspace	Wood Framed Floor	2x10 @ 16 in. O.C.	R 30	0.034	Floor Surface: Carpeted; Floor Deck: Wood Siding/sheathing/decking; Cavity / Frame: R-30 / 2x10

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	[illegible]

WATER HEATING SYSTEMS

01 Name	02 System Type	03 Distribution Type	04 Water Heater	05 Number of Heaters	06 Solar Fraction (%)
DHW Sys 1 - 1/1	DHW	Recirculation, Demand Control Push Button	DHW Heater 1	1	0%

WATER HEATERS

01 Name	02 Heater Element Type	03 Tank Type	04	05	06	07 Tank Exterior Insulation R-value	08 Standby Loss (Fraction)
DHW Heater 1	Natural Gas	Small Instantaneous	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

WATER HEATING - HERS VERIFICATION

01 Name	02 Pipe Insulation	03 Parallel Piping	04 Compact Distribution	05 Point of Use	06 Recirculation Control	07 Central DHW Distribution
DHW Sys 1 - 1/1	—	—	—	—	—	—

SPACE CONDITIONING SYSTEMS

01 SC Sys Name	02 System Type	03 Heating Unit Name	04 Cooling Unit Name	05 Fan Name	06 Distribution Name
House1	Other Heating and Cooling System	Heating Component 1	Cooling Component 1	HVAC Fan 1	Air Distribution System 1

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Project Name: Highland Estates - Lot #9 — **Calculation Date/Time:** 16:03, Mon, Dec 07, 2015

Calculation Description: Title 24 Analysis — **Input File Name:** Ticonder5.xml

HVAC FAN SYSTEMS - HERS VERIFICATION

01 Name	02 Verified Fan Watt Draw	03 Required Fan Efficacy (Watts/CFM)
HVAC Fan 1-hers-fan	Required	0.58

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	71.4	0.25	Default	0	Required

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Project Name: Highland Estates - Lot #9 — **Calculation Date/Time:** 16:03, Mon, Dec 07, 2015

Calculation Description: Title 24 Analysis — **Input File Name:** Ticonder5.xml

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT	
1. I certify that this Certificate of Compliance documentation is accurate and complete.	
Documentation Author Name: Rick Maurer	Documentation Author Signature:
Company: Rick Maurer Title 24, Inc.	Signature Date: 2015-12-07 16:48:22
Address: 7544 Saddlehill Trail	CEA/HERS Certification Identification (If applicable): R13-90-10024
City/State/Zip: Orange, CA 92869	Phone: 714-771-1507

CABEC — California Association of Building Energy Consultants — CERTIFIED ENERGY ANALYST

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: Rodger Bickell	Responsible Designer Signature: Rodger Bickell
Company: Nexgen Builders	Date Signed: 2015-12-07 16:50:19
Address: 225 Demeter Street	License:
City/State/Zip: East Palo Alto, CA 94303	Phone: 650-322-5800

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.

RESUBMITTAL
FEB 16 2017
San Mateo County
Building Inspection

Registration Number: 215-N6448489A-000000000-0000 Registration Date/Time: 2015-12-07 16:50:19 HERS Provider: CalCERTS inc.
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REVISIONS	BY
12-21-15 SUMMARY SHEET R-21 VAULT	

Designer: Mark Gross & Associates, Inc.
8881 Research Drive
Irvine, CA 92618

Owner: Ticonderoga Partners, LLC
655 Skyway, Suite #230
San Carlos, CA 94070

Project: "Highland Estates"
Lot #9
San Mateo County, California

RICK MAURER TITLE 24, INC.
7544 E. Saddlehill Trail * Orange, CA 92869
Phone: (714) 771-1507
Fax: (714) 771-2939
T-24@socal.rr.com

Date 12/7/15

Drawn R.A.M.

Job # 4276

Sheet

T-24.2

2013 Energy Code
2013 Energy Standards

LOT: 9

2013 California Green Building Standards Code

CHAPTER 3
GREEN BUILDING

SECTION 301 GENERAL

301.1 Scope. Buildings shall be designed to include the green building measures specified as mandatory in the application checklists contained in this code.

301.1.1 Additions and alterations. [HCD] The mandatory provisions of Chapter 4 shall be applied to additions or alterations of existing residential buildings where the addition or alteration increases the building's conditioned area, volume, or size. The requirements shall apply only to and/or within the specific area of the addition or alteration.

Note: On and after January 1, 2014, residential buildings undergoing permitted alterations, additions or improvements shall replace noncompliant plumbing fixtures with water-conserving plumbing fixtures. Plumbing fixtures replacement is required prior to issuance of a certificate of final completion, certificate of occupancy or final permit approval by the local building department. See Civil Code Section 1101.1, et seq., for the definition of a noncompliant plumbing fixture, types of residential buildings affected and other important enactment dates.

"Noncompliant plumbing fixtures" means any of the following:

1. Any toilet manufactured to use more that 1.6 gallons of water per flush.
2. Any urinal manufactured to use more than one gallon of water per flush.
3. Any showerhead manufactured to have a flow capacity of more than 2.5 gallons of water per minute.
4. Any interior faucet that emits more than 2.2 gallons of water per minute.

301.2 Low-rise and high-rise residential buildings. [HCD] The provisions of individual sections of Calgreen may apply to either low-rise residential buildings, high-rise residential buildings, or both.

CHAPTER 7
INSTALLER AND SPECIAL INSPECTOR QUALIFICATIONS

SECTION 702 QUALIFICATIONS

702.1 Installer training. HVAC system installers shall be trained and certified in the proper installation of HVAC systems including ducts and equipment by a nationally or regionally recognized training or certification program. Uncertified persons may perform HVAC installations when under the direct supervision and responsibility of a person trained and certified to install HVAC systems or contractor licensed to install HVAC systems. Examples of acceptable HVAC training and certification programs include but are not limited to the following:

1. State certified apprenticeship programs
2. Public utility training programs
3. Training programs sponsored by trade, labor or statewide energy consulting or verification organizations
4. Programs sponsored by manufacturing organizations
5. Other programs acceptable to the enforcing agency

702.2 Special inspection. [HCD] When required by the enforcing agency, the owner or the responsible entity acting as the owner's agent shall employ one or more special inspectors to provide inspection or other duties necessary to substantiate compliance with this code. Special inspectors shall demonstrate competence to the satisfaction of the enforcing agency for the particular type of inspection or task to be performed. In addition to other certifications or qualifications acceptable to the enforcing agency, the following certifications or education may be considered by the enforcing agency when evaluating the qualifications of a special inspector:

1. Certification by a national or regional green building program or standard publisher
2. Certification by a statewide energy consulting or verification organization, such as HERS raters, building performance contractors, and home energy auditors
3. Successful completion of a third party apprentice training program in the applicable trade
4. Other programs acceptable to the enforcing agency

Notes:

1. Special inspectors shall be independent entities with no financial interest in the materials or the project they are inspecting for compliance with this code.
2. HERS raters are special inspectors certified by the California Energy Commission (CEC) to rate homes in California according to the Home Energy Rating System (HERS).

SECTION 703 VERIFICATIONS

703.1 Documentation. Documentation used to show compliance with this code shall include but is not limited to, construction documents, plans, specifications, builder or installer certification, inspection reports, or other methods acceptable to the enforcing agency which demonstrate substantial conformance. When specific documentation or special inspection is necessary to verify compliance, that method of compliance will be specified in the appropriate section or identified in the application checklist.

CHAPTER 4
RESIDENTIAL MANDATORY MEASURES

Division 4.1 – PLANNING AND DESIGN

SECTION 4.101 GENERAL

4.101.1 Scope. The provisions of this division outline planning, design and development methods that include environmentally responsible site selection, building design, building siting and development to protect, restore and enhance the environmental quality of the site and respect the integrity of adjacent properties.

SECTION 4.106 SITE DEVELOPMENT

4.106.1 General. Preservation and use of available natural resources shall be accomplished through evaluation and careful planning to minimize negative effects on the site and adjacent areas. Preservation of slopes, management of storm water drainage and erosion controls shall comply with this section.

4.106.2 Storm water drainage and retention during construction. Projects which disturb less than one acre of soil and are not part of a larger common plan of development which in total disturbs one acre or more, shall manage storm water drainage during construction. In order to manage storm water drainage during construction, one or more of the following measures shall be implemented to prevent flooding of adjacent property, prevent erosion and retain soil runoff on the site.

1. Retention basins of sufficient size shall be utilized to retain storm water on the site.
2. Where storm water is conveyed to a public drainage system, collection point, gutter or similar disposal method, water shall be filtered by use of a barrier system, wattle or other method approved by the enforcing agency.
3. Compliance with a lawfully enacted storm water management ordinance.

4.106.3 Grading and Paving. Construction plans shall indicate how the site grading or drainage system will manage all surface water flows to keep water from entering buildings. Examples of methods to manage surface water include, but are not limited to, the following:

1. Swales
2. Water collection and disposal systems
3. French drains
4. Water retention gardens
5. Other water measures which keep surface water away from buildings and aid in groundwater recharge

Exception: Additions and alterations not altering the drainage path.

Division 4.2 – ENERGY EFFICIENCY

SECTION 4.201 GENERAL

4.201.1 Scope. For the purposes of mandatory energy efficiency standards in this code, the California Energy Commission will continue to adopt mandatory standards.

Division 4.3 –WATER EFFICIENCY AND CONSERVATION

SECTION 4.301 GENERAL

4.301.1 Scope. The provisions of this chapter shall establish the means of conserving water used indoors, outdoors and in wastewater conveyance.

SECTION 4.303 INDOOR WATER USE

4.303.1 Water conserving plumbing fixtures and fittings. Plumbing fixtures (water closets and urinals) and fittings (faucets and showerheads) shall comply with the following:

4.303.1.1 Water closets. The effective flush volume of all water closets shall not exceed 1.28 gallons per flush. Tank type water closets shall be certified to the performance criteria of the U.S. EPA WaterSense specification for Tank-type Toilets.

Note: The effective flush volume of dual flush toilets is defined as the composite, average flush volume of two reduced flushes and one full flush.

4.303.1.2 Urinals. The effective flush volume of urinals shall not exceed 0.5 gallons per flush.

4.303.1.3 Showerheads.

4.303.1.3.1 Single showerhead. Showerheads shall have a maximum flow rate of not more than 2.0 gallons per minute at 80 psi. Showerheads shall be certified to the performance criteria of the U.S. EPA WaterSense Specification for Showerheads.

4.303.1.3.2 Multiple showerheads serving one shower. When a shower is served by more than one showerhead, the combined flow rate of all showerheads and/or other shower outlets controlled by a single valve shall not exceed 2.0 gallons per minute at 80 psi, or the shower shall be designed to allow only one shower outlet to be in operation at a time.

Note: A hand-held shower shall be considered a showerhead

4.303.1.4 Faucets.

4.303.1.4.1 Residential lavatory faucets. The maximum flow rate of residential lavatory faucets shall not exceed 1.5 gallons per minute at 60 psi. The minimum flow rate of residential lavatory faucets shall not be less than 0.8 gallons per minute at 20 psi.

4.303.1.4.2 Lavatory faucets in common and public use areas. The maximum flow rate of lavatory faucets installed in common and public areas (outside of dwellings or sleeping units) in residential buildings shall not exceed 0.5 gallons per minute at 60 psi.

4.303.1.4.3 Metering faucets. Metering faucets when installed in residential buildings shall not deliver more than 0.25 gallons per cycle.

4.303.1.4.4 Kitchen faucets. The maximum flow rate of kitchen faucets shall not exceed 1.8 gallons per minute at 60 psi. Kitchen faucets may temporarily increase the flow above the maximum rate, but not to exceed 2.2 gallons per minute at 60 psi, and must default to a maximum flow rate of 1.8 gallons per minute at 60 psi.

Note: Where complying faucets are unavailable, aerators or other means may be used to achieve reduction.

4.303.2 Standards for plumbing fixtures and fittings. Plumbing fixtures and fittings shall be installed in accordance with the *California Plumbing Code*, and shall meet the applicable standards referenced in Table 1401.1 of the *California Plumbing Code*.

SECTION 4.304 OUTDOOR WATER USE

4.304.1 Irrigation controllers. Automatic irrigation system controllers for landscaping provided by the builder and installed at the time of final inspection shall comply with the following:

1. Controllers shall be weather- or soil moisture-based controllers that automatically adjust irrigation in response to changes in plants' needs as weather conditions change.
2. Weather-based controllers without integral rain sensors or communication systems that account for local rainfall shall have a separate wired or wireless rain sensor which connects or communicates with the controller(s). Soil moisture-base controllers are not required to have rain sensor input.

Note: More information regarding irrigation controller function and specifications is available from the Irrigation Association.

Division 4.4 – MATERIAL CONSERVATION AND RESOURCE EFFICIENCY

SECTION 4.401 GENERAL

4.401.1 Scope. The provisions of this chapter shall outline means of achieving material conservation and resource efficiency through protection of buildings from exterior moisture; construction waste diversion; employment of techniques to reduce pollution through recycling of materials; and building commissioning or testing, adjusting and balancing.

SECTION 4.406 ENHANCED DURABILITY AND REDUCED MAINTENANCE

4.406.1 Rodent Proofing. Annular spaces around pipes, electric cables, conduits or other openings in sole/bottom plates at exterior walls shall be protected against the passage of rodents by closing such openings with cement mortar, concrete masonry or a similar method acceptable to the enforcing agency.

SECTION 4.408 CONSTRUCTION WASTE REDUCTION, DISPOSAL AND RECYCLING

4.408.1 Construction waste management. Recycle and/or salvage for reuse a minimum of 50 percent of the nonhazardous construction and demolition waste in accordance with either Section 4.408.2, 4.408.3 or 4.408.4, or meet a more stringent local construction and demolition waste management ordinance.

Exceptions:

1. Excavated soil and land-clearing debris.
2. Alternate waste reduction methods developed by working with local agencies if diversion or recycle facilities capable of compliance with this item do not exist or are not located reasonably close to the jobsite.
3. The enforcing agency may make exceptions to the requirements of this section when isolated jobsites are located in areas beyond the haul boundaries of the diversion facility.

4.408.2 Construction waste management plan. Submit a construction waste management plan in conformance with Items 1 through 5. The construction waste management plan shall be updated as necessary and shall be available during construction for examination by the enforcing agency.

1. Identify the construction and demolition waste materials to be diverted from disposal by recycling, reuse on the project or salvage for future use or sale.
2. Specify if construction and demolition waste materials will be sorted on-site (source-separated) or bulk mixed (single stream)
3. Identify diversion facilities where the construction and demolition waste material will be taken.
4. Identify construction methods employed to reduce the amount of construction and demolition waste generated.
5. Specify that the amount of construction and demolition waste materials diverted shall be calculated by weight or volume, but not by both.

4.408.3 Waste management company. Utilize a waste management company, approved by the enforcing agency, which can provide verifiable documentation that the percentage of construction and demolition waste material diverted from the landfill complies with Section 4.408.1.

Note: The owner or contractor may make the determination if the construction and demolition waste materials will be diverted by a waste management company.

4.408.4 Waste stream reduction alternative. Projects that generate a total combined weight of construction and demolition waste disposed of in landfills, which do not exceed four (4) lbs./sq.ft. of the building area shall meet the minimum 50 percent construction waste reduction requirement in Section 4.408.1

4.408.4.1 Waste stream reduction alternative. [HR] Projects that generate a total combined weight of construction and demolition waste disposed of in landfills, which do not exceed two (2) pounds per square foot of the building area, shall meet the minimum 50 percent construction waste reduction requirement in Section 4.408.1.

4.408.5 Documentation. Documentation shall be provided to the enforcing agency which demonstrates compliance with Section 4.408.2, Items 1 through 5, Section 4.408.3 or Section 4.408.4

Notes:

1. Sample forms found in "A Guide to the California Green Building Standards Code (Residential)" located at www.hcd.ca.gov/CalGreen.html may be used to assist in documenting compliance with this section.
2. Mixed construction and demolition debris (C&D) Processors can be located at the California Department of Resources Recycling and Recovery (CalRecycle).

CHAPTER 4
RESIDENTIAL MANDATORY MEASURES

SECTION 4.410 BUILDING MAINTENANCE AND OPERATION

4.410.1 Operation and maintenance manual. At the time of final inspection, a manual, compact disc, web-based reference or other media acceptable to the enforcing agency which includes all of the following shall be placed in the building:

1. Directions to the owner or occupant that the manual shall remain with the building throughout the life cycle of the structure.
2. Operation and maintenance instructions for the following:
   a. Equipment and appliances, including water-saving devices and systems, HVAC systems, water heating systems and other major appliances and equipment.
   b. Roof and yard drainage, including gutters and downspouts.
   c. Space conditioning systems, including condensers and air filters.
   d. Landscape irrigation systems.
   e. Water reuse systems.
3. Information from local utility, water and waste recovery providers on methods to further reduce resource consumption, including recycle programs and locations.
4. Public transportation and/or carpool options available in the area.
5. Educational material on the positive impacts of an interior relative humidity between 30–60 percent and what methods an occupant may use to maintain the relative humidity level in that range.
6. Information about water-conserving landscape and irrigation design and controllers which conserve water.
7. Instructions for maintaining gutters and downspouts and the importance of diverting water at least 5 feet away from the foundation.
8. Information on required routine maintenance measures, including, but not limited to, caulking, painting and grading around the building, etc.
9. Information about state solar energy and incentive programs available.
10. A copy of all special inspection verifications required by the enforcing agency or this code.

Division 4.5 – ENVIRONMENTAL QUALITY

SECTION 4.501 GENERAL

4.501.1 Scope. The provisions of this chapter shall outline means of reducing the quantity of air contaminants that are odorous, irritating and/or harmful to the comfort and well-being of a building's installers, occupants and neighbors.

SECTION 4.503 FIREPLACES

4.503.1 General. Any installed gas fireplace shall be a direct-vent sealed-combustion type. Any installed woodstove or pellet stove shall comply with U.S. EPA Phase II emission limits where applicable. Woodstoves, pellet stoves and fireplaces shall also comply with applicable local ordinances.

SECTION 4.504 POLLUTANT CONTROL

4.504.1 Covering of duct openings and protection of mechanical equipment during construction. At the time of rough installation or during storage on the construction site and until final startup of the heating, cooling and ventilating equipment, all duct and other related air distribution component openings shall be covered with tape, plastic, sheetmetal or other methods acceptable to the enforcing agency to reduce the amount of dust or debris which may enter in the system.

4.504.2 Finish material pollutant control. Finish materials shall comply with this section.

4.504.2.1 Adhesives, sealants and caulks. Adhesives, sealants and caulks used on the project shall meet the requirements of the following standards unless more stringent local or regional air pollution or air quality management district rules apply:

1. Adhesives, adhesive bonding primers, adhesive primers, sealants, sealant primers, and caulks shall comply with local or regional air pollution control or air quality management district rules where applicable or SCAQMD Rule 1168 VOC limits, as shown in Table 4.504.1 or 4.504.2, as applicable. Such products also shall comply with the Rule 1168 prohibition on the use of certain toxic compounds (chloroform, ethylene dichloride, methylene chloride, perchloroethylene and trichloroethylene), except for aerosol products, as specified in Subsection 2 below.
2. Aerosol adhesives, and smaller unit sizes of adhesives, and sealant or caulking compounds (in units of product, less packaging, which do not weigh more than 1 pound and do not consist of more than 16 fluid ounces) shall comply with statewide VOC standards and other requirements, including prohibitions on use of certain toxic compounds, of *California Code of Regulations*, Title 17, commencing with Section 94507.

4.504.2.2 Paints and coatings. Architectural paints and coatings shall comply with VOC limits in Table 1 of the ARB Architectural Suggested Control Measure, as shown in Table 4.504.3, unless more stringent local limits apply. The VOC content limit for coatings that do not meet the definitions for the specialty coatings categories listed in Table 4.504.3 shall be determined by classifying the coating as a Flat, Nonflat or Nonflat-High Gloss coating, based on its gloss, as defined in subsections 4.21, 4.36, and 4.37 of the 2007 California Air Resources Board, Suggested Control Measure, and the corresponding Flat, Nonflat or Nonflat-High Gloss VOC limit in Table 4.504.3 shall apply.

4.504.2.3 Aerosol paints and coatings. Aerosol paints and coatings shall meet the Product-Weighted MIR Limits for ROC in Section 94522(a)(3) and other requirements, including prohibitions on use of certain toxic compounds and ozone depleting substances, in Sections 94522(b)(2) and (d)(2) of *California Code of Regulations*, Title 17, commencing with Section 94520; and in areas under the jurisdiction of the Bay Area Air Quality Management District additionally comply with the percent VOC by weight of product limits of Regulation 8, Rule 49.

4.504.2.4 Verification. Verification of compliance with this section shall be provided at the request of the enforcing agency. Documentation may include, but is not limited to the following:

1. Manufacturer's product specification.
2. Field verification of on-site product containers.

4.504.3 Carpet systems. All carpet installed in the building interior shall meet the testing and product requirements of one of the following:

1. Carpet and Rug Institute's Green Label Plus Program.
2. California Department of Public Health, "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emission from Indoor Sources Using Environmental Chambers," Version 1.1, February 2010 (also known as Specification 01350.)
3. NSF/ANSI 140 at the Gold level.
4. Scientific Certifications Systems Indoor Advantage™ Gold.

4.504.3.1 Carpet cushion. All carpet cushion installed in the building interior shall meet the requirements of the Carpet and Rug Institute's Green Label program.

4.504.3.2 Carpet adhesive. All carpet adhesive shall meet the requirements of Table 4.504.1.

4.504.4 Resilient flooring systems. Where resilient flooring is installed, at least 80 percent of floor area receiving resilient flooring shall comply with one or more of the following:

1. VOC emission limits defined in the Collaborative for High Performance Schools (CHPS) High Performance Products Database.
2. Products compliant with CHPS criteria certified under the Greenguard Children & Schools program.
3. Certification under the Resilient Floor Covering Institute (RFCI) FloorScore program.
4. Meet the California Department of Public Health, "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions form Indoor Sources Using Environmental Chambers," Version 1.1 February 2010 (also known as specification 01350)

4.504.5 Composite wood products. Hardwood plywood, particleboard and medium density fiberboard composite wood products used on the interior or exterior of the building shall meet the requirements for formaldehyde as specified in ARB's Air Toxics Control Measure for Composite Wood (17 CCR 93120 et seq.), by or before the dates specified in those sections, as shown in Table 4.504.5.

TABLE 4.504.5
FORMALDEHYDE LIMITS[1]
Maximum Formaldehyde Emissions in Parts per Million

PRODUCT	CURRENT LIMIT
Hardwood plywood veneer core	0.05
Hardwood plywood composite core	0.05
Particleboard	0.09
Medium density fiberboard	0.11
Thin medium density fiberboard[2]	0.13

1. Values in this table are derived from those specified by the California Air Resources Board, Air Toxics Control Measure for Composite Wood as tested in accordance with ASTM E 1333. For additional information, see *California Code of Regulations*, Title 17, Sections 93120 through 93120.12.
2. Thin medium density fiberboard has a maximum thickness of 5/16 inch (8 mm).

4.504.5.1 Documentation. Verification of compliance with this section shall be provided as requested by the enforcing agency. Documentation shall include at least one of the following:

1. Product certificates and specifications
2. Chain of custody certifications
3. Product labeled and invoiced as meeting the Composite Wood Products regulation (see CCR, Title 17, Section 93120, *et seq.*),
4. Exterior grade products marked as meeting the PS-1 or PS-2 standards of the Engineered Wood Association, the Australian AS/NZS 2269 or European 636 3S standards.
5. Other methods acceptable to the enforcing agency.

SECTION 4.505 INTERIOR MOISTURE CONTROL

4.505.1 General. Buildings shall meet or exceed the provisions of the *California Building Standards Code*.

4.505.2 Concrete slab foundations. Concrete slab foundations required to have a vapor retarder by *California Building Code*, Chapter 19 or concrete slab-on-ground floors required to have a vapor retarder by the *California Residential Code*, Chapter 5, shall also comply with this section.

4.505.2.1 Capillary break. A capillary break shall be installed in compliance with at least one of the following:

1. A 4-inch (101.6 mm) thick base of ¾ inch (12.7 mm) or larger clean aggregate shall be provided with a vapor barrier in direct contact with concrete and a concrete mix design, which will address bleeding, shrinkage and curing, shall be used. For additional information, see American Concrete Institute, ACI 302.2R-06.
2. Other equivalent methods approved by the enforcing agency.
3. A slab design specified by a licensed design professional.

4.505.3 Moisture content of building materials. Building materials with visible signs of water damage shall not be installed. Wall and floor framing shall not be enclosed when the framing members exceed 19 percent moisture content. Moisture content shall be verified in compliance with the following:

1. Moisture content shall be determined with either a probe-type or contact-type moisture meter. Equivalent moisture verification methods may be approved by the enforcing agency and shall satisfy requirements found in Section 101.8 of this code.
2. Moisture readings shall be taken at a point 2 feet (610 mm) to 4 feet (1219 mm) from the grade stamped end of each piece to be verified.
3. At least three random moisture readings shall be performed on wall and floor framing with documentation acceptable to the enforcing agency provided at the time of approval to enclose the wall and floor framing.

Insulation products which are visibly wet or have a high moisture content shall be replaced or allowed to dry prior to enclosure in wall or floor cavities. Wet-applied insulation products shall follow the manufacturers' drying recommendations prior to enclosure.

CHAPTER 4
RESIDENTIAL MANDATORY MEASURES

4.106.4. Electric vehicle (EV) charging for new construction. New construction shall comply with Sections 4.106.4.1 and 4.106.4.2 to facilitate future installation and use of EV chargers. Electric vehicle supply equipment (EVSE) shall be installed in accordance with the *California Electrical Code*, Article 625.

Exceptions: On a case-by-case basis, where the local enforcing agency has determined EV charging and infrastructure are not feasible based upon one or more of the following conditions:

1. Where there is no commercial power supply.
2. Where there is evidence substantiating that meeting the requirements will alter the local utility infrastructure design requirements on the utility side of the meter so as to increase the utility side cost to the homeowner or the developer by more than $400.00 per dwelling unit.

4.106.4.1 New one- and two-family dwellings and town- houses with attached private garages. For each dwelling unit, install a listed raceway to accommodate a dedicated 208/240-volt branch circuit. The raceway shall not be less than trade size 1 (nominal 1-inch inside diameter). The raceway shall originate at the main service or subpanel and shall terminate into a listed cabinet, box or other enclosure in close proximity to the proposed location of an EV charger. Raceways are required to be continuous at enclosed, inaccessible or concealed areas and spaces. The service panel and/or subpanel shall provide capacity to install a 40-ampere minimum dedicated branch circuit and space(s) reserved to permit installation of a branch circuit overcurrent protective device.

4.106.4.1.1 Identification. The service panel or subpanel circuit directory shall identify the overcurrent protective device space(s) reserved for future EV charging as "EV CAPABLE". The raceway termination location shall be permanently and visibly marked as "EV CAPABLE".

4.106.4.2 New multifamily dwellings. Where 17 or more multifamily dwelling units are constructed on a building site, 3 percent of the total number of parking spaces provided for all types of parking facilities, but in no case less than one, shall be electric vehicle charging stations (EVCS) capable of supporting future EVSE and shall be identified on construction documents. Calculations for the number of EVCS shall be rounded up to the nearest whole number.

Note: Construction documents are intended to demonstrate the project's capability and capacity for facilitating future EV charging. There is no requirement for EVCS to be constructed or available until EV chargers are installed for use.

4.106.4.2.1 Electric vehicle charging station (EVCS) locations. Construction documents shall indicate the location of proposed EVCS. At least one EVCS shall be located in common use areas and available for use by all residents.

When EV chargers are installed, EVCS required by Section 4.106.2.2, Item 3, shall comply with at least one of the following options:

1. The EVCS shall be located adjacent to an accessible parking space meeting the requirements of the *California Building Code*, Chapter 11A, to allow use of the EV charger from the accessible parking space.
2. The EVCS shall be located on an accessible route, as defined in the *California Building Code*, Chapter 2, to the building.

4.106.4.2.2 Electric vehicle charging station (EVCS) dimensions and slope. The EVCS shall be designed to comply with the following:

1. The minimum length of each EVCS shall be 18 feet (5486 mm).
2. The minimum width of each EVCS shall be 9 feet (2743 mm).
3. One in every 25 EVCS, but not less than one EVCS, shall also have an 8-foot (2438 mm) wide minimum aisle. A 5-foot (1524 mm) wide minimum aisle shall be permitted provided the minimum width of the EVCS is 12 feet (3658 mm).
   a. Surface slope for this EVCS and the aisle shall not exceed 1 unit vertical in 48 units horizontal (2.083 percent slope) in any direction.

4.106.4.2.3 Single EVCS required. Install a listed raceway capable of accommodating a 208/240-volt dedicated branch circuit. The raceway shall not be less than trade size 1 (nominal 1-inch inside diameter). The raceway shall originate at the main service or subpanel and shall terminate into a listed cabinet, box or enclosure in close proximity to the proposed location of the EVCS. Construction documents shall identify the raceway termination point. The service panel and/or subpanel shall provide capacity to install a 40-ampere minimum dedicated branch circuit and space(s) reserved to permit installation of a branch circuit overcurrent protective device.

4.106.4.2.4 Multiple EVCS required. Construction documents shall indicate the raceway termination point and proposed location of future EVCS and EV chargers. Construction documents shall also provide information on amperage of future EVSE, raceway method(s), wiring schematics and electrical load calculations to verify that the electrical panel service capacity and electrical system, including any on-site distribution transformer(s), have sufficient capacity to simultaneously charge all EVs at all required EVCS at the full rated amperage of the EVSE. Plan design shall be based upon a 40-ampere minimum branch circuit. Raceways and related components that are planned to be installed underground, enclosed, inaccessible or in concealed areas and spaces shall be installed at the time of original construction.

4.106.4.2.5 Identification. The service panel or subpanel circuit directory shall identify the overcurrent protective device space(s) reserved for future EV charging purposes as "EV CAPABLE" in accordance with the *California Electrical Code*.

CHAPTER 4
RESIDENTIAL MANDATORY MEASURES

SECTION 4.506 INDOOR AIR QUALITY AND EXHAUST

4.506.1 Bathroom exhaust fans. Each bathroom shall be mechanically ventilated and shall comply with the following:

1. Fans shall be ENERGY STAR compliant and be ducted to terminate outside the building.
2. Unless functioning as a component of a whole house ventilation system, fans must be controlled by a humidity control.
   a. Humidity controls shall be capable of adjustment between a relative humidity range of ≤ 50 percent to a maximum of 80 percent. A humidity control may utilize manual or automatic means of adjustment.
   b. A humidity control may be a separate component to the exhaust fan and is not required to be integral (i.e., built-in).

Notes:

1. For the purposes of this section, a bathroom is a room which contains a bathtub, shower or tub/shower combination.
2. Lighting integral to bathroom exhaust fans shall comply with the *California Energy Code*.

SECTION 4.507 ENVIRONMENTAL COMFORT

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

1. The heat loss and heat gain is established according to ANSI/ACCA 2 Manual J—2004 (Residential Load Calculation), ASHRAE handbooks or other equivalent design software or methods.
2. Duct systems are sized according to ANSI/ACCA 1 Manual D—2009 (Residential Duct Systems), ASHRAE handbooks or other equivalent design software or methods.
3. Select heating and cooling equipment according to ANSI/ACCA 3 Manual S—2004 (Residential Equipment Selection) or other equivalent design software or methods.

Exception: Use of alternate design temperatures necessary to ensure the systems function are acceptable.

TABLE 4.504.1
ADHESIVE VOC LIMIT[1, 4]
Less Water and Less Exempt Compounds in Grams per Liter

ARCHITECTURAL APPLICATIONS	CURRENT VOC LIMIT
Indoor carpet adhesives	50
Carpet pad adhesives	50
Outdoor carpet adhesives	150
Wood flooring adhesive	100
Rubber floor adhesives	60
Subfloor adhesives	50
Ceramic tile adhesives	65
VCT and asphalt tile adhesives	50
Drywall and panel adhesives	50
Cove base adhesives	50
Multipurpose construction adhesives	70
Structural glazing adhesives	100
Single-ply roof membrane adhesives	250
Other adhesives not specifically listed	50
SPECIALTY APPLICATIONS	
PVC welding	510
CPVC welding	490
ABS welding	325
Plastic cement welding	250
Adhesive primer for plastic	550
Contact adhesive	80
Special purpose contact adhesive	250
Structural wood member adhesive	140
Top and trim adhesive	250
SUBSTRATE SPECIFIC APPLICATIONS	
Metal to metal	30
Plastic foams	50
Porous material (except wood)	50
Wood	30
Fiberglass	80

1. If an adhesive is used to bond dissimilar substrates together, the adhesive with the highest VOC content shall be allowed.
2. For additional information regarding methods to measure the VOC content specified in this table, see South Coast Air Quality Management District Rule 1168.

TABLE 4.504.2
SEALANT VOC LIMIT
Less Water and Less Exempt Compounds in Grams per Liter

SEALANTS	CURRENT VOC LIMIT
Architectural	250
Marine deck	760
Nonmembrane roof	300
Roadway	250
Single-ply roof membrane	450
Other	420
SEALANT PRIMERS	
Architectural	
Nonporous	250
Porous	775
Modified bituminous	500
Marine deck	760
Other	750

TABLE 4.504.3
VOC CONTENT LIMITS FOR ARCHITECTURAL COATINGS[Q1, 2]
Grams of VOC per Liter of Coating,
Less Water and Less Exempt Compounds

COATING CATEGORY	EFFECTIVE 1/1/2010	EFFECTIVE 1/1/2012
Flat coatings	50	
Nonflat coatings	100	
Nonflat-high gloss coatings	150	
SPECIALTY COATINGS		
Aluminum roof coatings	400	
Basement specialty coatings	400	
Bituminous roof coatings	50	
Bituminous roof primers	350	
Bond breakers	350	
Concrete curing compounds	350	
Concrete/masonry sealers	100	
Driveway sealers	50	
Dry fog coatings	150	
Faux finishing coatings	350	
Fire resistive coatings	350	
Floor coatings	100	
Form-release compounds	250	
Graphic arts coatings (sign paints)	500	
High temperature coatings	420	
Industrial maintenance coatings	250	
Low solids coatings[3]	120	
Magnesite cement coatings	450	
Mastic texture coatings	100	
Metallic pigmented coatings	500	
Multicolor coatings	250	
Pretreatment wash primers	420	
Primers, sealers, and undercoaters	100	
Reactive penetrating sealers	350	
Recycled coatings	250	
Roof coatings	50	
Rust preventative coatings	250	100
Shellacs		
Clear	730	
Opaque	550	
Specialty primers, sealers and undercoaters	350	100
Stains	250	
Stone consolidants	450	
Swimming pool coatings	340	
Traffic marking coatings	100	
Tub and tile refinish coatings	420	
Waterproofing membranes	250	
Wood coatings	275	
Wood preservatives	350	
Zinc-rich primers	340	

1. Grams of VOC per liter of coating, including water and including exempt compounds.
2. The specified limits remain in effect unless revised limits are listed in subsequent columns in the table.
3. Values in this table are derived from those specified by the California Air Resources Board, Architectural Coatings Suggested Control Measure, February 1, 2008. More information is available from the Air Resources Board.

REVIEWED FOR CODE COMPLIANCE
This review does not authorize violation of State or County building laws.

NOV 1 8 2019
SAN MATEO CO. BLDG. INSP. DIV.

The contractor, owner or third party consultant shall provide the necessary documentation and verification required by the enforcement agency of all the mandatory CalGREEN requirements.

CALIFORNIA GREEN BUILDING STANDARDS CODE

This sheet contains all the minimum residential mandatory measures and environmental features required for compliance by the California Code of Regulations Title 24, Part 11. When these features are incorporated into the architectural plans the design will be in compliance with the 2013 CALGreen Code. It is the responsibility of the Owner, Builder or General Contractor responsible for the construction to comply with these measures and to submit documentation of conformance for applicable Green Building Measures to the enforcing agency upon request.

RESUBMITTAL
FEB 16 2017

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California Association of Building Energy Consultants
CERTIFIED ENERGY ANALYST
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R08-90-243 & NR08-90-527

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Lot #9
San Mateo County, California

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Date 12/7/15
Scale NONE
Drawn R.A.M.
Job # 4276
Sheet CG
2013 CalGREEN Code

LOT: 9

REINFORCING STEEL

1. ALL REINFORCING SHALL BE ASTM A-615 GRADE 40 FOR #4 BARS AND SMALLER. ALL REINFORCING SHALL BE ASTM A-615 GRADE 60 FOR #5 BARS AND LARGER. WELDED WIRE FABRIC TO BE ASTM A-185, LAP 1-1/2 SPACES, 9" MIN. FOR STRUCTURAL SLABS ALL REINFORCING #5 AND LARGER TO BE ASTM A-615 GRADE 60.
2. ALL BARS SHALL BE DEFORMED AS PER ASTM A615 / A615M.
3. ALL BARS SHALL BE CLEAN OF LOOSE FLAKY RUST, GREASE OR OR OTHER MATERIALS LIKELY TO IMPAIR BOND.
4. ALL BENDS SHALL BE MADE COLD.
5. SPLICING OF #3-#5 BARS SHALL HAVE A MIN. LAPPING OF 42 DIA. OR 32" MIN., WHICH EVER IS GREATER, IN ALL CONTINUOUS REINFORCEMENT OF FOOTINGS AND CONCRETE WALLS, EXCEPT AS NOTED ON PLANS. MASONRY REINFORCEMENT SHALL HAVE LAPPINGS OF 40 DIA. FOR GRADE 40 & 48 DIA. FOR GRADE 60 MIN. OR 2'-0", WHICH EVER IS GREATER.
6. ALL REINFORCING BARS SHALL BE ACCURATELY AND SECURELY PLACED BEFORE POURING CONCRETE.
7. CONCRETE PROTECTION FOR REINFORCEMENT SHALL BE AT LEAST EQUAL TO THE DIAMETER OF THE BARS. COVER SHALL BE AS FOLLOW:

	CONC.	MASONRY
A. POURED AGAINST EARTH	3"	2"
B. POURED AGAINST FORM BELOW GRADE . . .	2"	2"
#6 AND LARGER	2"	2"
#5 AND SMALLER	1 1/2"	1 1/2"
C. FORMED SLABS	1"	1"
D. SLABS ON GRADE (FROM TOP OF SLAB) . .	1"	1"
E. COLUMNS AND BEAMS TO MAIN BARS	1 1/2"	2"
F. WALLS – EXPOSED TO WEATHER	1 1/2"	1 1/2"
NOT EXPOSED TO WEATHER, #11 AND SMALLER	3/4"	3/4"
#14 AND #18	1 1/2"	1 1/2"

WOOD TRUSSES

1. MANUFACTURER SHALL SUPPLY TO THE ARCHITECT/ENGINEER AND THE BUILDING DEPARTMENT, CALCULATIONS AND SHOP DRAWINGS FOR APPROVAL PRIOR TO FABRICATION. ALL CALCULATIONS AND SHOP DRAWINGS SHALL BE SIGNED BY A CALIFORNIA REGISTERED PROFESSIONAL ENGINEER. IT SHALL BE THE RESPONSIBILITY OF THE MANUFACTURER TO OBTAIN BUILDING DEPARTMENT APPROVAL FOR CALCULATIONS AND SHOP DRAWINGS PRIOR TO FABRICATION.
2. TRUSSES SHALL BE DESIGNED IN ACCORDANCE WITH THE LATEST LOCAL BUILDING CODE FOR ALL LOADS IMPOSED, INCLUDING LATERAL LOADS AND MECHANICAL EQUIPMENT LOADS.
3. ALL CONNECTORS SHALL BE ICC APPROVED AND OF ADEQUATE STRENGTH TO RESIST STRESSES DUE TO THE LOADINGS INVOLVED.
4. TOTAL LOAD DEFLECTIONS SHALL BE LIMITED TO L/240
5. CROSS BRIDGING AND/OR BRACING SHALL BE PROVIDED AND DETAILED AS REQUIRED TO ADEQUATELY BRACE ALL TRUSSES.
6. EACH TRUSS SHALL BE LEGIBLY BRANDED, MARKED OR OTHERWISE HAVE PERMANENTLY AFFIXED THERETO THE FOLLOWING INFORMATION LOCATED WITHIN 2 FEET OF THE CENTER OF THE SPAN ON THE FACE OF THE BOTTOM CHORD.
   a) IDENTITY OF THE COMPANY MANUFACTURING THE TRUSS
   b) THE DESIGN LOAD
   c) THE SPACING OF THE TRUSSES
7. DOUGLAS FIR SPECIES TO BE USED FOR TOP AND BOTTOM CHORDS OF TRUSSES U.N.O.

GENERAL NOTES

1. THE GENERAL CONTRACTOR AND EACH SUBCONTRACTOR SHALL VERIFY ALL DIMENSIONS AND SITE CONDITIONS BEFORE STARTING WORK. THE ARCHITECT OR **ESI/FME, INC.** SHALL BE NOTIFIED OF ANY DISCREPANCY.
2. DIMENSIONING SHALL TAKE PRECEDENCE OVER SCALES SHOWN ON DRAWINGS. TYPICAL DETAILS AND GENERAL NOTES ARE MINIMUM REQUIREMENTS TO BE USED WHEN CONDITIONS ARE NOT SHOWN OTHERWISE.
3. NOTES AND DETAILS ON DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL NOTES AND TYPICAL DETAILS. WHERE NO DETAILS ARE SHOWN CONSTRUCTION SHALL CONFORM TO SIMILAR WORK ON PROJECT.
4. ALL WORK SHALL CONFORM TO THE MINIMUM STANDARDS OF THE 2013 EDITION OF THE CALIFORNIA BUILDING CODE, AND ANY OTHER REGULATING AGENCIES WHICH HAVE AUTHORITY OVER ANY PORTION OF THE WORK, INCLUDING THE STATE OF CALIFORNIA DIVISION OF INDUSTRIAL SAFETY, AND THOSE CODES AND STANDARDS LISTED IN THESE NOTES AND SPECIFICATIONS.
5. APPROVAL BY THE INSPECTOR DOES NOT MEAN APPROVAL OR ALLOWABLE FAILURE TO COMPLY WITH THE PLANS AND SPECIFICATIONS. ANY DESIGN WHICH FAILS TO BE CLEAR OR IS AMBIGUOUS MUST BE REFERRED TO THE DESIGNER OR ENGINEER FOR INTERPRETATION OR CLARIFICATION.
6. SEE ARCHITECTURAL, ELECTRICAL AND MECHANICAL DRAWINGS FOR PITS, TRENCHES, ROOF OPENINGS, DEPRESSIONS ETC. NOT SHOWN ON STRUCTURAL DRAWINGS.
7. VIBRATION EFFECTS OF MECHANICAL EQUIPMENT HAVE NOT BEEN CONSIDERED BY **ESI/FME, INC.**
8. THE DESIGN ADEQUACY AND SAFETY OF ERECTION BRACING, SHORING, TEMPORARY SUPPORTS, ETC. IS SOLE RESPONSIBILITY OF THE CONTRACTOR, AND HAS NOT BEEN CONSIDERED BY **ESI/FME, INC.** THE CONTRACTOR IS RESPONSIBLE FOR THE STABILITY OF THE STRUCTURE PRIOR TO THE APPLICATION OF ALL SHEAR WALLS, ROOF AND FLOOR DIAPHRAGMS AND FINISH MATERIALS. HE SHALL PROVIDE THE NECESSARY BRACING TO PROVIDE STABILITY PRIOR TO THE APPLICATION OF THE AFOREMENTIONED MATERIALS. OBSERVATION VISITS TO THE SITE BY **ESI/FME, INC.** SHALL NOT INCLUDE INSPECTION OF THE ABOVE ITEMS.
9. CONTRACTOR SHALL INVESTIGATE SITE DURING CLEARING AND EARTHWORK OPERATIONS FOR FILLED EXCAVATIONS OR BURIED STRUCTURES SUCH AS CESSPOOLS, CISTERNS, FOUNDATIONS, ETC. IF ANY SUCH STRUCTURES ARE FOUND, **ESI/FME, INC.** AND THE SOIL ENGINEER SHALL BE NOTIFIED IMMEDIATELY.
10. CONSTRUCTION MATERIALS SHALL BE SPREAD OUT IF PLACED ON FRAMED FLOORS OR ROOF. LOAD SHALL NOT EXCEED THE DESIGN LIVE LOAD PER SQUARE FOOT. PROVIDE ADEQUATE SHORING AND/OR BRACING WHERE STRUCTURE HAS NOT ATTAINED DESIGN STRENGTH.
11. CONSTRUCTION DOCUMENTS IDENTIFIED AS "BID SET" ON ANY OR ALL SHEETS MAY BE SUBJECT TO REVIEW. THIS REVIEW MAY RESULT IN CHANGES WHICH MAY BE MADE TO THE PLANS PRIOR TO THE ISSUANCE OF THE FINAL CONSTRUCTION SET WHICH WILL CONTAIN NO "BID SET" DESIGNATIONS. CONSTRUCTION DOCUMENTS IDENTIFIED AS "BID SET" ARE NOT CONSTRUED AS BEING THE COMPLETED OR FINAL DRAWINGS AND THEY SHOULD NOT IN ANY WAY BE USED AS SUCH.
12. ALL GUARD RAILS AND HANDRAILS SHALL BE DESIGNED TO WITHSTAND A LATERAL POINT LOAD OF 200 POUNDS APPLIED HORIZONTALLY AT RIGHT ANGLES, AT ANY POINT TO TOP RAIL. A 50 PLF LOAD IS REQUIRED AT 3-STORY AND MULTI-FAMILY.
13. THESE PLANS ARE INTENDED SOLELY FOR THE USE OF THE OWNER FOR CONSTRUCTION AND ARE EXPRESSLY NOT INTENDED FOR USE IN MARKETING. EXTERIOR ELEVATIONS AND OTHER DETAILS ON THESE PLANS ARE ONLY A REPRESENTATION AND MAY VARY SIGNIFICANTLY FROM THE ACTUAL CONSTRUCTION.
14. SLAB ON GRADE REQUIREMENTS TO BE PER THE SOIL ENGINEERS RECOMMENDATIONS SOLELY. THE SLAB ON GRADE IS A NON-STRUCTURAL ITEM AND THEREFORE HAS NOT BEEN DESIGNED BY THE STRUCTURAL DESIGN ENGINEER.
15. IN THE EVENT OF CONFLICT BETWEEN THE ARCHITECTURAL GENERAL NOTES AND THE STRUCTURAL GENERAL NOTES (SHEET SGN), THE MORE STRINGENT REQUIREMENT SHALL GOVERN.

STRUCTURAL OBSERVATION REQ.

1. STRUCTURAL OBSERVATIONS SHALL BE PROVIDED IN ACCORDANCE WITH SECTION 1709 OF THE CALIFORNIA BUILDING CODE FOR THIS PROJECT. STRUCTURAL OBSERVATION IS DEFINED IN CBC SECTION 1702 AS "...THE VISUAL OBSERVATION OF THE STRUCTURAL SYSTEM FOR GENERAL CONFORMANCE TO THE APPROVED PLANS AND SPECIFICATIONS AT SIGNIFICANT CONSTRUCTION STAGES AND AT COMPLETION OF THE STRUCTURAL SYSTEM..."
2. STRUCTURAL OBSERVATION SHALL BE PERFORMED BY THE ENGINEER RESPONSIBLE FOR THE DESIGN OF THE STRUCTURAL SYSTEM, OR BY AN OBSERVER DESIGNATED BY THE ENGINEER OF RECORD. THE STRUCTURAL OBSERVER SHALL BE EMPLOYED BY THE ESI/FME, INC. NOT THE CONTRACTOR.
3. REQUIRED OBSERVATION: SINGLE FAMILY=MODELS / MUTLI-FAMILY=ALL UNITS
   A. FOUNDATION (MULTI-FAMILY ONLY)
   B. COMPLETE FRAMING PRIOR TO WRAPPING

CONTRACTOR RESPONSIBILITY

CONTRACTOR RESPONSIBLE FOR THE CONSTRUCTION OF A WIND OR SEISMIC FORCE RESISTING SYSTEM/COMPONENT LISTED IN THE "STATEMENT OF SPECIAL INSPECTION" SHALL SUBMIT A WRITTEN STATEMENT OF RESPONSIBILITY TO THE BUILDING INSPECTORS AND THE OWNER PRIOR TO COMMENCEMENT OF WORK ON SUCH SYSTEM OR COMPONENT PER SECTION 1709.

CORROSION REQUIREMENTS

TABLE 4.3.1 AC1318-11 REQUIREMENTS FOR CONCRETE BY EXPOSURE CLASS

CAT.	SEVERITY	CLASS	CONDITION		NORMAL WT. AGGREGATE Maximum w/cm	LIGHTWEIGHT AGGREGATE CONC. (MIN f'c) f'c Normal Weight and Lightweight Aggregate Concrete, psi	ADDITIONAL REQUIREMENTS	
			WATER-SOLUBLE SULFATE (SO4)IN SOIL, PERCENT BY WEIGHT	DISSOLVED SULFATE (SO4)IN WATER, PPM			CEMENT† TYPE	
S SULFATE	NOT APPLICABLE	S0	0-0.10	0-150	N/A	2,500	NO TYPE RESTRICTION	
	MODERATE	S1	0.10-0.20	150-1500 (SEAWATER)	0.50	4,000	II ‡	
	SEVERE	S2	0.20-2.00	1500-10.000	0.45	4,500	V §	
	VERY SEVERE	S3	>2.00	>10,000	0.45	4,500	V plus pozzolan or slag ‖	
							MAX. WATER-SOLUBLE CHLORIDE ION(CI-) CONTENT IN CONCRETE PERCENT BY WEIGHT OF CEMENT#	
							REINFORCED CONCRETE	PRESTRESSED CONCRETE
C CORROSION PROTECTION OF REINFORCE-MENT	NOT APPLICABLE	C0	CONCRETE DRY OR PROTECTED FROM MOISTURE		N/A	2,500	1.00	0.06
	MODERATE	C1	CONCRETE EXPOSED TO MOISTURE BUT NOT TO EXTERNAL SOURCES OF CHLORIDES.		N/A	2,500	0.30	0.06
	SEVERE **	C2	CONCRETE EXPOSED TO MOISTURE AND EXTERNAL SOURCES OF CHLORIDES FROM DEICING CHEMICALS, WATER, SEATWATER, OR SPRAY FROM THESE SOURCES.		.40	5,000	0.15	0.06

† Alternative combinations of cermentitious materials of those listed in Table 4.3.1 shall be permitted when tested for sulfate resistance and meeting criteria in 4.5.1 of ACI 318.

‡ For seawater exposure, other types of portland cements with tricalcium aluminate (C_3 A) contents up to 10 percent are permitted if the w/cm does not exceed 0.40.

§ Other available types of cement such as Type III or Type I are permitted in Exposure Classes S1 or S2 it the $_3$C A contents are less than 8 or 5 percent, repsectively.

‖ The ammount of the specific source of the possolan or slag to be used shall not be less than the ammount that has been determined by service record to improve sulfate resistance when used in concrete containing Type V cement. Alternatively, the amount of the specific source of the pssolan or slag to be susd shall not be less than the amount tested in accordance with ASTM C1012 and meeting the criteria of 4.5.1 of ACI 318.

Water-soluable chloride ion content that is contributed from the ingredients include water, aggregates, cerementitious materials, and admixutres shall be determined on the concrete mixture by ASTM C1218 at age between 29 and 42 days.

** Requirements of 7.7.6 of ACI 318 shall be statisfied. See 18.16 of ACI 318 for unbonded tendons.

CONCRETE

1. ALL CONCRETE SHALL CONFORM TO THE LATEST EDITION OF THE CALIFORNIA BUILDING CODE.
2. CONCRETE SHALL BE DESIGNED AND TESTED AS OUTLINED IN THE SPECS.
3. ALL CEMENT SHALL CONFORM TO ASTM C-150. PLEASE CROSS-REFERENCE EXPOSURE CLASS SHOWN BELOW WITH CORROSION TABLE ON SGN-2 FOR CONCRETE REQUIREMENTS
4. FINE AND COARSE AGGREGATE SHALL CONFORM TO ASTM C-33 FOR STANDARD WEIGHT CONCRETE AND ASTM C-330 FOR LIGHT WEIGHT CONCRETE.
5. ALL AGGREGATE SHALL BE COMPARABLE TO "SAN GABRIEL VALLEY" AGGREGATE. THE SHRINKAGE SHALL BE AS PER ASTM C-157 WITH THE AVERAGE DRYING SHRINKAGE AT 28-DAYS NOT EXCEEDING 0.04%.
6. DRYPACK SHALL BE COMPOSED OF ONE PART PORTLAND CEMENT TO NOT MORE THAN THREE PARTS SAND.
7. ANCHOR BOLTS, HOLDOWN BOLTS, DOWELS, INSERTS, ETC. SHALL BE SECURELY TIED IN PLACE PRIOR TO POURING CONCRETE.
8. CONCRETE SHALL BE CURED BY KEEPING CONTINUOUSLY WET FOR 10-DAYS OR BY AN APPROVED CURING COMPOUND.
9. REFER TO ARCHITECTURAL, MECHANICAL, ELECTRICAL AND PLUMBING DRAWINGS FOR MISCELLANEOUS ITEMS TO BE CAST INTO CONCRETE AND FLOOR DEPRESSIONS, PITS, ETC.
10. SEE ARCHITECTURAL DRAWINGS FOR LOCATIONS OF EXPANSION JOINTS, SCORING, ETC. FOR CONCRETE WALKS AND SLABS.
11. ALL STRUCTURAL CONCRETE, TYPE II OR V — F'c = 3,000 PSI
    ALL SLAB-ON-GRADE, TYPE II OR V — F'c = 2,500 PSI
    ALL CONTINUOUS FOOTINGS AND PADS, TYPE II OR V — F'c = 2,500 PSI
    ALL CONCRETE SHALL REACH MINIMUM COMPRESSIVE STRENGTH 28 - DAYS.
12. ALL CONCRETE WITH F'c GREATER THAN 2,500 PSI SHALL HAVE SPECIAL INSPECTION PER SECTION 1704 OF THE 2013 CBC UNLESS NOTED OTHERWISE.
13. CONCRETE FOR SLAB ON GRADE SHALL HAVE A MAXIMUM OF 5 in. OF SLUMP PER ASTM C-143. 5 SACKS OF CEMENT PER CUBIC YARD OF CONCRETE. CEMENT ASTM C-150 TYPE 1 OR 2 MIN.

FOUNDATION/SITEWORK

1. THE FOUNDATION DESIGN IS BASED ON THE FOUNDATION INVESTIGATION BY SOIL REPORT SUBMITTED:
   PER: CORNERSTONE
   PROJECT NO. : 230-1-5
   DATE : 10-30-15
2. THE ALLOWABLE SOIL BEARING VALUE IS 1500 PSF FOR CONTINUOUS FOOTINGS, UNLESS NOTED OTHERWISE IN THE DESIGN LOADS BELOW.
3. ALL SITE PREPARATION, EXCAVATION AND COMPACTION SHALL BE DONE UNDER THE SUPERVISION OF THE SOIL ENGINEER.
4. SEPARATE PERMITS SHALL BE OBTAINED FOR ALL FENCES AND WALLS, AS REQUIRED.
5. PROVIDE NON-EXPANSIVE FILL AS REQUIRED TO LEVEL PAD.
6. SURFACE WATER WILL DRAIN AWAY FROM BUILDING. DRAINAGE SHALL BE 2% FROM BUILDING TO SWALE LINE. SWALE SHALL DRAIN AT 1% (MIN.) FROM REAR OF BUILDING TO STREET.
7. THERE SHALL BE NO UTILITY TRENCH NEAR THE BUILDING FOUNDATION WHICH EXTEND DEEPER THAN A 45 DEGREE LINE PROJECTED DOWN AND AWAY FROM THE BOTTOM OUTSIDE CORNER OF ANY FOOTING.
8. SLAB SUBGRADE REQUIREMENTS ARE NOT WITHIN THE SCOPE OF WORK OR LIABILITY OF ESI/FME, INC. THE SUBGRADE CONFIGURATION SHOWN IN DETAIL 1/FD1 OR THE POST-TENSION DETAILS REFLECT THE GENERAL RECOMMENDATIONS OF THE SOILS ENGINEER, AND/OR THE SITE CONDITIONS. IT IS THE RESPONSIBILITY OF THE OWNER TO REVIEW THE SLAB SUBGRADE CONFIGURATION WITH THE SOILS ENGINEER, AND CONCRETE/FLOORING CONTRACTORS, FOR ADEQUATE MOISTURE PROTECTION. PLEASE REFER TO THE SOILS REPORT FOR ADDITIONAL RECOMMENDATIONS.
9. ALL HOLDOWN ANCHORS, POST BASES AND HOLDOWN BOLTS SHALL BE TIED INTO PLACE PRIOR TO FOUNDATION INSPECTION.
10. PLACE 20'-0" REBAR IN FOUNDATION AT SERVICE LOCATIONS. STUB UP REBAR ABOVE THE FLOOR BY ELECTRIC SERVICE METERS.
11. FOR THE LOCATION OF CONTROL JOINTS, REFER TO THE FOUNDATION PLAN. (ZIP STRIP OR EQUAL). MINIMUM OF 20'-0" O.C. EACH WAY IS RECOMMENDED.
12. DRIVEWAY PAVING SHALL BE 4" PORTLAND CEMENT CONCRETE. (5 SACKS MIN.).
13. FOR POST-TENSION SLAB, REFER TO APPROVED PLANS PREPARED BY OTHERS.
14. MINIMUM SLAB REINFORCEMENT AND PAD REQUIREMENT SHALL CONFORM TO THE SOILS ENGINEER'S RECOMMENDATIONS, U.N.O..

DESIGN LOADS:

VERTICAL	SEISMIC		WIND	
ROOF DL = 20 PSF	SEISMIC DESIGN CATEGORY=D		WIND VELOCITY = 110 MPH	
ROOF LL = 20 PSF	SITE CLASS = C		WIND EXPOSURE = C	
FLOOR DL =14 PSF	BASIC-SEISMIC-FORCE-RESISTING SYSTEM LIGHT FRAMED WALLS			
FLOOR LL = 40 PSF	ANALYSIS PROCEDURE EQUIVALENT FORCE METHOD			
	Ie= 1	R = 6.5		
	(PER USGS WEBSITE) S_S = 2.543	S_1 =		
		(PER USGS WEBSITE) Fa = 1.0		
		(FOR SIMPLIFIED DESIGN) Fv = 1.3		
	(FOR SIMPLIFIED DESIGN) SDs = 1.695	V = 0.239 W		

TRUSS DESIGN: UNINHABITALE ATTICS WHICH QUALIFY FOR LIMITED STORAGE REQUIREMENTS SHALL BE DESIGNED WITH LL=20 PSF AND BOTTOM CHORD DL=10 PSF PER TABLE 1607.1.

GLULAMS/MFR. WD. PROD.

1. ALL GLUED LAMINATED MEMBERS SHALL BE MADE OF 1-1/2" DOUGLAS FIR LAMINATIONS, COMBINATION 24-F PER AITC.
2. IND. APP. GRADE: Fb=2400 PSI; Fv=240 PSI; E=1.8X10^6 PSI
3. INDUSTRIAL APPEARANCE GRADE SHALL BE USED, WITH MOISTURE CONTENT BETWEEN 7 - 14 PERCENT, UNLESS NOTED OTHERWISE.
4. FABRICATOR SHALL BE A MEMBER OF AITC AND ALL FABRICATION SHALL BE PERFORMED IN ACCORDANCE WITH AITC A190.1 & ASTM 3737. LUMBER SHALL BE MARKED WITH AN AITC QUALITY MARK INDICATING CONFORMANCE WITH THE COMMERCIAL STANDARD "STRUCTURAL GLUED LAMINATED LUMBER
5. GLUED LAMINATED MEMBERS SHALL BE ACCOMPANIED BY A CERTIFICATE OF INSPECTION. CONTRACTOR SHALL BEAR EXPENSES OF INSPECTION AND TESTS. A CERTIFICATE OF INSPECTION SHALL BE SUBMITTED TO THE BUILDING DEPARTMENT.
6. THE FABRICATOR SHALL SUBMIT COMPLETE SHOP DRAWINGS TO BUILDING DEPARTMENT AND **ESI/FME, INC.** FOR APPROVAL PRIOR TO FABRICATION.
7. ALL GLUED LAMINATED BEAMS WILL HAVE A STANDARD CAMBER BASED ON A RADIUS=1600 UNLESS NOTED OTHERWISE.
8. PARALLAM PSL 2.0E BY I-LEVEL PER ESR-1387
   fb=2900 PSI; fv=290 PSI; E=2.0 x 10^6 PSI - RR# 25202
   TIMBERSTRAND LSL 1.55E BY I-LEVEL PER ESR-1387
   fb=2325 PSI; fv=310 PSI; E=1.55 x 10^6 PSI - RR# 25202
   VERSA-LAM PSL 2.0 E BY BOISE CASCADE PER ICC ESR-1040 fb=3100 PSI, fv=285 PSI; E=2.0 x 10^6 PSI
   RIGIDLAM LVL 2.0E BY ROSEBURG PER ICC ESR-1210
   fb=2900 PSI, fv=285 PSI; E=2.0 x 10^6 PSI RR#25439
   RIGIDLAM LVL 1.5E BY ROSEBURG PER ICC ESR-1210
   fb=2400 PSI, fv=220 PSI; E=1.5 x 10^6 PSI RR#25439
   GLULAM (V4) BY BOISE CASCADE PER ANSI/AITC A190.10
   fb=2400 PSI, fv=265 PSI; E=1.8 x 10^6 PSI
9. PROVIDE MULTIPLE 2x4 SQUASH BLOCKS UNDER BEARING POINT LOAD FROM ABOVE TO TOP PLATES BELOW AT FLOOR LEVEL.
10. I-LEVEL I-JOISTS PER ICC ESR#1533, RR#25538 LOUISIANA PACIFIC I-JOISTS PER ICC ESR#1130, RR#25176 BOISE CASCADE I-JOISTS PER ICC ESR#1336, RR#24999 ROSEBURG I-JOISTS PER ICC ESR#1251, RR#25439
11. PROVIDE DOUBLE I-JOISTS OR DOUBLE I-JOIST BLOCKS WHEN 16d SOLE PLATE NAILING IS LESS THAN 4" O.C. AT SHEAR WALL ABOVE.
12. REFER TO I-JOIST MANUFACTURER SPECIFICATION FOR DRILLING OF HOLES THRU I-JOIST WEB.

LUMBER/CARPENTRY

1. ALL STRUCTURAL LUMBER SHALL BE GRADED IN ACCORDANCE WITH THE AMERICAN SOFTWOOD LUMBER STANDARD DOC PS 20.
2. ALL WOOD BEARING ON CONCRETE OR MASONRY SHALL BE PRESSURE TREATED DOUG FIR OR REDWOOD WITH SODIUM BORATE (SBX) OR DISODIUM OCTABORATE TETRAHYDRATE (DOT).
3. HOLES FOR BOLTS SHALL BE BORED WITH A BIT 1/32" TO 1/16" LARGER THAN THE NOMINAL BOLT DIAMETER.
4. ALL BOLTS SHALL BE RE-TIGHTENED PRIOR TO APPLICATION OF PLYWOOD, PLASTER, ETC.
5. STRUCTURAL MEMBERS SHALL NOT BE CUT FOR PIPES, ETC. UNLESS SPECIFICALLY NOTED OR DETAILED.
6. 2X SOLID BLOCKING SHALL BE PLACED BETWEEN JOISTS OR RAFTERS AT ALL SUPPORTS, EXCEPT WHEN LEDGERED.
7. CROSS-BRIDGING SHALL BE PROVIDED AT 8'-0" O.C. MAX. FOR ALL FLOOR JOISTS OVER 10" IN DEPTH AND ALL ROOF JOISTS OVER 10" DEPTH. USE SOLID BLOCKING OR AN APPROVED TYPE METAL BRIDGING. WHERE STATED IN PRODUCTS ICC REPORT, CROSS-BRIDGING IS NOT REQUIRED FOR PRE-FABRICATED I-JOISTS.
8. ALL STRUCTURAL PLYWOOD SHALL BE STRUCTURAL II OR C-D GRADE WITH EXTERIOR GLUE UNLESS NOTED OTHERWISE AND CONFORM TO DOC PS1 OR PS2. EACH SHEET SHALL BE IDENTIFIED BY A REGISTERED STAMP D.F.P.A OR A.P.A.
9. ALL BOLTS BEARING ON WOOD SHALL HAVE STANDARD CUT WASHERS UNDER HEAD AND NUT UNLESS NOTED OTHERWISE.
10. ALL METAL ANCHORS, FASTENERS AND CONNECTORS ETC. SHALL BE FROM SIMPSON STRONG-TIE (TM). SUBSTITUTIONS MUST BE PRE-APPROVED IN WRITING BY **ESI/FME.**
11. ALL STRUCTURAL LUMBER SHALL BE DOUGLAS FIR-LARCH, 19% MAX. MOISTURE CONTENT, OF THE FOLLOWING GRADES UNLESS NOTED OTHERWISE :

2X4 STUDS (UP TO 10')	"STUD" OR BETTER
2X4 STUDS (OVER 10')	"NO.2" OR BETTER
2X PLATES & 3X PLATES	STANDARD" OR BETTER
2X6 STUDS	NO.2
2X JOIST	NO.2
4X10 POST AND SMALLER	NO.2 OR STANDARD
4X12 POST AND LARGER	NO.1
<u>BEAMS AND STRINGERS</u>	
4X10 AND SMALLER	NO.2
4X12 AND LARGER	NO.1
6X AND 8X	NO.1
POST/TIMBERS	NO.1

ROOF PLANKING AND DECKING..COM.DEX.
BOARD SHTG. AND STRIPPING..SUITABLE FOR INTENDED USE.
2012 NDS STRESS VALUES FOR DOUGLAS FIR-LARCH:
SINGLE/REPETITIVE
2X4 #2: Fb= 1350/1552 PSI ; Fv=180 psi E=1.6x10^6
2X6 #2: Fb= 1170/1345 PSI
2X8 #2: Fb= 1080/1242 PSI
2X10 #2: Fb= 990/1138 PSI
2X12 #2: Fb= 900/1150 PSI
2X14 #2: Fb= 810/ 931 PSI
4X4 #2: Fb= 1350 PSI
4X6 #2: Fb= 1170 PSI
4X8 #2: Fb= 1170 PSI
4X10 #2: Fb= 1080 PSI
4X12 #1: Fb= 1100 PSI ; Fv=180 psi E= 1.7x10^6
4X14 #1: Fb= 1000 PSI
4X16 #1: Fb= 1000 PSI
6X10 #1: Fb= 1350 PSI ; Fv=170 psi, E=1.6x10^6
6X12 #1: Fb= 1350 PSI

12. ALL NAILING TO BE PER TABLE NUMBER 2304.9.1 OF THE LATEST CALIFORNIA BUILDING CODE, UNLESS NOTED OTHERWISE.
13. PLYWOOD FLOOR AND ROOF SHEATHING SHALL BE LAID CONTINUOUS OVER TWO OR MORE SUPPORTS WITH FACE GRAIN PERPENDICULAR TO SUPPORTS (UNLESS SHOWN OTHERWSE). STAGGER ALL PLYWOOD PANELS A MINIMUM OF 4'-0".
14. WHENEVER LATERAL BRACING OF WEB MEMBER IN TRUSSES IS REQUIRED, THE LATERAL BRACE MUST END ON AN EXTERIOR BEARING WALL.
15. FRAMING CONTRACTOR SHALL PROVIDE BACKING AS REQUIRED FOR ALL LIGHT FIXTURES, CABINETS, WARDROBES, TOWEL BARS, AND HANDRAILS AS REQUIRED AND REQUESTED BY GENERAL CONTRACTOR.
16. EXTERIOR WOOD POSTS AND COLUMNS SUPPORTED BY A CONCRETE SLAB SHALL BE INSTALLED A MINIMUM OF 8" ABOVE EXPOSED EARTH AND AT LEAST 1" ABOVE SLAB ON METAL POST BASES. (EXCEPTION: POSTS OR COLUMNS OF APPROVED WOOD WITH NATURAL RESISTANCE TO DECAY OR TREATED WOOD). POSTS OR COLUMNS RESTING ON CONCRETE PIERS SURROUNDED BY EXISTING GRADE SHALL BE A MINIMUM OF 8" ABOVE ADJACENT GRADE PER C.B.C. SECT. 2304.11.2.2 ALL ISOLATED INTERIOR AND EXTERIOR WOOD POSTS ATTACHED DIRECTLY TO CONCRETE SHALL BE SECURED WITH SIMPSON 'PB' OR EQUIVALENT.
17. PROVIDE 2x4 FLAT HEADERS AT ALL INTERIOR NON-BEARING OPENINGS UP TO 36 INCHES IN WIDTH AND 4x4 HEADERS FOR OPENINGS 3 TO 6 FEET IN WIDTH.
18. PROVIDE MINIMUM 1/2" CLEARANCE (VOID SPACE) FROM TOP OF ALL INTERIOR NON-BEARING PARTITIONS TO ROOF AND CEILING FRAMING ABOVE.
19. ALL EXTERIOR WALLS ADJACENT TO VAULTED CEILINGS SHALL BE BALLOON FRAMED WITH CONTINUOUS STUDS TO BOTTOM CHORD OF TRUSS OR RAFTER. U.N.O.
20. WHEN PLYWOOD SIDING IS USED AS AN EXTERIOR OR INTERIOR WALL COVERING, PROVIDE SOLID BLOCKING AT ANY HORIZONTAL JOINTS BETWEEN SOLE PLATE AND ANY TOP PLATE. "Z" BAR METAL SHALL BE USED AT EXTERIOR HORIZONTAL JOINTS.
21. INSTALL FIREBLOCKS TO CUT OFF ALL HORIZONTAL AND VERTICAL DRAFT OPENINGS BETWEEN TWO STORIES AND ROOF ATTIC SPACES. FIREBLOCKS SHALL BE OF 2 INCH NOMINAL THICKNESS. LOCATION OF FIREBLOCKS SHALL INCLUDE:
    A. STUD WALLS AT FURRED SOFFITS, CEILING AND FLOOR LEVELS.
    B. AROUND TOP, BOTTOM, SIDES AND ENDS OF SLIDING POCKET DOORS
    C. BETWEEN STAIR STRINGERS AT TOP AND BOTTOM OF RUN AND BETWEEN STUDS IN A WALL PARALLEL AND ADJOINING RUN OF STAIRS.
22. FASTENING OF MULTIPLE MEMBERS: DOUBLE & TRIPLE JOISTS; 16d NAILS AT 12" O.C STAGGERED (BOTH SIDES FOR TRIPLES). FOUR OR MORE JOISTS; 1/2" DIA. M.B's AT 18" O.C STAGGERED. 4X OR LARGER BEAMS; 1/2" DIA. M.B's AT 12" O.C STAGGERED.
23. ALL ROUGH OR RESAWN BEAMS ARE TO BE FREE OF GRADING STAMP LABELS AND FREE OF HEART CENTER.
24. ALL HANGING JOISTS SHALL BE HUNG WITH SIMPSON "LUS" HANGERS U.N.O., AND SIMPSON "IUS" FOR TJI's, U.N.O.
25. ALL BEARING WALLS ON A WOOD FLOOR ARE TO BE SUPPORTED WITH DOUBLE JOISTS OR SOLID BLOCKING UNLESS NOTED OTHERWISE.
26. ALL BEAMS TO BE SUPPORTED WITH FULL BEARING, U.N.O
27. ROOF SHEATHING IS TO CONTINUE UNDER CALIFORNIA FRAMING, TYP.
28. APPLY SHEAR WALL PLYWOOD PRIOR TO ALL BOX-OUTS, FUR-OUTS, SOFFITS OR ANY OTHER FRAMING THAT MAY INTERRUPT CONTINUITY OF THE PLYWOOD.
29. PROVIDE FURRING AS NEEDED TO ALIGN NON-SHEAR WALLS WITH SHEAR WALLS.
30. PROVIDE 4X OR DOUBLE 2X MEMBERS UNDER SOLE PLATE NAILING LESS THAN 4 in. O.C.
31. DOUBLE TOP PLATES w/MIN. 48 in. LAP SPLICES TO BE PROVIDED w/MIN (8) 16d's PER TOP PLATE SPLICE.
32. TOP PLATE BREAKS AND SPLICES SHALL OCCUR OVER A STUD OR POST.
33. SOLID BLOCKING BETWEEN PERPENDICULAR JOIST AT BEARING AND AT SHEAR WALLS.
34. ALL EXPOSED BEAMS AND HEAVY TIMBER RECOMMENDED TO BE FREE OF HEART CENTER.
35. ALL ISOLATED POSTS AND BEAMS TO HAVE SIMPSON PB's AND/ OR BC's MINIMUM, UNLESS NOTED OTHERWISE.
36. ALL SIMPSON HD, HTT, HDQ, HDU, PHD, HDA, AND CB HOLDOWNS TO BE FASTENED TO 4x4 POST MIN., U.N.O.
37. ALL EXTERIOR WALLS ARE TO BE SECURED WITH MIN. 1/2" DIA. x 10" ANCHOR BOLTS AT 72 in. O.C., U.N.O.
38. ALL INTERIOR WALLS TO BE SECURED WITH SHOT PINS PER MANUFACTURER 'S RECOMMENDATION, U.N.O. CALCULATIONS GOVERN IN ALL CASES. RECOMMEND SIMPSON .145" DIA. PDP POWER ACTUATED ANCHORS 3" LONG @ 24"o.c. U.N.O. (ICC ESR#2138) OR EQUAL.
39. ALL CONVENTIONAL FRAME PORTIONS OF STRUCTURE ARE TO BE CONSTRUCTED PER SECTION 2308 OF THE CALIFORNIA BUILDING CODE, U.N.O.
40. ALL SHOP DRAWINGS ARE TO BE REVIEWED BY THE CONTRACTOR AND THE ARCHITECT PRIOR TO SUBMITTAL FOR ENGINEER REVIEW.
41. TRUSS MANUFACTURER TO PROVIDE CALCULATIONS, SHOP DRAWINGS, DETAILS, TRUSS HANGERS, BRIDGING AND ERECTION BRACING.
42. PROVIDE DOUBLE 2X SOLE PLATES WITH SOLE PLATE NAILING AS SPECIFIED ON THE PLANS AT BOTH PLATES WHERE 1 1/2" LIGHT WEIGHT CONCRETE IS USED AT THE FLOOR.
43. WHERE BOTH TOP PLATES ARE BROKEN, STRAP WITH ST6224 MIN. U.N.O.
44. COMMON NAILS SHALL BE USED FOR ALL PLY SHEATHING TOP PLATE SPLICES. BOX NAILS MAY BE USED AT SOLE PLATE NAILING. ALL HARDWARE SHALL BE INSTALLED WITH NAILS PER THE MANUFACTURERS SPECIFICATIONS AND RECOMMENDATIONS.
45. ALL HEADERS SHALL BE FRAMED WITH A MINIMUM OF (1) 2X4 TRIMMER AND (1) 2X4 KING STUD AT EACH END, U.N.O.
46. AT ANY SOLE PLATES OR TOP PLATES CUT FOR PIPES, PROVIDE A .058" THICK (16 GA.) AND 1 1/2" WIDE PLATE ACROSS EACH SIDE OF OPENING WITH NOT LESS THAN (6) 16d NAILS.
47. PROVIDE SOLID BLOCKING AT SOFFIT CEILINGS.
48. SHEAR SHALL BE CONTINUOUS FROM BOTTOM PLATES TO TOP PLATES., U.N.O.
49. STAIR STRINGER SHALL BE 2x12 DF#1 U.N.O.
50. A SINGLE TOP PLATE IS PERMITTED PROVIDED THE PLATE IS ADEQUATELY TIED AT JOINTS, CORNERS AND INTERSECTING WALLS BY AT LEAST THE EQUIVALENT OF 3 IN, X 6 IN. X .036 IN. THICK GALVANIZED STEEL PLATE THAT IS NAILED TO EACH WALL OR SEGMENT OF WALL BY (6) 8d NAILS OR EQUIVALENT.

LATERAL SHEAR NOTES:

(2013 CBC, SDPWS-2008 ; SEISMIC DESIGN CATEGORY D & E)
{ TABLE 4.3A, AFPA SDPWS-2008 }

△# **VERTICAL:** — FRAMING MEMBERS DOUGLAS FIR-LARCH AT 16" O.C

10. 3/8" WOOD STRUCTURAL PANEL WITH 8d COMMON NAILS AT 6" O.C AT EDGES AND 12" O.C AT FIELD .... 260 PLF
11. 3/8" WOOD STRUCTURAL PANEL WITH 8d COMMON NAILS AT 4" O.C AT EDGES AND 12" O.C AT FIELD .... 350 PLF
12. 3/8" WOOD STRUCTURAL PANEL WITH 8d COMMON NAILS AT 3" O.C AT EDGES AND 12" O.C AT FIELD .... 490 PLF
13. 3/8" WOOD STRUCTURAL PANEL WITH 8d COMMON NAILS AT 2" O.C AT EDGES AND 12" O.C AT FIELD .... 640 PLF
14. 1/2"(OR 15/32) WOOD STRUCTURAL PANEL WITH 10d COMMON NAILS AT 2" O.C AT EDGES AND 12" O.C AT FIELD .... 770 PLF
15. 1/2"(OR 15/32) STRUCT. I WOOD PANEL WITH 10d COMMON NAILS AT 2" O.C AT EDGES AND 12" O.C AT FIELD .... 870 PLF

△# HORIZONTAL: (3/8" @ CEILING LIDS, 15/32" @ ROOF SHT'G) — FRAMING MEMBERS DOUGLAS FIR-LARCH AT 24" O.C
(3/8" PANEL VALUES AND NAILING BELOW MAY BE USED FOR 15/32" PANELS)

20. BLOCKED PLYWOOD DIAPHRAGM WITH 3/8" WOOD STRUCTURAL PANEL AND 8d COMMON NAILS AT 6" O.C AT BOUNDARIES, 6" O.C. AT EDGES AND 10" O.C AT FIELD .... 240 PLF
21. BLOCKED PLYWOOD DIAPHRAGM WITH 3/8" WOOD STRUCTURAL PANEL AND 8d COMMON NAILS AT 4" O.C AT BOUNDARIES, 6" O.C. AT EDGES AND 10" O.C AT FIELD .... 320 PLF
22. BLOCKED PLYWOOD DIAPHRAGM WITH 3/8" WOOD STRUCTURAL PANEL AND 8d COMMON NAILS AT 2.5" O.C STAGG. AT BOUNDARIES, 4" O.C. AT EDGES AND 10" O.C AT FIELD .... 480 PLF
23. BLOCKED PLYWOOD DIAPHRAGM WITH 3/8" WOOD STRUCTURAL PANEL AND 8d COMMON NAILS AT 2" O.C STAGG. AT BOUNDARIES, 3" O.C. AT EDGES AND 10" O.C AT FIELD .... 545 PLF

△# HORIZONTAL: — FRAMING MEMBERS DOUGLAS FIR-LARCH AT 16" O.C

24. BLOCKED PLYWOOD DIAPHRAGM WITH 19/32" WOOD STRUCTURAL PANEL AND 10d COMMON NAILS AT 6" O.C AT BOUNDARIES, 6" O.C. AT EDGES AND 10" O.C AT FIELD .... 320 PLF
25. BLOCKED PLYWOOD DIAPHRAGM WITH 19/32" WOOD STRUCTURAL PANEL AND 10d COMMON NAILS AT 4" O.C AT BOUNDARIES, 6" O.C. AT EDGES AND 10" O.C AT FIELD .... 425 PLF
26. BLOCKED PLYWOOD DIAPHRAGM WITH 19/32" WOOD STRUCTURAL PANEL AND 10d COMMON NAILS AT 2.5" O.C STAGG. AT BOUNDARIES, 4" O.C. AT EDGES AND 10" O.C AT FIELD .... 640 PLF
27. BLOCKED PLYWOOD DIAPHRAGM WITH 19/32" WOOD STRUCTURAL PANEL AND 10d COMMON NAILS AT 2" O.C STAGG. AT BOUNDARIES, 3" O.C. AT EDGES AND 10" O.C AT FIELD .... 730 PLF

NOTES:

A. WOOD STRUCTURAL PANEL: MATERIAL APPROVED BY APA, PFS/TECO OR PITTSBURG TESTING LABORATORIES THESE VALUES ARE FOR DOUG-FIR LARCH OR SOUTHERN PINE, OTHER LUMBER SPECIES MAY DIFFER IN SHEAR CAPACITIES.
B. PROVIDE 2X BLOCKING AT HORIZONTAL WOOD STRUCTURAL PANEL PANEL JOINTS. FRAMING AT ADJOINING PANEL EDGES SHALL BE 3X WHEN NAILING IS 2.5" O.C. OR LESS.
C. WHERE WOOD STRUCTURAL PANEL IS APPLIED ON BOTH FACES OF WALL AND NAIL SPACING IS LESS THAN 6" O.C, PANEL JOINTS SHALL BE OFFSET TO FALL ON DIFFERENT FRAMING MEMBERS OR FRAMING SHALL BE 3X OR WIDER AND NAILS STAGGERED ON EACH SIDE.
D. FOR SHEAR WALLS △12 TO △15 USE THE FOLLOWING:
   1) USE 3x MEMBER @ PANEL JOINTS & HORIZONTAL BLOCKING
   2) EDGE NAILING SHALL BE STAGGERED
E. 10d SHORT BOX NAILS MAY BE USED IN LIEU OF 8d COMMON NAILS @ SHEAR WALLS ONLY.
F. REQUIRED PLATE WASHERS AT SHEAR WALLS TO BE: 3" x 3" x .229" STEEL PLATE U.N.O. WITH SUB SCRIPT c WHERE STANDARD CUT WASHERS ARE OKAY (SDPWS SECT. 4.3.6.4.3) WASHER MAY BE SLOT CUT PROVIDED A STANDARD CUT WASHER IS PROVIDED BETWEEN THE WASHER AND NUT. WASHER TO BE INSTALLED WITHIN 1/2" OF SHEATHED SIDE OF PLATE.
G. A STANDARD CUT WASHER MAY BE USED AT ALL NON-SHEAR WALL LOCATIONS WITH ANCHOR BOLTS.

<u>HORIZONTAL:</u>
ALL ROOF AND FLOOR SHEATHING TO BE EXPOSURE I OR EXTERIOR (TABLE 2306.2.1)

ROOF: JOIST SPACING EQUAL TO OR LESS THAN 24" O.C: 15/32"WOOD STRUCTURAL PANEL PII 32/16, WITH 8d's AT 6" O.C AT EDGES AND BOUNDARIES, 12" O.C FIELD.
HORIZONTAL DIAPHRAGM VALUES FOR 3/8" WOOD STRUCTURAL PANELS MAY BE USED FOR 15/32" WOOD STRUCTURAL PANELS. U.N.O.

FLOOR: * JOIST SPACING EQUAL TO OR LESS THAN 16" O.C: 19/32" WOOD STRUCTURAL PANEL T&G SHTG, PII 32/16, w/10d's AT 6" O.C AT EDGES AND BOUNDARIES, 12" O.C FIELD.
JOIST SPACING EQUAL TO OR LESS THAN 20" O.C: 19/32" WOOD STRUCTURAL PANEL T&G SHTG, PII 40/20, w/10d's AT 6" O.C AT EDGES AND BOUNDARIES, 12" O.C FIELD.
JOIST SPACING EQUAL TO OR LESS THAN 24" O.C: 23/32" WOOD STRUCTURAL PANEL T&G SHTG, PII 48/24, w/10d's AT 6" O.C AT EDGES AND BOUNDARIES, 12" O.C FIELD.

* PANEL EDGES SHALL HAVE APPROVED T&G JOINTS OR SHALL BE SUPPORTED WITH BLOCKING NOT REQUIRED WHEN LIGHTWEIGHT CONCRETE IS PLACED OVER SUBFLOOR.

FRAMING LEGEND:

INDICATES SPAN AND DIRECTION OF ROOF JOISTS AND RAFTERS
INDICATES SPAN AND DIRECTION OF TRUSSES
INDICATES SPAN AND DIRECTION OF FLOOR JOISTS
INDICATES SPAN AND DIRECTION OF CEILING JOISTS
INDICATES SPAN AND DIRECTION OF DECK JOISTS (SLOPED AS REQUIRED)

A	2X6 AT 12" O.C
B	2X6 AT 16" O.C
C	2X6 AT 24" O.C
D	2X8 AT 12" O.C
E	2X8 AT 16" O.C
F	2X8 AT 24" O.C
G	2X10 AT 12" O.C
H	2X10 AT 16" O.C
J	2X10 AT 24" O.C
K	(2)2X10 AT 16" O.C
L	2X12 AT 12" O.C
M	2X12 AT 16" O.C
N	2X12 AT 24" O.C
P	(2)2X12 AT 16" O.C
T	TRUSS AT 24" O.C

I-JOIST TABLE

MARK	SPACING	SIZE & MANUFACTURER OPTIONS
Q-	I-JOIST @ 12" O.C.	a) 9 1/2" TJI / 210
R-	I-JOIST @ 16" O.C.	b) –
S-	I-JOIST @ 19.2" O.C.	c) – d) –
U-	I-JOIST @ 12" O.C.	a) 11 7/8" TJI / 210
V-	I-JOIST @ 16" O.C.	b) –
W-	I-JOIST @ 19.2" O.C.	c) – d) –
X-	I-JOIST @ 12" O.C.	a) 14" TJI / 230
Y-	I-JOIST @ 16" O.C.	b) –
Z-	I-JOIST @ 19.2" O.C.	c) – d) –

M=L	INDICATES (1) 1 3/4" x DEPTH OF JOIST MICROLAM LVL 1.9 E
PSL	INDICATES PARALLAM PSL 2.0 E
TSR	INDICATES 1 1/2" BY DEPTH OF JOIST TIMBERSTRAND RIM
E.N.	INDICATES EDGE NAILING @ 6" O.C.
G.T.	GIRDER TRUSS
C-TM	INDICATES CONNECTION BY TRUSS MANUFACTURER
⟨#⟩	HEADERS AND BEAMS, REFER TO ENGINEERING CALCS.
■ ■ ■	INDICATES INTERIOR BEARING WALL

NOTE: APPLY SHEAR PRIOR TO FRAMING OF PERPENDICULAR WALL AND/OR BOX-OUTS. (WHERE APPLICABLE)

FRAMING NOTES LEGEND

MARK:	DESCRIPTION
SPN12:	16d SOLE PLATE NAILING @ 12" O.C.
SPN10:	16d SOLE PLATE NAILING @ 10" O.C.
SPN8:	16d SOLE PLATE NAILING @ 8" O.C.
SPN6:	16d SOLE PLATE NAILING @ 6" O.C.
SPN4:	16d SOLE PLATE NAILING @ 4" O.C.
SPN3:	16d SOLE PLATE NAILING @ 3" O.C.
SPN2:	16d SOLE PLATE NAILING @ 2" O.C.
SCR3:	1/4" x 4 1/2" SDS SCREWS @ 3" O.C.

CEILING JOIST SCHEDULE

SIZE	SPACING	SPAN GRADE NO 2
2x4	12" O.C.	9'-1"
	16" O.C.	8'-4"
	24" O.C.	7'-2"
2x6	12" O.C.	14'-6"
	16" O.C.	13'-4"
	24" O.C.	11'-6"
2x8	12" O.C.	20'-4"
	16" O.C.	18'-3"
	24" O.C.	16-'1"

1. AT GABLE END WALLS IF PLY SHEAR IS RUN UP TO AND NAILED TO BOT. CHORD OF TRUSS -OK TO OMIT A35's AND PLATE SPICE NAILING
2. AT EXT WALLS IF PLY SHEAR IS RUN UP TO AND NAILED TO T.S.R. -OK TO OMIT A35's AND PLATE SPICE NAILING AND 2^{ND} FLOOR SPECIAL SILL PLATE NAILING, BUT ADD ST6224 AT EACH RIM SPLICE.

REVISIONS

ESI/FME, INC.
STRUCTURAL ENGINEERS
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SANTA ANA, CA 92701
PHONE: 714-835-2800
FAX: 714-835-2819
JN.-C169 01/04/2017

STRUCTURAL GENERAL NOTES

" HIGHLAND ESTATES "
LOT 9
SAN MATEO COUNTY, CA.
THE CHAMBERLAIN GROUP - MGA

DALE LOREN FORBES
C 30407

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01/04/2017
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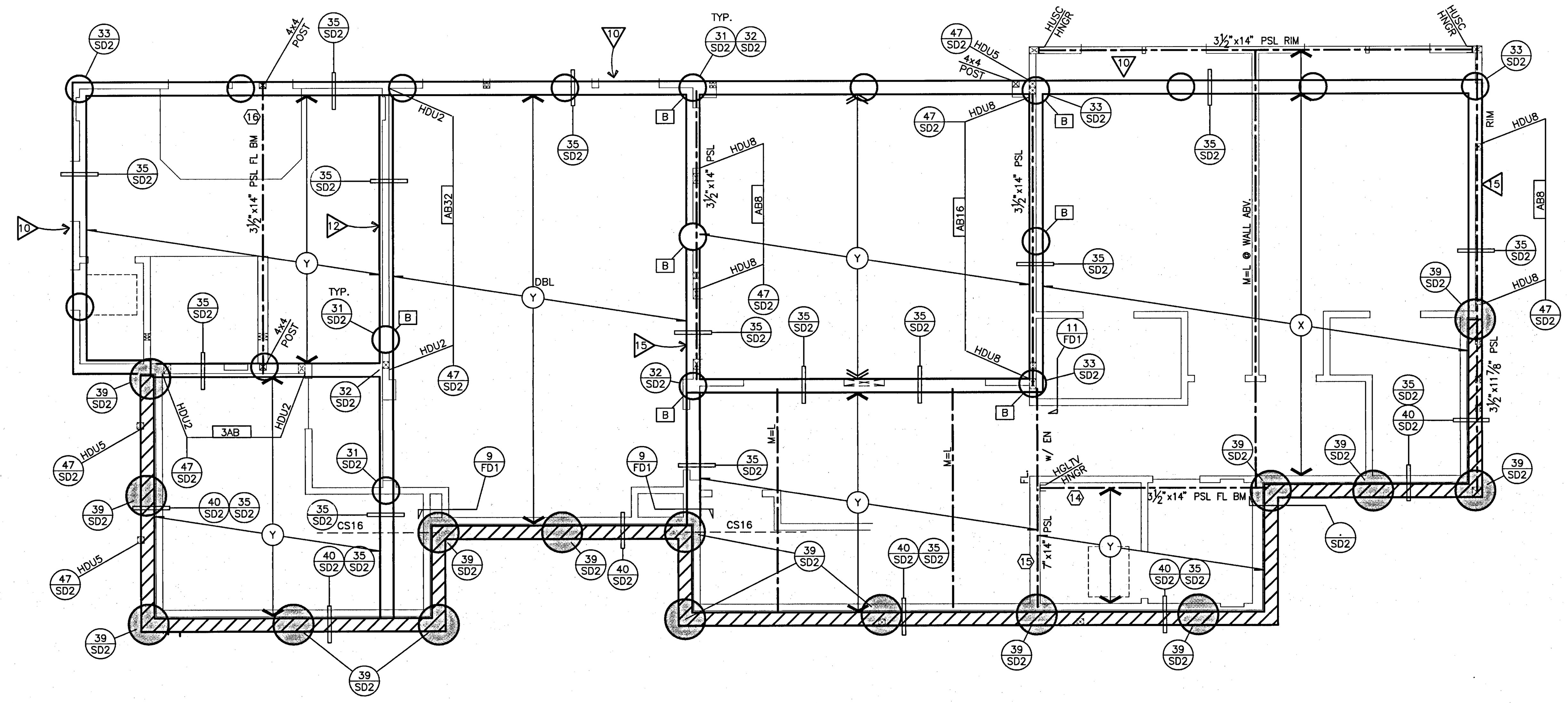


FOUNDATION PLAN
SCALE : 1/4" = 1'-0"

SEE SHEET S9-3 FOR FRAMING NOTES

FOUNDATION NOTES:

ALL DIMENSIONS SHALL BE VERIFIED WITH THE ARCHITECTS DRAWINGS ANY DISCREPANCIES SHALL BE RESOLVED PRIOR TO COMMENCING OF WORK.

1. D.F.P.T. PLATE TO BE SECURED WITH 1/2" DIAMETER BY 10" LONG ANCHOR BOLTS WITH A STANDARD CUT WASHER EMBEDDED AT LEAST 7" INTO CONCRETE WITH A MAXIMUM SPACING OF 72" O.C. THERE SHALL BE A MINIMUM OF TWO BOLTS PER PIECE OF FOUNDATION PLATE WITH ONE BOLT LOCATED WITHIN 12" MAX. & 4-1/2" MIN. OF EA. END OF EA. PIECE. **AT SHEAR WALLS** A PROPERLY SIZED NUT AND 3"x3"x.229" THICK WASHER SHALL BE TIGHTENED ON EA. BOLT TO THE PLATE, HOLE IN PLATE WASHER CAN BE DIAGONALLY SLOTTED W/ A WIDTH OF UP TO 3/16" LARGER THAN BOLT DIAMETER & A SLOT LENGTH NOT TO EXCEED 1 3/4", PROVIDED A STANDARD CUT WASHER IS PLACED BETWEEN THE PLATE WASHER & THE NUT. U.N.O. BY SUB LETTER 'C' WHEN A CUT WASHER IS OKAY.
2. ALL INTERIOR NON-SHEAR WALLS ARE TO BE SECURED WITH SHOT PINS INSTALLED PER MANUFACTURERS RECOMMENDATIONS, U.N.O. STRUCTURAL ENGINEERS CALCULATIONS GOVERN IN ALL CASES.
3. INSTALL ALL SIMPSON (OR APPROVED EQUAL) FOUNDATION HARDWARE PER MANUFACTURERS RECOMMENDATIONS. DEEPEN FOOTING WHERE NECESSARY TO PROVIDE ANCHOR EMBEDMENT AT HOLDOWN LOCATIONS.

NOTE:

WHEN REQUIRED BY LOCAL BUILDING DEPARTMENT ALL ANCHOR BOLTS AND HOLDOWN BOLTS TO BE SET IN PLACE PRIOR TO CITY FOUNDATION INSPECTION

SOIL INFORMATION:

1. FOUNDATION SIZES, DEPTHS, AND REINFORCEMENT ARE AS RECOMMENDED WITHIN THE OWNER/DEVELOPER'S SOILS ENGINEERS REPORT. SOILS ENGINEER TO PROVIDE FOUNDATION INSPECTION AS OUTLINED IN LATEST SOIL REPORT.
2. OWNER/DEVELOPER AND SUBCONTRACTORS ARE TO REVIEW THE SOILS REPORT PRIOR TO COMMENCING CONSTRUCTION. IT IS THE RESPONSIBILITY OF THE OWNER, DEVELOPER AND SUBCONTRACTOR TO VERIFY THAT THE REPORT IS CURRENT AND PLAN REQUIREMENTS ARE CONSISTENT WITH ANY UPDATED SOIL REPORTS. ESI/FME IS TO BE SUPPLIED WITH ALL UPDATED REPORTS.

INDICATES GRADE BEAM

INDICATES RETAINING WALL

ANCHOR BOLT LEGEND:

* AB32 : 1/2" DIA. X 10" ANCHOR BOLTS AT 32" O.C.
AB24 : 1/2" DIA. X 10" ANCHOR BOLTS AT 24" O.C.
AB# : 1/2" DIA. X 10" ANCHOR BOLTS AT #" O.C.
2AB : (2) 1/2" DIA X 10" ANCHOR BOLTS.
3AB : (3) 1/2" DIA X 10" ANCHOR BOLTS.
#AB : (#) 1/2" DIA X 10" ANCHOR BOLTS.
#ABc : c DENOTES STANDARD CUT WASHERS OKAY IN LIEU OF 3" SQ. ONLY REQUIRED.
2-#4 : PROVIDE A TOTAL OF 2 #4 AT TOP AND 2 #4 AT BOTTOM OF FOOTING, 4' PAST POSTS.
3-#4 : PROVIDE A TOTAL OF 3 #4 AT TOP AND 3 #4 AT BOTTOM OF FOOTING, 4' PAST POSTS.
2-#5 : PROVIDE A TOTAL OF 2-#5 AT TOP AND 2-#5 AT BOTTOM OF FOOTING, 6' PAST POSTS.
HDU2 : (1) SIMPSON HDU2 PER POST.
HDU# : (1) SIMPSON HDU# PER POST.
HTT4 : (1) SIMPSON HTT4 PER POST.
HTT5 : (1) SIMPSON HTT5 PER POST.
PHD6 : (1) SIMPSON PHD6 PER POST.
HD8A : (1) SIMPSON HD8A PER POST.
HD10A : (1) SIMPSON HD10A PER POST.
HD14A : (1) SIMPSON HD14A PER POST.
HDQ8 : (1) SIMPSON HDQ8-SDS3 PER POST.
HHDQ11 : (1) SIMPSON HHDQ11-SDS2.5 PER POST.
HHDQ14 : (1) SIMPSON HHDQ14-SDS2.5 PER POST.

REFER TO ARCHITECTURAL PLANS FOR ALL DIMENSIONS

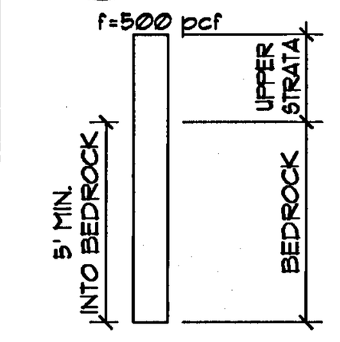
* ALT. TO ½"ø ANCHOR BOLTS SIMPSON MASA AT A 1-1 RATIO

ALL GRADE BEAMS 8"X22½" THICK w/ 2-#5 TOP & BOTTOM, U.N.O. w/ #3 TIES @ 12" O.C., U.N.O.

ALL PIERS TYPE A UNLESS NOTED OTHERWISE (U.N.O.)

SEE 31/SD2 FOR TYP. CONN.

PIER SCHEDULE			
TYPE	DEPTH INTO BEDROCK	CAPACITY	VERT. REINF.
A	5'-0"	11,775 #	(5)#6
B	8'-0"	18,840 #	(4)#8



- ALL PIERS TO BE INTERCONNECTED WITH GRADE BEAMS

PIERS:
16" ø PIER w/ #3 TIES AT 12" o/c PIERS SHALL PENETRATE AT LEAST 5'-0" INTO BEDROCK & A MIN. OF 10' BELOW THE LOWEST ADJACENT GRADE AS IDENTIFIED BY THE SOILS ENGINEER DURING CONSTRUCTION (SEE SOILS REPORT FOR MORE RECOMMENDATIONS.)

THE EXCAVATION OF ALL DRILLED SHAFTS SHOULD BE OBSERVED BY A CORNERSTONE REPRESENTATIVE TO CONFIRM THE SOIL PROFILE, VERIFY THAT THE PIERS EXTEND THE MINIMUM DEPTH INTO SUITABLE MATERIALS AND THAT THE PIERS ARE CONSTRUCTED IN ACCORDANCE WITH OUR RECOMMENDATIONS AND PROJECT REQUIREMENTS. THE DRILLED SHAFTS SHOULD BE STRAIGHT, DRY, AND RELATIVELY FREE OF LOOSE MATERIAL BEFORE REINFORCING STEEL IS INSTALLED AND CONCRETE IS PLACED. IF GROUND WATER CANNOT BE REMOVED FROM THE EXCAVATIONS PRIOR TO CONCRETE PLACEMENT, DRILLING SLURRY OR CASING MAY BE REQUIRED TO STABILIZE THE SHAFT AND THE CONCRETE SHOULD BE PLACED USING A TREMIE PIPE, KEEPING THE TREMIE PIPE BELOW THE SURFACE OF THE CONCRETE TO AVOID ENTRAPMENT OF WATER OR DRILLING SLURRY IN THE CONCRETE.

INDICATES 24"ø CAISSONS w/ 10-#8 VERT. BARS MIN. 13' INTO BEDROCK.

INDICATES RETAINING WALL

SEE SHEET S9-3 FOR FRAMING NOTES

REVISIONS

ESI/FME INC.
STRUCTURAL ENGINEERS

FOUNDATION PLAN
LOT 9

" HIGHLAND ESTATES "
LOT 9
SAN MATEO COUNTY, CA.
THE CHAMBERLAIN GROUP - MGA

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01/04/2017
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C169
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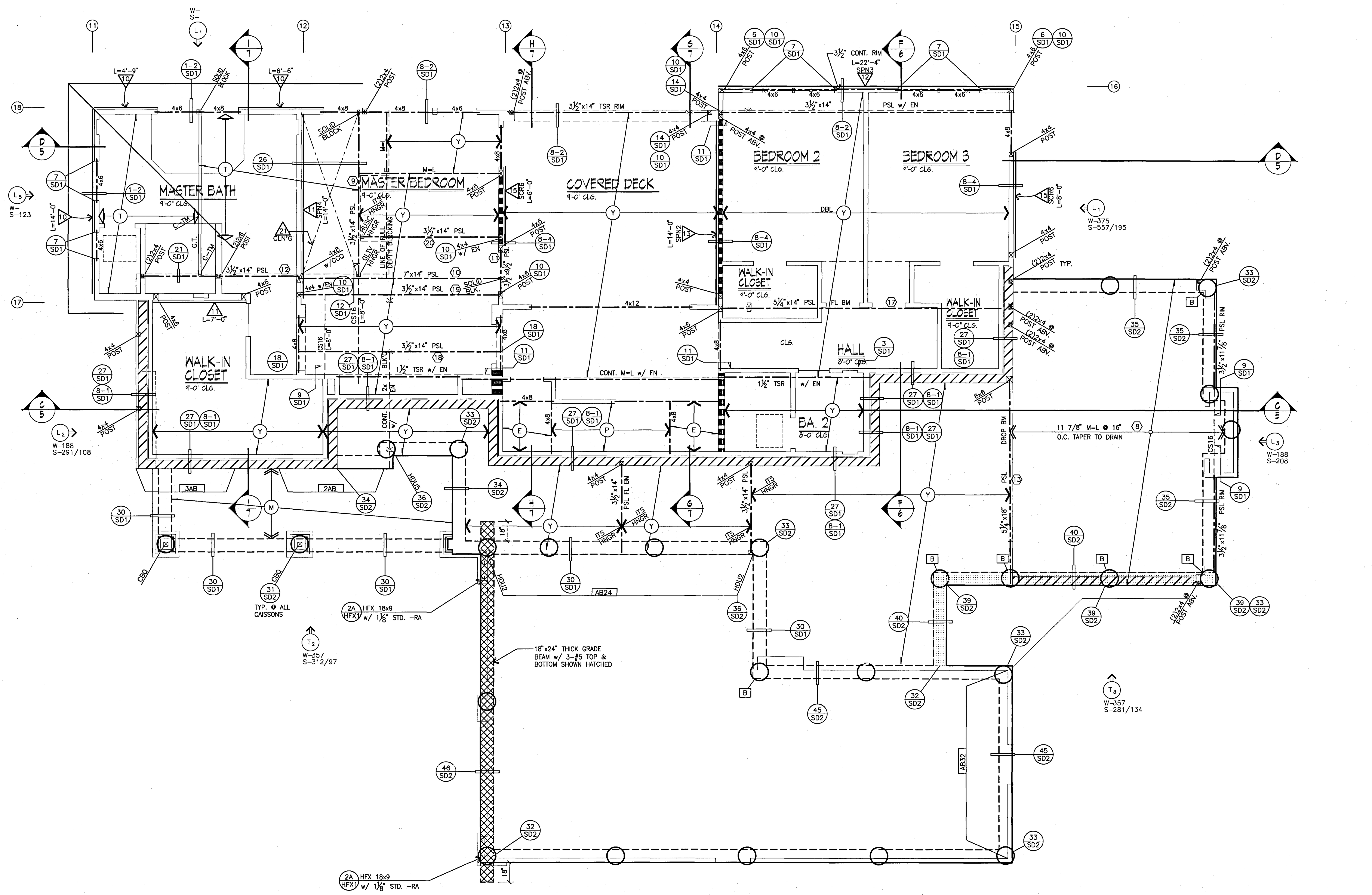
SHEET: 2 OF: 6



FLOOR FRAMING PLAN

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

FOUNDATION NOTES:

ALL DIMENSIONS SHALL BE VERIFIED WITH THE ARCHITECTS DRAWINGS ANY DISCREPANCIES SHALL BE RESOLVED PRIOR TO COMMENCING OF WORK.

1. D.F.P.T. PLATE TO BE SECURED WITH 1/2" DIAMETER BY 10" LONG ANCHOR BOLTS WITH A STANDARD CUT WASHER EMBEDDED AT LEAST 7" INTO CONCRETE WITH A MAXIMUM SPACING OF 72" O.C. THERE SHALL BE A MINIMUM OF TWO BOLTS PER PIECE OF FOUNDATION PLATE WITH ONE BOLT LOCATED WITHIN 12" MAX. & 4-1/2" MIN. OF EA. END OF EA. PIECE. **AT SHEAR WALLS** A PROPERLY SIZED NUT AND 3"x3"x.229" THICK WASHER SHALL BE TIGHTENED ON EA. BOLT TO THE PLATE, HOLE IN PLATE WASHER CAN BE DIAGONALLY SLOTTED W/ A WIDTH OF UP TO 3/16" LARGER THAN BOLT DIAMETER & A SLOT LENGTH NOT TO EXCEED 1 3/4", PROVIDED A STANDARD CUT WASHER IS PLACED BETWEEN THE PLATE WASHER & THE NUT. U.N.O. BY SUB LETTER 'C' WHEN A CUT WASHER IS OKAY.
2. ALL INTERIOR NON-SHEAR WALLS ARE TO BE SECURED WITH SHOT PINS INSTALLED PER MANUFACTURERS RECOMMENDATIONS, U.N.O. STRUCTURAL ENGINEERS CALCULATIONS GOVERN IN ALL CASES.
3. INSTALL ALL SIMPSON (OR APPROVED EQUAL) FOUNDATION HARDWARE PER MANUFACTURERS RECOMMENDATIONS. DEEPEN FOOTING WHERE NECESSARY TO PROVIDE ANCHOR EMBEDMENT AT HOLDOWN LOCATIONS.

NOTE:

WHEN REQUIRED BY LOCAL BUILDING DEPARTMENT ALL ANCHOR BOLTS AND HOLDOWN BOLTS TO BE SET IN PLACE PRIOR TO CITY FOUNDATION INSPECTION

SOIL INFORMATION:

1. FOUNDATION SIZES, DEPTHS, AND REINFORCEMENT ARE AS RECOMMENDED WITHIN THE OWNER/DEVELOPER'S SOILS ENGINEERS REPORT. SOILS ENGINEER TO PROVIDE FOUNDATION INSPECTION AS OUTLINED IN LATEST SOIL REPORT.
2. OWNER/DEVELOPER AND SUBCONTRACTORS ARE TO REVIEW THE SOILS REPORT PRIOR TO COMMENCING CONSTRUCTION. IT IS THE RESPONSIBILITY OF THE OWNER, DEVELOPER AND SUBCONTRACTOR TO VERIFY THAT THE REPORT IS CURRENT AND PLAN REQUIREMENTS ARE CONSISTENT WITH ANY UPDATED SOIL REPORTS. ESI/FME IS TO BE SUPPLIED WITH ALL UPDATED REPORTS.

INDICATES GRADE BEAM

INDICATES RETAINING WALL

ANCHOR BOLT LEGEND:

* AB32 : 1/2" DIA. X 10" ANCHOR BOLTS AT 32" O.C.
AB24 : 1/2" DIA. X 10" ANCHOR BOLTS AT 24" O.C.
AB# : 1/2" DIA. X 10" ANCHOR BOLTS AT #" O.C.
2AB : (2) 1/2" DIA X 10" ANCHOR BOLTS.
3AB : (3) 1/2" DIA X 10" ANCHOR BOLTS.
#AB : (#) 1/2" DIA X 10" ANCHOR BOLTS.
#ABc : c DENOTES STANDARD CUT WASHERS OKAY IN LIEU OF 3" SQ. ONLY REQUIRED.
2-#4 : PROVIDE A TOTAL OF 2 #4 AT TOP AND 2 #4 AT BOTTOM OF FOOTING, 4' PAST POSTS.
3-#4 : PROVIDE A TOTAL OF 3 #4 AT TOP AND 3 #4 AT BOTTOM OF FOOTING, 4' PAST POSTS.
2-#5 : PROVIDE A TOTAL OF 2-#5 AT TOP AND 2-#5 AT BOTTOM OF FOOTING, 6' PAST POSTS.
HDU2 : (1) SIMPSON HDU2 PER POST.
HDU# : (1) SIMPSON HDU# PER POST.
HTT4 : (1) SIMPSON HTT4 PER POST.
HTT5 : (1) SIMPSON HTT5 PER POST.
PHD6 : (1) SIMPSON PHD6 PER POST.
HD8A : (1) SIMPSON HD8A PER POST.
HD10A : (1) SIMPSON HD10A PER POST.
HD14A : (1) SIMPSON HD14A PER POST.
HDQ8 : (1) SIMPSON HDQ8-SDS3 PER POST.
HHDQ11 : (1) SIMPSON HHDQ11-SDS2.5 PER POST.
HHDQ14 : (1) SIMPSON HHDQ14-SDS2.5 PER POST.

REFER TO ARCHITECTURAL PLANS FOR ALL DIMENSIONS

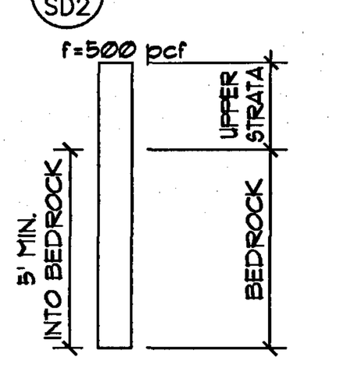
* ALT. TO ½"ø ANCHOR BOLTS SIMPSON MASA AT A 1-1 RATIO

ALL GRADE BEAMS 8"X22½" THICK w/ 2-#5 TOP & BOTTOM, U.N.O. w/ #3 TIES @ 12" O.C., U.N.O.

ALL PIERS TYPE A UNLESS NOTED OTHERWISE (U.N.O.)

PIER SCHEDULE			
TYPE	DEPTH INTO BEDROCK	CAPACITY	VERT. REINF.
A	5'-0"	11,775 #	(5)#6
B	8'-0"	18,840 #	(4)#8

SEE 31/SD2 FOR TYP. CONN.



- ALL PIERS TO BE INTERCONNECTED WITH GRADE BEAMS

PIERS:
16" ø PIER w/ #3 TIES AT 12" o/c PIERS SHALL PENETRATE AT LEAST 5'-0" INTO BEDROCK & A MIN. OF 10' BELOW THE LOWEST ADJACENT GRADE AS IDENTIFIED BY THE SOILS ENGINEER DURING CONSTRUCTION (SEE SOILS REPORT FOR MORE RECOMMENDATIONS.)

THE EXCAVATION OF ALL DRILLED SHAFTS SHOULD BE OBSERVED BY A CORNERSTONE REPRESENTATIVE TO CONFIRM THE SOIL PROFILE, VERIFY THAT THE PIERS EXTEND THE MINIMUM DEPTH INTO SUITABLE MATERIALS AND THAT THE PIERS ARE CONSTRUCTED IN ACCORDANCE WITH OUR RECOMMENDATIONS AND PROJECT REQUIREMENTS. THE DRILLED SHAFTS SHOULD BE STRAIGHT, DRY, AND RELATIVELY FREE OF LOOSE MATERIAL BEFORE REINFORCING STEEL IS INSTALLED AND CONCRETE IS PLACED. IF GROUND WATER CANNOT BE REMOVED FROM THE EXCAVATIONS PRIOR TO CONCRETE PLACEMENT, DRILLING SLURRY OR CASING MAY BE REQUIRED TO STABILIZE THE SHAFT AND THE CONCRETE SHOULD BE PLACED USING A TREMIE PIPE, KEEPING THE TREMIE PIPE BELOW THE SURFACE OF THE CONCRETE TO AVOID ENTRAPMENT OF WATER OR DRILLING SLURRY IN THE CONCRETE.

INDICATES 24"ø CAISSONS w/ 10-#8 VERT. BARS MIN. 13' INTO BEDROCK.

INDICATES RETAINING WALL

SEE SHEET S9-3 FOR FRAMING NOTES

REVISIONS

ESI/FME, INC.
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JN-C169 01/04/2017

FLOOR FRAMING PLAN
LOT 9

" HIGHLAND ESTATES "
LOT 9
SAN MATEO COUNTY, CA.
THE CHAMBERLAIN GROUP - MGA

REGISTERED PROFESSIONAL ENGINEER
DALE LOREN FORBES
C 30407
CIVIL
STATE OF CALIFORNIA

REVIEWED FOR CODE COMPLIANCE
This review does not authorize violation of State or County building laws.
NOV 1 ? 2019
SAN MATEO CO. BLDG. INSP. DIV

RESUBMITTAL
San Mateo County
Building Inspection

DRAWN
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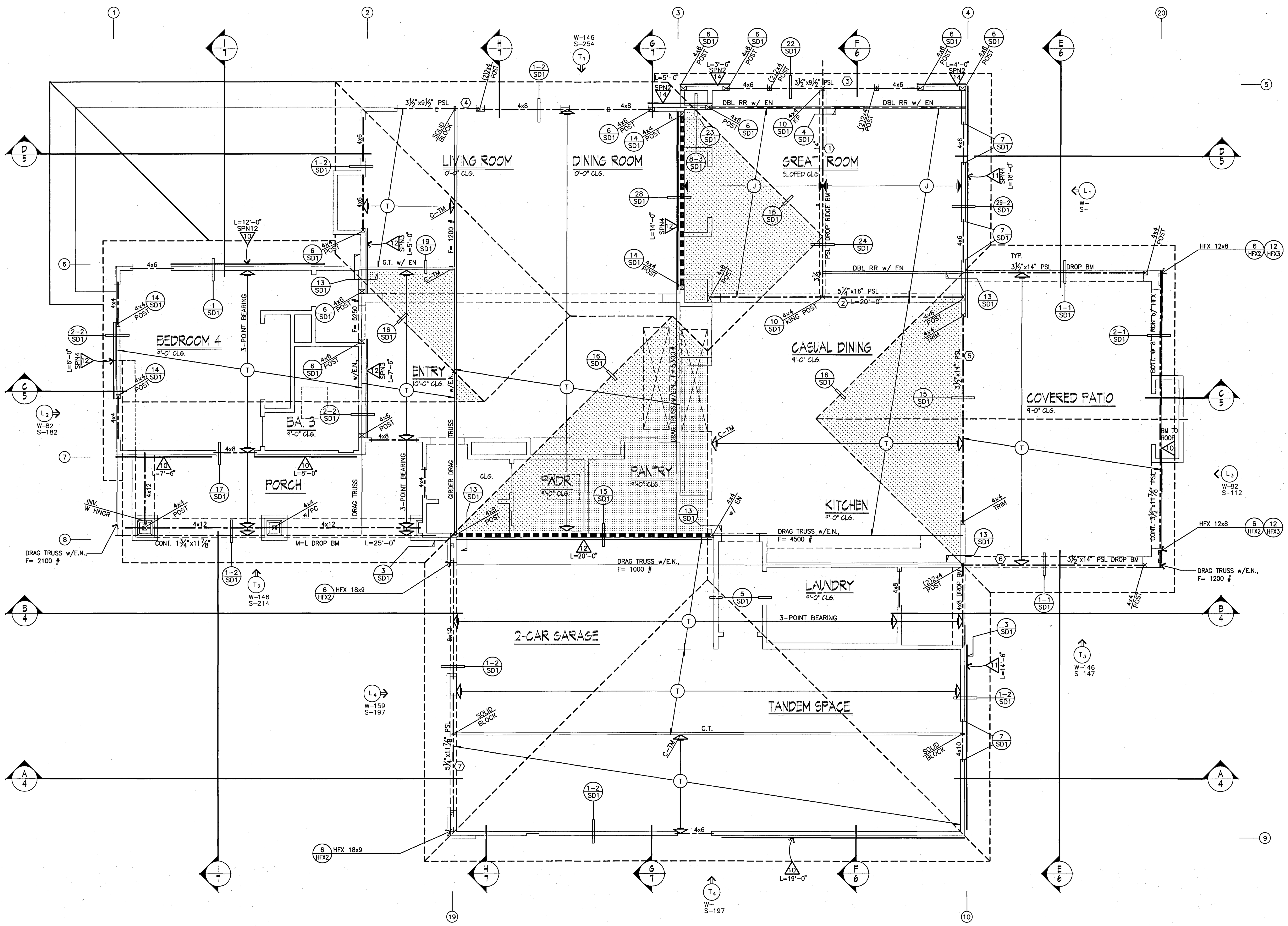
CHECKED
-
PLOT DATE
01/04/2017
JOB NO.
C169
SHEET
S9-2
SHEET: 3 OF: 6



ROOF FRAMING PLAN

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

LATERAL SHEAR NOTES:

(2013 CBC, SDPWS-2008 ; SEISMIC DESIGN CATEGORY D & E)
{ TABLE 4.3A, AFPA SDPWS-2008 }

VERTICAL: (FRAMING MEMBERS DOUGLAS FIR-LARCH AT 16" O.C)

10. 3/8" WOOD STRUCTURAL PANEL WITH 8d COMMON NAILS AT 6" O.C AT EDGES AND 12" O.C AT FIELD .... 260 PLF
11. 3/8" WOOD STRUCTURAL PANEL WITH 8d COMMON NAILS AT 4" O.C AT EDGES AND 12" O.C AT FIELD .... 350 PLF
12. 3/8" WOOD STRUCTURAL PANEL WITH 8d COMMON NAILS AT 3" O.C AT EDGES AND 12" O.C AT FIELD .... 490 PLF
13. 3/8" WOOD STRUCTURAL PANEL WITH 8d COMMON NAILS AT 2" O.C AT EDGES AND 12" O.C AT FIELD .... 640 PLF
14. 1/2"(OR 15/32) WOOD STRUCTURAL PANEL WITH 10d COMMON NAILS AT 2" O.C AT EDGES AND 12" O.C AT FIELD .... 770 PLF
15. 1/2"(OR 15/32) STRUCT. I WOOD PANEL WITH 10d COMMON NAILS AT 2" O.C AT EDGES AND 12" O.C AT FIELD .... 870 PLF

HORIZONTAL: (3/8" @ CEILING LIDS, 15/32" @ ROOF SHT'G) (FRAMING MEMBERS DOUGLAS FIR-LARCH AT 24" O.C)
(3/8" PANEL VALUES AND NAILING BELOW MAY BE USED FOR 15/32" PANELS)

20. BLOCKED PLYWOOD DIAPHRAGM WITH 3/8" WOOD STRUCTURAL PANEL AND 8d COMMON NAILS AT 6" O.C AT BOUNDARIES, 6" O.C. AT EDGES AND 10" O.C AT FIELD .... 240 PLF
21. BLOCKED PLYWOOD DIAPHRAGM WITH 3/8" WOOD STRUCTURAL PANEL AND 8d COMMON NAILS AT 4" O.C AT BOUNDARIES, 6" O.C. AT EDGES AND 10" O.C AT FIELD .... 320 PLF
22. BLOCKED PLYWOOD DIAPHRAGM WITH 3/8" WOOD STRUCTURAL PANEL AND 8d COMMON NAILS AT 2.5" O.C STAGG. AT BOUNDARIES, 4" O.C. AT EDGES AND 10" O.C AT FIELD .... 480 PLF
23. BLOCKED PLYWOOD DIAPHRAGM WITH 3/8" WOOD STRUCTURAL PANEL AND 8d COMMON NAILS AT 2" O.C STAGG. AT BOUNDARIES, 3" O.C. AT EDGES AND 10" O.C AT FIELD .... 545 PLF

HORIZONTAL: (FRAMING MEMBERS DOUGLAS FIR-LARCH AT 16" O.C)

24. BLOCKED PLYWOOD DIAPHRAGM WITH 19/32" WOOD STRUCTURAL PANEL AND 10d COMMON NAILS AT 6" O.C AT BOUNDARIES, 6" O.C. AT EDGES AND 10" O.C AT FIELD .... 320 PLF
25. BLOCKED PLYWOOD DIAPHRAGM WITH 19/32" WOOD STRUCTURAL PANEL AND 10d COMMON NAILS AT 4" O.C AT BOUNDARIES, 6" O.C. AT EDGES AND 10" O.C AT FIELD .... 425 PLF
26. BLOCKED PLYWOOD DIAPHRAGM WITH 19/32" WOOD STRUCTURAL PANEL AND 10d COMMON NAILS AT 2.5" O.C STAGG. AT BOUNDARIES, 4" O.C. AT EDGES AND 10" O.C AT FIELD .... 640 PLF
27. BLOCKED PLYWOOD DIAPHRAGM WITH 19/32" WOOD STRUCTURAL PANEL AND 10d COMMON NAILS AT 2" O.C STAGG. AT BOUNDARIES, 3" O.C. AT EDGES AND 10" O.C AT FIELD .... 730 PLF

NOTES:

A. WOOD STRUCTURAL PANEL: MATERIAL APPROVED BY APA, PFS/TECO OR PITTSBURG TESTING LABORATORIES THESE VALUES ARE FOR DOUG-FIR LARCH OR SOUTHERN PINE, OTHER LUMBER SPECIES MAY DIFFER IN SHEAR CAPACITIES.
B. PROVIDE 2X BLOCKING AT HORIZONTAL WOOD STRUCTURAL PANEL PANEL JOINTS. FRAMING AT ADJOINING PANEL EDGES SHALL BE 3X WHEN NAILING IS 2.5" O.C. OR LESS.
C. WHERE WOOD STRUCTURAL PANEL IS APPLIED ON BOTH FACES OF WALL AND NAIL SPACING IS LESS THAN 6" O.C, PANEL JOINTS SHALL BE OFFSET TO FALL ON DIFFERENT FRAMING MEMBERS OR FRAMING SHALL BE 3X OR WIDER AND NAILS STAGGERED ON EACH SIDE.
D. FOR SHEAR WALLS 12 TO 15 USE THE FOLLOWING:
   1) USE 3x MEMBER @ PANEL JOINTS & HORIZONTAL BLOCKING
   2) EDGE NAILING SHALL BE STAGGERED
E. 10d SHORT BOX NAILS MAY BE USED IN LIEU OF 8d COMMON NAILS @ SHEAR WALLS ONLY.
F. REQUIRED PLATE WASHERS AT SHEAR WALLS TO BE: 3" x 3" x .229" STEEL PLATE U.N.O. WITH SUB SCRIPT c WHERE STANDARD CUT WASHERS ARE OKAY (SDPWS SECT. 4.3.6.4.3) WASHER MAY BE SLOT CUT PROVIDED A STANDARD CUT WASHER IS PROVIDED BETWEEN THE WASHER AND NUT. WASHER TO BE INSTALLED WITHIN 1/2" OF SHEATHED SIDE OF PLATE.
G. A STANDARD CUT WASHER MAY BE USED AT ALL NON-SHEAR WALL LOCATIONS WITH ANCHOR BOLTS.

HORIZONTAL:
ALL ROOF AND FLOOR SHEATHING TO BE EXPOSURE I OR EXTERIOR (TABLE 2306.2.1)

ROOF: JOIST SPACING EQUAL TO OR LESS THAN 24" O.C: 15/32" WOOD STRUCTURAL PANEL PII 32/16, WITH 8d's AT 6" O.C AT EDGES AND BOUNDARIES, 12" O.C FIELD.
HORIZONTAL DIAPHRAGM VALUES FOR 3/8" WOOD STRUCTURAL PANELS MAY BE USED FOR 15/32" WOOD STRUCTURAL PANELS. U.N.O.

FLOOR: * JOIST SPACING EQUAL TO OR LESS THAN 16" O.C: 19/32" WOOD STRUCTURAL PANEL T&G SHTG, PII 32/16, w/10d's AT 6" O.C AT EDGES AND BOUNDARIES, 12" O.C FIELD.
JOIST SPACING EQUAL TO OR LESS THAN 20" O.C: 19/32" WOOD STRUCTURAL PANEL T&G SHTG, PII 40/20, w/10d's AT 6" O.C AT EDGES AND BOUNDARIES, 12" O.C FIELD.
JOIST SPACING EQUAL TO OR LESS THAN 24" O.C: 23/32" WOOD STRUCTURAL PANEL T&G SHTG, PII 48/24, w/10d's AT 6" O.C AT EDGES AND BOUNDARIES, 12" O.C FIELD.

* PANEL EDGES SHALL HAVE APPROVED T&G JOINTS OR SHALL BE SUPPORTED WITH BLOCKING NOT REQUIRED WHEN LIGHTWEIGHT CONCRETE IS PLACED OVER SUBFLOOR.

FRAMING LEGEND:

- INDICATES SPAN AND DIRECTION OF ROOF JOISTS AND RAFTERS
- INDICATES SPAN AND DIRECTION OF TRUSSES
- INDICATES SPAN AND DIRECTION OF FLOOR JOISTS
- INDICATES SPAN AND DIRECTION OF CEILING JOISTS
- INDICATES SPAN AND DIRECTION OF DECK JOISTS (SLOPED AS REQUIRED)

A 2X6 AT 12" O.C
B 2X6 AT 16" O.C
C 2X6 AT 24" O.C
D 2X8 AT 12" O.C
E 2X8 AT 16" O.C
F 2X8 AT 24" O.C
G 2X10 AT 12" O.C
H 2X10 AT 16" O.C
J 2X10 AT 24" O.C
K (2)2X10 AT 16" O.C
L 2X12 AT 12" O.C
M 2X12 AT 16" O.C
N 2X12 AT 24" O.C
P (2)2X12 AT 16" O.C
T TRUSS AT 24" O.C

I-JOIST TABLE

MARK	SPACING	SIZE & MANUFACTURER OPTIONS
Q-	I-JOIST @ 12" O.C.	a) 9 1/2" TJI / 210
R-	I-JOIST @ 16" O.C.	b) –
S-	I-JOIST @ 19.2" O.C.	c) – d) –
U-	I-JOIST @ 12" O.C.	a) 11 7/8" TJI / 210
V-	I-JOIST @ 16" O.C.	b) –
W-	I-JOIST @ 19.2" O.C.	c) – d) –
X-	I-JOIST @ 12" O.C.	a) 14" TJI / 230
Y-	I-JOIST @ 16" O.C.	b) –
Z-	I-JOIST @ 19.2" O.C.	c) – d) –

M=L INDICATES (1) 1 3/4" x DEPTH OF JOIST MICROLAM LVL 1.9 E
PSL INDICATES PARALLAM PSL 2.0 E
TSR INDICATES 1 1/2" BY DEPTH OF JOIST TIMBERSTRAND RIM
E.N. INDICATES EDGE NAILING @ 6" O.C.
G.T. GIRDER TRUSS
C-TM INDICATES CONNECTION BY TRUSS MANUFACTURER
⟨#⟩ HEADERS AND BEAMS, REFER TO ENGINEERING CALCS.
■ ■ ■ INDICATES INTERIOR BEARING WALL

NOTE: APPLY SHEAR PRIOR TO FRAMING OF PERPENDICULAR WALL AND/OR BOX-OUTS. (WHERE APPLICABLE)

FRAMING NOTES LEGEND

MARK:	DESCRIPTION
SPN12:	16d SOLE PLATE NAILING @ 12" O.C.
SPN10:	16d SOLE PLATE NAILING @ 10" O.C.
SPN8:	16d SOLE PLATE NAILING @ 8" O.C.
SPN6:	16d SOLE PLATE NAILING @ 6" O.C.
SPN4:	16d SOLE PLATE NAILING @ 4" O.C.
SPN3:	16d SOLE PLATE NAILING @ 3" O.C.
SPN2:	16d SOLE PLATE NAILING @ 2" O.C.
SCR3:	1/4" x 4 1/2" SDS SCREWS @ 3" O.C.

CEILING JOIST SCHEDULE

SIZE	SPACING	SPAN GRADE NO 2
2x4	12" O.C.	9'-1"
	16" O.C.	8'-4"
	24" O.C.	7'-2"
2x6	12" O.C.	14'-6"
	16" O.C.	13'-4"
	24" O.C.	11'-6"
2x8	12" O.C.	20'-4"
	16" O.C.	18'-3"
	24" O.C.	16-'1"

1. AT GABLE END WALLS IF PLY SHEAR IS RUN UP TO AND NAILED TO BOT. CHORD OF TRUSS -OK TO OMIT A35's AND PLATE SPICE NAILING
2. AT EXT WALLS IF PLY SHEAR IS RUN UP TO AND NAILED TO T.S.R. -OK TO OMIT A35's AND PLATE SPICE NAILING AND 2ND FLOOR SPECIAL SILL PLATE NAILING, BUT ADD ST6224 AT EACH RIM SPLICE.

REVIEWED FOR CODE COMPLIANCE
SAN MATEO CO. BLDG. INSP. DIV.

RESUBMITTAL
San Mateo County
Building Inspection

REVISIONS

ESI/FME, INC.
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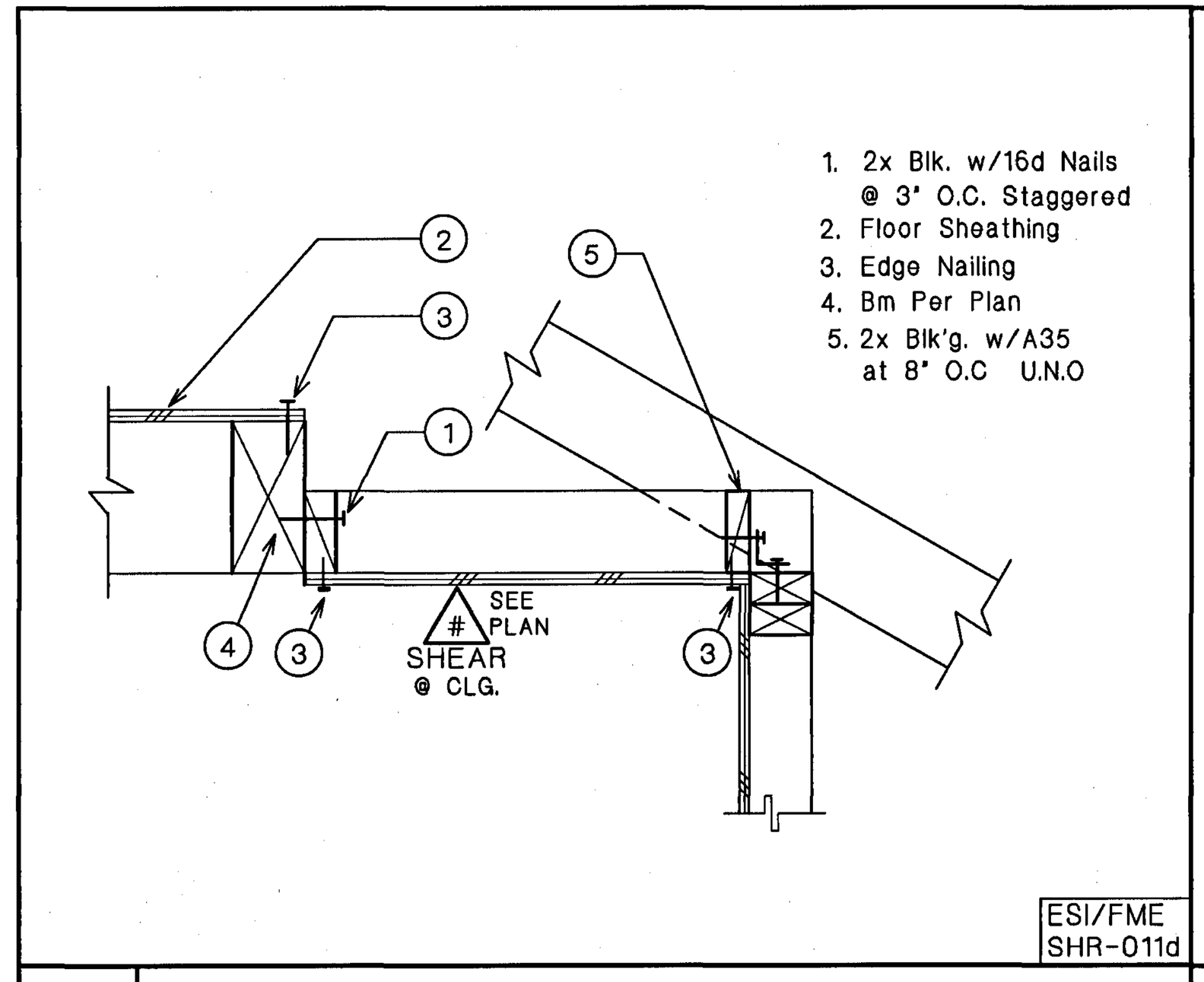
JN.-C169 01/04/2017

ROOF FRAMING PLAN
LOT 9

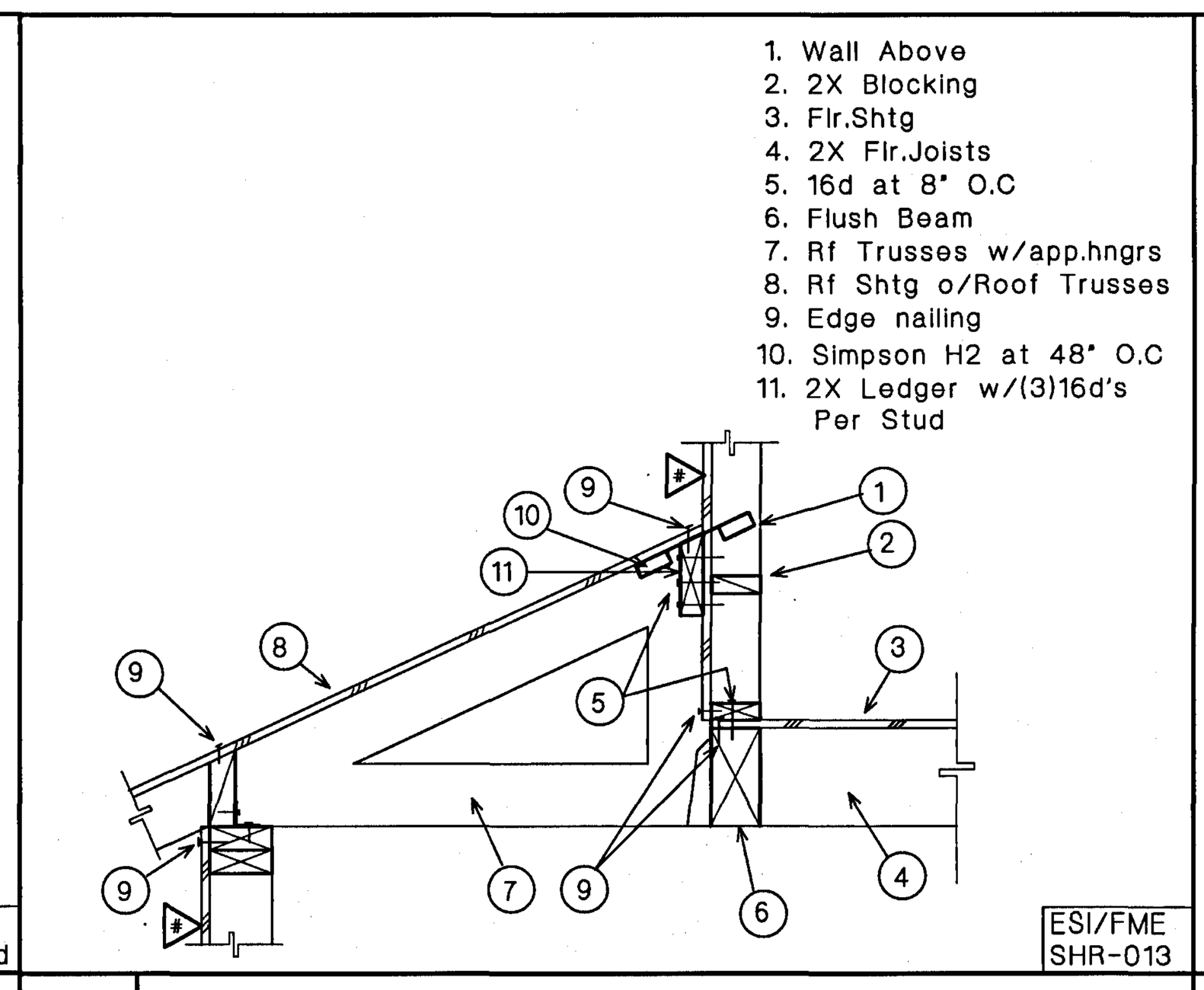
" HIGHLAND ESTATES "
LOT 9
SAN MATEO COUNTY, CA.
THE CHAMBERLAIN GROUP - MGA

REVIEWED FOR CODE COMPLIANCE
NOV 1 3 2019
SAN MATEO CO. BLDG. INSP. DIV.

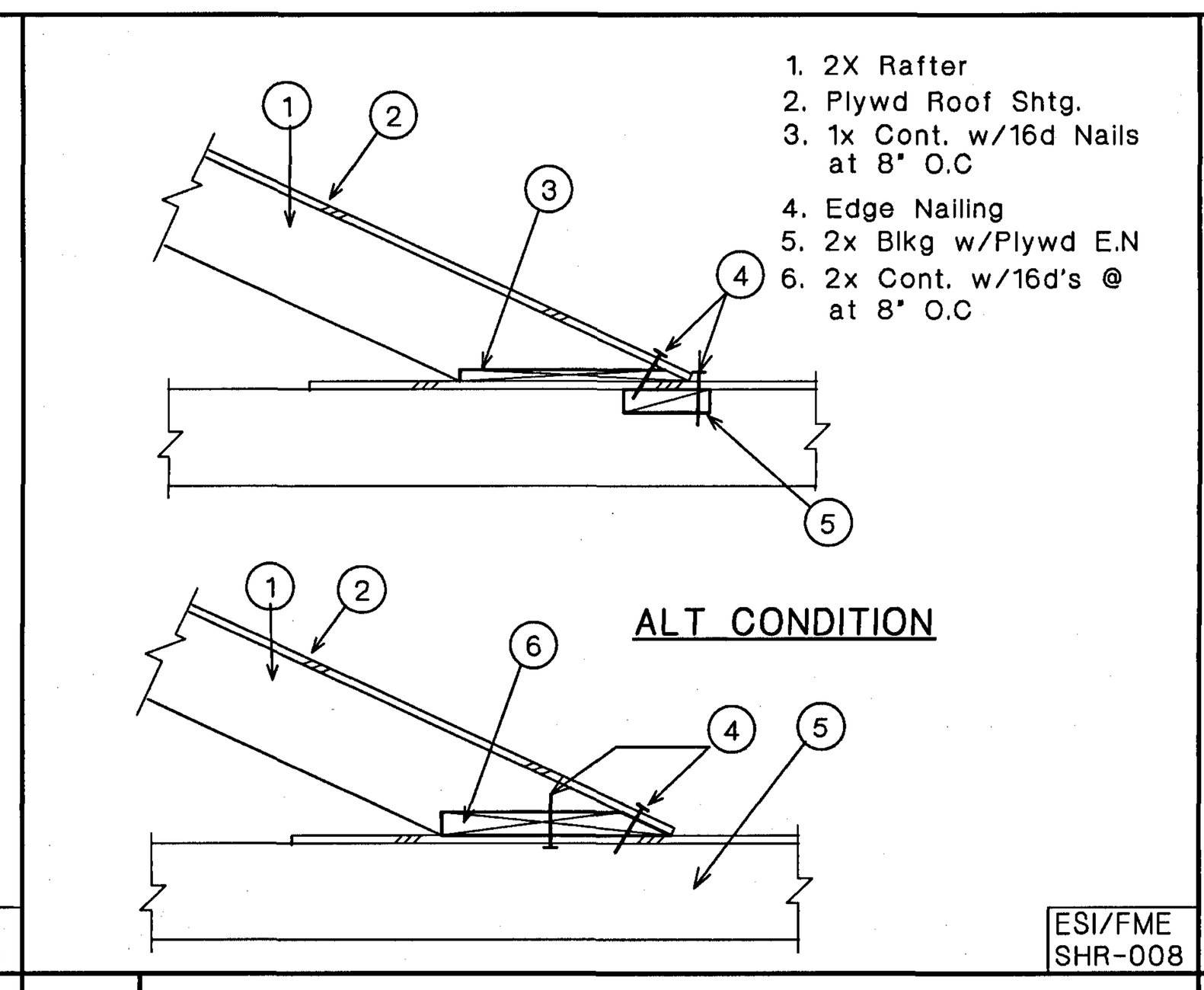
DRAWN
CHECKED
PLOT DATE 01/04/2017
JOB NO. C169
SHEET
S9-3
SHEET: 4 OF: 6



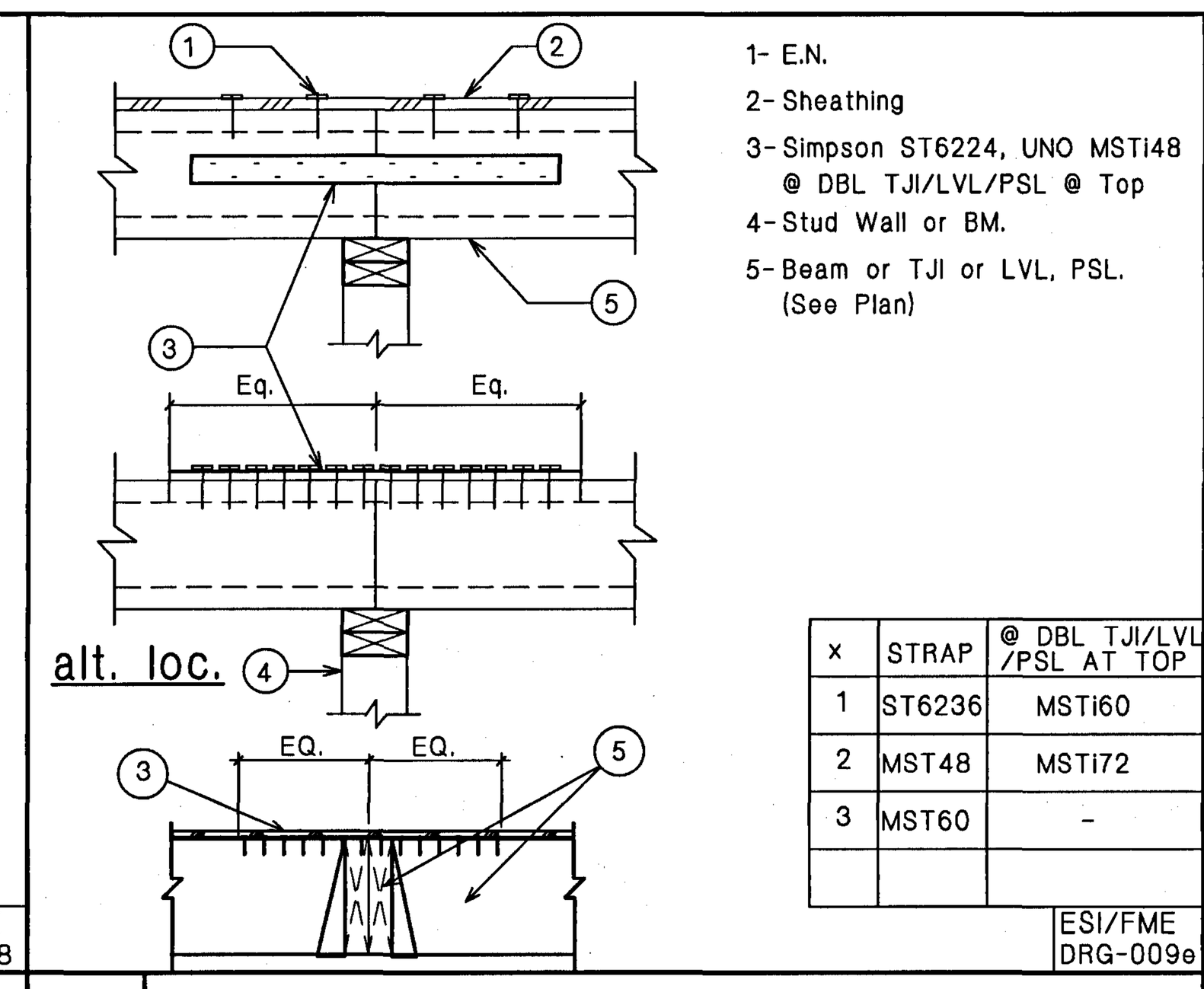
26 SHEAR TRANSFER



21 SHEAR TRANSFER

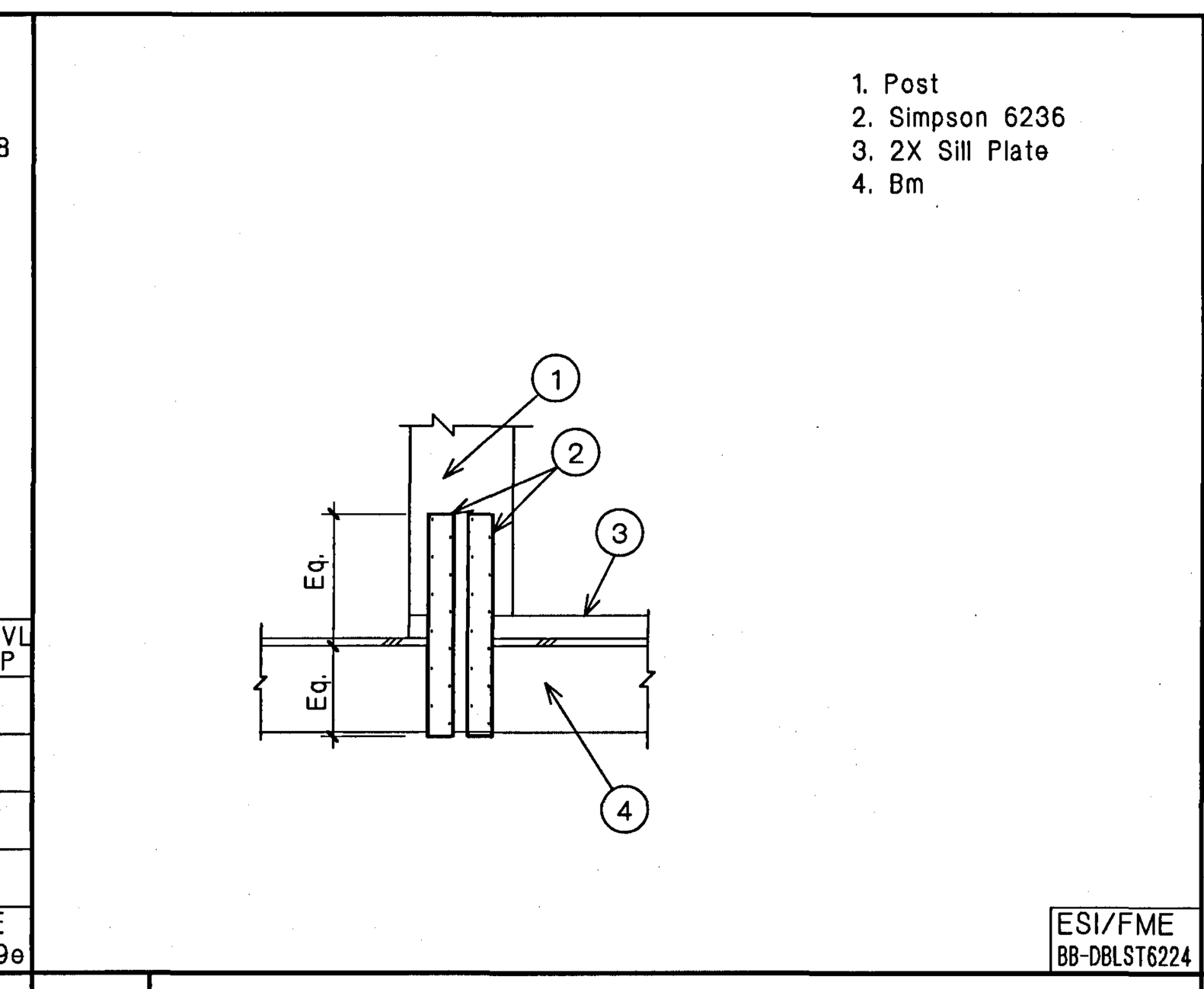


16 SHEAR TRANSFER

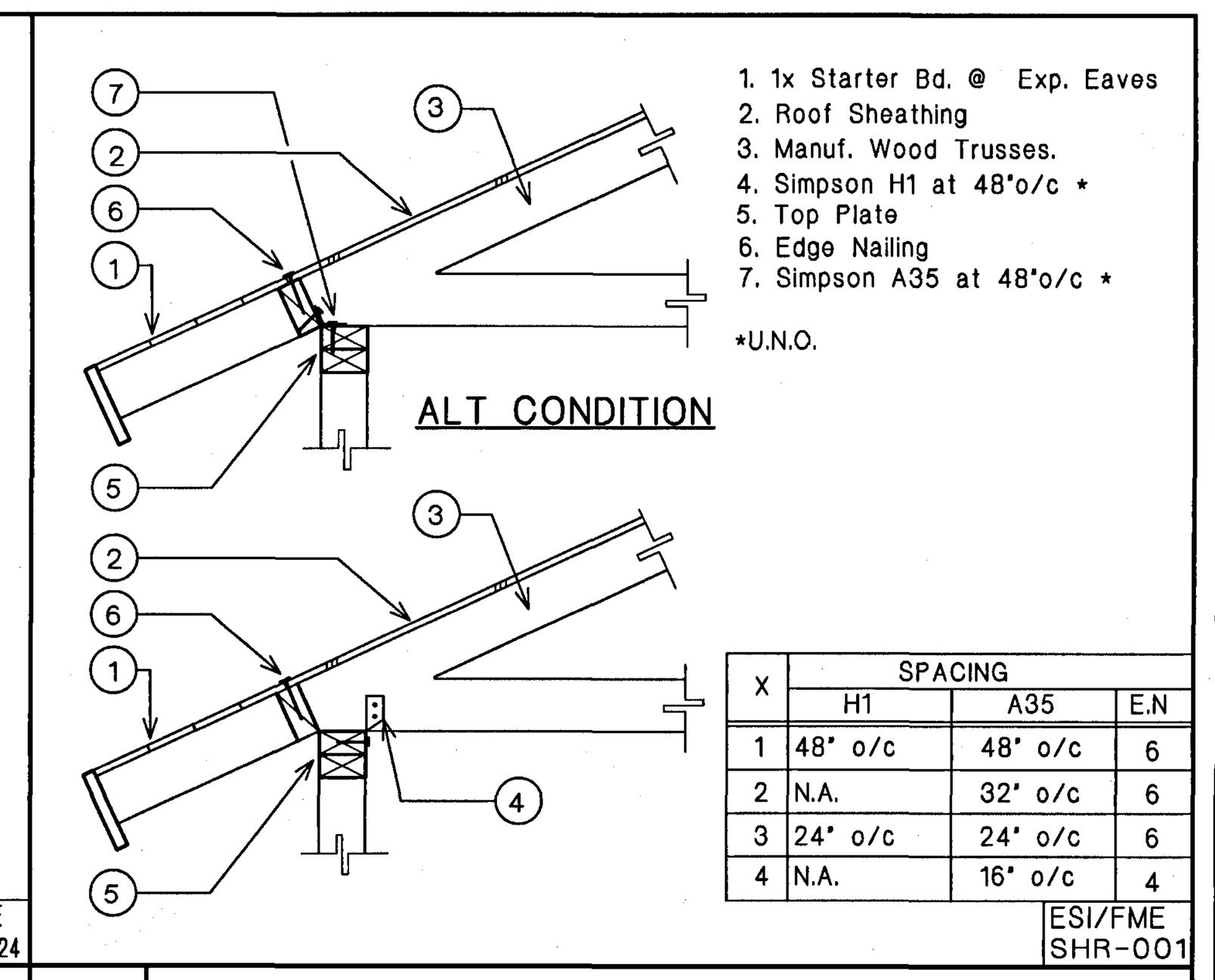


X	STRAP	@ DBL TJI/LVL /PSL AT TOP
1	ST6236	MSTI60
2	MST48	MSTI72
3	MST60	-

11 JOIST DRAG STRUT

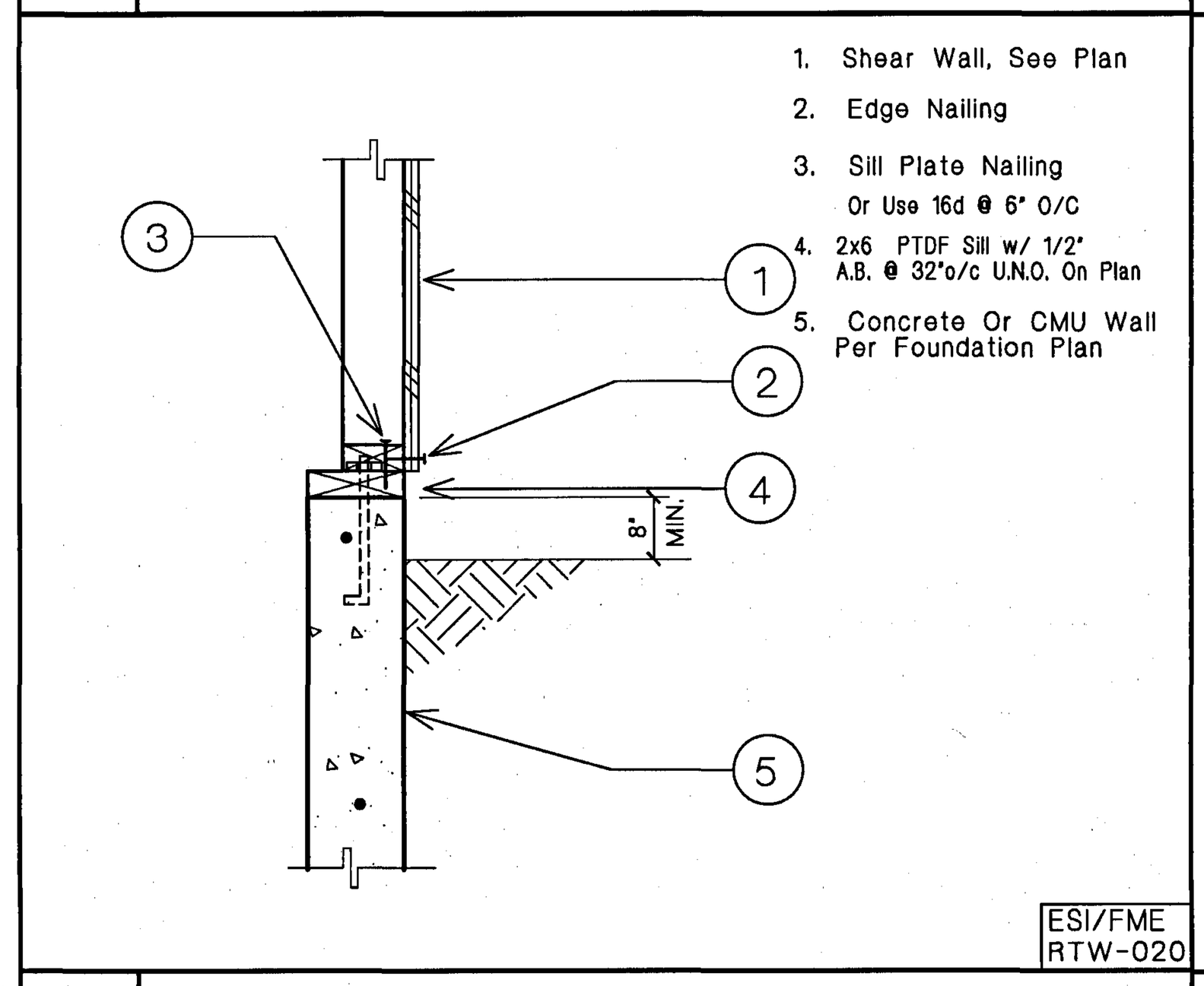


6 TIE DOWN CONNECTION

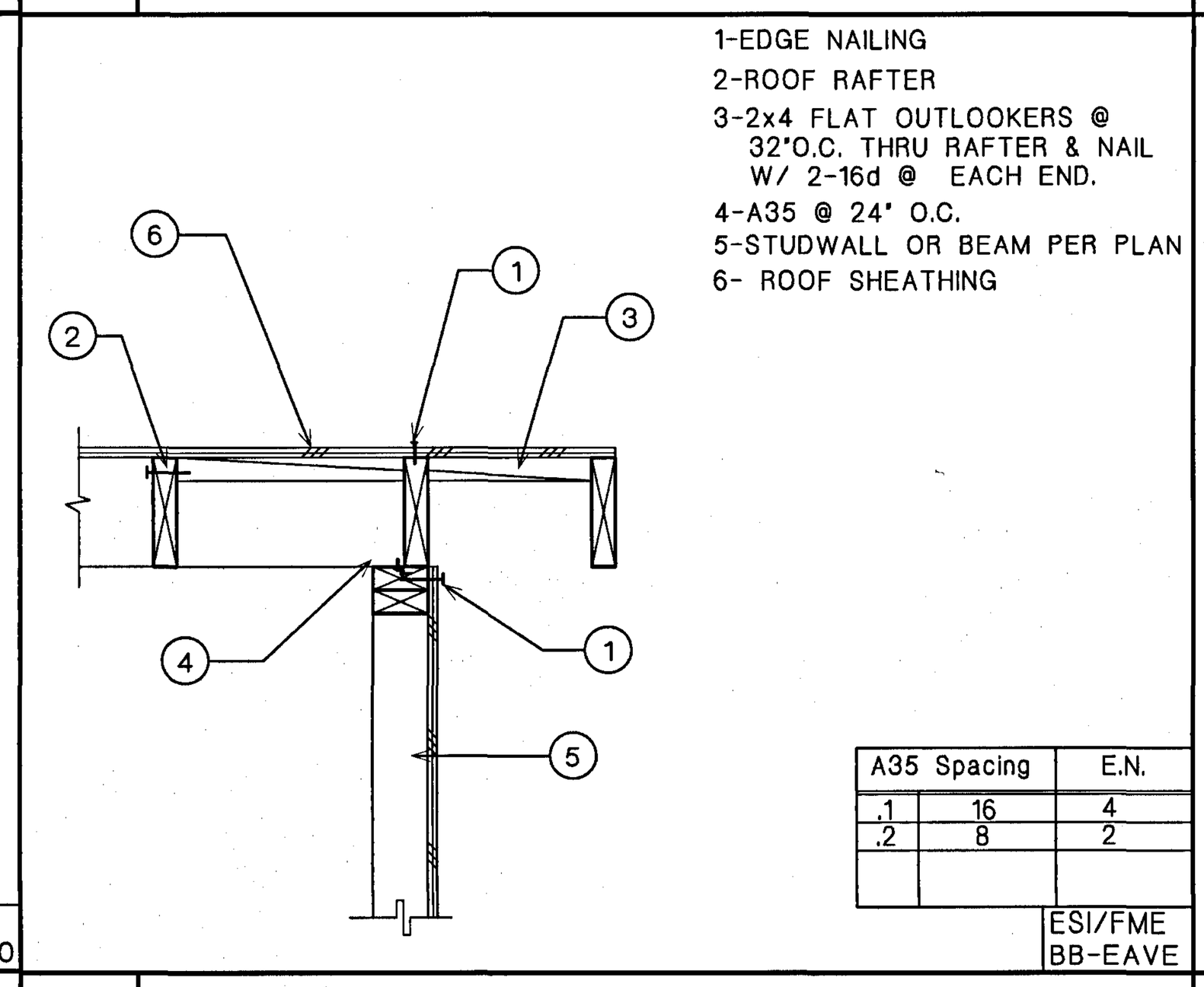


X	SPACING H1	A35	E.N
1	48" o/c	48" o/c	6
2	N.A.	32" o/c	6
3	24" o/c	24" o/c	6
4	N.A.	16" o/c	4

1 EAVE TRUSS SHEAR CONNECTION

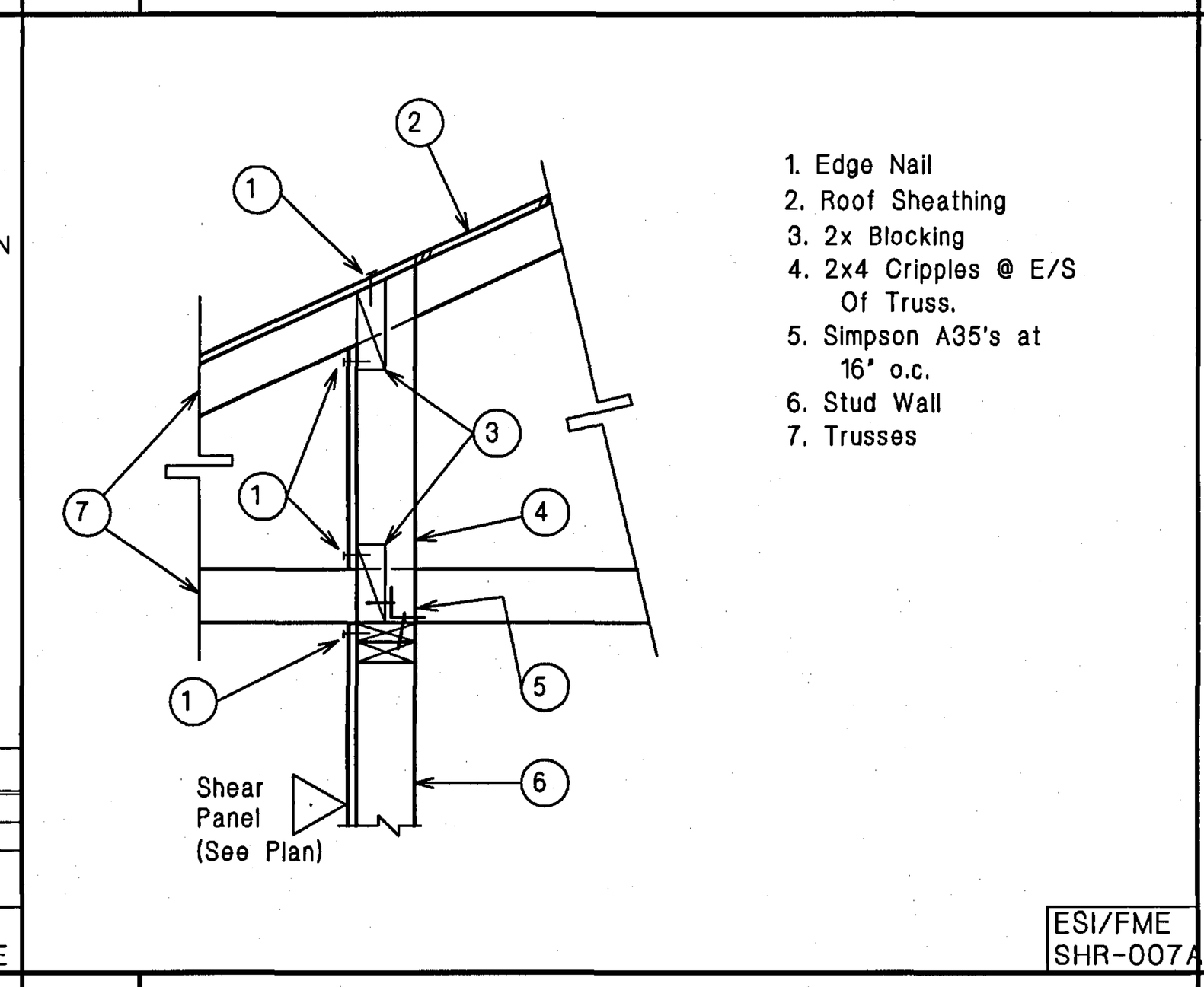


24 WALL @ CONC OR CMU WALL

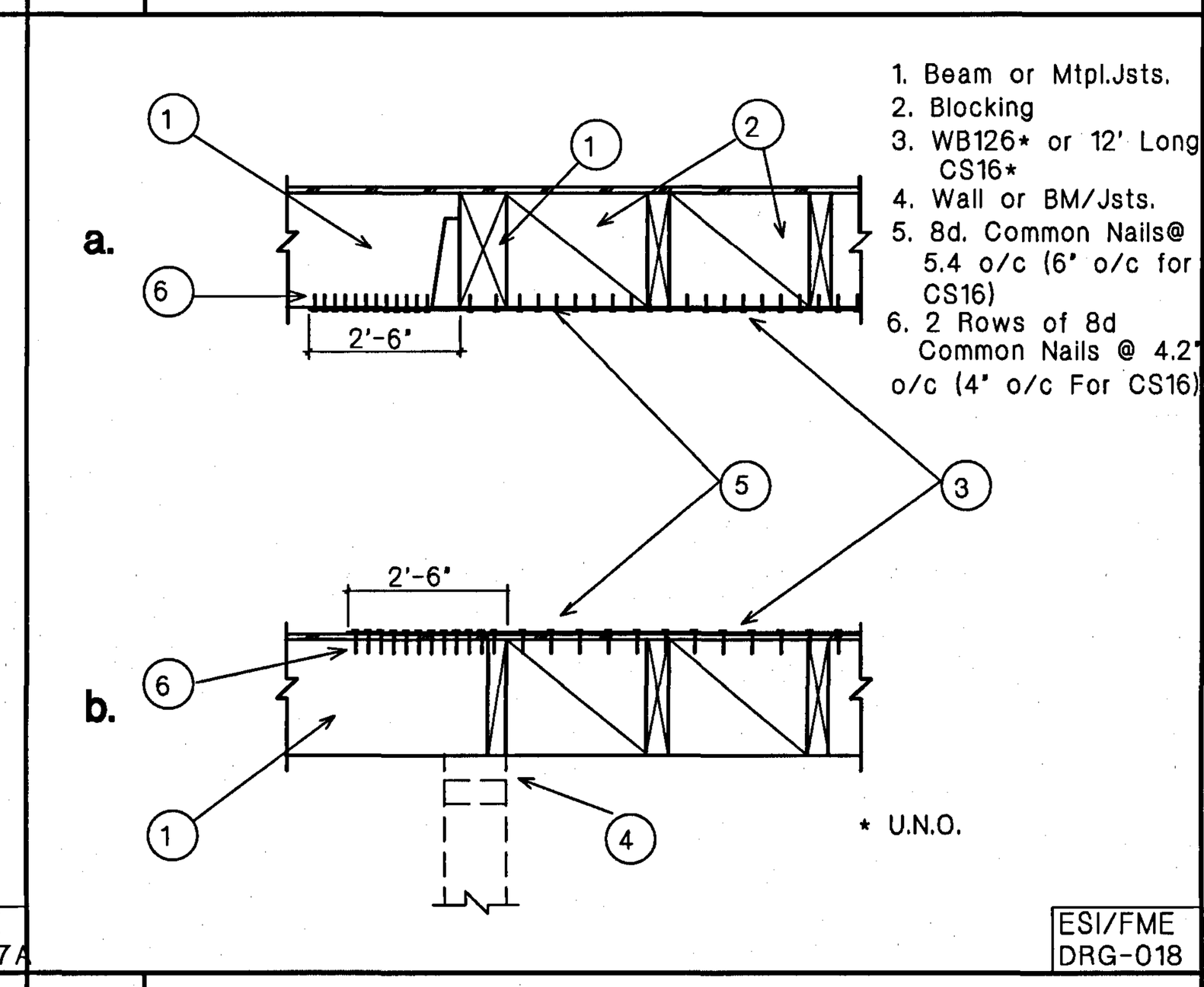


A35 Spacing		E.N.
.1	16	4
.2	8	2

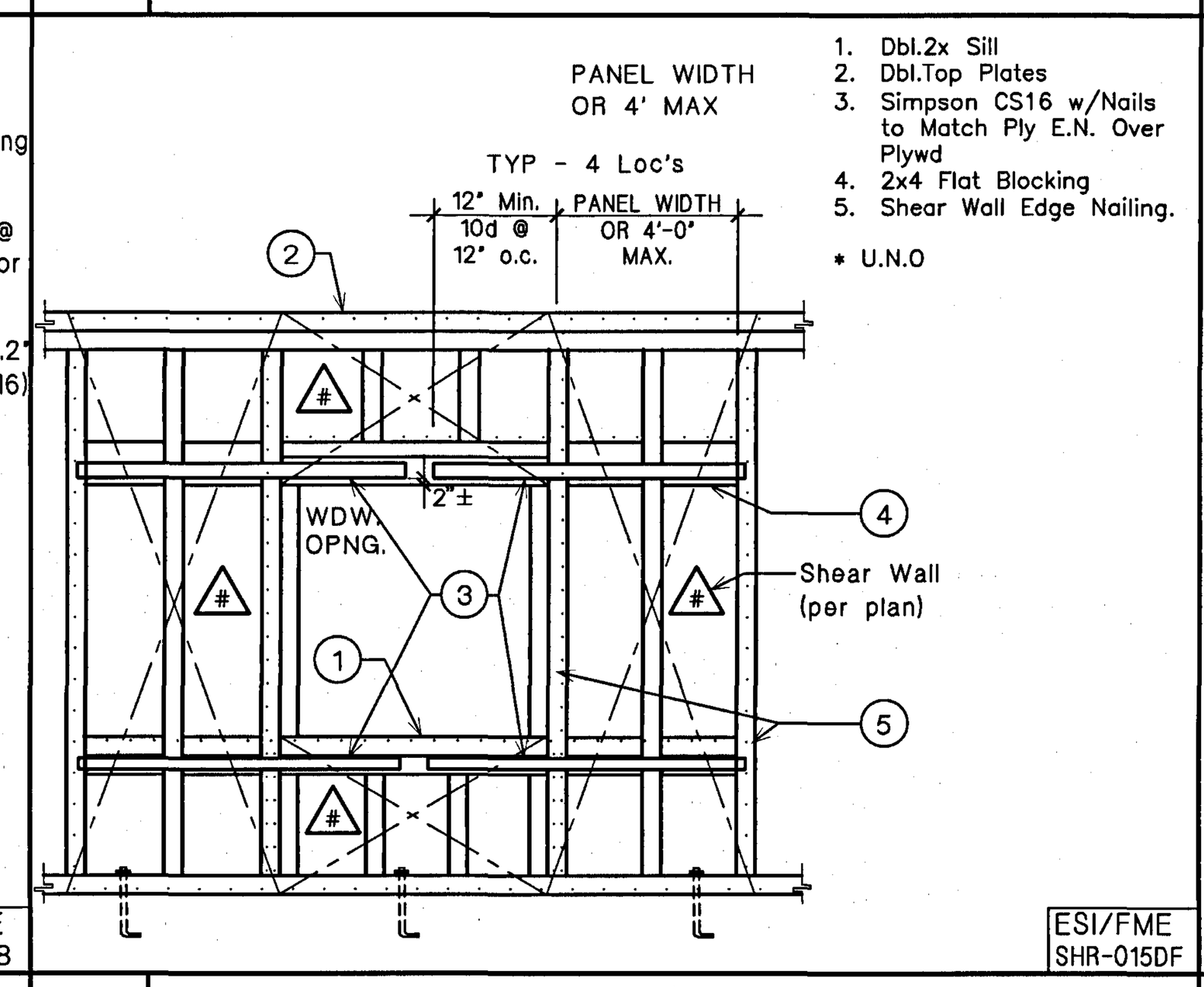
22 SHEAR TRANSFER



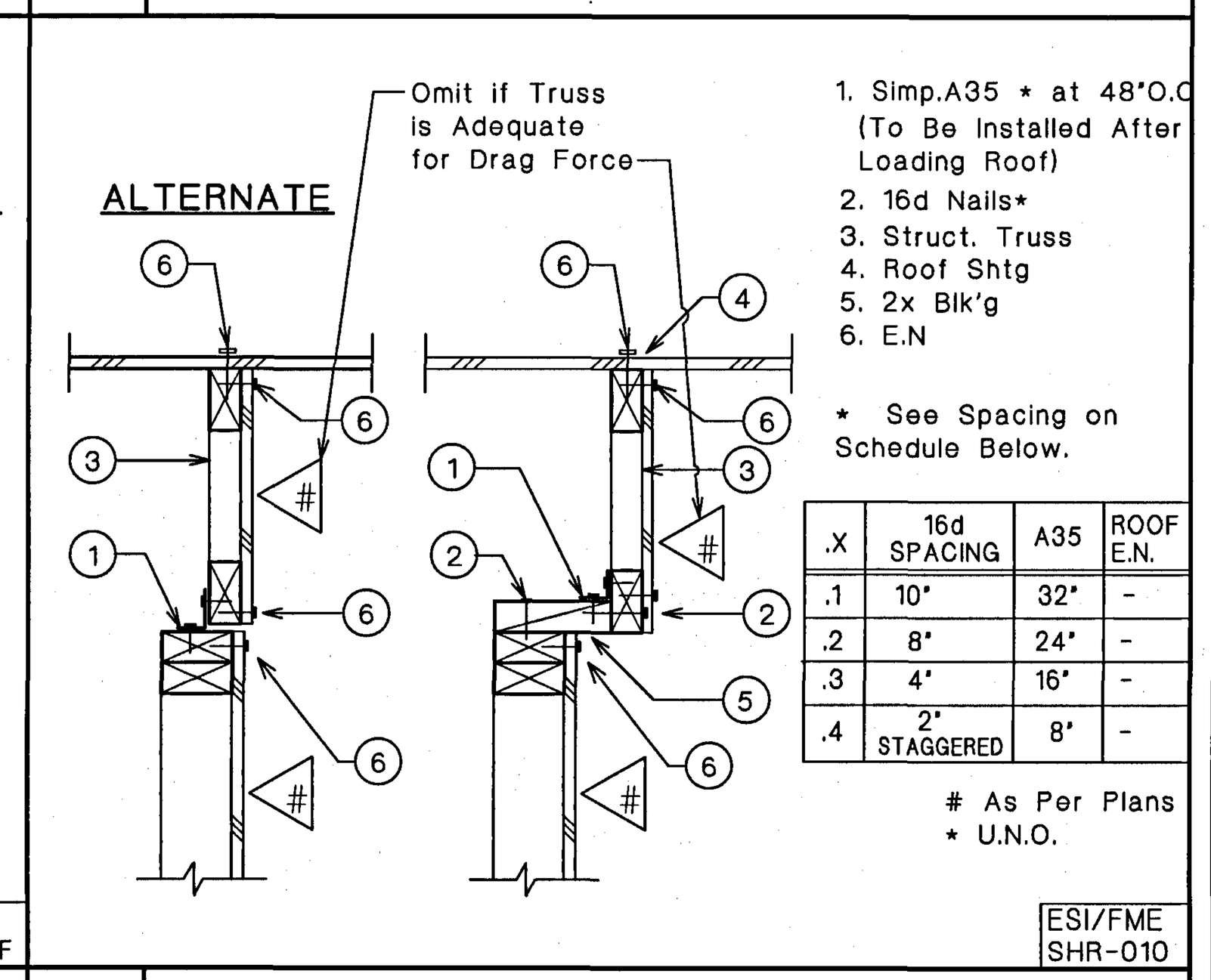
17 SHEAR TRANSFER



12 INTERRUPTED DRAGS

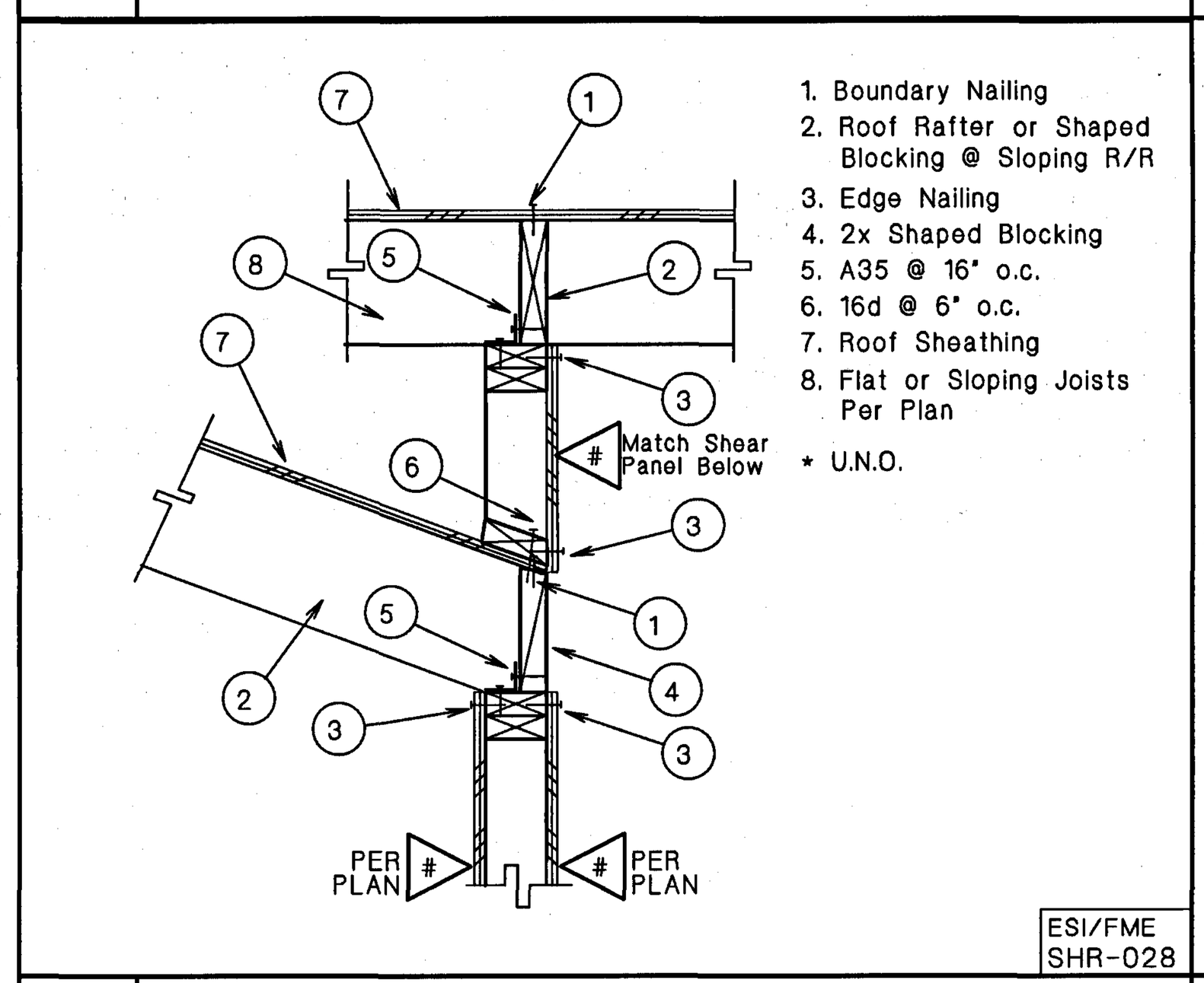


7 SPECIAL SHEAR AT WINDOW OPENING

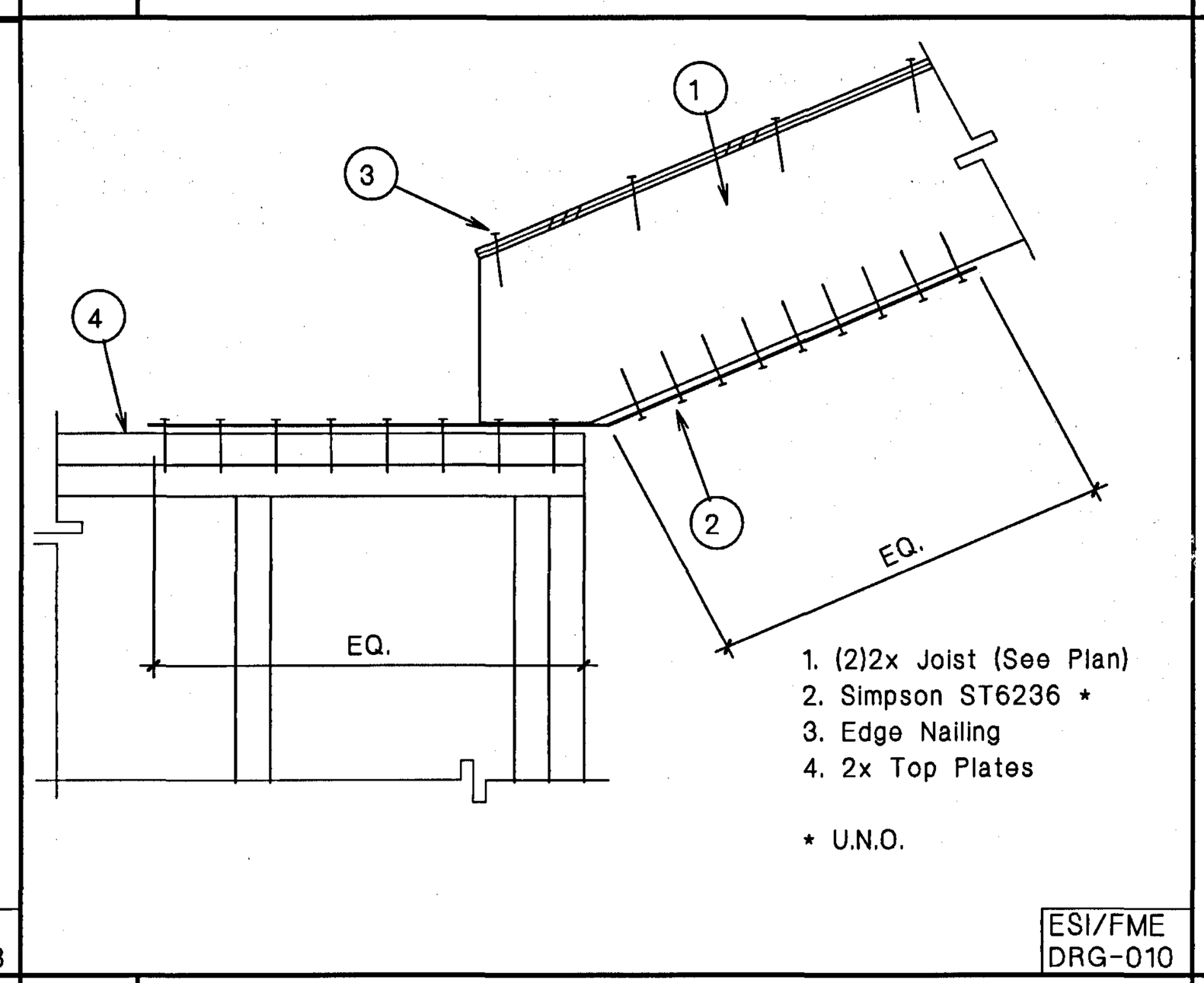


.X	16d SPACING	A35	ROOF E.N.
.1	10"	32"	-
.2	8"	24"	-
.3	4"	16"	-
.4	2" STAGGERED	8"	-

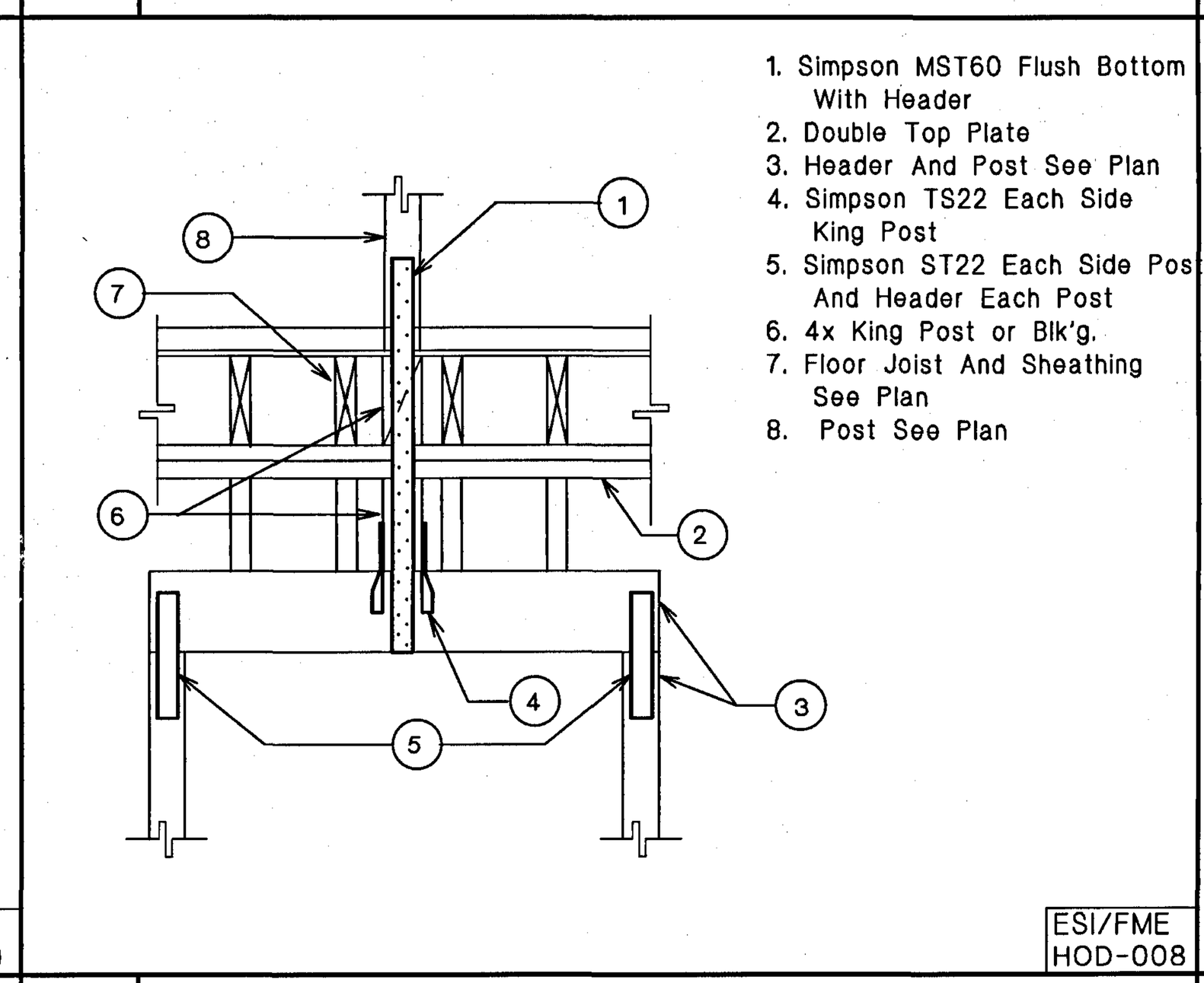
2 DRAG TRUSS SHEAR TRANSFER



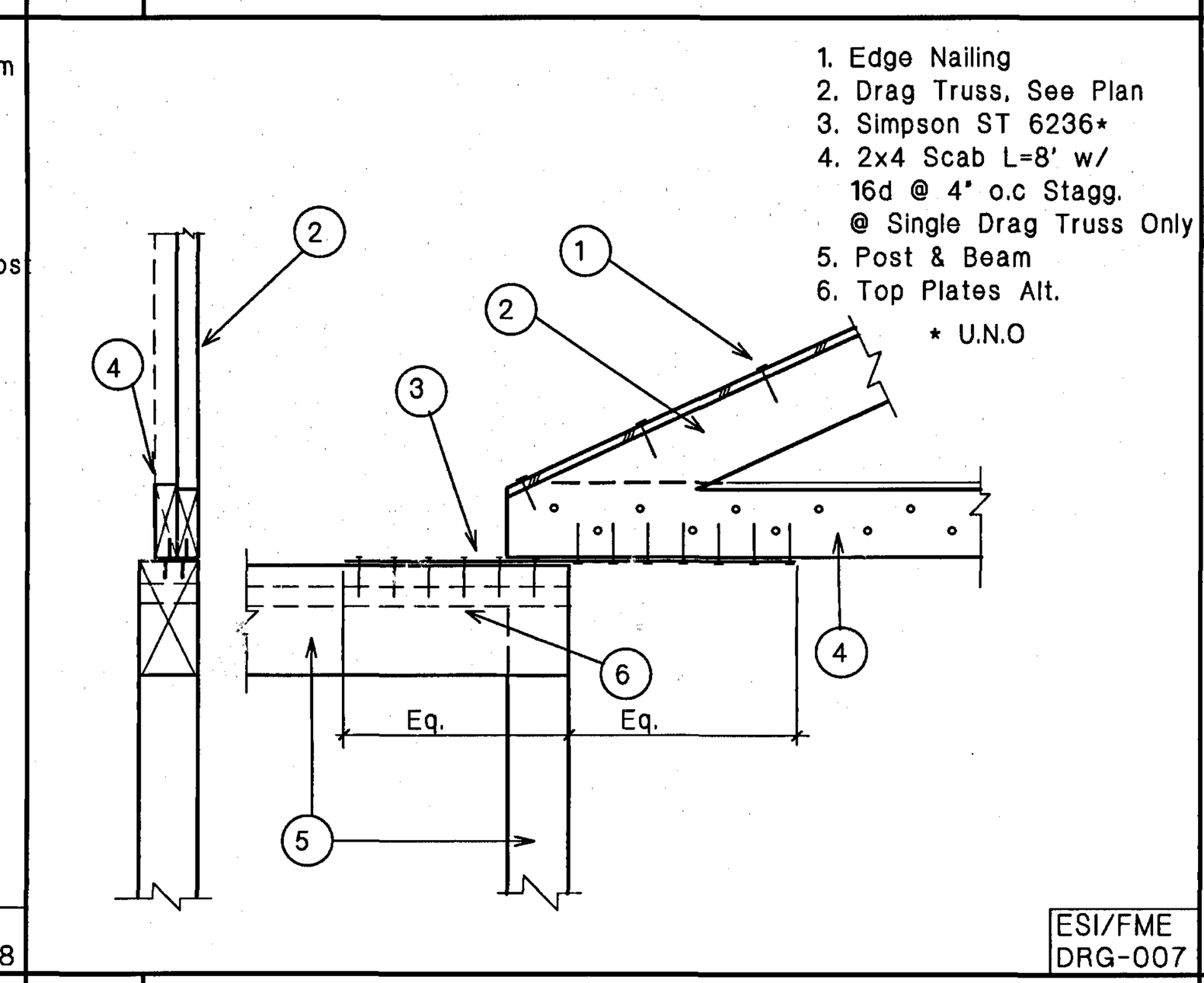
28 SHEAR TRANSFER



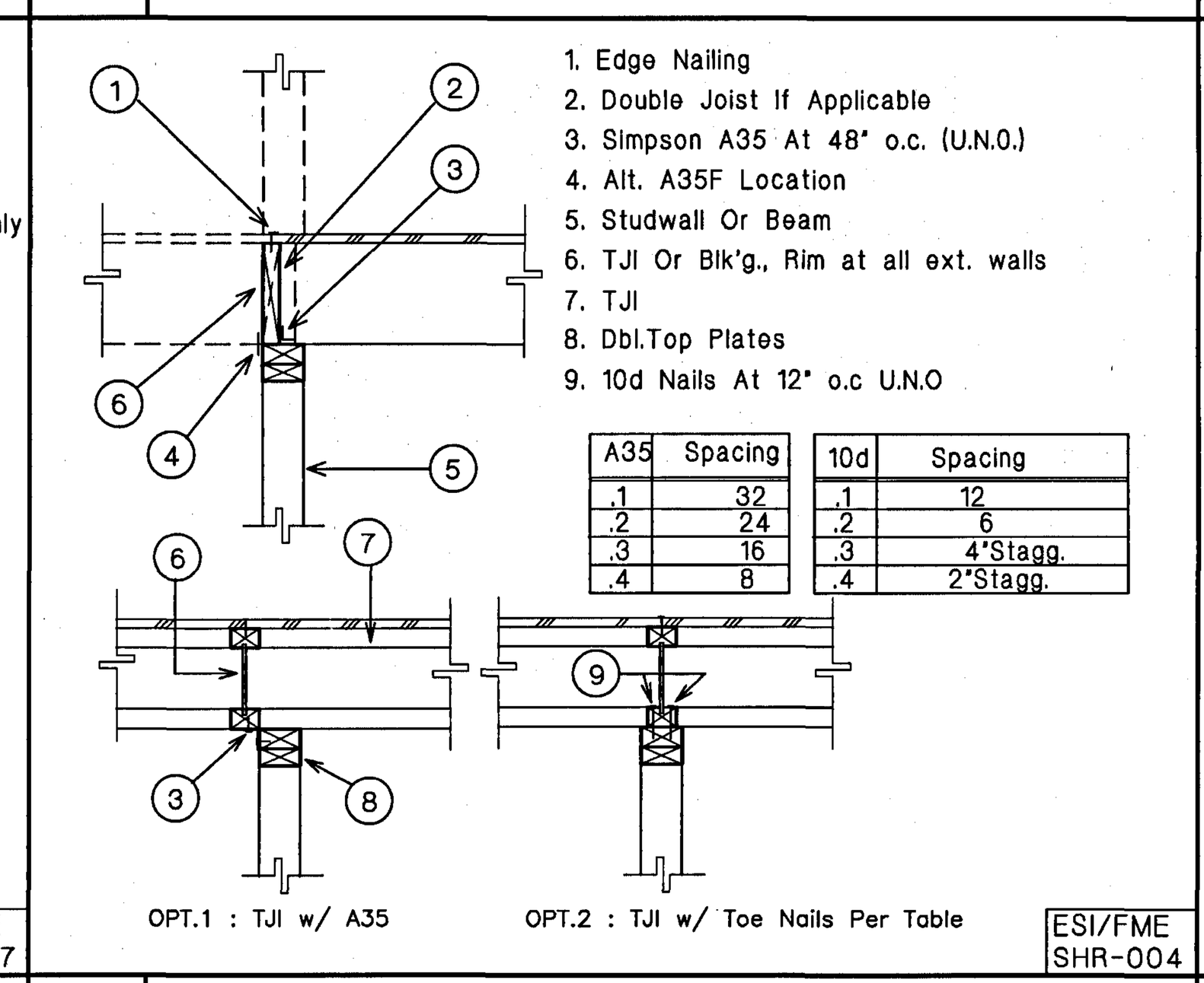
23 DRAG CONNECTION



18 BEAM POCKET DRAG CONNECTION



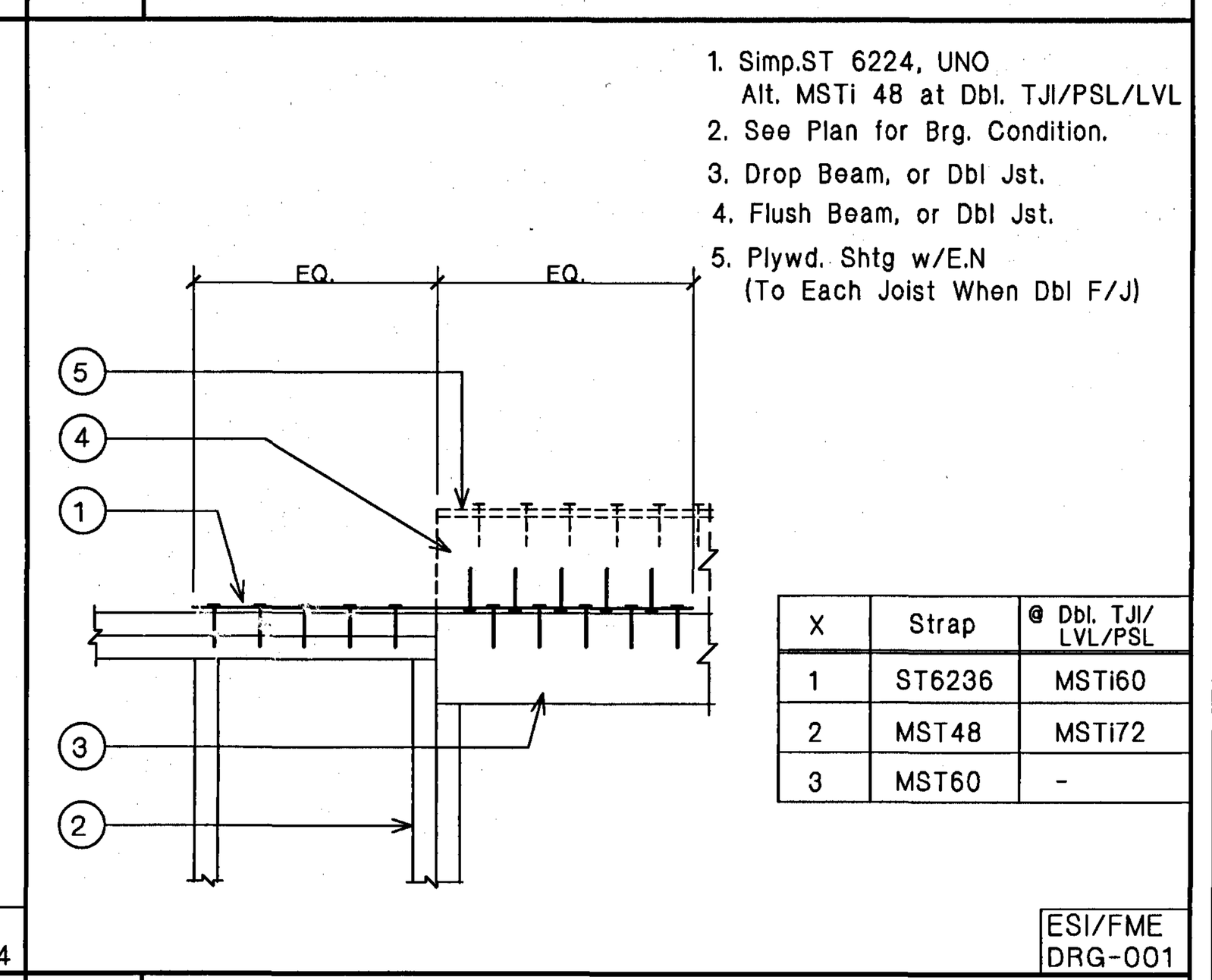
13 DRAG TIE TO TRUSS



A35	Spacing
.1	32
.2	24
.3	16
.4	8

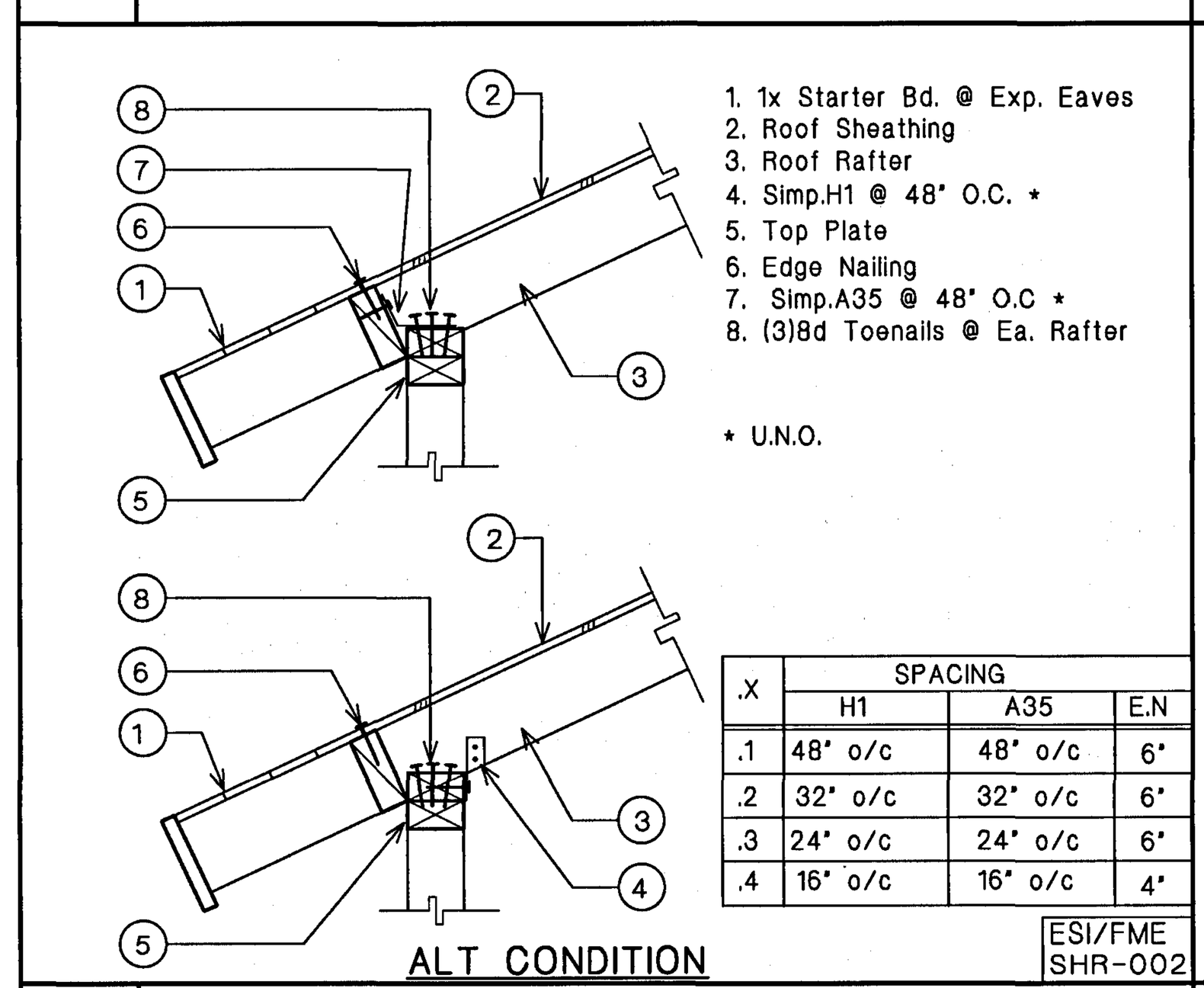
10d	Spacing
.1	12
.2	6
.3	4"Stagg.
.4	2"Stagg.

8 JOIST SHEAR CONNECTION



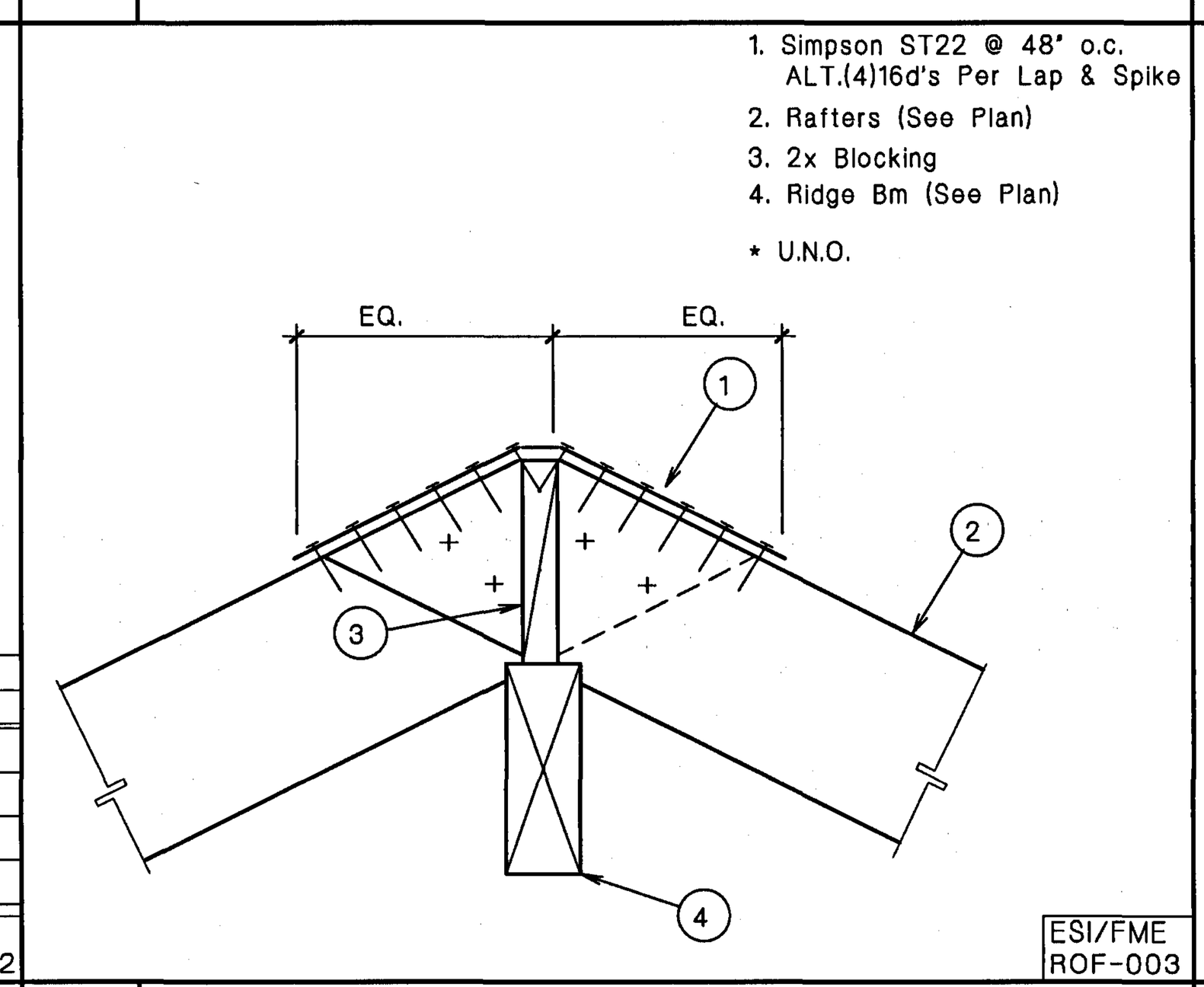
X	Strap	@ Dbl. TJI/ LVL/PSL
1	ST6236	MSTI60
2	MST48	MSTI72
3	MST60	-

3 DRAG DETAIL

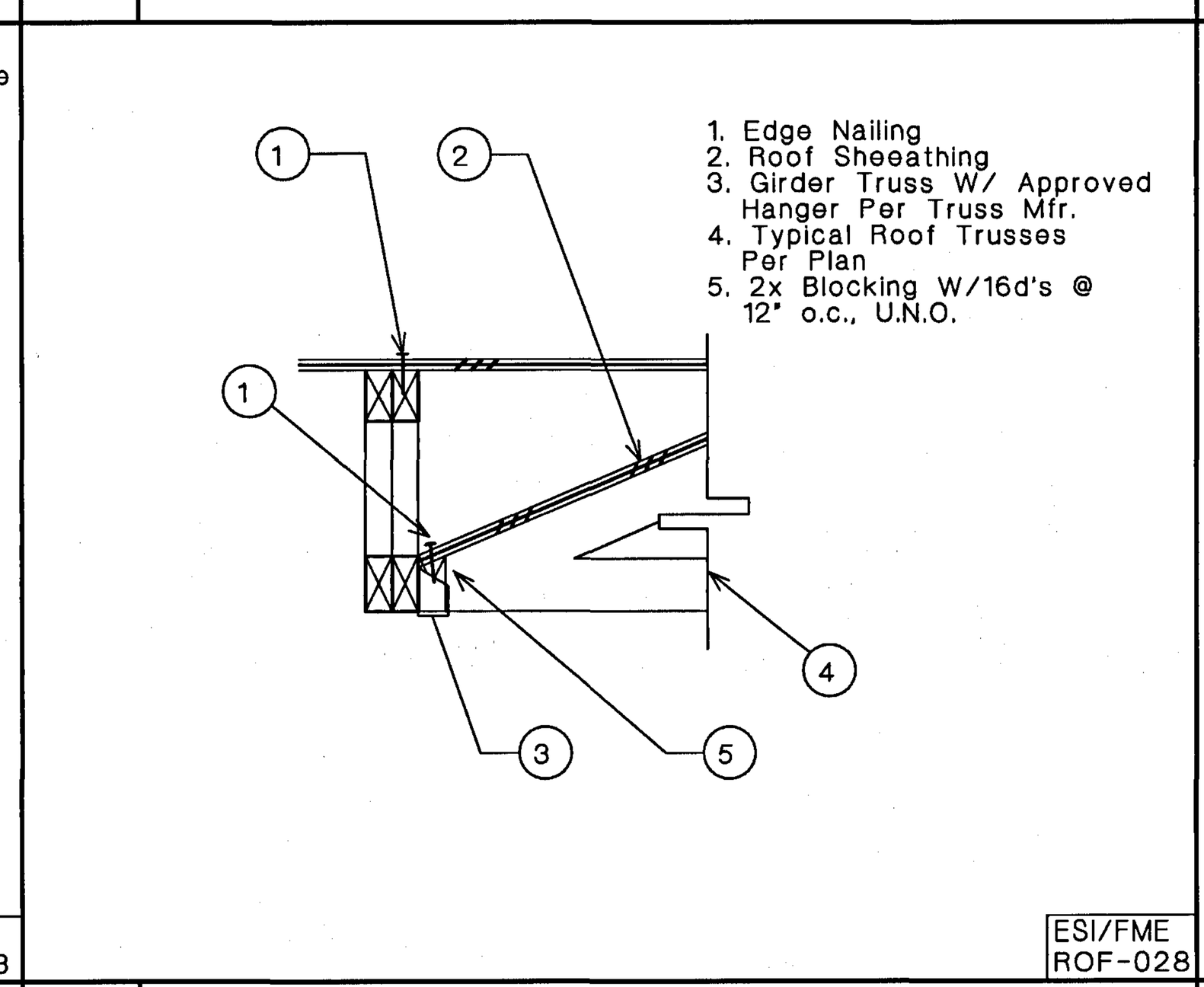


.X	SPACING H1	A35	E.N
.1	48" o/c	48" o/c	6"
.2	32" o/c	32" o/c	6"
.3	24" o/c	24" o/c	6"
.4	16" o/c	16" o/c	4"

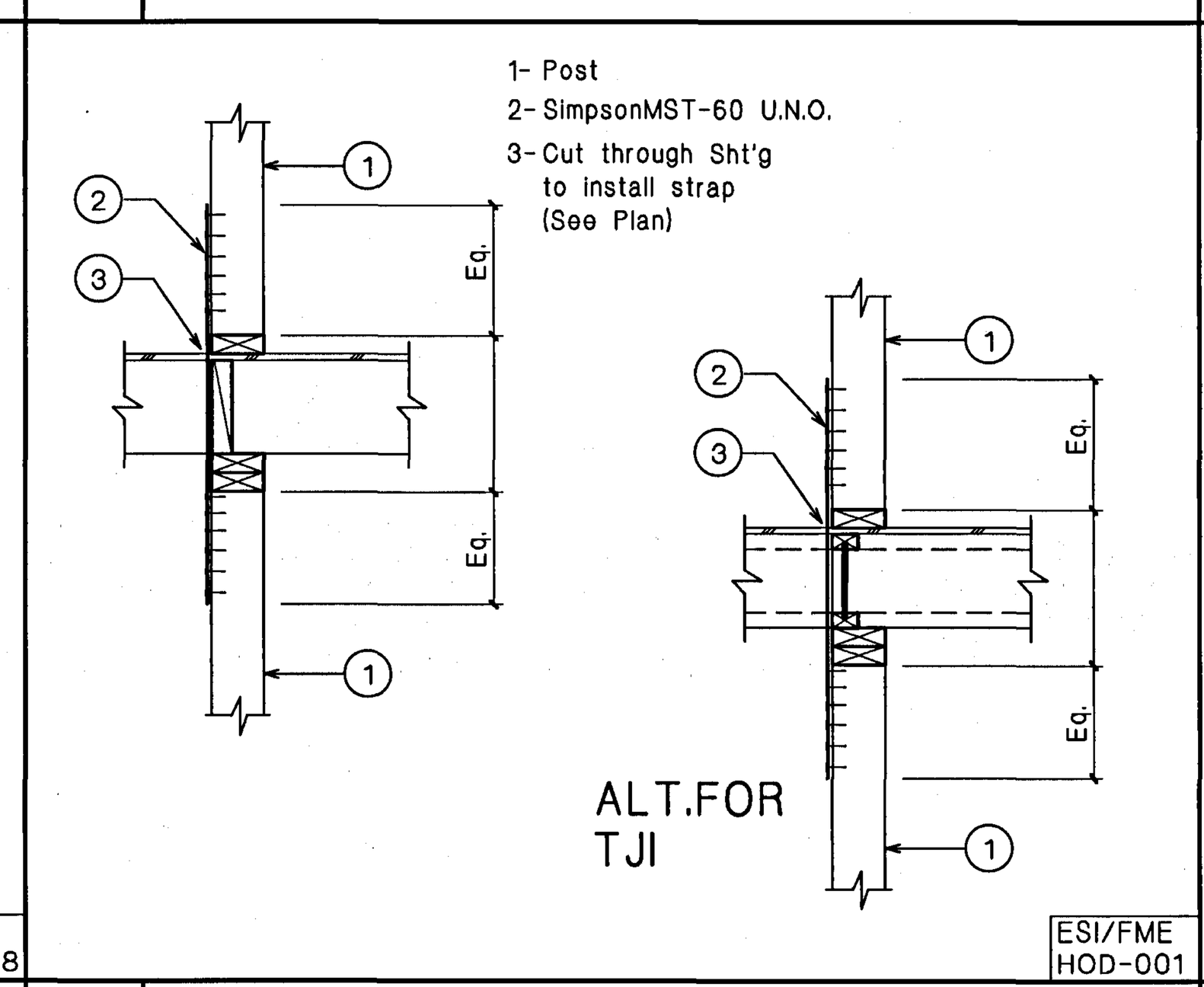
29 EAVE RAFTER SHEAR CONNECTION



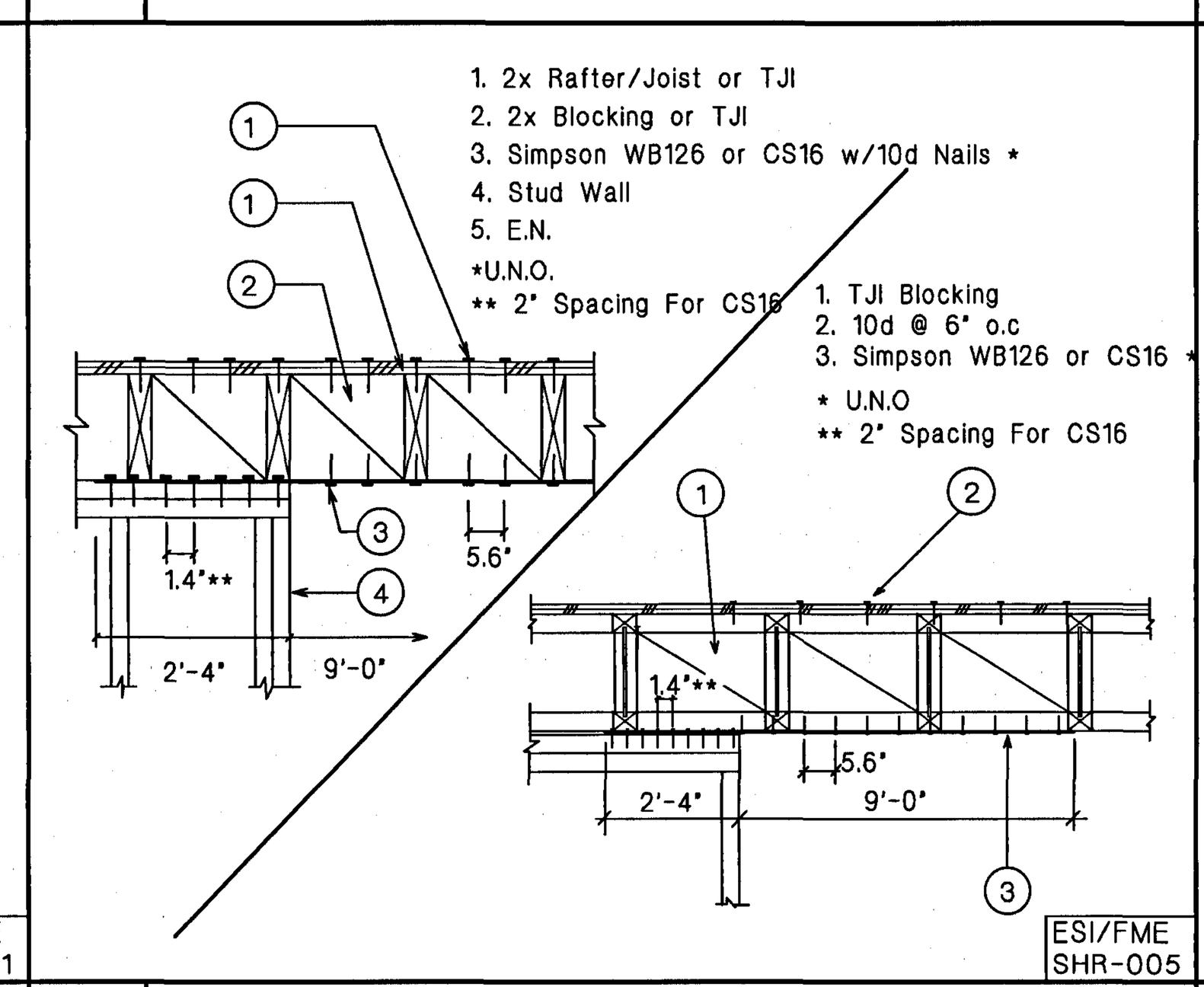
24 RAFTER ON RIDGE BM



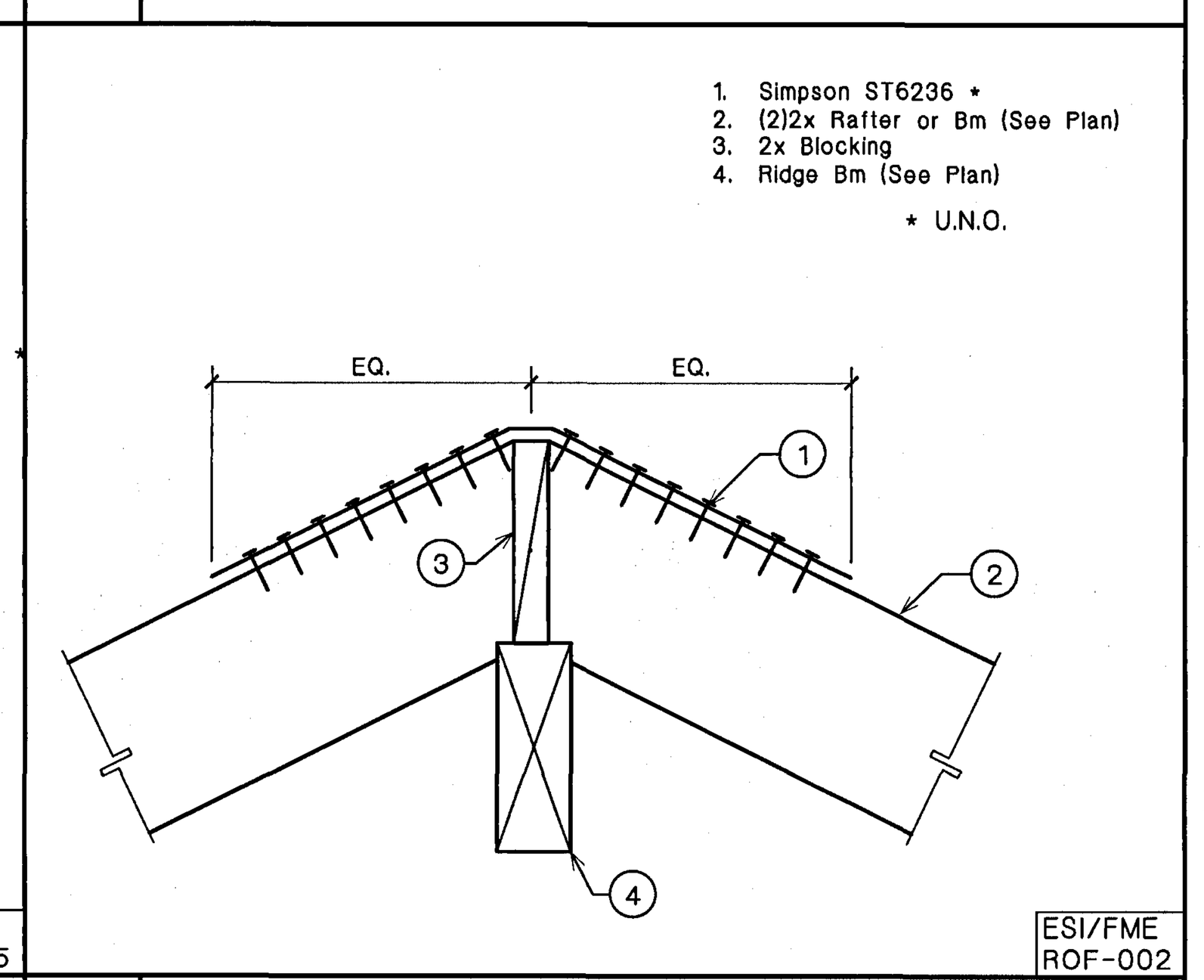
19 ROOF CONNECTION



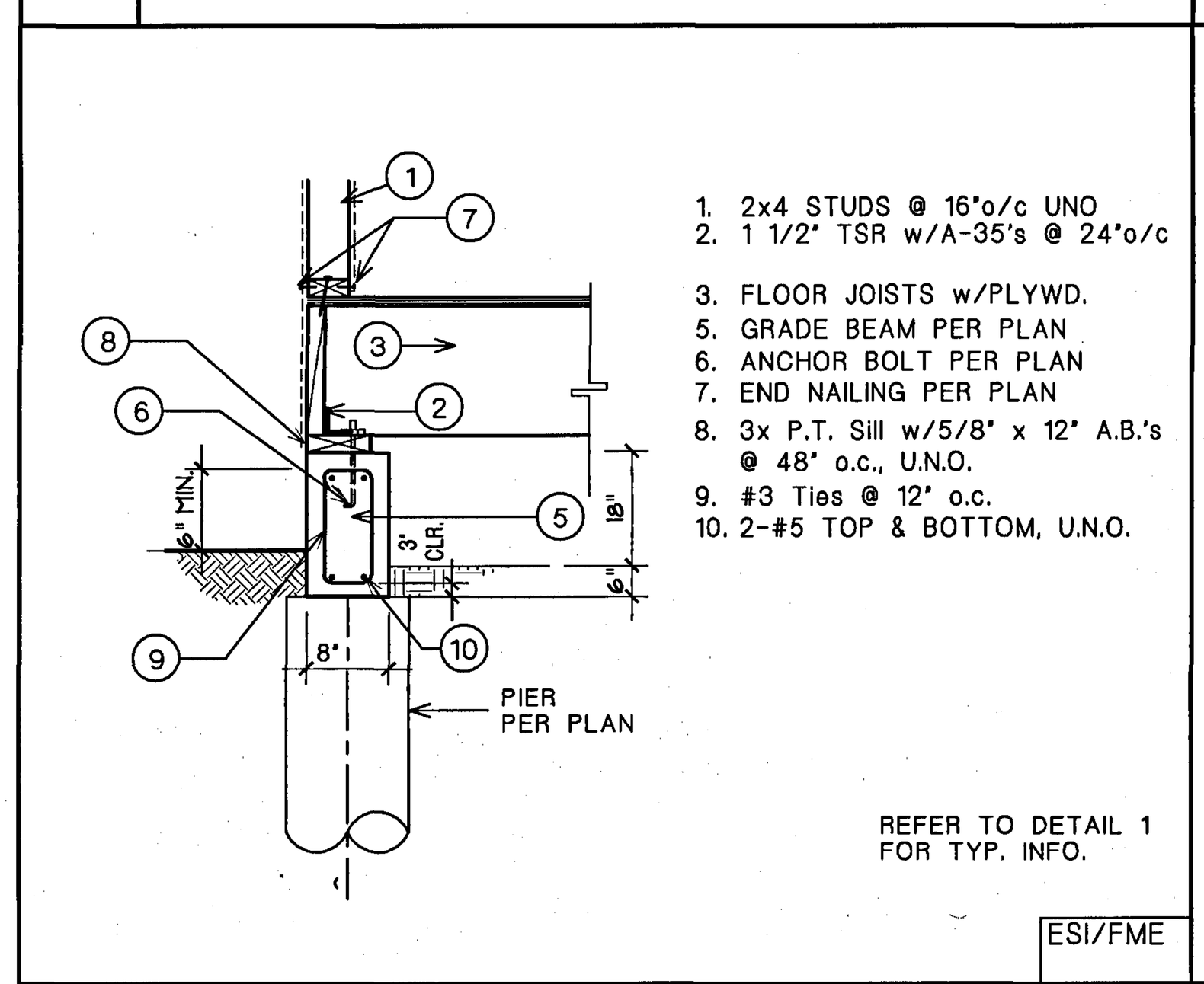
14 POST TO POST HOLDOWN



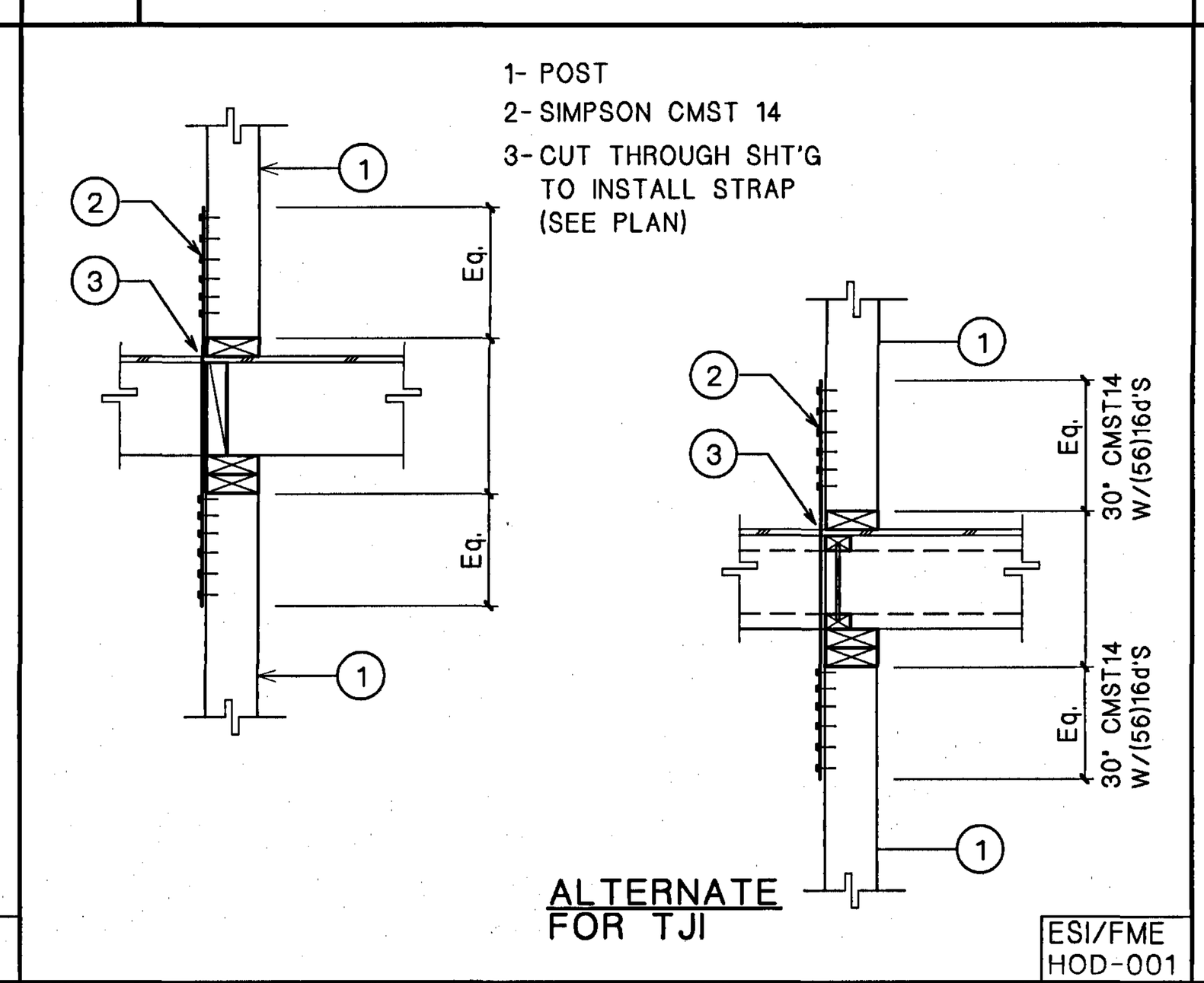
9 PERPENDICULAR DRAG STRUT



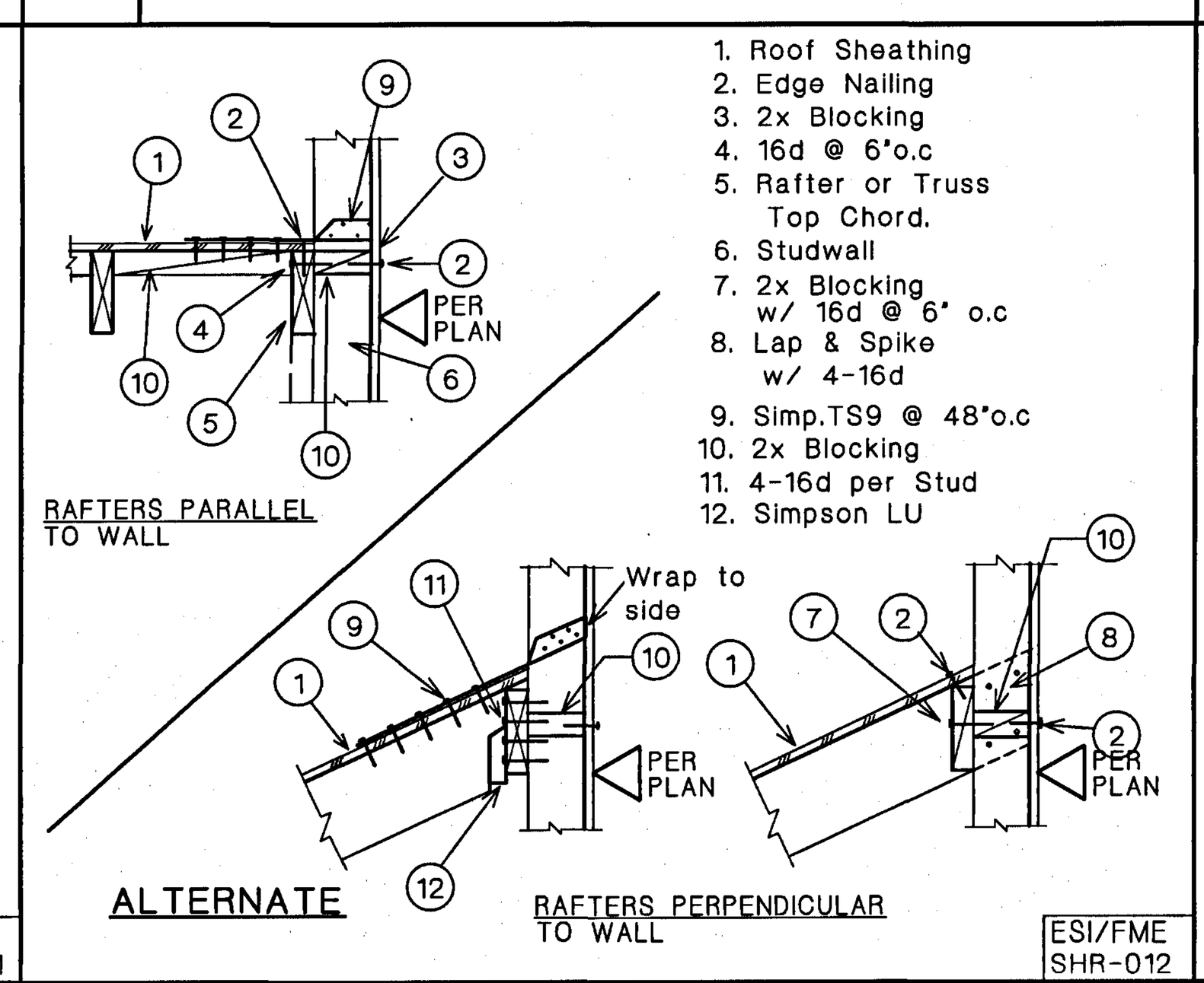
4 DRAG CONNECTION



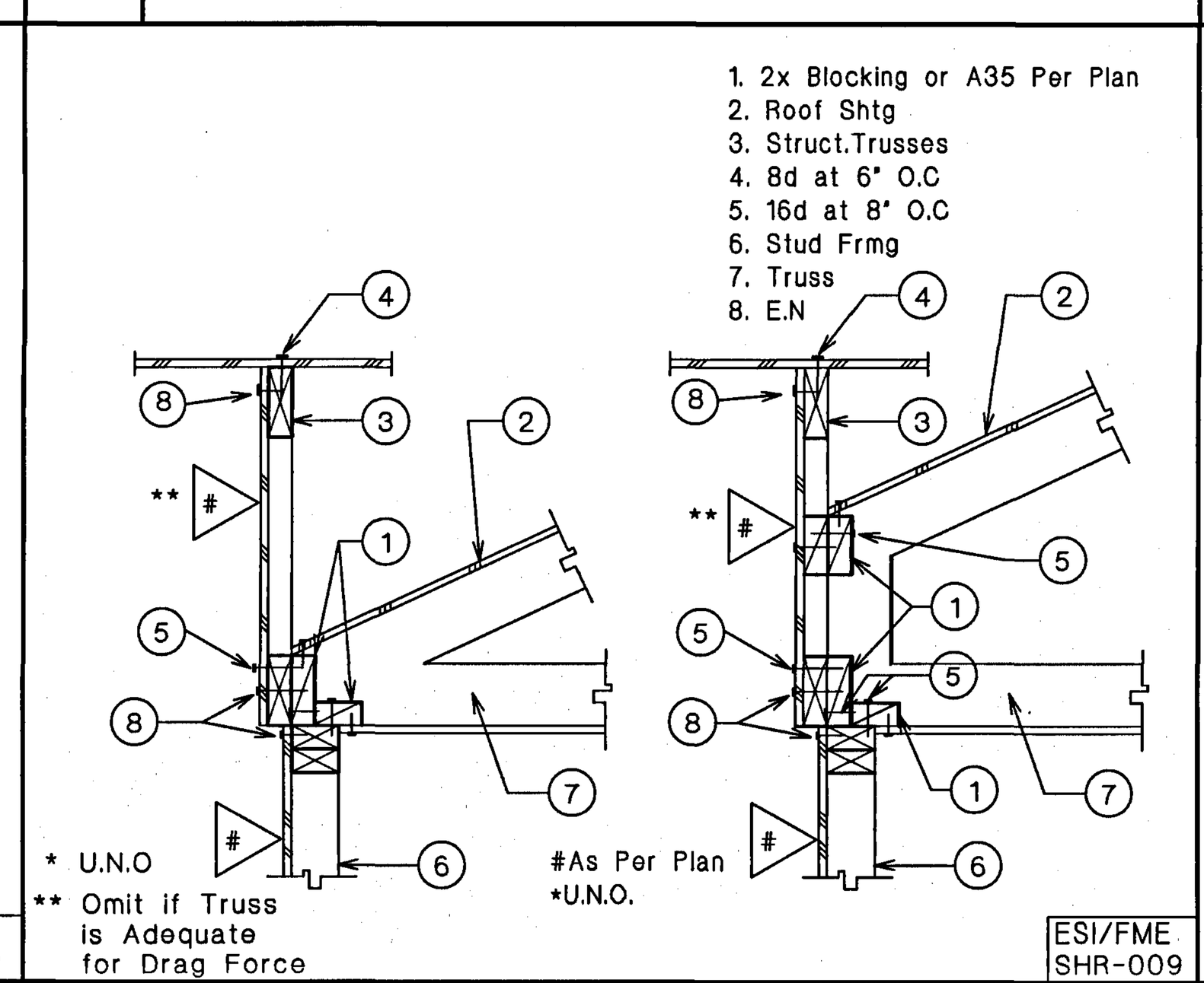
30 EXTERIOR WALL



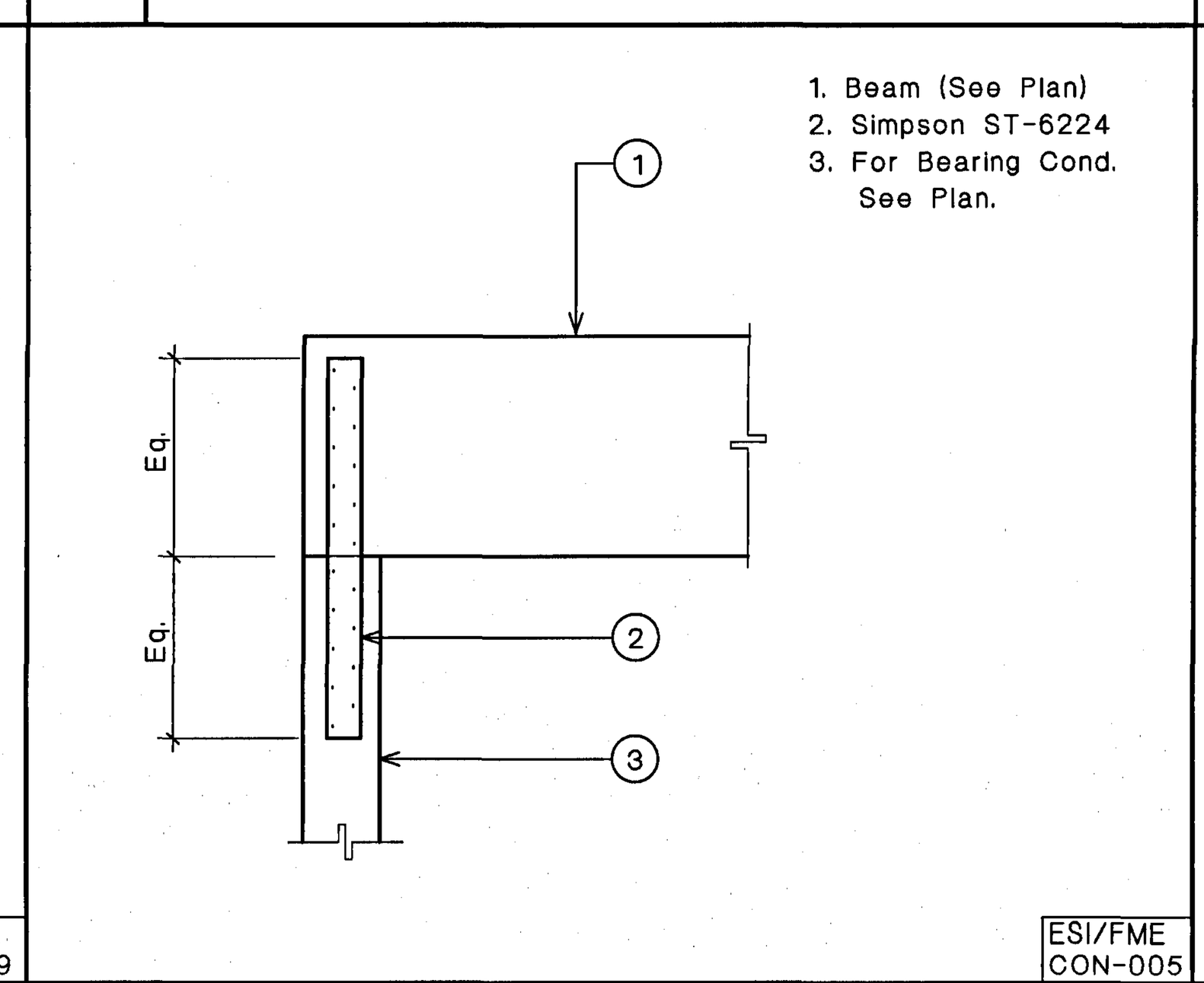
25 POST TO POST HOLDOWN



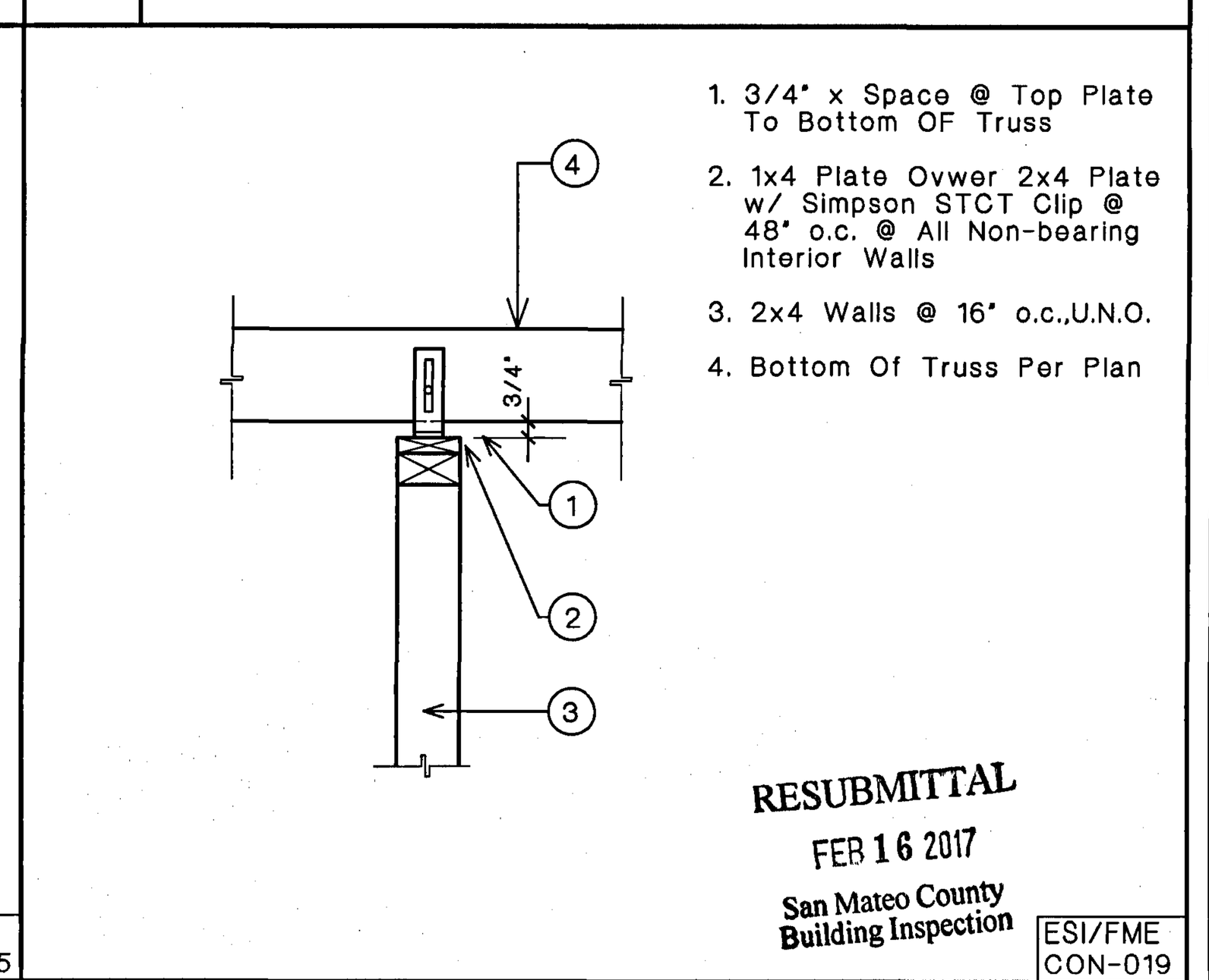
20 ROOF TO WALL SHEAR TRANSFER



15 SHEAR TRANSFER



10 BM TO POST CONNECTION



5 NON-BEARING WALL CONNECTION

REVISIONS

ESI/FME, INC.
STRUCTURAL ENGINEERS
1800 E. 16TH ST. STE B
SANTA ANA, CA 92701
PHONE: 714-835-2800
FAX: 714-835-2819
JN-C169 01/04/2017

STRUCTURAL DETAILS

REVIEWED FOR CODE COMPLIANCE
This review does not authorize violation of State or County building laws.
NOV 13 2019
SAN MATEO CO. BLDG. INSP. DIV.

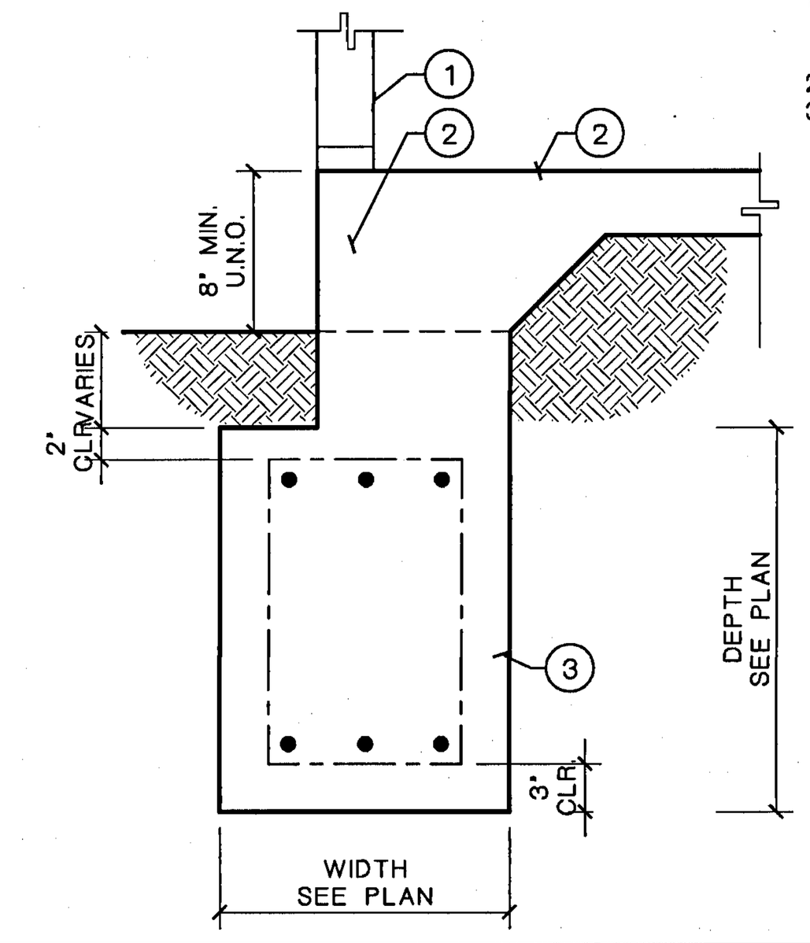
" HIGHLAND ESTATES "

LOT 9
SAN MATEO COUNTY, CA.
THE CHAMBERLAIN GROUP - MGA

DRAWN	-
CHECKED	-
PLOT DATE	01/04/2017
JOB NO.	C169
SHEET	SD1

SHEET: 5 OF: 6

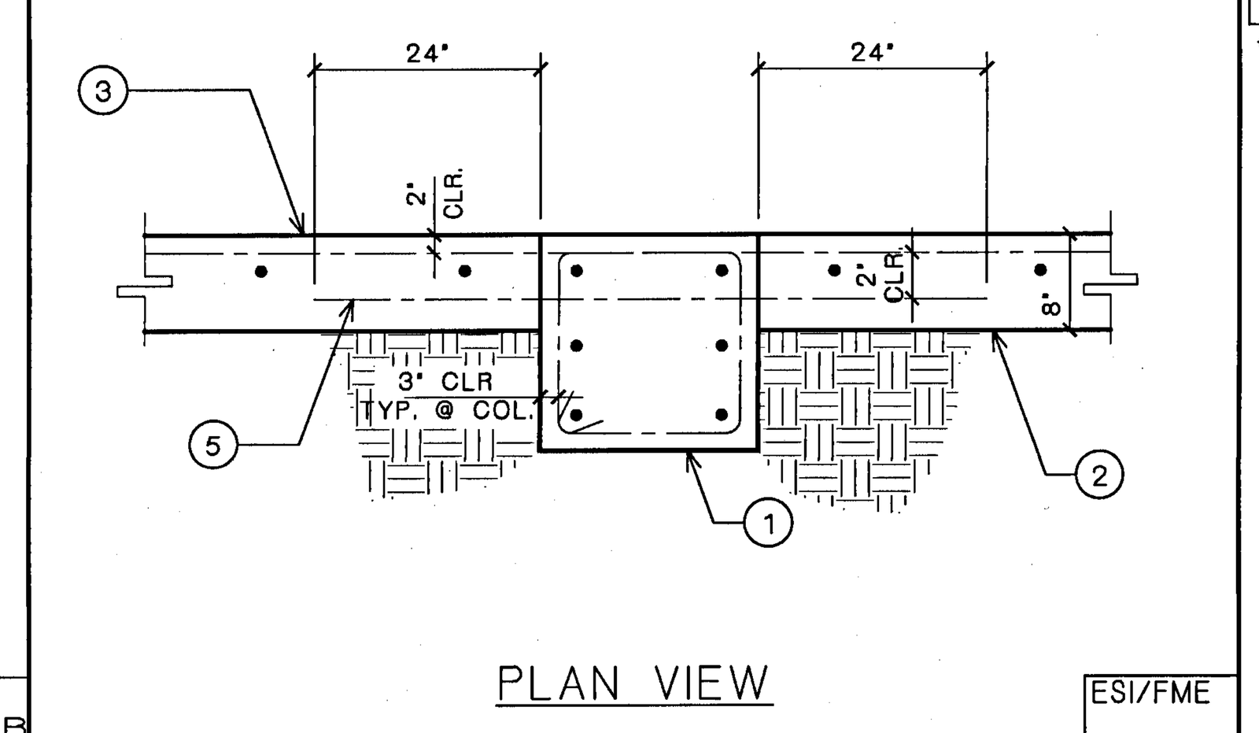
REVISIONS



1. SHEAR PANEL WHERE OCCURS (PER PLAN)
2. SLAB / FTG.
3. GRADE BEAM & REBAR (PER PLAN)

ESI/FME BB-GB

46 EXTERIOR GRADE BEAM



1. 15" SQ. CONC. COL. w/ (6)-#7 VERTICAL & #3 TIES AT 9" o/c
2. 8" CONC. WALL
3. HORIZ. REBAR PER (40/SD2)
4. BACK FILL
5. #4 @ 16" O.C.

PLAN VIEW

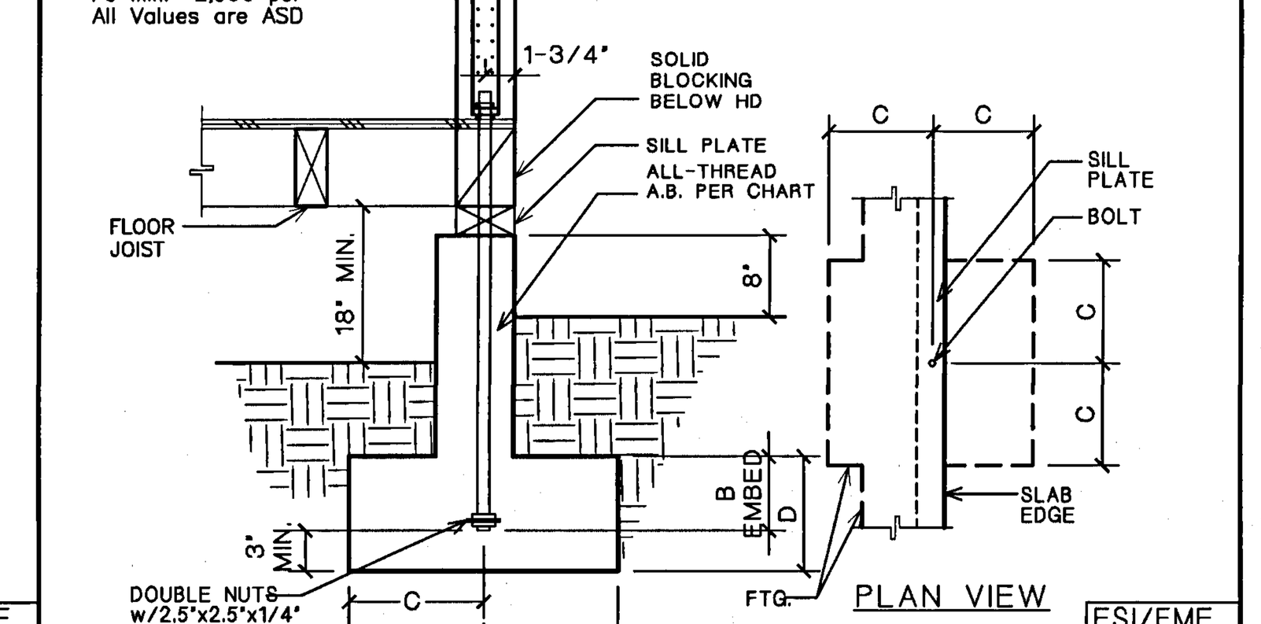
ESI/FME

41 WALL / COLUMN

HOLDOWN	A.B. DIA.	CAPACITY	A	B	C	D	Post Req'd
HDU2	5/8"	3075 lbs	19"	6"	9.5"	10.5"	4x4
HDU4/HDU5	5/8"	4400 lbs	19"	6"	9.5"	10.5"	4x4
HTT16/HTT4	5/8"	3610 lbs	19"	6"	9.5"	10.5"	4x4
HTT22/HTT5	5/8"	4165 lbs	19"	6"	9.5"	10.5"	4x4
HDU8	7/8"	6970 lbs	33"	9"	16.5"	16.75"	4x4,(4x6=7807 lbs)
HDQ8	7/8"	7630 lbs	33"	9"	16.5"	16.75"	4x4,(4x6=9230 lbs)
HDU11	1"	9535 lbs	33"	10"	16.5"	16.75"	4x6,(4x8=10357 lbs)
HDU14	1"	14121 lbs	30"	10"	15"	13"	4x8

** ALL BOLTS A307
f'c min.= 2,500 psi
All Values are ASD

Deepen Footing As Required To Obtain Anchor Embedment and Concrete Cover. Holdown Anchors Must Be Tied In Place Prior To Foundation Inspection.

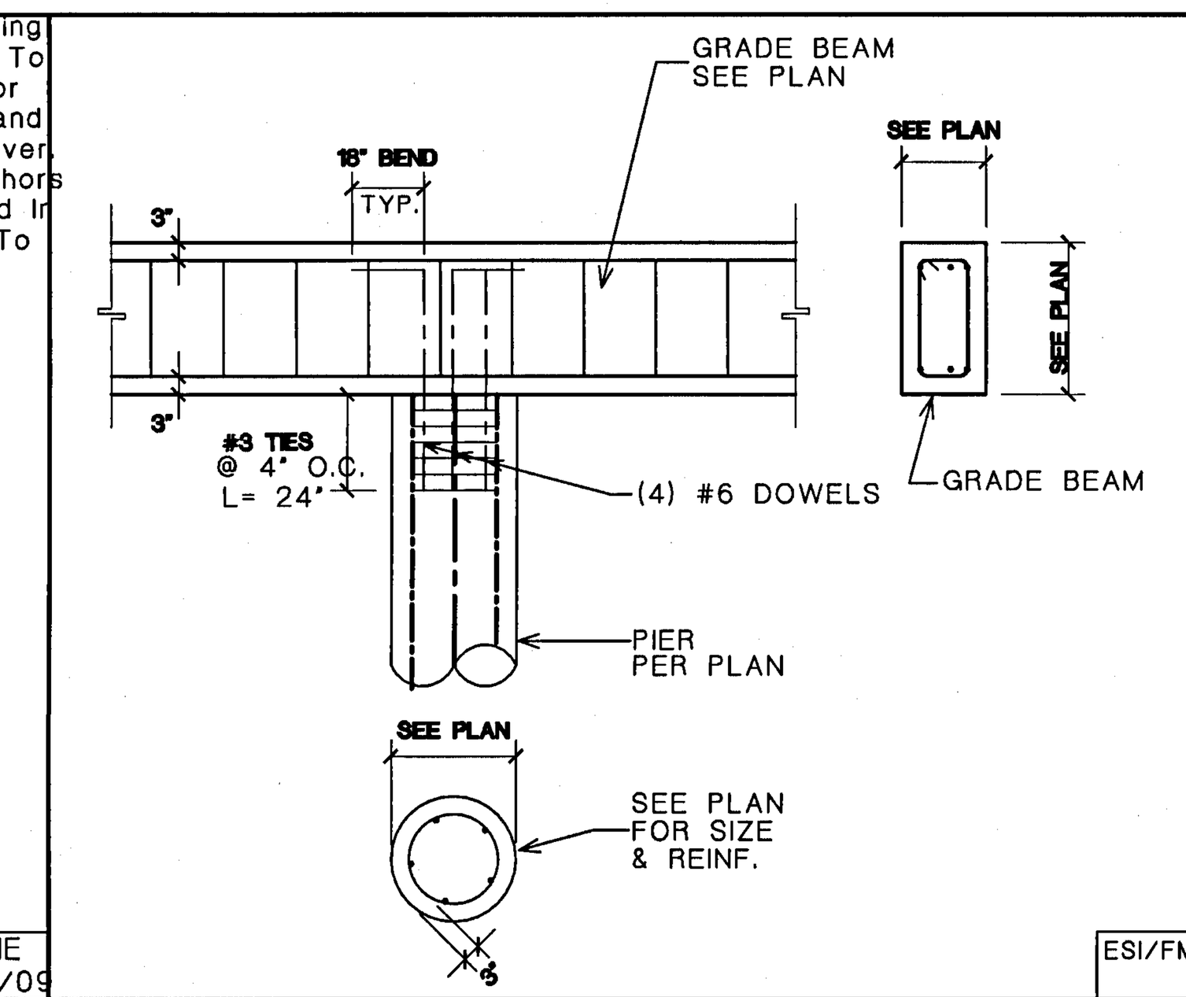


PLAN VIEW

ESI/FME 03/23/09

36 EXTERIOR HOLDOWN

HDU= ICC-ESR-2330
HTT= IAPMO-ES-ER-130

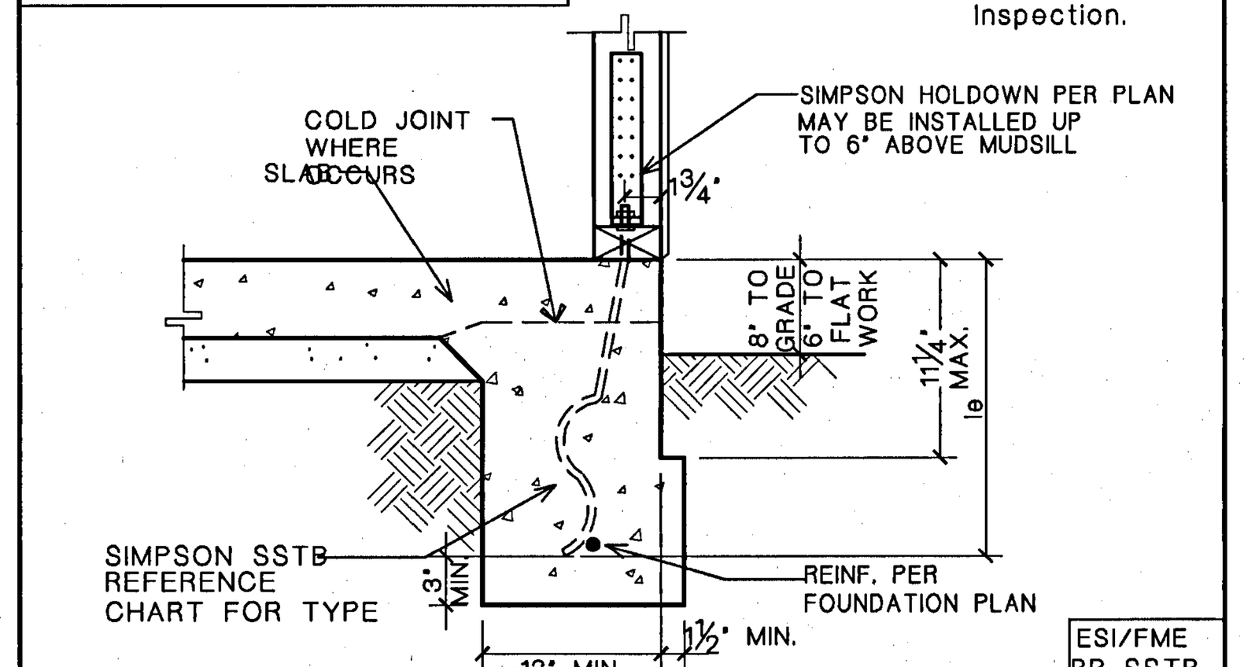


ESI/FME

31

HOLDOWN	A.B. DIA.	SSTB	le	
HDU2	5/8"	SSTB24	20 5/8"	
HDU4/HTT4	5/8"			
HDU5/HTT5	5/8"			
HDU8	7/8"	SSTB34	28 7/8"	
HDQ8	7/8"			
HDU11	1"	N/A	N/A	
HDU14	1"			
ICC-ESR 2611 FOR 2X, 3X, AND 2-2X MUDSILLS				

Deepen Footing As Required To Obtain Anchor Embedment and Concrete Cover. Holdown Anchors Must Be Tied In Place Prior To Foundation Inspection.

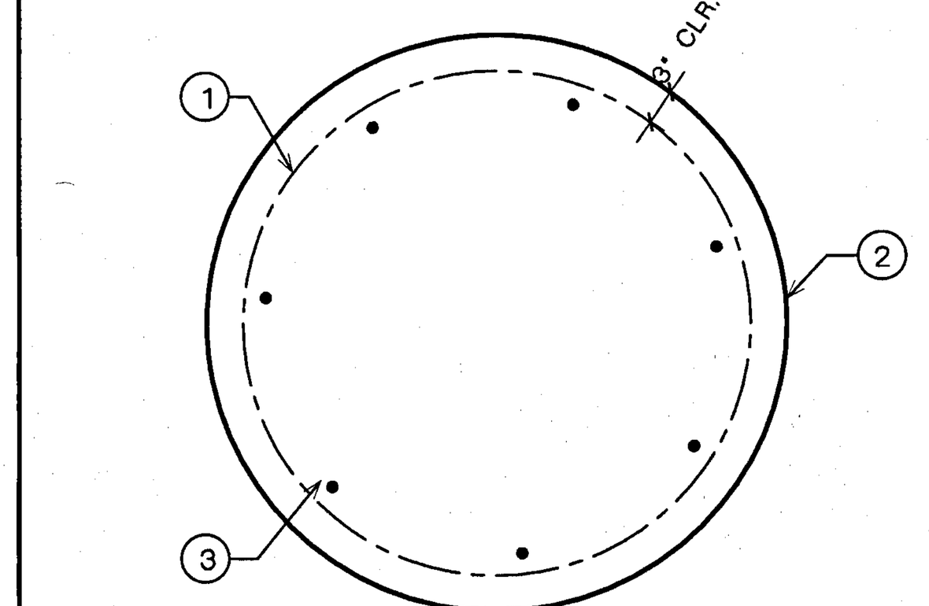


ESI/FME BB-SSTB

47 HOLDOWN DETAIL SSTB BOLT

ICC-ESR 2330

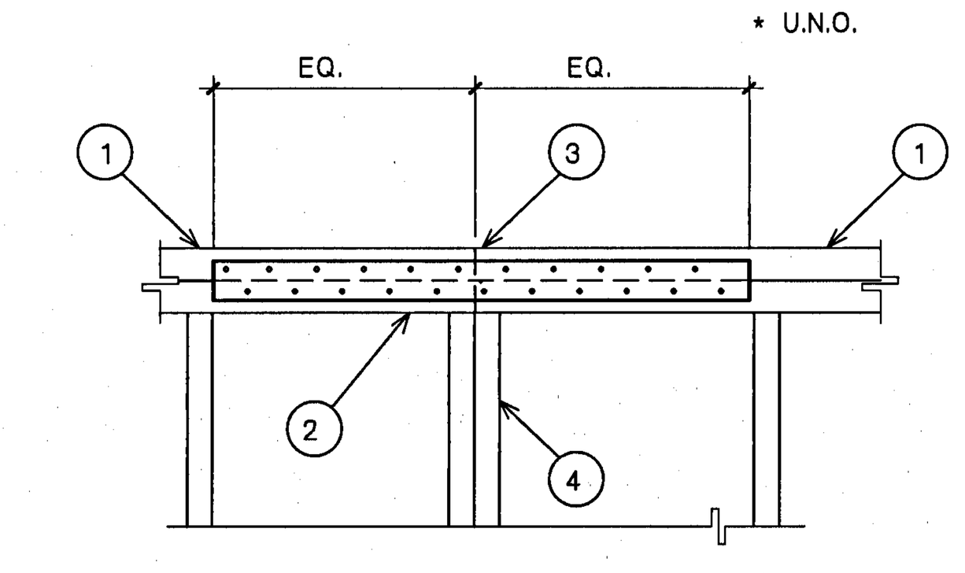
1. #3 Ties @ 8" o.c.
2. Caisson Per Plan
3. Equally Spaced Vert. Bars Per Plan



ESI/FME

42 CAISSON SECTION

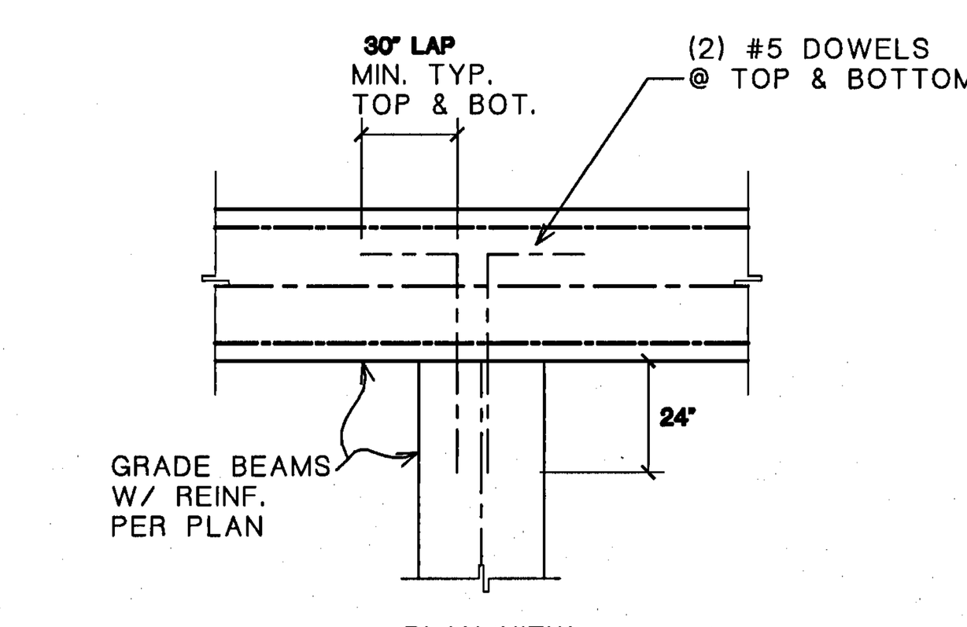
1. Dbl Top Plate See Plan
2. Simpson ST6224 •
3. Top Plate Break
4. Dbl Studs
• U.N.O.



ELEVATION

ESI/FME DRG-025

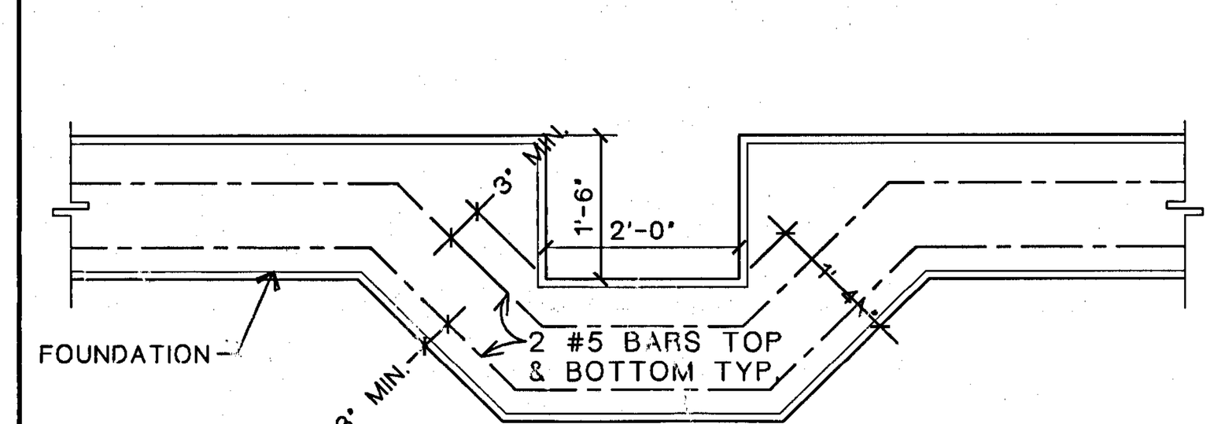
37 TOP PLATE BREAK



PLAN VIEW

ESI/FME

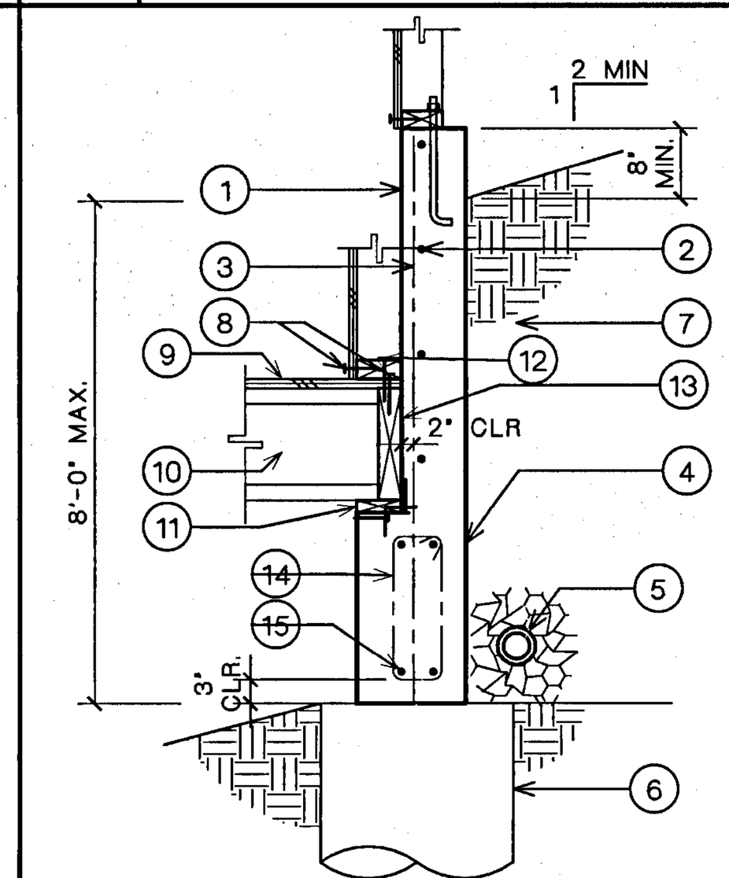
32 G.B. INTERSECTION



PROVIDE CLEARANCE AND WATER DRAINAGE AT ACCESS

ESI/FME B-RAISEDACCESS

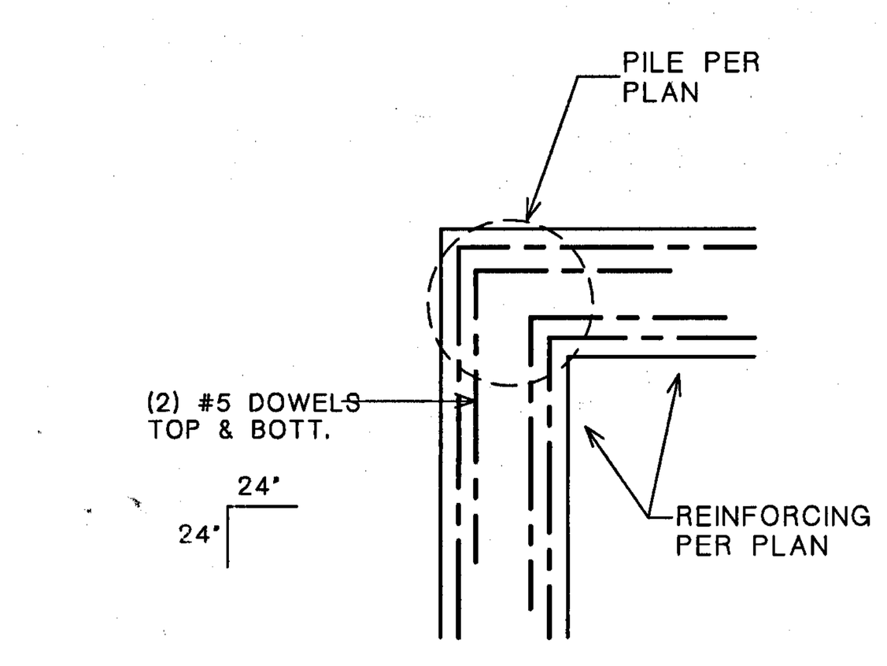
43 FOUNDATION ACCESS



1. 8" CONC. WALL
2. #5 HORIZ. AT 12" o/c
3. #5 VERT. AT 12" o/c
4. 16" W X 24" DP GRADE BM w/ (2) #5 T&B & #3 TIES @ 12" O.C.
5. DRAIN PER SOILS REPORT
6. CAISSON BELOW
7. BACKFILL PER SOILS REPORT
8. EDGE NAILING
9. FLOOR SHEATHING
10. I-JOIST
11. 2x6 P.T. SILL w/ 1/2" ø A.B.'s PER PLAN
12. SPN
13. TSR RIM JOIST
14. #3 TIES @ 12" O.C.
15. 2-#5 TOP & BOTTOM, U.N.O.

ESI/FME

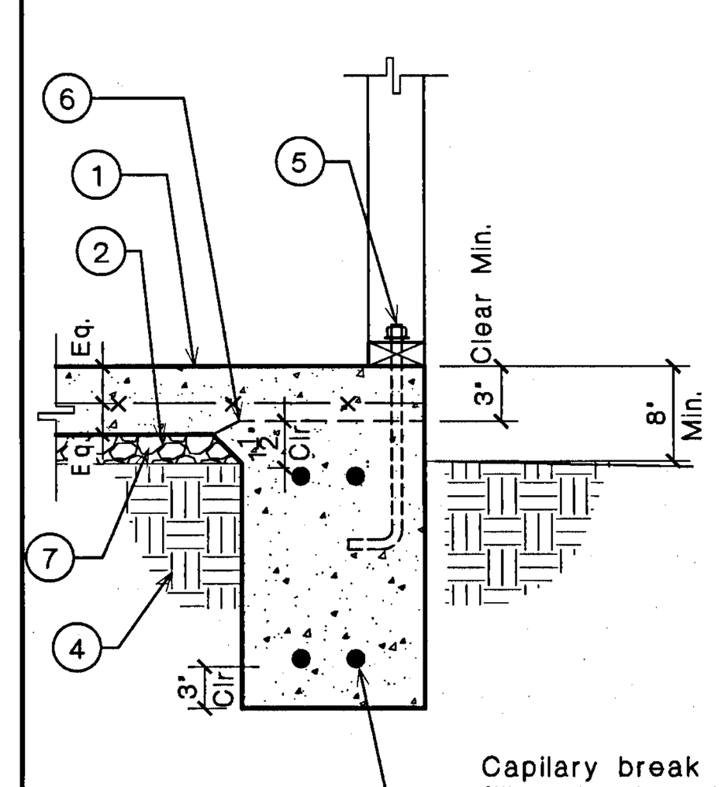
38 FLOOR @ WALL



PLAN VIEW

ESI/FME

33 GRADE BM @ CORNER



1. 5" Actual Conc.Slab w/ #4 @ 12" O/C E.W.
2. 10 Mil. Vapor Barrier Extended 1 1/2" into Foundation Wall
3. (2) #5 T/B Min.,Typical @ All Cont. Footings, U.N.O
4. Natural Grade or Approved Compacted Fill.
5. D.F.P.T. Plate w/ 1/2" Dia. x 10" A.B's @ 72" O/C Min. w/ 3" x 3" x 0.229" Washer 12" From all Corners & Splices w/ 7" Min. Embedment (U.N.O.) (See Foundation Plans)
6. Cold Joint at 2 Pour
7. 4" THK. GRAVEL BASE OF 1/2" OR LARGER CLEAN AGGREGATE

Capilary break placed over non-expansive fill and subgrade prepared according to geotech report.

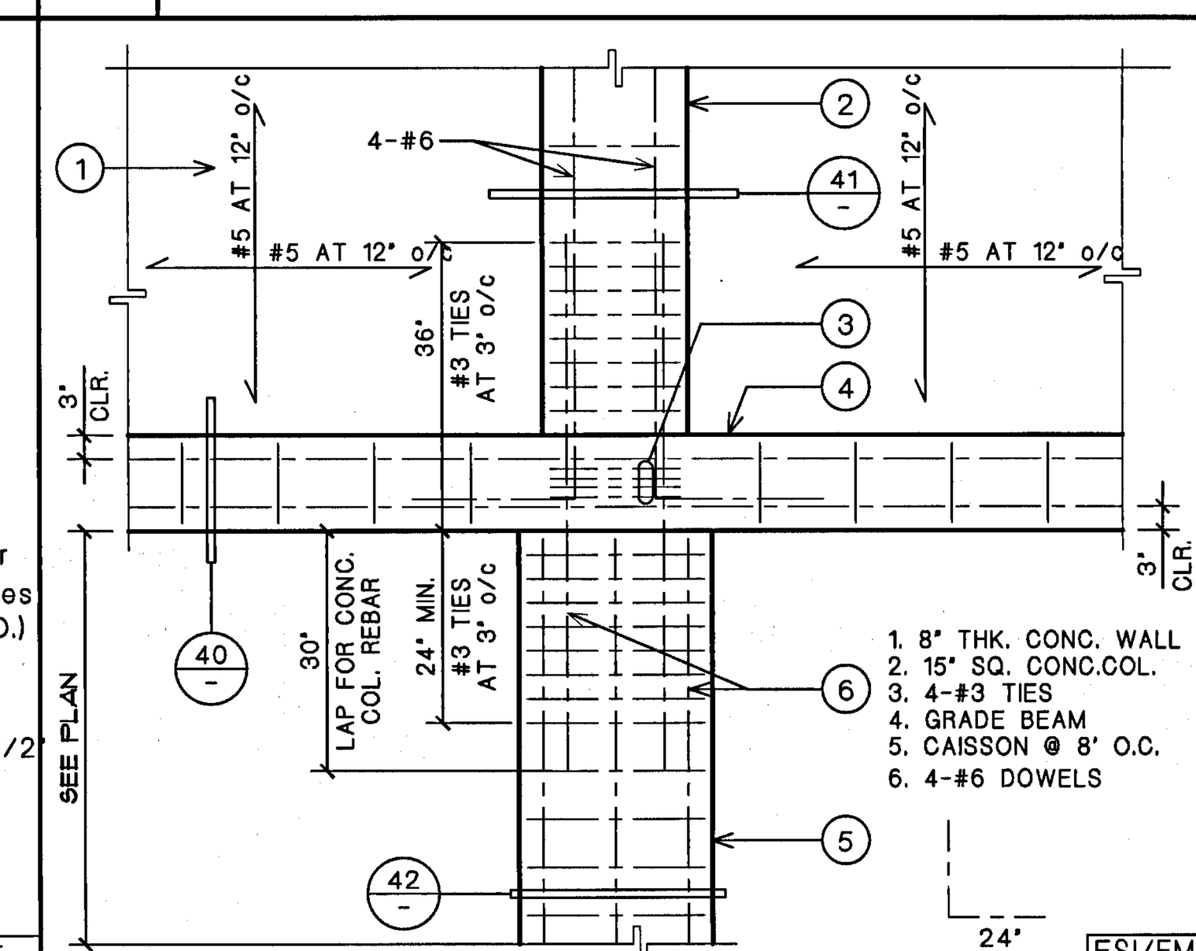
• U.N.O.

NOTE: ITEMS 2 & 7 MAY BE OMITTED IF VAPOR BARRIER IS NOT PROVIDED AT GARAGE

Note: See Soil Report For Additional Requirement.

ESI/FME FDN-00197

44 EXTERIOR FOOTING

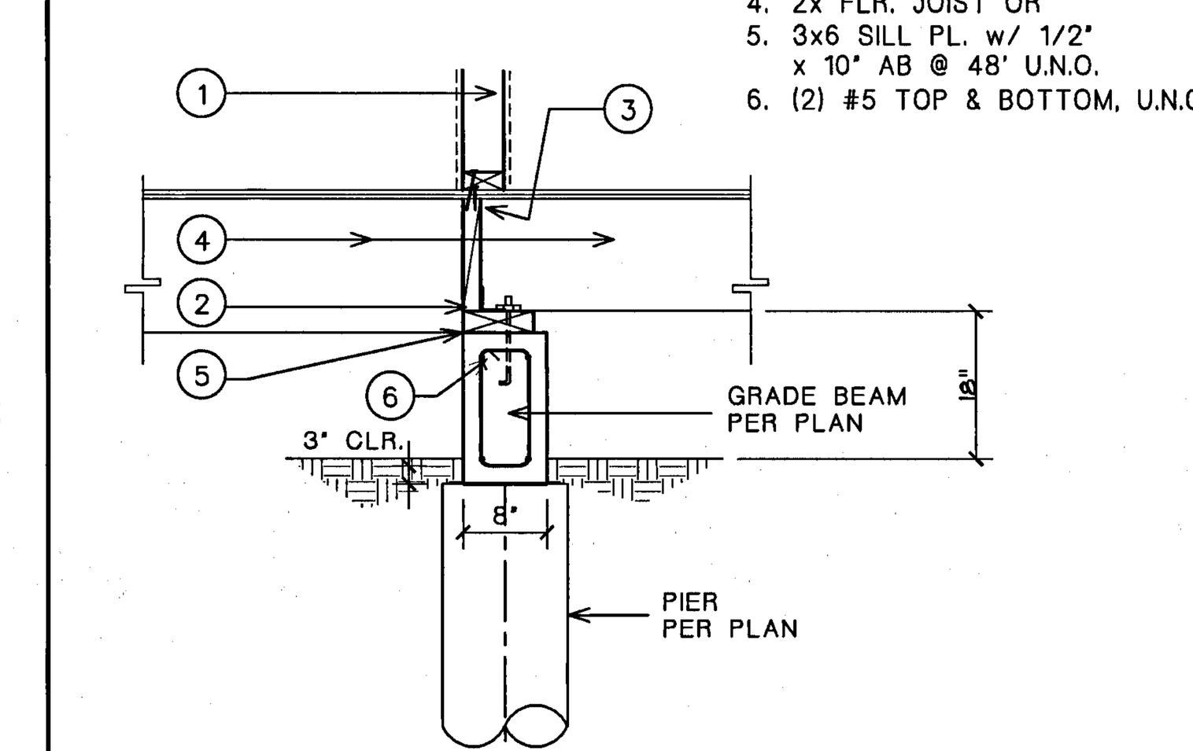


1. 8" THK. CONC. WALL
2. 15" SQ. CONC.COL.
3. 4-#3 TIES
4. GRADE BEAM
5. CAISSON @ 8" O.C.
6. 4-#6 DOWELS

ESI/FME

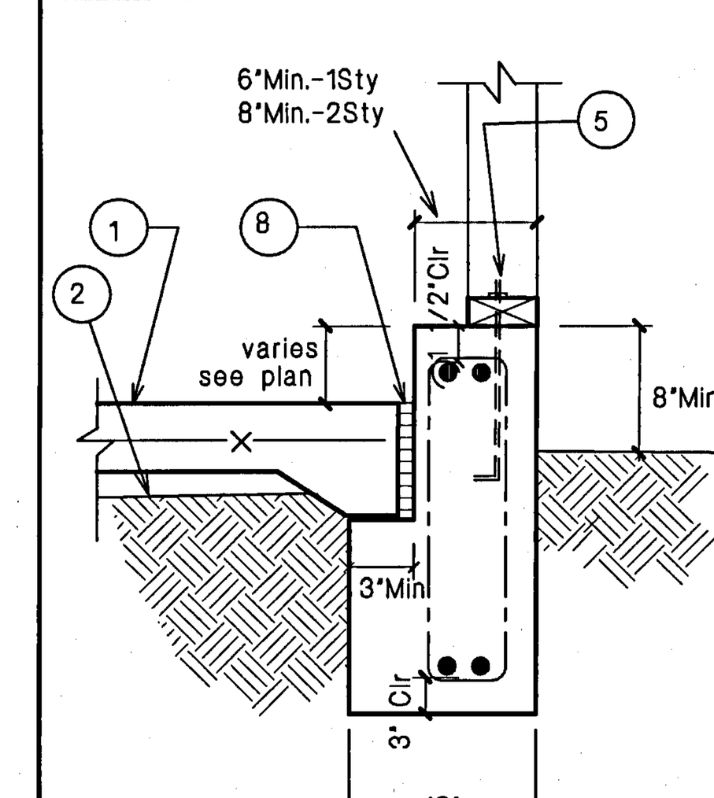
39 COLUMN / CAISSON

1. SHEAR WALL WHERE OCCURS
2. 2x BLK'G OR TSR w/A-35's@16"o/c
3. EDGE NAILING
4. 2x FLR. JOIST OR
5. 3x6 SILL PL. w/ 1/2" x 10" AB @ 48" U.N.O.
6. (2) #5 TOP & BOTTOM, U.N.O.



ESI/FME

34 INTERIOR GRADE BM

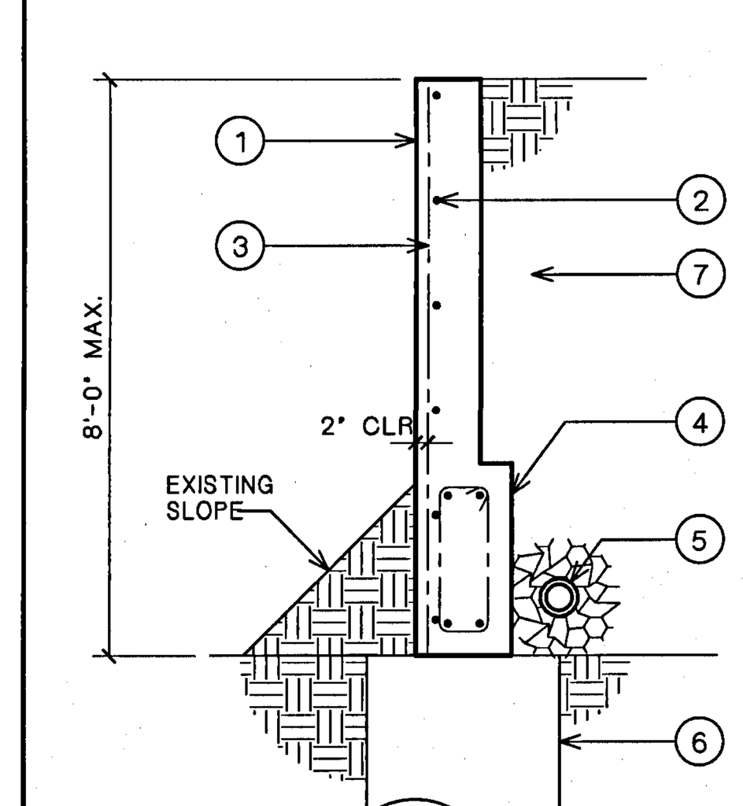


SEE DETAIL 44 FOR REPETITIVE INFORMATION

• U.N.O.

ESI/FME FDN-005

45 EXTERIOR GARAGE FOOTING



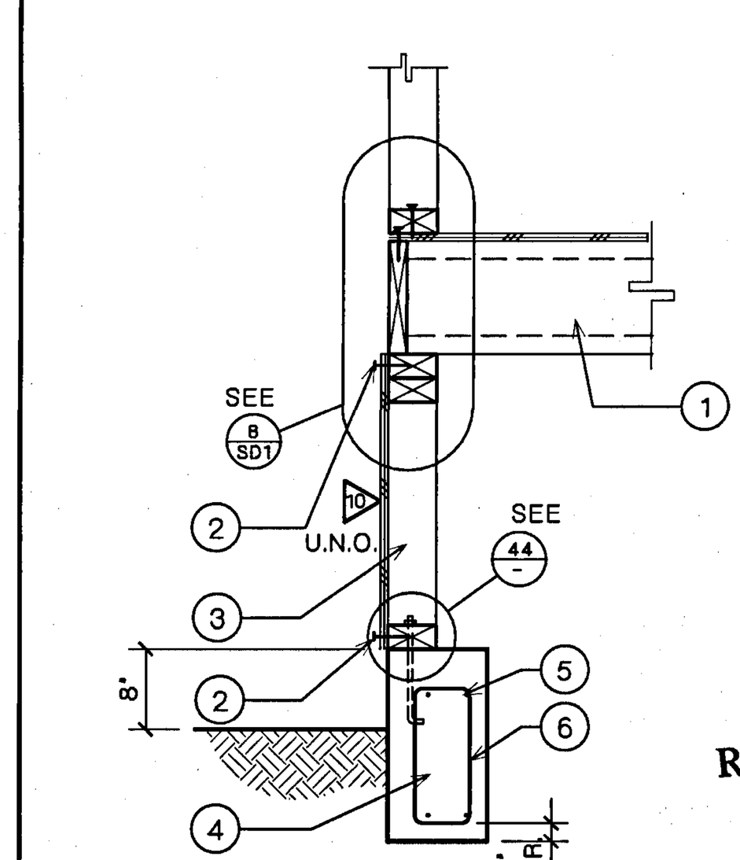
1. 8" CONC. WALL
2. #5 HORIZ. AT 12" o/c
3. #5 VERT. AT 12" o/c
4. 16" W X 24" DP GRADE BM w/ (2) #5 T&B & #3 TIES @ 12" O.C.
5. DRAIN PER SOILS REPORT
6. CAISSON BELOW
7. BACKFILL PER SOILS REPORT

NOTE: SLOPE GRADE BM AT GRADE VARIATIONS DO NOT STEP

ESI/FME

40 RETAINING WALL

1. Floor Joists
2. E.N.
3. Cripple Wall
4. Grade Beam Per Plan
5. 2-#5 Top & Bottom, U.N.O.
6. #3 Ties @ 12" o.c.



RESUBMITTAL
FEB 16 2017
San Mateo County Building Inspection

ESI/FME

35 GRADE BEAM

REVIEWED FOR CODE COMPLIANCE
This review does not authorize violation of State or County building laws.
NOV 13 2019
SAN MATEO CO. BLDG. INSP. DIV.

ESI/FME INC.
STRUCTURAL ENGINEERS
1800 E. 16TH ST. STE B
SANTA ANA, CA 92701
PHONE: 714-835-2800
FAX: 714-835-2819

STRUCTURAL DETAILS LOT 9

" HIGHLAND ESTATES "
LOT 9
SAN MATEO COUNTY, CA.
THE CHAMBERLAIN GROUP - MGA

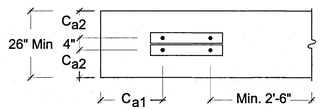
DRAWN
CHECKED
PLOT DATE 01/04/2017
JOB NO. C169
SHEET
SD2
SHEET: 6 OF: 6

BACK TO BACK REINFORCED ANCHORAGE (BB–RA)

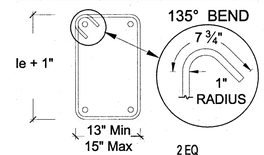
Model	Panel Width (in)	Anchorage [1]	Rod Dia (in)	Rod Grade [2,3]	BB-RA le [4] (in)	BB-RA $Ca1$ [5] (in)	BB-RA $Ca2$ [6] (in)	Stirrups [9] (in)	Shear Ties [7]
HFX-9x	9	1-1/8-STD-BB-RA	1-1/8	STD	13	19-3/4	11	8 - # 4	# 3 (min) @ 3-3/4" OC
HFX-12x	12	1-1/8-STD-BB-RA		STD	18			11 - # 4	# 3 (min) @ 4" OC
		1-1/8-HS-BB-RA		HS					
HFX-15x	15	1-1/8-STD-BB-RA		STD	20	20-5/8		12 - # 4	# 4 (min) @ 4" OC
		1-1/8-HS-BB-RA		HS					
HFX-18x	18	1-1/8-STD-BB-RA		STD	23			15 - # 4	
		1-1/8-HS-BB-RA		HS					
HFX-21x	21	1-1/8-STD-BB-RA		STD	26			16 - # 4	
		1-1/8-HS-BB-RA		HS					
HFX-24x	24	1-1/8-STD-BB-RA		STD				18 - # 4	
		1-1/8-HS-BB-RA		HS					

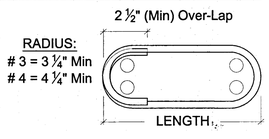
BACK TO BACK REINFORCED ANCHORAGE NOMENCLATURE

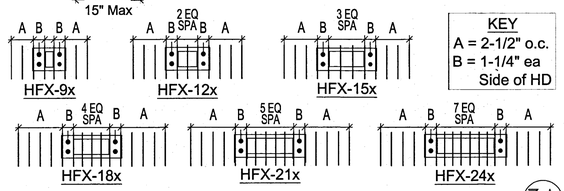
1-1/8 - STD - BB - RA
- REINFORCED ANCHORAGE "BACK TO BACK" INSTALLATION
- ROD GRADE
- ROD DIAMETER



3



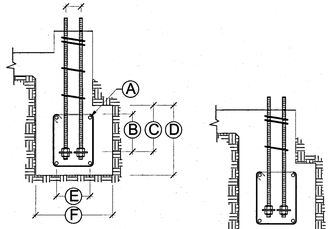




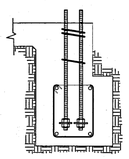
KEY
A = 2-1/2" o.c.
B = 1-1/4" ea Side of HD

BB–RA SHEAR TIES & STIRRUPS

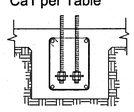
3A



CURB (12" MIN WIDTH)

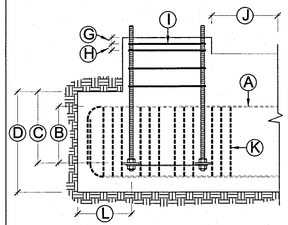


EXTERIOR SLAB

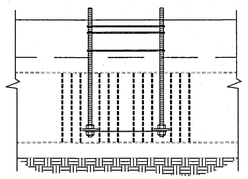


INTERIOR SLAB

A. #4 (Min) Horizontal Rebar Top and Bottom by EOR
B. le - 3"
C. le per Table
D. le + 7"
E. CL = 10" Min, 12" Max
F. 2'-2" (Min)
G. ±1" From Top of Concrete to CL of Shear Tie
H. 1" CL @ Upper Two Ties
I. Shear Ties per Table
J. 2'-6" (Min) UNO by EOR
K. Stirrups per Table
L. Ca1 per Table



CURB @ OUTSIDE CORNER



CONTINUOUS FOOTING

BB–RA SECTIONS & ELEVATIONS

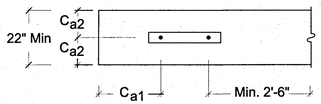
3B

REINFORCED ANCHORAGE (RA)

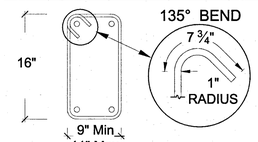
Model	Panel Width (in)	Anchorage [1]	Rod Dia (in)	Rod Grade [2,3]	RA le [4] (in)	RA $Ca1$ [5] (in)	RA $Ca2$ [6] (in)	Stirrups [9] (in)	Shear Ties
HFX-9x	9	1-1/8-STD-RA	1-1/8	STD	15	19-3/4	11	8 - # 4	# 3 (min) @ 3-3/4" OC
HFX-12x	12	1-1/8-STD-RA		STD				9 - # 4	# 3 (min) @ 4" OC
		1-1/8-HS-RA		HS					
HFX-15x	15	1-1/8-STD-RA		STD		20-5/8		10 - # 4	
		1-1/8-HS-RA		HS					
HFX-18x	18	1-1/8-STD-RA		STD				11 - # 4	
		1-1/8-HS-RA		HS					
HFX-21x	21	1-1/8-STD-RA		STD				12 - # 4	# 4 (min) @ 4" OC
		1-1/8-HS-RA		HS					
HFX-24x	24	1-1/8-STD-RA		STD					
		1-1/8-HS-RA		HS					

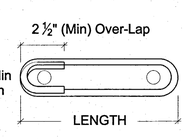
REINFORCED ANCHORAGE NOMENCLATURE

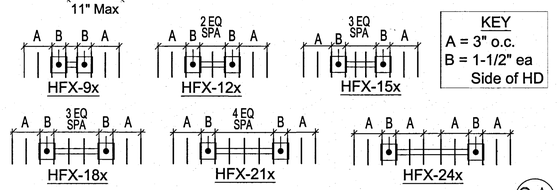
1-1/8 - STD - RA
- REINFORCED ANCHORAGE
- ROD GRADE
- ROD DIAMETER



2



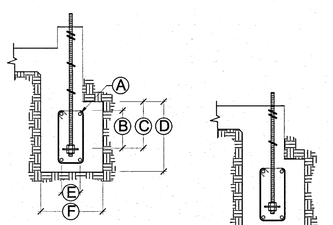




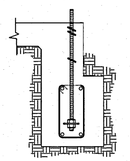
KEY
A = 3" o.c.
B = 1-1/2" ea Side of HD

RA SHEAR TIES & STIRRUPS

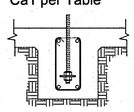
2A



CURB (6" MIN WIDTH)

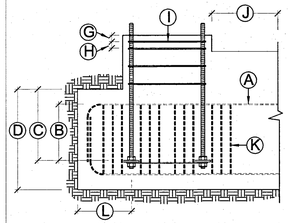


EXTERIOR SLAB

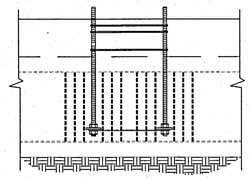


INTERIOR SLAB

A. #4 (Min) Horizontal Rebar Top and Bottom by EOR
B. 12" Min
C. 15" Min
D. 22" Min
E. CL = 6" Min, 8" Max
F. 1'-10" (Min)
G. ±1" From Top of Concrete to CL of Shear Tie
H. 1" CL @ Upper Two Ties
I. Shear Ties per Table
J. 2'-6" Min UNO by EOR
K. Stirrups per Table
L. Ca1 per Table



CURB @ OUTSIDE CORNER



CONTINUOUS FOOTING

RA SECTIONS & ELEVATIONS

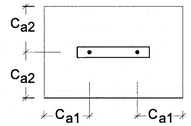
2B

UNREINFORCED ANCHORAGE (UA)

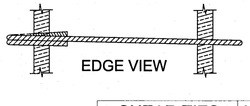
Model	Panel Height	Anchorage [1]	Rod Dia (in)	Rod Grade [2,3]	UA le [4] (in)	UA $Ca1$ [5] & $Ca2$ [6] (in)	Shear Ties [7,8]
HFX-9x	79.5" - 8'	1-1/8-STD-13-19	1-1/8	STD	13	19	1 - # 3
HFX-12x	78" - 10'	1-1/8-HS-20-30		HS	20	30	
		1-1/8-STD-14-20		STD	14	20	
HFX-15x, 18x	78" - 13'	1-1/8-HS-20-30		HS	20	30	
HFX-15x, 18x Balloon	14' - 20'						
HFX-21x, 24x	78" - 13'	1-1/8-STD-14-20		STD	14	20	
		1-1/8-HS-23-34		HS	23	34	2 - # 3
HFX-21x, 24x Balloon	14' - 20'	1-1/8-HS-20-30			20	30	

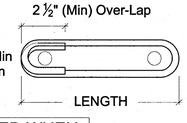
UNREINFORCED ANCHORAGE NOMENCLATURE

1-1/8 - STD - 14 - 20
- END & EDGE DISTANCE ($Ca1$ & $Ca2$)
- EMBEDMENT DEPTH (le)
- ROD GRADE
- ROD DIAMETER



1

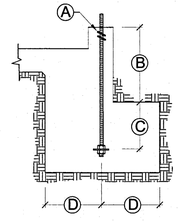




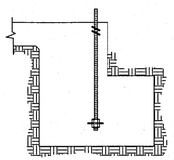
SHEAR TIES	NOT REQUIRED WHEN	
Model	Length	End Distance ≥	Edge Distance ≥
HFX-9x	7-1/2"	2-3/8"	2-3/8"
HFX-12x	10-1/2"	6-1/4"	3-1/2"
HFX-15x	12"	7-3/8"	4-1/4"
HFX-18x	15"	8-3/8"	5"
HFX-21x	18"	9-3/8"	5-1/2"
HFX-24x	21"	10-3/8"	6"

UA SHEAR TIES

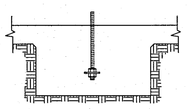
1A



CURB (6" MIN WIDTH)

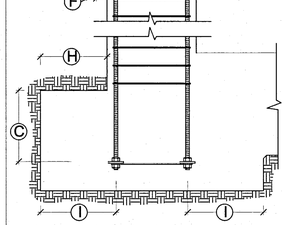


EXTERIOR SLAB

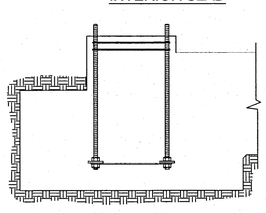


INTERIOR SLAB

A. Shear Ties per UA Table
B. 10" Max or per Plans
C. le per Table
D. Ca2 per Table
E. ±1" from Top of Concrete to CL of Shear Tie
F. 1" CL @ Upper Two Ties
G. Shear Ties per RA Table when Top of Concrete is ≥ 8" above Top of Slab
H. 12" Min
I. Ca1 per Table



STEM WALL @ OUTSIDE CORNER



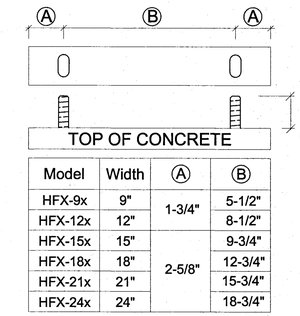
CURB @ OUTSIDE CORNER

UA SECTIONS & ELEVATIONS

1B

TABLE NOTES

1. Designs are to resist loading per ACI-318.
2. STD indicates Anchors complying with ASTM F1554 Grade 36 with a Hardy Frame Bolt Brace (HFXBB) installed with double nuts on the embed end.
3. HS indicates Anchors complying with ASTM A193 Grade B7 with a 1/2"x3"x3"(Min) Plate Washer installed with double nuts on the embed end (HFXBB not required).
4. le = length of embedment from the top of footing or grade beam to the top of the HFXBB Bolt Brace (top of the embedded Plate Washer @ HS anchors)
5. Ca1 = distance from HD Centerline to the end of the footing or grade beam.
6. Ca2 = distance from HD Centerline to both the front and the back face of the footing or grade beam.
7. Shear Ties are Grade 60 (Min) rebar and required for near edge distance conditions per ACI-318, f'c = 2,500 psi. Curbs and stem walls must be 6 inch (min) width for UA and RA, 12 inch (min) width for BB-RA.
8. For UA applications, additional ties may be required at stem walls. Shear Ties are not required for installation away from edge (see detail 1A), installation on wood framing, or for IRC Braced Wall Panel applications.
9. Stirrups are Grade 60 (Min) rebar. See table for size and spacing. See "Stirrup Layout" diagrams and "Key" for layout patterns.
10. Concrete Edge Distances must comply with ACI-318.



Model	Width	Ⓐ	Ⓑ
HFX-9x	9"	1-3/4"	5-1/2"
HFX-12x	12"		8-1/2"
HFX-15x	15"	2-5/8"	9-3/4"
HFX-18x	18"		12-3/4"
HFX-21x	21"		15-3/4"
HFX-24x	24"		18-3/4"

HFX ANCHOR CENTERLINES

A

IMPORTANT!

1. ANCHORAGE IS DESIGNED FOR TENSION AND SHEAR TRANSFER ONLY, FOUNDATION DESIGN PER EOR.
2. REINFORCEMENT SHOWN IS THE MINIMUM REQUIREMENT AND IS NOT INTENDED TO REPLACE REINFORCEMENT DESIGNED BY THE EOR.
3. FOR RA AND BB-RA INSTALLATIONS, THE HFXBB BOLT BRACE MAY BE PLACED ON TOP OF THE STIRRUPS WITH DOUBLE-NUTS INSTALLED AT EMBED END OF STANDARD GRADE ANCHOR RODS. (NOTE: ½" x 3" x 3" PLATE WASHERS ARE REQUIRED TO BE DOUBLE-NUTTED AT EMBED END OF HIGH STRENGTH ANCHOR RODS.)
4. HIGH STRENGTH ALL-THREAD RODS PROVIDED BY HARDY FRAMES ARE STAMPED ON BOTH ENDS.

HF B7

RESUBMITTAL DEC 20 2017 San Mateo County Building Inspection

IMPORTANT NOTES

B

REVISIONS	DATE

ANCHORAGE DETAILS - HFX PANELS

THIS DETAIL SHEET IS NOT PROPRIETARY AND IS NOT REQUIRED FOR PLAN SUBMITTAL WITH *HARDY FRAME* PRODUCTS

REVIEWED FOR CODE COMPLIANCE
This review does not authorize violation of State or County building laws.
NOV 1 2019
SAN MATEO CO. BLDG. INSP. DIV.

HARDY FRAME®
SHEAR WALL SYSTEM
1732 PALMA DRIVE, SUITE 200, VENTURA, CA 93003
TELEPHONE: 800 754-3030 / www.hardyframe.com

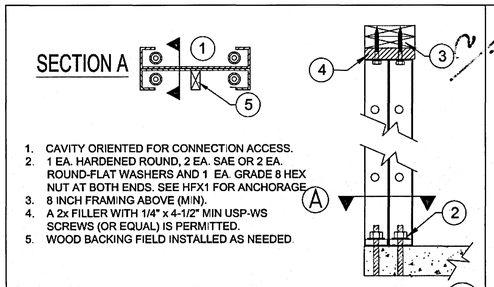
REGISTERED PROFESSIONAL ENGINEER No. 4321 STRUCTURAL STATE OF CALIFORNIA

1-1-17

HFX SERIES

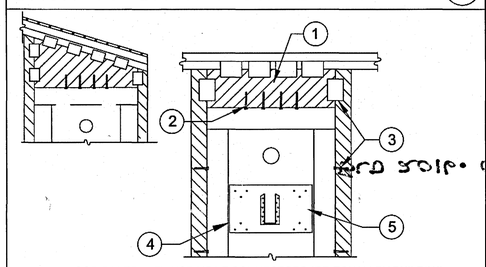
DATE: 1-1-2017

HFX1



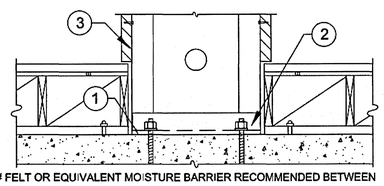
1. CAVITY ORIENTED FOR CONNECTION ACCESS.
2. 1 EA. HARDENED ROUND, 2 EA. SAE OR 2 EA. ROUND-FLAT WASHERS AND 1 EA. GRADE 8 HEX NUT AT BOTH ENDS. SEE HFX1 FOR ANCHORAGE.
3. 8 INCH FRAMING ABOVE (MIN).
4. A 2x FILLER WITH 1/4" x 4-1/2" MIN USP-WS SCREWS (OR EQUAL) IS PERMITTED.
5. WOOD BACKING FIELD INSTALLED AS NEEDED.

BACK TO BACK INSTALLATION (11)



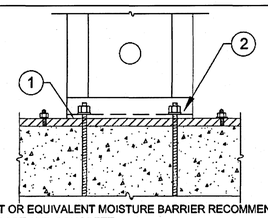
1. 4x WOOD FILLER WITH USP MP4-F CONNECTORS (OR EQUAL) BY BUILDING DESIGN PROFESSIONAL.
2. 1/4" x 3" (MIN) USP "WS-SERIES" SCREWS (OR EQUAL). QUANTITY PER TABLES
3. ADJACENT FRAMING WITH 1/4" DIAMETER SCREWS IS INSTALLED AT THE EDGES WHEN INSTALLING A 4x FILLER ABOVE OR WHEN SPECIFIED BY DESIGN PROFESSIONAL.
4. OPTIONAL LEDGER PRE-DRILL 3/16" DIA. HOLES, EVENLY SPACED IN FACE OF PANEL AND INSTALL 1/4" DIA. WOOD SCREWS INTO 2x (MIN.) WOOD LEDGER LOCATED IN PANEL CAVITY.
5. CONNECTOR AND ATTACHMENT BY BUILDING DESIGN PROFESSIONAL.

TOP CONNECTION W/ 4x FILLER (10)



1. 15# FELT OR EQUIVALENT MOISTURE BARRIER RECOMMENDED BETWEEN PANEL BASE AND CONCRETE.
2. 1 EA. HARDENED ROUND, 2 EA. SAE OR 2 EA. ROUND-FLAT WASHERS AND 1 EA. GRADE 8 HEX NUT AT BOTH ENDS. SEE HFX1 FOR ANCHORAGE.
3. ADACCENT FRAMING WITH 1/4" DIAMETER SCREWS IS INSTALLED AT THE EDGES WHEN INSTALLING A 4x FILLER ABOVE OR WHEN SPECIFIED BY DESIGN PROFESSIONAL.

RAISED FLOOR HEAD-OUT (9)

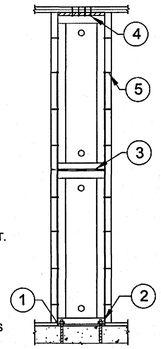


1. 15# FELT OR EQUIVALENT MOISTURE BARRIER RECOMMENDED BETWEEN PANEL BASE AND CONCRETE.
2. 1 EA. HARDENED ROUND, 2 EA. SAE OR 2 EA. ROUND-FLAT WASHERS AND 1 EA. GRADE 8 HEX NUT. SEE HFX1 FOR ANCHORAGE.

INSTALLATION ON 2x PLATE (8)

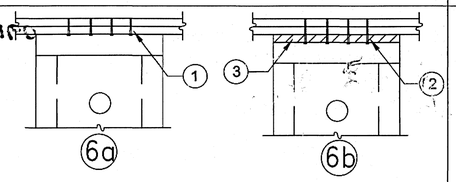
NOTES:
A) OUT OF PLANE FORCES TO BE RESISTED BY OTHER FRAMING MEMBERS PER THE BUILDING DESIGN PROFESSIONAL.

B) BALLOON WALL APPLICATIONS REQUIRE HIGH STRENGTH ANCHORAGE. SEE FOUNDATION PLAN AND ANCHORAGE TABLES ON SHEET HFX-1



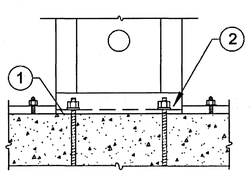
1. 15# FELT OR EQUIVALENT MOISTURE BARRIER RECOMMENDED BETWEEN PANEL BASE AND CONCRETE.
2. 1 EA. HARDENED ROUND, 2 EA. SAE OR 2 EA. ROUND-FLAT WASHERS AND 1 EA. GRADE 8 HEX NUT. SEE HFX1 FOR ANCHORAGE.
3. WELDED CONNECTION BY HARDY FRAMES, INC. (NO FIELD CONNECTION REQUIRED).
4. A 2x FILLER WITH 1/4" x 4-1/2" MIN USP-WS SCREWS (OR EQUAL) IS PERMITTED.
5. WHEN REQUIRED BY THE BUILDING DESIGN PROFESSIONAL ATTACH ADJACENT WOOD MEMBERS TO PANEL WITH 1/4" USP-WS SCREWS (OR EQUAL) THROUGH THE PANEL EDGE INTO THE WOOD MEMBER.

BALLOON WALL INSTALLATION (7)



1. 1/4" x 3" (MIN) USP "WS-SERIES" SCREWS (OR EQUAL). QUANTITY PER TABLES
2. 1/4" x 4-1/2" (MIN) USP "WS-SERIES" SCREWS (OR EQUAL). QUANTITY PER TABLES
3. 2x WOOD FILLER.

TOP PLATE CONNECTIONS (6)



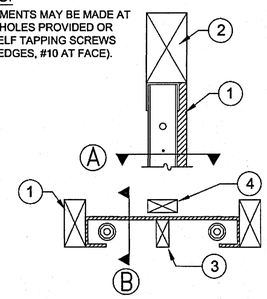
1. 15# FELT OR EQUIVALENT MOISTURE BARRIER RECOMMENDED BETWEEN PANEL BASE AND CONCRETE.
2. 1 EA. HARDENED ROUND, 2 EA. SAE OR 2 EA. ROUND-FLAT WASHERS AND 1 EA. GRADE 8 HEX NUT AT BOTH ENDS. SEE HFX1 FOR ANCHORAGE.

INSTALLATION ON FOUNDATION (5)

1. PLUS OR MINUS 1-1/2" GAP TO BE FILLED WITH MIN 5,000 PSI STRENGTH NON-SHRINK GROUT.
2. 1 EA. HARDENED ROUND, 2 EA. SAE OR 2 EA. ROUND-FLAT WASHERS AND 1 EA. GRADE 8 HEX NUT. SEE HFX1 FOR ANCHORAGE.

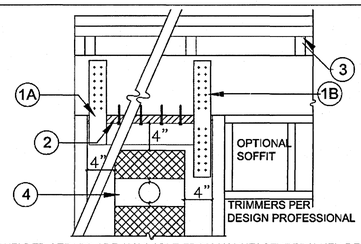
INSTALLATION ON NUTS&WASHERS (4)

NOTES:
ATTACHMENTS MAY BE MADE AT SCREW HOLES PROVIDED OR WITH SELF TAPPING SCREWS (#12 AT EDGES, #10 AT FACE).



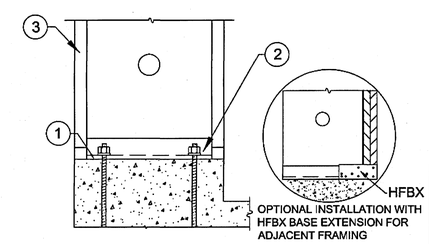
1. TRIMMERS PROVIDE FULL BEARING FOR HEADER ABOVE, DESIGN AND CONNECTIONS BY OTHERS.
2. 6x HEADER.
3. WOOD MEMBERS MAY BE INSERTED VERTICALLY OR HORIZONALLY IN CAVITY FOR BACKING AS NEEDED.

6x HEADER ABOVE-SECTION (3)



1A. WELDED STRAPS ARE AVAILABLE FROM MANUFACTURER WHEN REQUIRED BY THE DESIGN PROFESSIONAL.
1B. WHEN STRAPS ARE FIELD INSTALLED THE DESIGN AND CONNECTION IS BY THE DESIGN PROFESSIONAL. CONNECTION TO PANEL WITH SELF TAPPING SCREWS IS PERMITTED.
2. A 2x WOOD FILLER WITH 1/4"x4-1/2" (MIN.) USP "WS" SERIES SCREWS OR EQUAL IS PERMITTED.
3. WHEN CRIPPLE STUDS OCCUR, SHEAR TRANSFER DESIGN TO BE PER THE DESIGN PROFESSIONAL.
4A. THERE IS NO "INSIDE" OR "OUTSIDE" FACE OF PANEL. TO PREVENT THE NEED FOR ADDITIONAL HOLES ORIENT THE PANEL CAVITY TOWARD THE FIXTURE BEING INSTALLED.
4B. A 1" DIA. HOLE MAY BE ADDED IN THE PANEL FACE WHEN IT IS LOCATED IN THE UPPER HALF OF THE PANEL HEIGHT AND IS 4" MIN. FROM ANY EDGE. FOR PANELS MORE THAN 12" WIDE, ADDITIONAL HOLES MUST ALSO BE 1" MINIMUM ABOVE AND BELOW THE 3" DIA. HOLE PROVIDED.
4C. FOR HOLES LARGER THAN 1" DIA. OR TO ADD MORE THAN ONE HOLE CONTACT HARDY FRAMES, INC.

TOP CONNECTION TO HEADER (2)



1. 15# FELT OR EQUIVALENT MOISTURE BARRIER RECOMMENDED BETWEEN PANEL BASE AND CONCRETE.
2. 1 EA. HARDENED ROUND, 2 EA. SAE OR 2 EA. ROUND-FLAT WASHERS AND 1 EA. GRADE 8 HEX NUT. SEE HFX1 FOR ANCHORAGE.
3. ADJACENT FRAMING OPTIONAL U.N.O. BY BUILDING DESIGN PROFESSIONAL.

INSTALLATION ON CURB (1)

HFX-SERIES 78 IN. THRU 13 FOOT

Model Number	Net Height (in)	Depth (in)	Hold Down Diameter[1] (in)	Top Screw Qty[2] (ea)	Screw Qty Available at Edges (ea)[3]
HFX-12,15,18,21 & 24x78	78	3-1/2	1-1/8	9" Width = 5 12" Width = 6 15" Width = 8 18" Width = 10 21" Width = 12 24" Width = 14	4 5 6
HFX-9x79.5	79-1/2				
HFX-12,15,18,21 & 24x8	92-1/4				
HFX-9x8	93-3/4				
HFX-12,15,18,21 & 24x9	104-1/4				
HFX-12,15,18,21 & 24x10	116-1/4				
HFX-15,18,21 & 24x11	128-1/4				
HFX-15,18,21 & 24x12	140-1/4				
HFX-15,18,21 & 24x13	152-1/4				

BALLOON PANELS 14 FEET THRU 20 FEET

Model Number	Net Height (in)	Depth (in)	Hold Down Diameter[1] (in)	Top Screw Qty[2] (ea)	Screw Qty Available at Edges (ea)[3]
HFX-15,18,21 & 24x14	164-1/4	3-1/2	1-1/8	15" Width = 8 18" Width = 10 21" Width = 12 24" Width = 14	6 7 8
HFX-15,18,21 & 24x15	176-1/4				
HFX-15,18,21 & 24x16	188-1/4				
HFX-15,18,21 & 24x17	200-1/4				
HFX-15,18,21 & 24x18	212-1/4				
HFX-15,18,21 & 24x19	224-1/4				
HFX-15,18,21 & 24x20	236-1/4				

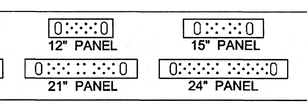
1) Hold down bolts connect to the Panel base with (1 ea) Hardened Round, (2 ea) Round-Flat or (2 ea) SAE Washers below (1 ea) Grade 8 Hex Nut on each rod or as specified by the Building Design Professional.
2) 1/4" diameter USP-WS Series screws (or equal). Length is 3" (minimum) when attached directly to the collector and 4-1/2" (minimum) when installing a 2x filler above the Panel.
3) Adjacent framing with 1/4" diameter screws is required at the edges when installing a 4X filler above or when specified by the Design Professional.

(A)

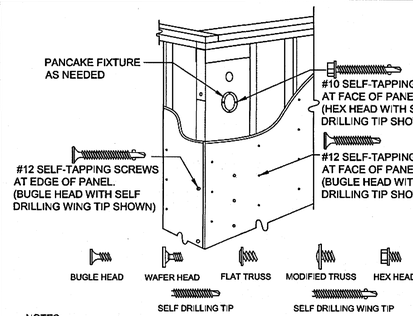
INSTALLATION INSTRUCTIONS

A) When installing directly on concrete, place Panel over bolts and connect with (1 ea) Hardened Round, (2 ea) Round-Flat or (2 ea) SAE Washers below (1 ea) Grade 8 or 2H Heavy Hex Nut. Secure with a deep socket (recommended) until "Snug Tight".
B) If bottom connection is not detailed on plans, confirm with Design Professional before installing on Nuts & Washers or on a Mudsill.
C) Use 1/4"x4-1/2" USP-WS Series screws (or equal) at top connections with a 2x filler. If the top of Panel is in direct contact with the collector above (top plates, header, beam, etc.) use1/4 x 3" (minimum)
D) For installations with a 4x filler above 1/4" diameter screws are required at the Panel edges to brace for the out-of-plane hinge or when they are specified by the Design Professional.

(B)



(C)



NOTES:
1) SURFACE FINISHES, CONNECTORS AND FIXTURES ARE ATTACHED TO THE PANEL FACE WITH # 10 SELF-TAPPING SCREWS SPACED NO LESS THAN 2-1/4" OC.
2) ATTACHMENTS TO THE PANEL EDGES ARE MADE WITH # 12 SELF-TAPPING SCREWS.
3) STRUCTURAL CONNECTIONS ARE TO BE DESIGNED BY THE DESIGN PROFESSIONAL.
4) STRUCTURAL HARDWARE USED TO TRANSFER LOADS SHOULD NOT EXCEED 12 GAGE.

RESUBMITTAL
FEB 16 2017
Building Inspection

(D)

REVISIONS	DATE

DETAILS - HFX PANELS

THIS DETAIL SHEET IS NOT PROPRIETARY AND IS NOT REQUIRED FOR PLAN SUBMITTAL WITH *HARDY FRAME* PRODUCTS

REVISED FOR CODE COMPLIANCE
This review does not authorize violation of State or County building laws.
NOV 13 2019
SAN MATEO CO. BLDG. INSP. DIV.

HARDY FRAME
SHEARWALL SYSTEM
1732 PALMA DRIVE, SUITE 200, VENTURA, CA 93003
TELEPHONE: 800 754-3030 / www.hardyframe.com

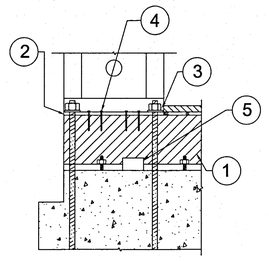
HFX SERIES

DATE: 1-1-2016

HFX2

NOTE:
INSTALLATION WITHOUT *HARDY FRAME*® BEARING PLATE (HFXBP) RESULTS IN A DECREASE OF ALLOWABLE SHEAR VALUE. BUILDING DESIGN PROFESSIONAL MUST ANALYZE EFFECTS

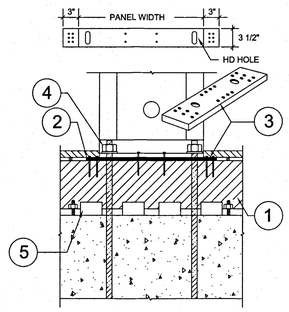
NOTE:
COUPLING NUTS MAY BE USED WHEN THREADED ROD IS SUBJECT TO TENSION LOADS ONLY.



1. 4x (MIN) RIM, TABLES SPECIFY ENGINEERED WOOD PRODUCT.
2. FLOOR SHEATHING NOTCHED FOR BEARING PLATE (HFXBP).
3. 1 EA. HARDENED ROUND, 2 EA. SAE OR 2 EA. ROUND-FLAT WASHERS AND 1 EA. GRADE 8 HEX NUT. SEE HFX1 FOR ANCHORAGE.
4. 1/4" x 4 1/2 (MIN) USP-WS SCREWS (OR EQUAL) THROUGH BOTTOM OF PANEL MIN QUANTITY PER TABLE.
5. USP MP4 F CONNECTORS OR EQUAL BY BUILDING DESIGN PROFESSIONAL.

RAISED–OS CORNER (4)

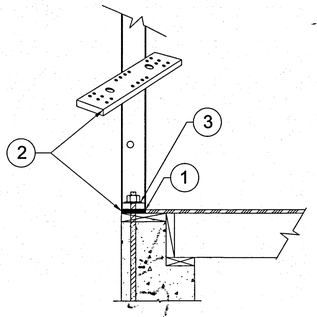
NOTE: COUPLING NUTS MAY BE USED WHEN THREADED ROD IS SUBJECT TO TENSION LOADS ONLY.



1. 4x (MIN) RIM, TABLES SPECIFY ENGINEERED WOOD PRODUCT.
2. FLOOR SHEATHING NOTCHED FOR BEARING PLATE (HFXBP).
3. ***HARDY FRAME***® BEARING PLATE (HFXBP) WITH 6 EA.1/4" DIA. x 3" (MIN) USP-WS SCREWS (OR EQUAL) AT EACH END. WHEN MORE THAN 12 EA. SCREWS ARE REQUIRED INSTALL 1/4" x 4-1/2" (MIN) SCREWS THROUGH BASE OF PANEL.
4. 1 EA. HARDENED ROUND, 2 EA. SAE OR 2 EA. ROUND-FLAT WASHERS AND 1 EA. GRADE 8 HEX NUT. SEE HFX1 FOR ANCHORAGE.
5. USP MP4 F CONNECTORS OR EQUAL BY BUILDING DESIGN PROFESSIONAL.

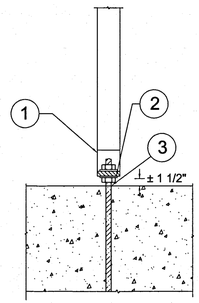
RAISED–BEARING PL (3)

NOTE:
INSTALLATION WITHOUT *HARDY FRAME* BEARING PLATE (HFXBP) MAY INCREASE DEFLECTION AND RESULT IN A DECREASE OF ALLOWABLE SHEAR VALUE. BUILDING DESIGN PROFESSIONAL MUST ANALYZE EFFECTS



1. FLOOR SHEATHING NOTCHED FOR BEARING PLATE (HFXBP).
2. ***HARDY FRAME*** BEARING PLATE (HFXBP) WITH 6 EA.1/4" DIA. x 3" (MIN) USP-WS SCREWS (OR EQUAL) AT EACH END. WHEN MORE THAN 12 EA. SCREWS ARE REQUIRED INSTALL 1/4" x 4-1/2" (MIN) SCREWS THROUGH BASE OF PANEL.
3. 1 EA. HARDENED ROUND, 2 EA. SAE OR 2 EA. ROUND-FLAT WASHERS AND 1 EA. GRADE 8 HEX NUT. SEE HFX1 FOR ANCHORAGE.

RAISED STEM WALL (2)



1. ACCESS HOLE LOCATED AT EDGE OF POST.
2. 1 EA. HARDENED ROUND, 2 EA. SAE OR 2 EA. ROUND-FLAT WASHERS AND 1 EA. GRADE 8 HEX NUT. SEE HFX1 FOR ANCHORAGE.
3. PLUS OR MINUS 1-1/2" GAP TO BE FILLED WITH MINIMUM 5,000 PSI STRENGTH NON-SHRINK GROUT.

POST ON DBL. NUT (1)

Model Number	Net Height (in)	Depth (in)	Hold Down Diameter[1] (in)	Screw Quantity			Screw Qty[4] Available at Edges (ea)
				Panel	Top[2] (ea)	Bott[3] (ea)	
HFX-12,15,18,21 & 24x8	92-1/4	3-1/2	1-1/8	12" Width	6	6	4
HFX-12,15,18,21 & 24x9	104-1/4			15" Width	8	8	
HFX-12,15,18,21 & 24x10	116-1/4			18" Width	10	10	5
HFX-15,18,21 & 24x11	128-1/4			21" Width	12	12	
HFX-15,18,21 & 24x12	140-1/4			24" Width	14	14	6
HFX-15,18,21 & 24x13	152-1/4						

NOTE: *HARDY FRAME*® "STK" WASHERS ARE REQUIRED IN THE TOP OF PANELS WHEN CONNECTING TO A HOLD DOWN ROD FROM ABOVE. *HARDY FRAME*® "STK PANELS" INCLUDE STK WASHERS PRE-WELDED IN THE TOP CHANNEL.

1) Hold down bolts specified as Standard Grade (STD) must comply with ASTM F1554 Grade 36 (or equal) Hold down bolts specified as High Strength (HS) must comply with ASTM A 193 Grade B7 (or equal). HD bolts (both grades) connect to the base of the Panel above with one Hardened Round, two Flat or two SAE Washers and a Grade 8 Hex Nut (or equal). HD bolts (both grades) connect to the top channel of the Panel below with a ***Hardy Frame***® Stacking (STK) Washer (may be pre-welded in a ***Hardy Frame***® "STK" Panel), one Hardened Round, two Flat or two SAE Washers and a Grade 8 Hex Nut (or equal).
2) 1/4" diameter USP-WS Series screws (or equal). Length is 3" (minimum) when attaching directly to the collector and 4-1/2" (minimum) when installing a 2x filler above the Panel.
3) 1/4" diameter USP-WS Series screws (or equal). Length is 4-1/2" (minimum) through base of Panel and 3" (minimum) at ***Hardy Frame***® Bearing Plate (HFXBP).
4) 1/4" diameter screws are required at the edges when installing a 4x filler above or when specified by the Design Professional.

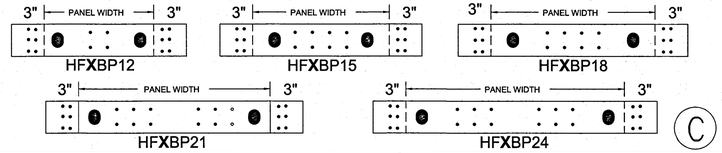
(A)

INSTALLATION ON FLOOR SYSTEMS WITH *HARDY FRAME*® BEARING PLATE (HFXBP)

A) Install a solid 4x (min) rim in floor system below Panel. Table values assume Engineered Wood Product (EWP).
B) Notch floor sheathing and screw ends of HFXBP to rim with 1/4"x3" (min) USP "WS" Series Screws (or equal).
C) Install Panel on HFXBP, connect with threaded rod grade specified on plans and secure base of Panel with Hardened Round Washer and Grade 8 Nut (or equal). Nuts to be snug tight.
D) When stacking to a Panel below, "STK" Panels include "STK Washers" pre-welded in the top channel, or field install "STK" Washer, Hardened Round Washer and a Grade 8 Nut in the top channel of the Panel below.
E) When more than 12 screws are required for minimum bottom screw quantity, install 1/4"x4-1/2" Screws through Panel base and HFXBP into rim.
F) For standard wall heights, install a 2x filler above Panel (Dtl 6/HFX2). For larger fillers see Dtl 10/HFX2.

NOTE: Installations may vary with specific job conditions and/or specifications by the Design Professional.

(B)



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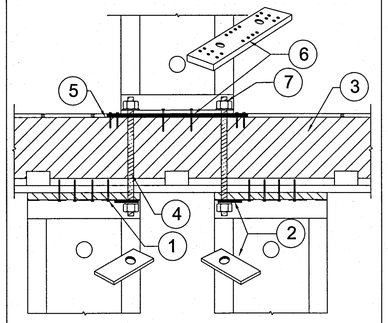
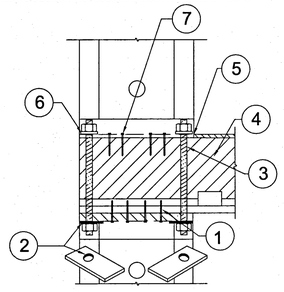


1. 1/4" x 4 1/2" (MIN) USP-WS SCREWS (OR EQUAL) PER TABLE.
2. ***HARDY FRAME***® "STK WASHER" AT TOP OF PANEL WHEN CONNECTING TO HOLD DOWN ABOVE.
3. 4x (MIN) RIM, TABLES SPECIFY ENGINEERED WOOD PRODUCT.
4. ALL THREAD ROD PER PLANS.
5. FLOOR SHEATHING NOTCHED FOR BEARING PLATE.
6. ***HARDY FRAME***® BEARING PLATE (HFXBP) WITH 6 EA.1/4" DIA. x 3" (MIN) USP-WS SCREWS (OR EQUAL) AT EACH END. WHEN MORE THAN 12 EA. SCREWS ARE REQUIRED INSTALL 1/4" x 4-1/2" (MIN) SCREWS THROUGH BASE OF PANEL.
7. 1 EA. HARDENED ROUND, 2 EA. SAE OR 2 EA. ROUND-FLAT WASHERS AND 1 EA. GRADE 8 HEX NUT AT BOTH ENDS.

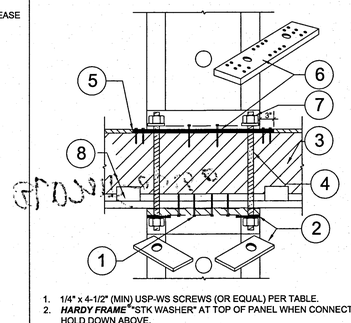
PYRAMID STACK (8)

NOTE
INSTALLATION WITHOUT ***HARDY FRAME***® BEARING PLATE (HFXBP) MAY INCREASE DEFLECTION AND RESULT IN A DECREASE OF ALLOWABLE SHEAR VALUE, BUILDING DESIGN PROFESSIONAL MUST ANALYZE EFFECTS.



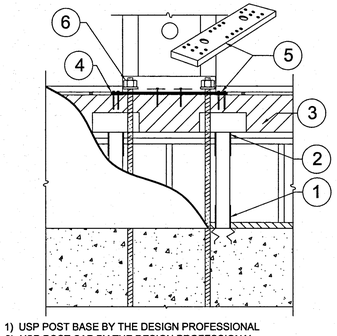
1. 1/4" x 4-1/2" (MIN) USP-WS SCREWS (OR EQUAL) PER TABLE.
2. ***HARDY FRAME***® "STK WASHER" AT TOP OF PANEL WHEN CONNECTING TO HOLD DOWN ABOVE.
3. ALL THREAD ROD PER PLANS.
4. 4x (MIN) RIM, TABLES SPECIFY ENGINEERED WOOD PRODUCT.
5. FLOOR SHEATHING NOTCHED FOR BEARING PLATE (HFXBP).
6. 1 EA. HARDENED ROUND, 2 EA. SAE OR 2 EA. ROUND-FLAT WASHERS AND 1 EA. GRADE 8 HEX NUT AT BOTH ENDS.
7. 1/4" x 4 1/2 (MIN) USP-WS SCREWS (OR EQUAL) THROUGH BOTTOM OF PANEL MIN QUANTITY PER TABLE.

STACK @ OS CORNER (7)



1. 1/4" x 4-1/2" (MIN) USP-WS SCREWS (OR EQUAL) PER TABLE.
2. ***HARDY FRAME***® "STK WASHER" AT TOP OF PANEL WHEN CONNECTING TO HOLD DOWN ABOVE.
3. ALL THREAD ROD PER PLANS.
4. 4x (MIN) RIM, TABLES SPECIFY ENGINEERED WOOD PRODUCT.
5. FLOOR SHEATHING NOTCHED FOR BEARING PLATE (HFXBP).
6. ***HARDY FRAME***® BEARING PLATE (HFXBP) WITH 6 EA.1/4" DIA. x 3" (MIN) USP-WS SCREWS (OR EQUAL) AT EACH END. WHEN MORE THAN 12 EA. SCREWS ARE REQUIRED INSTALL 1/4" x 4-1/2" (MIN) SCREWS THROUGH BASE OF PANEL.
7. 1 EA. HARDENED ROUND, 2 EA. SAE OR 2 EA. ROUND-FLAT WASHERS AND 1 EA. GRADE 8 HEX NUT AT BOTH ENDS.
8. USP MP4 F CONNECTORS OR EQUAL BY BUILDING DESIGN PROFESSIONAL.

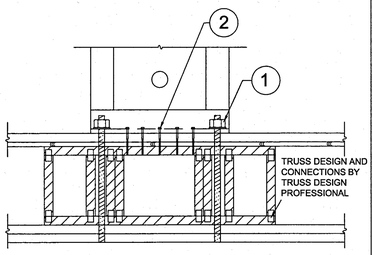
STRAIGHT STACK (6)



1) USP POST BASE BY THE DESIGN PROFESSIONAL
2) USP POST CAP BY THE DESIGN PROFESSIONAL
3) 4x (MIN) RIM AND STRUCTURAL FRAMING BY THE DESIGN PROFESSIONAL
4) FLOOR SHEATHING NOTCHED FOR BEARING PLATE.
5) ***HARDY FRAME***® BEARING PLATE (HFXBP) WITH 6 EA.1/4" DIA. x 3" (MIN) USP-WS SCREWS (OR EQUAL) AT EACH END. WHEN MORE THAN 12 EA. SCREWS ARE REQUIRED INSTALL 1/4" x 4-1/2" (MIN) SCREWS THROUGH BASE OF PANEL.
6) 1 EA. HARDENED ROUND, 2 EA. SAE OR 2 EA. ROUND-FLAT WASHERS AND 1 EA. GRADE 8 HEX NUT. SEE HFX1 FOR ANCHORAGE.

CRIPPLE WALL (5)

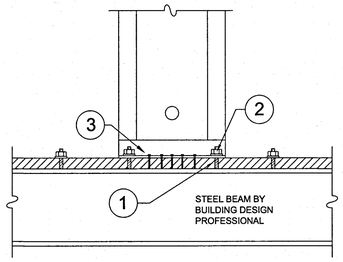
NOTE:
A. INSTALLATION WITHOUT *HARDY FRAME*® BEARING PLATE (HFXBP) INCREASES DEFLECTION AND MAY RESULT IN A DECREASE OF ALLOWABLE SHEAR VALUES BUILDING DESIGN PROFESSIONAL MUST ANALYZE EFFECTS.
B. TRUSS DESIGN PROFESSION TO CHECK LATERAL SHEAR AND OVERTURNING MOMENT OF TRUSS SYSTEM.
C. END BLOCK CONFIGURATION MAY CHANGE TO ACCOMMODATE SPECIFIC JOB CONDITIONS.



1. 1 EA. HARDENED ROUND, 2 EA. SAE OR 2 EA. ROUND-FLAT WASHERS AND 1 EA. GRADE 8 HEX NUT AT BOTH ENDS.
2. 1/4" MIN USP-WS SCREWS (OR EQUAL) WITH FULL PENETRATION INTO TOP CHORD OF BLOCK.

OPEN WEB TRUSS (14)

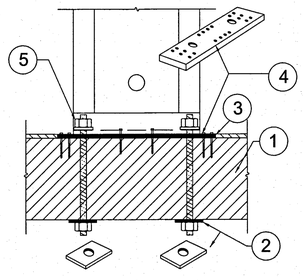
BUILDING DESIGN PROFESSIONAL TO DESIGN
A. LOAD PATH FROM BEAM TO FOUNDATION.
B. INSTALLATION WITHOUT *HARDY FRAME*® BEARING PLATE (HFXBP) INCREASES PANEL DEFLECTION AND MAY RESULT IN A DECREASE OF ALLOWABLE SHEAR VALUES. BUILDING DESIGN PROFESSIONAL MUST ANALYZE EFFECTS.
C. BEAM DEFLECTION MAY INCREASE TOTAL DRIFT OF PANEL. BUILDING DESIGN PROFESSIONAL MUST ANALYZE EFFECTS.



1. HOLD DOWN ALL THREAD RODS WELDED TO STEEL BEAM BY BUILDING DESIGN PROFESSIONAL.
2. 1 EA. HARDENED ROUND, 2 EA. SAE OR 2 EA. ROUND-FLAT WASHERS AND 1 EA. GRADE 8 HEX NUT.
3. 1/4" MIN USP-WS SCREWS (OR EQUAL)MAY BE INSTALLED FOR ADDITIONAL SHEAR TRANSFER.

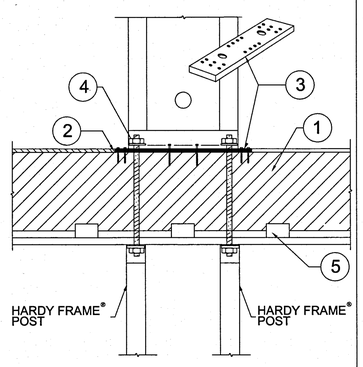
STEEL BM–WELDED HD (13)

BUILDING DESIGN PROFESSIONAL TO DESIGN
A. LOAD PATH FROM BEAM TO FOUNDATION.
B. INSTALLATION WITHOUT *HARDY FRAME*® BEARING PLATE (HFXBP) INCREASES PANEL DEFLECTION AND MAY RESULT IN A DECREASE OF ALLOWABLE SHEAR VALUES. BUILDING DESIGN PROFESSIONAL MUST ANALYZE EFFECTS.
C. BEAM DEFLECTION MAY INCREASE TOTAL DRIFT OF PANEL. BUILDING DESIGN PROFESSIONAL MUST ANALYZE EFFECTS.



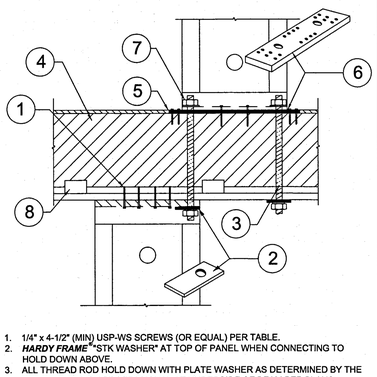
1. WOOD BEAM PER PLAN.
2. ALL THREAD HOLD DOWN WITH PLATE WASHER AS DETERMINED BY THE BUILDING DESIGN PROFESSIONAL AT UNDERSIDE OF BEAM PER PLAN.
3. FLOOR SHEATHING NOTCHED FOR BEARING PLATE.
4. ***HARDY FRAME***® BEARING PLATE (HFXBP) WITH 6 EA.1/4" DIA. x 3" (MIN) USP-WS SCREWS (OR EQUAL) AT EACH END. WHEN MORE THAN 12 EA. SCREWS ARE REQUIRED INSTALL 1/4" x 4-1/2" (MIN) SCREWS THROUGH BASE OF PANEL.
5. 1 EA. HARDENED ROUND, 2 EA. SAE OR 2 EA. ROUND-FLAT WASHERS AND 1 EA. GRADE 8 HEX NUT.

WOOD BM THRU BOLT (12)



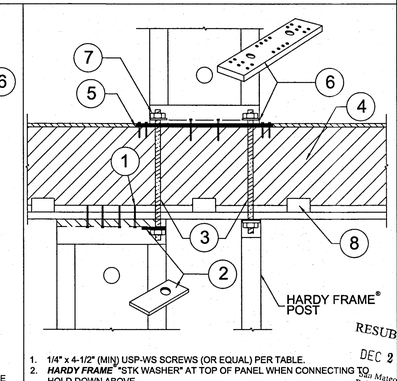
1. 4x (MIN) RIM, TABLES SPECIFY ENGINEERED WOOD PRODUCT.
2. FLOOR SHEATHING NOTCHED FOR BEARING PLATE.
3. ***HARDY FRAME***® BEARING PLATE (HFXBP) WITH 6 EA.1/4" DIA. x 3" (MIN) USP-WS SCREWS (OR EQUAL) AT EACH END. WHEN MORE THAN 12 EA. SCREWS ARE REQUIRED INSTALL 1/4" x 4-1/2" (MIN) SCREWS THROUGH BASE OF PANEL.
4. 1 EA. HARDENED ROUND, 2 EA. SAE OR 2 EA. ROUND-FLAT WASHERS AND 1 EA. GRADE 8 HEX NUT AT BOTH ENDS.
5. USP MP4 F CONNECTORS OR EQUAL BY BUILDING DESIGN PROFESSIONAL.

POSTS BELOW (11)



1. 1/4" x 4-1/2" (MIN) USP-WS SCREWS (OR EQUAL) PER TABLE.
2. ***HARDY FRAME***® "STK WASHER" AT TOP OF PANEL WHEN CONNECTING TO HOLD DOWN ABOVE.
3. ALL THREAD ROD HOLD DOWN WITH PLATE WASHER AS DETERMINED BY THE BUILDING DESIGN PROFESSIONAL AT UNDERSIDE OF BEAM PER PLANS.
4. 4x (MIN) RIM, TABLES SPECIFY ENGINEERED WOOD PRODUCT.
5. FLOOR SHEATHING NOTCHED FOR BEARING PLATE (HFXBP).
6. ***HARDY FRAME***® BEARING PLATE (HFXBP) WITH 6 EA.1/4" DIA. x 3" (MIN) USP-WS SCREWS (OR EQUAL) AT EACH END. WHEN MORE THAN 12 EA. SCREWS ARE REQUIRED INSTALL 1/4" x 4-1/2" (MIN) SCREWS THROUGH BASE OF PANEL.
7. 1 EA. HARDENED ROUND, 2 EA. SAE OR 2 EA. ROUND-FLAT WASHERS AND 1 EA. GRADE 8 HEX NUT AT BOTH ENDS.
8. USP MP4 F CONNECTORS OR EQUAL BY BUILDING DESIGN PROFESSIONAL.

STAGGERED–THRU BOLT (10)



1. 1/4" x 4-1/2" (MIN) USP-WS SCREWS (OR EQUAL) PER TABLE.
2. ***HARDY FRAME***® "STK WASHER" AT TOP OF PANEL WHEN CONNECTING TO HOLD DOWN ABOVE.
3. ALL THREAD ROD PER PLANS.
4. 4x (MIN) RIM, TABLES SPECIFY ENGINEERED WOOD PRODUCT.
5. FLOOR SHEATHING NOTCHED FOR BEARING PLATE (HFXBP).
6. ***HARDY FRAME***® BEARING PLATE (HFXBP) WITH 6 EA.1/4" DIA. x 3" (MIN) USP-WS SCREWS (OR EQUAL) AT EACH END. WHEN MORE THAN 12 EA. SCREWS ARE REQUIRED INSTALL 1/4" x 4-1/2" (MIN) SCREWS THROUGH BASE OF PANEL.
7. 1 EA. HARDENED ROUND, 2 EA. SAE OR 2 EA. ROUND-FLAT WASHERS AND 1 EA. GRADE 8 HEX NUT AT BOTH ENDS.
8. USP MP4 F CONNECTORS OR EQUAL BY BUILDING DESIGN PROFESSIONAL.

STAGGERED TO POST (9)

REVISIONS	DATE

FLOOR SYSTEM DETAILS - HFX PANELS

THIS DETAIL SHEET IS NOT PROPRIETARY AND IS NOT REQUIRED FOR PLAN SUBMITTAL WITH *HARDY FRAME* PRODUCTS

REVIEWED FOR CODE COMPLIANCE
This review does not authorize violation of State or County building laws.
NOV 3 2019
SAN MATEO BLDG. INSP. DIV.

HARDY FRAME®
SHEAR WALL SYSTEM
1732 PALMA DRIVE, SUITE 200, VENTURA, CA 93003
TELEPHONE: 800 754-3030 / www.hardyframe.com

REGISTERED PROFESSIONAL ENGINEER
JOSE E. ROMO
No. 41321
STRUCTURAL
STATE OF CALIFORNIA

1-1-17

HFX SERIES

RESUBMITTAL
DEC 20 2017
San Mateo County Building Inspection

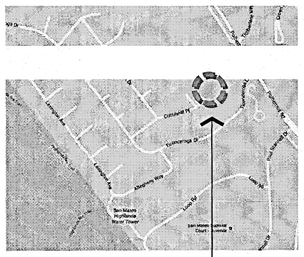
DATE:
1-1-2017

HFX3

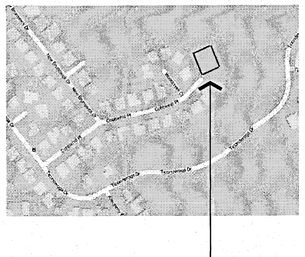
HIGHLAND ESTATES

LOT 9 – 2185 COBBLEHILL PLACE
LANDSCAPE PLANS

VICINITY MAP



SITE MAP



SHEET INDEX

REVISION LOG

DATE	SHEET NUMBER	DESCRIPTION

REVIEWED FOR COMPLIANCE
This review does not authorize violation of State or County building laws.
NOV 13 2019
SAN MATEO CO. BLDG. INSP. DIV.

RESUBMITTAL
DEC 14 2017
San Mateo County Building Inspection

CLIENT:
CHAMBERLAIN GROUP
655 Skyway, Suite 230
San Carlos, CA 94070
(650) 595.5582

USA CALL BEFORE YOU DIG
800.227.2600

REGISTERED LANDSCAPE ARCHITECT
REZKI R. ABED
STATE OF CALIFORNIA

VAN DORN ABED
LANDSCAPE ARCHITECTS, INC.
81 14TH ST. SAN FRANCISCO, CA
ZIP 94103 PH (415) 864-1921 FAX(415) 864-4796

PROJECT MANAGER: ZA
DRAWN BY: MW
CHECKED BY: ZA

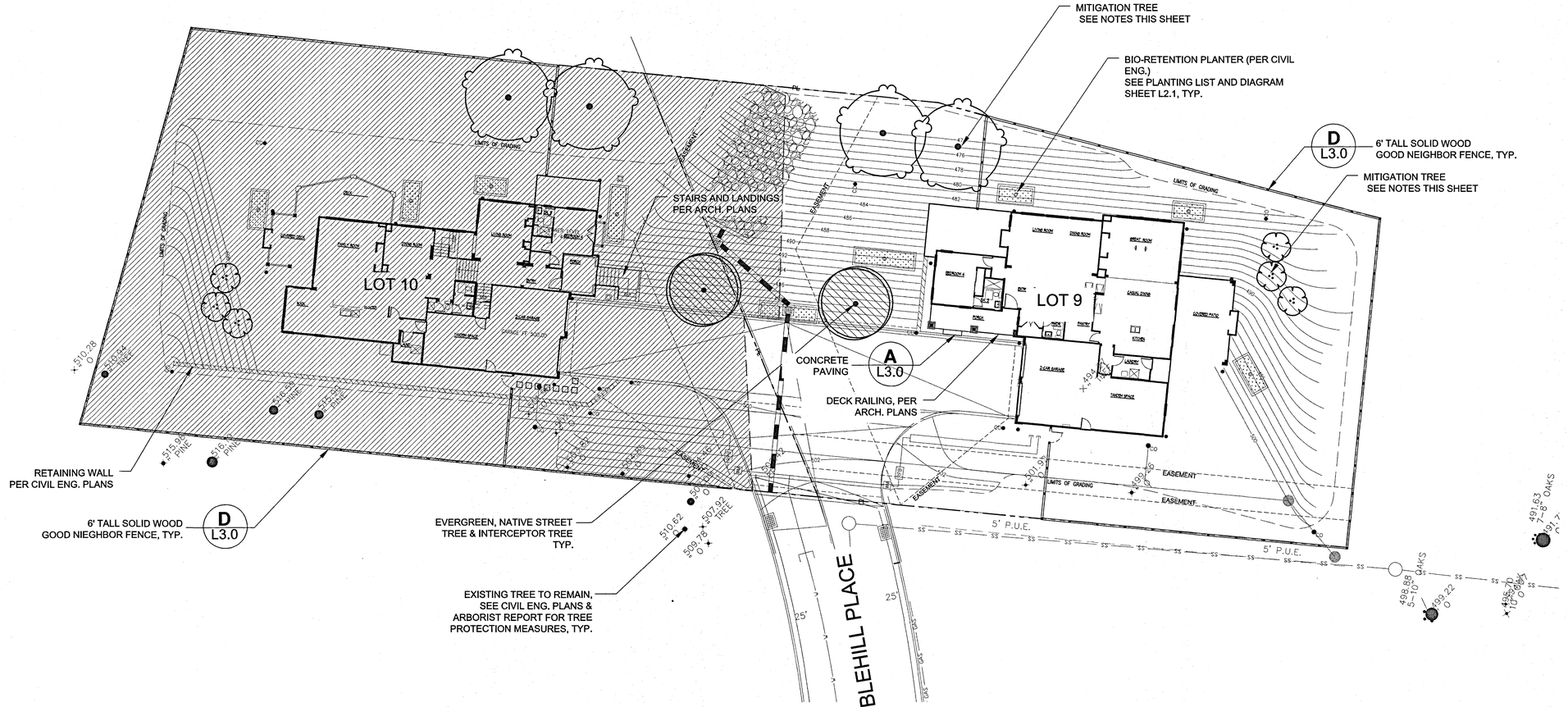
PROJECT NAME/LOCATION:
2185 COBBLEHILL PLACE
SAN MATEO CALIFORNIA
DRAWING TITLE:
LANDSCAPE IMPROVEMENT PLANS
LOT 9

REVISIONS:

NO.	DESCRIPTION	BY:	DATE

SHEET TITLE:
COVER SHEET

SCALE: NTS
ISSUE DATE: 5/18/17
PROJECT NO.: V1355
SHEET NO.: L0.0 OF



REVIEWED FOR CODE COMPLIANCE
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NOV 18 2019

SAN MATEO CO. BLDG. INSP. DIV.

NOTES:

1. **NO PLANTING OR IRRIGATION SHALL OCCUR UNDER THE CANOPIES OF ANY EXISTING OAK TREES TO REMAIN. FIELD ADJUST NEW REPLACEMENT TREES AS NEEDED.**

TREE LEGEND:

PROPOSED TREES - SEE L2.1 FOR COMPLETE TREE SPECIES/LEGEND

	QUALIFIES FOR STORMWATER CREDIT WHEN WITHIN 25' OF IMPERVIOUS SURFACE.
	TOTAL SITE (LOT 5-11): 22 MITIGATION TREES REQUIRED 49 MITIGATION TREES PROVIDED **PROVIDED - LOT 9 - LOT 11:** 3 = REAR YARD MITIGATION TREES MIN. PROVIDED PER COA AES-1B, EACH LOT 14 TOTAL MITIGATION TREES, WITH MIN. 4 OAKS.
•	EXISTING TREES TO REMAIN, TYP. SEE CIVIL PLANS AND ARBORISTS REPORT FOR TREE PROTECTION MEASURES.

RESUBMITTAL
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REGISTERED LANDSCAPE ARCHITECT
TEKI R. ABED
No. 2412
STATE OF CALIFORNIA

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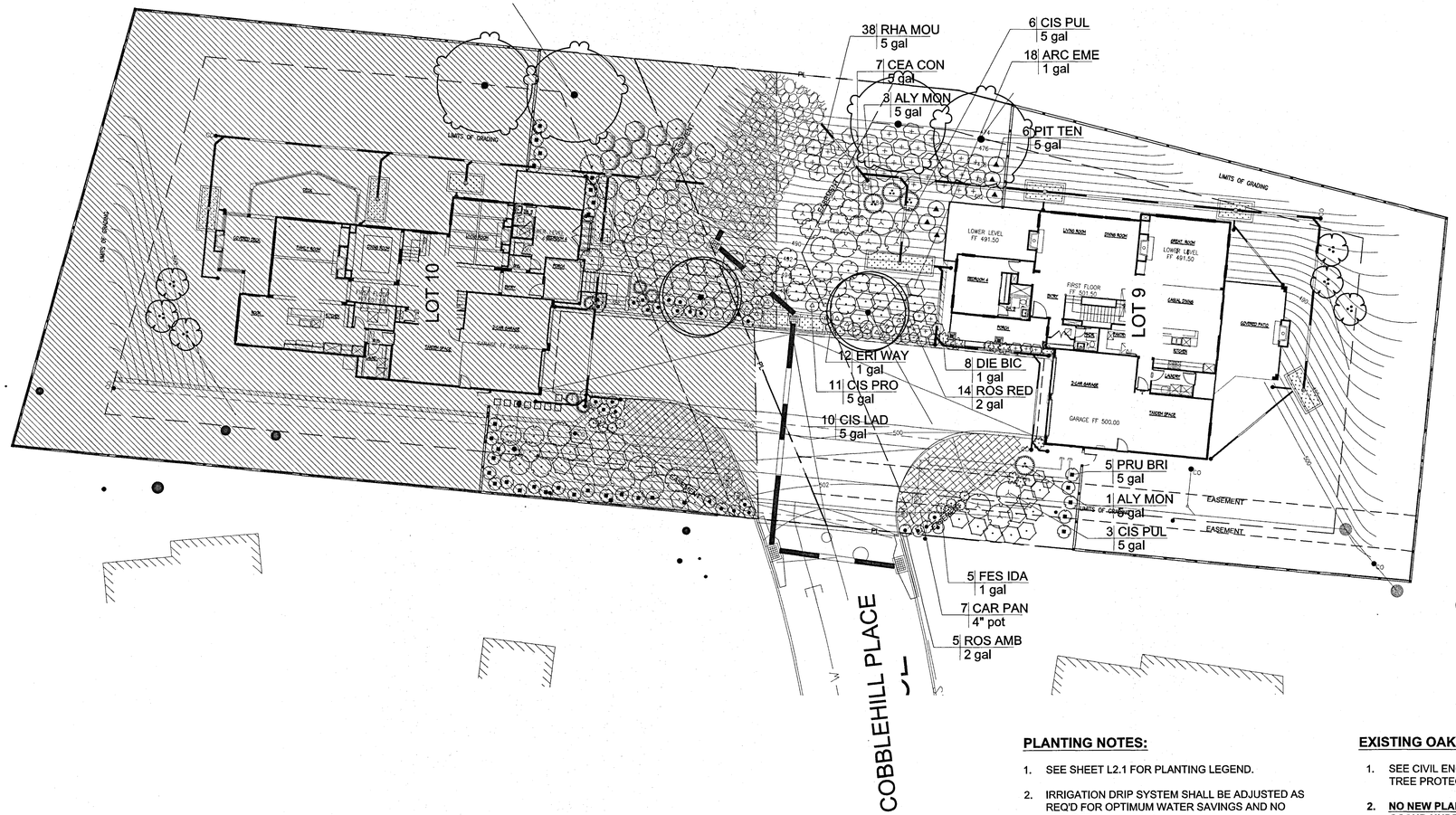
PROJECT MANAGER: MW
DRAWN BY: MW
CHECKED BY: ZA

PROJECT NAME/LOCATION:
2185 COBBLEHILL PLACE
SAN MATEO CALIFORNIA
DRAWING TITLE:
LANDSCAPE IMPROVEMENT PLAN
LOT 9

REVISIONS: NO.	DESCRIPTION	BY:	DATE

SHEET TITLE:
CALLOUT & LAYOUT PLAN

SCALE: 1/16" = 1'-0"
ISSUE DATE: 5/18/17
PROJECT NO.: V1355
SHEET NO.: L1.0
OF



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NOV 1 1 2019

SAN MATEO COUNTY BLDG. INSP. DIV.

PLANTING NOTES:

1. SEE SHEET L2.1 FOR PLANTING LEGEND.
2. IRRIGATION DRIP SYSTEM SHALL BE ADJUSTED AS REQ'D FOR OPTIMUM WATER SAVINGS AND NO RUN OFF.

EROSION CONTROL NOTES:

1. LEAVE EROSION CONTROL MAT ON ALL SLOPES. CUT HOLES FOR NEW SHRUBS/TREES AS NEEDED.
2. SEE CIVIL IMPROVEMENT PLANS, SHEET C9.10 - C9.90 FOR COMPLETE EROSION CONTROL MEASURES.

EXISTING OAK TREE NOTES:

1. SEE CIVIL ENG. PLANS & ARBORIST REPORT FOR TREE PROTECTION MEASURES, TYP.
2. **NO NEW PLANTING OR IRRIGATION SHALL OCCUR UNDER ANY EXISTING OAK TREES. CONTRACTOR TO FIELD ADJUST AS NECESSARY.**
3. CONTRACTOR SHALL PROTECT EXISTING OAK TREES FROM IRRIGATION & ANY POTENTIAL IRRIGATION RUN OFF.
4. NATIVE LEAF LITTER MULCH SHALL REMAIN UNDER ALL EXISTING OAK TREES . IN ANY BARE AREAS UNDER TREES, CONTRACTOR SHALL APPLY A 3-INCH LAYER OF MULCH AROUND THE BASE OF OAK TREES. APPLY BROADLY. DO NOT PLACE MULCH IMMEDIATELY AGAINST THE TRUNK. KEEP MULCH CLEAR FROM THE TRUNK OF THE OAK TREE BY 12 INCHES.

SAN MATEO COUNTY WATER EFFICIENT LANDSCAPE ORDINANCE COMPLIANCE STATEMENT:

"I HAVE COMPLIED WITH THE CRITERIA OF THE ORDINANCE AND APPLIED THEM FOR THE EFFICIENT USE OF WATER IN THE LANDSCAPE DESIGN PLAN."

ZEKI ABED - LICENSED LANDSCAPE ARCHITECT

RESUBMITTAL
DEC 1 4 2017
San Mateo County Building Inspection

0 8 16 32 64

CLIENT:
CHAMBERLAIN GROUP
655 Skyway, Suite 230
San Carlos, CA 94070
(650) 595.5582

CALL USA BEFORE YOU DIG
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REGISTERED LANDSCAPE ARCHITECT
ZEKI R. ABED
No. 3652
RENEWAL 4/19
STATE OF CALIFORNIA

VAN DORN ABED
LANDSCAPE ARCHITECTS, INC.
81 14TH ST. SAN FRANCISCO, CA. ZIP 94103 PH (45) 864-1921 FAX(415) 864-0796

PROJECT MANAGER: XW
DRAFTED BY: XW
CHECKED BY: ZA

PROJECT NAME/LOCATION:
2185 COBBLEHILL PLACE
SAN MATEO CALIFORNIA

DRAWING TITLE:
LANDSCAPE IMPROVEMENT PLANS
LOT 9

REVISIONS: NO.	DESCRIPTION	BY:	DATE

SHEET TITLE:
PLANTING PLAN

SCALE: 1/16" = 1'-0"
ISSUE DATE: 5/18/17
PROJECT NO.: V1355
SHEET NO.: L2.0
OF

BIO-RETENTION PLANTERS ON THE
NORTH & NORTHEAST SIDES OF BUILDINGS

5 GAL	CORNUS SERICEA "ISANTI"	QTY: 1
1 GAL	CAREX PRAEGRACILUS	QTY: CAN-TO-CAN FULL
ALTERNATIVE:		
5 GAL	CARPENTERIA CALIFORNICA	QTY: 1
1 GAL	CAREX PRAEGRACILUS	QTY: CAN-TO-CAN FULL

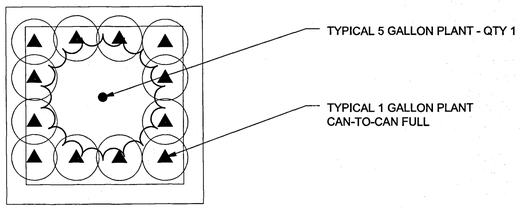
BIO-RETENTION PLANTERS ON THE
SOUTH & SOUTHWEST SIDES OF BUILDINGS

5 GAL	MUHLENBERGIA RIGENS	QTY: 1
1 GAL	MIMULUS AURANTIACUS & CAREX PRAEGRACILUS (ALTERNATING)	QTY: CAN-TO-CAN FULL

NOTES:

1. CONTRACTOR TO HAND WATER PLANTS IN BIO-RETENTION PLANTERS UNTIL ESTABLISHED.
2. SEE CIVIL ENGINEER'S PLANS AND SPECIFICATIONS FOR BIO-RETENTION SOIL MIX.
3. PLANT SPECIES LISTED ABOVE ARE APPROVED FOR USE IN BIO-PLANTERS PER THE SAN MATEO COUNTY STORMWATER MEASURES PLANT LIST

PLANTING DIAGRAM:



TREE PLANTING LIST (lots 5-11)

TREES	CODE	BOTANICAL NAME	COMMON NAME	CONT	QTY	WUCOLS	REMARKS
	ARC MAN	Arctostaphylos manzanita MULTI-TRUNK	Manzanita	15 gal	8	L	Multi-Trunk/Native Mitigation tree
	CER OCC	Cercis occidentalis - MULTI-TRUNK	Western Redbud	15 gal	22	L	Multi-trunk/Native Mitigation Tree
	HET AR2	Heteromeles arbutifolia	Toyon	24"box	8	L	Evergreen/Native Mitigation Tree (Interceptor Tree) Min. install size 9` tall x 5` wide
	MYR CA2	Myrica californica	Pacific Wax Myrtle	15 gal	2	L	Evergreen/Native Tree
	MYR CAL	Myrica californica	Pacific Wax Myrtle	24"box	4	L	Evergreen Tree/Native Tree (Interceptor Tree) Min. install size 9` tall x 5` wide
	QUE AGR	Quercus agrifolia	Coast Live Oak	15 gal	5	L	Single-Trunk/Native Mitigation tree
	SAM MEX	Sambucus mexicana - MULTI-TRUNK	Mexican Elderberry	15 gal	5	L	Multi-Trunk/Native Mitigation tree

SHRUB/GROUNDCOVER PLANTING LIST (Lots 5-11)

SHRUBS	CODE	BOTANICAL NAME	COMMON NAME	SIZE	QTY	IRRIGATION/WATER USE
	ACA COG	Acacia cognata `Cousin Itt`	River Wattle	5 gal	17	L
	ALY MON	Alyogyne huegelii `Monterey Bay`	Blue Hibiscus	5 gal	11	L
	ARB ELF	Arbutus unedo `Elfin King`	Dwarf Strawberry Tree	5 gal	8	L
	ARC EME	Arctostaphylos x `Emerald Carpet`	Emerald Carpet Manzanita	1 gal	121	L
	CEA YAN	Ceanothus griseus horizontalis `Yankee Point`	California Lilac	5 gal	102	L
	CEA CON	Ceanothus x `Concha`	California Lilac	5 gal	7	L
	CIS LAD	Cistus ladanifer	Crimson Spot Rockrose	5 gal	31	L
	CIS PUL	Cistus pulverulentus `Sunset`	Rockrose	5 gal	34	L
	CIS PRO	Cistus salviifolius `Prostratus`	Sageleaf Rockrose	5 gal	62	L
	CIS HYB	Cistus x hybridus	White Rockrose	5 gal	58	L
	CIT MEY	Citrus x meyeri	Meyer Lemon	5 gal	3	L
	DIE BIC	Dietes bicolor	Fortnight Lily	1 gal	51	L
	ERI WAY	Erigeron glaucus `Wayne Roderick`	Seaside Daisy	1 gal	36	L
	GRE NOE	Grevillea x `Noellii`	Grevillea	5 gal	45	L
	LAV ASS	Lavatera assurgentiflora	Mallow	5 gal	9	L
	PEN FAR	Pennisetum x `Fairy Tails`	Evergreen Fountain Grass	5 gal	12	L
	PIT TEN	Pittosporum tenuifolium `Marjorie Channon`	Tawhiwhi	5 gal	30	L
	PIT CRE	Pittosporum tobira `Cream De Mint` TM	Cream De Mint Dwarf Mock Orange	5 gal	15	L
	PIT WHE	Pittosporum tobira `Wheelers Dwarf`	Wheeler`s Dwarf Mock Orange	5 gal	34	L
	PRU BRI	Prunus caroliniana `Bright `N Tight` TM	Bright `N Tight Carolina Laurel	5 gal	44	L
	RHA MOU	Rhamnus californica `Mound San Bruno`	California Coffeeberry	5 gal	120	L
	RHA SEA	Rhamnus californica `Seaview`	California Coffee Berry	5 gal	22	L
	ROS AMB	Rosa x `Flower Carpet Amber`	Amber Carpet Rose	2 gal	65	L
	ROS RED	Rosa x `Flower Carpet Red`	Rose	2 gal	35	L
	TRA JAS	Trachelospermum jasminodes	Star Jasmine	15 gal	2	M
	WES MOR	Westringia fruticosa `Morning Light`	Morning Light Coast Rosemary	5 gal	9	L

GRASSES	CODE	BOTANICAL NAME	COMMON NAME	SIZE	QTY	REMARKS
	FES IDA	Festuca idahoensis	Idaho Fescue	1 gal	67	L

GROUND COVERS	CODE	BOTANICAL NAME	COMMON NAME	CONT	SPACING	QTY	REMARKS
	CAR PAN	Carex pansa	Sanddune Sedge	4" pot	8" o.c.	13 sf	L

PLANTING QUANTITIES SHOWN L2.1 ARE TOTAL QUANTITIES FOR LOTS 5-11.
SEE L2.0 FOR INDIVIDUAL LOT PLANTING PLANS.

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(650) 595.5582

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REGISTERED LANDSCAPE ARCHITECT
KEVIN R. ABED
No. 2118
STATE OF CALIFORNIA

VAN DORN ABED
LANDSCAPE ARCHITECTS, INC.
81 14TH ST. SAN FRANCISCO, CA
ZIP 94103 PH (415) 864-1921 FAX(415) 864-6796

PROJECT MANAGER: MW
DRAWN BY: MW
CHECKED BY: ZA

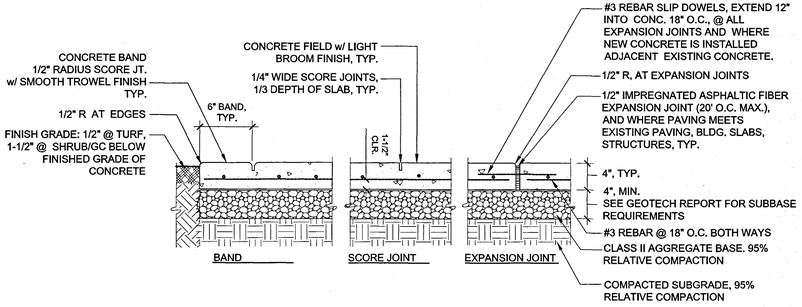
PROJECT NAME/LOCATION:
2185 COBBLEHILL PLACE
SAN MATEO CALIFORNIA
DRAWING TITLE:
LANDSCAPE IMPROVEMENT PLANS

REVISIONS:

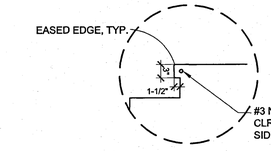
NO.	DESCRIPTION	BY:	DATE

SHEET TITLE:
PLANTING LEGEND

SCALE: NTS
ISSUE DATE: 5/18/17
PROJECT NO.: V1355
SHEET NO.: L2.1 OF



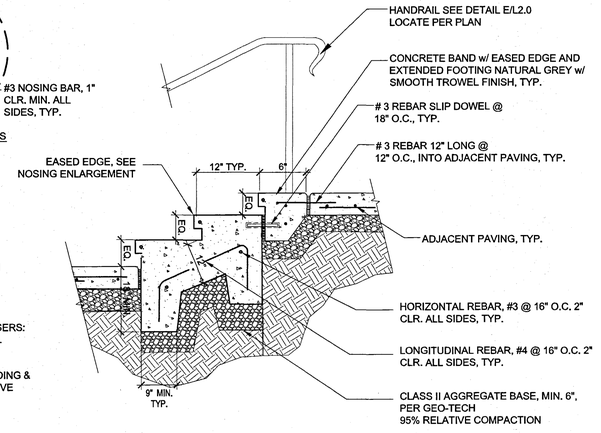
A CONCRETE PAVING
1" = 1'-0"



NOSING ENLARGEMENT, NTS

NOTES:

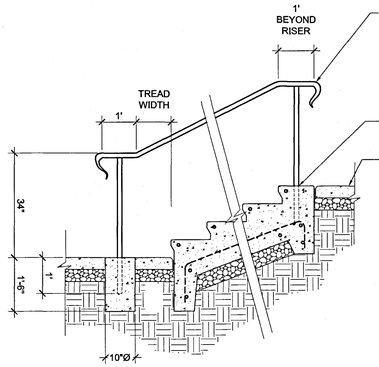
1. CONCRETE STAIRS TO HAVE LIGHT BROOM FINISH.
2. COLOR TO MATCH THE ADJACENT PAVING.
3. SEE PLAN FOR GENERAL STEP LAYOUT. RISERS: 5" MIN. TO 7-3/4" MAX AND EQUAL. SEE CIVIL GRADING PLANS FOR RISER HEIGHTS.
4. MAXIMUM 2% DIRECTIONAL SLOPE ON LANDING & WALKS IN ANY DIRECTION. PROVIDE POSTIVE DRAINAGE ON STAIRS.

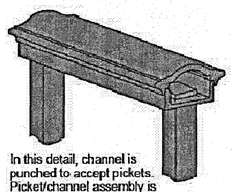


B CONCRETE STEPS
3/4" = 1'-0"

HANDRAIL NOTES:

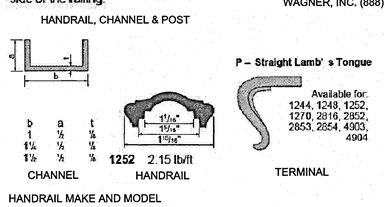
1. HANDRAILS TO BE 1-9/16" MODEL H2901 ALUMINUM HANDRAIL WITH LAMBS TONGUE TERMINUS AS SHOWN. ALUMINUM CHANNEL SHALL BE MODEL C2100512. POSTS SHALL BE 1" SQUARE STEEL BAR WELDED TO BASE OF CHANNEL.
2. PRIME AND PAINT WITH ZINC-RICH PRIMER AND 2 COATS ENAMEL, COLOR TO BE DARK BRONZE. SUBMIT PAINT SAMPLE TO OWNER FOR APPROVAL.
3. AVAILABLE THROUGH R&B WAGNER, INC. (888) 243-6914.





In this detail, channel is punched to accept pickets. Picket/channel assembly is then attached to the under-side of the railing.

HANDRAIL, CHANNEL & POST

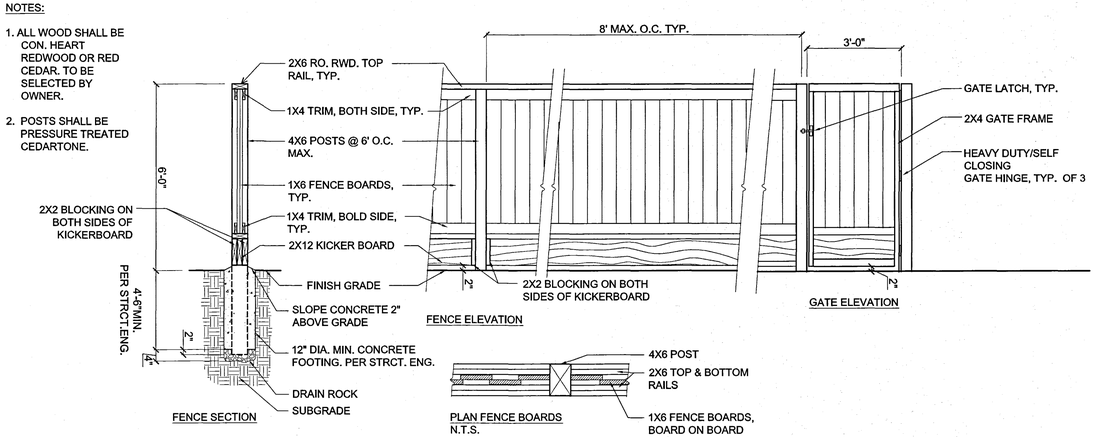


HANDRAIL MAKE AND MODEL

C HANDRAIL
1/2" = 1'-0"

NOTES:

1. ALL WOOD SHALL BE CON. HEART REDWOOD OR RED CEDAR. TO BE SELECTED BY OWNER.
2. POSTS SHALL BE PRESSURE TREATED CEDARTONE.

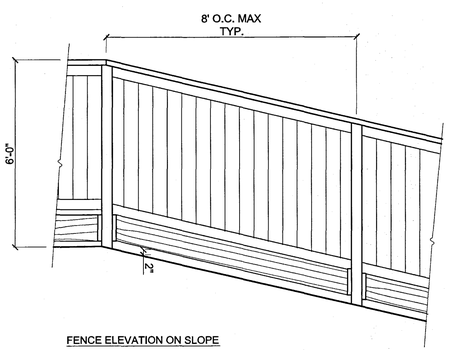


FENCE ELEVATION

GATE ELEVATION

FENCE SECTION

PLAN FENCE BOARDS
N.T.S.



FENCE ELEVATION ON SLOPE

D 6' TALL WOOD FENCE & GATE
NTS

CONCRETE NOTES:

1. SCORING PATTERN TO MEET ALL ACI INTERNATIONAL GUIDELINES.
2. ALL FORMWORK/SCORING/PROPOSED JOINT SPACING TO BE APPROVED AND REVIEWED BY OWNERS' REPRESENTATIVE PRIOR TO POURING.
3. ALL SCORING/CONTRACTION JOINTS TO BE MINIMUM 1/3 DEPTH OF SLAB.
4. DISTANCE BETWEEN CONTRACTION JTS TO BE MAXIMUM 24 TIMES SLAB THICKNESS. ALL CONTRACTION JTS TO BE CONTINUOUS,NOT STAGGERED OR OFFSET. REFER TO ACI INTL. CCS-1 SERIES GUIDELINES FOR ALL CONCRETE WORK. ANY DISCREPANCIES WITH DRAWINGS TO BE BROUGHT TO ATTENTION OF OWNER/ARCHITECT PRIOR TO COMMENCEMENT OF WORK.
5. CONCRETE PANELS TO BE AS SQUARE AS PRACTICAL. NEVER MAKE LONG SIDE MORE THAN 1-1/2 TIMES LENGTH OF SHORT SIDE. NO ONE PANEL TO BE MORE THAN 100 SQ. FT.
6. INSTALL EXPANSION JOINTS WHERE NEW PAVING MEETS EXISTING PAVING, WALLS, CURBS, FOUNDATIONS, OR OTHER FIXED OBJECTS, AND CHANGES IN WALK DIRECTIONS.
7. CONCRETE COLOR TO BE NATURAL GRAY.
8. BROOM FINISH SHALL BE PERPENDICULAR TO PATH OF TRAVEL.
9. CONTRACTOR SHALL COORDINATE INSTALLATION OF REBAR SLIP DOWELS WHERE DRIVEWAY MEETS GARAGE CONCRETE PAD WITH OWNER'S REPRESENTATIVE AND PROJECT STRUCTURAL ENGINEER. DOWELS SHALL BE #4 REBAR SPACED 24" O.C. EXTENDING 12" INTO DRIVEWAY AND GARAGE PAD, OR AS SPECIFIED BY STRUCTURAL ENGINEER. CONTRACTOR SHALL ONLY INSTALL REBAR DOWELS IF APPROVED BY OWNER'S REPRESENTATIVE AND PROJECT STRUCTURAL ENGINEER. SUBMIT TO OWNER'S REPRESENTATIVE PROPOSED DOWEL LOCATIONS.
10. FOR ALL PAVING DETAILS SHOWN, THE PAVING PROFILE, AGGREGATE, SUBBASE PREPARATION & COMPACTION PER GEOTECH ENGINEER, TYP. PROFILES ARE SHOWN FOR DESIGN INTENT & BIDDING PURPOSES ONLY. SEE GEOTECH REPORT FOR PAVING & SUBBASE REQUIREMENTS.

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DEC 14 2017
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CLIENT:
CHAMBERLAIN GROUP
655 Skyway, Suite 230
San Carlos, CA 94070
(650) 595.5582

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VAN DORN ABED
LANDSCAPE ARCHITECTS, INC.
81 14TH ST. SAN FRANCISCO, CA
ZIP 94103 PH (415) 864-1921 FAX(415) 864-4796

PROJECT MANAGER: MW
DRAFTED BY: MW
CHECKED BY: VA

PROJECT NAME/LOCATION:
2185 COBBLEHILL PLACE
SAN MATEO CALIFORNIA
DRAWING TITLE:
LANDSCAPE IMPROVEMENT PLANS

REVISIONS: NO.	DESCRIPTION	BY:	DATE

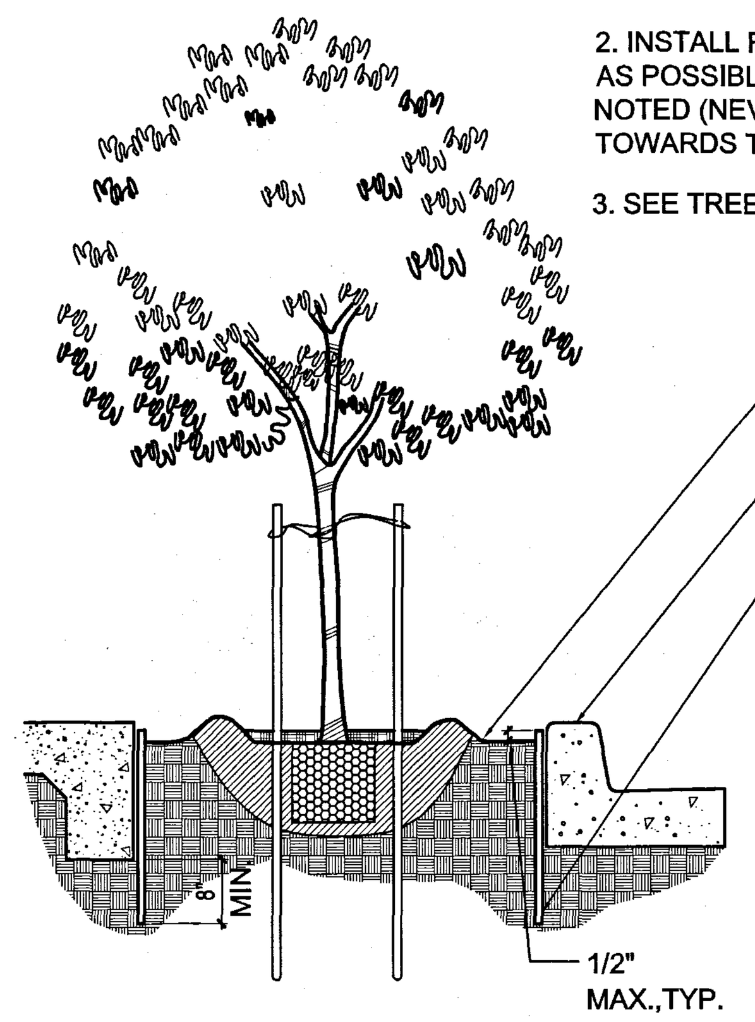
SHEET TITLE:
LANDSCAPE DETAILS

SCALE: AS NOTED
ISSUE DATE: 5/18/17
PROJECT NO.: V1355
SHEET NO.: L3.0 OF

NOTES: 1. ROOT DEFLECTORS ARE REQUIRED FOR CERTAIN CONDITIONS. SEE PLANS FOR SPECIFIC LOCATIONS WHERE ROOT DEFLECTORS ARE REQUIRED.

2. INSTALL ROOT DEFLECTOR AGAINST STRUCTURE OR AS CLOSE TO STRUCTURE AS POSSIBLE. THE TOP OF ROOT DEFLECTOR SHALL BE SET ABOVE GRADE AS NOTED (NEVER BELOW GRADE.) THE RAISED ROOT DEFLECTORS SHALL FACE TOWARDS TREE.

3. SEE TREE PLANTING DETAIL FOR TREE INSTALLATION

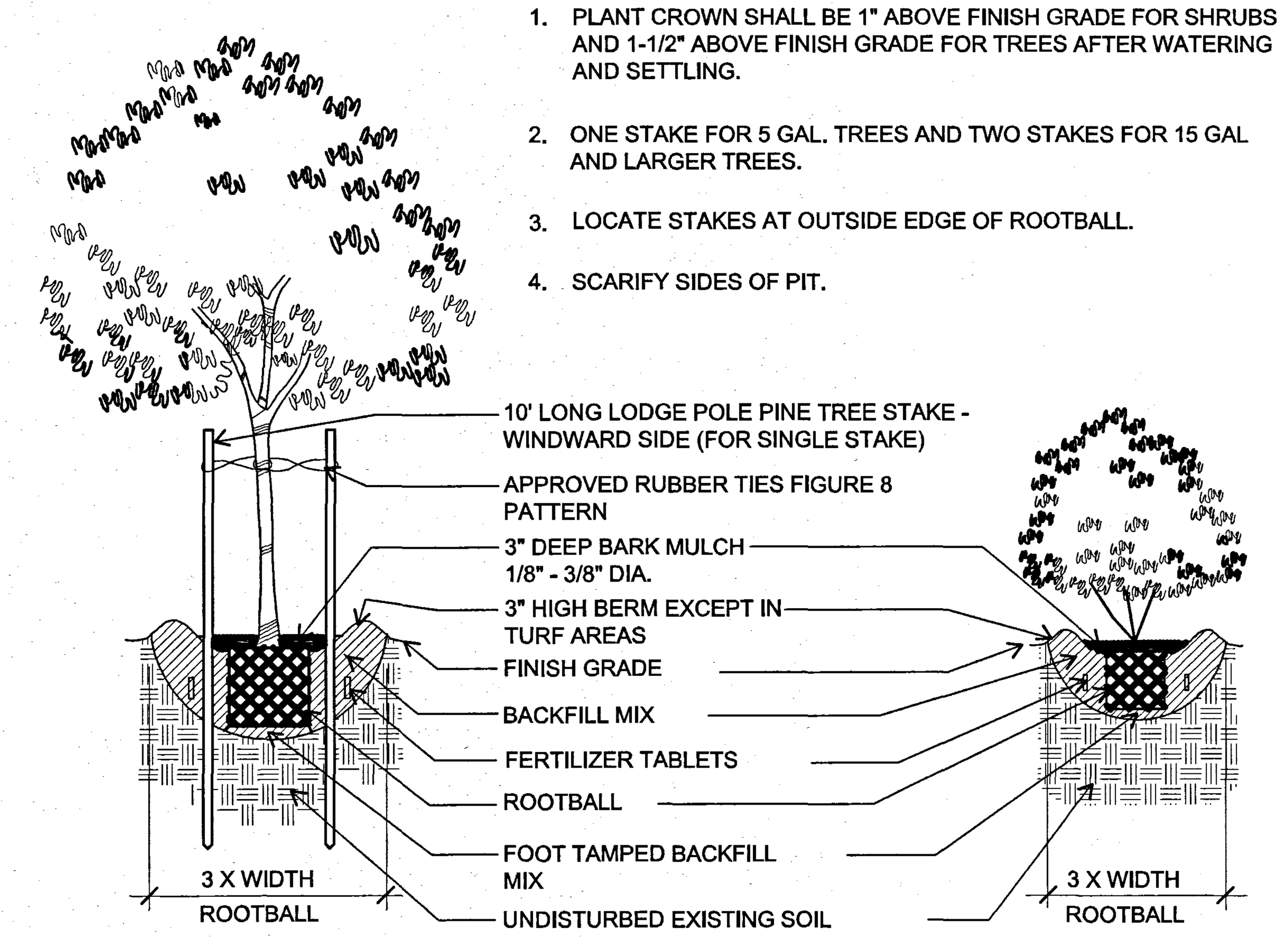


ROOT DEFLECTOR MUST EXTEND 8" BELOW BOTTOM OF HARDSCAPE STRUCTURE, USE #RS-36 OR #RS-48 PANELS INSTEAD IF REQUIRED TO PROVIDE MINIMUM CLEARANCE. INSTALL PANELS AS DETAILED AND PER MANUFACTURE'S INSTALLATION SPECIFICATIONS. SEE PLANTING NOTES FOR ADDITIONAL REQUIREMENTS.

(A) ROOT DEFLECTOR
NTS

NOTES:

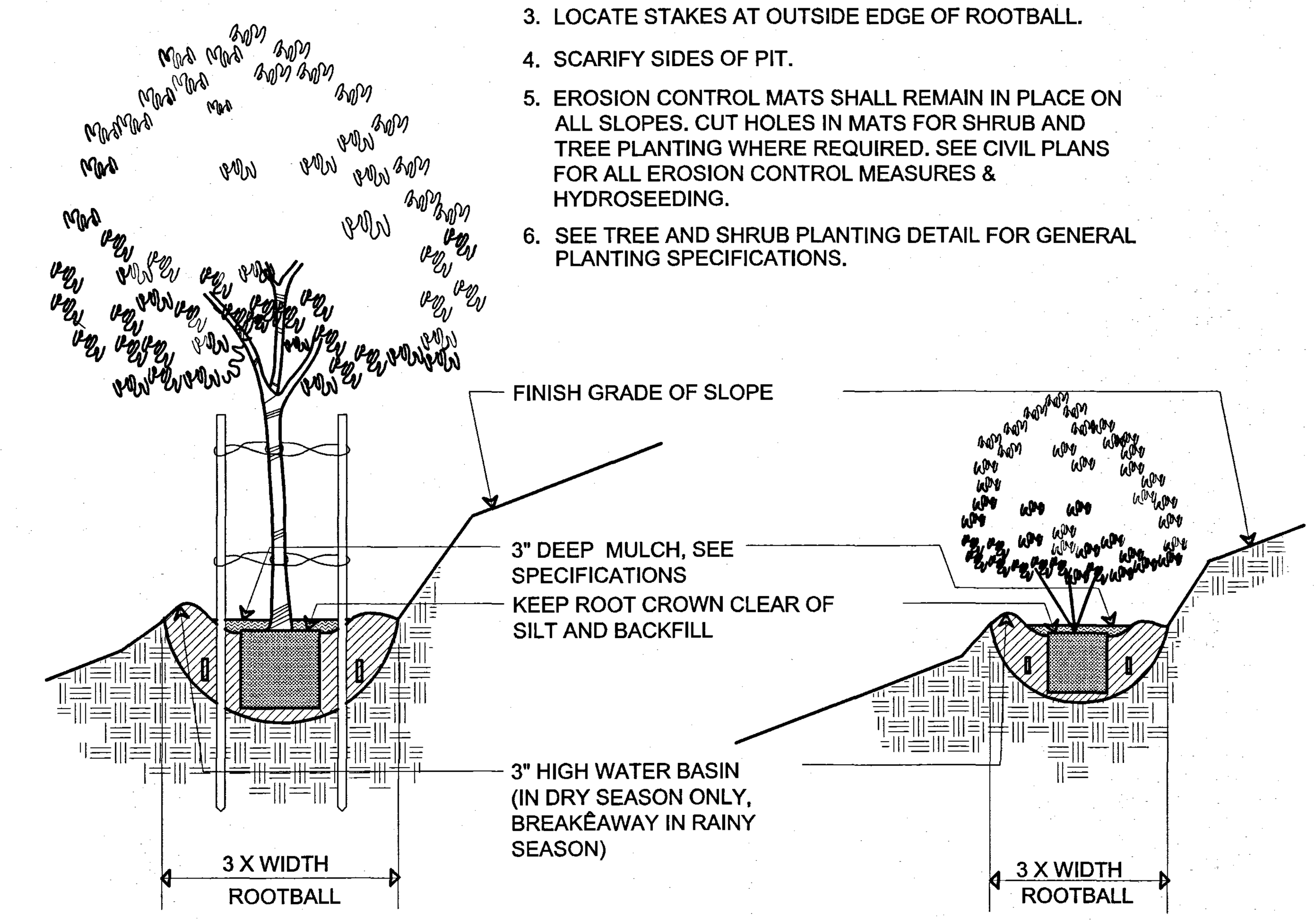
1. PLANT CROWN SHALL BE 1" ABOVE FINISH GRADE FOR SHRUBS AND 1-1/2" ABOVE FINISH GRADE FOR TREES AFTER WATERING AND SETTLING.
2. ONE STAKE FOR 5 GAL. TREES AND TWO STAKES FOR 15 GAL AND LARGER TREES.
3. LOCATE STAKES AT OUTSIDE EDGE OF ROOTBALL.
4. SCARIFY SIDES OF PIT.



(B) TREE AND SHRUB PLANTING
NTS

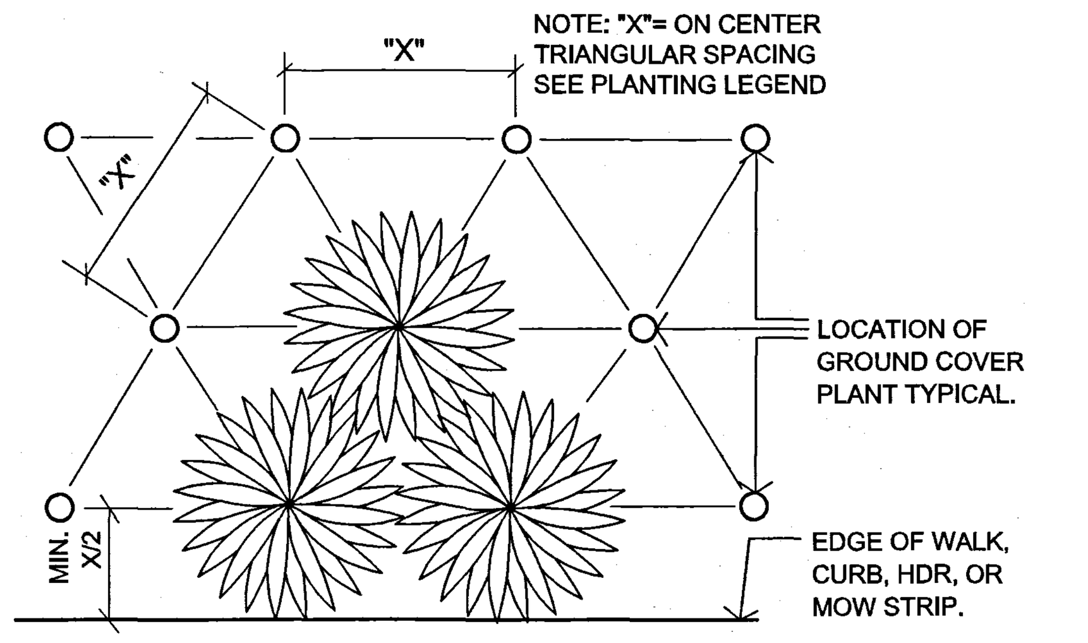
NOTES:

1. PLANT CROWN SHALL BE 1" ABOVE FINISH GRADE FOR SHRUBS AND 1-1/2" ABOVE FINISH GRADE FOR TREES AFTER WATERING AND SETTLING.
2. ONE STAKE FOR 5 GAL. TREES AND TWO STAKES FOR 15 GAL. & LARGER TREES.
3. LOCATE STAKES AT OUTSIDE EDGE OF ROOTBALL.
4. SCARIFY SIDES OF PIT.
5. EROSION CONTROL MATS SHALL REMAIN IN PLACE ON ALL SLOPES. CUT HOLES IN MATS FOR SHRUB AND TREE PLANTING WHERE REQUIRED. SEE CIVIL PLANS FOR ALL EROSION CONTROL MEASURES & HYDROSEEDING.
6. SEE TREE AND SHRUB PLANTING DETAIL FOR GENERAL PLANTING SPECIFICATIONS.

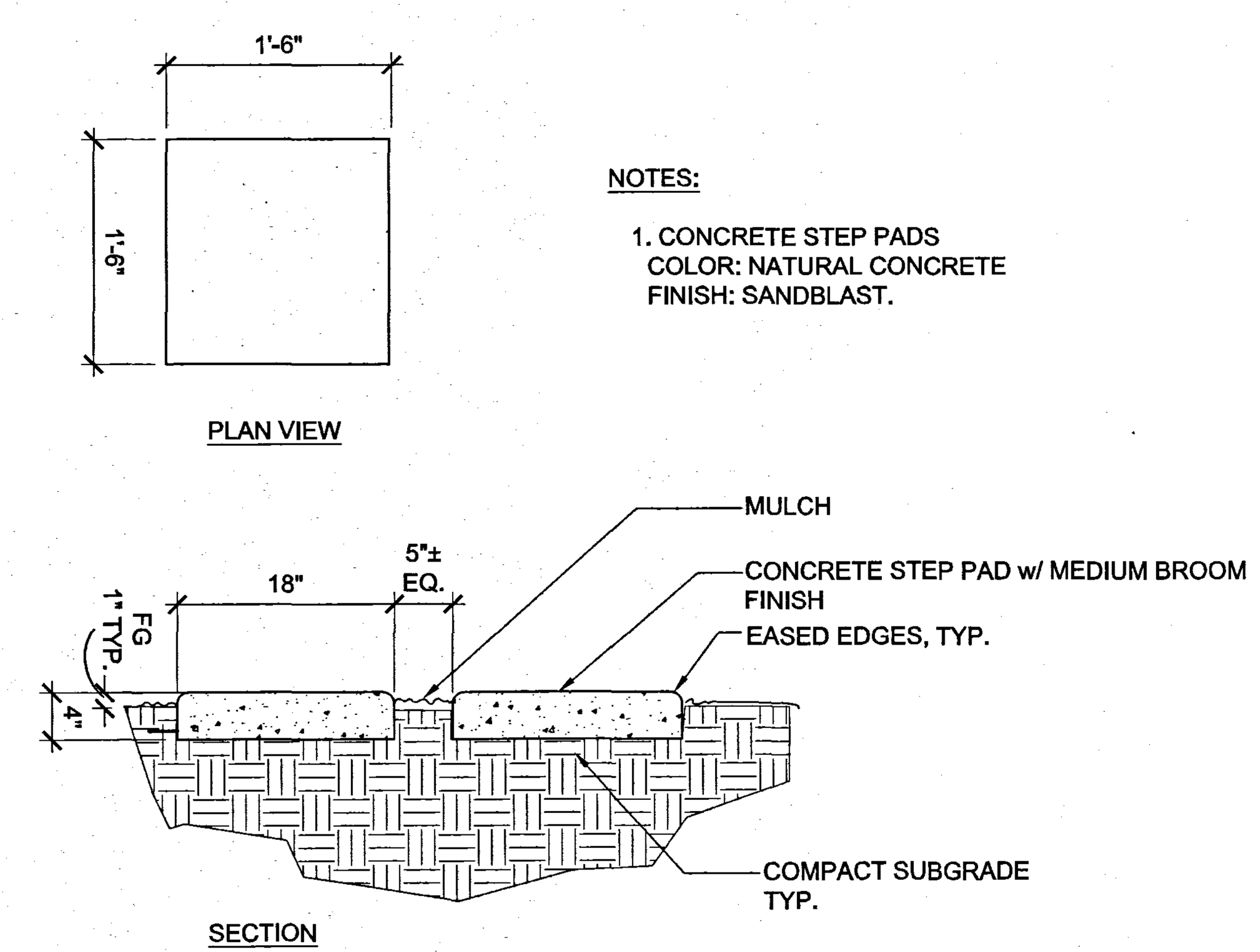


(C) HILLSIDE TREE AND SHRUB PLANTING
NTS

JUTE MESH SHALL BE INSTALLED IN GROUNDCOVER AREAS. CUT HOLES IN MESH FOR PLANTING WHERE REQUIRED.



(D) GROUNDCOVER PLANTING
NTS



NOTES:

1. CONCRETE STEP PADS COLOR: NATURAL CONCRETE FINISH: SANDBLAST.

(E) CONCRETE STEP PADS
3/4" = 1'-0"

REVIEWED FOI CODE COMPLIANCE
This review does not authorize violation of State or County building laws.
NOV 3 2019
SAN MATEO CO BLDG. INSP. DIV.

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DEC 1 4 201
San Mateo Count Building Inspectic

CLIENT:
CHAMBERLAIN GROUP
655 Skyway, Suite 230
San Carlos, CA 94070
(650) 595.5582

800.227.2600

REGISTERED LANDSCAPE ARCHITECT
ZENI R. ABED
STATE OF CALIFORNIA

VAN DORN ABED
LANDSCAPE ARCHITECTS, INC.
81 14TH ST. SAN FRANCISCO, CA
ZIP 94103 PH (415) 864-1921 FAX(415) 864-4796

PROJECT MANAGER: MW
DRAFTED BY: MW
CHECKED BY: ZA

PROJECT NAME/LOCATION:
2185 COBBLEHILL PLACE
SAN MATEO CALIFORNIA
DRAWING TITLE:
LANDSCAPE IMPROVEMENT PLANS

REVISIONS: NO.	DESCRIPTION	BY:	DATE

SHEET TITLE: LANDSCAPE DETAILS
SCALE: AS NOTED
ISSUE DATE: 5/18/17
PROJECT NO.: V1355
SHEET NO.: L3.1

GENERAL NOTES:

1. THIS DESIGN IS DIAGRAMMATIC. ALL PIPING, VALVES, ETC., SHOWN WITHIN PAVED AREAS ARE FOR DESIGN CLARIFICATION ONLY AND SHALL BE INSTALLED IN PLANTING AREAS WHERE POSSIBLE, UNLESS OTHERWISE NOTED. AVOID ANY CONFLICTS BETWEEN THE IRRIGATION SYSTEM, PLANTING AND ARCHITECTURAL FEATURES.

2. CONTRACTOR SHALL PERFORM PRESSURE TESTS (STATIC & DYNAMIC) AND FLOW TESTS (GPM) AT POINT OF CONNECTION (P.O.C.) PRIOR TO BEGINNING WORK. SEE IRRIGATION NOTES FOR PRESSURE AND FLOW TEST REQUIREMENTS AND PROCEDURES. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY CORRECTIVE MEASURES REQUIRED TO IRRIGATION SYSTEM, AT NO ADDITIONAL COST TO THE OWNER, IF IRRIGATION SYSTEM IS INSTALLED WITHOUT REQUIRED TESTS, AND DISCREPANCIES IN PRESSURE AND FLOW AT THE P.O.C. ARE DISCOVERED THAT PREVENT THE IRRIGATION SYSTEM FROM FUNCTIONING CORRECTLY.

WATER PRESSURE AT P.O.C. NOTES:

1. CONTRACTOR SHALL VERIFY WATER PRESSURE ON SITE. IF PRESSURE IS 65 PSI OR HIGHER AT P.O.C., CONTRACTOR SHALL INSTALL A PRESSURE REDUCER AS SHOWN, AND SET PRESSURE REDUCER TO 65 PSI. PRESSURE REDUCER SHALL BE 1-1/4" WILKINS LEAD FREE 500XL-YSBR (INCLUDES PRESSURE REDUCER & FILTER), SEE IRRIGATION DETAILS.

2. IF PRESSURE IS LESS THAN 65 PSI OMIT PRESSURE REDUCER.

3. IF PRESSURE IS LESS THAN 55 PSI NOTIFY OWNER'S REPRESENTATIVE AND LANDSCAPE ARCHITECT FOR CORRECTIVE MEASURES.

SLEEVE NOTES:

1. FOR DESIGN CLARITY, NOT ALL SLEEVES SHOWN. CONTRACTOR SHALL SLEEVE ALL PIPES CROSSING UNDER PAVED AREAS.

2. WHERE LATERAL LINES WITH SLEEVES CROSS ROADS OR DRIVEWAYS, CONTRACTOR SHALL INSTALL ONE SPARE 4" CLASS 315 PVC SLEEVE.

3. WHERE MAIN LINES WITH SLEEVES CROSS ROADS OR DRIVEWAYS, CONTRACTOR SHALL INSTALL ONE SPARE 6" CLASS 315 PVC SLEEVE.

SPECIAL REQUIREMENTS AT EXISTING TREES

1. ALL UNDERGROUND IRRIGATION LINES SHALL BE ROUTED OUTSIDE THE DRIP LINES WHERE POSSIBLE.

2. IF UNDERGROUND IRRIGATION LINES MUST TRAVERSE THROUGH THE DRIP LINE AREA, LOCATION OF IRRIGATION LINES SHALL BE REVIEWED WITH PROJECT ARBORIST AND MODIFIED AS NEEDED PRIOR TO INSTALLATION. WHEN LINES ARE PROPOSED WITHIN A DISTANCE FROM THE TRUNKS OF FIVE (5) TIMES THEIR DIAMETER, THE PROJECT ARBORIST MAY RECOMMEND THAT A PNEUMATIC AIR DEVICE IS USED TO EXCAVATE THE TRENCH.

EXISTING OAK TREE NOTES:

1. SEE CIVIL ENG. PLANS & ARBORIST REPORT FOR TREE PROTECTION MEASURES, TYP.
2. NO NEW PLANTING OR IRRIGATION SHALL OCCUR UNDER ANY EXISTING OAK TREES. CONTRACTOR TO FIELD ADJUST AS NECESSARY.
3. CONTRACTOR SHALL PROTECT EXISTING OAK TREES FROM IRRIGATION & ANY POTENTIAL IRRIGATION RUN OFF.

NOTE: CONTRACTOR SHALL FIELD STAKE ALL TREE LOCATIONS PRIOR TO INSTALLATION OF IRRIGATION SYSTEM TO AVOID CONFLICTS WITH TREE LOCATIONS AND MAIN LINES/LATERAL LINES. IRRIGATION LATERAL LINES AND MAIN LINES SHALL BE LOCATED 3' MINIMUM HORIZONTALLY FROM TREE LOCATIONS. FIELD ADJUST ROUTING OF IRRIGATION LINES AS NECESSARY TO MEET MINIMUM CLEARANCE NOTED ABOVE.

AT DRIPLINE TUBING ON ALL SLOPES: PLACE THE DRIPLINE LATERALS PARALLEL TO THE SLOPE CONTOUR WHERE POSSIBLE. INCREASE THE LATERAL SPACING BY 25% ON THE LOWER ONE-THIRD OF THE SLOPE TO AVOID EXCESS DRAINAGE. DRIPLINE TUBING DETAILS FOR ADDITIONAL REQUIREMENTS.

NOTE: DRIPLINE TUBING IS ONLY INSTALLED AT CAREX PANSA (4" POTS) GROUND COVER PLANTING AREAS, ADJUSTE TUBING LAYOUT TO MATCH GROUND COVER PLANTING AREAS AS NECESSARY.

POINT OF CONNECTION NOTES (TYP. FOR EACH LOT):

P.O.C. IS AT 1" HOUSE WATER METER, SEE P.O.C. DETAIL. WATER METER BY OTHERS, SEE CIVIL PLANS. FIELD VERIFY METER LOCATION & SIZE. CONTRACTOR SHALL VERIFY STATIC & DYNAMIC PRESSURE AND FLOW RATES AVAILABLE AT P.O.C. PRIOR TO BEGINNING WORK (SEE IRRIG. SPECIFICATIONS). SUBMIT TO OWNER'S REPRESENTATIVE AND LANDSCAPE ARCHITECT RESULTS OF PRESSURE AND FLOW TESTS PRIOR TO BEGINNING WORK. IF THERE ARE DISCREPANCIES OF 10 PSI OR MORE OR FLOW RATES LOWER THAN STATED IRRIGATION DEMAND ON PLANS, SYSTEM MAY NOT PERFORM CORRECTLY. SEE "WATER PRESSURE AT P.O.C. NOTES" & IRRIGATION SPECS FOR PRESSURE AND FLOW TEST REQUIREMENTS AND PROCEDURES.

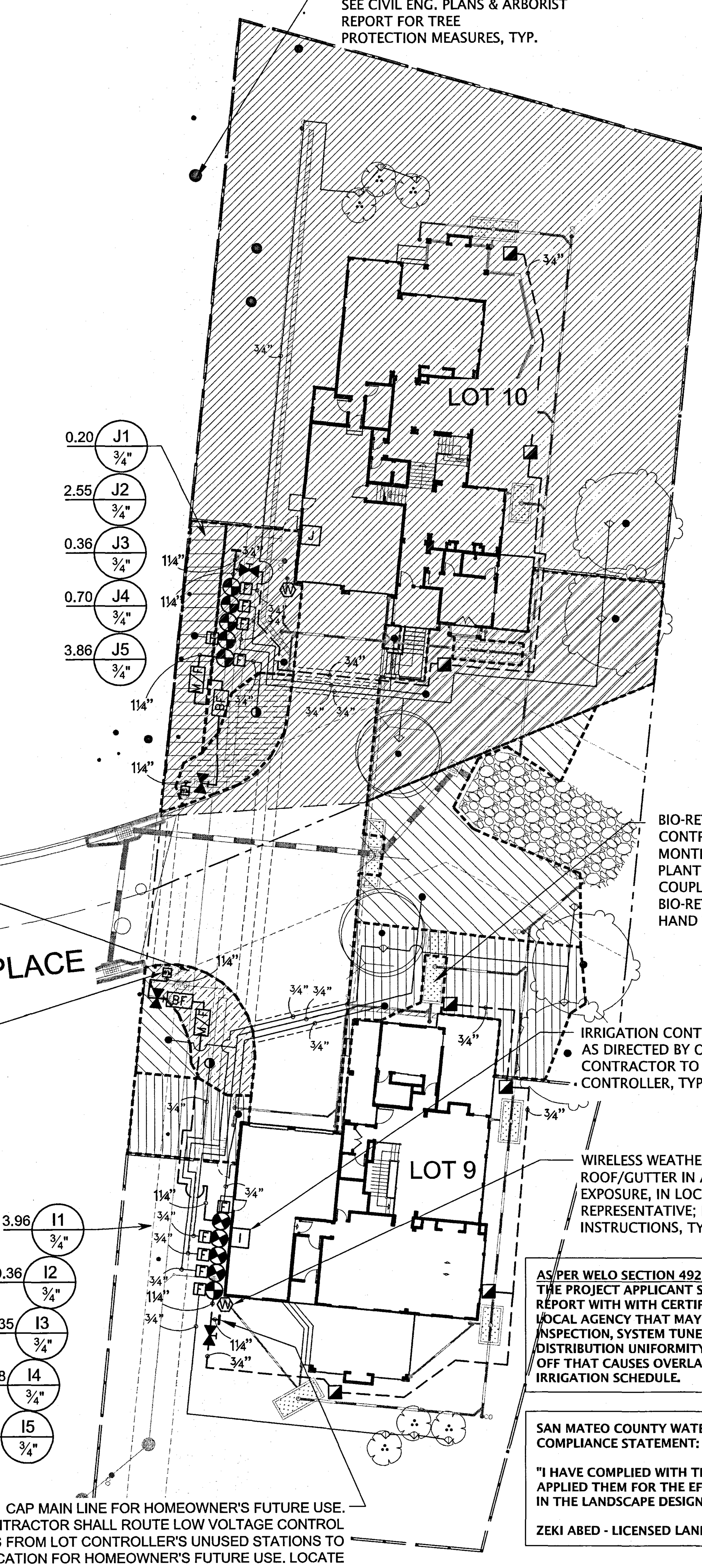
IRRIGATION DEMAND: 12 GPM @ 65 PSI.

SEE "WATER PRESSURE AT P.O.C. NOTES" FOR PRESSURE REDUCER INSTALLATION REQUIREMENTS.

AT RVC I2 INSTALL 2.0 GPH EMITTERS AT TREES TO ENSURE MIN. GPM FLOW IS 0.12 GPM OR GREATER.

CAP MAIN LINE FOR HOMEOWNER'S FUTURE USE. CONTRACTOR SHALL ROUTE LOW VOLTAGE CONTROL WIRES FROM LOT CONTROLLER'S UNUSED STATIONS TO CAP LOCATION FOR HOMEOWNER'S FUTURE USE. LOCATE CONTROL WIRES IN 9" ROUND PLASTIC VALVE BOX (E.G., IF LOT HAS 5 VALVE/CONTROLLER STATIONS USED, CONTRACTOR SHALL ROUTE LOW VOLTAGE CONTROL WIRES FOR THE REMAINING 7 UNUSED STATIONS TO MAIN LINE CAP LOCATION), TYP.

EXISTING TREE TO REMAIN, SEE CIVIL ENG. PLANS & ARBORIST REPORT FOR TREE PROTECTION MEASURES, TYP.



BIO-RETENTION BOXES, NON-IRRIGATED. CONTRACTOR TO HAND WATER FOR 3 MONTH PERIOD (MIN.) TO ESTABLISH PLANT MATERIALS, TYP. QUICK COUPLERS ARE LOCATED IN VICINITY OF BIO-RETENTION BOXES FOR USE FOR HAND WATERING.

IRRIGATION CONTROLLER, WALL MOUNT IN GARAGE AS DIRECTED BY OWNER'S REPRESENTATIVE. CONTRACTOR TO PROVIDE 120 VOLT AC POWER TO CONTROLLER, TYP.

WIRELESS WEATHER SENSOR, LOCATE ON EDGE OF ROOF/GUTTER IN AREA OPEN TO SKY WITH FULL SUN EXPOSURE, IN LOCATION APPROVED BY OWNER'S REPRESENTATIVE; INSTALL PER MANUFACTURER'S INSTRUCTIONS, TYP.

AS PER WELO SECTION 492.12 (1):
THE PROJECT APPLICANT SHALL SUBMIT AN IRRIGATION AUDIT REPORT WITH WITH CERTIFICATE OF COMPLETION TO THE LOCAL AGENCY THAT MAY INCLUDE, BUT IS NOT LIMITED TO: INSPECTION, SYSTEM TUNE-UP, SYSTEM TEST WITH DISTRIBUTION UNIFORMITY, REPORTING OVERSPRAY OR RUN OFF THAT CAUSES OVERLAND FLOW, AND PREPARATION OF AN IRRIGATION SCHEDULE.

SAN MATEO COUNTY WATER EFFICIENT LANDSCAPE ORDINANCE COMPLIANCE STATEMENT:

"I HAVE COMPLIED WITH THE CRITERIA OF THE ORDINANCE AND APPLIED THEM FOR THE EFFICIENT USE OF WATER IN THE LANDSCAPE DESIGN PLAN."

ZEKI ABED - LICENSED LANDSCAPE ARCHITECT

REVIEWED FOR CODE COMPLIANCE
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NOV 13 2019
SAN MATEO CO. BLDG. INSP. DIV.

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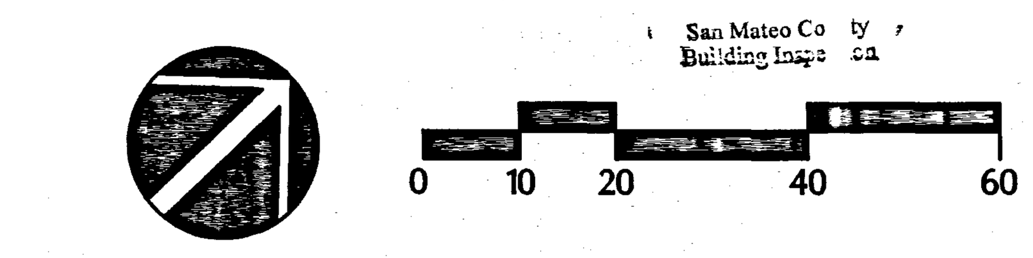

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PROJECT MANAGER: MW
DRAFTED BY: EO
CHECKED BY: ZA

PROJECT NAME/LOCATION:
2185 COBBLEHILL PLACE
SAN MATEO CALIFORNIA

DRAWING TITLE:
LANDSCAPE IMPROVEMENT PLANS
LOT 9

REVISIONS: NO.	DESCRIPTION	BY:	DATE

SHEET TITLE:
IRRIGATION PLAN

SCALE: 1" = 20'-0"
ISSUE DATE: 5/18/17
PROJECT NO.: V1355
SHEET NO.: L4.0

IRRIGATION SCHEDULE

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION
●	PVC lateral line to drip area with Rainbird 8-outlet emitter units. Route PVC lateral line thru drip area and install required quantity of Xeri-Bird 8 Multi Outlet devices necessary to irrigate plants in the drip area.
	Rain Bird XBT-6 Six multi-outlet drip emitter/bubbler Six-Outlet, Pressure Compensating, with 1.0 GPH Black Drip Emitters at each emitter outlet. Comes with 1/2" FPT Inlet x Barb Outlet. Install DBC-025 Diffuser Bug Caps at end of each emitters 1/4" distribution line. Install 4 (four) 1/4" distribution lines with Diffuser Bug Caps at 5Gal & 15Gal trees; Install 6 (six) 1/4" distribution lines with Diffuser Bug Caps at 24"Box trees. Plug unused emitter outlets.
A1 A1 A1 A1 CONTROLLER VALVE CIRCUIT NO. NOTE: DRIP AREA PATTERNS VARY FOR DESIGN CLARITY	Area to Receive Drip Emitters Rain Bird XBD81-PRS w/XB-10 Xeri-Bird 8 Multi Outlet Emission Device with Xeri-Bug emitters at 1gph each, with built-in 200 mesh filter. Pressure Regulator in-stem. Emitter Notes: OCT8-16 emitters (1 assigned to each 1 gal plant) OCT8-16 emitters (4 assigned to each 15 gal plant) OCT8-16 emitters (2 assigned to each 2 gal plant) OCT8-16 emitters (6 assigned to each 24"box plant) XB10PC emitters (1 assigned to each 4" pot plant) OCT8-16 emitters (2 assigned to each 5 gal plant)
A1 A1	Area to Receive Dripline Toro RGP-212 (12) Rootguard and 0.53 gph emitters at 12" o.c., or approved equivalent. Dripline spacing shall be as follows: Dripline lateral rows shall be spaced at 12" apart, with emitters offset for triangular pattern. See notes on irrigation plans and details for spacing at sloped areas.

NOTE: TUBING INSTALLED ON GRADE, SEE DRIP DETAILS. FLUSH VALVE AND AIR RELIEF VALVES NOT SHOW ON PLANS FOR DESIGN CLARITY, SEE DRIP DETAILS FOR TYPICAL INSTALLATION LOCATIONS AT EACH DRIP CIRCUIT.

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION
⊕	Irritrol 700 with OMR-100 Electric Remote Control Valve, with Omni-Reg 5-100psi regulator. Set pressure regulator at 40 PSI.
◪	Rain Bird 33-DRC 3/4" Brass Quick-Coupling Valve, with Corrosion-Resistant Stainless Steel Spring, Thermoplastic Rubber Cover, Double Track Key Lug, and 2-Piece Body. Provide two 33-DK 3/4" valve key with SH-0 3/4" hose swivels to Owner for each lot.
⧗	Nibco T-113-LF Lead free Class 125 bronze gate shut off valve with wheel handle, same size as mainline pipe diameter at valve location. Size Range - 1/4" - 3"
M/F	Master Valve & Flow Sensor: 1-1/4" Griswold 2160JE - 1-1/4" Solenoid, Normally Open Master Valve. Epoxy Coating. Cast Iron and Bronze Material. NPT End Connection & Creative Sensor Technology FSI-T10-001 - 1" (25mm) PVC tee type flow sensor w/socket ends, custom mounting tee and ultra-lightweight impeller enhances low flow measurement. 2 wire digital output compatible w/all irrigation controllers. Flow range: .86-52 GPM.
BF	Febco LF825Y 1" Lead Free Reduced Pressure Backflow Preventer
E	Irritrol MC-12-E 12- Station, Commercial-Grade, Outdoor/Indoor Controller. Equipped in a rugged, lockable, vandal-proof, weather resistant steel cabinet. Wall mounted. Connect Flow Sensor and Climate Logic receiver unit per manufacturers specifications.
F	Irritrol MC-12-E 12- Station, Commercial-Grade, Outdoor/Indoor Controller. Equipped in a rugged, lockable, vandal-proof, weather resistant steel cabinet. Wall mounted. Connect Flow Sensor and Climate Logic receiver unit per manufacturers specifications.
G	Irritrol MC-12-E 12- Station, Commercial-Grade, Outdoor/Indoor Controller. Equipped in a rugged, lockable, vandal-proof, weather resistant steel cabinet. Wall mounted. Connect Flow Sensor and Climate Logic receiver unit per manufacturers specifications.
H	Irritrol MC-12-E 12- Station, Commercial-Grade, Outdoor/Indoor Controller. Equipped in a rugged, lockable, vandal-proof, weather resistant steel cabinet. Wall mounted. Connect Flow Sensor and Climate Logic receiver unit per manufacturers specifications.
I	Irritrol MC-12-E 12- Station, Commercial-Grade, Outdoor/Indoor Controller. Equipped in a rugged, lockable, vandal-proof, weather resistant steel cabinet. Wall mounted. Connect Flow Sensor and Climate Logic receiver unit per manufacturers specifications.
J	Irritrol MC-12-E 12- Station, Commercial-Grade, Outdoor/Indoor Controller. Equipped in a rugged, lockable, vandal-proof, weather resistant steel cabinet. Wall mounted. Connect Flow Sensor and Climate Logic receiver unit per manufacturers specifications.
K	Irritrol MC-12-E 12- Station, Commercial-Grade, Outdoor/Indoor Controller. Equipped in a rugged, lockable, vandal-proof, weather resistant steel cabinet. Wall mounted. Connect Flow Sensor and Climate Logic receiver unit per manufacturers specifications.
W	Irritrol CL Wireless Weather Sensing System. 100-Receive and Transmitter Kit. Outdoor sensor, and receiver attaches to Irritrol Controller. Compatible with Rain Dial-R, Total Control-R, KwikDial, adn MC-E controllers. Monitors weather data.
F	Amiad 150 mesh Y-Filter with flush valve, or approved equivalent, at drip remote control valves. Select filter size with gpm flow rate compatible with valve circuit gpm flow rate.
WM	Water Meter 1"
———	Irrigation Lateral Line: PVC Class 200 SDR 21 with solvent weld Sch.40 fittings. Only lateral transition pipe sizes 1" and above are indicated on the plan, with all others being 3/4" in size. 12" min. burry.

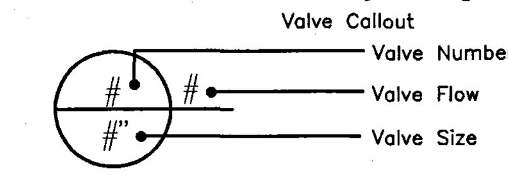
NOTE: INSTALL ONE TORO T-DL-MP9 DL2000 POP-UP OPERATION INDICATOR AT EACH RCV TORO DRIPLINE VALVE CIRCUIT. LOCATE AT END OF DRIPLINE CIRCUIT AT FLUSH VALVE.

FOR MOUNTING INFO, SEE NOTES ON PLANS

Y-FILTER TO BE INSTALLED AT DRIP CIRCUITS.

NOTE: SEE P.O.C. NOTES ON IRRIGATION PLANS.

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION
— — — — — — —	Irrigation Mainline: PVC Schedule 40 and Class 315 with solvent weld Sch.40 fittings. PVC Schedule 40 to 1-1/2", PVC Class 315 SDR 13.5 for pipes 2" and larger. 18" min. bury.
- - - - - - - - - -	Pipe Sleeve: PVC Class 315 SDR 13.5 Typical pipe sleeve for irrigation pipe. Pipe sleeve size shall allow for irrigation piping and their related couplings to easily slide through sleeving material. Extend sleeves 18 inches beyond edges of paving or construction. 24" min. bury.



SYMBOL	MANUFACTURER/MODEL/DESCRIPTION
◑	Drip zone connection point: PVC lateral line connection to subsurface dripline tubing manifold. Note-location diagrammatic, see drip details for PVC lateral to drip tubing.
— — ⊣	Cap main line for Homeowner's future use. Contractor shall route low voltage control wires from lot controller's unused stations to cap location for Homeowner's future use. Locate control wires in 9" round plastic valve box (e.g., if lot has 5 valve/controller stations used, Contractor shall route low voltage control wires for the remaining 7 unused stations to main line cap location).

IRRIGATION RUN TIME SCHEDULE NOTES:

1. IRRIGATION CONTROLLER RUN TIMES ARE NOT INCLUDED ON LANDSCAPE PLANS. IRRIGATION CONTROLLERS ARE ET BASED SMART CONTROLLERS THAT GENERATE OPTIMUM RUN TIME SCHEDULES BASED UPON LOCAL WEATHER CONDITIONS.
2. CONTROLLERS ARE INITIALLY PROGRAMMED WITH IRRIGATION SYSTEM COMPONENT INFORMATION, PLANT MATERIAL WATER USE REQUIREMENTS, SOIL TYPE, AND LOCAL MICRO CLIMATIC INFORMATION. CONTROLLERS AUTOMATICALLY GENERATE RUN TIME SCHEDULES FROM THIS INFORMATION. EACH DAY CONTROLLERS RECEIVES LOCAL WEATHER CONDITION DATA WIRELESS WEATHERS SENSORS, AND AUTOMATICALLY ADJUST THEIR WATERING SCHEDULES FOR OPTIMUM WATER CONSERVATION. EACH CONTROLLER HAS IT'S OWN WIRELESS WEATHER SENSOR, LOCATED ON-SITE.
3. CONTRACTOR SHALL PROGRAM CONTROLLER'S FLOW MONITORING FEATURE TO DETECT FLOWS OF 5 GPM ABOVE PEAK RECORDED GPM FLOW FOR MAIN LINE AND LATERAL LINES/RCVS. CONTROLLER SHALL BE SET TO SHUT MASTER VALVE AND CONTROLLER OFF IN THE EVENT OF AN OVERFLOW CONDITION (MAIN LINE OR LATERAL LINE BREAK).

REVIEWED F R CODE COMPLIANCE
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N V 1 3 2019
SAN MATEO CO. BLDG. INSP. DIV.

RESUBMITTAL
DEC 1 2017
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PROJECT NAME/LOCATION:
2185 COBBLEHILL PLACE
SAN MATEO CALIFORNIA

DRAWING TITLE:
LANDSCAPE IMPROVEMENT PLANS

REVISIONS: NO.	DESCRIPTION	BY:	DATE

SHEET TITLE:
IRRIGATION LEGEND

SCALE: NA
ISSUE DATE: 5/18/17
PROJECT NO.: V1355
SHEET NO.: L4.1

Appendix B – Water Efficient Landscape Worksheet : Lot 9

WATER EFFICIENT LANDSCAPE WORKSHEET

This worksheet is filled out by the project applicant and it is a required element of the Landscape Documentation Package.

Reference Evapotranspiration (ETo): 42.8

Hydrozone # /Planting Description[a]	Plant Factor (PF)	Irrigation Method[b]	Irrigation Efficiency (IE)[c]	ETAF (PF/IE)	Landscape Area (sq, ft,)	ETAF x Area	Estimated Total Water Use (ETWU)[d]
Regular Landscape Areas							
#1 Sun	0.3	Drip	0.81	0.37	2294	849	22523
#2 Shade	0.3	Drip	0.81	0.37	1767	654	17349
				Totals	4061	1503	39872
Special Landscape Areas N/A							
				Totals	(C)	(D)	
						ETWU Total	39872 ✓
						Maximum Allowed Water Allowance (MAWA)[e]	48493 ✓

[a] *Hydrozone #/Planting Description*
E.g
1.) front lawn
2.) low water use plantings
3.) medium water use planting

[b] *Irrigation Method*
overhead spray
or drip

[c] *Irrigation Efficiency*
0.75 for spray head
0.81 for drip

[d] *ETWU* (Annual Gallons Required) = *Eto x 0.62 x ETAF x Area*
where 0.62 is a conversion factor that converts acre-inches per acre per year to gallons per square foot per year.

[e] *MAWA (Annual Gallons Allowed) = (42.8) (0.62) [(0.55 x LA) + ((1-ETAF) x SLA)]*
where 0.62 is a conversion factor that converts acre-inches per acre per year to gallons per square foot per year, LA is the total landscape area in square feet, SLA is the total special landscape area in square feet, and ETAF is .55 for residential areas and 0.45 for non-residential areas.

0.55 used in MAWA calculation.

ETAF Calculations

Regular Landscape Areas

Total ETAF x Area	1234
Total Area	3336
Average ETAF	**0.37**

Average ETAF for Regular Landscape Areas must be 0.55 or below for residential areas, and 0.45 or below for non-residential areas.

All Landscape Areas

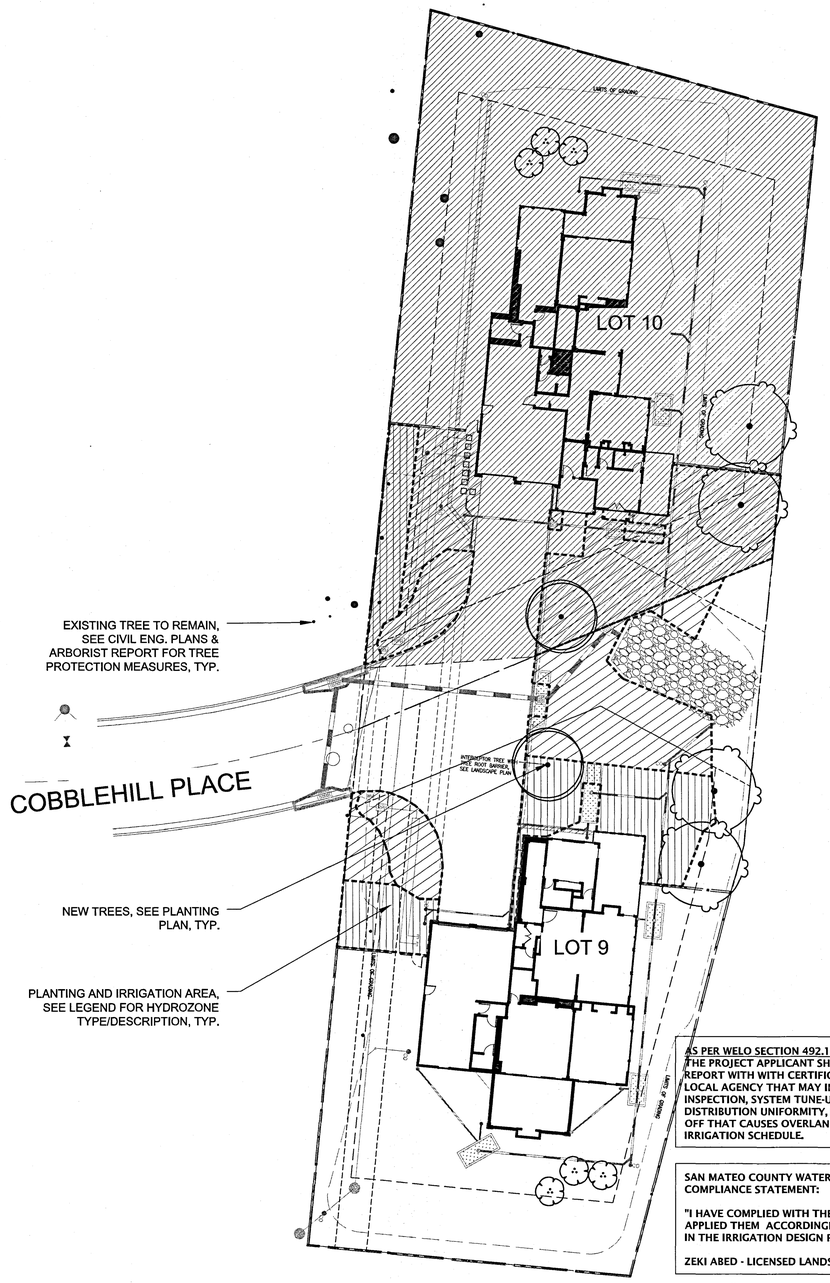
Total ETAF x Area	1234
Total Area	3336
Sitewide ETAF	**0.37**

WATER EFFICIENT LANDSCAPE WORKSHEET NOTES:

1. THE LANDSCAPE WATER USE CALCULATIONS ARE PER THE SAN MATEO COUNTY WATER EFFICIENT LANDSCAPING ORDINANCE (WELO).
2. THIS PROJECTS WATER USE IS LESS THAN THE MAXIMUM PERMITTED, THEREFORE THIS PROJECT IS A WATER CONSERVING LANDSCAPE DESIGN.

HYRDOZONE AREA LEGEND

SYMBOL	HYDROZONE	DESCRIPTION	IRRIG. METHOD	SF AREA	%LANDSCAPE AREA
	1	LOW WATER USE, SUN EXPOSURE, DRIP IRRIGATED TREE, SHRUB & GROUND COVER AREAS	DRIP	2,294 SF	56.5%
	2	LOW WATER USE, SHADE EXPOSURE, DRIP IRRIGATED TREE, SHRUB & GROUND COVER AREAS	DRIP	1,767 SF	43.5%
			TOTAL SF AREA =	4,061 SF	100%



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NOV 1 2019
SAN MATEO CO. LDG. INSP. DIV.

RESUBMITTAL
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SAN MATEO COUNTY WATER EFFICIENT LANDSCAPE ORDINANCE COMPLIANCE STATEMENT:

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LOT 9

PROJECT MANAGER: ZA
DRAFTED BY: EO
CHECKED BY: ZA

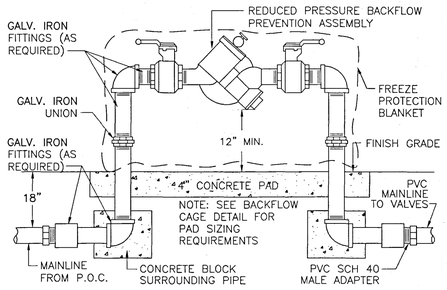
REVISIONS:

NO.	DESCRIPTION:	BY:	DATE

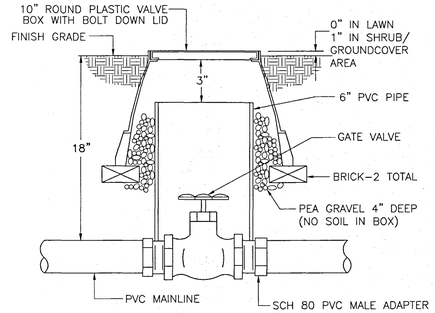
SHEET TITLE:
HYDROZONE PLAN & WATER CALCS

SCALE: 1" = 20'-0"
ISSUE DATE: 5/18/17
PROJECT NO.: V1355
SHEET NO.: L4.2 OF

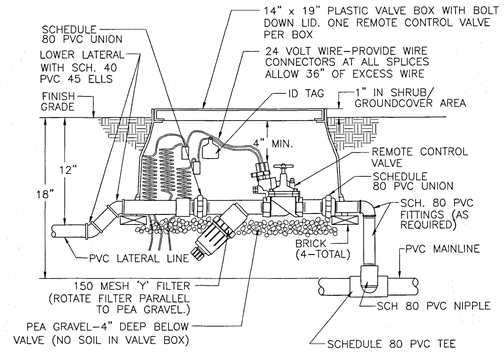
NOTE: EVENLY COAT METAL FITTINGS EXPOSED TO SOIL AND CONCRETE WITH 3M SCOTCHRAP PIPE PRIMER AND THEN WRAP WITH 3M SCOTCHRAP NO. 51 BLACK TAPE (3/4" OVERLAP).



1 REDUCED PRESSURE BACKFLOW PREVENTER DETAIL
NOT TO SCALE



2 GATE VALVE DETAIL
NOT TO SCALE



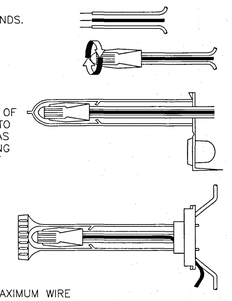
3 REMOTE CONTROL VALVE & 'Y' FILTER DETAIL
NOT TO SCALE

STEP 1: STRIP WIRES 1/2" FROM ENDS.

STEP 2: APPLY SCOTCHLOK Y SPRING CONNECTOR IN A CLOCKWISE DIRECTION.

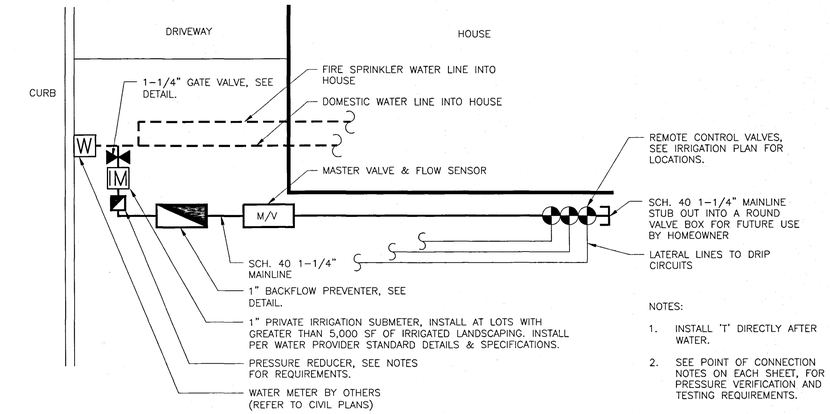
STEP 3: INSERT SPLICE TO BOTTOM OF GEL-FILLED TUBE. CHECK TO MAKE SURE CONNECTOR HAS BEEN PUSHED PAST LOCKING FINGERS AND IS SEATED AT BOTTOM OF TUBE.

STEP 4: POSITION WIRES IN WIRE CHANNELS AND CLOSE INSULATOR TUBE COVER.



NOTE: MAXIMUM WIRE SIZES PER CONNECTOR ARE THREE # 14'S OR TWO #12'S.

4 WIRE CONNECTION DETAIL
NOT TO SCALE



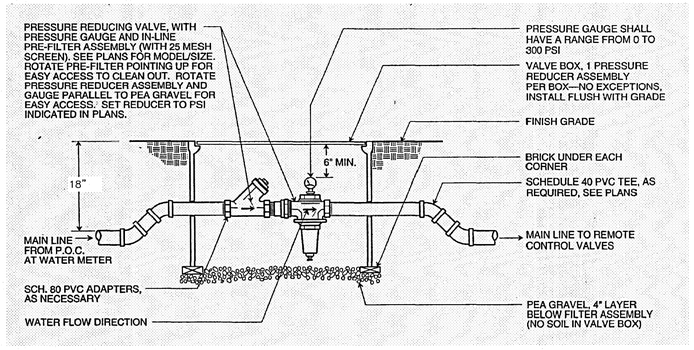
NOTES:

1. INSTALL 'T' DIRECTLY AFTER WATER.
2. SEE POINT OF CONNECTION NOTES ON EACH SHEET, FOR PRESSURE VERIFICATION AND TESTING REQUIREMENTS.

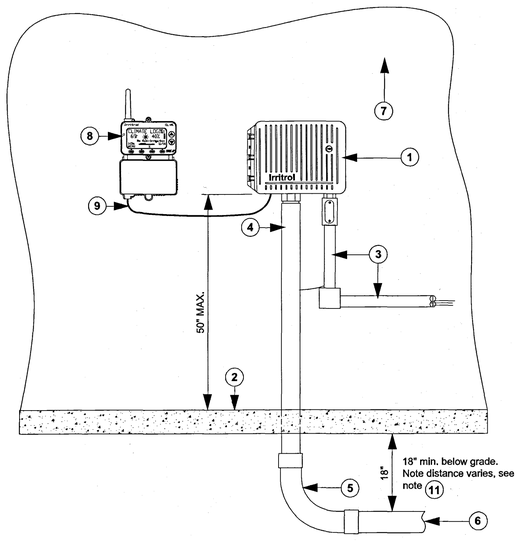
5 IRRIGATION SYSTEM P.O.C. AT EACH LOT DETAIL
NOT TO SCALE

NOTES:

PRESSURE REDUCER SHALL BE 1-1/4" LEAD FREE WILKINS 500XLYSBR (INCLUDES PRESSURE REDUCER & FILTER), SET AT 50 PSI. SEE NOTES ON IRRIGATION PLANS FOR INSTALLATION REQUIREMENTS.

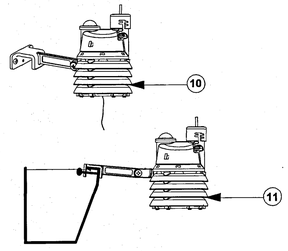


6 PRESSURE REDUCER DETAIL
NOT TO SCALE



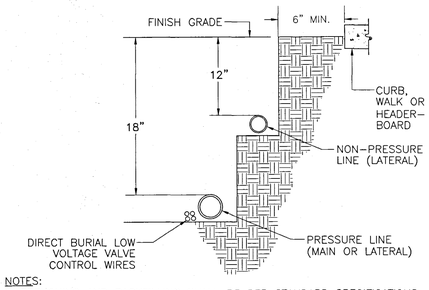
1. Irrigation controller. Install controller in location as directed by Owner's Representative.
2. Garage finish surface.
3. 1/2" UL approved electrical conduit, ring nut and junction box for 120V AC electrical power. Contractor to proved 120 volt AC electrical power to controller, see notes on Irrigation Plans.
4. PVC schedule 40 control wire conduit (size as required)
5. PVC sweep ell to conduit through bldg. to exterior planting area 18" below grade.
6. End conduit 12" beyond edge of bldg., 18" below grade.
7. Interior wall in garage area.
8. Climate Logic™ receiver module mounted near the compatible controller. Mount with screws at eye level.
9. Single connection cord plugged into controllers remote port.
10. Climate Logic™ weather sensor mounted outdoors on flat surface using screws, , see notes on Irrigation Plans.
11. Climate Logic™ weather sensor mounted on a rain gutter using QuickClip™ guttermount, see notes on Irrigation Plans.
11. Note: at lots where garage areas are elevated above grade, route conduit down side of bldg./structural piers out site where possible, to 18" below grade. Paint exposed conduit to match house color as directed by Owner's Representative.

7 IRRIGATION CONTROLLER & WIRELESS WEATHER SENSOR DETAIL
NOT TO SCALE



NOTES:

1. Irrigation controller is not shown on the irrigation plan. Irrigation controller to be installed in garage as directed by Owner's Representative.
2. 120 volt AC power to controller per Electrical Plans.
3. Wireless weather sensor unit to be installed on edge of bldg. in area open to sky with full sun exposure, in location approved by Owner's Representative. Locate sensor unit within radio communication range of controller.
4. All electrical work must conform to local codes. Refer to product literature for additional installation requirements.



NOTES:
1. TRENCHING AND BACKFILLING SHALL BE PER STANDARD SPECIFICATIONS.
2. MINIMUM BACKFILL RELATIVE COMPACTION SHALL BE 90%.
3. BUNDLE CONTROL WIRES TOGETHER AND TAPE AT 10' INTERVALS.
4. 4" MIN. HORIZONTAL DISTANCE BETWEEN PIPES IN COMMON TRENCH.
5. ALL PLASTIC IRRIGATION PIPING TO BE SNAKED IN TRENCHES.

8 IRRIGATION LINE TRENCHING
NOT TO SCALE

REVIEWED FOR CODE COMPLIANCE
This review does not authorize violation of State or County building laws.
NOV 13 2019
SAN MATEO CO. BLDG. INSP. DIV.

RESUBMITTAL
DEC 1 2017
San Mateo County Building Inspection

CLIENT:
CHAMBERLAIN GROUP
655 Skyway, Suite 230
San Carlos, CA 94070
(650) 595.5582

CALL BEFORE YOU DIG
800.227.2600

REGISTERED LANDSCAPE ARCHITECT
ZAKI R. ABED
No. 2512
RENEWAL 4/12
STATE OF CALIFORNIA

VAN DORN ABED
LANDSCAPE ARCHITECTS, INC.
81 14TH ST. SAN FRANCISCO, CA
ZIP 94103 PH (415) 864-1921 FAX(415) 864-6796

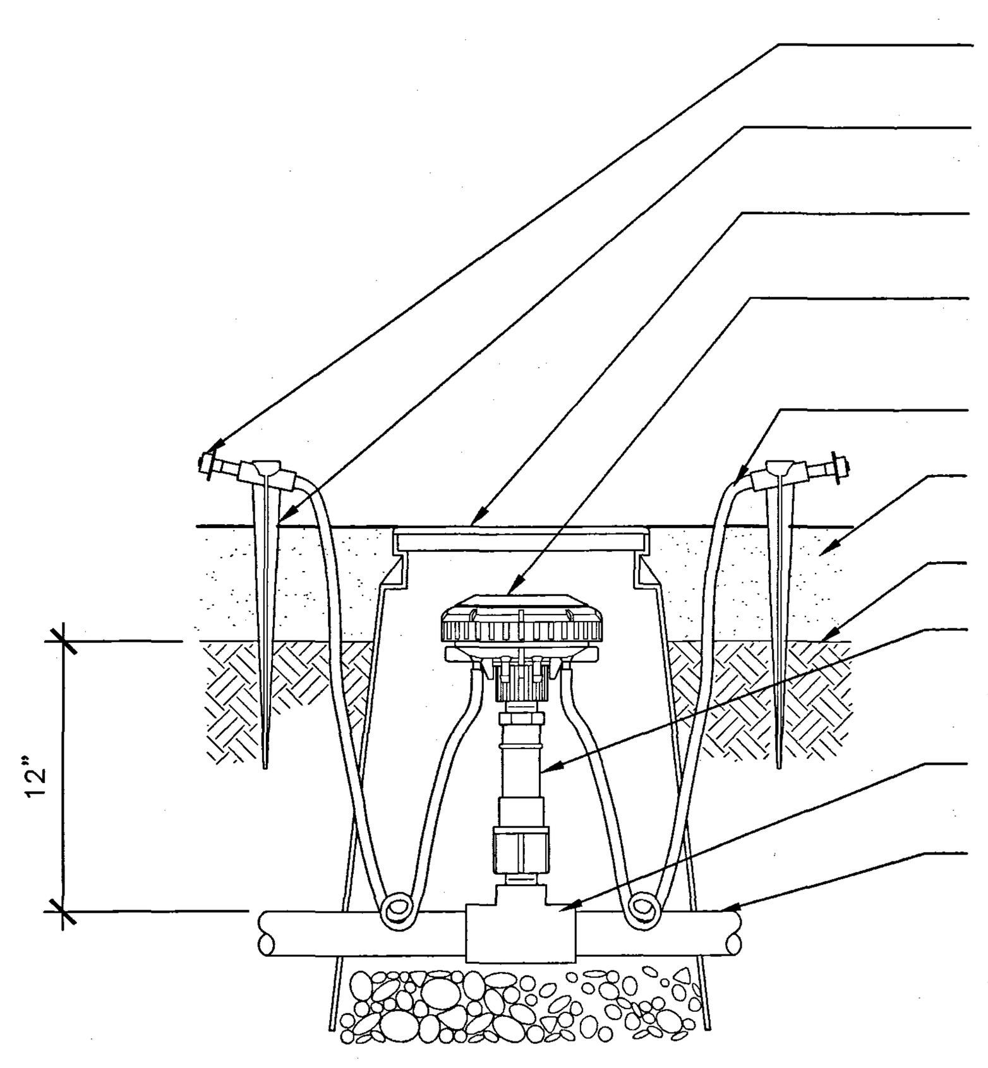
PROJECT MANAGER: MW
DRAFTED BY: BO
CHECKED BY: ZA

PROJECT NAME/LOCATION:
2185 COBBLEHILL PLACE
SAN MATEO CALIFORNIA
DRAWING TITLE:
LANDSCAPE IMPROVEMENT PLANS

REVISIONS: NO.	DESCRIPTION:	BY:	DATE

SHEET TITLE:
IRRIGATION DETAILS

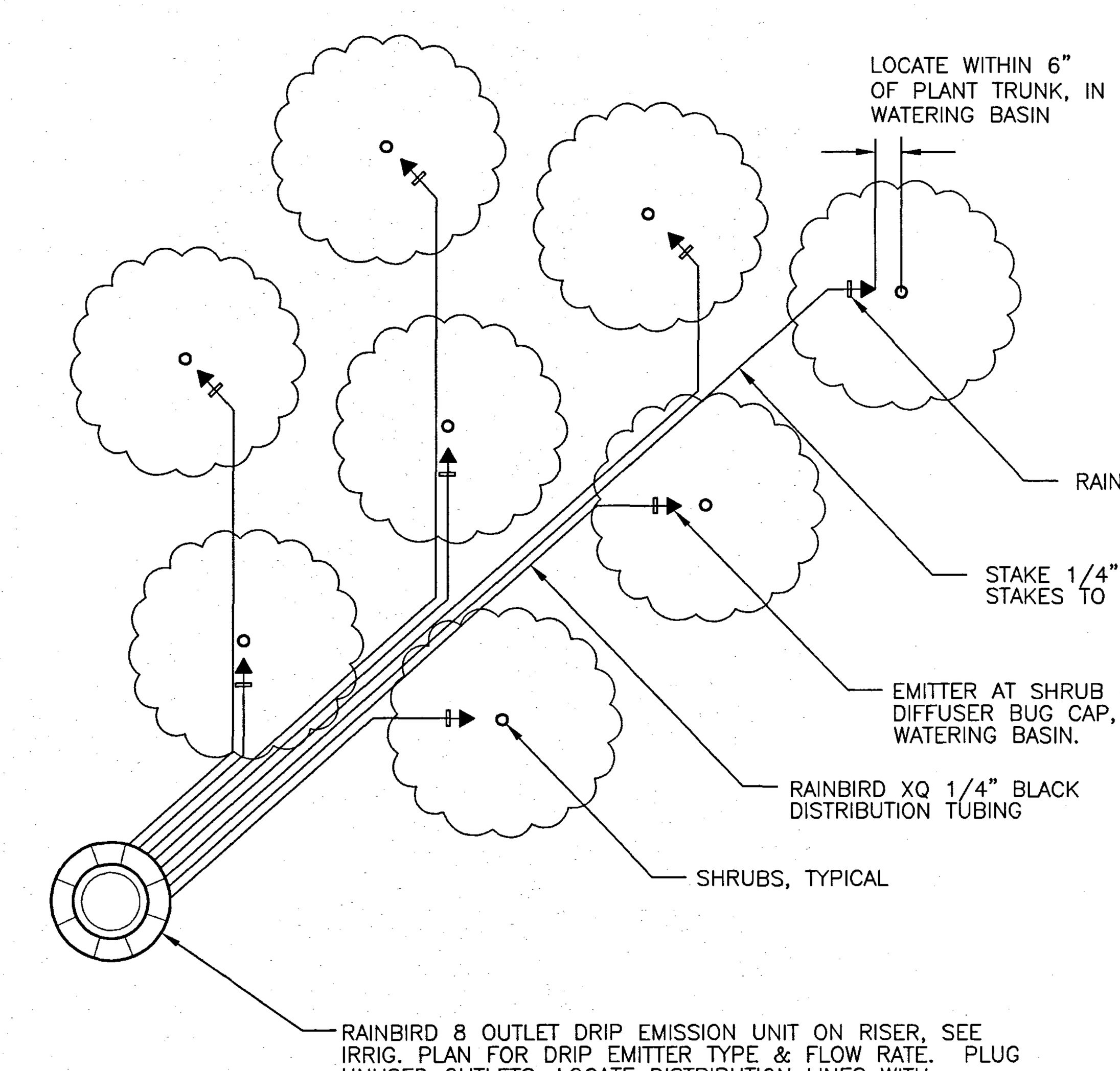
SCALE: AS SHOWN
ISSUE DATE: 5/18/17
PROJECT NO.: V1355
SHEET NO.: L4.3
OF



SECTION

NOTES:

1. APPLY TEFLON TAPE TO ALL THREADED CONNECTIONS.
2. SEE DRIP LATERAL PIPE SIZING CHART FOR SIZING LATERAL LINES.
3. 1/4" DISTRIBUTION TUBING MAXIMUM LENGTH SHALL NOT EXCEED 20'.



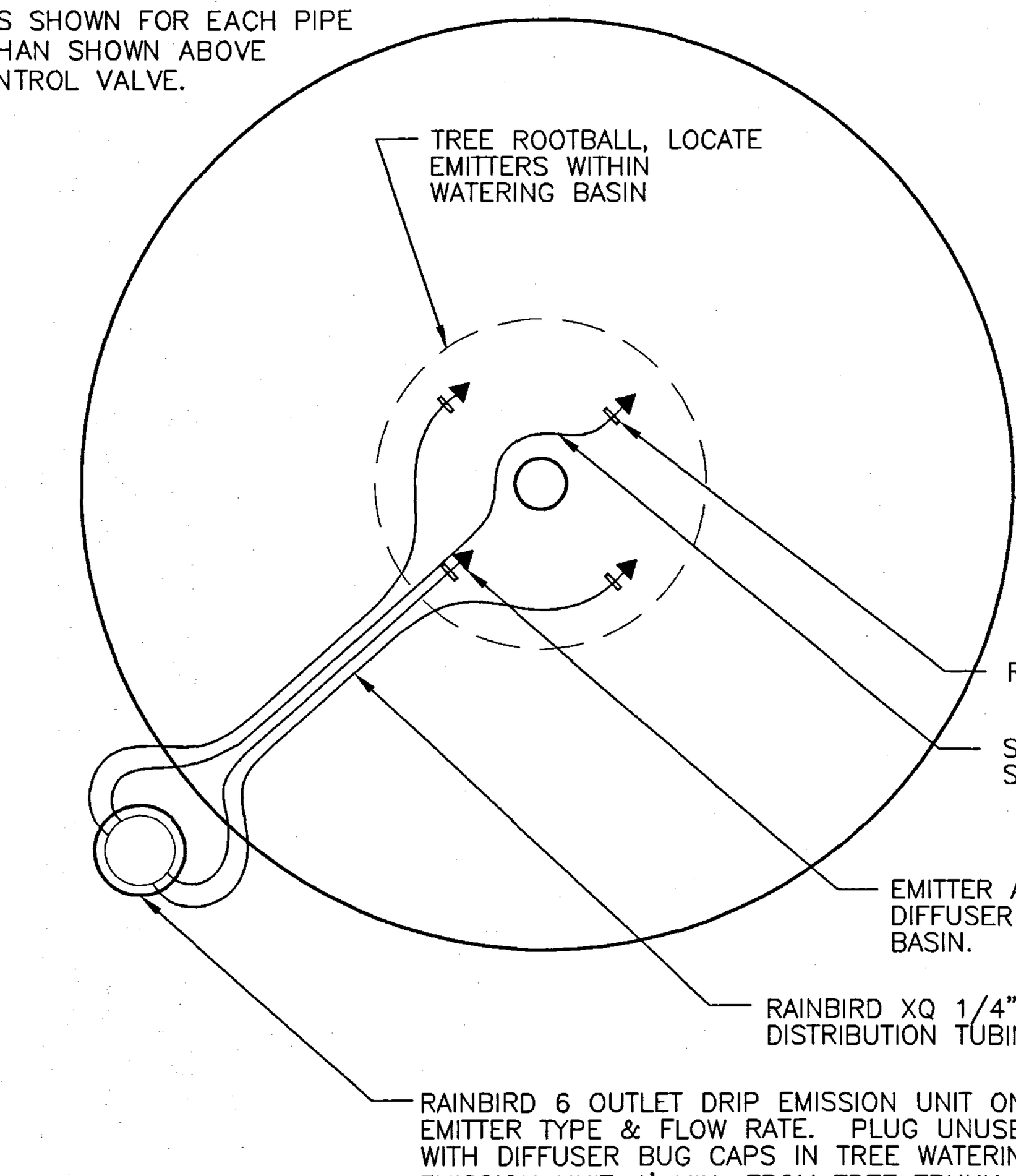
PLAN VIEW – RAINBIRD 8 OUTLET DRIP EMITTER LAYOUT @ SHRUBS/GROUND COVERS

DRIP SHRUB/GC LATERAL PIPE SIZING CHART

GPM FLOW RATES	SIZE OF CLASS 200 PVC PIPE	MAX. QUANTITY OF RAINBIRD 8-OUTLET DRIP EMISSION UNITS (WITH 1.0 GPM EMITTERS)
5 to 8	3/4"	58
9 to 14	1"	102
15 to 20	1-1/4"	150

NOTE: DO NOT EXCEED MAXIMUM FLOW RATES SHOWN FOR EACH PIPE SIZE. IF CIRCUITS REQUIRE HIGHER FLOWS THAN SHOWN ABOVE CONTRACTOR SHALL ADD A NEW REMOTE CONTROL VALVE.

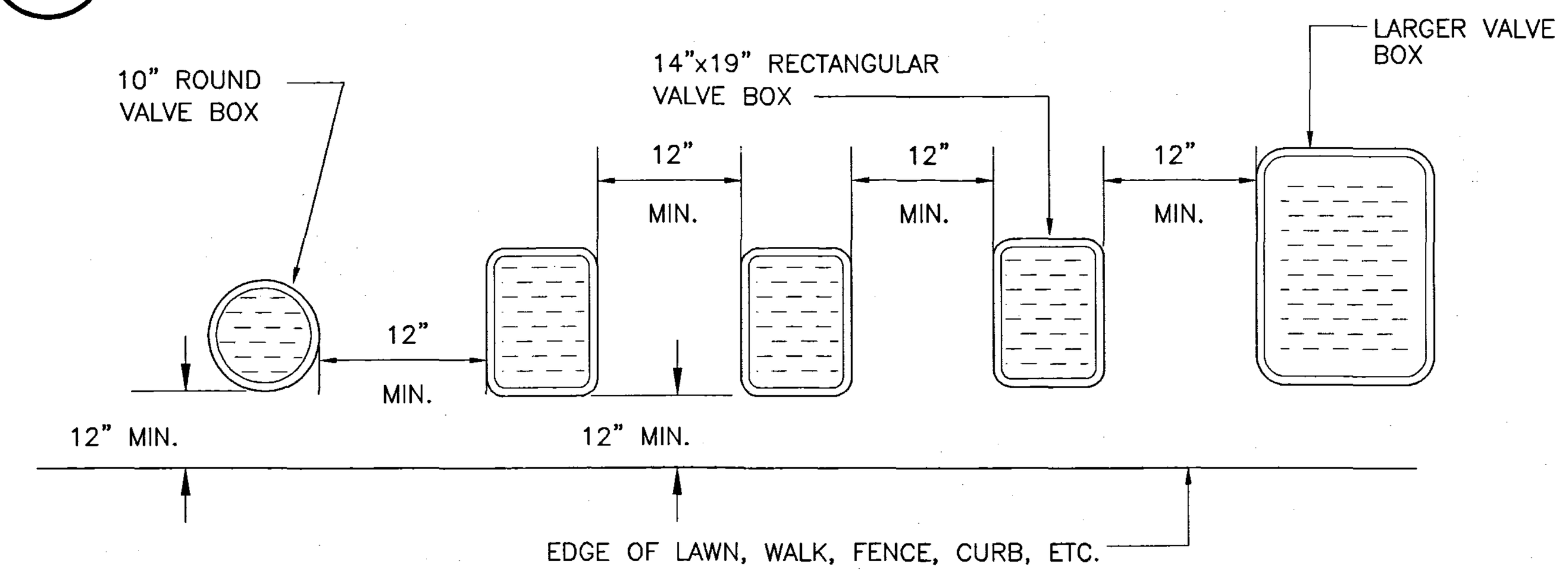
INSTALL:
1 EMITTER @ 1 GAL. PLANTS
1 EMITTER @ 2 GAL. PLANTS
2 EMITTERS @ 5 GAL. PLANTS
4 EMITTERS @ 15 GAL. PLANTS
4 EMITTERS @ 24" BOX TREES
4 EMITTERS @ 36" BOX TREES



PLAN VIEW – RAINBIRD 6 OUTLET DRIP EMITTER LAYOUT @ TREES

1 8-OUTLET & 6-OUTLET DRIP EMITTER ON RISER DETAIL

NOT TO SCALE



TOP VIEW

NOTES

1. CENTER BOX OVER VALVE TO FACILITATE SERVICING VALVE.
2. SET BOXES 1" ABOVE FINISH GRADE OR MULCH COVER IN GROUND COVER/SHRUB AREA AND FLUSH WITH FINISH GRADE IN TURF AREA.
3. SET VALVE BOX ASSEMBLY IN GROUND COVER/SHRUB AREA WHERE POSSIBLE. INSTALL IN LAWN AREA ONLY IF GROUND COVER/SHRUB AREA DOES NOT EXIST ADJACENT TO LAWN.
4. SET BOXES PARALLEL TO EACH OTHER AND PERPENDICULAR TO EDGE.
5. AVOID HEAVILY COMPACTING SOIL AROUND VALVE BOX EDGES TO PREVENT COLLAPSE AND DEFORMATION OF VALVE BOX SIDES.
6. VALVE BOXES SHALL HAVE BOLT DOWN LIDS WITH BOLTS INSTALLED.
7. VALVE BOXES SHALL BE BY CARSON, OR EQUIVALENT.

2 VALVE BOX LAYOUT DETAIL

NOT TO SCALE

TORO DRIP TUBING MAXIMUM LENGHT OF RUN CHART:

TUBING TYPE: TORO RGP-212(12);
5/8" DIA. TUBING WITH 0.53 GPH
EMITTERS AT 12" O.C.

TORO

Performance Specifications (continued)

Maximum length of run

- RGP-212-XX:
  - 250' @ 15 psi (76m @ 1,03 Bar)
  - 360' @ 25 psi (110m @ 1,72 Bar)
  - 400' @ 30 psi (122m @ 2,07 Bar)
  - 460' @ 40 psi (140m @ 2.76 Bar)

TUBING LAYOUT CHART NOTES:

1. CONTRACTOR SHALL FIELD LAYOUT DRIP TUBING ZONE AREAS AS INDICATED ON THE PLANS, AND FIELD VERIFY/CALCULATE EACH ZONES TOTAL GPM DOES NOT EXCEED THE DRIP ZONE VALVE CIRCUIT GPM'S SHOWN ON THE PLANS. IF DRIP ZONE(S) GPM'S EXCEED GPM'S SHOWN ON PLANS, CONTRACTOR SHALL SPLIT DRIP ZONE(S) INTO TWO OR MORE DRIP ZONE VALVE CIRCUITS AREAS TO REDUCE GPM FLOW RATES AS NECESSARY.
2. PSI AVAILABLE AT EACH DRIP CIRCUIT'S TUBING WILL VARY AND DEPEND UPON PSI AT WATER METER/P.O.C AND PSI LOSSES FROM P.O.C TO DRIP TUBING REMOTE CONTROL VALVE. CONTRACTOR SHALL FIELD VERIFY PSI AVAILABLE AT EACH DRIP CIRCUIT'S VALVE, AND SELECT THE APPROPRIATE MAXIMUM TUBING RUN FROM CHART BELOW. DO NOT EXCEED MAXIMUM TUBING RUN LENGTHS.
3. WHERE NECESSARY, INSTALL ADDITIONAL PVC LATERAL SUPPLY MANIFOLDS IN DRIP ZONE AREAS TO KEEP TUBING RUN LENGTHS FROM EXCEEDING MAXIMUM RUN LENGTHS.
4. PVC LATERAL SUPPLY MANIFOLDS SHALL BE SAME SIZE AS LATERAL LINE SIZE THAT FEEDS ENTIRE DRIP ZONE AREA.

3 DRIP CIRCUIT MAXIMUM TUBING LENGTH CHART

NOT TO SCALE

NOTE: SEE IRRIGATION LEGEND FOR TYPE OF DRIP SYSTEM (DRIP EMITTERS AND/OR DRIPLINE TUBING) INSTALLED IN PLANTING AREAS.

TORO

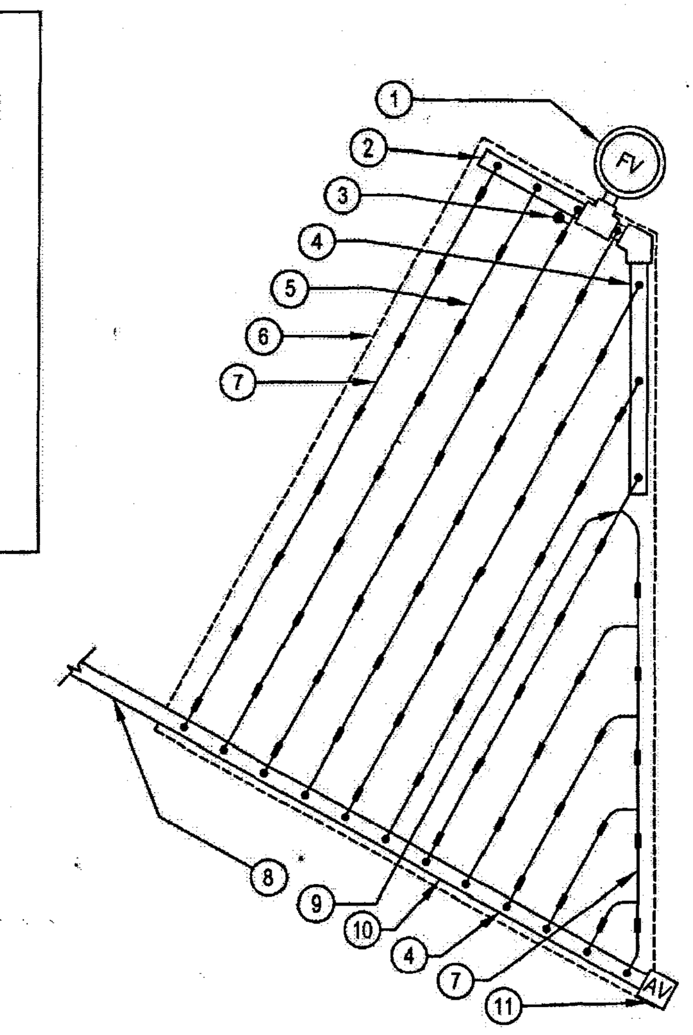
TORO-IRRIGATION DIVISION
5825 JASMINE STREET
RIVERSIDE, CA 92504
TOLL FREE: 1-877-345-8676
PHONE: (951) 785-3152
FAX: (951) 359-1870
www.toro.com

LEGEND

1. TORO DL2000 AUTOMATIC FLUSH VALVE (FCH-H-FIPT) PLUMBED TO FLUSH MANIFOLD AT LOW POINT.
2. PVC FLUSH MANIFOLD.
3. TORO DL2000 OPERATION INDICATOR (DL-MP9), OPTIONAL.
4. TORO DL2000 MANIFOLD-TO-ELBOW CONNECTION (TYP).
5. TORO DL2000 DRIPLINE LATERAL (RGP-XXX-XX).
6. AREA PERIMETER.
7. PERIMETER LATERALS 2" TO 4" FROM EDGE.
8. PVC LATERAL LINE FROM DRIP ZONE KIT.
9. TORO LOC-EZE TEE (FTT16).
10. PVC SUPPLY MANIFOLD.
11. TORO DL2000 AIR/VACUUM RELIEF VALVE (YD-500-34) PLUMBED TO SUPPLY MANIFOLD AT HIGH POINT.

DL2000 DRIPLINE:
RPG212(12)–5/8" DIA.
TUBING WITH 0.53GPH
EMITTERS AT 12" O.C.

NOTE:
THE TOTAL LENGTH OF ALL INTERCONNECTED DRIP LINE SHALL NOT EXCEED THE MAXIMUM RUN LENGTH. SEE TORO SUBSURFACE IRRIGATION DESIGN GUIDE (FORM #ALT111).



PLAN
NOT TO SCALE

NOTES:
1. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS.
2. DO NOT SCALE DRAWINGS.
3. CONTRACTORS NOTE: FOR PRODUCT AND COMPANY INFORMATION VISIT www.CADdetails.com/info REFERENCE NUMBER 065-188I.

4 DRIP CIRCUIT ODD SHAPE LAYOUT – END FEED DETAIL

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RIVERSIDE, CA 92504
TOLL FREE: 1-877-345-8676
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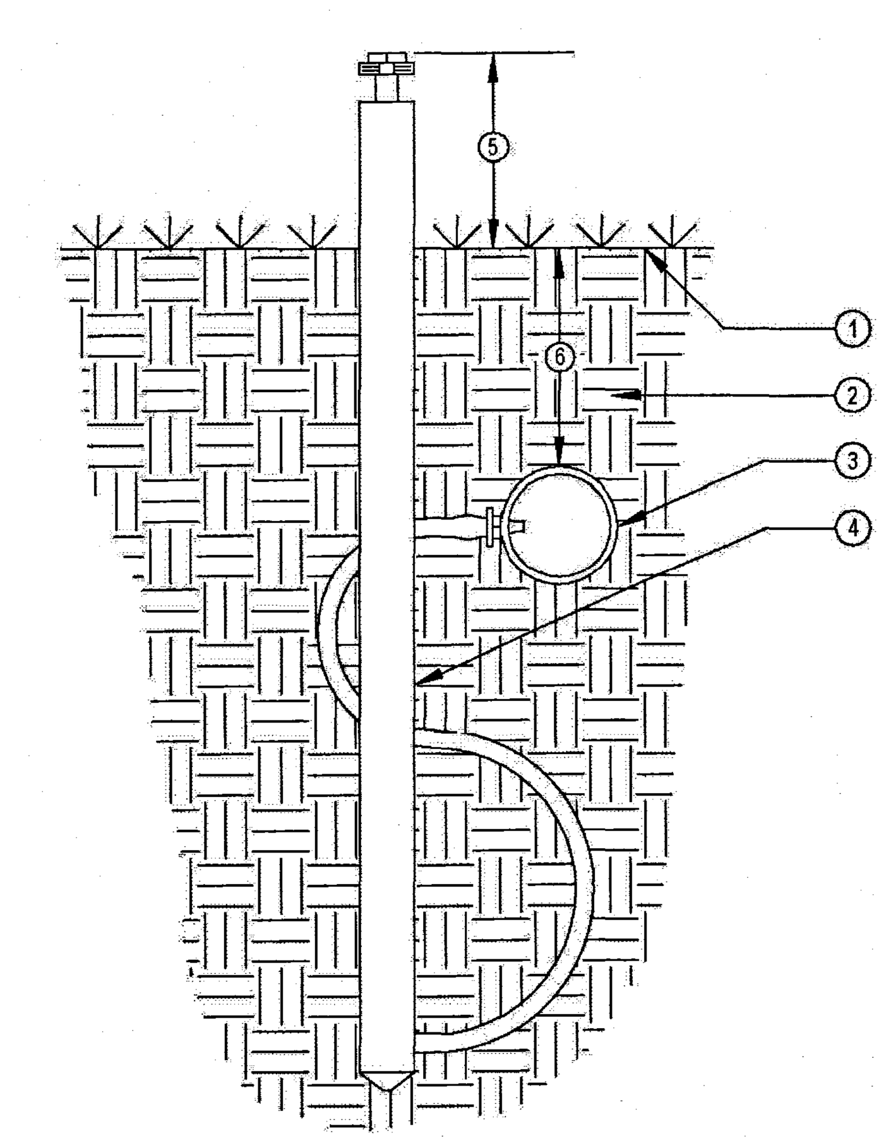
crc@toro.com
www.toro.com



SECTION/ELEVATION
NOT TO SCALE

LEGEND:
1. FINISH GRADE.
2. NATIVE SOIL BACKFILL PER SPECIFICATIONS.
3. TORO DL2000 DRIPLINE (RGP-XXX-XX).
4. TORO DL2000 OPERATION INDICATOR (DL-MP9). USE ONE PER ZONE AND LOCATED AT FLUSH END OF ZONE.
5. 2"-3" ABOVE FINISH GRADE.
6. SEE DRIP DETAILS FOR DEPTH

REVIEWED FOR CO[illegible] COMPLIANCE
This review does not [illegible]thorize violation of State or County [illegible]uilding laws.
NOV 1 3 [illegible]019
SAN MATEO CO. [illegible]DG. INSP. DIV.

RESUBMITTAL
DEC 1 2017
San Mateo County Building Inspection

NOTES:
1. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
2. DO NOT SCALE DRAWING.
3. THIS DRAWING IS INTENDED FOR USE BY ARCHITECTS, ENGINEERS, CONTRACTORS, CONSULTANTS AND DESIGN PROFESSIONALS FOR PLANNING PURPOSES ONLY. THIS DRAWING MAY NOT BE USED FOR CONSTRUCTION.
4. ALL INFORMATION CONTAINED HEREIN WAS CURRENT AT THE TIME OF DEVELOPMENT BUT MUST BE REVIEWED AND APPROVED BY THE PRODUCT MANUFACTURER TO BE CONSIDERED ACCURATE.
5. CONTRACTOR'S NOTE: FOR PRODUCT AND COMPANY INFORMATION VISIT www.CADdetails.com/info AND ENTER REFERENCE NUMBER 065-188y.

5 DL2000 DRIPLINE OPERATION INDICATOR

NOT TO SCALE

CLIENT:
CHAMBERLAIN GROUP
655 Skyway, Suite 230
San Carlos, CA 94070
(650) 595.5582

800.227.2600

REGISTERED LANDSCAPE ARCHITECT — ZEKI R. ABED — STATE OF CALIFORNIA

VAN DORN ABED
LANDSCAPE ARCHITECTS, INC.
81 14TH ST. SAN FRANCISCO, CA
ZIP 94103 PH (415) 864-1921 FAX(415) 864-4796

PROJECT MANAGER: MW
DRAFTED BY: EO
CHECKED BY: ZA

PROJECT NAME/LOCATION:
2185 COBBLEHILL PLACE
SAN MATEO CALIFORNIA

DRAWING TITLE:
LANDSCAPE IMPROVEMENT PLANS

REVISIONS: NO.	DESCRIPTION	BY:	DATE

SHEET TITLE:
IRRIGATION DETAILS

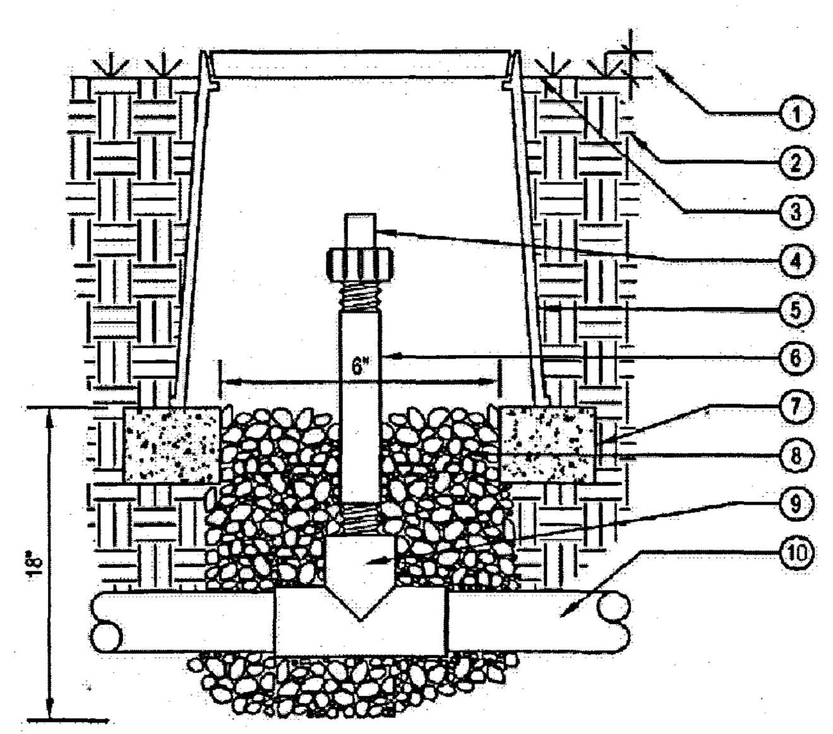
SCALE: AS SHOWN
ISSUE DATE: 5/18/17
PROJECT NO.: V1355
SHEET NO.: L4.4
OF

DRIP CIRCUIT NOTES (FOR DETAILS 1–6):

1. ALL PVC LATERALS LINES, INCLUDING PVC FEED LINES SHALL BE INSTALLED 12" BELOW GRADE.
2. SEE IRRIGATION LEGEND FOR TUBING SPECIFICATIONS.
3. SEE NOTES AT EACH DRIP DETAIL FOR ADDITIONAL REQUIREMENTS.
4. SEE "DRIPLINE TUBING NOTES" ON IRRIGATION PLANS FOR ADDITIONAL REQUIREMENT.
5. CONTACT CHRIS STEELE, TORO IRRIGATION SPECIFICATION SALES MANAGER, 559–779–8676, PRIOR TO INSTALLATION OF DRIP TUBING TO REVIEW INSTALLATION REQUIREMENTS.

LEGEND

1. 1" ABOVE FINISH GRADE.
2. NATIVE SOIL PER SPECIFICATIONS.
3. FINISH GRADE.
4. TORO DL2000 FLUSH VALVE (FCH-H-FIPT).
5. 6" ROUND PLASTIC VALVE BOX . HEAT BRAND "FV" ON LID IN 1" HIGH CHARACTERS.
6. 3/4" SCH 80 PVC NIPPLE (LENGTH AS REQUIRED).
7. BRICK SUPPORTS (2 COMMON BRICKS REQUIRED).
8. PEA GRAVEL SUMP (6" x 18").
9. PVC TEE (SxSxT) WITH 3/4" THREADED OUTLET.
10. PVC PIPING.



SECTION/ELEVATION
NOT TO SCALE

NOTES:
1. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS.
2. DO NOT SCALE DRAWINGS.
3. CONTRACTORS NOTE: FOR PRODUCT AND COMPANY INFORMATION VISIT www.CADdetails.com/info REFERENCE NUMBER 065-188w.

1 DRIP CIRCUIT FLUSH VALVE DETAIL
NOT TO SCALE

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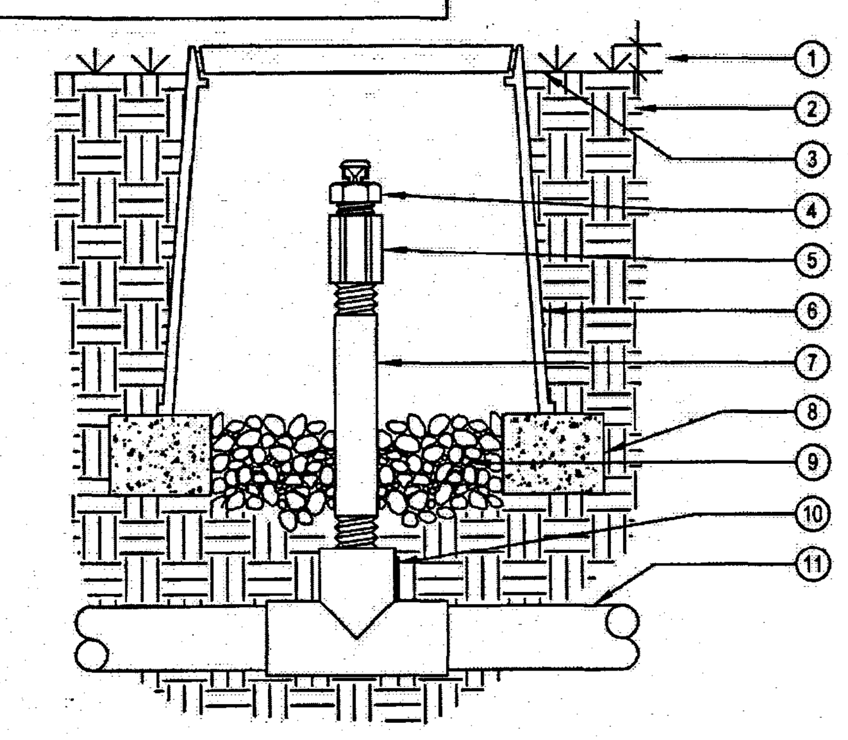
5825 JASMINE STREET
RIVERSIDE, CA 92504
TOLL FREE: 1-877-345-8676
PHONE: (951) 785-3152
FAX: (951) 359-1870
www.toro.com

LEGEND

1. 1" ABOVE FINISH GRADE.
2. NATIVE SOIL PER SPECIFICATIONS.
3. FINISH GRADE.
4. TORO DL2000 AIR/VACUUM RELIEF VALVE (YD-500-34).
5. 1/2" PVC COUPLING (TxT).
6. 6" ROUND PLASTIC VALVE BOX . HEAT BRAND "AR" ON LID IN 1" HIGH CHARACTERS.
7. 1/2" SCH 80 PVC NIPPLE (LENGTH AS REQUIRED).
8. BRICK SUPPORTS (2 COMMON BRICKS REQUIRED).
9. PEA GRAVEL SUMP (6" DEEP).
10. PVC ELL (SxT) WITH 1/2" THREADED OUTLET.
11. PVC PIPING.

NOTE:
USE ONE AIR/RELIEF VALVE FOR EVERY 7 GPM PER ZONE. LOCATE AT HIGH POINTS. REFER TO TORO PUBLICATION #ALT111 FOR SPECIFICATIONS.



SECTION/ELEVATION
NOT TO SCALE

NOTES:
1. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS.
2. DO NOT SCALE DRAWINGS.
3. CONTRACTORS NOTE: FOR PRODUCT AND COMPANY INFORMATION VISIT www.CADdetails.com/info REFERENCE NUMBER 065-188q.

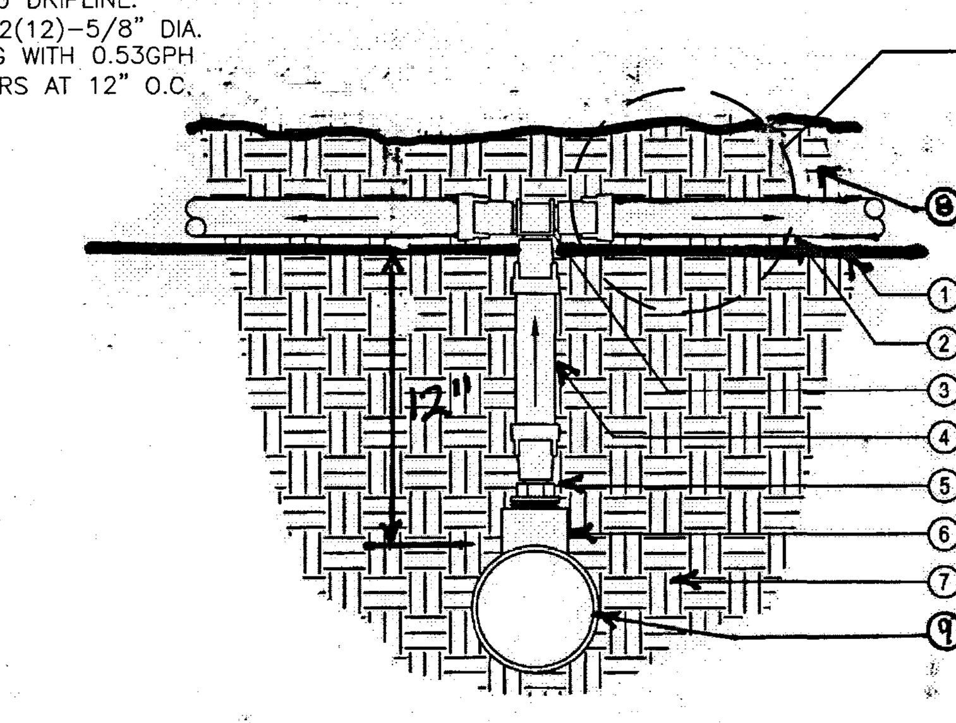
2 DRIP CIRCUIT AIR VACUUM RELIEF VALVE DETAIL
NOT TO SCALE

TORO-IRRIGATION DIVISION
5825 JASMINE STREET
RIVERSIDE, CA 92504
TOLL FREE: 1-877-345-8676
PHONE: (951) 785-3152
FAX: (951) 359-1870
www.toro.com

LEGEND

1. FINISH GRADE.
2. TORO DL2000 DRIPLINE LATERAL (RGP-XXX-XX).
3. TORO LOC-EZE TEE (FTT16).
4. TORO BLUE STRIPE POLY TUBING (EHD1645-XXX).
5. TORO LOC-EZE X 1/2" MPT ADAPTER (FAM16).
6. PVC TEE (SxSxT) WITH 1/2" FPT OUTLET.
7. NATIVE SOIL BACKFILL PER SPECIFICATIONS.
8. 3" BARK MULCH LAYER
9. PVC LATERAL FEED LINE

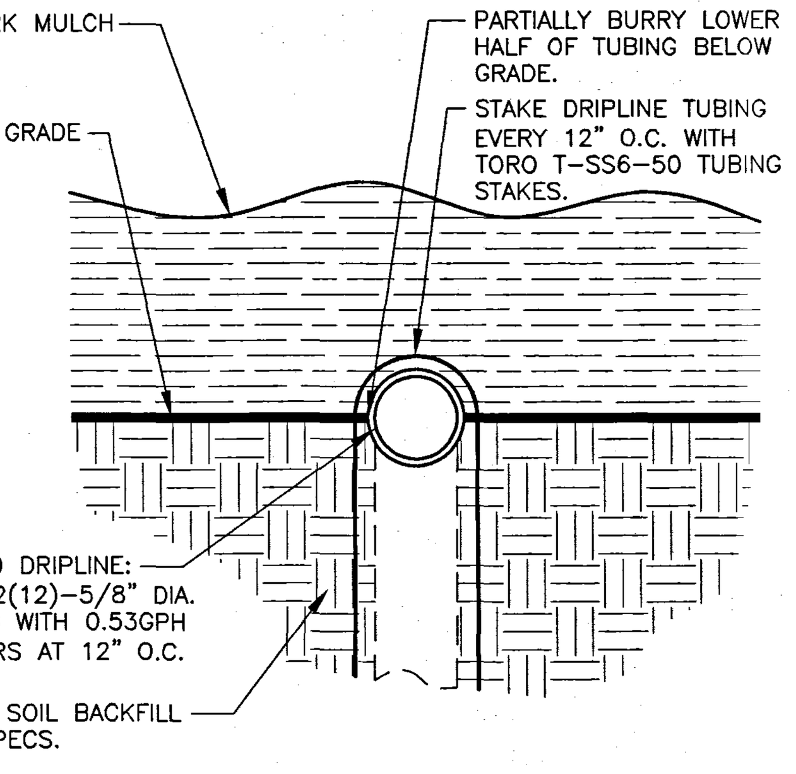
DL2000 DRIPLINE:
RPG212(12)–5/8" DIA.
TUBING WITH 0.53GPH
EMITTERS AT 12" O.C.



SECTION/ELEVATION
NOT TO SCALE

NOTES:
1. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS.
2. DO NOT SCALE DRAWINGS.
3. CONTRACTORS NOTE: FOR PRODUCT AND COMPANY INFORMATION VISIT www.CADdetails.com/info REFERENCE NUMBER 065-188a.

3 DRIP CIRCUIT FEED MANIFOLD CONNECTION DETAIL
NOT TO SCALE



ENLARGED TUBING ON GRADE DETAIL
NTS

NOTE: SEE IRRIGATION LEGEND FOR TYPE OF DRIP SYSTEM (DRIP EMITTERS AND/OR DRIPLINE TUBING) INSTALLED IN PLANTING AREAS.

TORO-IRRIGATION DIVISION
5825 JASMINE STREET
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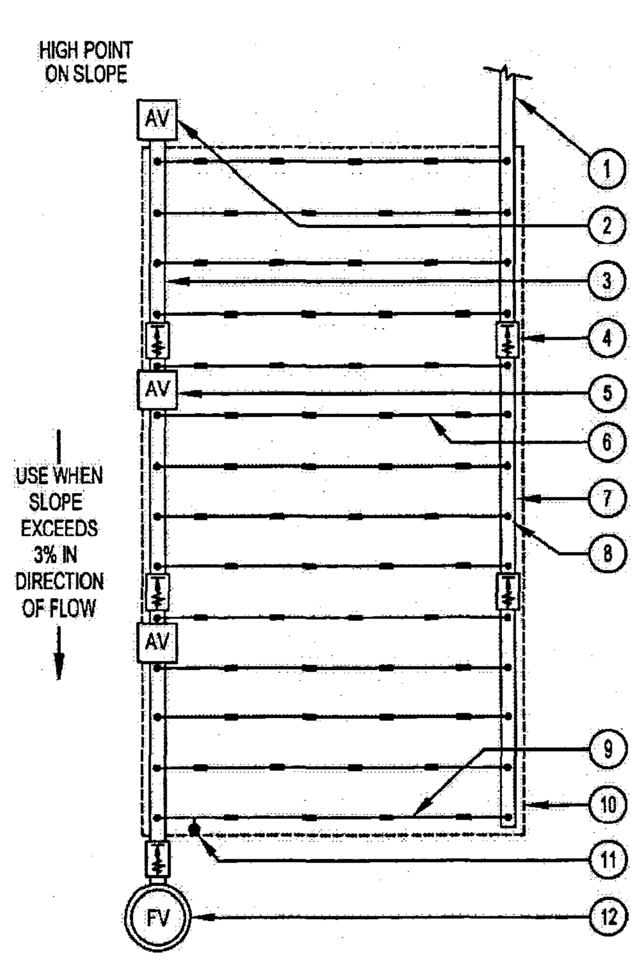
TOLL FREE: 1-877-345-8676
PHONE: (951) 785-3152
FAX: (951) 359-1870
www.toro.com

LEGEND

1. PVC LATERAL LINE FROM DRIP ZONE KIT.
2. TORO DL2000 AIR/VACUUM RELIEF VALVE (YD-500-34) PLUMBED TO PVC FLUSH MANIFOLD AT HIGH POINT.
3. PVC FLUSH MANIFOLD.
4. INLINE SPRING CHECK VALVE (JV0500-S2) TO HELP CONTROL LOW-HEAD DRAINAGE (TYP).
5. TORO DL2000 AIR/VACUUM RELIEF VALVE (YD-500-34) PLUMBED TO PVC FLUSH MANIFOLD JUST BELOW EACH CHECK VALVE (TYP).
6. TORO DL2000 DRIPLINE LATERAL (RGP-XXX-XX).
7. PVC SUPPLY MANIFOLD.
8. TORO DL2000 MANIFOLD-TO-ELBOW CONNECTION (TYP).
9. PERIMETER LATERALS 2" TO 4" FROM EDGE.
10. AREA PERIMETER.
11. TORO DL2000 OPERATION INDICATOR (DL-MP9), OPTIONAL.
12. TORO DL2000 AUTOMATIC FLUSH VALVE (FCH-H-FIPT) PLUMBED TO FLUSH MANIFOLD AT LOW POINT.

DL2000 DRIPLINE: RPG212(12)–5/8" DIA. TUBING WITH 0.53GPH EMITTERS AT 12" O.C.

NOTE:
THE TOTAL LENGTH OF ALL INTERCONNECTED DRIP LINE SHALL NOT EXCEED THE MAXIMUM RUN LENGTH. SEE TORO SUBSURFACE IRRIGATION DESIGN GUIDE (FORM #ALT111).



PLAN
NOT TO SCALE

NOTES:
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2. DO NOT SCALE DRAWINGS.
3. CONTRACTORS NOTE: FOR PRODUCT AND COMPANY INFORMATION VISIT www.CADdetails.com/info REFERENCE NUMBER 065-188i.

4 DRIP CIRCUIT LAYOUT – SLOPE DETAIL

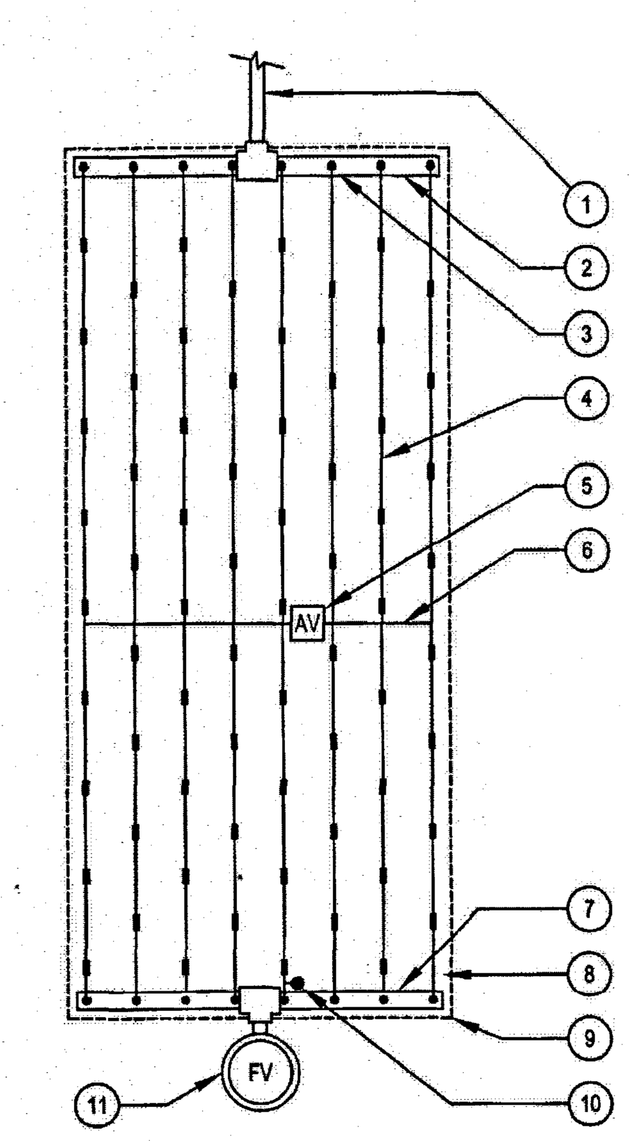
TORO-IRRIGATION DIVISION
5825 JASMINE STREET
RIVERSIDE, CA 92504
TOLL FREE: 1-877-345-8676
PHONE: (951) 785-3152
FAX: (951) 359-1870
www.toro.com

LEGEND

1. PVC LATERAL LINE FROM DRIP ZONE KIT.
2. PVC SUPPLY MANIFOLD.
3. TORO DL2000 MANIFOLD-TO-ELBOW CONNECTION (TYP).
4. TORO DL2000 DRIPLINE LATERAL (RGP-XXX-XX).
5. TORO DL2000 AIR/VACUUM RELIEF VALVE (YD-500-34) PLUMBED TO TORO BLUE STRIPE POLY TUBING (EHD1645-XXX) AT EACH HIGH POINT.
6. AIR/VACUUM RELIEF LATERAL, TORO BLUE STRIPE POLY TUBING (EHD1645-XXX) CENTERED ON MOUND OR BERM.
7. PVC FLUSH MANIFOLD.
8. PERIMETER LATERALS 2" TO 4" FROM EDGE.
9. AREA PERIMETER.
10. TORO DL2000 OPERATION INDICATOR (DL-MP9), OPTIONAL.
11. TORO DL2000 AUTOMATIC FLUSH VALVE (FCH-H-FIPT) PLUMBED TO FLUSH MANIFOLD AT LOW POINT.

DL2000 DRIPLINE: RPG212(12)–5/8" DIA. TUBING WITH 0.53GPH EMITTERS AT 12" O.C.

NOTE:
THE TOTAL LENGTH OF ALL INTERCONNECTED DRIP LINE SHALL NOT EXCEED THE MAXIMUM RUN LENGTH. SEE TORO SUBSURFACE IRRIGATION DESIGN GUIDE (FORM #ALT111).



PLAN
NOT TO SCALE

NOTES:
1. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS.
2. DO NOT SCALE DRAWINGS.
3. CONTRACTORS NOTE: FOR PRODUCT AND COMPANY INFORMATION VISIT www.CADdetails.com/info REFERENCE NUMBER 065-188h.

5 DRIP CIRCUIT LAYOUT – END FEED DETAIL

TORO-IRRIGATION DIVISION
5825 JASMINE STREET
RIVERSIDE, CA 92504
TOLL FREE: 1-877-345-8676
PHONE: (951) 785-3152
FAX: (951) 359-1870
www.toro.com

LEGEND

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2. PVC FLUSH MANIFOLD.
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EMITTERS AT 12" O.C.

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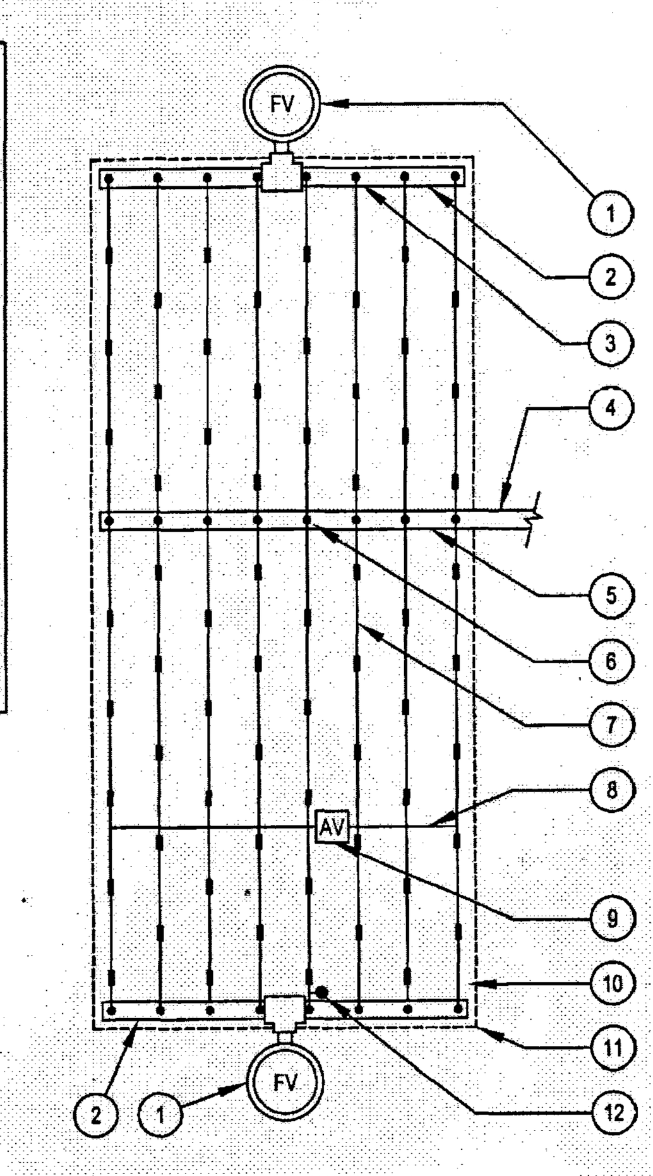

PLAN
NOT TO SCALE

NOTES:
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2. DO NOT SCALE DRAWINGS.
3. CONTRACTORS NOTE: FOR PRODUCT AND COMPANY INFORMATION VISIT www.CADdetails.com/info REFERENCE NUMBER 065-188g.

6 DRIP CIRCUIT LAYOUT – CENTER FEED DETAIL

DRIPLINE TUBING NOTES:

1. DRIPLINE TUBING LAYOUT ON PLANS IS DIAGRAMMATIC. INSTALL DRIPLINE AND COMPONENTS PER MANUFACTURERS INSTRUCTIONS AND INSTALLATION DETAILS.
2. DRIPLINE SPACING SHALL BE AS INDICATED IN IRRIGATION LEGEND. INSTALL DRIPLINE 2" FROM PERIMETER OF PLANTED AREA. THERE SHALL BE A MINIMUM OF TWO DRIPLINE LATERALS IN EACH PLANTED AREA. DRIPLINE SHALL BE INSTALLED AT A CONSISTENT DEPTH THROUGHOUT THE CIRCUIT. SEE IRRIGATION LEGEND AND DRIP CIRCUIT DETAILS FOR DRIPLINE TUBING DEPTH.
3. PLACE AIR/VACUUM RELIEF VALVES AT THE HIGHEST POINTS OF EACH ZONE AND JUST BELOW CHECK VALVES ON SLOPES. INSTALL ONE AIR/VACUUM RELIEF VALVE FOR 7 GPM PER ZONE (OR FOR EVERY 800' OF 0.53 GPH/12" EMITTER SPACING DRIPLINE). SEE DRIP CIRCUIT AIR RELIEF VALVE DETAIL FOR ADDITIONAL REQUIREMENTS.
4. PLACE FLUSH VALVES AT THE HYDRAULIC CENTER OF THE EXHAUST HEADER OR AT LOW POINT ON SLOPES. INSTALL ONE AIR/VACUUM RELIEF VALVE FOR EVERY 7 GPM PER ZONE (OR FOR EVERY 800' OF 0.53 GPH/12" EMITTER SPACING DRIPLINE). SEE DRIP CIRCUIT FLUSH VALVE DETAIL FOR ADDITIONAL REQUIREMENTS.
5. INSTALL IN-LINE CHECK VALVES ON SLOPES GREATER THAN 3% AND WHERE LOW-LINE DRAINAGE COULD CAUSE WET AREAS IN THE LOWEST AREAS OF AN IRRIGATION ZONE. CHECK VALVES SHALL BE PLACED EVERY 4-5 FEET BETWEEN DRIPLINE LATERALS AND BEFORE THE FLUSH VALVE.
6. ON ALL SLOPES AND MOUNDS, PLACE THE DRIPLINE LATERALS PARALLEL TO THE SLOPE CONTOUR WHERE POSSIBLE. INCREASE THE LATERAL SPACING BY 25% ON THE LOWER ONE-THIRD OF THE SLOPE TO AVOID EXCESS DRAINAGE.
7. PVC SUPPLY LATERAL LINE AND DRIP CIRCUIT MANIFOLDS LINES SHALL BE THE SAME SIZE WITHIN THE DRIP CIRCUIT ZONE.
8. SEE "DRIP CIRCUIT MAXIMUM TUBING LENGTH CHART" FOR MAXIMUM DRIPLINE TUBING LENGTHS AND DRIP CIRCUIT PSI AND GPM FIELD VERIFICATION REQUIREMENTS.
9. FITTINGS SHALL BE OF THE SAME MANUFACTURER AS DRIPLINE. SEE DRIP CIRCUIT DETAILS FOR FITTING TYPE.
10. THOROUGHLY FLUSH EACH INSTALLATION SEGMENT TO ENSURE NO DEBRIS OR CONTAMINATION OCCURS.
11. RUN THE DRIPLINE SYSTEM EVERY DAY OR EVERY OTHER DAY TO ESTABLISH PLANT MATERIAL. MAINTAIN A CONSISTENT MOISTURE BALANCE IN THE SOIL. IT IS IMPORTANT TO KEEP THE SOIL MOIST WITHOUT SATURATION.

RESUBMITTAL DEC 4 2017 County Inspection

CLIENT: CHAMBERLAIN GROUP
655 Skyway, Suite 230
San Carlos, CA 94070
(650) 595.5582

CALL BEFORE YOU DIG — USA — 800.227.2600

REGISTERED LANDSCAPE ARCHITECT — ZEKI R. ABED — STATE OF CALIFORNIA — Signature — Date 2/18

VAN DORN ABED
LANDSCAPE ARCHITECTS, INC.
81 14TH ST. SAN FRANCISCO, CA
ZIP 94103 PH (415) 864-1921 FAX(415) 864-4796

PROJECT MANAGER: MW
DRAFTED BY: EO
CHECKED BY: ZA

PROJECT NAME/LOCATION: 2185 COBBLEHILL PLACE
SAN MATEO CALIFORNIA
DRAWING TITLE: LANDSCAPE IMPROVEMENT PLANS

REVIEWED FOR CODE COMPLIANCE — This review does not authorize violation of State or County building laws. — NOV 13 2019 — SAN MATEO CO. BLDG. INSP. DIV.

REVISIONS: NO.	DESCRIPTION	BY:	DATE

SHEET TITLE: IRRIGATION DETAILS
SCALE: AS SHOWN
ISSUE DATE: 5/18/17
PROJECT NO.: V1355
SHEET NO.: L4.5 OF

IRRIGATION NOTES:

1. Irrigation system shall be installed in conformance with all applicable local codes and ordinances by experienced workmen and a licensed Landscape Contractor who shall obtain all necessary permits and pay all required fees.

2. Prior to the start of construction, the Contractor shall verify with the City, Water District, and/or other governing agency(s) if a reclaimed water source will be available in the future for connection to the irrigation system. If local regulations so stipulate, then the Contractor shall follow all requirements, specifications, construction details, codes, etc., for the installation of irrigation systems utilizing reclaimed water sources for irrigation of landscaping.

3. The Contractor shall be responsible for any damage to existing facilities caused by or during the performance of his work. All repairs shall be made at no cost to the Owner.

4. This design is diagrammatic: install parallel lines in a common trench with minimum horizontal distance of 4" and lines not one above the other. Snake pipe in trenches. All piping, valves, etc., shown within paved areas is for design clarification only and shall be installed in planting areas where possible. Avoid any conflicts between the irrigation system, planting and architectural features.

5. Do not willfully install the irrigation system as shown on the drawings when it is obvious in the field that obstructions, grade differences or differences in the area dimensions exist that might not have been considered in the engineering. Such obstructions or differences should be brought to the attention of the Owner's authorized representative. In the event this notification is not performed, the Contractor shall assume full responsibility for any revisions necessary.

6. It is the responsibility of the Contractor to familiarize himself with all grade differences, location of walls, retaining walls etc. Contractor shall coordinate his work with the General Contractor and other Subcontractors for the location and the installation of pipe sleeves through walls, under roadways, paving, structures, etc.

7. Due to the scale of the drawings, it is not possible to indicate all offsets, fittings, sleeves, etc., which may be required. The Contractor shall carefully investigate the structural and finished conditions affecting all of his work and plan his work accordingly, furnishing such fittings, etc., as may be required to meet such conditions. Drawings are generally diagrammatic and indicative of the work to be installed. The work shall be installed in such a manner as to avoid conflicts between irrigation system, planting, and architectural features..

8. Notify Landscape Architect of any other aspects of layout which will provide incomplete or insufficient water coverage of plant material and do not proceed until his instructions are obtained.

9. Sprinklers/bubblers/multi-out drip emitters located where low head drainage will cause erosion and excess water run-off, use pop-up bodies with an integral check valve, and shrub risers with King Bros. CV series check valve in lieu of Schedule 80 coupling.

10. Electrical Contractor to supply 120 volt A.C. (2.5 AMP) service to controller location. Contractor to make final connection from electrical stub-out to controller. Paint conduit to controller with 2 coats Rustoleum brown paint if installed outdoors; color to be approved by Owner's representative. 120 volt A.C. J-Box to controller by others. All 120 volt A.C. and 24 volt connections to be made by Contractor.

11. Each controller shall have its own independent ground wire.

12. Program irrigation controller(s) to operate between the hours of 10:00 P.M. and 7:00 A.M.

13. Valve locations shown are diagrammatic. Install in ground cover/shrub areas where possible (not in lawn area).

14. Install valve boxes 12" from and perpendicular to walk, curb, lawn, building or landscape feature. At multiple valve box groups, each box shall be an equal distance from the walk, curb, lawn, etc., and each box shall be 12" apart. Short side of valve box shall be parallel to walk, curb, lawn, etc.

15. Install U.L. approved direct-burial wire #14 minimum and #14 common ground at 16" depth minimum. Splicing of 24 volt wires will not be permitted except in valve boxes. Leave a 24" coil of excess wire at each splice and 100 feet on center along wire run. Tape wire in bundles 10 feet on center. No taping permitted inside sleeves.

16. Install controller wiring as specified on the irrigation plans.

17. Prior to trenching, call Underground Service Alert, 1-800-642-2444 to locate all cables, conduits, and other utilities and take proper precautions not to damage or disturb existing utilities.

18. All Main lines and Lateral lines under paving shall be in PVC sleeves which extend 12" into planting areas. All backfill shall be free of rocks greater than 1" diameter. For ring-tite PVC main line piping inside sleeves use 1120-315 PSI PVC plastic pipe with schedule 40 PVC couplings.

19. When applicable, Schedule 80, ASTM D2466 male adapters to be used where mainline connects to copper pipe service lines installed by others.

20. Copper pipe shall be joined to steel or cast iron pipe with a dielectric union.

21. In addition to the sleeves and conduits shown on the plans the Contractor shall be responsible for the installation of sleeves and conduits of sufficient size under all paved areas.

22. Locate quick coupling valve 12" from hardscape area.

23. The irrigation system design is based on the minimum operating Pressure (PSI) and Flow (GPM) shown on the irrigation drawings (see Irrigation Demand at P.O.C.). The Contractor shall verify the Static and Dynamic water pressure (PSI) and Flow Rate (GPM) at the point of connection (P.O.C.) prior to construction as follows:

   A. Static Pressure: take PSI reading at P.O.C. with no water flowing.

   B. Dynamic Pressure: install at P.O.C. a pressure (PSI) and flow gauge (GPM) assembly of suitable size* to take flow (GPM) readings in the range of the stated Irrigation Demand for the irrigation system design. Open valve or meter at P.O.C. until GPM flow reading equals or exceeds irrigation GPM demand. Note dynamic pressure and flow readings. If the GPM flow does not equal or exceed the GPM demand, note highest flow reading possible.

   C. Readings shall be taken at the following times: 1PM, 5PM, 9PM, 1AM, 5AM, 9AM.

   * Irrigation systems with high irrigation demand GPM flow rates, will require large capacity test gauge assemblies.

   Submit to Owner's Representative and Landscape Architect results of Pressure and Flow Tests prior to beginning work. Note any discrepancies of 10 PSI or more or flow rates lower than stated Irrigation Demand on plans to Owner's Representative and Landscape Architect. If there are discrepancies of 10 PSI or more or flow rates lower than stated Irrigation Demand on plans, system may not perform correctly - do not proceed with irrigation system installation until corrective measures are determined. Note, Contractor shall be responsible for any corrective measures required to the irrigation system, at no additional cost to the Owner, if irrigation system is installed without required tests, and discrepancies in Pressure and Flow at the P.O.C. are discovered that prevent the irrigation system from functioning correctly.

24. Meter(s) indicated on the Drawing(s) is supplied and installed by others, unless otherwise indicated. The Contractor is responsible for furnishing all proper fittings.

25. All irrigation piping shall be subjected to hydrostatic pressure tests as follows before backfilling trenches: Valves, pumps, and accurately calibrated recording gauges shall be installed in at least two places. Supply lines shall be tested at 125 psi for at least 4 hours with an allowable loss of 5 psi. Laterals lines shall be tested at the existing static psi for at least 1 hour with an allowable loss of 5 psi. Any leaks shall be corrected and piping re-tested until the system meet the requirements. The Contractor shall notify the Owner's Representative at least 3 days in advance of the time that the irrigation system piping is to be tested. Submit written test results to Owner's Representative and Landscape Architect.

26. Contractor to notify all local jurisdictions for inspection and testing of installed backflow prevention device.

27. Irrigation demand: See Irrigation Plans.

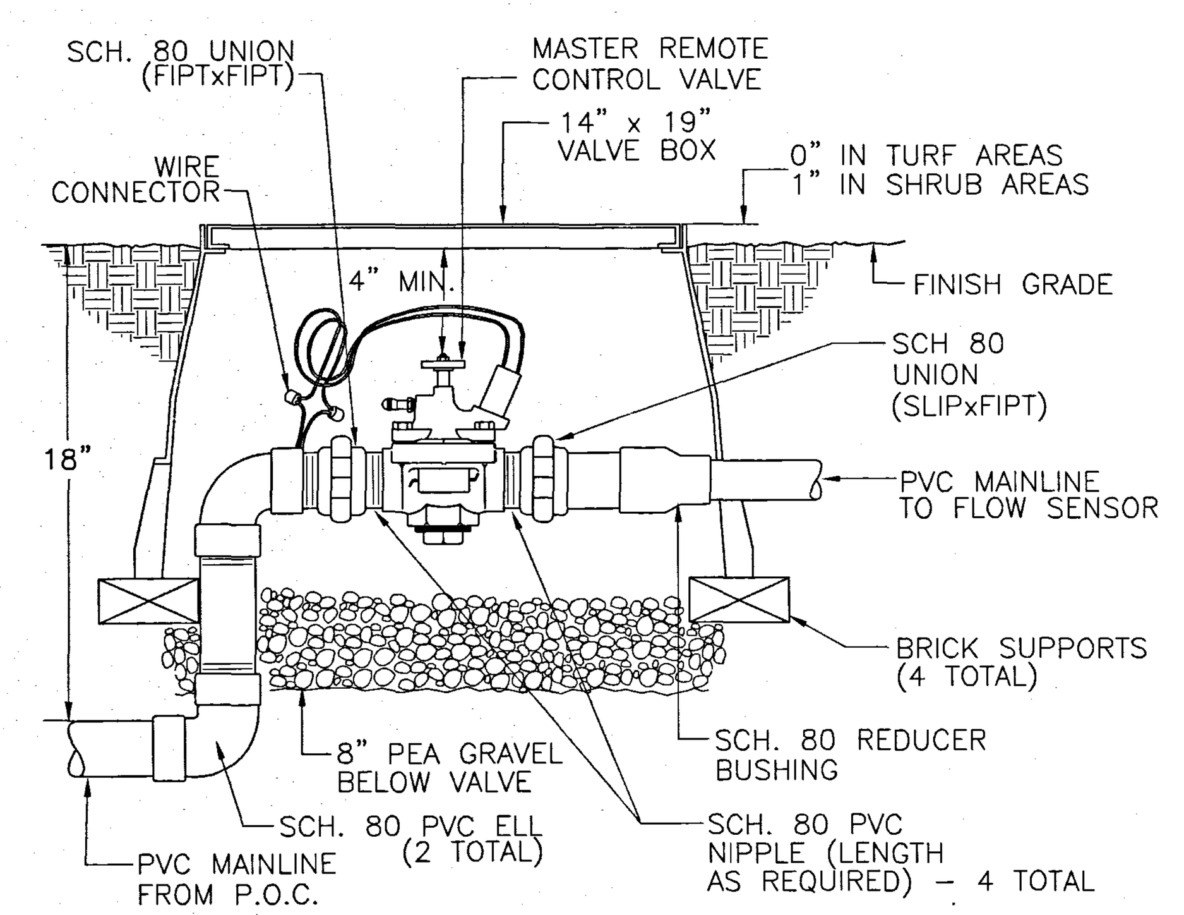
28. The entire irrigation system shall be operating properly before any lawn or ground cover is planted.

29. The Contractor shall provide Owner with a clean set of marked prints of "RECORD DRAWINGS" drawings. Reference all trenches, valves, controllers, splice boxes, quick couplers, backflow preventers, water meters, with dimensions to nearest building or paving.

30. See notes on irrigation plans for additional requirements.

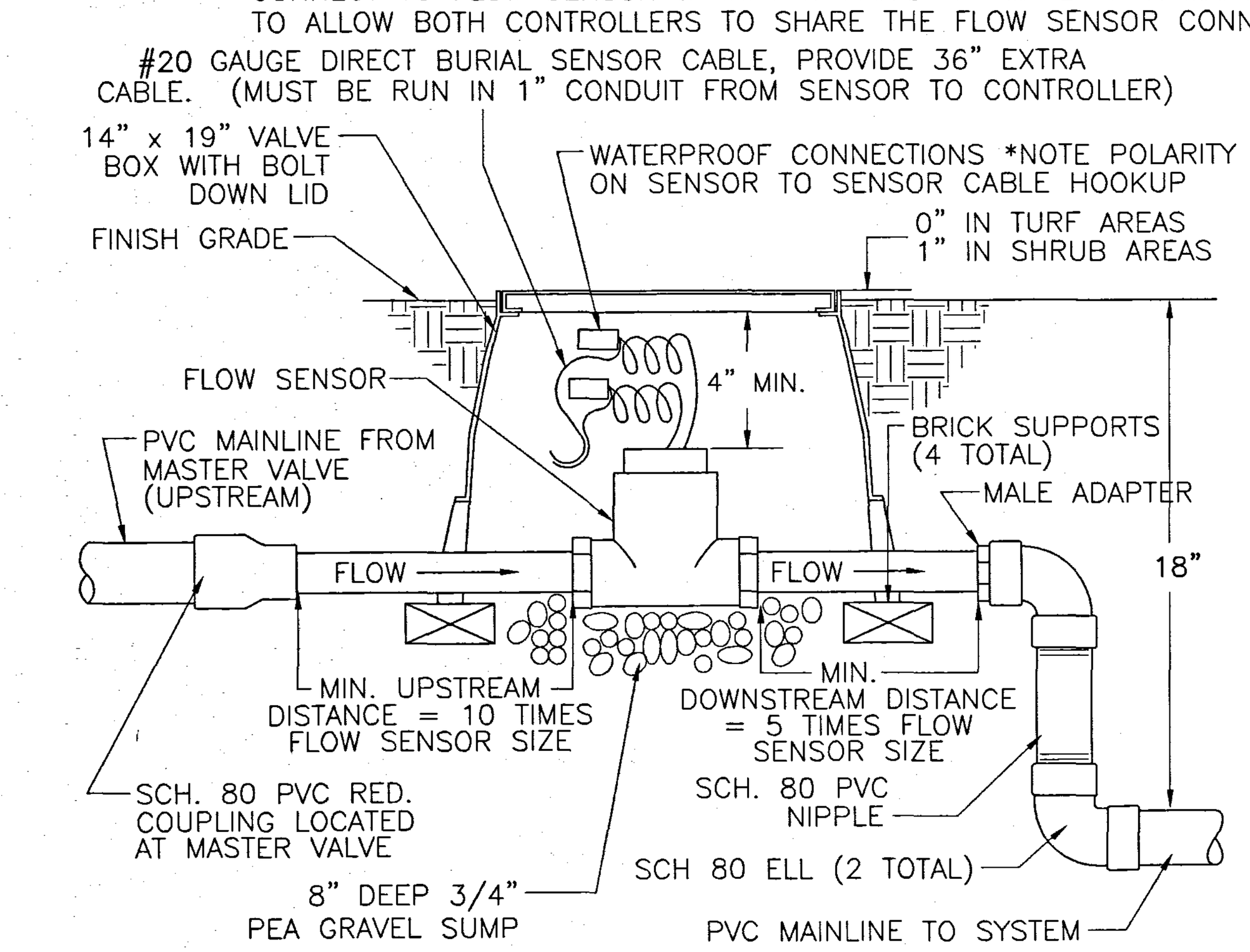
31. Bio-treatment grass areas with buried dripline irrigation tubing shall be hand watered by Contractor until plant material is established.

32. The Contractor shall guarantee the irrigation system will be free of defects of workmanship and materials for a period of one year. All repairs necessary shall be made at no cost to the Owner, with the exception of repairs and labor cost made necessary by vandalism.



1 MASTER REMOTE CONTROL VALVE DETAIL
NOT TO SCALE

NOTES:
1. FLOW SENSOR MUST BE INSTALLED WITH INSERT (TOP) VERTICAL AND BODY (TEE) POSITIONED HORIZONTALLY.
2. INSTALL CREATIVE TECHNOLOGY ISOFLOW MODEL 300 UNIT IN FLOW SENSOR VALVE BOX. CONNECT TO FLOW SENSOR & CONTROLLER'S "A" & "B" PER MANUFACTURER'S SPECS, TO ALLOW BOTH CONTROLLERS TO SHARE THE FLOW SENSOR CONNECTION.



2 FLOW SENSOR INSTALLATION DETAIL
NOT TO SCALE

REVIEWED FOR CODE COMPLIANCE
This review does not au... ...ize violation of State or County b... ...ding laws.
NOV 1 3 2 9
SAN MATEO CO. BL... G. INSP. DIV.

RESUBMITT... L
DEC 1 4 201
San Mateo Count... Building Inspecti...

CLIENT:
CHAMBERLAIN GROUP
655 Skyway, Suite 230
San Carlos, CA 94070
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ZIP 94103 PH (415) 864-1921 FAX(415) 864-4796

PROJECT MANAGER: MW
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SAN MATEO CALIFORNIA
DRAWING TITLE:
LANDSCAPE IMPROVEMENT PLANS

REVISIONS: NO.	DESCRIPTION	BY:	DATE

SHEET TITLE:
IRRIGATION SPECIFICATIONS & DETAILS
SCALE: AS SHOWN
ISSUE DATE: 5/18/17
PROJECT NO.: V1355
SHEET NO.: L4.6
OF

GENERAL NOTES:

1. Contractor shall verify all existing site conditions prior to beginning construction. Notify Owner's Representative of any discrepancies.
2. The Contractor shall provide all materials, labor and equipment to complete all landscape work as shown on the plans and specifications.
3. If there is a conflict with the utilities and the planting, the Owner's Representative is to be responsible for spotting new plant locations prior to the planting process.
4. The Contractor shall be responsible for any damage to existing utilities, pavement or improvements. All repairs shall be made at no expense to the Owner.
5. The Contractor shall notify the Owner's Representative prior to beginning construction and shall keep the Owner's Representative informed of progress of work throughout landscape construction.
6. All work shall be installed in conformance with all applicable local codes and ordinances by experienced workmen and a licensed Contractor who shall obtain all necessary permits and pay all required fees.
7. Any requirement in the Plans and / or Notes and Specifications shall be considered binding. In case of discrepancies, the Owner's Representative shall be contacted immediately
8. It is the Contractor's responsibility to schedule regular site visits by the Owner's Representative/Landscape Architect throughout landscape construction, at the beginning of the maintenance period, and final site review will be required.
9. Execute weekly cleaning of the site throughout the contract period to remove all waste materials, rubbish, plant containers, etc.
10. See Civil Engineer's improvement plans for all general grading information and notes.
11 All written dimensions supersede scaled distances. All dimensions are taken from back of curb, face of building, face of wall finish or face of fence.
12. Upon award of bid and prior to any construction, the Contractor shall perform the Percolation and Soils Testing as specified in the Planting Notes, if these tests have not already been performed. If drainage is found to be insufficient, or soils test results identify conditions requiring extraordinary or corrective measures, the Contractor shall immediately alert the Owner's Representative and Landscape Architect of any such problems, for corrective action and/or additional drainage treatment.

GRADING NOTES:

1. See Civil Engineer's Grading & Erosion Control Plans.
2. Rough grading and site drainage shall have been completed prior to Landscaping work. Verify all existing site conditions and report any discrepancies to Owner's Representative.
3. Contractor shall be responsible for finish grading. Verify positive drainage at a minimum 2% slope in landscape areas away from buildings and paved surfaces. Shrub areas shall be 1-1/2" below top of adjacent paving, headers, or curbs. No low spots which hold standing water will be permitted.
4. All salvageable, clean top soil from areas to be paved shall be stockpiled to be used as fill in planting areas.
5. Avoid soil compaction in existing and proposed landscaped areas. All equipment or stockpiling should be located away from all proposed landscaping to reduce compaction.

CONSTRUCTION NOTES:

1. Concrete work: Install concrete work as detailed. Layout of concrete work shall be as shown on construction plans and as specified below.

   A. Layout shall be approved by Owner's representative/Landscape Architect prior to concrete pour. Contact Owner's Representative two days in advance.

2. Paving Installation:

   B. Concrete Materials: For paving, concrete shall be a 5 sack mix producing concrete having a 28 day strength not less than 2500 psi. For walls concrete shall be 6 sack mix.

1. Portland cement: Conforming to ASTM. C150, Type I or II. Total alkali content not to exceed 0.60%. Deliver cement and all materials in labeled, unopened containers.
2. Form coatings: Standard product resin type sealer. Do not use form oil or any oil-bearing material.
3. Concrete aggregates: Conform to ASTM C33. Maximum 3/4" size aggregate.
4. Base course aggregates: Conform to ASTM C33. Maximum 3/4" size aggregate.
5. Water: Clean and potable.
6. Forms: Form material is Sub-contractor's option.
7. Admixtures or finish retardants: For workability, where approved by Owner's representative, and admixture may be added in accordance with manufacturer's recommendations. Obtain approval of material prior to use.
8. Expansion joint material: 3/8" thick pre-molded joint filler, conforming to ASTM D1751 or D1752.
9. Reinforcing steel:

   a. Bars: Deformed, intermediate grade, conforming to ASTM A615, Grade 40 for sizes #5 and smaller.

   b. Tie wire: Annealed copper-bearing steel wire, minimum 16 gauge.

10. Welded wire mesh: 6" x 6" x #10.
11. Liquid curing compound as required: Thompson's approved standard product fugitive resin type, or equal conforming to ASTM C309, free of wax or oil, compatible with subsequently applied finishes or coverings, not deleterious to bond of cementitious materials to aggregate
12. Patching mortar: One part Portland cement or equal (part white and part gray adjusted to match color of surrounding concrete) and 2-1/2 parts sand with the least water required to produce a workable mass. Rework this mortar until it is the stiffest consistency that will permit placing.

C. Concrete Installation:

1. Construct the subgrade true to grade and detail as shown. Compact subgrade to 90% maximum density at optimum moisture content.
2. Set forms with upper edges true to line and grade. Properly brace or tie together to maintain position and shape. Remove side forms not sooner than 12 hours after finishing has been completed. Form curves and straight sections for smooth and continuous lines. Secure Owner's representative's approval of subgrade compaction and moisture content and form alignment prior to pouring concrete.
3. Embedded items: Do not place any concrete until all inserted items such as sleeves, anchor bolts, wood, nails, dowels, etc. are installed in their proper locations, secured against displacement, cleaned, inspected and approved. Furnish ties and supports necessary to keep embedded items in place when concrete is placed.
4. Weather: Do not place concrete during rain unless approved measures are taken to prevent damage to concrete.
5. Deposit concrete evenly, consolidate with mechanical vibrators, particularly at side forms and strike off to indicated elevations and contour.
6. Concrete finishes shall be even surfaces of uniform texture and appearance, free of unsightly bulges, depressions and other imperfections and as follows:

   Medium broom finish: Broom with coarse bristled broom across width of flatwork to a uniformly roughened surface. Finished surface and edges shall be clean with uniform and reasonably straight lines. Submit Sample.

   Light broom finish: Broom with janitor's push broom type, with soft bristles, across width to a uniformly roughened surface. There shall be no deeply incised or obvious lines. Submit sample.

   Steel trowel finish: After floating, and no free water is evident and/or no cement sticks to the finger when touching slab, steel trowel until hard. All trowel marks eliminated. Final trowelling done when a ringing sound is produced as the trowel is moved over the surface.

   Joints: Joints shall be tooled with one-quarter inch (1/4") radius edging tool or as shown on plans.

   Edges: Edge slabs one-half (1/2") inch radius, edge curbs and other structures three-quarters inch (3/4") radius unless otherwise shown.

7. Remove flange marks: Remove flange marks resulting from tooling of edges by carefully trowelling out, unless specifically detailed in plans.

CARPENTRY NOTES:

A. Wood materials: See details for type of wood for each item.

1. Wood shall be selected for straightness and smoothness, size and grade as shown in plans.

B. Workmanship: Carefully plan and layout the work as required. Properly accommodate the work of other trades. Accurately saw-cut and fit lumber into the respective locations, true to line, grade, and level, as indicated or required, and permanently secure in proper position with spikes, nails, lag screws, bolts, hangers, or other fastenings to make the work substantial and rigid in all parts and connections.

C. Connections: Make connections between members tight, accurate and secure. Place fastenings without splitting wood; predrill when required. Drill bolt holes same size as bolt diameter. Drill holes for lag screws same size as thread root diameter; and counterbore, same depth and diameter as shank. Turn lag screws into place; do not drive. Provide bolts and lag screws with washers under every head and nut bearing on wood. Tighten bolts and lag screws at installation: carefully retighten just prior to closing in, or at completion of project.

D. Finishing: As per plan.

E. Redwood header layout: All curved sections shall be smooth and continuous. Layout shall be approved by Owner's representative.

2. Hardware:

A. All metal bolts, nails, screws and other hardware shall be galvanized steel, sized as shown on the plans.

B. All visible hardware shall be painted with two coats of black rustproof paint or to match architectural colors. Color to be approved by Owner's representative.

C. All hardware for metal gates to be approved by Owner's representative.

3. Metal:

A. Provide complete shop drawings for all metal fabrication.

B. Fabricate all exterior steel work in shop, including all welding. All metal work shall conform to ASTM specifications. Miter corners and angles of moldings or frames unless otherwise noted.

C. Shop primer: One coat of primer, semi-quick drying. Painting: After material has been properly cleaned, apply shop prime coat of paint to all surfaces. Apply all paint in accordance with manufacturer's directions. Spot paint all abrasions and field connections after assembly.

D. Installation: Set all work plumb, true, rigid and neatly trimmed out as detailed. Provide all necessary connections, anchor bolts etc. required to fit metal with other work.

E. Protect all metal from damage to surface, profile or to shape from shop through construction to final acceptance of project.

F. Color: Color to be approved by Owner's representative, submit sample for approval.

G. All defective work shall be repaired or replaced as directed Owner's representative.

H. All exposed site metal for utilities, irrigation, etc., shall be painted with one coat brown rustproof paint.

REVIEWED FO CODE COMPLIANCE
This review do not authorize violation
of State or county building laws.
NO 1 8 2019
SAN MATEO CO. BLDG. INSP. DIV.

RESUBMITTAL
DEC 14 2017
San Mateo County
Building Inspection

CLIENT:
CHAMBERLAIN GROUP
655 Skyway, Suite 230
San Carlos, CA 94070
(650) 595.5582

CALL TOLL FREE BEFORE YOU DIG
800.227.2600

REGISTERED LANDSCAPE ARCHITECT
KEVIN R. ABED
No. 5118
STATE OF CALIFORNIA

VAN DORN ABED
LANDSCAPE ARCHITECTS, INC.
81 14TH ST. SAN FRANCSCO, CA
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PROJECT MANAGER: KW
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SAN MATEO CALIFORNIA
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SHEET TITLE:
LANDSCAPE NOTES & SPECIFICATIONS
SCALE:
—
ISSUE DATE:
5/18/17
PROJECT NO.:
V1355
SHEET NO.:
L5.0
OF

PLANTING NOTES:

1. Submittals: Contractor shall submit the following items to Owner's Representative and Landscape Architect for review/approval prior to beginning planting installation operations:

   A. Soils tests: initial site soils test & post amendment installation test.

   B. Vendor data for landscape products, including: bark mulch, root barriers, fertilizers, soil amendments, and soil conditioners.

   C. Written results of percolation tests.

3. The Contractor shall verify the availability of all landscape plants within 10 days following award of the contract. Discrepancies or other problems and all plant substitutions shall be resolved at this time. If a substitute is authorized by the Owner's Representative, it must be of the same size, value and quality as the original plant.

4. All trees and representative samples of shrubs/ground covers shall be inspected at the site for approval by the Owner's Representative and meet the following standards:

   A. Quality and size shall conform to the State of California Grading Code of Nursery Stock, No. 1 grade and to the current issue of the American Standard for Nursery Stock published by the American Association of Nurserymen. Use only nursery-grown stock. The Owner's Representative will inspect plants for approval prior to any installation.

   B. Plant material must be selected from nurseries that have been inspected by state or federal agencies.

   C. Nomenclature will be in accordance with Hortus III.

   D. Plant materials will not be accepted that are overgrown, root-bound, or too recently canned so that the root system is not thoroughly established throughout the can. Pruning shall not be done prior to delivery except as authorized by the Owner's Representative.

5. Soil, Mulch, Amendments:

   A. Soil Test: Contractor shall submit three (3) representative soil samples to Soil and Plant Laboratory, Santa Clara or approved equal to be tested for agricultural suitability and fertility with pre-plant and post-plant recommendations, immediately following the completion of rough grading. Soil samples shall be taken from location determined by the Owner's Representative. Soil shall be certified as clean and free of hazardous material or waste contamination. Notify Owner's Representative of any soils problems noted in the soils test report that could potentially affect/impact plant health, including but not limited to the following: high or low soil pH, poor soil drainage, excessive soil compaction, different soil types in the same test sample, deficient or excess nutrient levels, high salt levels, high boron or other elements and compounds toxic to plants, etc. Submit report to Landscape Architect and Owner's Representative for review and approval prior to beginning work. Do not proceed with any amending operations until soils report has been reviewed and approved.

   B. Compost to be used for soil amendment at the rate indicated by the soil analysis to bring the soil organic matter content to a mimimum of 3.5% by dry weight or 2" of compost. Contractor may 1) import topsoil to meet organic matter content listed, or 2) submit soils report that identifies existing topsoil meets or exceeds the specified organic matter content. (Bay-Friendly score card item C.7.a.I)

   Compost to be added as follows in all planting areas at a rate of a minimum of four cubic yards per 1,000 square feet of permeable area shall be incorporated to a depth of six inches into the soil. Soils with greater than 6% organic matter in the top six inches of soil are exempt from adding compost and tilling. **(Applied rates of soil amendment and commercial fertilizer shall be <u>used for bidding purpose</u> until determined by soil tests.)**

   Amount per 1000 square feet:

   4 cubic yards Compost

   20 lbs. 6-20-20 fertilizer (Best's Cropmaker)

   10 lbs. 0-25-0 Single super phosphate

   10 lbs. Iron sulfate

   C. Soil amendment in all planting areas shall be uniformly spread and thoroughly incorporated to a soil depth of 6" minimum by repeated rotary hoe cultivation prior to planting.

   D. Post Amendment Installation Soil Testing for Compliance: After incorporating amendments, fertilizers and conditioners, Contractor shall take three (3) representative soil samples and have samples tested for Agricultural Suitability and Fertility by an approved soils analysis laboratory for compliance with original soil test report recommendations. Add any additional amendments, fertilizers and conditioners recommended by soils analysis laboratory at no cost to Owner. Notify Owner's Representative of any potential soils problems noted in the report. Submit report for amendment/fertilizer/conditioner compliance to Landscape Architect and Owner's Representative prior to beginning planting operations.

   E. A minimum three inch layer of mulch shall be applied on all exposed soil surfaces of planting areas except in turf areas, groundcover, or direct seeding/hydroseed applications. Organic mulch materials made from recycled or post-consumer shall take precedence over inorganic materials or virgin forest products unless organic or recycled, post consumer products are not locally available. Organic mulches are not required where prohibited by local Fuel Modification Plan Guidelines or other applicable local ordinances.

6. Tree and Shrub Planting:

   Prior to digging holes for final planting, the Contractor shall spot all trees as shown on the Drawings for approval by the Landscape Architect.

   A. Soil amendments and fertilizer shall have been incorporated into the soil prior to tree and shrub planting.

   B. Dig pits as shown on Drawings.

   C. After pits are dug, break sides and bottom of holes to open wall of pit for root penetration.

   D. Percolation Test: All plant pits shall be tested for sufficient drainage prior to planting. Representative plant pits shall be dug (at least 2) at site upon award of Bid to test for general site subgrade drainage conditions. Individual planting pits shall also be tested again for sufficient drainage prior to planting. Contractor shall fill plant pits with water, to see if subsoil conditions will cause retention of water within plant pits overnight. If standing water is still observed after 12 hours, then Contractor shall alert Owner's Representative and Landscape Architect of the problem.

   E. Planting backfill mix for trees and shrubs shall be:

   Amount per Cubic Yard:

   3/4 cubic yard On site soil

   1/4 cubic yard compost

   1.5 lbs. 6-20-20 fertilizer (Best's Cropmaker)

   2.5 lbs. 0-25-0 Single super phosphate

   1 lb. Iron sulfate

   (Applied rates of soil amendment and commercial fertilizer shall be used for bidding purpose until determined by soil tests)

   F. Fertilize plants at the time of planting with Agriform 21-gram fertilizer packets, 20-10-5: 2 per 1 gallon can; 3 per 5 gallon can; 4 per 15 gallon can; specimen trees-3 per inch of caliper.

   G. Plants shall be erect after planting, and staked or guyed as detailed at the time of planting. Remove nursery stakes.

   H. Rootball crown shall be 2" above finish grade after watering and settling.

   I. Tree and shrub plantings shall be watered and flooded to eliminate air pockets within 2 hours of the time of planting.

   J. All vines shall be trained to posts, fences or walls by tying select individual branches with plastic covered wire ties as follows: ties shall be attached to wood surfaces with 3/4" galvanized iron staples and attached to stucco or masonry surfaces with epoxy as recommended by manufacturer. See planting details.

   K. All trees shall be planted 10'-0" minimum from buildings including overhangs and 5'-0" minimum from curbs, paving, fences, etc. Orient main branches of trees away from building. Should any discrepancies occur between field conditions and planting plans contact Owner's Representative. All trees closer than 5'-0" from curbs, foundations, sidewalks, or other hardscape items, shall be installed with linear root deflector panels protecting adjacent hardscape items, but never fully surrounding rootball. Install a 10 foot by 24 inch deep section of linear interlocking root deflector panels, centered on tree (5 feet on each side), located at curb, foundation, sidewalks, other hardscape items, unless otherwise indicated. See plans for detail.

   L. All trees shall be planted a minimum of 5'-0" away from storm drain, or other underground utility lines (or per code), and 10'-0" away from sanitary sewer lines (or per code), and 15'-0" minimum away from utility poles or light standards (or per code).

   M. All planting areas to receive 3" layer of bark mulch, natural color, no dyes. Maintain a 6" clear area around base of trees and shrubs to allow for air flow and not to suffocate the new planting with mulch.

   N. All trees and shrubs shall have watering basins around them. Basin diameters shall be the same size as the tree or shrub's rootball. Basins shall be formed with level bottoms and 3 inch high walls.

   O. Soil amendments shall have been incorporated into the soil prior to planting.

   P. Clear planting areas of rocks and debris greater than 1" diameter.

   Q. Apply a pre-emergent herbicide, per manufacturer's directions.

   R. Maintain erosion control mats & hydroseed or mulch on all disturbed slopes as indicated on Erosions Control Plans.

   S. Thirty (30) days after planting, replace all dead plants and fill in bare areas. Top dress with 16-6-8 fertilizer at 7 lbs./1000 sq. ft. when ground is dry and thoroughly irrigate promptly after application

   (Applied rates of soil amendment and commercial fertilizer shall be used for bidding purpose until determined by soil tests)

7. NOT USED

8. Workmanship:

   Precautions shall be taken to avoid damage to existing plants, turf and structures. Any areas damaged shall be restored to their original condition.

9. Clean-up:

   Keep all areas of work clean, neat and orderly at all times. Keep all paved areas clean during planting and maintenance operations.

10. Site Visits and Approvals:

    The Contractor shall contact the Owner's Representative for review and approval of plant materials and plant locations. The maintenance period begins following acceptance of plant installation.

11. Maintenance:

    A. Begin maintenance after each plant is installed and continue until Final Acceptance.

    B. Maintenance Period shall begin upon inspection and approval by Owner's Representative and shall be for 60 calendar days.

    C. Maintenance of new planting shall consist of watering, cultivating, weeding, mulching, re-staking, tightening and repairing of guys, resetting plants to proper grades or upright position, restoration of the planting saucer, and furnishing and applying such sprays and invigorates as are necessary to keep the plantings free of insects and disease and in thriving condition.

    D. Protect planting areas and plants at all times against damage of all kinds, including frost, for duration of maintenance period. Maintenance includes temporary protection fences, barriers, covers during frost and signs as required for protection. If any plants become damaged or injured, treat or replace as directed by Landscape Architect at no additional cost to Owner.

13. Guarantee:

    A. Replacement trees shall be in thriving condition 3 years from the date of final acceptance. Any replacement trees which have lost at least 30% of their normal foliage or are not in vigorous growing condition shall be replaced.

    B. All other trees, shrubs, grasses, ground covers shall be in thriving condition 1 year from the date of final acceptance. Replace any trees which have lost at least 30% of their normal foliage or are not in vigorous growing condition.

REVIEWED FOR CODE COMPLIANCE
This review does not authorize violation of State or County building laws.
NOV 13 2019
SAN MATEO CO. BLDG. INSP. DIV.

RESUBMITTAL
DEC 1 1 2017
San Mateo County Building Inspection

CLIENT:
CHAMBERLAIN GROUP
655 Skyway, Suite 230
San Carlos, CA 94070
(650) 595.5582

800.227.2600

VAN DORN ABED
LANDSCAPE ARCHITECTS, INC.
81 14TH ST. SAN FRANCISCO, CA
ZIP 94103 PH (415) 864-1921 FAX (415) 864-4796

PROJECT MANAGER:
DRAFTED BY: MW
CHECKED BY: ZA

PROJECT NAME/LOCATION:
2185 COBBLEHILL PLACE
SAN MATEO CALIFORNIA

DRAWING TITLE:
LANDSCAPE IMPROVEMENT PLANS

REVISIONS: NO. | DESCRIPTION | BY: | DATE

SHEET TITLE:
LANDSCAPE NOTES & SPECIFICATIONS

SCALE: -

ISSUE DATE: 5/18/17

PROJECT NO.: V1355

SHEET NO.: L5.1

IMPROVEMENT PLANS FOR

HIGHLAND ESTATES - LOT 9 COBBLEHILL PLACE

COUNTY OF SAN MATEO, CALIFORNIA

EARTHWORK

CUT	140	CY
FILL	1800	CY
NET	1660	CY FILL

EARTHWORK NOTES:

1. THE EARTHWORK QUANTITIES SHOWN ABOVE ARE IN-PLACE QUANTITIES AND HAVE BEEN ESTIMATED BY THE ENGINEER WITH THE FOLLOWING ASSUMPTIONS:
   A. EARTHWORK QUANTITIES DO NOT ACCOUNT FOR SITE STRIPPINGS.
   B. THE UNIT PAD SECTION IS ASSUMED TO BE A 12" THICK CONCRETE SECTION.
   C. EARTHWORK QUANTITIES DO NOT ACCOUNT FOR FILL SHRINKAGE FACTORS.
   D. EARTHWORK QUANTITIES DO NOT ACCOUNT FOR UTILITY TRENCHING AND SPOILS.
   E. EARTHWORK QUANTITIES DO NOT ACCOUNT FOR SOIL STABILIZATION FACTORS AND LANDSCAPING PLANTING SOILS.
   F. EARTHWORK QUANTITIES DO NOT ACCOUNT FOR RETAINING WALLS AND BUILDING FOOTINGS AND BACKFILL.
   G. EARTHWORK QUANTITIES DO NOT ACCOUNT FOR FOR OVER-EXCAVATION AND COMPACTION OF UNDOCUMENTED FILL IN THE DRIVEWAY AND GARAGE AREAS.
2. ACTUAL QUANTITIES MAY VARY DUE TO FIELD CONDITIONS OR CONSTRUCTION TECHNIQUES. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL QUANTITIES BASED UPON APPROVED PLANS AND INDEPENDENT CALCULATIONS.

LEGEND

EXISTING

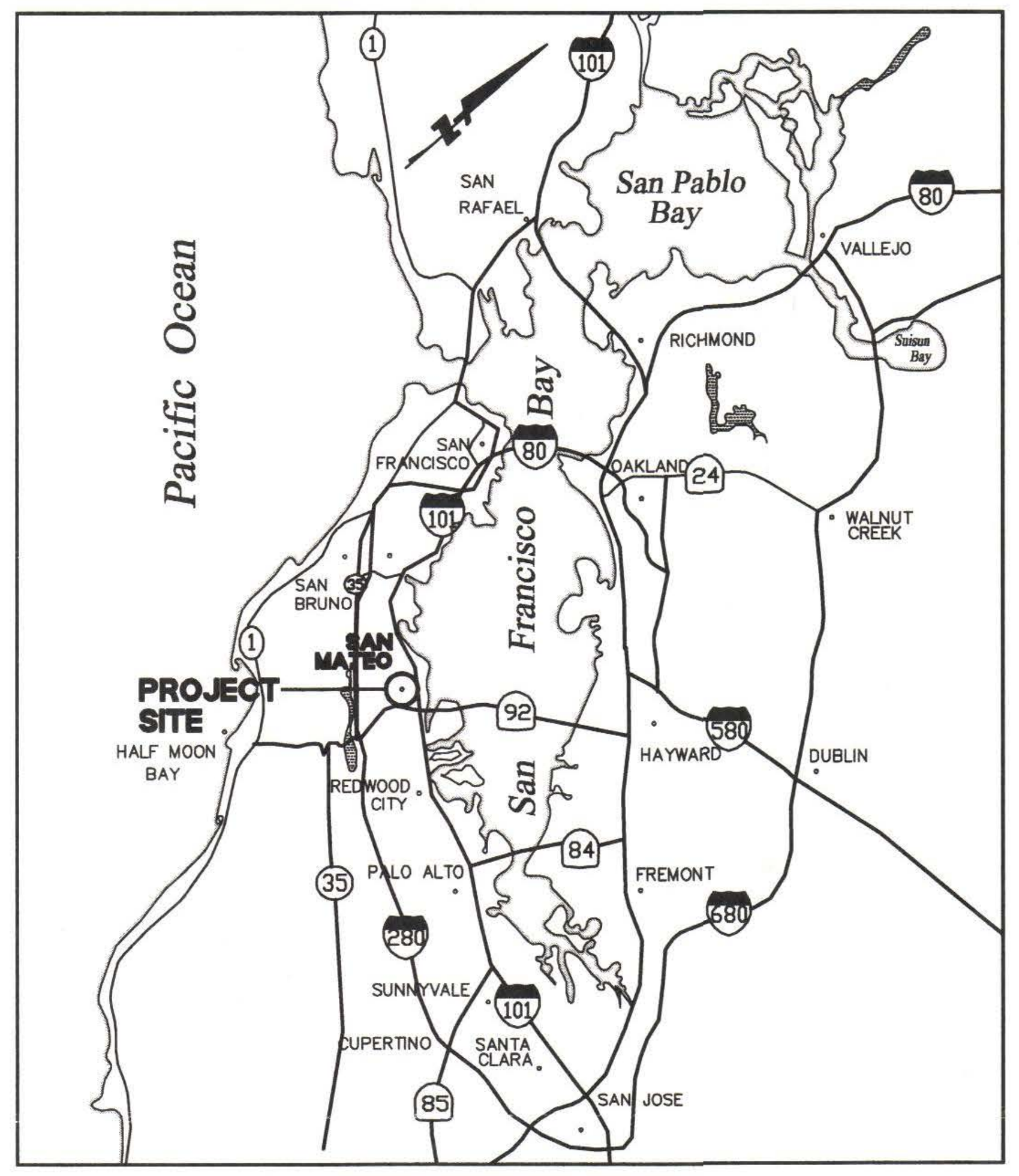
- EXISTING PROPERTY LINE BOUNDRY
- EXISTING SANITARY SEWER W/MANHOLE
- EXISTING STORM DRAIN DRAIN W/ MANHOLE
- EXISTING WATERLINE
- EXISTING CATCH BASIN
- EXISTING GAS LINE
- ALL UTILITIES ARE APPROXIMATELY LOCATED

PROPOSED

- PROPOSED PROPERTY LINE BOUNDRY
- SS — SANITARY SEWER W/ MANHOLE
- STORM DRAIN W/ MANHOLE & CATCH BASIN
- W, FH — WATER LINE W/ FIRE HYDRANT
- GAS — GAS MAIN
- ETC — UNDERGROUND ELECTRIC, TELEPHONE, & C.A.T.V.
- S.D.E. — STORM DRAIN EASEMENT
- S.S.E. — SANITARY SEWER EASEMENT
- 509.3 #4 OAK — EXISTING TREE & ELEVATION (TREE NO. REFERS TO TREE IDENTIFICATION TAG PER (TREE REPORT PREPARED BY HABITAT RESTORATION GROUP)
- 509.3 #3 OAK — INDICATES TREE TO BE REMOVED
- L.W. — LEATHERWOOD BUSH
- EUC. — EUCALYPTUS TREE
- P.O.C. — POINT OF CONNECTION
- FDZ — FIRE DEFENSE ZONE
- FLOW-THROUGH PLANTER. PROPOSED FOR TREATMENT OF ROOF AND DRIVEWAY STORM WATER RUNOFF.

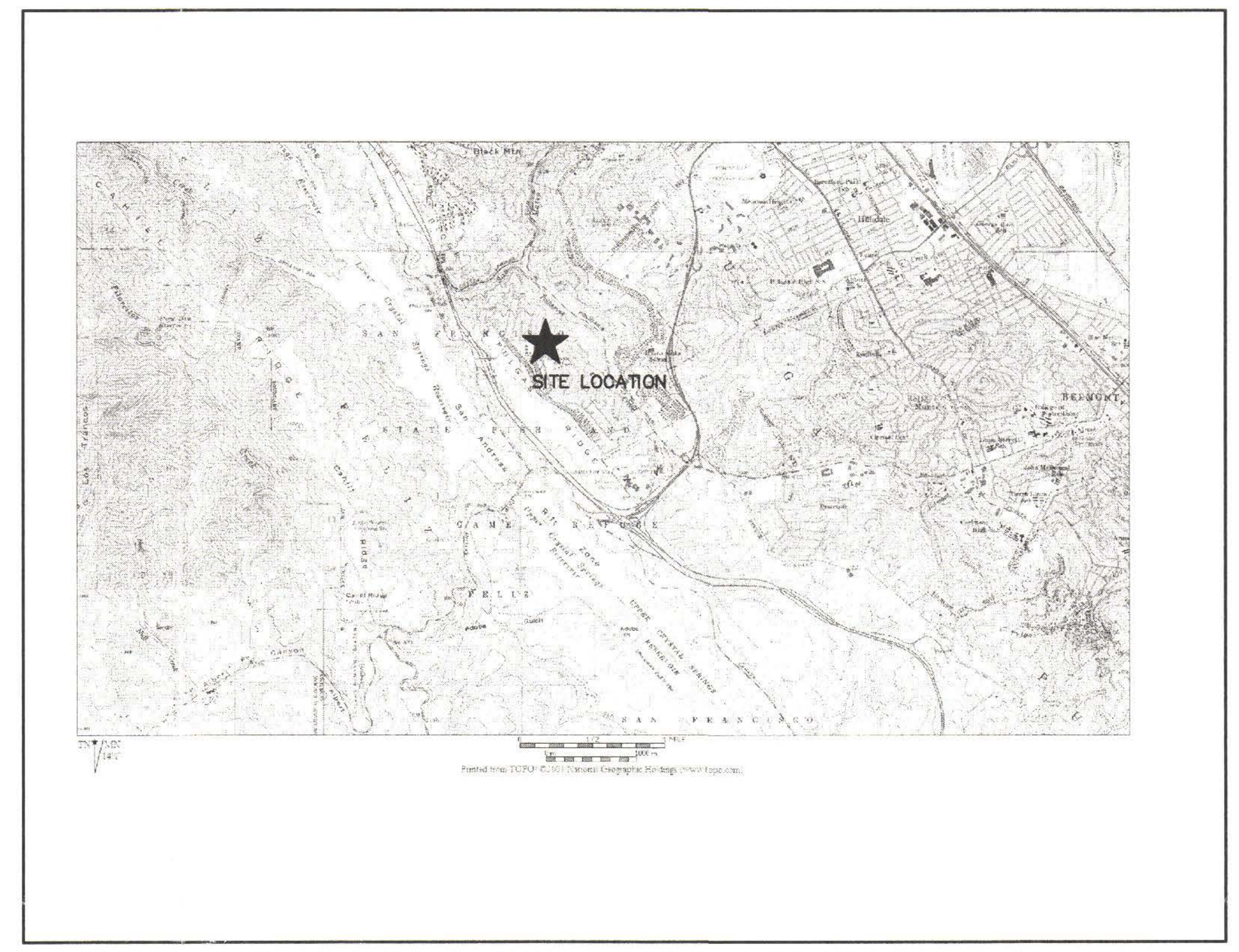
ABBREVIATIONS

AC	ASPHALTIC CONCRETE	L	LENGTH
BEG	BEGINNING	LF	LINEAR FEET
BL	BAY LAUREL	LG	LIP OF GUTTER
BLDG COR	BUILDING CORNER	NIC	NOT IN CONTRACT
BOT	BOTTOM	O	OAK TREE
BOW	GRADE AT BOTTOM OF WALL	P	PEPPER TREE
BW	BACK OF WALK	PD	PLANNED DEVELOPMENT
CB	CATCH BASIN	PINE	PINE TREE
CL	CENTERLINE	PUE	PUBLIC UTILITY EASEMENT
CLF	CHAIN LINK FENCE	PVC	POLYVINYL CHLORIDE PIPE
CMP	CORRUGATED METAL PIPE	RCP	REINFORCED CONCRETE PIPE
CO	CLEANOUT	RDW	REDWOOD TREE
CONC	CONCRETE	RET WALL	RETAINING WALL
CU	COPPER	ROW	RIGHT OF WAY
DG	DECOMPOSED GRANITE	RPB	REDUCED PRESSURE BACKFLOW
DI	DRAIN INLET	RWL	RAIN WATER LEADER
DW	DOMESTIC WATER	S	SLOPE
EG	EXISTING GRADE	SD	STORM DRAIN
EP	EDGE OF PAVEMENT	SDCB	STORM DRAIN CATCH BASIN
EUC	EUCALYPTUS TREE	SDCO	STORM DRAIN CLEANOUT
EX, (E)	EXISTING	SDDI	STORM DRAIN DROP INLET
FC, FOC	FACE OF CURB	SDMH	STORM DRAIN MANHOLE
FF	FINISH FLOOR	SS	SANITARY SEWER
FG	FINISH GRADE	SSCO	SANITARY SEWER CLEAN OUT
FL	FLOW LINE	SSMH	SANITARY SEWER MANHOLE
FNC	FENCE	T	TREE
FTP	FLOW THROUGH PLANTER	TC	TOP OF CURB
FW	FIRE WATER	TOE	TOE OF SLOPE
GB	GRADE BREAK	TOP	TOP OF SLOPE
GFF	GARAGE FINISH FLOOR	TOW	TOP OF WALL
GM	GAS METER	TYP	TYPICAL
GND	GROUND SHOT	UB	UTILITY BOX
GR	GRATE	VC	VERTICAL CURVE
GRAVEL	EDGE OF GRAVEL ROAD	VCP	VITRIFIED CLAY PIPE
GW	GUY WIRE	W	WATER
INV	INVERT	WM	WATER METER
JP	JOINT POLE	WV	WATER VALVE



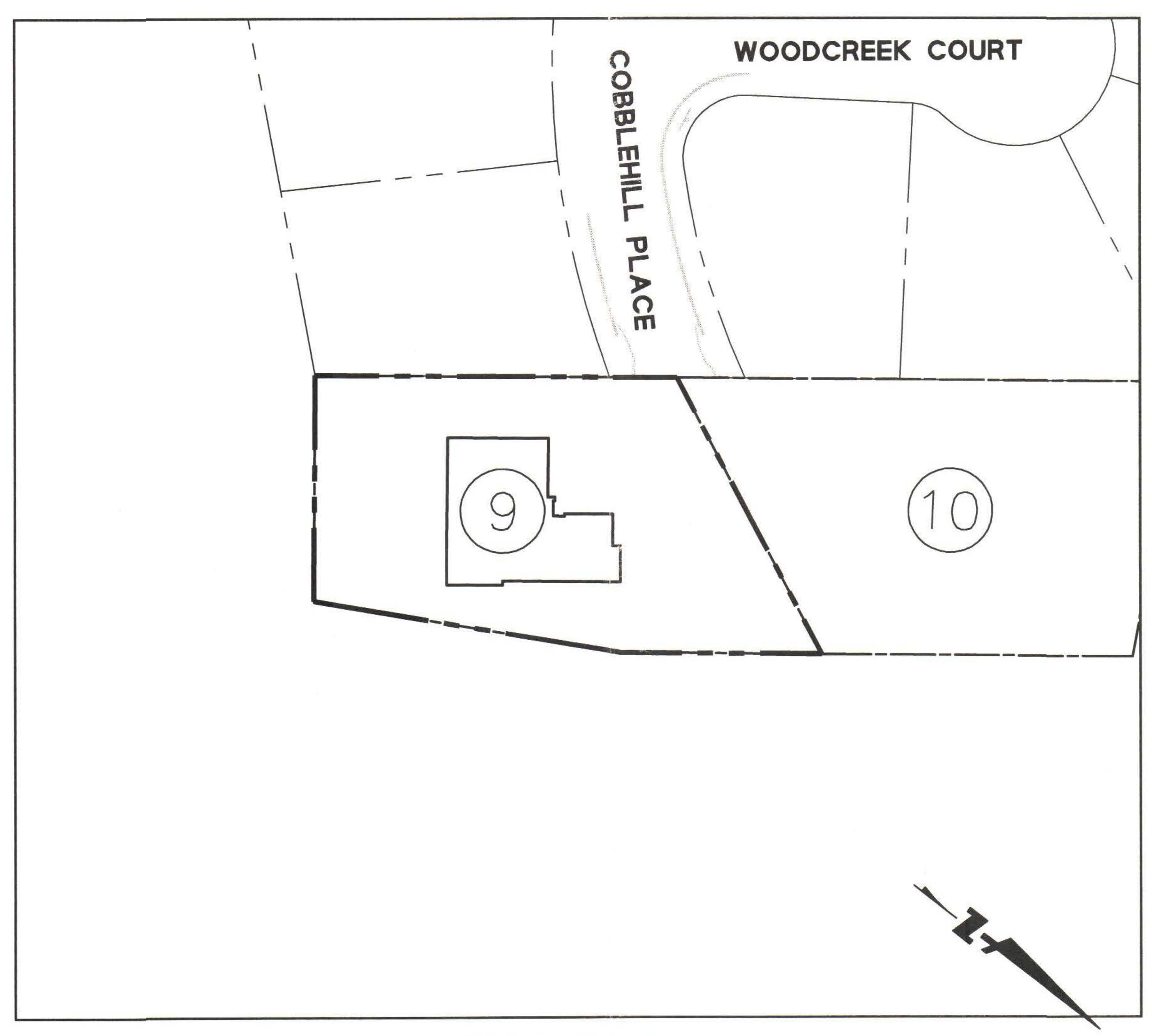
VICINITY MAP

NTS



LOCATION MAP

NTS



SITE PLAN

SCALE: 1" = 50'

PROJECT DATA

SITE AREA:	17,997 SF
EXISTING LAND USE:	UNDEVELOPED LAND
PROPOSED USE:	RESIDENTIAL (LOT 9)
EXISTING ZONE:	RMD – RESOURCE MANAGEMENT DISTRICT
PROPOSED ZONE:	R-1
PROPOSED USE:	1 RESIDENTIAL LOT
OWNER:	TICONDEROGA PARTNERS, A CALIFORNIA LIMITED LIABILITY CORPORATION C/O THE CHAMBERLAIN GROUP 655 SKYWAY, SUITE 230 SAN CARLOS, CA 94070 (650) 595-5582 ATTN: JACK CHAMBERLAIN
DEVELOPER:	THE CHAMBERLAIN GROUP 655 SKYWAY, SUITE 230 SAN CARLOS, CA 94070 (650) 595-5582 ATTN: JACK CHAMBERLAIN
CIVIL ENGINEER:	BKF ENGINEERS 255 SHORELINE DRIVE, SUITE 200 REDWOOD CITY, CA 94065 (650) 482-6300
GEOTECHNICAL ENGINEER:	CORNERSTONE EARTH GROUP 1259 OAKMEAD PARKWAY SUNNYVALE, CA 94085 (408) 245-4600
WATER SUPPLY:	CAL WATER SERVICE 341 N. DELAWARE STREET SAN MATEO, CA 94401-1808 (650) 343-1808
SEWAGE DISPOSAL:	CITY OF SAN MATEO & CRYSTAL SPRINGS COUNTY SANITATION DISTRICT
GAS & ELECTRIC	PG&E
TELEPHONE:	AT&T
FIRE PROTECTION:	CALIFORNIA DEPARTMENT OF FORESTRY AND FIRE PROTECTION
CABLE:	COMCAST
STORM DRAINAGE:	COUNTY OF SAN MATEO CITY OF SAN MATEO
TOPOGRAPHIC BASE MAP:	AERO-GEODIC COROP. JOB NO. 950168 DATE OF PHOTOGRAPHY 9/18/87
EROSION CONTROL POINT OF CONTACT:	NOEL CHAMBERLAIN, NEXGEN BUILDERS INC. 225 DEMETER STREET EAST PALO ALTO, CA 94303 PHONE #: (650) 322-5800 CELL #: (650) 444-3089 EMAIL: noel@nexgenbuilders.com

SHEET INDEX

ENGINEER'S STATEMENT

THESE IMPROVEMENT PLANS HAVE BEEN PREPARED UNDER MY DIRECTION.

Roland N.V. Haga   October 8, 2018

ROLAND N.V. HAGA
R.C.E NO. 43971
BKF ENGINEERS
DATE

REGISTERED PROFESSIONAL ENGINEER ROLAND N.V. HAGA No. C043971 CIVIL STATE OF CALIFORNIA

ENGINEER OF WORK

I HEREBY DECLARE THAT I AM THE CIVIL ENGINEER OF WORK FOR THIS PROJECT AND THAT I HAVE EXERCISED RESPONSIBLE CHARGE OVER THE DESIGN OF THIS PROJECT AS DEFINED IN SECTION 6703 OF THE STATE OF CALIFORNIA, BUSINESS & PROFESSIONAL CODES, AND THAT THE DESIGN IS CONSISTENT WITH CURRENT STANDARDS.

October 8, 2018

JONATHAN TANG
P.E. NO. 67726
BKF ENGINEERS
DATE

REGISTERED PROFESSIONAL ENGINEER JONATHAN TANG No. C67726 CIVIL STATE OF CALIFORNIA

REVIEWED FOR CODE COMPLIANCE
This review does not authorize violation of State or County building laws.
NOV 1 8 2019
SAN MATEO CO. BLDG. INSP. DIV.

RESUBMITTAL
OCT 1 0 2018
San Mateo County Building Inspection

BKF
ENGINEERS / SURVEYORS / PLANNERS
255 SHORELINE DRIVE, SUITE 200
REDWOOD CITY, CA 94065
PHONE: (650) 482-6300
FAX: (650) 482-6399

HIGHLAND ESTATES
LOT 9 IMPROVEMENT PLANS
TITLE SHEET
SAN MATEO COUNTY CALIFORNIA
CITY OF SAN MATEO

Date	10/8/2018
Scale	NTS
Design	JT
Drawn	MD
Approved	RH/JT
Job No	950168-20

Revisions | No.

Sheet Number:
C9.10
OF

DRAWING NAME: K:\Eng95\950168\dwg\CD\Lot_9\C9.10-HECDTS.dwg
PLOT DATE: 10-08-18 PLOTTED BY: holt

Ⓡ BKF ENGINEERS

NOTES:

I. GENERAL NOTES

1. WORK SHALL CONFORM TO THE COUNTY OF SAN MATEO PUBLIC WORKS STANDARD DRAWINGS FOR PUBLIC IMPROVEMENTS, REVISED SEPTEMBER 2007 AND THE SAN MATEO COUNTY SEWER AND SANITATION DISTRICTS STANDARD SPECIFICATIONS, DATED JUNE 1995.

2. PERFORM WORK IN CONFORMANCE WITH THE RECOMMENDATION OF THE PROJECT GEOTECHNICAL ENGINEERING REPORT TITLED "UPDATED GEOTECHNICAL INVESTIGATION, HIGHLAND ESTATES LOTS 5 THROUGH 11, TICONDEROGA DRIVE/COBBLEHILL PLACE/COWPENS WAY, SAN MATEO COUNTY, CALIFORNIA" PREPARED BY CORNERSTONE EARTH GROUP, DATED OCTOBER 30, 2015. GRADING WORK WILL BE SUBJECT TO APPROVAL OF GEOTECHNICAL ENGINEER.

3. ARRANGE FOR REQUIRED INSPECTIONS BY COUNTY ENGINEER. NO DELAY OF WORK CLAIM WILL BE ALLOWED DUE TO CONTRACTOR'S FAILURE TO ARRANGE FOR REQUIRED COUNTY INSPECTIONS IN ADVANCE. PROVIDE NOTICE TO COUNTY ENGINEER A MINIMUM OF 2 WORKING DAYS IN ADVANCE OF REQUIRED INSPECTIONS.

4. REVISIONS TO THESE PLANS MUST BE REVIEWED AND APPROVED IN WRITING BY ENGINEER, WHO WILL OBTAIN APPROVAL FROM COUNTY ENGINEER PRIOR TO CONSTRUCTION OF AFFECTED ITEMS. REVISIONS SHALL BE ACCURATELY SHOWN ON REVISED PLANS, WHICH SHALL BE REVIEWED AND APPROVED BY THE ENGINEER AND COUNTY ENGINEER PRIOR TO INSTALLATION OF THE IMPROVEMENTS.

5. REPLACE OR REPAIR EXISTING UTILITIES, IMPROVEMENTS OR FEATURES DAMAGED, REMOVED, OR DISTURBED BY CONSTRUCTION TO THEIR ORIGINAL CONDITION, WHETHER SHOWN ON PLANS OR NOT.

6. REPLACE STREET MONUMENTS, LOT CORNERS PIPES AND OTHER PERMANENT MONUMENTS DISTURBED DURING CONSTRUCTION. MONUMENTS SHALL BE SET BY A SURVEYOR REGISTERED IN THE STATE OF CALIFORNIA.

7. PREPARE TRAFFIC CONTROL PLAN AND OBTAIN APPROVAL FROM COUNTY ENGINEER BEFORE COMMENCING WORK. PROVIDE FLAG MEN, CONES, BARRICADES AND OTHER TRAFFIC CONTROL MEASURES NECESSARY TO PROVIDE SAFE LANE CLOSURE IN CONFORMANCE WITH CALTRANS STANDARDS AND AS APPROVED BY COUNTY ENGINEER.

8. PEDESTRIAN TRAFFIC CONTROL TO BE PROVIDED WHEN EXISTING SIDEWALKS CANNOT BE MAINTAINED DURING CONSTRUCTION.

9. DO NOT LEAVE TRENCHES OPEN OVERNIGHT IN EXISTING STREET AREAS. BACKFILL OR COVER OPEN TRENCHES AT THE END OF WORK EVERY WORK DAY.

10. PREPARE SHORING PLAN AND SUBMIT TO THE COUNTY ENGINEER FOR REVIEW AND APPROVAL. ADEQUATELY SHORE EXCAVATIONS TO PREVENT EARTH FROM SLIDING OR SETTLING AND TO PROTECT EXISTING ADJACENT IMPROVEMENTS FROM DAMAGE. DAMAGE RESULTING FROM A LACK OF ADEQUATE SHORING SHALL BE THE CONTRACTOR'S RESPONSIBILITY. PROVIDE SHORING IN CONFORMANCE WITH APPLICABLE CONSTRUCTION SAFETY ORDERS OF THE CALIFORNIA DIVISION OF INDUSTRIAL SAFETY AND OSHA WHERE EXCAVATIONS ARE 5 FEET OR MORE IN DEPTH.

11. IMPLEMENT CONSTRUCTION DUST CONTROL MEASURES TO REDUCE PARTICULATE GENERATION TO A LESS THAN SIGNIFICANT LEVEL. PROVIDE DUST CONTROL IN CONFORMANCE WITH BAY AREA AIR QUALITY MANAGEMENT DISTRICT MINIMUM REQUIREMENTS. IMPLEMENT THE FOLLOWING CONSTRUCTION PRACTICES EXCEPT WHEN IT IS RAINING.

    11.A. WATER ACTIVE EXTERIOR SOIL AREAS AT LEAST TWICE DAILY.

    11.B. COVER TRUCKS HAULING SOIL, SAND AND OTHER LOOSE MATERIAL OR PROVIDE 2 FEET OF FREEBOARD.

    11.C. PAVE, APPLY WATER THREE TIMES DAILY OR APPLY NON-TOXIC SOIL STABILIZER ON UNPAVED ACCESS ROADS, PARKING AREAS AND STAGING AREAS.

    11.D. SWEEP PAVED ACCESS ROADS, PARKING AREAS AND STAGING AREAS DAILY.

    11.E. APPLY HYDROSEED OR NON-TOXIC SOIL STABILIZER TO INACTIVE CONSTRUCTION AREAS.

    11.F. ENCLOSE, COVER, WATER TWICE DAILY OR APPLY NON-TOXIC SOIL STABILIZER TO EXPOSED SOIL STOCKPILES.

    11.G. INSTALL SANDBAGS AND OTHER EROSION CONTROL MEASURES TO PREVENT SILT RUNOFF TO PUBLIC ROADWAYS.

    11.H. LIMIT TRAFFIC SPEED ON UNPAVED ROADS TO 15 MPH.

    11.I. REPLANT VEGETATION IN DISTURBED AREAS AS QUICKLY AS POSSIBLE.

12. KEEP STREETS CLEAN OF DIRT, MUD AND OTHER CONSTRUCTION DEBRIS. CLEAN AND SWEEP STREETS ON A DAILY BASIS DURING THE WORK WEEK.

13. SHOULD IT APPEAR THAT THE WORK IS NOT SUFFICIENTLY DETAILED OR SPECIFIED IN CONSTRUCTION DOCUMENTS, NOTIFY ENGINEER AND OBTAIN CLARIFICATION BEFORE PROCEEDING WITH WORK IN QUESTION.

14. CONSTRUCTION STAKING SHALL BE DONE BY A CIVIL ENGINEER OR LAND SURVEYOR REGISTERED IN THE STATE OF CALIFORNIA.

15. IF BKF ENGINEERS IS RETAINED TO PROVIDE CONSTRUCTION STAKING SERVICES, CONTRACTOR WILL BE PROVIDED WITH ONE SET OF SURVEY STAKES FOR LAYOUT PURPOSES. PRESERVE AND PROTECT THESE STAKES UNTIL THEY ARE NO LONGER NEEDED. RESTAKING SHALL BE AT CONTRACTOR'S EXPENSE.

16. MATCH EXISTING PAVEMENT, CURB AND GUTTER, SIDEWALK, ADJACENT LANDSCAPE AND OTHER IMPROVEMENTS WITH SMOOTH TRANSITION TO AVOID ABRUPT OR APPARENT CHANGES IN GRADES, CROSS SLOPES, LOW SPOTS OR HAZARDOUS CONDITIONS.

17. VISIT SITE TO BECOME FAMILIAR WITH EXISTING CONDITIONS AND OVERALL PROJECT REQUIREMENT PRIOR TO BIDDING PROJECT.

18. OBTAIN AND PAY FOR PERMITS AND LICENSES AS REQUIRED TO PERFORM WORK WITHIN THE COUNTY OF SAN MATEO PRIOR TO START OF WORK. PERMITS MAY INCLUDE ENCROACHMENT PERMIT FOR WORK WITHIN COUNTY RIGHT-OF-WAY AND GRADING/UTILITY PERMIT.

19. CONTRACTOR IS RESPONSIBLE FOR TRAFFIC AND PEDESTRIAN CONTROL DURING CONSTRUCTION.

20. OBTAIN APPROVAL OF IMPORT SOIL MATERIAL FROM GEOTECHNICAL ENGINEER PRIOR TO DISTRIBUTING MATERIAL OVER SITE.

21. PROTECT ADJOINING PREMISES, TREES, LANDSCAPING, UTILITIES, SIDEWALKS, STREETS AND OTHER FEATURES FROM DAMAGE BY CONTRACTOR'S OPERATIONS. REPAIR, REPLACE OR CLEAN ADJOINING PREMISES, TREES, LANDSCAPING, UTILITIES, SIDEWALKS, STREETS AND OTHER FEATURES TO SATISFACTION OF OWNER.

22. MAINTAIN AND MANAGE CONSTRUCTION MATERIALS, EQUIPMENT AND VEHICLES AT THE CONSTRUCTION SITE.

23. NOTIFY COUNTY ENGINEER A MINIMUM OF 24 HOURS PRIOR TO STARTING WORK ON OFF-SITE DRAINAGE AND SEWER FACILITIES, GRADING, PAVING, OR WORK IN THE COUNTY RIGHT-OF-WAY.

24. MAKE EFFORTS TO MINIMIZE CONSTRUCTION NOISE.

    24.A. MAINTAIN EQUIPMENT USED ON SITE IN GOOD MECHANICAL CONDITION TO MINIMIZE NOISE CREATED BY FAULTY OR POORLY MAINTAINED ENGINE, DRIVE-TRAIN AND OTHER COMPONENTS.

    24.B. EQUIPMENT EXCEEDING 110 DBA MEASURED 25 FEET FROM THE PIECE OF EQUIPMENT WILL NOT BE ALLOWED ON SITE.

    24.C. SELECT APPROPRIATE EQUIPMENT TO MINIMIZE NOISE GENERATION. USE THE FOLLOWING TECHNIQUES TO MINIMIZE NOISE GENERATION SUBJECT TO EQUIPMENT AVAILABILITY AND COST CONSIDERATIONS. USE SCRAPERS AS MUCH AS POSSIBLE FOR EARTH REMOVAL, RATHER THAN NOISIER LOADERS AND HAUL TRUCKS. USE BACKHOES FOR BACKFILLING AS IT IS QUIETER THAN DOZERS OR LOADERS. USE MOTOR GRADERS RATHER THAN BULLDOZERS FOR FINAL GRADING.

II. EXISTING CONDITIONS

1. EXISTING TOPOGRAPHIC INFORMATION SHOWN ON THESE PLANS IS BASED UPON A FIELD TOPOGRAPHIC SURVEY OF THE PROJECT SITE BY BKF ENGINEERS, DATED JUNE 2009. ACTUAL CONDITIONS ENCOUNTERED ON SITE MAY VARY FROM THOSE SHOWN ON THE PLANS. CONTRACTOR SHALL REVIEW CONSTRUCTION DOCUMENTS AND CONDUCT THEIR OWN INVESTIGATIONS TO UNDERSTAND AND VERIFY EXISTING CONDITIONS AT THE SITE.

2. EXISTING SUBSURFACE IMPROVEMENTS AND UTILITIES SHOWN ON THESE PLANS WERE TAKEN FROM RECORD INFORMATION KNOWN TO THE ENGINEER AND FIELD SURVEY OF ABOVE GRADE FEATURES. THESE PLANS ARE NOT MEANT TO BE A FULL CATALOG OF EXISTING SUBSURFACE CONDITIONS. CONDUCT FIELD INVESTIGATION TO VERIFY THE LOCATIONS AND ELEVATIONS OF EXISTING SUBSURFACE IMPROVEMENTS AND UTILITIES, WHETHER SHOWN ON PLANS OR NOT, PRIOR TO START OF EXCAVATION. IF DISCREPANCIES BETWEEN EXISTING CONDITIONS AND THESE PLANS ARE DISCOVERED, NOTIFY ENGINEER IMMEDIATELY AND REQUEST DISCREPANCY BE RESOLVED.

3. VERIFY LOCATION AND ELEVATION OF EXISTING UTILITIES PRIOR TO START OF CONSTRUCTION AFFECTING UTILITIES. POTHOLE WHERE NEEDED TO VERIFY LOCATIONS AND ELEVATIONS OF EXISTING UTILITIES.

4. CONTACT USA (UNDERGROUND SERVICES ALERT) AT 1-800-227-2600, AND AFFECTED UTILITY COMPANIES A MINIMUM OF 2 WORKING DAYS PRIOR TO STARTING WORK TO REQUEST UTILITIES BE MARKED.

III. DEMOLITION

1. REMOVE FROM SITE AND DISPOSE OF IN LAWFUL MANNER EXISTING STRUCTURES, UTILITIES, AND OTHER FEATURES NOT REMOVED DURING DEMOLITION OR ROUGH GRADING AND ENCOUNTERED DURING WORK ON SITE.

    1.A. REMOVE WOOD OR CONCRETE STRUCTURES, SLABS, FOOTINGS, GRADE BEAMS, DECKS, DOCKS, AND OTHER SIMILAR STRUCTURES.

    1.B. REMOVE LANDSCAPING, UTILITIES AND IRRIGATION LINES AS SPECIFIED BY GEOTECHNICAL ENGINEER.

    1.C. REMOVE ABANDONED IN-GROUND STRUCTURES, SUCH AS CULVERTS, UTILITY VAULTS, AND FOUNDATIONS AS SPECIFIED BY GEOTECHNICAL ENGINEER.

IV. DEWATERING

1. DEWATER AREAS COVERED WITH STANDING WATER PRIOR TO PLACEMENT OF FILL.

2. DISPOSE OF WATER FROM DEWATERING OPERATION IN CONFORMANCE WITH APPLICABLE LOCAL, STATE AND FEDERAL REGULATIONS.

V. UTILITIES

1. DO NOT OPERATE WATER VALVES OR OTHER WATER DISTRICT FACILITIES. REQUIRED OPERATION WILL BE PERFORMED BY UTILITY DISTRICT PERSONNEL ONLY. NOTIFY UTILITY DISTRICT 2 WORKING DAYS PRIOR TO REQUIRING FACILITY OPERATION.

2. PROVIDE MINIMUM 12 INCH VERTICAL CLEARANCE BETWEEN ADJACENT UTILITY PIPES AT UTILITY CROSSINGS UNLESS OTHERWISE NOTED.

3. COMPLETE ELECTRIC, GAS, TELEPHONE, CABLE AND OTHER JOINT TRENCH WORK IN CONFORMANCE WITH THE REQUIREMENTS OF THE RESPECTIVE UTILITY PROVIDER. NOTIFY UTILITY PROVIDER MINIMUM 2 WORKING DAYS PRIOR TO COMMENCING WORK. IF EXISTING WATER, SEWER, GAS OR OTHER UTILITY SERVICES ARE DISTURBED OR DAMAGED DURING CONSTRUCTION, NOTIFY UTILITY OWNER IMMEDIATELY.

4. PROTECT UTILITIES FROM DAMAGE CAUSED BY CONTRACTOR'S WORK.

5. PROVIDE UTILITY STRUCTURES IN PAVED AREAS SUITABLE FOR H-20 LOADING.

6. PIPE LENGTHS SHOWN ON PLANS ARE FOR ENGINEERING CALCULATIONS ONLY AND ARE NOT INTENDED AS BID QUANTITIES OR FOR ORDERING MATERIALS.

7. CONSTRUCT GRAVITY FLOW UTILITIES FROM DOWNSTREAM CONNECTION POINT TO UPSTREAM TERMINUS.

8. COORDINATE WITH COUNTY OF SAN MATEO AND CRYSTAL SPRINGS SANITATION DISTRICT FOR INSPECTION OF WORK ON DISTRICT FACILITIES.

9. ALL WATER LATERALS AND SERVICES SHALL BE INSTALLED TO THE STANDARDS OF THE CALIFORNIA WATER SERVICE COMPANY. EXISTING WATER MAINS OR LATERALS DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED AND TESTED TO THE SATISFACTION OF THE WATER COMPANY.

VI. EARTHWORK AND GRADING

1. OFF-SITE IMPORT FILL MATERIAL SHALL CONFORM TO THE SPECIFICATIONS AND THE REQUIREMENTS OF THE GEOTECHNICAL REPORT.

2. TOPSOIL, ROOTS, VEGETABLE MATTER, TRASH AND DEBRIS WILL NOT BE CONSIDERED ACCEPTABLE FILL MATERIAL.

3. REMOVE DEBRIS FROM AREAS OF EARTHWORK PRIOR TO PLACING FILL OR STARTING GRADING OPERATIONS.

4. PLACE AND COMPACT FILL MATERIAL AS RECOMMENDED IN GEOTECHNICAL REPORT. PLACE FILL MATERIAL IN MAXIMUM 8 INCH UNCOMPACTED THICKNESS. COMPACTION BY FLOODING, PONDING OR JETTING WILL NOT BE PERMITTED.

5. CONTRACTOR SHALL MAKE HIS OWN DETERMINATION OF EARTHWORK QUANTITIES.

VII RECORD DRAWINGS

1. KEEP ACCURATE RECORD OF THE FINAL LOCATION, ELEVATION AND DESCRIPTION OF WORK ON A COPY OF THE FINAL APPROVED CONSTRUCTION DOCUMENTS. NOTE THE LOCATIONS AND ELEVATIONS OF EXISTING IMPROVEMENTS ENCOUNTERED THAT VARY FROM THE LOCATIONS SHOWN ON THE IMPROVEMENT PLANS. PROVIDE COPY OF RECORD INFORMATION TO OWNER AT COMPLETION OF PROJECT AND WHEN REQUESTED.

VII. STATEMENT OF RESPONSIBILITY

1. CONSTRUCTION CONTRACTOR AGREES THAT IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, CONSTRUCTION CONTRACTOR WILL BE REQUIRED TO ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THE PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY. THIS REQUIREMENT SHALL BE MADE TO APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS, AND CONSTRUCTION CONTRACTOR FURTHER AGREES TO DEFEND, INDEMNIFY AND HOLD BOTH DESIGN PROFESSIONAL AND THE COUNTY OF SAN MATEO HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPTING LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF EITHER THE DESIGN PROFESSIONAL OR THE COUNTY OF SAN MATEO, RESPECTIVELY.

IX. UNAUTHORIZED CHANGES AND USES

1. THE ENGINEER PREPARING THESE PLANS WILL NOT BE RESPONSIBLE FOR, OR LIABLE FOR UNAUTHORIZED CHANGES TO OR USES OF THESE PLANS. ALL CHANGES TO THE PLANS MUST BE IN WRITING AND REQUIRE WRITTEN APPROVAL OF THE COUNTY ENGINEER AND THE PREPARER OF THESE PLANS.

X. DRAWING LANGUAGE

1. NOTES AND CALLOUTS ON DRAWINGS MAY USE IMPERATIVE LANGUAGE. REQUIREMENTS EXPRESSED IMPERATIVELY ARE TO BE PERFORMED BY THE CONTRACTOR UNLESS NOTED OTHERWISE.

CONDITIONS OF APPROVAL NOTES

CONSTRUCTION NOTES

1. THE FIRST PHASE OF CONSTRUCTION SHALL REQUIRE 30 PERCENT OF CONSTRUCTION EQUIPMENT TO MEET TIER 1 EPA CERTIFICATION STANDARDS FOR CLEAN TECHNOLOGY. THE REMAINDER OF CONSTRUCTION EQUIPMENT (70 PERCENT), WHICH WOULD CONSIST OF OLDER TECHNOLOGIES, SHALL BE REQUIRED TO USE EMULSIFIED FUELS.

2. THE SECOND PHASE OF CONSTRUCTION SHALL REQUIRE 30 PERCENT OF CONSTRUCTION EQUIPMENT TO MEET TIER 2 EPA CERTIFICATION STANDARDS FOR CLEAN TECHNOLOGY AND 50 PERCENT TO MEET TIER 1 EPA CERTIFICATION STANDARDS. THE REMAINING 20 PERCENT OF CONSTRUCTION EQUIPMENT, WHICH WOULD CONSIST OF OLDER TECHNOLOGIES, SHALL USE EMULSIFIED FUELS.

3. FOR ALL LARGER VEHICLES, INCLUDING CEMENT MIXERS OR OTHER DEVICES THAT MUST BE DELIVERED BY LARGE TRUCKS, VEHICLES SHALL BE EQUIPPED WITH CARB LEVEL THREE VERIFIED CONTROL DEVICES.

4. WATER ALL ACTIVE CONSTRUCTION AREAS AT LEAST TWICE DAILY.

5. COVER ALL TRUCKS HAULING SOIL, SAND, AND OTHER LOOSE MATERIALS OR REQUIRE ALL TRUCKS TO MAINTAIN AT LEAST TWO FEET OF FREEBOARD.

6. PAVE, APPLY WATER THREE TIMES DAILY, OR APPLY NON-TOXIC SOIL STABILIZERS ON ALL UNPAVED ACCESS ROADS, PARKING AREAS, AND STAGING AREAS AT THE CONSTRUCTION SITES.

7. SWEEP DAILY (WITH WATER SWEEPERS) ALL PAVED ACCESS ROADS, PARKING AREAS, AND STAGING AREAS AT THE CONSTRUCTION SITES.

8. SWEEP PUBLIC STREETS ADJACENT TO CONSTRUCTION SITES DAILY (WITH WATER SWEEPERS) IF VISIBLE SOIL MATERIAL IS CARRIED ONTO THE STREETS.

9. HYDROSEED OR APPLY NON-TOXIC SOIL STABILIZERS TO INACTIVE CONSTRUCTION AREAS (PREVIOUSLY GRADED AREAS INACTIVE FOR TEN DAYS OR MORE).

10. ENCLOSE, COVER, WATER TWICE DAILY, OR APPLY NON-TOXIC SOIL BINDERS TO EXPOSED STOCKPILES (DIRT, SAND, ETC.). LIMIT TRAFFIC SPEEDS ON UNPAVED ROADS TO 15 MILES PER HOUR.

11. LIMIT TRAFFIC SPEEDS ON UNPAVED ROADS TO 15 MILES PER HOUR.

12. INSTALL SANDBAGS OR OTHER EROSION CONTROL MEASURES TO PREVENT SILT RUNOFF TO PUBLIC ROADWAYS.

13. REPLANT VEGETATION IN DISTURBED AREAS AS SOON AS POSSIBLE.

14. INSTALL WHEEL WASHERS FOR ALL EXITING TRUCKS OR WASH OFF THE TIRES OR TRACKS OF ALL TRUCKS AND EQUIPMENT LEAVING THE CONSTRUCTION SITE.

15. INSTALL WIND BREAKS AT THE WINDWARD SIDES OF THE CONSTRUCTION AREAS.

16. SUSPEND EXCAVATION AND GRADING ACTIVITIES WHEN WIND (AS INSTANTANEOUS GUSTS) EXCEEDS 25 MILES PER HOUR.

NOISE NOTES

1. EQUIPMENT AND TRUCKS USED FOR PROJECT GRADING AND CONSTRUCTION WOULD UTILIZE THE BEST AVAILABLE NOISE CONTROL TECHNIQUES (E.G., IMPROVED EXHAUST MUFFLERS, EQUIPMENT REDESIGN, USE OF INTAKE SILENCERS, DUCTS, ENGINE ENCLOSURES, AND ACOUSTICALLY-ATTENUATING SHIELDS OR SHROUDS) IN ORDER TO MINIMIZE CONSTRUCTION NOISE IMPACTS.

2. EQUIPMENT USED FOR PROJECT GRADING AND CONSTRUCTION WOULD BE HYDRAULICALLY OR ELECTRICALLY POWERED IMPACT TOOLS (E.G., JACK HAMMERS AND PAVEMENT BREAKERS) WHEREVER POSSIBLE TO AVOID NOISE ASSOCIATED WITH COMPRESSED AIR EXHAUST FROM PNEUMATICALLY-POWERED TOOLS. COMPRESSED AIR EXHAUST SILENCERS WOULD BE USED ON OTHER EQUIPMENT. OTHER QUIETER PROCEDURES WOULD BE USED SUCH AS DRILLING RATHER THAN IMPACT EQUIPMENT WHENEVER FEASIBLE.

3. THE GRADING AND CONSTRUCTION ACTIVITY WOULD BE KEPT TO THE HOURS OF 7:00 AM TO 7:00 PM, MONDAY THROUGH FRIDAY. SATURDAY HOURS (8:00 AM TO 5:00 PM) ARE PERMITTED UPON THE DISCRETION OF COUNTY APPROVAL BASED ON INPUT FROM NEARBY RESIDENTS AND BUSINESSES. SATURDAY CONSTRUCTION (8:00 AM TO 5:00 PM) WOULD BE ALLOWED ONCE THE BUILDINGS ARE FULLY ENCLOSED. NOISE GENERATING GRADING AND CONSTRUCTION ACTIVITIES SHALL NOT OCCUR AT ANY TIME ON SUNDAYS, THANKSGIVING AND CHRISTMAS.

4. RESIDENTIAL PROPERTY OWNERS WITHIN 200 FEET OF PLANNED CONSTRUCTION AREAS SHALL BE NOTIFIED OF THE CONSTRUCTION SCHEDULE IN WRITING, PRIOR TO CONSTRUCTION; THE PROJECT SPONSOR SHALL DESIGNATE A "DISTURBANCE COORDINATOR" WHO SHALL BE RESPONSIBLE FOR RESPONDING TO ANY LOCAL COMPLAINTS REGARDING CONSTRUCTION NOISE; THE COORDINATOR (WHO MAY BE AN EMPLOYEE OF THE DEVELOPER OR GENERAL CONTRACTOR) SHALL DETERMINE THE CAUSE OF THE COMPLAINT AND SHALL REQUIRE THAT REASONABLE MEASURES WARRANTED TO CORRECT THE PROBLEM BE IMPLEMENTED; A TELEPHONE NUMBER OF THE NOISE DISTURBANCE COORDINATOR SHALL BE CONSPICUOUSLY POSTED AT THE CONSTRUCTION SITE FENCE AND ON THE NOTIFICATION SENT TO NEIGHBORS ADJACENT TO THE SITE.

ASBESTOS NOTES

1. IF NATURALLY OCCURRING ASBESTOS IS IDENTIFIED AT THE SITE, A SITE HEALTH AND SAFETY (H&S) PLAN INCLUDING METHODS FOR CONTROL OF AIRBORNE DUST SHALL BE PREPARED. THIS PLAN SHALL BE REVIEWED AND APPROVED BY THE COUNTY OF SAN MATEO PRIOR TO GRADING IN AREAS UNDERLAIN BY SERPENTINE-BEARING SOILS OR BEDROCK AND NATURALLY OCCURRING ASBESTOS. THE H&S PLAN SHALL STRICTLY CONTROL DUST-GENERATING EXCAVATION AND COMPACTION OF MATERIAL CONTAINING NATURALLY OCCURRING ASBESTOS. THE PLAN SHALL ALSO IDENTIFY SITE-MONITORING ACTIVITIES DEEMED NECESSARY DURING CONSTRUCTION (E.G., AIR MONITORING). WORKER MONITORING SHALL ALSO BE PERFORMED AS APPROPRIATE. THE PLAN SHALL DEFINE PERSONAL PROTECTION METHODS TO BE USED BY CONSTRUCTION WORKERS. ALL WORKER PROTECTION AND MONITORING SHALL COMPLY WITH PROVISIONS OF THE MINING SAFETY AND HEALTH ADMINISTRATION (MSHA) GUIDELINES, CALIFORNIA DIVISION OF OCCUPA-TIONAL SAFETY AND HEALTH (DOSH), AND THE FEDERAL OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA).

2. IF NATURALLY OCCURRING ASBESTOS IS FOUND AT THE SITE, A SOIL MANAGEMENT PLAN SHALL BE DEVELOPED AND APPROVED BY THE COUNTY PLANNING DEPARTMENT TO PROVIDE DETAILED DESCRIPTIONS OF THE CONTROL AND DISPOSITION OF SOILS CONTAINING NATURALLY OCCURRING ASBESTOS. SERPENTINE MATERIAL PLACED AS FILL SHALL BE SUFFICIENTLY BURIED IN ORDER TO PREVENT EROSION BY WIND OR SURFACE WATER RUNOFF, OR EXPOSURE TO FUTURE HUMAN ACTIVITIES, SUCH AS LANDSCAPING OR SHALLOW TRENCHES. ADDITIONALLY, THE BAAQMD SHALL BE NOTIFIED PRIOR TO THE START OF ANY EXCAVATION IN AREAS CONTAINING NATURALLY OCCURRING ASBESTOS.

GRADING NOTES

1. NO GRADING SHALL BE ALLOWED DURING THE WINTER SEASON (OCTOBER 15 TO APRIL 30) TO AVOID POTENTIAL SOIL EROSION UNLESS APPROVED, IN WRITING, BY THE COMMUNITY DEVELOPMENT DIRECTOR. THE PROPERTY OWNERS SHALL SUBMIT A LETTER TO THE CURRENT PLANNING SECTION, AT LEAST TWO WEEKS PRIOR TO COMMENCEMENT OF GRADING, STATING THE DATE WHEN GRADING WILL BEGIN.

TREE PROTECTION NOTES

1. THE APPLICANT SHALL ESTABLISH AND MAINTAIN TREE PROTECTION ZONES THROUGHOUT THE ENTIRE LENGTH OF THE PROJECT. TREE PROTECTION ZONES SHALL BE DELINEATED USING 4-FOOT TALL ORANGE PLASTIC FENCING SUPPORTED BY POLES POUNDED INTO THE GROUND, LOCATED AS CLOSE TO THE DRIPLINES AS POSSIBLE WHILE STILL ALLOWING ROOM FOR CONSTRUCTION/GRADING TO SAFELY CONTINUE. THE APPLICANT SHALL MAINTAIN TREE PROTECTION ZONES FREE OF EQUIPMENT AND MATERIALS STORAGE AND SHALL NOT CLEAN ANY EQUIPMENT WITHIN THESE AREAS. SHOULD ANY LARGE ROOTS OR LARGE MASSES OF ROOTS NEED TO BE CUT, THE ROOTS SHALL BE INSPECTED BY A CERTIFIED ARBORIST OR REGISTERED FORESTER PRIOR TO CUTTING. ANY ROOT CUTTING SHALL BE MONITORED BY AN ARBORIST OR FORESTER AND DOCUMENTED. ROOTS TO BE CUT SHOULD BE SEVERED CLEANLY WITH A SAW OR TOPPERS. NORMAL IRRIGATION SHALL BE MAINTAINED, BUT OAKS SHOULD NOT NEED SUMMER IRRIGATION. THE ABOVE INFORMATION SHALL BE ON-SITE AT ALL TIMES.

VEGETATION REMOVAL/REPLACEMENT NOTES

1. VEGETATION REMOVED IN AREAS OUTSIDE OF BUILDING FOOTPRINTS, DRIVEWAYS, AND CONSTRUCTION ACCESS AREAS SHALL BE REPLACED WITH DROUGHT-TOLERANT, NON-INVASIVE PLANTS, IMMEDIATELY AFTER GRADING IS COMPLETE IN THAT AREA. PRIOR TO THE ISSUANCE OF ANY BUILDING PERMITS, THE APPLICANT SHALL SUBMIT PHOTOGRAPHS DEMONSTRATING COMPLIANCE WITH THIS CONDITION TO THE CURRENT PLANNING SECTION, SUBJECT TO REVIEW AND APPROVAL BY THE COMMUNITY DEVELOPMENT DIRECTOR.

2. THE APPLICANT SHALL REPLACE ALL VEGETATION REMOVED IN ALL AREAS NOT COVERED BY CONSTRUCTION WITH DROUGHT-TOLERANT, NON-INVASIVE PLANTS, ONCE CONSTRUCTION IS COMPLETED. PRIOR TO THE CURRENT PLANNING SECTION'S FINAL APPROVAL OF ANY BUILDING PERMIT, THE APPLICANT SHALL SUBMIT PHOTOGRAPHS DEMONSTRATING COMPLIANCE WITH THIS CONDITION, SUBJECT TO REVIEW AND APPROVAL BY THE COMMUNITY DEVELOPMENT DIRECTOR.

DUST CONTROL NOTES

1. ALL GRADED SURFACES AND MATERIALS, WHETHER FILLED, EXCAVATED, TRANSPORTED OR STOCKPILED, SHALL BE WETTED, PROTECTED OR CONTAINED IN SUCH A MANNER AS TO PREVENT ANY SIGNIFICANT NUISANCE FROM DUST, OR SPILLAGE UPON ADJOINING WATER BODY, PROPERTY, OR STREETS. EQUIPMENT AND MATERIALS ON THE SITE SHALL BE USED IN SUCH A MANNER AS TO AVOID EXCESSIVE DUST. A DUST CONTROL PLAN MAY BE REQUIRED AT ANYTIME DURING THE COURSE OF THE PROJECT.

2. A DUST PALLIATIVE SHALL BE APPLIED TO THE SITE WHEN REQUIRED BY THE COUNTY. THE TYPE AND RATE OF APPLICATION SHALL BE RECOMMENDED BY THE SOILS ENGINEER AND APPROVED BY THE DEPARTMENT OF PUBLIC WORKS, THE PLANNING AND BUILDING DEPARTMENT'S GEOTECHNICAL SECTION, AND THE REGIONAL WATER QUALITY CONTROL BOARD.

DISCOVERY OF HUMAN REMAINS NOTE

1. THE APPLICANT AND CONTRACTORS MUST BE PREPARED TO CARRY OUT THE REQUIREMENTS OF CALIFORNIA STATE LAW WITH REGARD TO THE DISCOVERY OF HUMAN REMAINS DURING CONSTRUCTION, WHETHER HISTORIC OR PREHISTORIC. IN THE EVENT THAT ANY HUMAN REMAINS ARE ENCOUNTERED DURING SITE DISTURBANCE, ALL GROUND-DISTURBING WORK SHALL CEASE IMMEDIATELY AND THE COUNTY CORONER SHALL BE NOTIFIED IMMEDIATELY. IF THE CORONER DETERMINES THE REMAINS TO BE NATIVE AMERICAN, THE NATIVE AMERICAN HERITAGE COMMISSION SHALL BE CONTACTED WITHIN 24 HOURS. A QUALIFIED ARCHAEOLOGIST, IN CONSULTATION WITH THE NATIVE AMERICAN HERITAGE COMMISSION, SHALL RECOMMEND SUBSEQUENT MEASURES FOR DISPOSITION OF THE REMAINS.

GEOTECHNICAL INSPECTION NOTE

1. PRIOR TO ISSUANCE OF BUILDING PERMITS, THE PROJECT GEOTECHNICAL CONSULTANT SHALL FIELD INSPECT (AND INVESTIGATE, AS NEEDED) ALL PROPOSED DRAINAGE DISCHARGE LOCATIONS AND VERIFY THAT PROPOSED DRAINAGE DESIGNS ARE ACCEPTABLE FROM A SLOPE STABILITY/EROSION PERSPECTIVE OR RECOMMEND APPROPRIATE MODIFICATIONS.

MITIGATION AQ-1

1. THE PROJECT APPLICANT SHALL REQUIRE THAT THE FOLLOWING BAAQMD RECOMMENDED AND ADDITIONAL PM10 REDUCTION PRACTICES BE IMPLEMENTED BY INCLUDING THEM IN THE CONTRACTOR CONSTRUCTION DOCUMENTS: THE FIRST PHASE OF CONSTRUCTION SHALL REQUIRE 30 PERCENT OF CONSTRUCTION EQUIPMENT TO MEET TIER 1 EPA CERTIFICATION STANDARDS FOR CLEAN TECHNOLOGY. THE REMAINDER OF CONSTRUCTION EQUIPMENT (70 PERCENT), WHICH WOULD CONSIST OF OLDER TECHNOLOGIES, SHALL BE REQUIRED TO USE EMULSIFIED FUELS.

2. THE SECOND PHASE OF CONSTRUCTION SHALL REQUIRE 30 PERCENT OF CONSTRUCTION EQUIPMENT TO MEET TIER 2 EPA CERTIFICATION STANDARDS FOR CLEAN TECHNOLOGY AND 50 PERCENT TO MEET TIER 1 EPA CERTIFICATION STANDARDS. THE REMAINING 20 PERCENT OF CONSTRUCTION EQUIPMENT, WHICH WOULD CONSIST OF OLDER TECHNOLOGIES, SHALL USE EMULSIFIED FUELS.

3. FOR ALL LARGER VEHICLES, INCLUDING CEMENT MIXERS OR OTHER DEVICES THAT MUST BE DELIVERED BY LARGE TRUCKS, VEHICLES SHALL BE EQUIPPED WITH CARB LEVEL THREE VERIFIED CONTROL DEVICES.

4. WATER ALL ACTIVE CONSTRUCTION AREAS AT LEAST TWICE DAILY.

2. COVER ALL TRUCKS HAULING SOIL, SAND, AND OTHER LOOSE MATERIALS OR REQUIRE ALL TRUCKS TO MAINTAIN AT LEAST TWO FEET OF FREEBOARD.

3. PAVE, APPLY WATER THREE TIMES DAILY, OR APPLY NON-TOXIC SOIL STABILIZERS ON ALL UNPAVED ACCESS ROADS, PARKING AREAS, AND STAGING AREAS AT THE CONSTRUCTION SITES.

4. SWEEP DAILY (WITH WATER SWEEPERS) ALL PAVED ACCESS ROADS, PARKING AREAS, AND STAGING AREAS AT THE CONSTRUCTION SITES.

5. SWEEP PUBLIC STREETS ADJACENT TO CONSTRUCTION SITES DAILY (WITH WATER SWEEPERS) IF VISIBLE SOIL MATERIAL IS CARRIED ONTO THE STREETS.

6. HYDROSEED OR APPLY NON-TOXIC SOIL STABILIZERS TO INACTIVE CONSTRUCTION AREAS (PREVIOUSLY GRADED AREAS INACTIVE FOR TEN DAYS OR MORE).

7. ENCLOSE, COVER, WATER TWICE DAILY, OR APPLY NON-TOXIC SOIL BINDERS TO EXPOSED STOCKPILES (DIRT, SAND, ETC.). LIMIT TRAFFIC SPEEDS ON UNPAVED ROADS TO 15 MILES PER HOUR.

8. LIMIT TRAFFIC SPEEDS ON UNPAVED ROADS TO 15 MILES PER HOUR.

9. INSTALL SANDBAGS OR OTHER EROSION CONTROL MEASURES TO PREVENT SILT RUNOFF TO PUBLIC ROADWAYS.

10. REPLANT VEGETATION IN DISTURBED AREAS AS SOON AS POSSIBLE.

11. INSTALL WHEEL WASHERS FOR ALL EXITING TRUCKS OR WASH OFF THE TIRES OR TRACKS OF ALL TRUCKS AND EQUIPMENT LEAVING THE CONSTRUCTION SITE.

12. INSTALL WIND BREAKS AT THE WINDWARD SIDES OF THE CONSTRUCTION AREAS.

13. SUSPEND EXCAVATION AND GRADING ACTIVITIES WHEN WIND (AS INSTANTANEOUS GUSTS) EXCEEDS 25 MILES PER HOUR.

MITIGATION NOI-1

1. THE PROJECT APPLICANT SHALL REQUIRE THAT THE FOLLOWING NOISE REDUCTION PRACTICES BE IMPLEMENTED BY INCLUDING THEM IN THE CONTRACTOR CONSTRUCTION DOCUMENTS:

2. EQUIPMENT AND TRUCKS USED FOR PROJECT GRADING AND CONSTRUCTION WOULD UTILIZE THE BEST AVAILABLE NOISE CONTROL TECHNIQUES (E.G., IMPROVED EXHAUST MUFFLERS, EQUIPMENT REDESIGN, USE OF INTAKE SILENCERS, DUCTS, ENGINE ENCLOSURES, AND ACOUSTICALLY-ATTENUATING SHIELDS OR SHROUDS) IN ORDER TO MINIMIZE CONSTRUCTION NOISE IMPACTS.

3. EQUIPMENT USED FOR PROJECT GRADING AND CONSTRUCTION WOULD BE HYDRAUL- ICALLY OR ELECTRICALLY POWERED IMPACT TOOLS (E.G., JACK HAMMERS AND PAVEMENT BREAKERS) WHEREVER POSSIBLE TO AVOID NOISE ASSOCIATED WITH COMPRESSED AIR EXHAUST FROM PNEUMATICALLY-POWERED TOOLS. COMPRESSED AIR EXHAUST SILENCERS WOULD BE USED ON OTHER EQUIPMENT. OTHER QUIETER PROCEDURES WOULD BE USED SUCH AS DRILLING RATHER THAN IMPACT EQUIPMENT WHENEVER FEASIBLE.

4. THE GRADING AND CONSTRUCTION ACTIVITY WOULD BE KEPT TO THE HOURS OF 7:00 AM TO 7:00 PM, MONDAY THROUGH FRIDAY. SATURDAY HOURS (8:00 AM TO 5:00 PM) ARE PERMITTED UPON THE DISCRETION OF COUNTY APPROVAL BASED ON INPUT FROM NEARBY RESIDENTS AND BUSINESSES. SATURDAY CONSTRUCTION (8:00 AM TO 5:00 PM) WOULD BE ALLOWED ONCE THE BUILDINGS ARE FULLY ENCLOSED. NOISE GENERATING GRADING AND CONSTRUCTION ACTIVITIES SHALL NOT OCCUR AT ANY TIME ON SUNDAYS, THANKSGIVING AND CHRISTMAS.

5. RESIDENTIAL PROPERTY OWNERS WITHIN 200 FEET OF PLANNED CONSTRUCTION AREAS SHALL BE NOTIFIED OF THE CONSTRUCTION SCHEDULE IN WRITING, PRIOR TO CONSTRUCTION; THE PROJECT SPONSOR SHALL DESIGNATE A 'DISTURBANCE COORDI- NATOR" WHO SHALL BE RESPONSIBLE FOR RESPONDING TO ANY LOCAL COMPLAINTS REGARDING CONSTRUCTION NOISE; THE COORDINATOR (WHO MAY BE AN EMPLOYEE OF THE DEVELOPER OR GENERAL CONTRACTOR) SHALL DETERMINE THE CAUSE OF THE COMPLAINT AND SHALL REQUIRE THAT REASONABLE MEASURES WARRANTED TO CORRECT THE PROBLEM BE IMPLEMENTED; A TELEPHONE NUMBER OF THE NOISE DISTURBANCE COORDINATOR SHALL BE CONSPICUOUSLY POSTED AT THE CONSTRUCTION SITE FENCE AND ON THE NOTIFICATION SENT TO NEIGHBORS ADJACENT TO THE SITE.

BENCHMARK:

THE PROJECT BENCHMARK IS THE TOP OF AN IRON PIPE, ELEVATION OF 538.23, LOCATED WITHIN A MONUMENT BOX AT THE INTERSECTION OF THE CENTERLINES OF COBBLEHILL PLACE AND NEW BRUNSWICK DRIVE IN SAN MATEO, CALIFORNIA. THE ELEVATION SHOWN IN BASED UPON A SURVEY BY BKF ENGINEERS IN MARCH OF 2011 AND IS BASED UPON AN ASSUMED ELEVATION.

BASIS OF BEARINGS:

THE BEARING NORTH 76° 09' 00" EAST OF THE CENTERLINE OF COBBLE HILL PLACE AS SHOWN ON TRACT MAP NO. 723, THE HIGHLANDS, RECORDED ON AUGUST 26TH, 1955, IN VOLUME 43 OF MAPS AT PAGES 23-25, SAN MATEO COUNTY RECORDS.

RESUBMITTAL
OCT 10 2018
San Mateo County
Building Inspection

REVIEWED FOR CODE COMPLIANCE
This review does not authorize violation of State or County building laws.
NOV [illegible]3 2019
SAN MATEO CO BLDG. INSP. DIV.

811
Know what's **below.**
Call before you dig.

255 SHORELINE DRIVE, SUITE 200
REDWOOD CITY, CA 94065
PHONE: (650) 482-6300
FAX: (650) 482-6399

BKF
ENGINEERS / SURVEYORS / PLANNERS

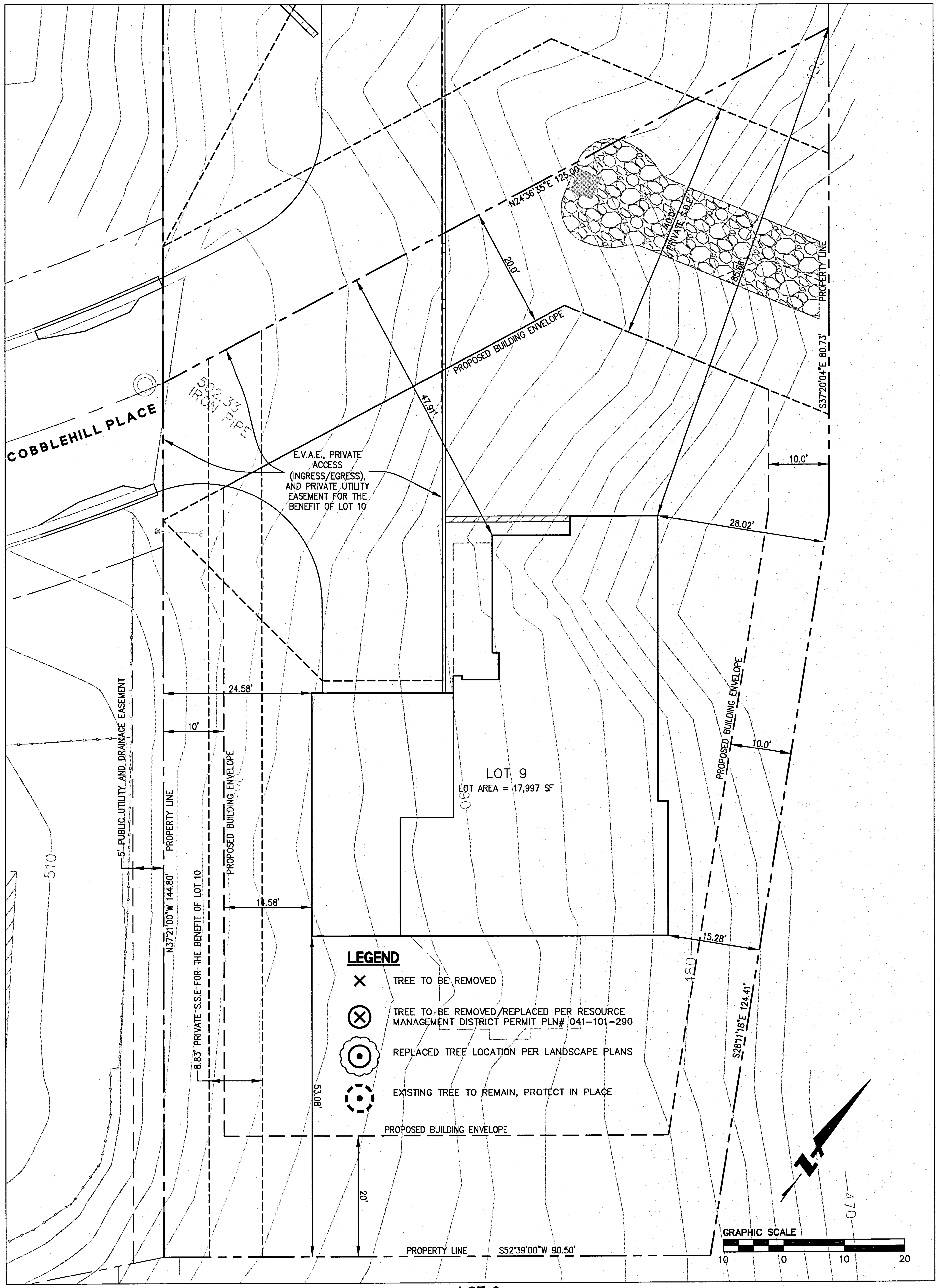
REGISTERED PROFESSIONAL ENGINEER
JONATHAN TANG
No. C67726
CIVIL
STATE OF CALIFORNIA

HIGHLAND ESTATES
LOT 9 IMPROVEMENT PLANS
GENERAL NOTES
SAN MATEO COUNTY
CITY OF SAN MATEO CALIFORNIA

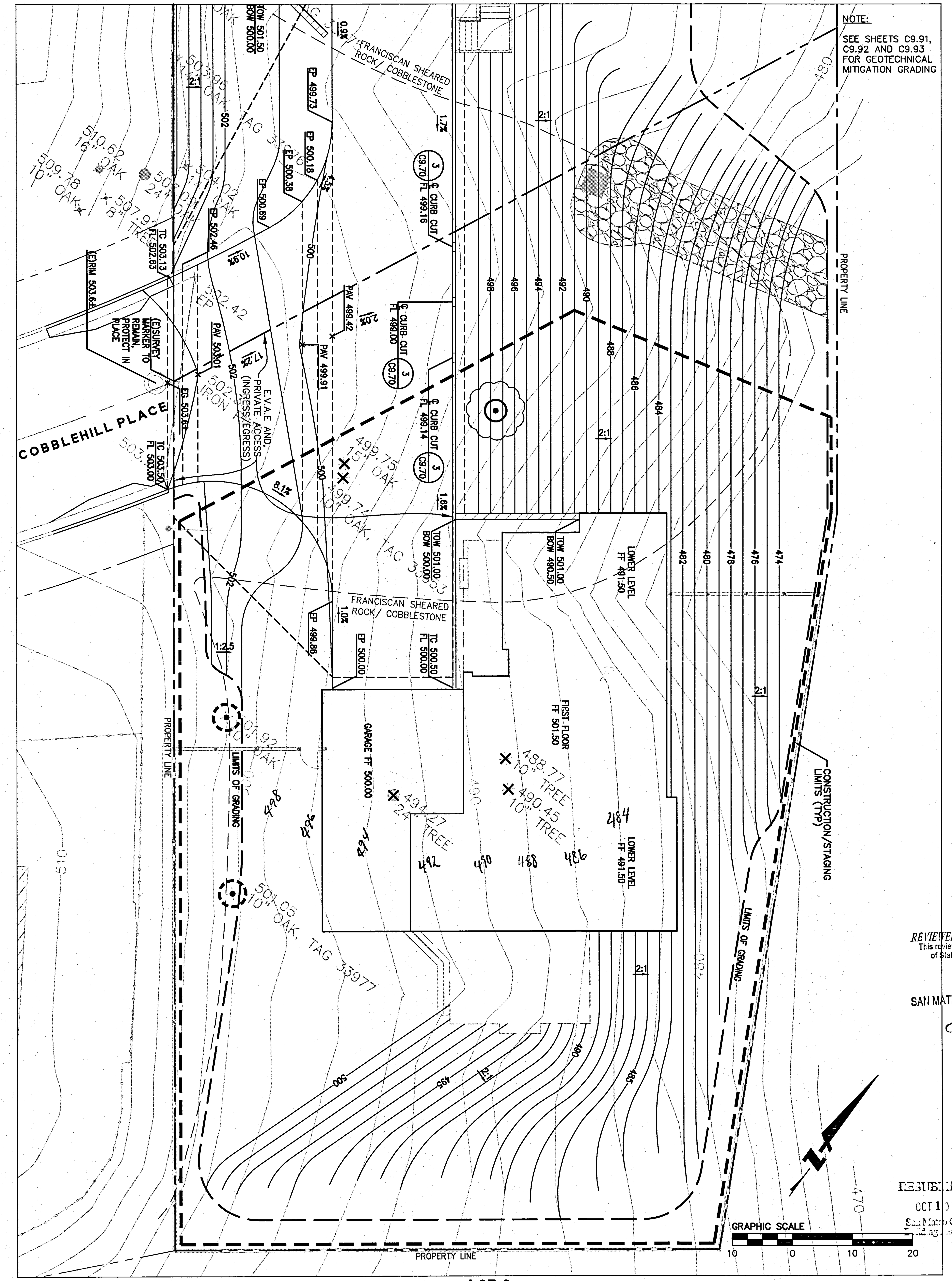
Revisions	
No.	
Date	10/8/2018
Scale	NTS
Design	JT
Drawn	LE
Approved	RH/JT
Job No	950168-20

Sheet Number:
C9.20
OF

DRAWING NAME: K:\Eng95\950168\dwg\CD\Lot_9\C9.20-HECDNT.dwg
PLOT DATE: 10-09-18 PLOTTED BY: holt



LOT 9
SITE PLAN
SCALE: 1"=10'



LOT 9
CLEARING, CONSTRUCTION, AND GRADING PLAN
SCALE: 1"=10'

REVIEWED FOR CODE COMPLIANCE
NOV 1 201
SAN MATEO CO. BLDG INSP. DIV.

RESUBMITTAL
OCT 1 2018
San Mateo County

BKF
ENGINEERS | SURVEYORS | PLANNERS
255 SHORELINE DRIVE, SUITE 200
REDWOOD CITY, CA 94065
PHONE: (650) 482-6300
FAX: (650) 482-6399

REGISTERED PROFESSIONAL ENGINEER No. C67726 STATE OF CALIFORNIA CIVIL

HIGHLAND ESTATES
LOT 9 IMPROVEMENT PLANS
SITE & CLEARING, CONSTRUCTION AND GRADING PLANS

CITY OF SAN MATEO — SAN MATEO COUNTY — CALIFORNIA

Date	10/8/2018
Scale	AS SHOWN
Design	JT
Drawn	LE
Approved	RH/JT
Job No	950168-20

Revisions | No.

Sheet Number:
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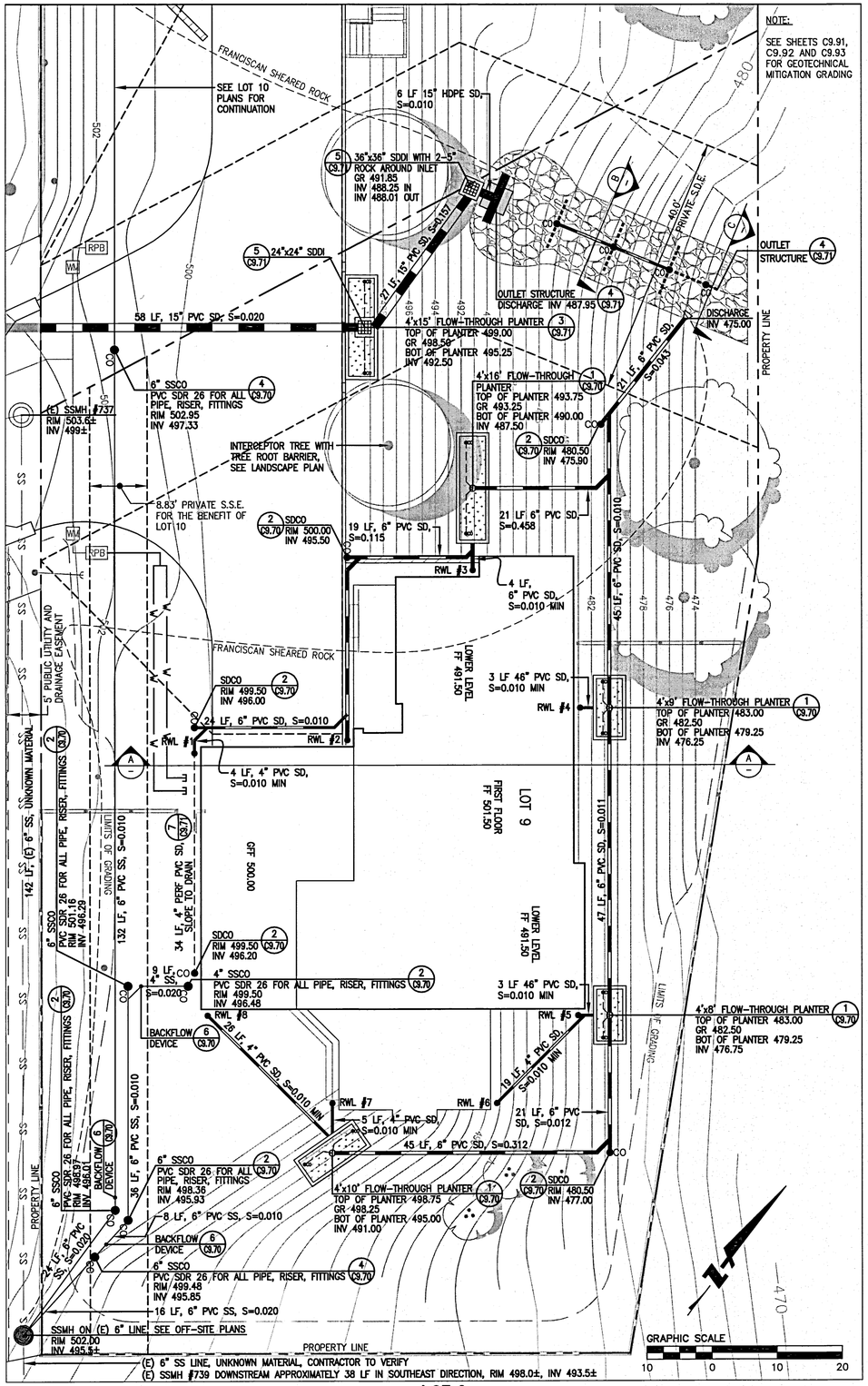
OF

DRAWING NAME: K:\Eng95\950168\dwg\CD\Lot_9\C9.30-HECDSP.dwg
PLOT DATE: 10-09-18 PLOTTED BY: holt



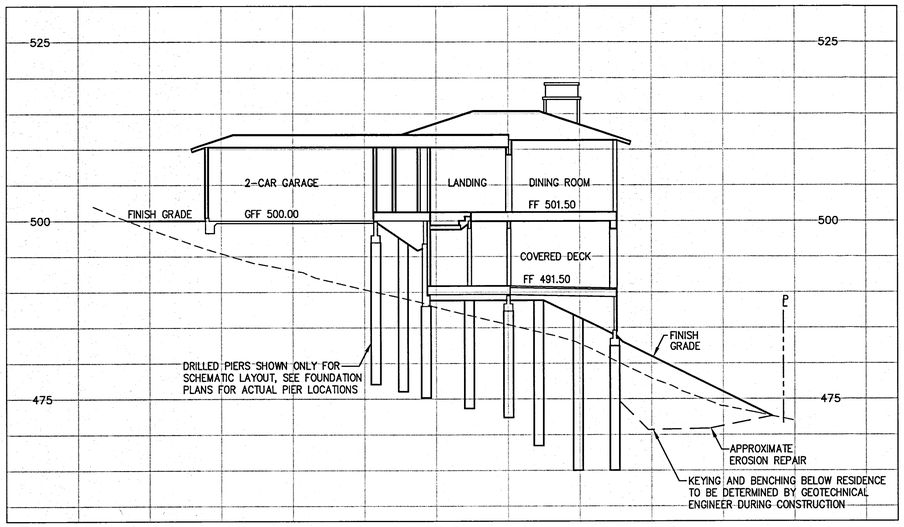
LOT 9 UTILITY PLAN
SCALE: 1"=10'

CRYSTAL SPRINGS COUNTY SANITATION DISTRICT NOTES:

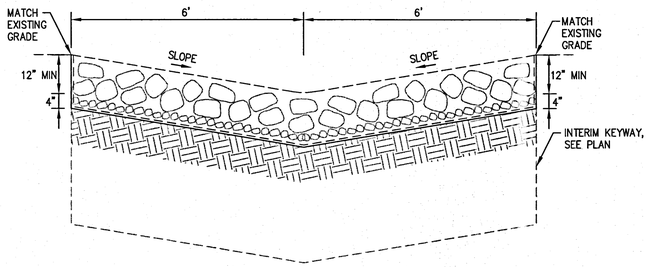
1. THE PROPERTY/EASEMENT LINE CLEANOUT MUST BE PLACED IN A LOCATION THAT PROVIDES EASY ACCESS FOR MAINTENANCE EQUIPMENT AND IS OUTSIDE OF ANY ENCLOSURES. A MINIMUM OF 6' IS REQUIRED BETWEEN THE PROPERTY LINE CLEANOUT AND STRUCTURE.
2. THE PLANS INDICATE THAT THE LOWEST FINISHED FLOOR ELEVATION OF THE PROPOSED MAIN RESIDENCE WILL BE LESS THAN ONE (1) FOOT HIGHER THAN THE RIM ELEVATION OF THE NEAREST UPSTREAM SANITARY SEWER MANHOLE. A BACKFLOW PREVENTION OR OVERFLOW DEVICE MUST BE INSTALLED IMMEDIATELY UPSTREAM OF THE REQUIRED CLEANOUT NEAR THE PROPERTY LINE TO PREVENT BACKFLOW OF SEWAGE INTO THE BUILDING/PROPERTY.
3. SANITARY SEWER CONNECTION AND TESTING MUST BE MADE IN THE PRESENCE OF A SEWER DISTRICT REPRESENTATIVE. THIS NOTE SHALL BE ADDED TO THE PLANS.
4. THE SEWER DISTRICT OFFICE SHALL BE CONTACTED (650-363-4100) TO SCHEDULE INSPECTIONS. INSPECTIONS MUST BE SCHEDULED A MINIMUM OF ONE WORKING DAY PRIOR TO THE INSPECTION. NO INSPECTIONS SHALL OCCUR ON FRIDAYS, WEEKENDS OR HOLIDAYS UNLESS SPECIAL ARRANGEMENTS ARE MADE WITH THE SEWER DISTRICT.
5. A VIDEO INSPECTION OF THE SEWER MAIN (MANHOLE TO MANHOLE) WHERE THE NEW LATERAL CONNECTS TO THE SEWER DISTRICT MAIN SHALL BE PERFORMED BY THE APPLICANT OR CONTRACTOR AND SUBMITTED TO THE SEWER DISTRICT FOR REVIEW AFTER LATERAL CONNECTION HAS BEEN MADE. THE VIDEO INSPECTION SHALL BE PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS DESCRIBED IN THE SPECIAL PROVISIONS FOR CLOSED CIRCUIT TELEVISION INSPECTION OF SANITARY SEWER MAINS (A COPY CAN BE OBTAINED FROM OUR WEBSITE AT HTTP://PUBLICWORKS.SMCGOV.ORG/SEWER-SERVICES). THE SEWER DISTRICT WILL REVIEW THE VIDEO INSPECTION TO DETERMINE WHETHER THE WORK PERFORMED IS ACCEPTABLE. ALL UNACCEPTABLE WORK SHALL BE CORRECTED TO THE SEWER DISTRICT'S SATISFACTION AT THE APPLICANT'S EXPENSE.
6. CARE MUST BE TAKEN TO PROTECT THE EXISTING SEWER DISTRICT FACILITIES WHEN A NEW SEWER LATERAL AND CONNECTION IS INSTALLED. ANY DAMAGES TO THE SEWER DISTRICT FACILITIES DURING THE INSTALLATION OF THE NEW LATERAL SHALL BE REPAIRED BY THE APPLICANT PER THE SEWER DISTRICT STANDARD DETAILS AND AT THE APPLICANT'S EXPENSE. THE SEWER DISTRICT MUST BE NOTIFIED OF ANY DAMAGES TO THE SANITARY SEWER FACILITIES AND ANY REPAIRS MUST BE INSPECTED BY A SEWER DISTRICT REPRESENTATIVE.
7. LATERAL CONNECTION TO THE EXISTING MANHOLE SHALL BE MADE BY CORE DRILLING A HOLE IN THE MANHOLE WALL APPROPRIATELY SIZED FOR THE SEWER LATERAL PIPE. THE ANNULAR SPACE BETWEEN THE WALL AND PIPE SHALL BE PLUGGED WITH MORTAR CEMENT. AFTER THE ANNULAR SPACE HAS BEEN PLUGGED, THE INTERIOR OF THE ENTIRE MANHOLE SHALL BE COATED WITH AN APPROVED WATERPROOFING MATERIAL APPLIED PER THE MANUFACTURER'S RECOMMENDATIONS.
8. THE CONTRACTOR MUST REMOVE AND DISPOSE OF ALL CONSTRUCTION DEBRIS IN THE MANHOLE AFTER THE LATERAL CONNECTION HAS BEEN MADE. CARE MUST BE TAKEN TO PREVENT CONSTRUCTION DEBRIS FROM ENTERING THE SEWER SYSTEM DURING THE INSTALLATION OF THE NEW SEWER LATERAL CONNECTION. IF THE SEWER DISTRICT DISCOVERED THAT CONSTRUCTION DEBRIS HAS ENTERED THE SEWER SYSTEM, THE APPLICANT WILL BE RESPONSIBLE TO CLEAN AND TELEVISE THE DOWNSTREAM PORTIONS OF THE SEWER MAINS AS DETERMINED BY THE SEWER DISTRICT TO THE SEWER DISTRICT'S SATISFACTION. SANITARY SEWER SERVICE SHALL BE MAINTAINED AT ALL TIMES. THE CONTRACTOR SHALL USE WHATEVER MEANS NECESSARY (E.G. PUMPS, ETC.) TO MAINTAIN THIS SERVICE DURING CONSTRUCTION.

NOTES:

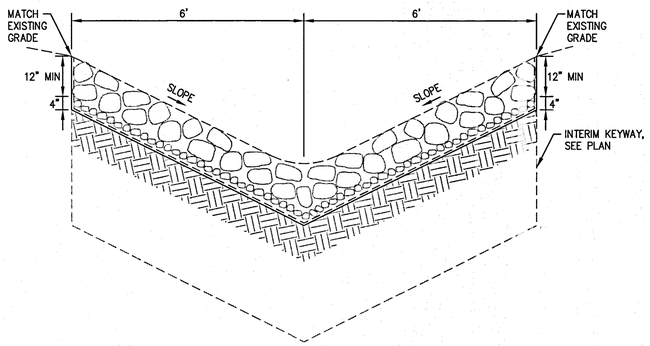
1. PER THE GEOTECHNICAL REPORT, UNDOCUMENTED FILL WAS MAPPED AT LOT 9 AND IF THIS FILL IS TO BE LEFT IN PLACE DURING HOUSE AND DRIVEWAY GRADING, IT SHOULD BE REMOVED AND REPLACED AS PROPERLY COMPACTED ENGINEERED FILL.
2. PER THE GEOTECHNICAL REPORT, ALL EXISTING FILLS SHOULD BE COMPLETELY REMOVED FROM WITHIN PROPOSED HOUSE FOOTPRINT AND DRIVEWAY AREAS AND TO A LATERAL DISTANCE OF AT LEAST 5 FEET BEYOND THE EDGE OF THE IMPROVEMENTS OR AS RECOMMENDED BY THE GEOTECHNICAL ENGINEER. ANY EXCESS MATERIAL SHALL BE DISPOSED OF OFF-SITE IN A LAWFUL MANNER.
3. PER THE GEOTECHNICAL REPORT, GEOTECHNICAL MITIGATION GRADING WILL BE PERFORMED ON LOT 9, SEE SHEETS C9.91 AND C9.92 FOR GRADING DETAILS OF THE MITIGATION
4. PER THE GEOTECHNICAL REPORT, ALL BUILDING AND RETAINING WALLS SHOULD BE SUPPORTED ON DRILLED PIERS. THE FOUNDATION SHOWN ON THIS PLAN ARE SCHEMATIC. REFER TO THE PROJECT STRUCTURAL PLANS FOR DETAILS ON THE DRILLED PIERS.



LOT 9 CROSS SECTION A-A
SCALE: 1"=10'



OUTLET STRUCTURE CROSS SECTION B-B
NTS



OUTLET STRUCTURE CROSS SECTION C-C
NTS

BKF ENGINEERS / SURVEYORS / PLANNERS
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PROFESSIONAL ENGINEER — No. 087726 — REGISTERED — CIVIL — STATE OF CALIFORNIA

HIGHLAND ESTATES
LOT 9 IMPROVEMENT PLANS
UTILITY PLAN AND CROSS SECTION

CITY OF SAN MATEO — SAN MATEO COUNTY — CALIFORNIA

REVIEWED FOR CODE COMPLIANCE
This review does not authorize violation of State or County building laws.
NOV 18 2019
SAN MATEO CO. BLDG. INSP. DIV.

RESUBMITTAL
OCT 10 2018
San Mateo County Building Inspection

No.	Revisions

Date	10/8/2018
Scale	AS SHOWN
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Drawn	NH
Approved	RH/JT
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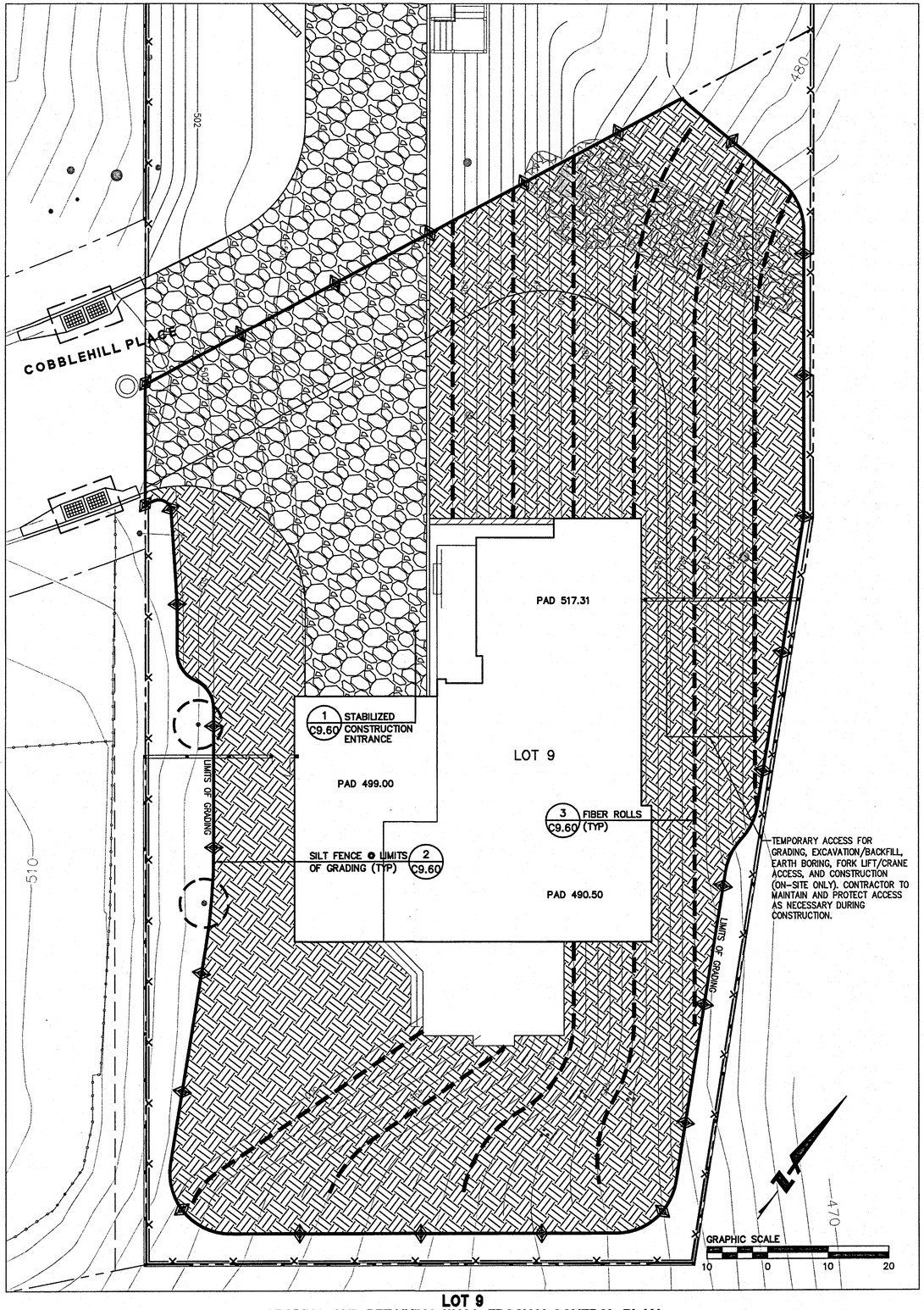
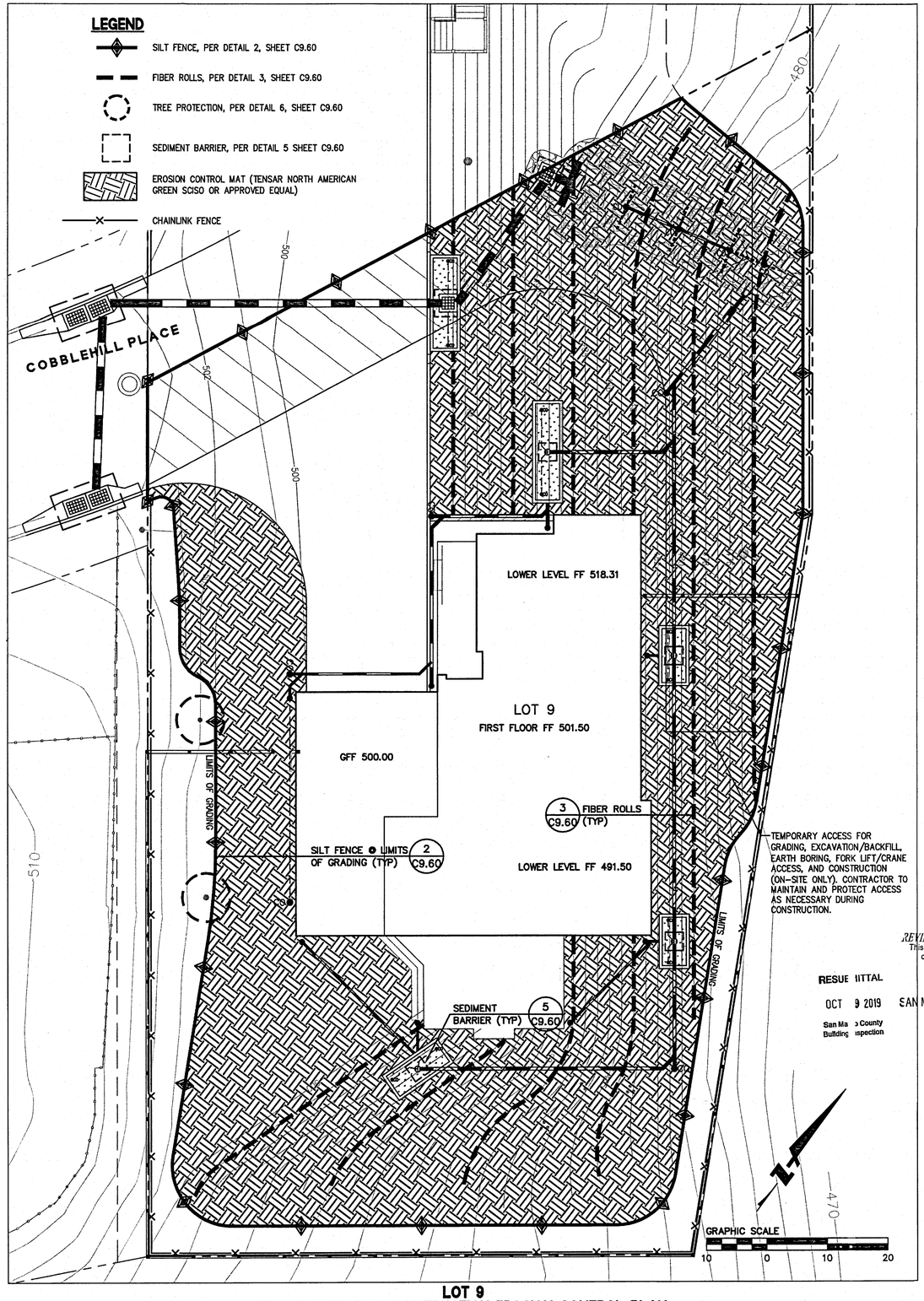
PLOT DATE: 10-09-18 PLOTTED BY: holt



LOT 9
GRADING AND RETAINING WALL EROSION CONTROL PLAN
SCALE: 1"=10'



LOT 9
FOUNDATION AND CONSTRUCTION EROSION CONTROL PLAN
SCALE: 1"=10'

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ENGINEERS | SURVEYORS | PLANNERS

REGISTERED PROFESSIONAL ENGINEER JOHNATHAN HOLT No. 69728 CIVIL STATE OF CALIFORNIA

HIGHLAND ESTATES
LOT 9 IMPROVEMENT PLANS
EROSION CONTROL PLANS

SAN MATEO COUNTY CALIFORNIA

CITY OF SAN MATEO

REVIEWED FOR CODE COMPLIANCE
This review does not authorize violation of State or Local laws.

RESUBMITTAL
OCT 9 2019
San Mateo County Building Inspection

NOV 18 2019
SAN MATEO CO. EL. G. INSP. DIV.

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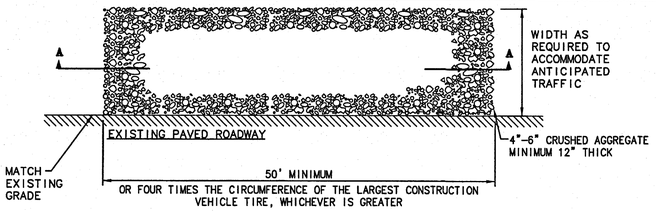
PLOT DATE: 12-03-18
PLOTTED BY: holt

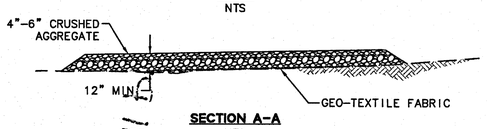
EROSION CONTROL NOTES

1. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.
2. ALTHOUGH SPECIFIC LOCATIONS FOR SEDIMENT CONTROL FACILITIES ARE SHOWN ON THESE PLANS, IT IS INTENDED THIS EROSION CONTROL PLAN BE MODIFIED WHEN NECESSARY TO MEET FIELD CONDITIONS. BASIN AND TRAP SIZES AND ELEVATIONS MAY BE ADJUSTED AS LONG AS THE MINIMUM AREAS AND DEPTHS FOR SEDIMENT SETTLING AND STORAGE ARE NOT REDUCED.
3. THE INTENT OF THESE PLANS IS TO PROVIDE THE INITIAL CONCEPT FOR INTERIM EROSION CONTROL. THE CONTRACTOR SHALL UPDATE THE PLANS TO REFLECT CHANGING SITE CONDITIONS. PLAN UPDATES SHALL BE BASED UPON GENERAL SURVEY DATA. EROSION CONTROL EFFECTIVENESS SHALL ALSO BE MONITORED AND THE PLANS UPGRADED AS REQUIRED TO PREVENT SIGNIFICANT QUANTITIES OF SEDIMENT FROM ENTERING THE DOWNSTREAM DRAINAGE SYSTEM.
4. THIS PLAN MAY NOT COVER ALL THE SITUATIONS THAT ARISE DURING CONSTRUCTION DUE TO UNANTICIPATED FIELD CONDITIONS. IN GENERAL, THE CONTRACTOR IS RESPONSIBLE FOR KEEPING THE STORM RUN OFF FROM LEAVING THE SITE. FIBER ROLLS, SAND BAGS, AND SILT FENCES SHALL BE USED BY THE CONTRACTOR ON AN AS NEEDED BASIS TO INHIBIT SILT FROM LEAVING THE SITE AND ENTERING THE STORM DRAIN SYSTEM. ALL EXISTING, TEMPORARY, OR PERMANENT CATCH BASINS SHALL USE ONE OF THE SEDIMENT BARRIERS SHOWN.
5. THE CONTRACTOR WILL BE LIABLE FOR ANY AND ALL DAMAGES TO PUBLIC AND/OR PRIVATE OWNED AND MAINTAINED ROAD CAUSED BY THE CONTRACTOR'S GRADING ACTIVITIES, AND WILL BE RESPONSIBLE FOR THE CLEANUP OF ANY MATERIAL SPILLED ON ANY PUBLIC ROAD ON THE HAUL ROUTE. ADJACENT PUBLIC ROADS SHALL BE CLEANED AT THE END OF EACH WORKING DAY.
6. BEST MANAGEMENT PRACTICES SHALL BE OPERABLE YEAR AROUND.
7. DURING THE RAINY SEASON, ALL PAVED AREAS ARE TO BE KEPT CLEAR OF EARTH MATERIAL AND DEBRIS. THE SITE IS TO BE MAINTAINED SO AS TO MINIMIZE SEDIMENT-LADEN RUNOFF TO ANY STORM DRAIN SYSTEM.
8. ALL EROSION CONTROL FACILITIES MUST BE INSPECTED AND REPAIRED DAILY DURING THE RAINY SEASON. ALL SLOPES SHALL BE REPAIRED AS SOON AS POSSIBLE WHEN DAMAGED.
9. THE FIRST PHASE OF CONSTRUCTION SHALL REQUIRE 30 PERCENT OF CONSTRUCTION EQUIPMENT TO MEET TIER 1 EPA CERTIFICATION STANDARDS FOR CLEAN TECHNOLOGY. THE REMAINDER OF CONSTRUCTION EQUIPMENT (70 PERCENT), WHICH WOULD CONSIST OF OLDER TECHNOLOGIES, SHALL BE REQUIRED TO USE EMULSIFIED FUELS.
10. THE SECOND PHASE OF CONSTRUCTION SHALL REQUIRE 30 PERCENT OF CONSTRUCTION EQUIPMENT TO MEET TIER 2 EPA CERTIFICATION STANDARDS FOR CLEAN TECHNOLOGY AND 50 PERCENT TO MEET TIER 1 EPA CERTIFICATION STANDARDS. THE REMAINING 20 PERCENT OF CONSTRUCTION EQUIPMENT, WHICH WOULD CONSIST OF OLDER TECHNOLOGIES, SHALL USE EMULSIFIED FUELS.
11. FOR ALL LARGER VEHICLES, INCLUDING CEMENT MIXERS OR OTHER DEVICES THAT MUST BE DELIVERED BY LARGE TRUCKS, VEHICLES SHALL BE EQUIPPED WITH CARB LEVEL THREE VERIFIED CONTROL DEVICES.
12. WATER ALL ACTIVE CONSTRUCTION AREAS AT LEAST TWICE DAILY.
13. COVER ALL TRUCKS HAULING SOIL, SAND, AND OTHER LOOSE MATERIALS OR REQUIRE ALL TRUCKS TO MAINTAIN AT LEAST TWO FEET OF FREEBOARD.
14. PAVE, APPLY WATER THREE TIMES DAILY, OR APPLY NON-TOXIC SOIL STABILIZERS ON ALL UNPAVED ACCESS ROADS, PARKING AREAS, AND STAGING AREAS AT THE CONSTRUCTION SITES.
15. SWEEP DAILY (WITH WATER SWEEPERS) ALL PAVED ACCESS ROADS, PARKING AREAS, AND STAGING AREAS AT THE CONSTRUCTION SITES.
16. SWEEP PUBLIC STREETS ADJACENT TO CONSTRUCTION SITES DAILY (WITH WATER SWEEPERS) IF VISIBLE SOIL MATERIAL IS CARRIED ONTO THE STREETS.
17. HYDROSEED OR APPLY NON-TOXIC SOIL STABILIZERS TO INACTIVE CONSTRUCTION AREAS (PREVIOUSLY GRADED AREAS INACTIVE FOR TEN DAYS OR MORE).
18. TEMPORARY AND PERMANENT SLOPES GREATER THAN 3 FEET SHALL BE SEEDED UNLESS ALTERNATIVE MEASURES ARE USED.
19. SEED MIX FOR REVEGETATION AND HYDROSEEDING:
    NORTHERN CALIFORNIA COVER MIX BY ACBRIGHT OR EQUAL
    30% BLUE WILDRYE
    30% MEADOW BARLEY
    20% ZORRO FESCUE
    10% PURPLE NEEDLE GRASS
    10% CALIFORNIA NATIVE WILDFLOWERS
    APPLY AT 40 POUNDS PER ACRE MINIMUM. HAND WATER AS RECOMMENDED BY SEED SUPPLIER TO ESTABLISH GERMINATION AND VEGEATION GROWTH. OVERSEED AND/OR REPLANT AS NEEDED TO MAINTAIN COVER AS REQUIRED.
20. ENCLOSE, COVER, WATER TWICE DAILY, OR APPLY NON-TOXIC SOIL BINDERS TO EXPOSED STOCKPILES (DIRT, SAND, ETC.). LIMIT TRAFFIC SPEEDS ON UNPAVED ROADS TO 15 MILES PER HOUR.
21. DISPOSAL AREAS FOR SEDIMENT TO BE DETERMINED IN FIELD. WHEN MATERIAL IS STOCKPILED, IT SHALL BE SURROUNDED BY A SILT FENCE/FIBER ROLLS.
22. LIMIT TRAFFIC SPEEDS ON UNPAVED ROADS TO 15 MILES PER HOUR.
23. INSTALL SANDBAGS OR OTHER EROSION CONTROL MEASURES TO PREVENT SILT RUNOFF TO PUBLIC ROADWAYS.
24. REPLANT VEGETATION IN DISTURBED AREAS AS SOON AS POSSIBLE.
25. INSTALL WHEEL WASHERS FOR ALL EXITING TRUCKS OR WASH OFF THE TIRES OR TRACKS OF ALL TRUCKS AND EQUIPMENT LEAVING THE CONSTRUCTION SITE.
26. INSTALL WIND BREAKS AT THE WINDWARD SIDES OF THE CONSTRUCTION AREAS.
27. SUSPEND EXCAVATION AND GRADING ACTIVITIES WHEN WIND (AS INSTANTANEOUS GUSTS) EXCEEDS 25 MILES PER HOUR.
28. NO GRADING SHALL BE ALLOWED DURING THE WINTER SEASON (OCTOBER 1 TO APRIL 30) TO AVOID POTENTIAL SOIL EROSION UNLESS APPROVED, IN WRITING, BY THE COMMUNITY DEVELOPMENT DIRECTOR. THE PROPERTY OWNERS SHALL SUBMIT A LETTER TO THE CURRENT PLANNING SECTION, AT LEAST TWO WEEKS PRIOR TO COMMENCEMENT OF GRADING, STATING THE DATE WHEN GRADING WILL BEGIN.
29. STABILIZE ALL DENUDED AREAS AND MAINTAIN EROSION CONTROL MEASURES CONTINUOUSLY BETWEEN OCTOBER 1 AND APRIL 30. STABILIZING SHALL INCLUDE BOTH PROACTIVE MEASURES, SUCH AS THE PLACEMENT OF STRAW BALES OR COIR NETTING, AND PASSIVE MEASURES, SUCH AS MINIMIZING VEGETATION REMOVAL AND REVEGETATING DISTURBED AREAS WITH VEGETATION THAT IS COMPATIBLE WITH THE SURROUNDING ENVIRONMENT.
30. STORE, HANDLE, AND DISPOSE OF CONSTRUCTION MATERIALS AND WASTES PROPERLY, SO AS TO PREVENT THEIR CONTACT WITH STORMWATER.
31. CONTROL AND PREVENT THE DISCHARGE OF ALL POTENTIAL POLLUTANTS, INCLUDING PAVEMENT CUTTING WASTES, PAINTS, CONCRETE, PETROLEUM PRODUCTS, CHEMICALS, WASH WATER OR SEDIMENTS, AND NON-STORMWATER DISCHARGES TO STORM DRAINS AND WATERCOURSES.
32. USE SEDIMENT CONTROLS OR FILTRATION TO REMOVE SEDIMENT WHEN DEWATERING SITE AND OBTAINING ALL NECESSARY PERMITS.
33. AVOID CLEANING, FUELING, OR MAINTAINING VEHICLES ON-SITE, EXCEPT IN A DESIGNATED AREA WHERE WASH WATER IS CONTAINED AND TREATED.
34. DELINEATE WITH FIELD MARKERS CLEARING LIMITS, SETBACKS, AND DRAINAGE COURSES.
35. PROTECT ADJACENT PROPERTIES AND UNDISTURBED AREAS FROM CONSTRUCTION IMPACTS USING VEGETATIVE BUFFER STRIPS, SEDIMENT BARRIERS OR FILTERS, DIKES, MULCHING, OR OTHER MEASURES AS APPROPRIATE.
36. PERFORM CLEARING AND EARTH-MOVING ACTIVITIES ONLY DURING DRY WEATHER.
37. LIMIT AND TIME APPLICATIONS OF PESTICIDES AND FERTILIZERS TO PREVENT POLLUTED RUNOFF.
38. LIMIT CONSTRUCTION ACCESS ROUTES AND STABILIZE DESIGNATED ACCESS POINTS.
39. ALL GRADED SURFACES AND MATERIALS, WHETHER FILLED, EXCAVATED, TRANSPORTED OR STOCKPILED, SHALL BE WETTED, PROTECTED OR CONTAINED IN SUCH A MANNER AS TO PREVENT ANY SIGNIFICANT NUISANCE FROM DUST, OR SPILLAGE UPON ADJOINING WATER BODY, PROPERTY, OR STREETS. EQUIPMENT AND MATERIALS ON THE SITE SHALL BE USED IN SUCH A MANNER AS TO AVOID EXCESSIVE DUST. A DUST CONTROL PLAN MAY BE REQUIRED AT ANYTIME DURING THE COURSE OF THE PROJECT.
40. A DUST PALLIATIVE SHALL BE APPLIED TO THE SITE WHEN REQUIRED BY THE COUNTY. THE TYPE AND RATE OF APPLICATION SHALL BE RECOMMENDED BY THE SOILS ENGINEER AND APPROVED BY THE DEPARTMENT OF PUBLIC WORKS, THE PLANNING AND BUILDING DEPARTMENT'S GEOTECHNICAL SECTION, AND THE REGIONAL WATER QUALITY CONTROL BOARD.
41. IF NO WORK HAS PROGRESSED FOR A PERIOD OF 6-WEEKS, FINAL DRAINAGE AND EROSION CONTROL IMPROVEMENTS SHALL BE INSTALLED IN ACCORDANCE WITH AN APPROVED WINTERIZATION PLAN.
42. PADS SHALL BE GRADED TO MINIMIZE STANDING WATER. SPECIFIC LOCATIONS REQUIRING SUPPLEMENTAL GRADING TO ACHIEVE ACCEPTABLE DRAINAGE SHALL BE DETERMINED BY THE CONSTRUCTION MANAGER. ALL SPOILS AND SOIL STOCKPILES REMAINING ON SITE SHALL BE ENCIRCLED BY SILT FENCES/FIBER ROLLS.
43. STUBBED OUT ENDS OF PARTIALLY COMPLETED SUBDRAINS SHALL BE WRAPPED WITH AN APPROVED FABRIC TO PREVENT SOIL AND DEBRIS FROM ENTERING THE PIPE.
44. HAUL ROADS ARE CURRENTLY NOT SHOWN ON THE PLANS. EROSION CONTROL MEASURES SHALL BE TAKEN TO MINIMIZE EROSION RELATED TO HAUL ROADS.
45. GRADING SCHEDULE SHALL BE SUBMITTED FOR APPROVAL TO SAN MATEO COUNTY PUBLIC WORKS BY AUGUST 15.
46. EROSION CONTROL POINT OF CONTACT:
    NOEL CHAMBERLAIN, NEXGEN BUILDERS INC.
    225 DEMETER STREET
    EAST PALO ALTO, CA 94303
    PHONE #: 650-322-5800
    CELL #: 650-444-3089
    EMAIL: noel@nexgenbuilders.com
47. SHOULD IT APPEAR THAT THE EROSION CONTROL PLAN, OR ANY OTHER MATTER THERETO, IS NOT SUFFICIENTLY DETAILED OR EXPLAINED ON THESE PLANS, THE CONTRACTOR SHALL CONTACT THE BKF PROJECT ENGINEER AT (650) 482-6300 FOR SUCH FURTHER EXPLANATIONS AS MAY BE NECESSARY.
48. AREAS DELINEATED ON PLANS FOR PARKING, CLEARING & GRUBBING, STORAGE, ETC. SHALL NOT BE ENLARGED OR "RUN OVER."
49. CONSTRUCTION SITES ARE REQUIRED TO HAVE EROSION CONTROL MATERIALS ON-SITE DURING THE "OFF-SEASON."
50. DUST CONTROL IS REQUIRED YEAR-ROUND.
51. EROSION CONTROL MATERIALS SHALL BE STORED ON-SITE.
52. USE OF PLASTIC SHEETING BETWEEN OCTOBER 1ST AND APRIL 30TH IS NOT ACCEPTABLE, UNLESS FOR USE ON STOCKPILES WHERE THE STOCKPILE IS ALSO PROTECTED WITH FIBER ROLLS CONTAINING THE BASE OF THE STOCKPILE.
53. TREE PROTECTION SHALL BE IN PLACE BEFORE ANY GRADING, EXCAVATING OR GRUBBING IS STARTED.
54. AVOID SOIL COMPACTION IN EXISTING AND PROPOSED LANDSCAPED AREAS. ALL EQUIPMENT OR STOCKPILING SHOULD BE LOCATED AWAY FROM ALL PROPOSED LANDSCAPING TO REDUCE COMPACTION.

ALL EROSION CONTROL MEASURES SHALL BE IN PLACE BY OCTOBER 1ST THROUGH APRIL 30TH AND MAINTAINED DURING ALL PHASES OF CONSTRUCTION.



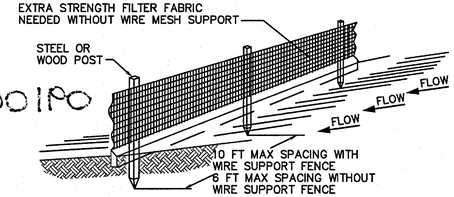
PLAN
NTS



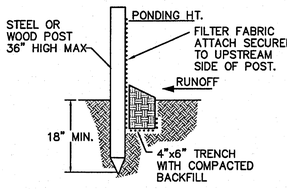
SECTION A-A
NTS

NOTES:
1. ALL CONSTRUCTION ENTRANCES SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHT-OF-WAYS. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND, AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED, OR TRACKED ONTO PUBLIC RIGHT-OF-WAYS SHALL BE REMOVED IMMEDIATELY.
2. WHEELS SHALL BE CLEAN PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAYS. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN. ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING ANY STORM DRAIN, DITCH OR WATERCOURSE THROUGH USE OF INLET PROTECTION (E.G. SAND BAGS OR OTHER APPROVED METHODS).
3. THE MATERIAL FOR CONSTRUCTION OF THE PAD SHALL BE 4" TO 6" STONE.
4. THE THICKNESS OF THE PAD SHALL NOT BE LESS THAN 12".
5. THE WIDTH OF THE PAD SHALL NOT BE LESS THAN THE FULL WIDTH OF ALL POINTS OF INGRESS OR EGRESS.
6. THE LENGTH OF THE PAD SHALL NOT BE LESS THAN 50'.

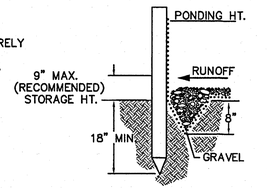
1/– STABILIZED CONSTRUCTION ENTRANCE
NTS



NOTES:
1. INSPECT AND REPAIR FENCE AFTER EACH STORM EVENT AND REMOVE SEDIMENT WHEN NECESSARY.
2. REMOVED SEDIMENT SHALL BE DEPOSITED TO AN AREA THAT WILL NOT CONTRIBUTE SEDIMENT OFF-SITE AND CAN BE PERMANENTLY STABILIZED.
3. SILT FENCE SHALL BE PLACED ON SLOPE TO MAXIMIZE PONDING EFFICIENCY.

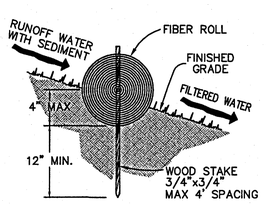


STANDARD DETAIL
TRENCH WITH NATIVE BACKFILL

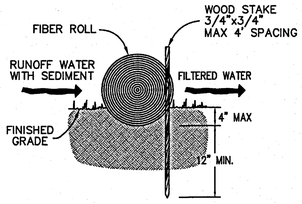


ALTERNATE DETAIL
TRENCH WITH GRAVEL

2/– SILT FENCE
NTS



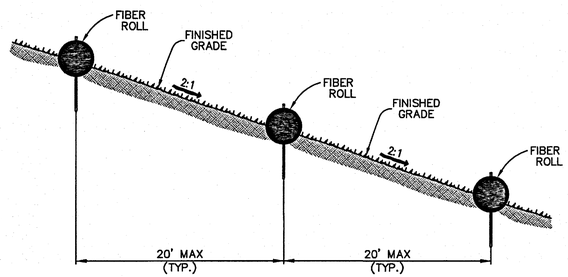
ENTRENCHMENT DETAIL
IN SLOPE AREA



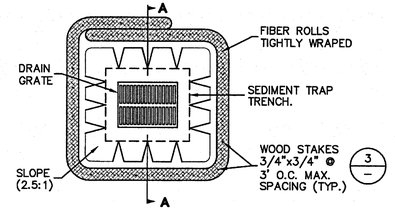
ENTRENCHMENT DETAIL
IN FLAT AREA

NOTES:
1. FIBER ROLL INSTALLATION REQUIRES THE PLACEMENT AND SECURE STAKING OF THE ROLL IN A TRENCH, 3" TO 4" DEEP, DUG ON CONTOUR.
2. ADJACENT ROLLS SHALL TIGHTLY ABUT.
3. RUNOFF MUST NOT BE ALLOWED TO RUN UNDER OR AROUND FIBER ROLL.

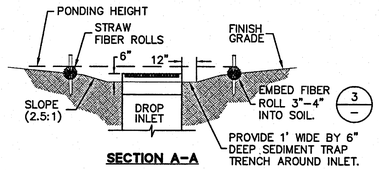
3/– FIBER ROLL
NTS



4/– FIBER ROLL INSTALLATION ON SLOPE
(TIME FRAME: BETWEEN FINAL PAVING OPERATIONS AND PROJECT COMPLETION)
NTS



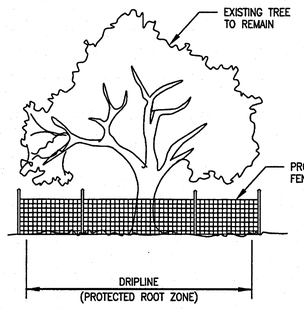
PLAN VIEW



SECTION A-A

NOTES:
1. PLACE FIBER ROLLS AROUND THE INLET CONSISTENT WITH BASIN SEDIMENT BARRIER DETAIL ON THIS SHEET. (FIBER ROLLS ARE TUBES MADE FROM STRAW BOUND W/ PLASTIC NETTING. THEY ARE APPROX. 8" DIA. AND 20 – 30 FT. LONG.)
2. FIBER ROLL INSTALLATION REQUIRES THE PLACEMENT AND SECURE STAKING OF THE FIBER ROLL IN A TRENCH, 3" – 4" DEEP, DUG ON CONTOUR. RUNOFF MUST NOT BE ALLOWED TO RUN UNDER OR AROUND FIBER ROLL.
3. THE TOP OF THE STRUCTURE (PONDING HEIGHT) MUST BE WELL BELOW THE GROUND ELEVATION DOWNSLOPE TO PREVENT RUNOFF FROM BY-PASSING THE INLET. EXCAVATION OF A BASIN ADJACENT TO THE DROP INLET OR A TEMPORARY DIKE ON THE DOWNSLOPE OF THE STRUCTURE MAY BE NECESSARY.

5/– SEDIMENT BARRIER
(TIME FRAME: AREA DRAINS – BETWEEN AREA DRAIN INSTALLATION AND PROJECT COMPLETION
CURB INLETS – BETWEEN CURB INLET INSTALLATION AND FINAL PAVING OPERATIONS)
NTS



TREE PROTECTION FENCE

NOTES:
1. THE APPLICANT SHALL ESTABLISH AND MAINTAIN TREE PROTECTION ZONES THROUGHOUT THE ENTIRE LENGTH OF THE PROJECT.
2. TREE PROTECTION ZONES SHALL BE DELINEATED USING 4-FOOT TALL ORANGE PLASTIC FENCING SUPPORTED BY POLES POUNDED INTO THE GROUND, LOCATED AS CLOSE TO THE DRIPLINES AS POSSIBLE WHILE STILL ALLOWING ROOM FOR CONSTRUCTION/GRADING TO SAFELY CONTINUE.
3. THE APPLICANT SHALL MAINTAIN TREE PROTECTION ZONES FREE OF EQUIPMENT AND MATERIALS STORAGE AND SHALL NOT CLEAN ANY EQUIPMENT WITHIN THESE AREAS.
4. SHOULD ANY LARGE ROOTS OR LARGE MASSES OF ROOTS NEED TO BE CUT, THE ROOTS SHALL BE INSPECTED BY A CERTIFIED ARBORIST OR REGISTERED FORESTER PRIOR TO CUTTING. ANY ROOT CUTTING SHALL BE MONITORED BY AN ARBORIST OR FORESTER AND DOCUMENTED.
5. ROOTS TO BE CUT SHOULD BE SEVERED CLEANLY WITH A SAW OR TOPPERS.
6. NORMAL IRRIGATION SHALL BE MAINTAINED, BUT OAKS SHOULD NOT NEED SUMMER IRRIGATION.
7. THE ABOVE INFORMATION SHALL BE ON-SITE AT ALL TIMES.

6/– TREE PROTECTION FENCE
NTS

CALIFORNIA STORMWATER QUALITY ASSOCIATION (CASQA) STANDARD DETAIL REFERENCES

(CALIFORNIA STORMWATER BMP HANDBOOK CONSTRUCTION, DATED NOVEMBER 2009)

NOTE: ALTHOUGH SPECIFIC LOCATIONS FOR SPECIFIC BMPS ARE SHOWN ON THESE PLANS, IT IS INTENDED FOR THE CONTRACTOR TO APPLY APPROPRIATE BMPS WHEN NECESSARY TO MEET FIELD CONDITIONS.

EROSION CONTROL BMPS:
- EC-1 SCHEDULING
- EC-2 PRESERVATION OF EXISTING VEGETATION
- EC-3 HYDRAULIC MULCH
- EC-4 HYDROSEEDING
- EC-5 SOIL BINDERS
- EC-6 STRAW MULCH
- EC-7 GEOTEXTILES & MATS
- EC-8 WOOD MULCHING
- EC-9 EARTH DIKES AND DRAINAGE SWALES
- EC-10 VELOCITY DISSIPATION DEVICES
- EC-11 SLOPE DRAINS
- EC-12 STREAMBANK STABILIZATION
- EC-14 COMPOST BLANKETS
- EC-15 SOIL PREPARATION/ROUGHENING
- EC-16 NON-VEGETATIVE STABILIZATION

TEMPORARY SEDIMENT CONTROL BMPS:
- SE-1 SILT FENCE
- SE-2 SEDIMENT BASIN
- SE-3 SEDIMENT TRAP
- SE-4 CHECK DAM
- SE-5 FIBER ROLLS
- SE-6 GRAVEL BAG BERM
- SE-7 STREET SWEEPING AND VACUUMING
- SE-8 SANDBAG BARRIER
- SE-9 STRAW BALE BARRIER
- SE-10 STORM DRAIN INLET PROTECTION
- SE-11 ACTIVE TREATMENT SYSTEMS
- SE-12 TEMPORARY SILT DIKE
- SE-13 COMPOST SOCKS AND BERMS
- SE-14 BIOFILTER BAGS

WIND EROSION CONTROL BMPS:
- WE-1 WIND EROSION CONTROL

TEMPORARY TRACKING CONTROL BMPS:
- TC-1 STABILIZED CONSTRUCTION ENTRANCE/EXIT
- TC-2 STABILIZED CONSTRUCTION ROADWAY
- TC-3 ENTRANCE/OUTLET TIRE WASH

NON-STORMWATER MANAGEMENT BMPS:
- NS-1 WATER CONSERVATION PRACTICES
- NS-2 DEWATERING OPERATIONS
- NS-3 PAVING AND GRINDING OPERATIONS
- NS-4 TEMPORARY STREAM CROSSING
- NS-5 CLEAR WATER DIVERSION
- NS-6 ILLICIT CONNECTION/DISCHARGE
- NS-7 POTABLE WATER/IRRIGATION
- NS-8 VEHICLE AND EQUIPMENT CLEANING
- NS-9 VEHICLE AND EQUIPMENT FUELING
- NS-10 VEHICLE AND EQUIPMENT MAINTENANCE
- NS-11 PILE DRIVING OPERATIONS
- NS-12 CONCRETE CURING
- NS-13 CONCRETE FINISHING
- NS-14 MATERIAL AND EQUIPMENT USE
- NS-15 DEMOLITION ADJACENT TO WATER
- NS-16 TEMPORARY BATCH PLANTS

WASTE MANAGEMENT & MATERIALS POLLUTION CONTROL BMPS:
- WM-1 MATERIAL DELIVERY AND STORAGE
- WM-2 MATERIAL USE
- WM-3 STOCKPILE MANAGEMENT
- WM-4 SPILL PREVENTION AND CONTROL
- WM-5 SOLID WASTE MANAGEMENT
- WM-6 HAZARDOUS WASTE MANAGEMENT
- WM-7 CONTAMINATED SOIL MANAGEMENT
- WM-8 CONCRETE WASTE MANAGEMENT
- WM-9 SANITARY/SEPTIC WASTE MANAGEMENT
- WM-10 LIQUID WASTE MANAGEMENT

REVIEWED FOR
This review does not authorize violation of State or County building laws.
NOV 3 2
SAN MATEO CO BLDG. INSP. DIV.

255 SHORELINE DRIVE, SUITE 200
REDWOOD CITY, CA 94065
PHONE: (650) 482-6300
FAX: (650) 482-6399
BKF ENGINEERS | SURVEYORS | PLANNERS

REGISTERED PROFESSIONAL ENGINEER JONATHAN TAYLOR No. C67726 CIVIL STATE OF CALIFORNIA

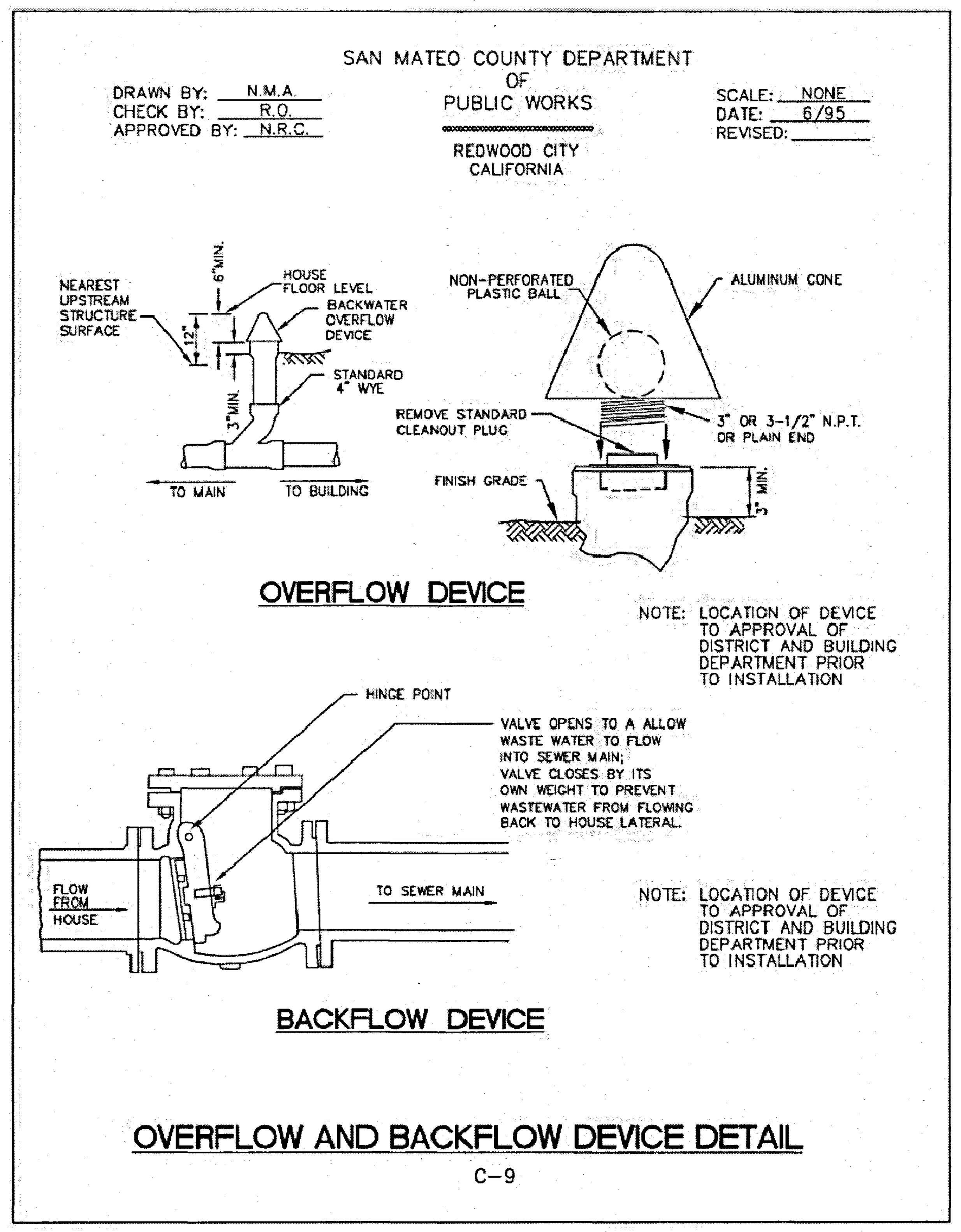
HIGHLAND ESTATES
LOT 9 IMPROVEMENT PLANS
EROSION CONTROL DETAILS AND NOTES
CITY OF SAN MATEO, SAN MATEO COUNTY, CALIFORNIA

No.	Revisions	Date

Date 10/8/2018
Scale AS SHOWN
Design JT
Drawn LE
Approved RH/JT
Job No 950168-20

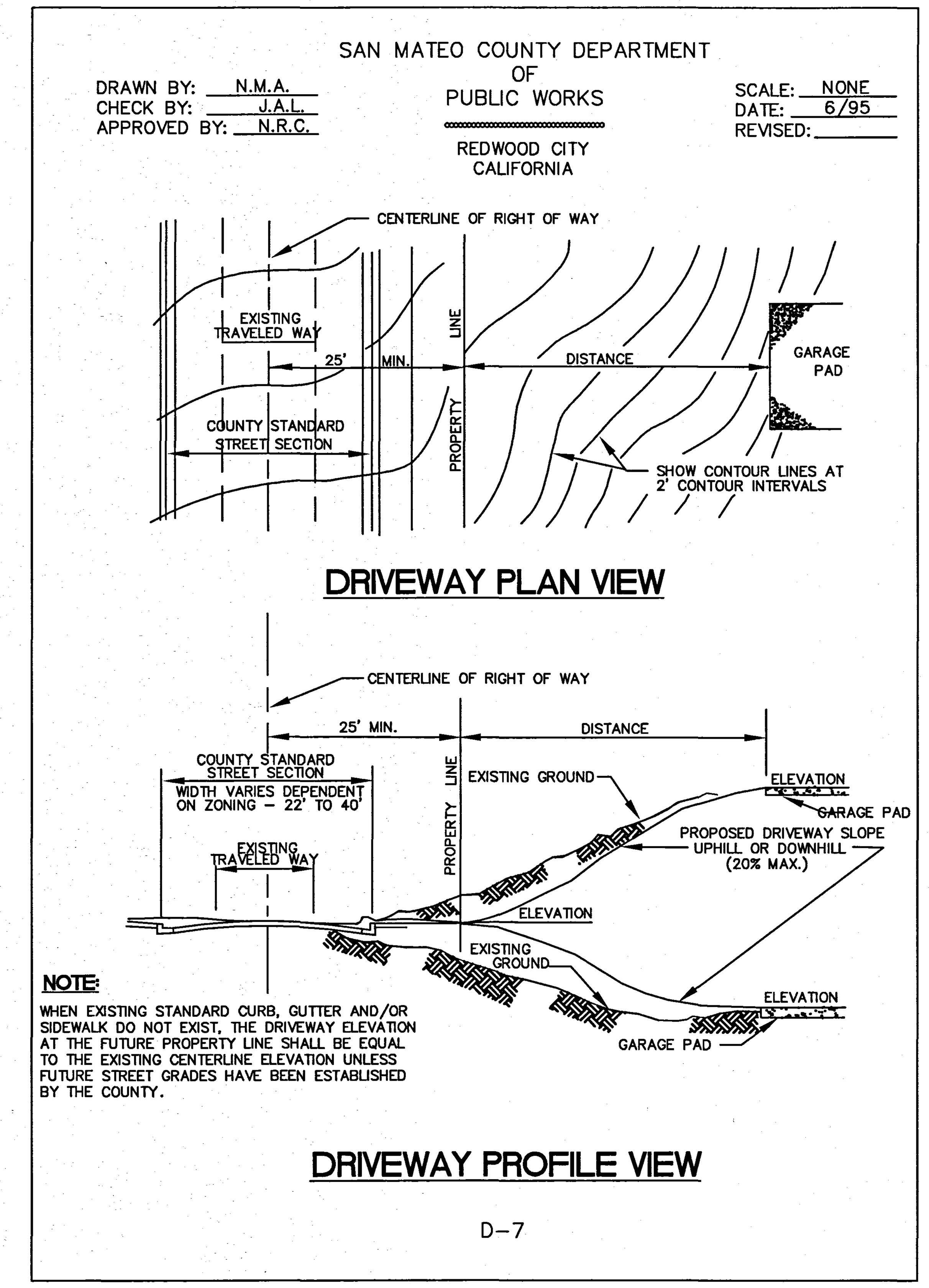
Sheet Number:
C9.60
OF

DRAWING NAME: K:\Eng95\950168\dwg\CD\Lot_9\C9.60-HECDEC.dwg
PLOT DATE: 12-03-18
PLOTTED BY: holt



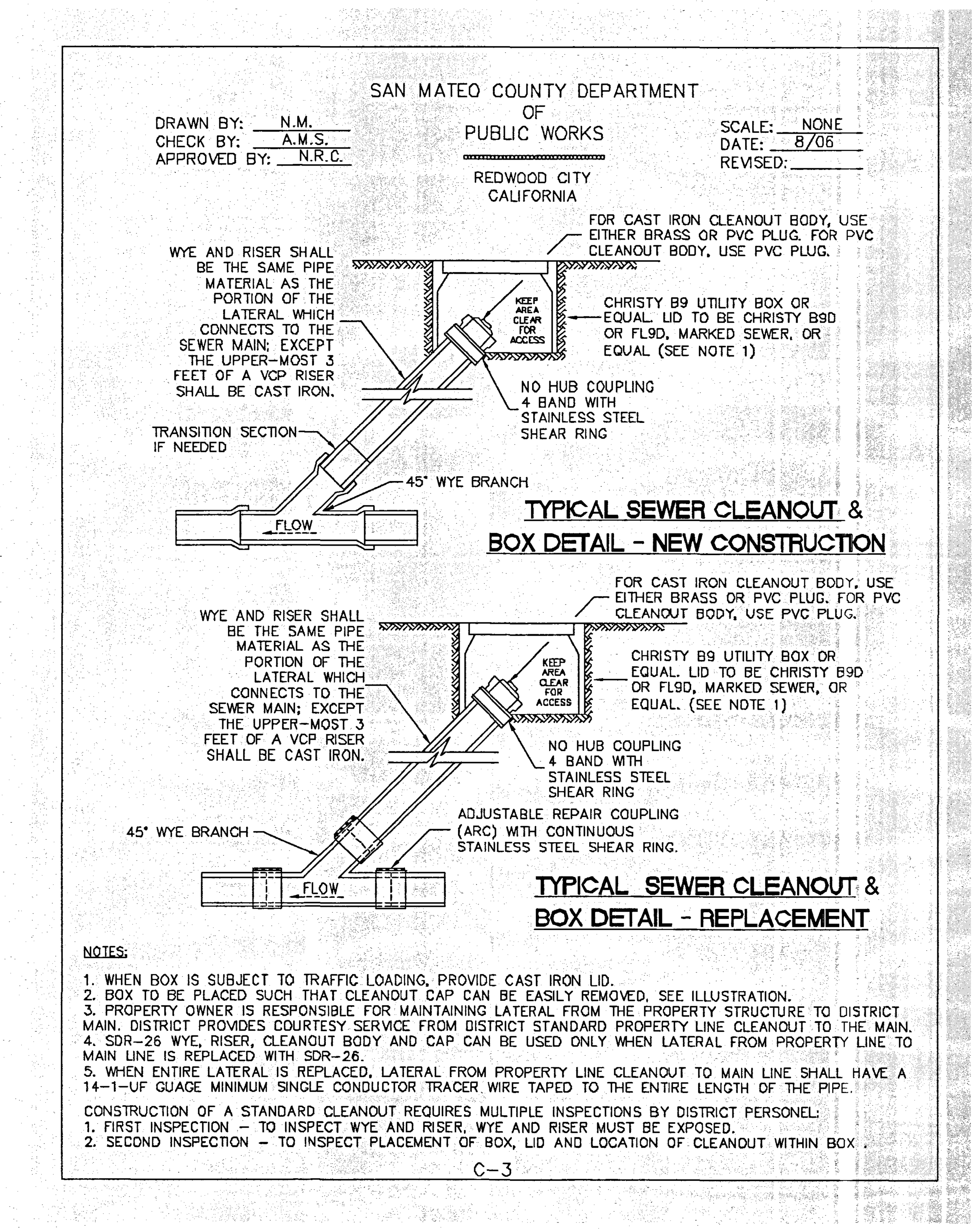
SAN MATEO COUNTY DEPARTMENT OF PUBLIC WORKS
REDWOOD CITY CALIFORNIA
DRAWN BY: N.M.A.
CHECK BY: R.O.
APPROVED BY: N.R.C.
SCALE: NONE
DATE: 6/95
REVISED:
NEAREST UPSTREAM STRUCTURE SURFACE
HOUSE FLOOR LEVEL
BACKWATER OVERFLOW DEVICE
STANDARD 4" WYE
TO MAIN
TO BUILDING
NON-PERFORATED PLASTIC BALL
ALUMINUM CONE
REMOVE STANDARD CLEANOUT PLUG
3" OR 3-1/2" N.P.T. OR PLAIN END
FINISH GRADE
OVERFLOW DEVICE
NOTE: LOCATION OF DEVICE TO APPROVAL OF DISTRICT AND BUILDING DEPARTMENT PRIOR TO INSTALLATION
HINGE POINT
VALVE OPENS TO A ALLOW WASTE WATER TO FLOW INTO SEWER MAIN; VALVE CLOSES BY ITS OWN WEIGHT TO PREVENT WASTEWATER FROM FLOWING BACK TO HOUSE LATERAL.
FLOW FROM HOUSE
TO SEWER MAIN
NOTE: LOCATION OF DEVICE TO APPROVAL OF DISTRICT AND BUILDING DEPARTMENT PRIOR TO INSTALLATION
BACKFLOW DEVICE
OVERFLOW AND BACKFLOW DEVICE DETAIL
C-9

6 SAN MATEO COUNTY OVERFLOW AND BACKFLOW DEVICE DETAIL
NTS



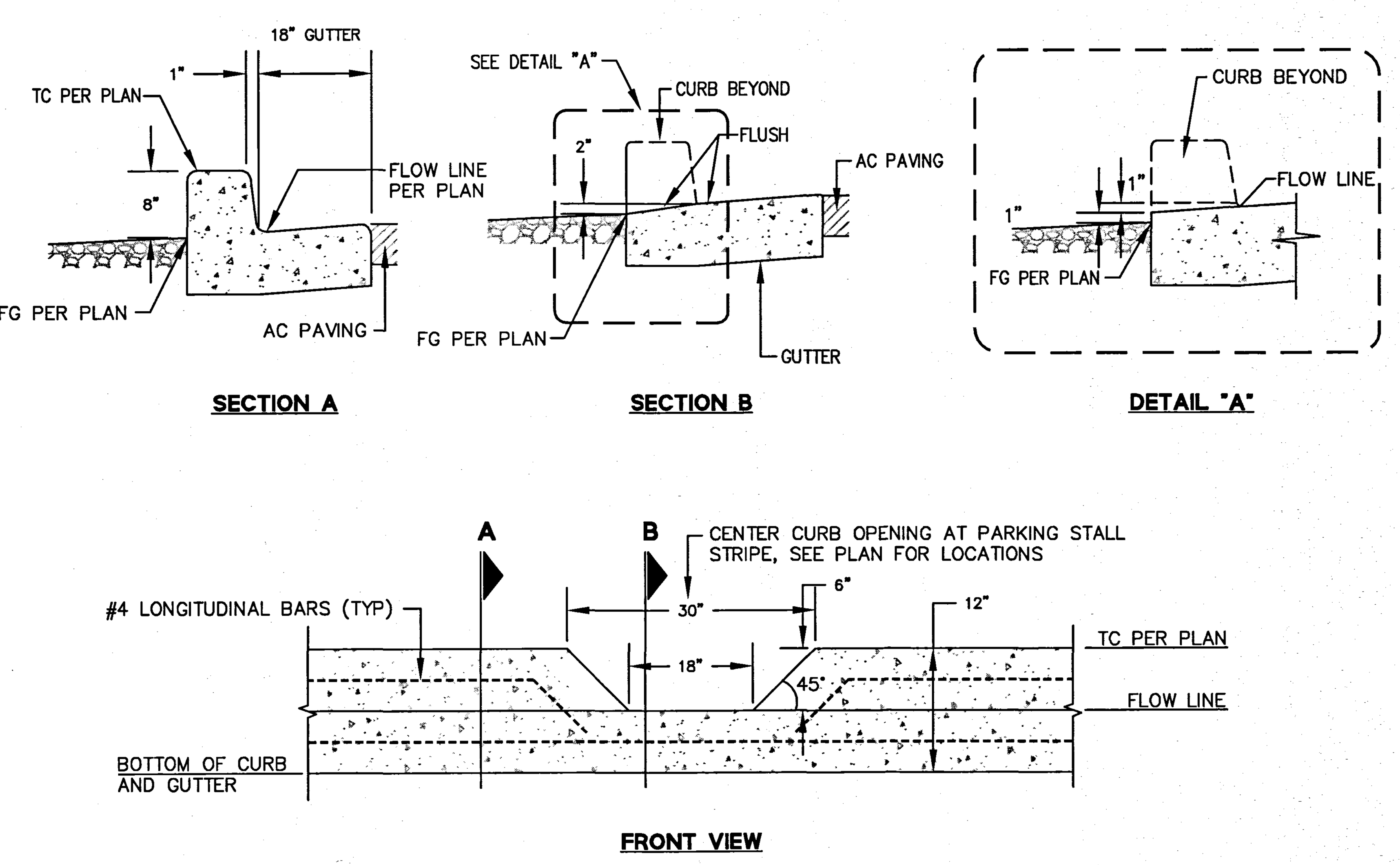
SAN MATEO COUNTY DEPARTMENT OF PUBLIC WORKS
REDWOOD CITY CALIFORNIA
DRAWN BY: N.M.A.
CHECK BY: J.A.L.
APPROVED BY: N.R.C.
SCALE: NONE
DATE: 6/95
REVISED:
CENTERLINE OF RIGHT OF WAY
EXISTING TRAVELED WAY
25' MIN
DISTANCE
GARAGE PAD
COUNTY STANDARD STREET SECTION
PROPERTY LINE
SHOW CONTOUR LINES AT 2' CONTOUR INTERVALS
DRIVEWAY PLAN VIEW
CENTERLINE OF RIGHT OF WAY
25' MIN.
DISTANCE
COUNTY STANDARD STREET SECTION
WIDTH VARIES DEPENDENT ON ZONING - 22' TO 40'
EXISTING GROUND
ELEVATION
GARAGE PAD
PROPOSED DRIVEWAY SLOPE UPHILL OR DOWNHILL (20% MAX.)
EXISTING TRAVELED WAY
ELEVATION
EXISTING GROUND
ELEVATION
GARAGE PAD
NOTE:
WHEN EXISTING STANDARD CURB, GUTTER AND/OR SIDEWALK DO NOT EXIST, THE DRIVEWAY ELEVATION AT THE FUTURE PROPERTY LINE SHALL BE EQUAL TO THE EXISTING CENTERLINE ELEVATION UNLESS FUTURE STREET GRADES HAVE BEEN ESTABLISHED BY THE COUNTY.
DRIVEWAY PROFILE VIEW
D-7

5 SAN MATEO COUNTY DRIVEWAY PLAN AND PROFILE VIEWS
NTS



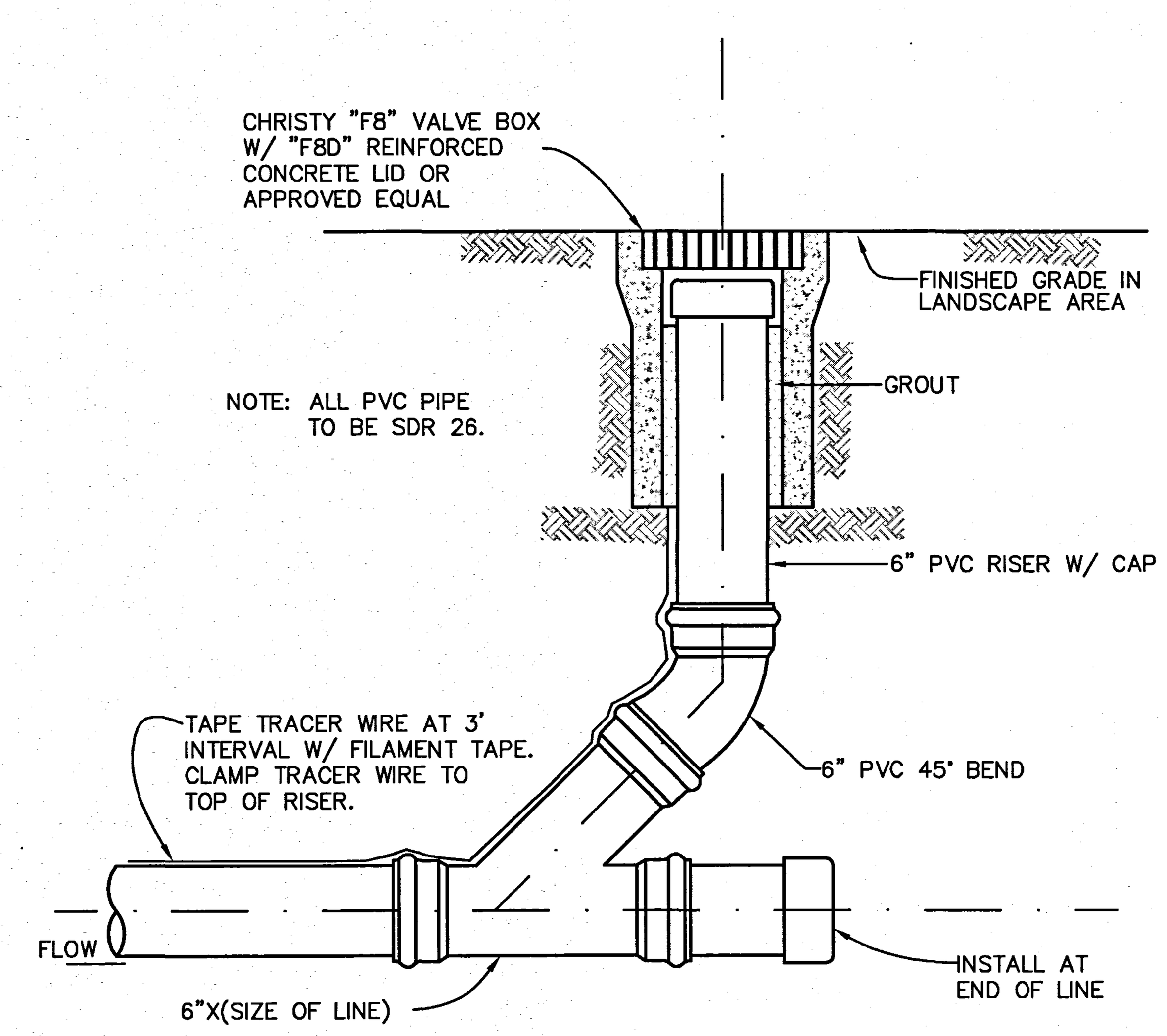
SAN MATEO COUNTY DEPARTMENT OF PUBLIC WORKS
REDWOOD CITY CALIFORNIA
DRAWN BY: N.M.
CHECK BY: A.M.S.
APPROVED BY: N.R.C.
SCALE: NONE
DATE: 8/06
REVISED:
FOR CAST IRON CLEANOUT BODY, USE EITHER BRASS OR PVC PLUG. FOR PVC CLEANOUT BODY, USE PVC PLUG.
WYE AND RISER SHALL BE THE SAME PIPE MATERIAL AS THE PORTION OF THE LATERAL WHICH CONNECTS TO THE SEWER MAIN; EXCEPT THE UPPER-MOST 3 FEET OF A VCP RISER SHALL BE CAST IRON.
CHRISTY B9 UTILITY BOX OR EQUAL. LID TO BE CHRISTY B9D OR FL9D, MARKED SEWER, OR EQUAL (SEE NOTE 1)
NO HUB COUPLING 4 BAND WITH STAINLESS STEEL SHEAR RING
TRANSITION SECTION IF NEEDED
45° WYE BRANCH
FLOW
TYPICAL SEWER CLEANOUT & BOX DETAIL - NEW CONSTRUCTION
FOR CAST IRON CLEANOUT BODY, USE EITHER BRASS OR PVC PLUG. FOR PVC CLEANOUT BODY, USE PVC PLUG.
WYE AND RISER SHALL BE THE SAME PIPE MATERIAL AS THE PORTION OF THE LATERAL WHICH CONNECTS TO THE SEWER MAIN; EXCEPT THE UPPER-MOST 3 FEET OF A VCP RISER SHALL BE CAST IRON.
CHRISTY B9 UTILITY BOX OR EQUAL. LID TO BE CHRISTY B9D OR FL9D, MARKED SEWER, OR EQUAL. (SEE NOTE 1)
NO HUB COUPLING 4 BAND WITH STAINLESS STEEL SHEAR RING
ADJUSTABLE REPAIR COUPLING (ARC) WITH CONTINUOUS STAINLESS STEEL SHEAR RING.
45° WYE BRANCH
FLOW
TYPICAL SEWER CLEANOUT & BOX DETAIL - REPLACEMENT
NOTES:
1. WHEN BOX IS SUBJECT TO TRAFFIC LOADING, PROVIDE CAST IRON LID.
2. BOX TO BE PLACED SUCH THAT CLEANOUT CAP CAN BE EASILY REMOVED. SEE ILLUSTRATION.
3. PROPERTY OWNER IS RESPONSIBLE FOR MAINTAINING LATERAL FROM THE PROPERTY STRUCTURE TO DISTRICT MAIN. DISTRICT PROVIDES COURTESY SERVICE FROM DISTRICT STANDARD PROPERTY LINE CLEANOUT TO THE MAIN.
4. SDR-26 WYE, RISER, CLEANOUT BODY AND CAP CAN BE USED ONLY WHEN LATERAL FROM PROPERTY LINE TO MAIN LINE IS REPLACED WITH SDR-26.
5. WHEN ENTIRE LATERAL IS REPLACED, LATERAL FROM PROPERTY LINE CLEANOUT TO MAIN LINE SHALL HAVE A 14-1-UF GUAGE MINIMUM SINGLE CONDUCTOR TRACER WIRE TAPED TO THE ENTIRE LENGTH OF THE PIPE.
CONSTRUCTION OF A STANDARD CLEANOUT REQUIRES MULTIPLE INSPECTIONS BY DISTRICT PERSONEL:
1. FIRST INSPECTION - TO INSPECT WYE AND RISER. WYE AND RISER MUST BE EXPOSED.
2. SECOND INSPECTION - TO INSPECT PLACEMENT OF BOX, LID AND LOCATION OF CLEANOUT WITHIN BOX.
C-3

4 SAN MATEO COUNTY TYPICAL SEWER CLEANOUT & BOX DETAIL
NTS



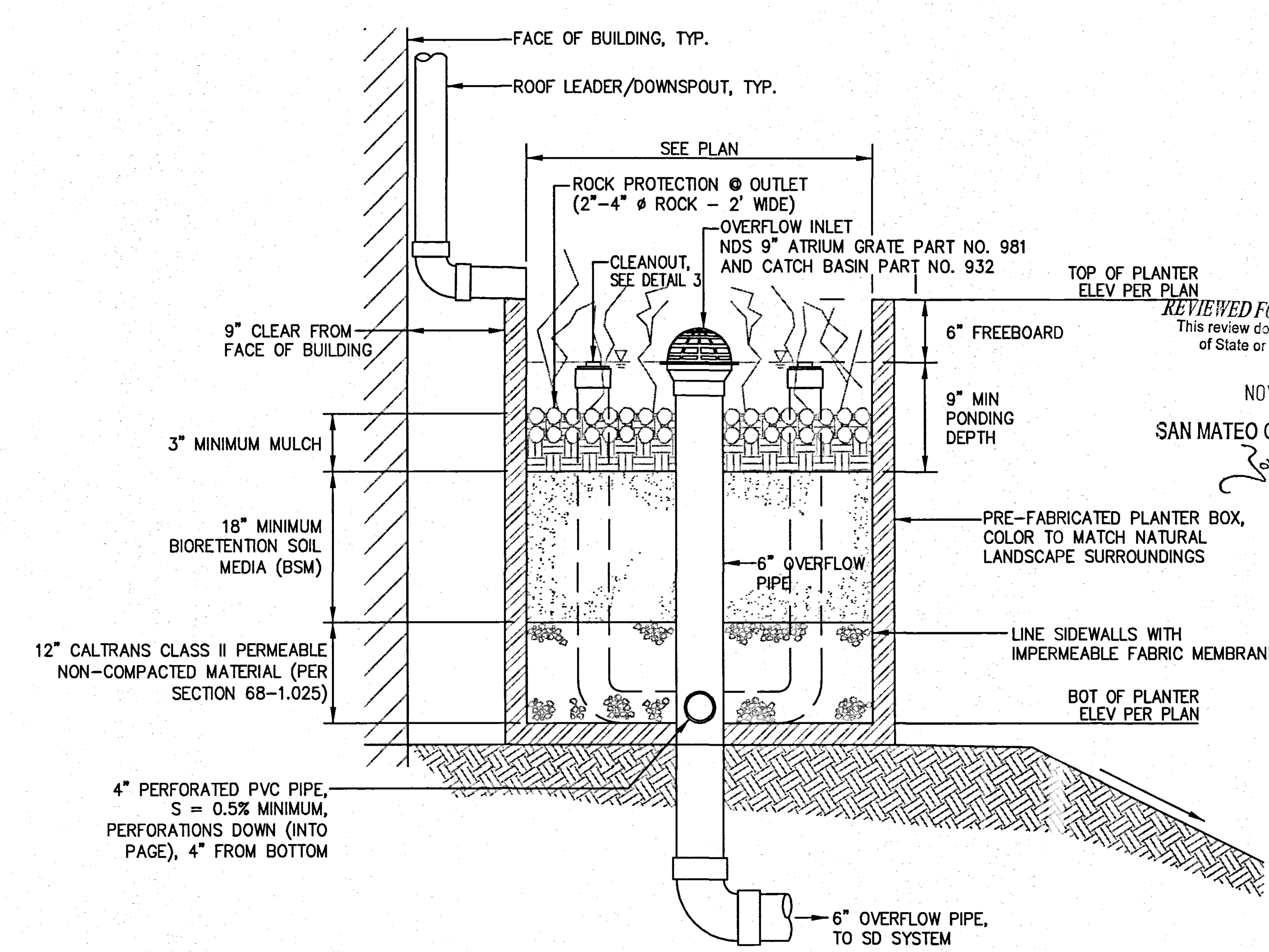
18" GUTTER
TC PER PLAN
1"
FLOW LINE PER PLAN
8"
FG PER PLAN
AC PAVING
SECTION A
SEE DETAIL "A"
CURB BEYOND
FLUSH
2"
AC PAVING
FG PER PLAN
GUTTER
SECTION B
CURB BEYOND
FLOW LINE
FG PER PLAN
DETAIL "A"
A
B
CENTER CURB OPENING AT PARKING STALL STRIPE, SEE PLAN FOR LOCATIONS
#4 LONGITUDINAL BARS (TYP)
30"
6"
12"
18"
45°
TC PER PLAN
FLOW LINE
BOTTOM OF CURB AND GUTTER
FRONT VIEW

3 CURB CUT
NTS



CHRISTY "F8" VALVE BOX W/ "F8D" REINFORCED CONCRETE LID OR APPROVED EQUAL
FINISHED GRADE IN LANDSCAPE AREA
NOTE: ALL PVC PIPE TO BE SDR 26.
GROUT
6" PVC RISER W/ CAP
TAPE TRACER WIRE AT 3' INTERVAL W/ FILAMENT TAPE. CLAMP TRACER WIRE TO TOP OF RISER.
6" PVC 45° BEND
FLOW
INSTALL AT END OF LINE
6"x(SIZE OF LINE)

2 CLEANOUT
NTS



FACE OF BUILDING, TYP.
ROOF LEADER/DOWNSPOUT, TYP.
SEE PLAN
ROCK PROTECTION @ OUTLET (2"-4" ø ROCK - 2' WIDE)
OVERFLOW INLET NDS 9" ATRIUM GRATE PART NO. 981 AND CATCH BASIN PART NO. 932
CLEANOUT, SEE DETAIL 3
TOP OF PLANTER ELEV PER PLAN
9" CLEAR FROM FACE OF BUILDING
6" FREEBOARD
9" MIN PONDING DEPTH
3" MINIMUM MULCH
18" MINIMUM BIORETENTION SOIL MEDIA (BSM)
PRE-FABRICATED PLANTER BOX, COLOR TO MATCH NATURAL LANDSCAPE SURROUNDINGS
6" OVERFLOW PIPE
12" CALTRANS CLASS II PERMEABLE NON-COMPACTED MATERIAL (PER SECTION 68-1.025)
LINE SIDEWALLS WITH IMPERMEABLE FABRIC MEMBRANE
BOT OF PLANTER ELEV PER PLAN
4" PERFORATED PVC PIPE, S = 0.5% MINIMUM, PERFORATIONS DOWN (INTO PAGE), 4" FROM BOTTOM
6" OVERFLOW PIPE, TO SD SYSTEM

1 FLOW-THROUGH PLANTER (FTP)
NTS

REVIEWED FOR CODE COMPLIANCE
This review does not authorize violation of State or County building laws.
NOV 1 3 2019
SAN MATEO CO. BLDG. INSP. DIV.

RESUBMITTAL
OCT 1 0 2018
San Mateo County Building Inspection

BKF
ENGINEERS / SURVEYORS / PLANNERS
255 SHORELINE DRIVE, SUITE 200
REDWOOD CITY, CA 94065
PHONE: (650) 482-6300
FAX: (650) 482-6399

REGISTERED PROFESSIONAL ENGINEER No. C67726 CIVIL STATE OF CALIFORNIA

HIGHLAND ESTATES LOT 9 IMPROVEMENT PLANS CONSTRUCTION DETAILS

CITY OF SAN MATEO SAN MATEO COUNTY CALIFORNIA

Date	10/8/2018
Scale	AS SHOWN
Design	JT
Drawn	LE
Approved	RH/JT
Job No	950168-20

Revisions | No.

Sheet Number:
C9.70
OF

DRAWING NAME: K:\Eng95\950168\dwg\CD\Lot_9\C9.70-HECDDT.dwg
PLOT DATE: 10-09-18 PLOTTED BY: holt

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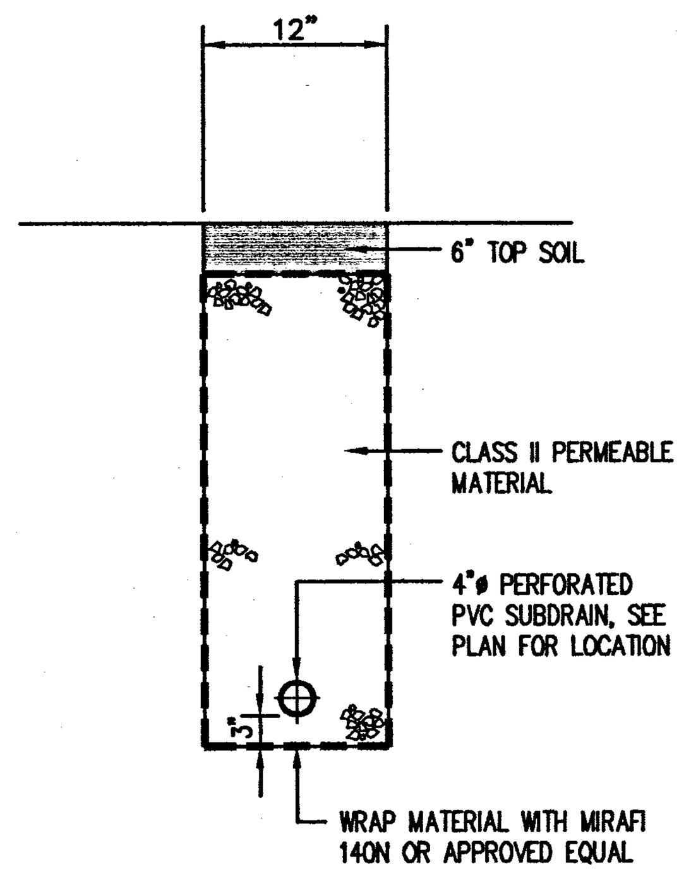
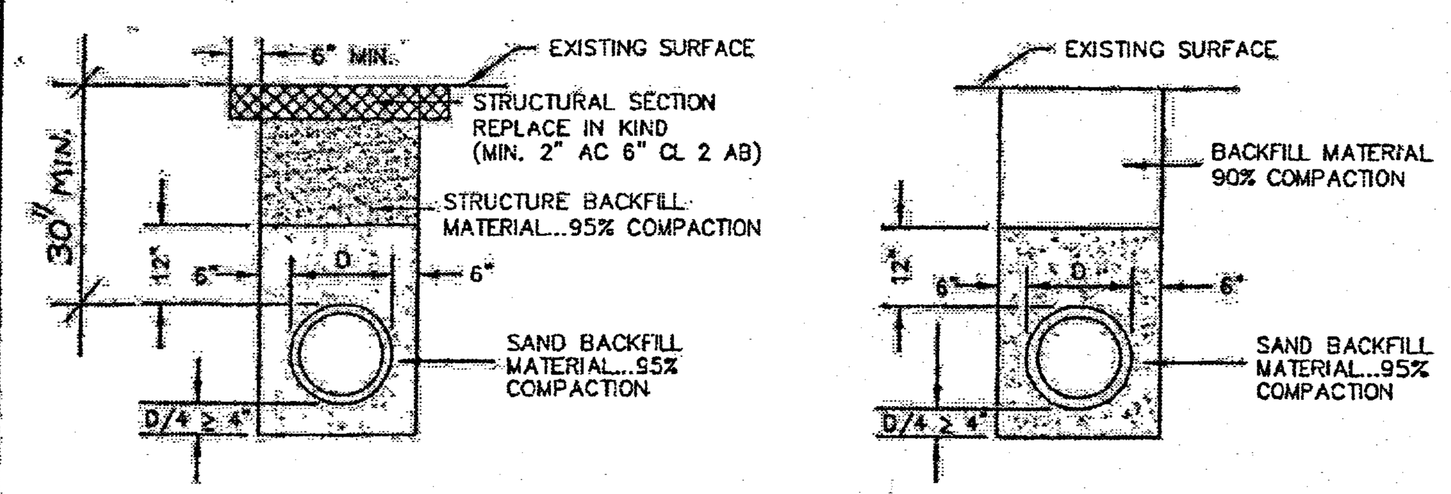


7 — SUBDRAIN
NTS

SAN MATEO COUNTY DEPARTMENT OF PUBLIC WORKS
REDWOOD CITY CALIFORNIA

DRAWN BY: M.L. CHECK BY: D.M.W. APPROVED BY: N.R.C.
SCALE: NONE DATE: 6/95 REVISED: 7/97



TYPE A (IN ROADWAY)   TYPE B (OUTSIDE ROADWAY)

NOTES

1. SAND.... MATERIAL FREE FROM ORGANIC MATTER AND CLAY WITH A SIEVE GRADATION BY WEIGHT AS FOLLOWS:

SIEVE SIZE	% PASSING SIEVE
No. 4	100
No. 200	0–5

2. STRUCTURE BACKFILL MATERIAL.... MATERIAL WITH SAND EQUIVALENT NOT LESS THAN 20 AND SIEVE GRADATION BY WEIGHT AS FOLLOWS:

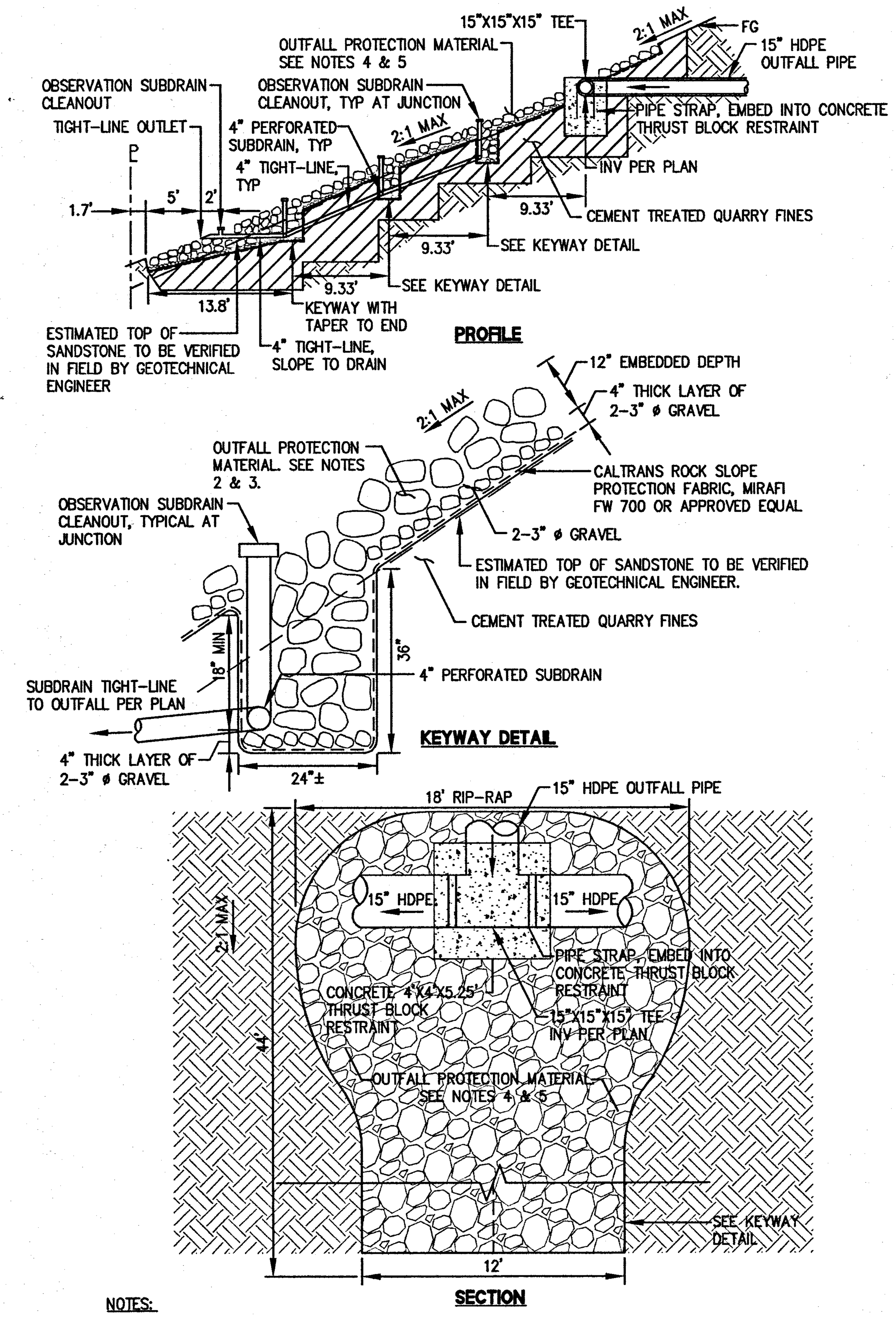
SIEVE SIZE	% PASSING SIEVE
3"	100
No. 4	35–100
No. 30	20–100

3. BACKFILL MATERIAL.... MATERIAL FROM EXCAVATION, FREE FROM STONES OR LUMPS EXCEEDING 3 INCHES GREATEST DIMENSION, ORGANIC MATTER, OR OTHER UNSATISFACTORY MATERIAL.

STANDARD TRENCH BACKFILL AND BEDDING DETAIL

W-10

6 — SAN MATEO COUNTY STANDARD TRENCH BACKFILL & BEDDING DETAIL
NTS



NOTES:

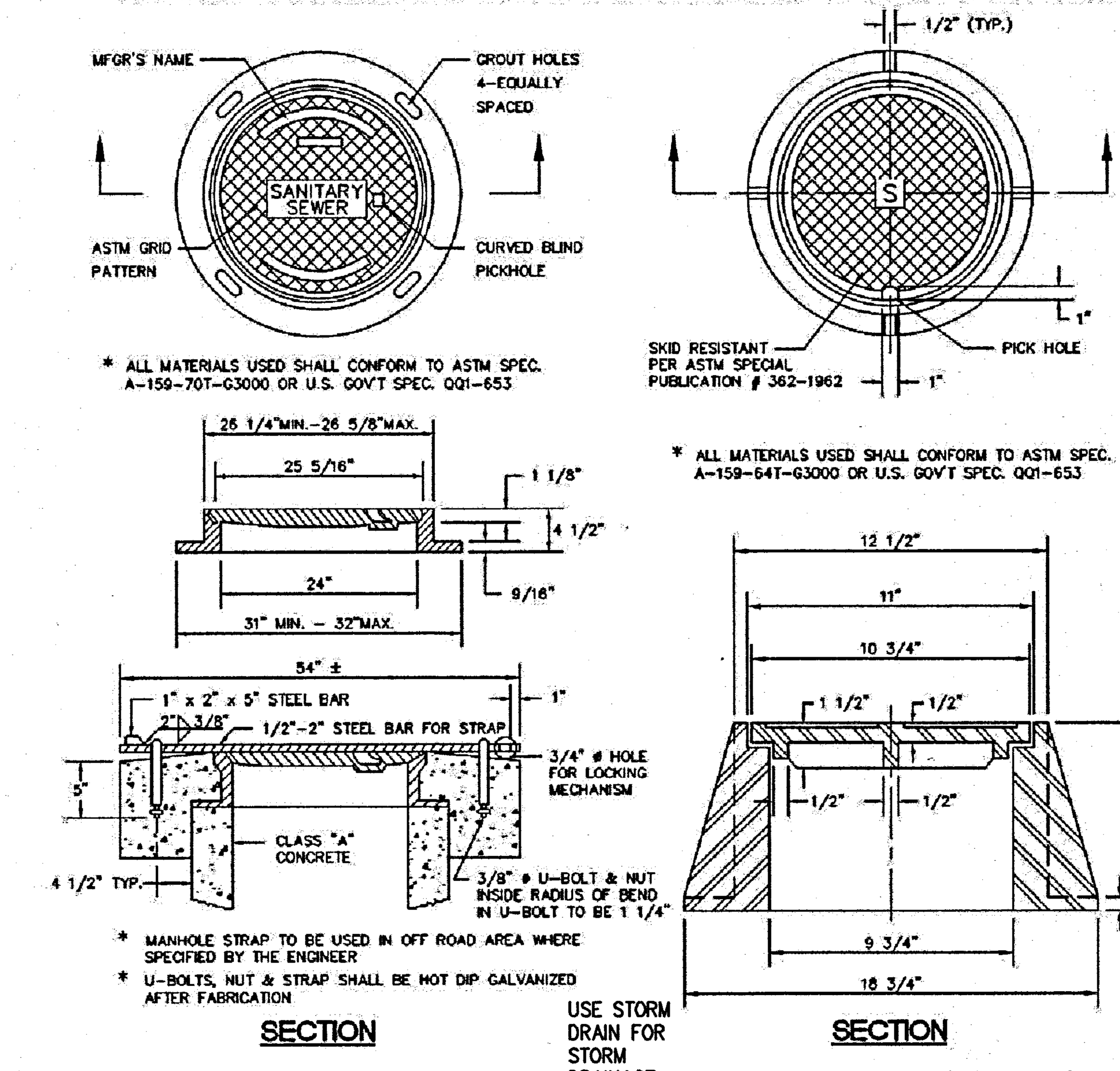
1. ALL HEADWALLS SHALL BE PLASTIC AND CONSTRUCTED IN CONFORMANCE WITH CALTRANS STANDARD PLAN D94A AND SECTION 70-5.02 OF THE CALTRANS STANDARD SPECIFICATIONS, 2015.
2. PIPE MATERIAL TO BE HDPE, CORRUGATED EXTERIOR WITH SMOOTH INTERIOR.
3. CONCRETE THRUST BLOCK TO BE PCC.
4. AREA OF ROCK RIP-RAP OUTFALL/EROSION PROTECTION IN ACCORDANCE WITH VELOCITY DISSIPATION DEVICES EC-10 OF THE CALIFORNIA STORMWATER QUALITY ASSOCIATION (CASQA) BMP HANDBOOK, JANUARY 2011.
5. OUTFALL PROTECTION MATERIAL:
   -CALTRANS ROCK SLOPE PROTECTION FABRIC WITH NO. 2 BACKING CONFORMING TO SECTION 72 OF THE CALTRANS STANDARD SPECIFICATIONS.
   -CALTRANS NO. 2 TO BE ~8" SIZE ANGULAR ROCK (25 LBS, TYP.) BROWN TO DARK BROWN/BLACK IN COLOR.
6. KEYWAYS SHALL BE EVENLY SPACED ALONG THE RIP-RAP LENGTH.
7. SEE SHEETS C9.91 AND C9.93 FOR CEMENT TREATED QUARRY FINES.

4 — OUTLET STRUCTURE
NTS

SAN MATEO COUNTY DEPARTMENT OF PUBLIC WORKS
REDWOOD CITY CALIFORNIA

DRAWN BY: M.L. CHECK BY: R.O. APPROVED BY: N.R.C.
SCALE: NONE DATE: 6/95 REVISED:

GENERAL NOTE:
FRAME AND COVER SHALL MEET OR EXCEED THE REQUIREMENTS OF AASHTO H-20 LOADING.



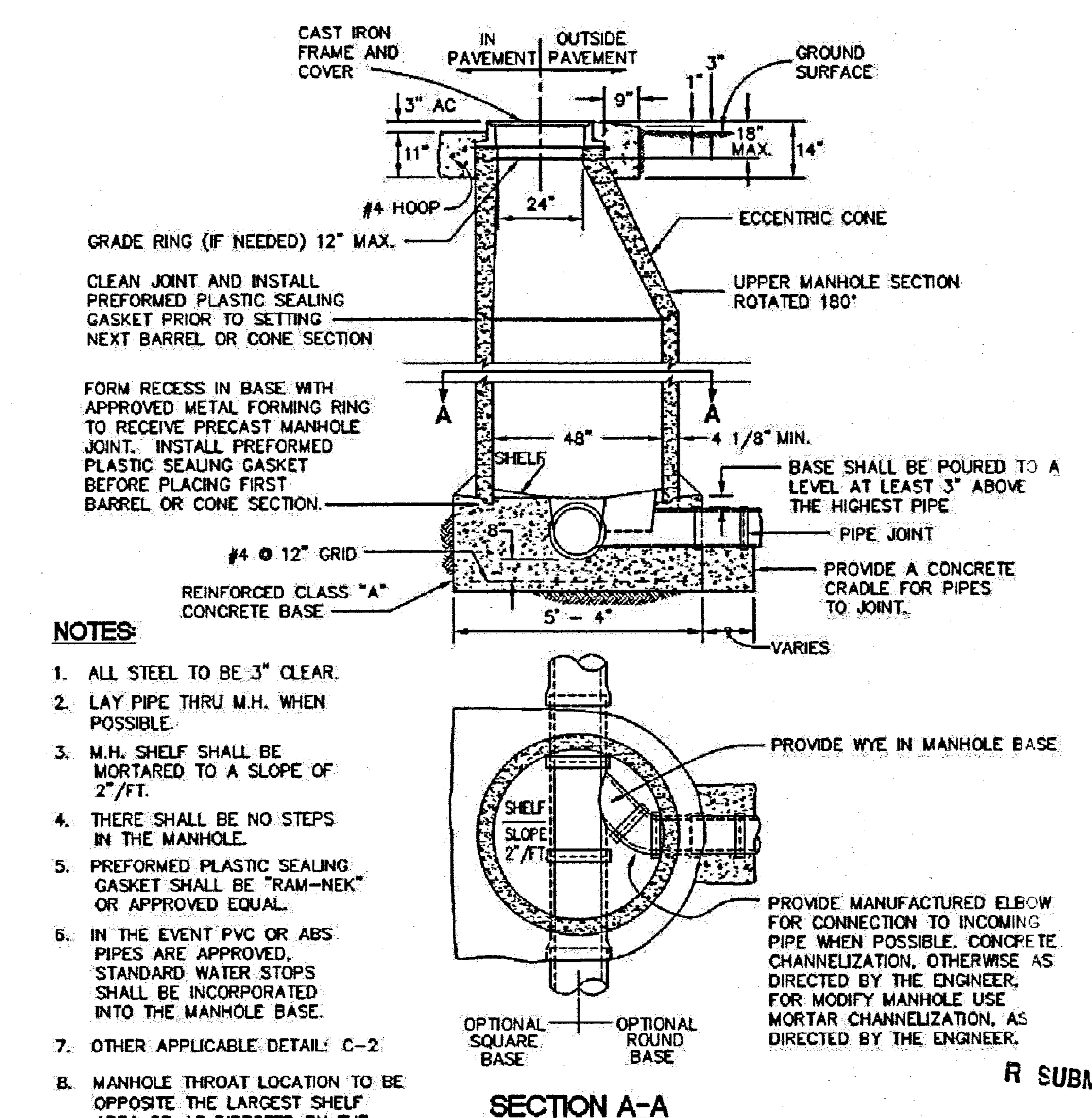
SANITARY SEWER MANHOLE COVER, FRAME AND STRAP DETAIL   C-2

SANITARY SEWER FLUSHING INLET COVER

2 — MANHOLE FRAME AND COVER
NTS

SAN MATEO COUNTY DEPARTMENT OF PUBLIC WORKS
REDWOOD CITY CALIFORNIA

DRAWN BY: D.P. CHECK BY: R.O. APPROVED BY: N.R.C.
SCALE: NONE DATE: 6/95 REVISED: 7/97



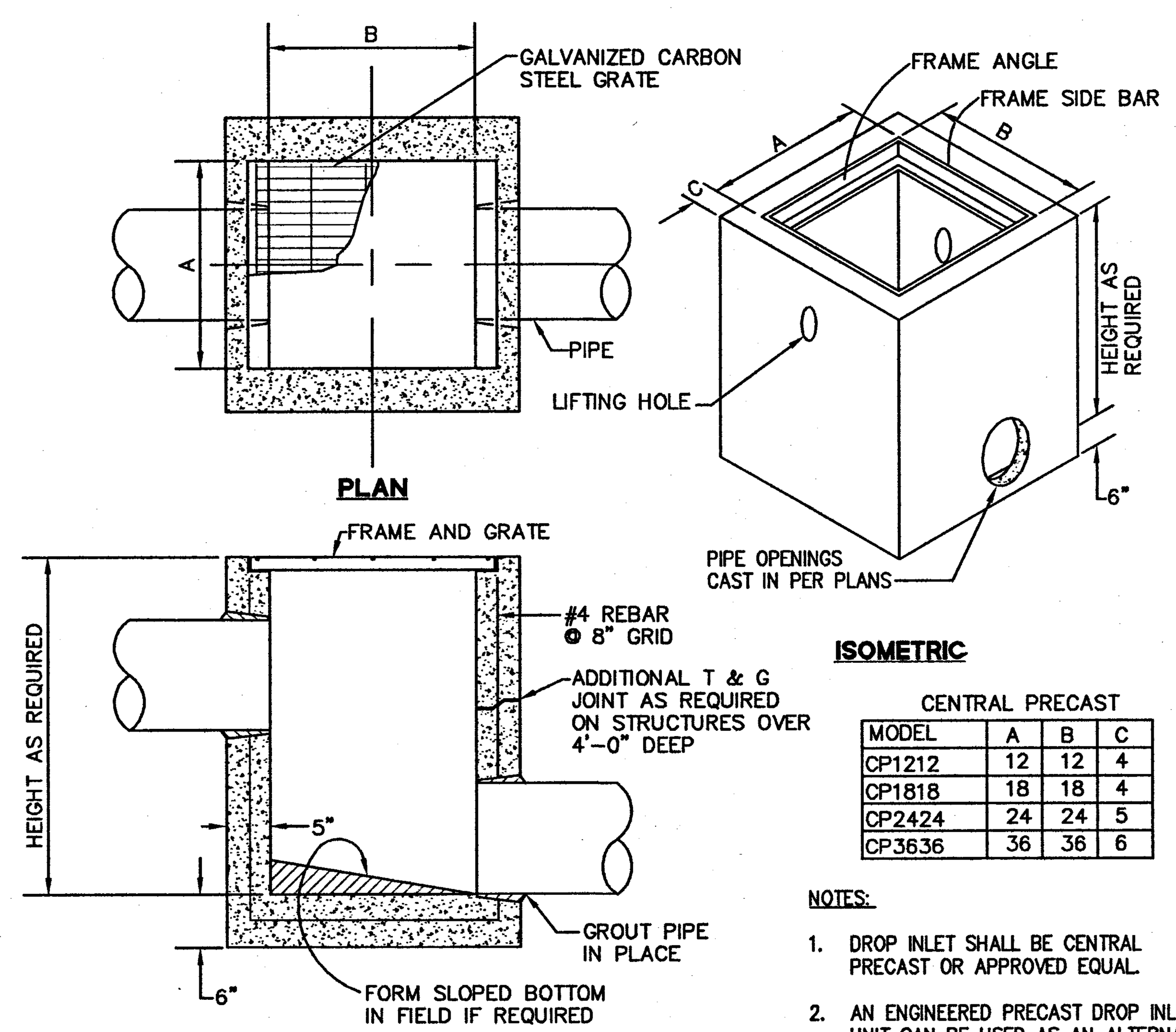
NOTES:

1. ALL STEEL TO BE 3" CLEAR.
2. LAY PIPE THRU M.H. WHEN POSSIBLE.
3. M.H. SHELF SHALL BE MORTARED TO A SLOPE OF 2"/FT.
4. THERE SHALL BE NO STEPS IN THE MANHOLE.
5. PREFORMED PLASTIC SEALING GASKET SHALL BE "RAM-NEK" OR APPROVED EQUAL.
6. IN THE EVENT PVC OR ABS PIPES ARE APPROVED, STANDARD WATER STOPS SHALL BE INCORPORATED INTO THE MANHOLE BASE.
7. OTHER APPLICABLE DETAIL: C-2
8. MANHOLE THROAT LOCATION TO BE OPPOSITE THE LARGEST SHELF AREA OR AS DIRECTED BY THE ENGINEER

SANITARY SEWER MANHOLE DETAIL

C-1

1 — MANHOLE (PIPES 6" TO 21")
NTS



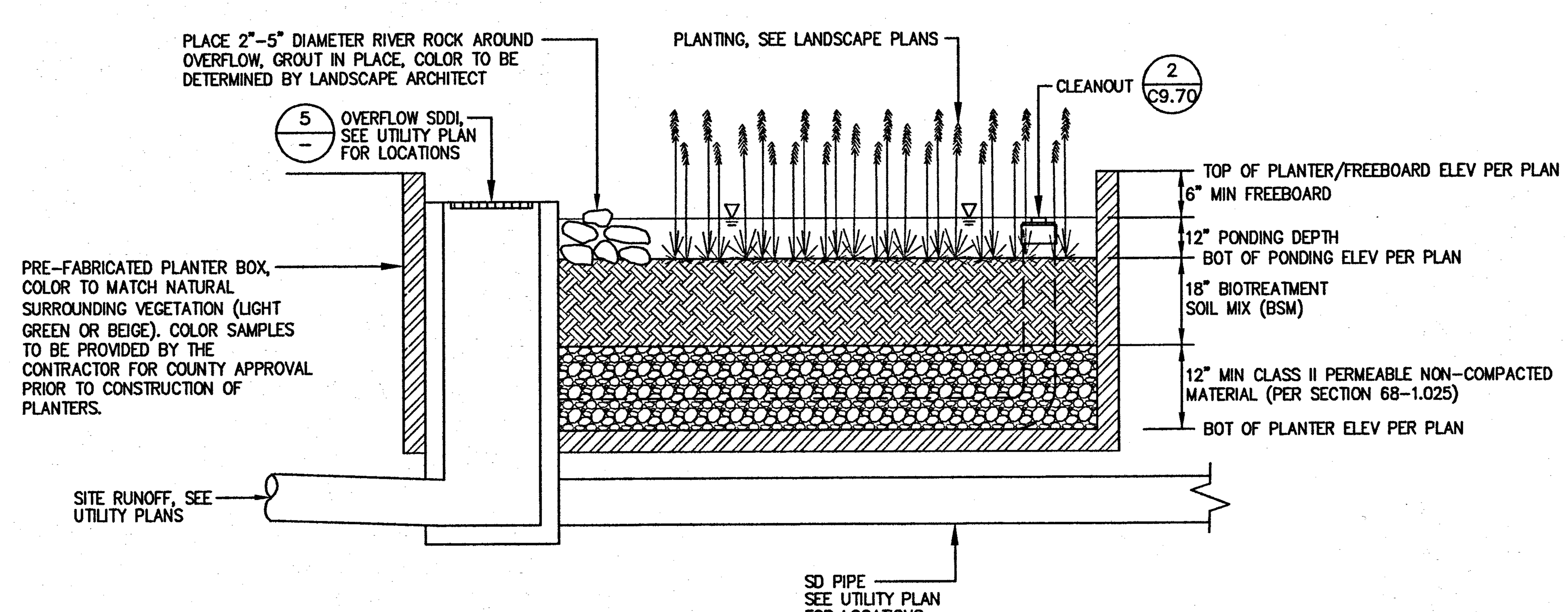
CENTRAL PRECAST

MODEL	A	B	C
CP1212	12	12	4
CP1818	18	18	4
CP2424	24	24	5
CP3636	36	36	6

NOTES:

1. DROP INLET SHALL BE CENTRAL PRECAST OR APPROVED EQUAL.
2. AN ENGINEERED PRECAST DROP INLET UNIT CAN BE USED AS AN ALTERNATE.

5 — DROP INLET
NTS



3 — AT-GRADE FLOW-THROUGH PLANTER
NTS

REVIEWED FOR CODE COMPLIANCE
NOV 1 5 2019
SAN MATEO CO. BLDG. INSP. DIV.

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NOV 20 2018
San Mateo County Building Inspection

DRAWING NAME: K:\Eng95\950168\dwg\EXHIBITS\2018-11-06 Geotechnical Exhibits\C9.71-HECDDT.dwg
PLOT DATE: 11-06-18 PLOTTED BY: holt

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HIGHLAND ESTATES LOT 9 IMPROVEMENT PLANS CONSTRUCTION DETAILS

SAN MATEO COUNTY
CITY OF SAN MATEO   CALIFORNIA

Revisions

Date 10/8/2018
Scale AS SHOWN
Design RH
Drawn NH
Approved RH/JT
Job No 950168-20

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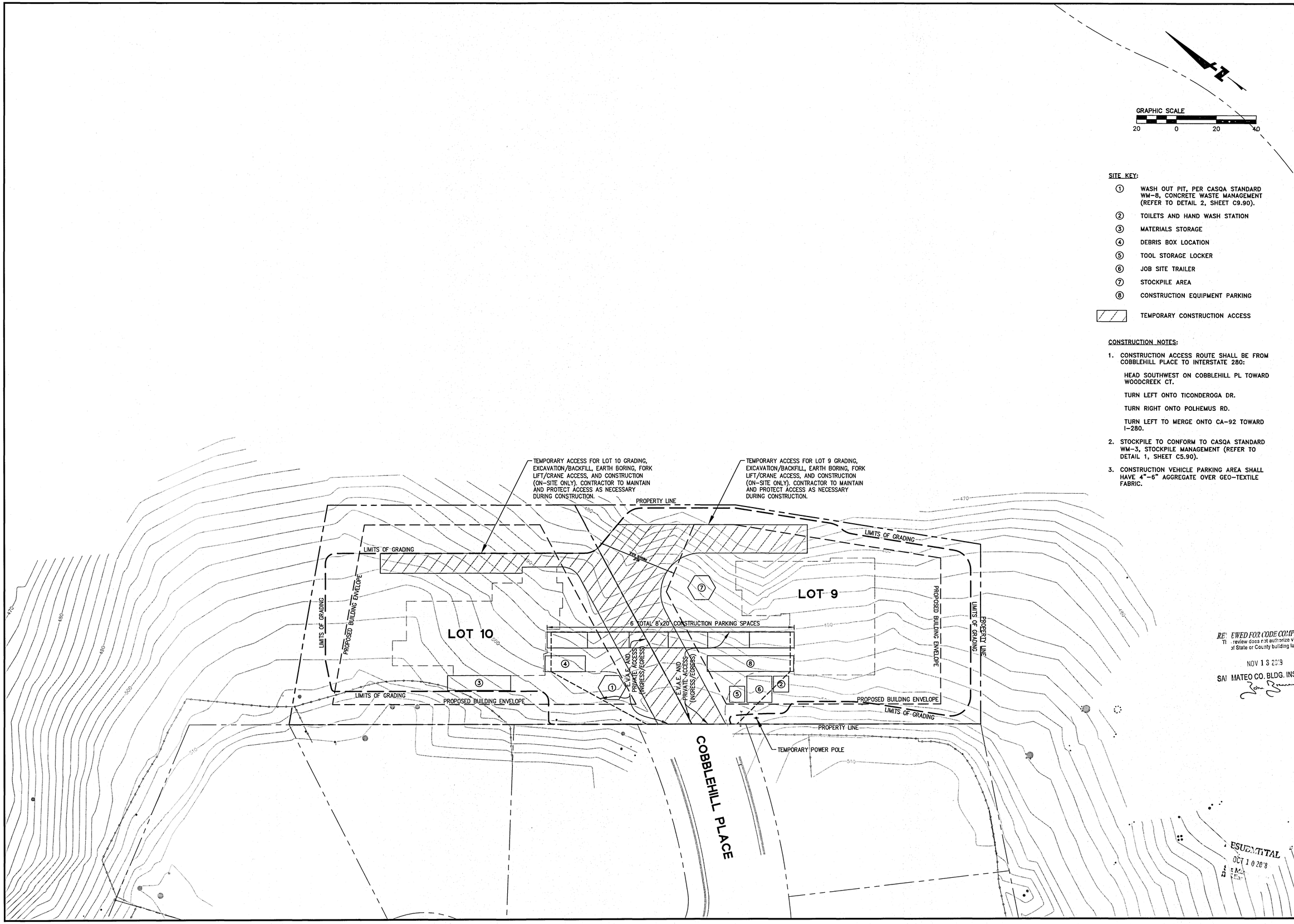
OF



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HIGHLAND ESTATES
LOT 9 IMPROVEMENT PLANS
LOGISTICS PLAN

CITY OF SAN MATEO — SAN MATEO COUNTY — CALIFORNIA

REVIEWED FOR CODE COMPLIANCE
This review does not authorize violation of State or County building laws.
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RESUBMITTAL
OCT 10 2018

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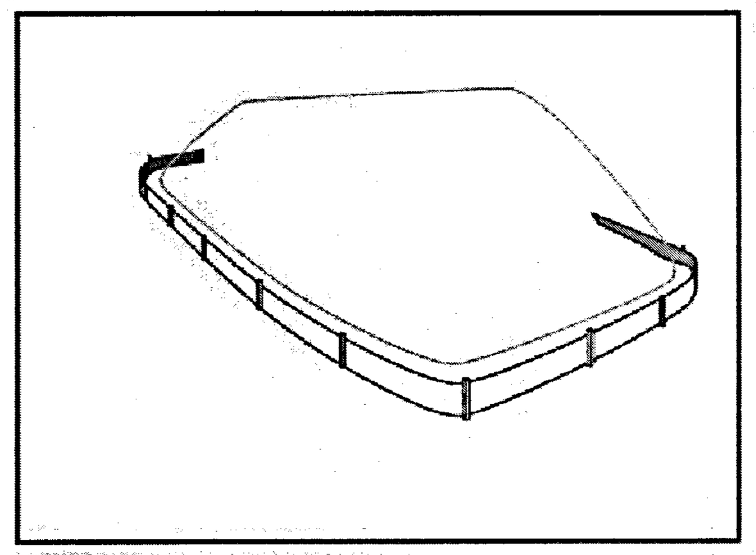
PLOT DATE: 10-09-18
PLOTTED BY: holt

Stockpile Management WM-3



Categories		
EC	Erosion Control	
SE	Sediment Control	☒
TC	Tracking Control	
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	☒
WM	Waste Management and Materials Pollution Control	☑

Legend:
☑ **Primary Category**
☒ **Secondary Category**

Targeted Constituents	
Sediment	☑
Nutrients	☑
Trash	☑
Metals	☑
Bacteria	
Oil and Grease	☑
Organics	☑

Potential Alternatives
None

Description and Purpose
Stockpile management procedures and practices are designed to reduce or eliminate air and stormwater pollution from stockpiles of soil, soil amendments, sand, paving materials such as portland cement concrete (PCC) rubble, asphalt concrete (AC), asphalt concrete rubble, aggregate base, aggregate sub base or pre-mixed aggregate, asphalt minder (so called "cold mix" asphalt), and pressure treated wood.

Suitable Applications
Implement in all projects that stockpile soil and other loose materials.

Limitations
- Plastic sheeting as a stockpile protection is temporary and hard to manage in windy conditions. Where plastic is used, consider use of plastic tarps with nylon reinforcement which may be more durable than standard sheeting.
- Plastic sheeting can increase runoff volume due to lack of infiltration and potentially cause perimeter control failure.
- Plastic sheeting breaks down faster in sunlight.
- The use of plastic materials should be avoided when feasible and photodegradable plastics should not be used.

Implementation
Protection of stockpiles is a year-round requirement. To properly manage stockpiles:

CASQA
CALIFORNIA STORMWATER QUALITY ASSOCIATION

Stockpile Management WM-3

- On larger sites, a minimum of 50 ft separation from concentrated flows of stormwater, drainage courses, and inlets is recommended.
- All stockpiles are required to be protected immediately if they are not scheduled to be used within 14 days.
- Protect all stockpiles from stormwater run-on using temporary perimeter sediment barriers such as compost berms (SE-13), temporary silt dikes (SE-12), fiber rolls (SE-5), silt fences (SE-1), sandbags (SE-8), gravel bags (SE-6), or biofilter bags (SE-14). Refer to the individual fact sheet for each of these controls for installation information.
- Implement wind erosion control practices as appropriate on all stockpiled material. For specific information, see WE-1, Wind Erosion Control.
- Manage stockpiles of contaminated soil in accordance with WM-7, Contaminated Soil Management.
- Place bagged materials on pallets and under cover.
- Ensure that stockpile coverings are installed securely to protect from wind and rain.
- Some plastic covers withstand weather and sunlight better than others. Select cover materials or methods based on anticipated duration of use.

Protection of Non-Active Stockpiles
Non-active stockpiles of the identified materials should be protected further as follows:

Soil stockpiles
- Cover and project soil stockpiles with soil stabilization measures and a temporary perimeter sediment barrier at all times.
- Consider temporary vegetation for topsoil piles that will be stockpiled for extended periods.

Stockpiles of Portland cement concrete rubble, asphalt concrete, asphalt concrete rubble, aggregate base, or aggregate sub base
- Provide covers and protect these stockpiles with a temporary perimeter sediment barrier at all times.

Stockpiles of "cold mix"
- Cover cold mix stockpiles and place them on plastic sheeting (or comparable material) and surround the stockpiles with a berm all times.

Stockpiles of fly ash, stucco, hydrated lime
- Cover stockpiles of materials that may raise the pH of runoff (i.e., basic materials) with plastic and surround the stockpiles with a berm at all times.

Stockpile Management WM-3

Stockpiles/Storage of wood (Pressure treated with chromated copper arsenate or ammoniacal copper zinc arsenate)
- Cover treated wood with plastic sheeting (or comparable material) and surround with a berm at all times.

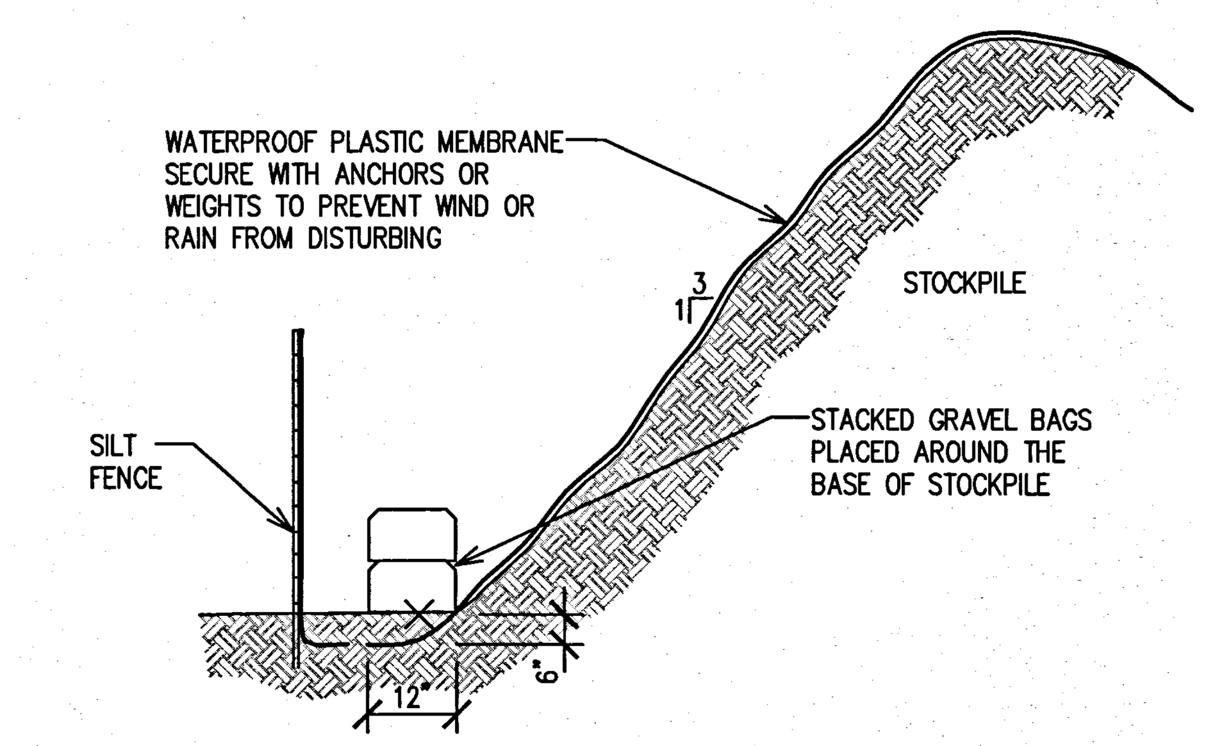
Protection of Active Stockpiles
Active stockpiles of the identified materials should be protected as follows:
- All stockpiles should be covered and protected with a temporary linear sediment barrier prior to the onset of precipitation.
- Stockpiles of "cold mix" and treated wood, and basic materials should be placed on and covered with plastic sheeting or comparable material and surrounded by a berm prior to the onset of precipitation.
- The downstream perimeter of an active stockpile should be protected with a linear sediment barrier or berm and runoff should be diverted around or away from the stockpile on the upstream perimeter.

Costs
For cost information associated with stockpile protection refer to the individual erosion or sediment control BMP fact sheet considered for implementation (For example, refer to SE-1 Silt Fence for installation of silt fence around the perimeter of a stockpile.)

Inspection and Maintenance
- Stockpiles must be inspected in accordance with General Permit requirements for the associated project type and risk level. It is recommended that at a minimum, BMPs be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.
- It may be necessary to inspect stockpiles covered with plastic sheeting more frequently during certain conditions (for example, high winds or extreme heat).
- Repair and/or replace perimeter controls and covers as needed to keep them functioning properly.
- Sediment shall be removed when it reaches one-third of the barrier height.

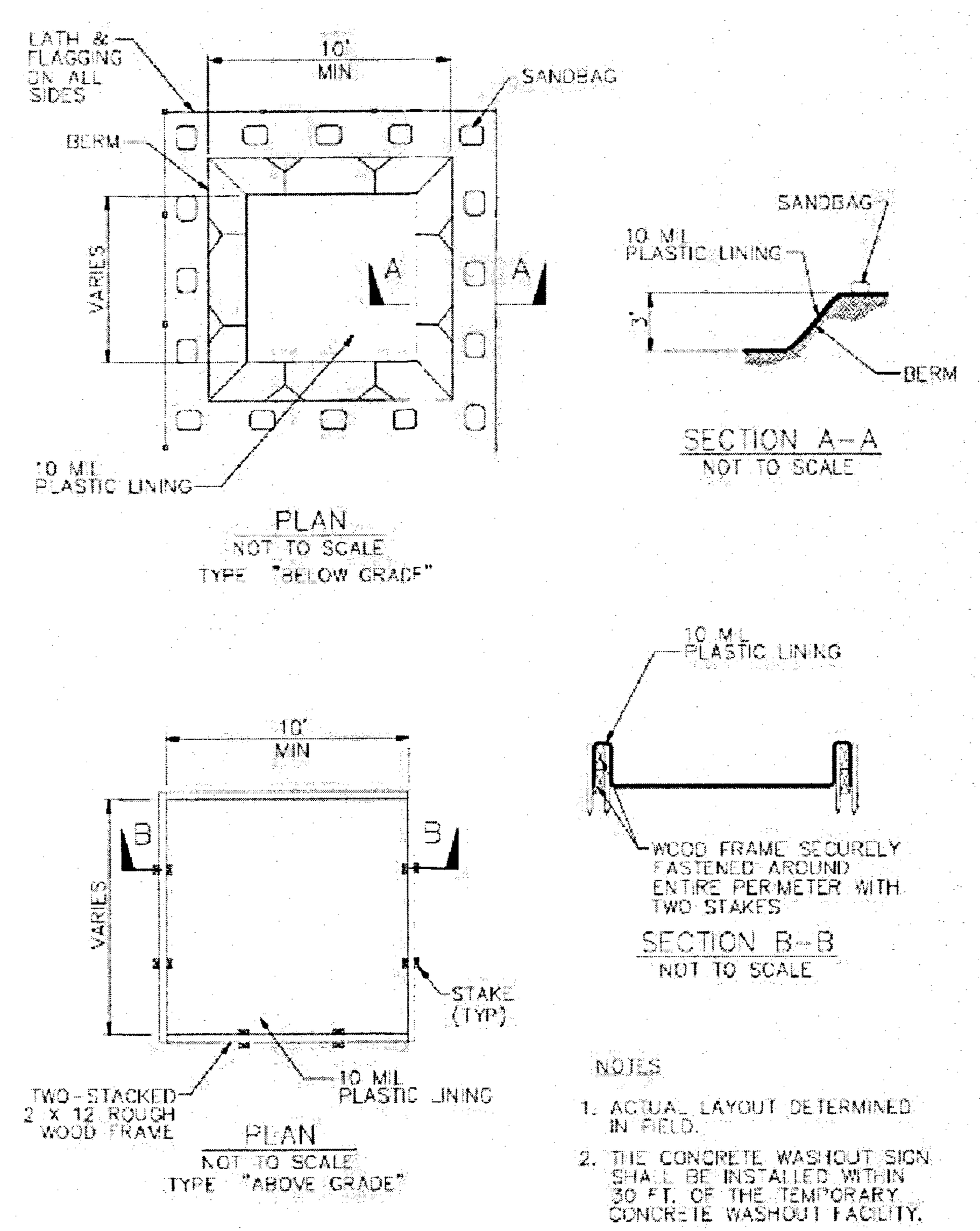
References
Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), March 2003.

WM-3 – STOCKPILE MANAGEMENT
NTS



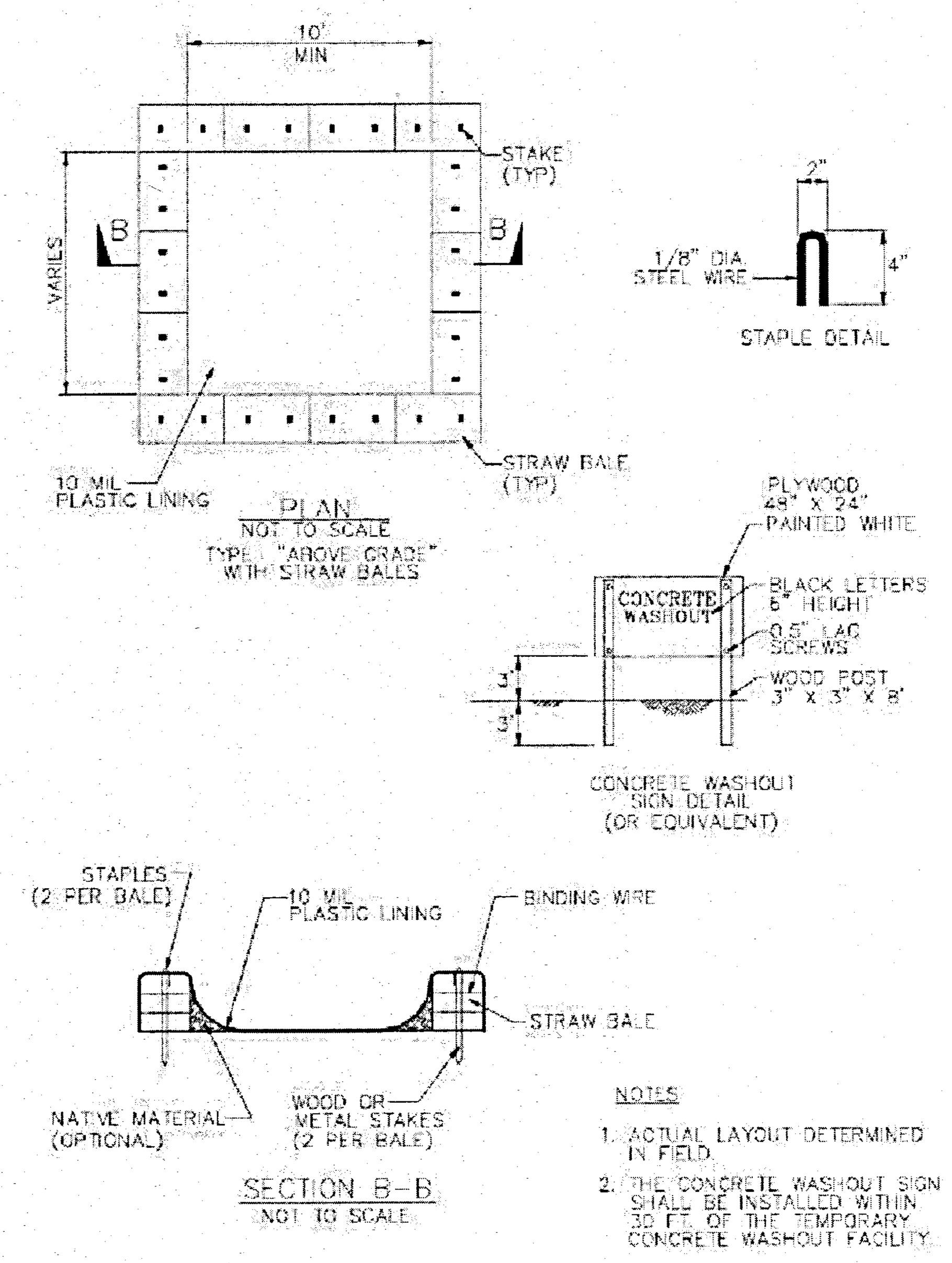
1 – STOCKPILE COVERING
(PER CASQA STANDARD WM-3, STOCKPILE MANAGEMENT, SEE LEFT)
NTS

Concrete Waste Management WM-8



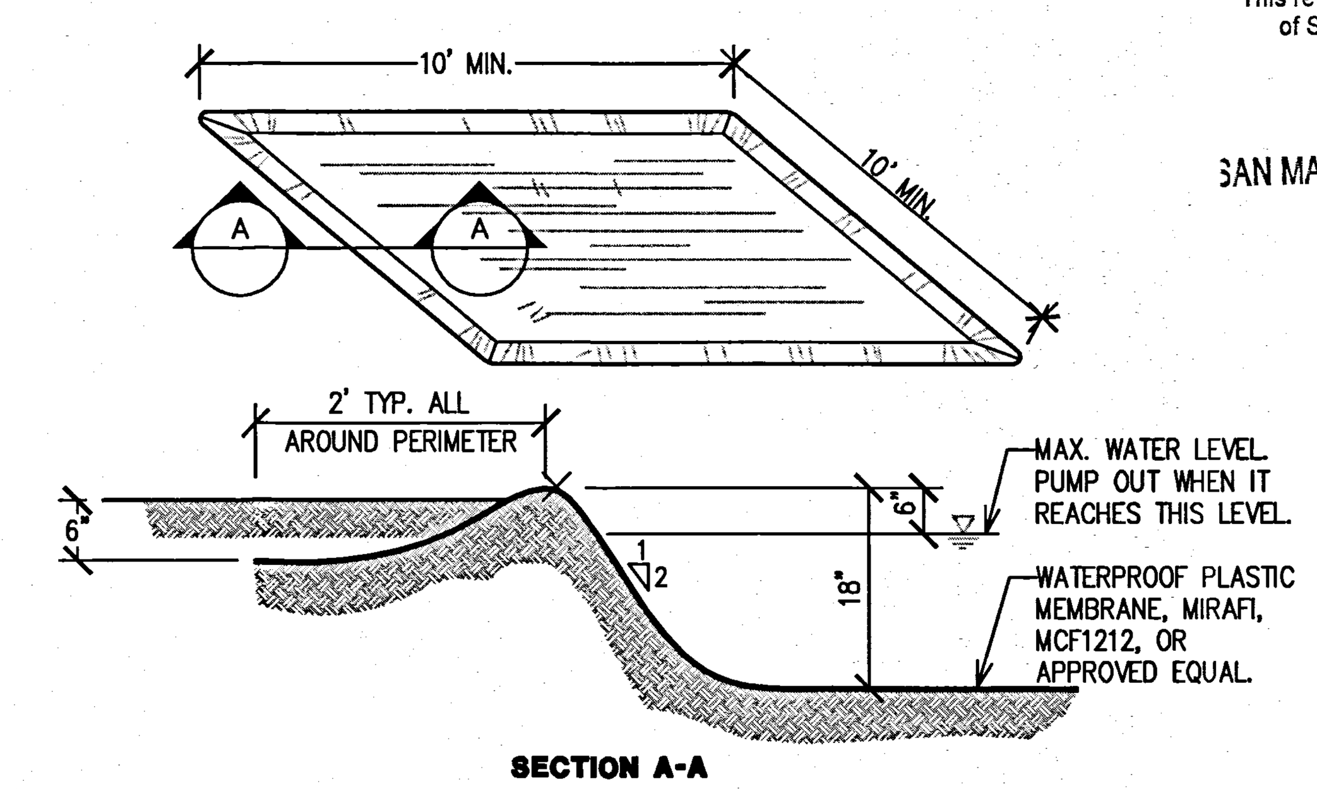
NOTES
1. ACTUAL LAYOUT DETERMINED IN FIELD.
2. THE CONCRETE WASHOUT SIGN SHALL BE INSTALLED WITHIN 30 FT. OF THE TEMPORARY CONCRETE WASHOUT FACILITY.

Concrete Waste Management 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.

WM-8 – CONCRETE WASTE MANAGEMENT
NTS



2 – TEMPORARY WASHOUT PIT
(PER CASQA STANDARD WM-8, CONCRETE WASTE MANAGEMENT, SEE LEFT)
NTS

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San Mateo County Building Inspection

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CIVIL
STATE OF CALIFORNIA

HIGHLAND ESTATES
LOT 9 IMPROVEMENT PLANS
CASQA STANDARD DETAILS
CITY OF SAN MATEO SAN MATEO COUNTY CALIFORNIA

No.	Revisions

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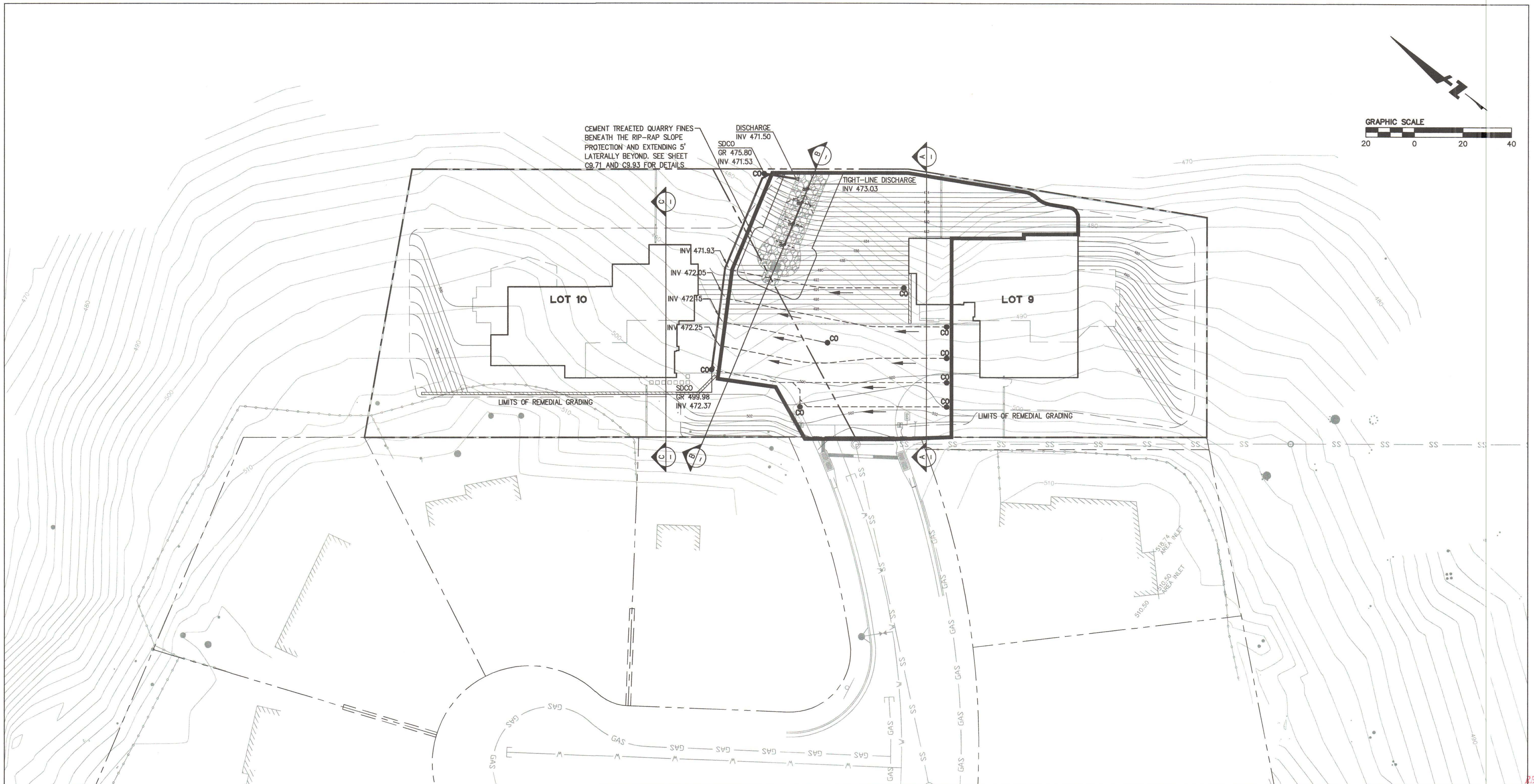

LEGEND

(heavy outline)	AREA OF OVER-EXCAVATION, KEYING, AND BENCHING FOR FILL REMOVAL (I.E. REMEDIAL GRADING). (SEE GEOTECHNICAL REPORT FOR ADDITIONAL INFORMATION); ALSO SEE SHEETS C9.30, C9.40, C9.92 AND C9.93 FOR EARTHWORK, KEYING, BENCHING, AND SUBDRAIN MITIGATION DETAILS.
(dashed line with arrow)	4" PERFORATED SUBDRAIN FOR KEYWAY, NOTE THE FINAL LOCATIONS OF THE SUBDRAIN WILL BE DETERMINED BY CORNERSTONE DURING CONSTRUCTION, ARROW IS ANTICIPATED DIRECTION OF FLOW.

BKF HAS PREPARED THESE PLANS BASED ON CORNERSTONE EARTH GROUP GEOTECHNICAL INVESTIGATION. AND RECOMMENDATIONS.

REGISTERED PROFESSIONAL ENGINEER JONATHAN TANG No. C67726 CIVIL STATE OF CALIFORNIA

JONATHAN TANG, P.E.

THE UNDERSIGNED GEOTECHNICAL ENGINEER HAS PERFORMED A GEOTECHNICAL INVESTIGATION AT THE SITE INCLUDING PERFORMING FIELD INVESTIGATION, LABORATORY TESTING, ENGINEERING ANALYSIS, AND REPORT PREPARATION AS DESCRIBED IN THE OCTOBER 30, 2015 REPORT BY CORNERSTONE EARTH GROUP, INC. FOR THE PROJECT. THE GEOTECHNICAL ASPECTS OF THESE PLAN SHEETS HAVE BEEN PREPARED AND REVIEWED BY THE UNDERSIGNED GEOTECHNICAL ENGINEER AND ARE BASED UPON LIMITATIONS DESCRIBED IN THE GEOTECHNICAL INVESTIGATION REPORT. THESE PLANS ARE NOT A STAND-ALONE DOCUMENT AND SHOULD BE CONSIDERED AS PART OF THE GEOTECHNICAL INVESTIGATION REPORT. THE GEOTECHNICAL DESIGN ASPECTS IN THESE PLANS ARE CONTINGENT UPON A GEOTECHNICAL ENGINEER AND ENGINEERING GEOLOGIST OBSERVING CERTAIN ASPECTS OF THE PROJECT GRADING. THESE PLANS ARE SUBJECT TO MODIFICATION AND REVISION DURING CONSTRUCTION BASED ON THE FIELD CONDITIONS ENCOUNTERED.

REGISTERED PROFESSIONAL ENGINEER SCOTT E. FITINGHOFF No. 2379 6-30-20 GEOTECHNICAL STATE OF CALIFORNIA

SCOTT E. FITINGHOFF, P.E., G.E.

REVIEWED FOR CODE COMPLIANCE
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RESUBMITTAL SAN MATEO CO. BLDG. INSP. DIV.
NOV 20 2018
San Mateo County Building Inspection

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HIGHLAND ESTATES
LOT 9 IMPROVEMENT PLANS
GEOTECHNICAL MITIGATION PLAN (LOTS 9 AND 10)

CITY OF SAN MATEO SAN MATEO COUNTY CALIFORNIA

Revisions	
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OF

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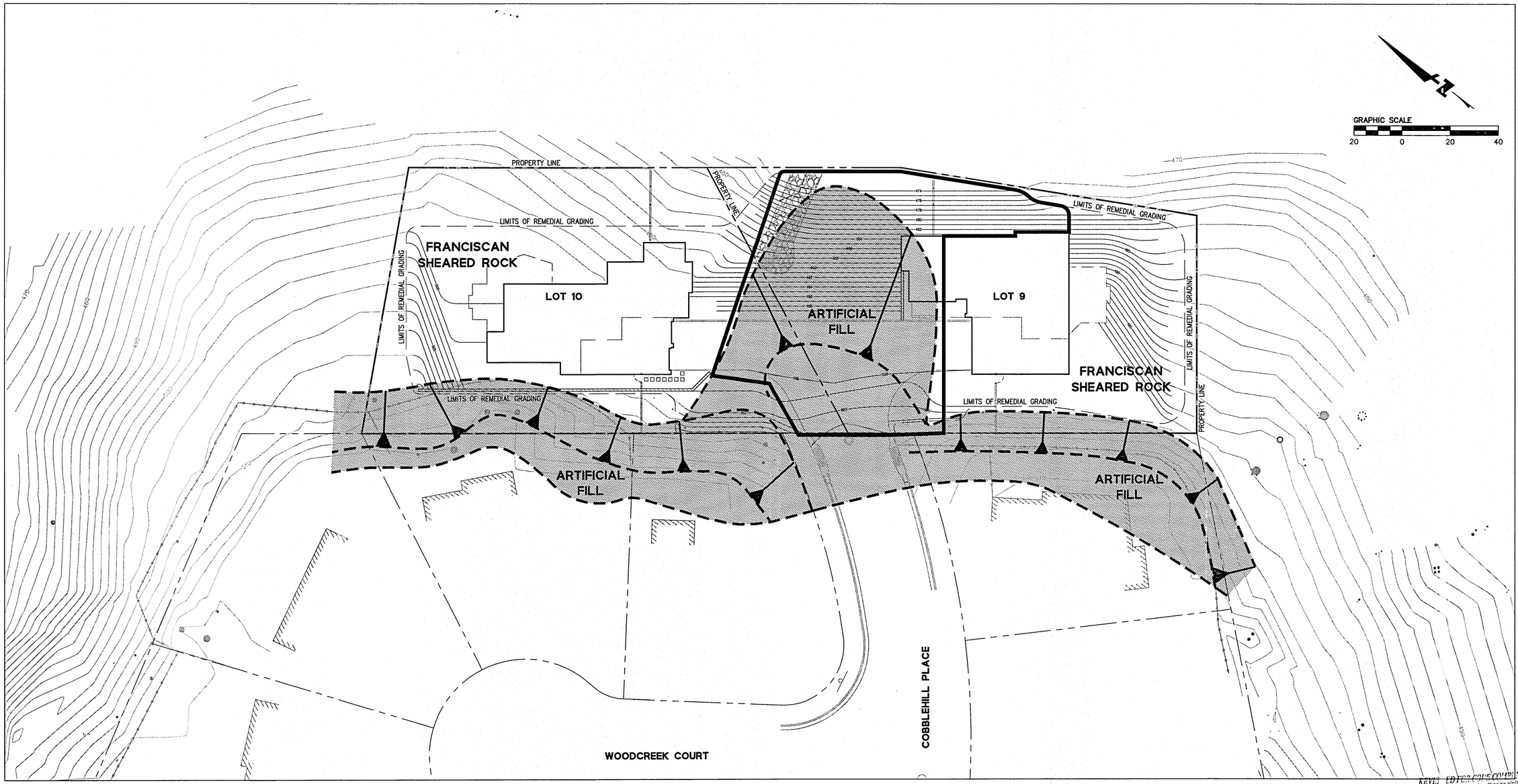

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SAN MATEO CO. BLDG. INSP. DIV.

LEGEND

AREA OF OVER-EXCAVATION, KEYING, AND BENCHING FOR FILL REMOVAL (I.E. REMEDIAL GRADING). (SEE GEOTECHNICAL REPORT FOR ADDITIONAL INFORMATION); ALSO SEE SHEETS C9.30, C9.40, C9.91 AND C9.93 FOR EARTHWORK, KEYING, BENCHING AND SUBDRIAN MITIGATION DETAILS

GEOLOGIC CONTACT (DASHED WHERE APPROXIMATE)

APPROXIMATE AREA OF ARTIFICIAL FILL

FILL SLOPE

BKF HAS PREPARED THESE PLANS BASED ON CORNERSTONE EARTH GROUP GEOTECHNICAL INVESTIGATION. AND RECOMMENDATIONS.

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SCOTT E. FITINGHOFF, P.E., G.E.

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OCT 10 2018
San Mateo County Building Inspection

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HIGHLAND ESTATES
LOT 9 IMPROVEMENT PLANS
GEOTECHNICAL MITIGATION KEYING AND BENCHING PLAN (LOTS 9 AND 10)
CITY OF SAN MATEO SAN MATEO COUNTY CALIFORNIA

No.	Revisions

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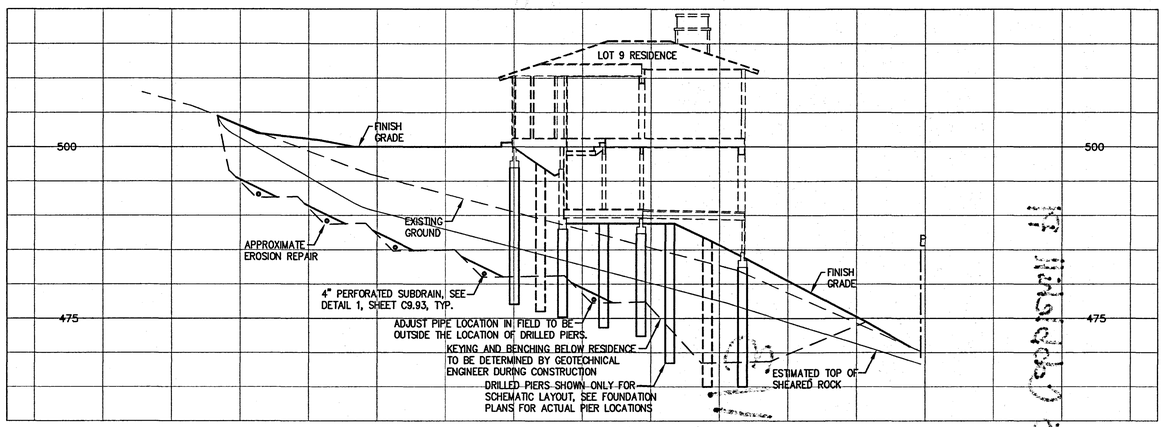
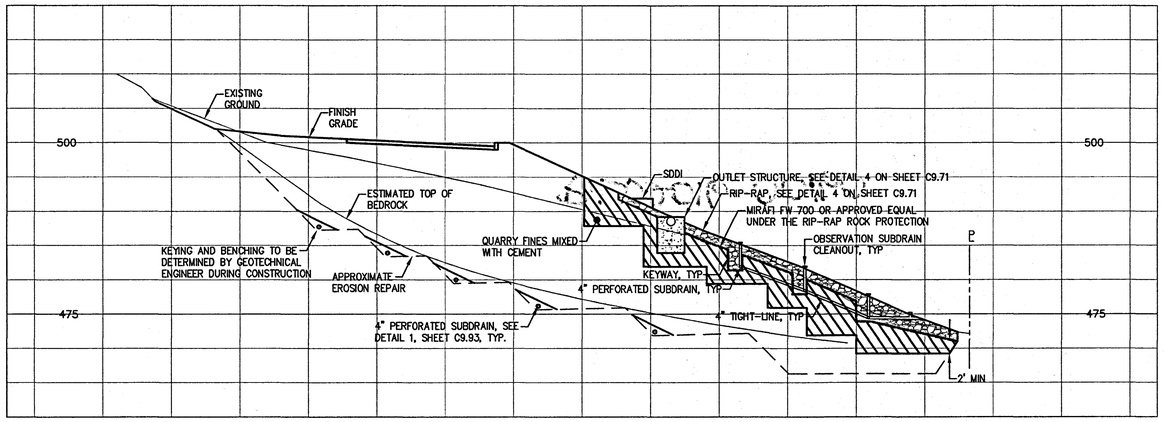


A-A CROSS SECTION
SCALE: 1"=10'



B-B CROSS SECTION
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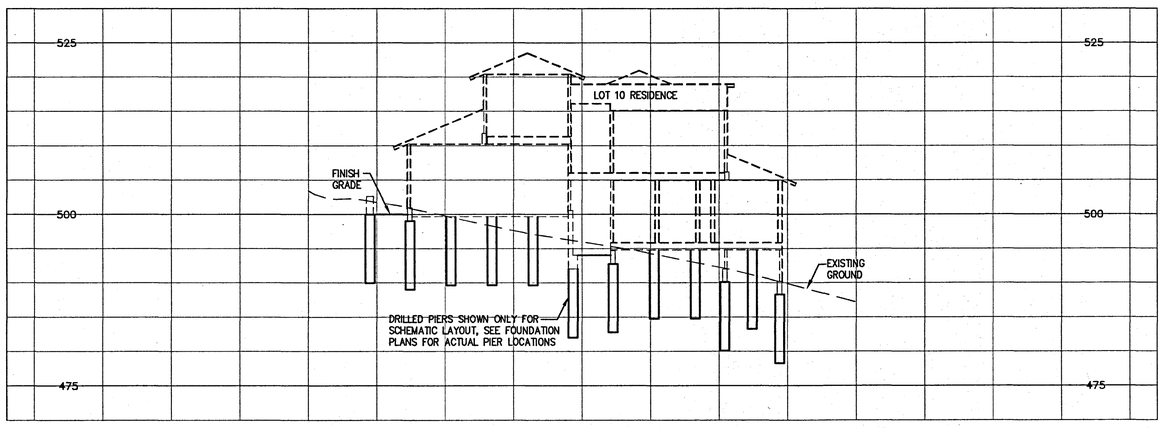


C-C CROSS SECTION
SCALE: 1"=10'

DRAINAGE MATERIAL

ALTERNATIVE 1

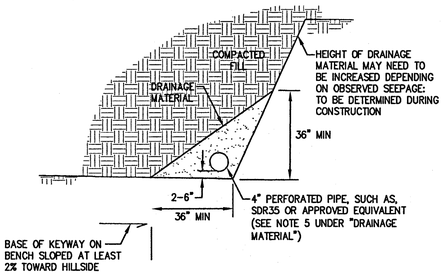
CLASS 2 PERMEABLE MATERIAL
(CALTRANS STANDARD SPECS LATEST EDITION)
MATERIAL SHALL CONSIST OF CLEAN, COARSE SAND AND GRAVEL OR CRUSHED STONE, CONFORMING TO THE FOLLOWING GRADATION REQUIREMENTS:

SIEVE SIZE	% PASSING SIEVE
1"	100
3/4"	90–100
3/8"	40–100
#4	25–40
#8	18–33
#30	5–15
#50	0–7
#200	0–3

ALTERNATIVE 2

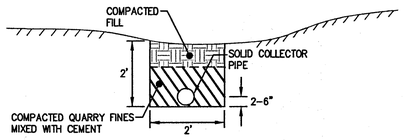
1/2 – TO 3/4– INCH CLEAN CRUSHED ROCK OR GRAVEL WRAPPED IN FILTER FABRIC
ALL NON–WOVEN FILTER FABRIC SHALL MEET THE FOLLOWING MINIMUM AVERAGE ROLL VALUES UNLESS OTHERWISE SPECIFIED BY CORNERSTONE EARTH GROUP

GRAB STRENGTH (ASTM D–4632):	180 LBS.
MASS PER UNIT AREA (ASTM D–4751):	5 OZ/YD
APPARENT OPENING SIZE (ASTM D–4751):	70–100 U.S. STD. SIEVE
FLOW RATE (ASTM D–4491):	80 GAL/MIN/FT
PUNCTURE STRENGTH (ASTM D–4833):	80 LBS.



NOTES:
1. 1% FALL (MINIMUM) ALONG ALL KEYWAYS, BENCHES ANDSUBDRAIN LINES.
2. ALL PERFORATED PIPE PLACED PERFORATIONS DOWN.
3. ALL PIPE JOINTS SHALL BE GLUED.
4. ALL SUBDRAINS SHOULD BE DISCHARGED TO A FREE DRAINING OUTLET APPROVED BY THE CIVIL ENGINEER.
5. SUBDRAIN PIPE (PERFORATED OR SOLID CONNECTOR) SHOULD CONSIST OF SDR–35 PVC PIPE WHEN PLACED IN FILLS LESS THAN 30 FEET DEEP.
6. USE 4" PERFORATED PIPE ON KEYWAY OR BENCHES.
7. USE 6" SOLID PIPE FOR COLLECTOR PIPES OR 6" PERFORATED PIPE (DETAIL 2)
8. PIPE FITTINGS FOR CLEAN–OUTS AND OTHER 90° BENDS IN THE SUBDRAIN SYSTEM (EXCEPT THE CONNECTION BETWEEN THE 4"PERFORATED PIPES AND 6"COLLECTION PIPES) SHOULD BE "SWEEP 90'S" OR OTHER APPROVED EQUIVALENT.
9. CONTRACTOR TO PROVIDE ALL INCIDENTAL FITTINGS IN THEIR BID PRICE TO CONSTRUCT THE SUBDRAIN SYSTEM. NOT ALL INCIDENTAL FITTINGS ARE SHOWN ON THESE PLANS.
10. FINAL SUBDRAIN LAYOUT AND PLACEMENT TO BE DETERMINED BY GEOTECHNICAL ENGINEER AT TIME OF CONSTRUCTION SUBDRAIN SHALL NOT CONFLICT WITH DRILLED PIERS.

DETAIL 1 – TYPICAL BENCH AND KEYWAY SUBDRAIN
NTS



NOTES:
1. THIS AREA MAY HAVE ACTIVE SEEPAGE DURING CONSTRUCTION.
2. COLLECTOR PIPE SHOULD BE 6" PERFORATED PIPE, SUCH AS SDR–35 OR SDR–23.5 OR APPROVED EQUIVALENT (SEE DETAIL 1 NOTE 5 UNDER "DRAINAGE MATERIAL")
3. PIPE FITTINGS FOR CLEAN–OUTS AND OTHER 90° BENDS IN THE SUBDRAIN SYSTEM (EXCEPT THE CONNECTION BETWEEN THE 4"PERFORATED PIPES AND 6" COLLECTION PIPES) SHOULD BE "SWEEP 90'S"OR OTHER APPROVED EQUIVALENT.
4. CONTRACTOR TO PROVIDE ALL INCIDENTAL FITTINGS IN THEIR BID PRICE TO CONSTRUCT THE SUBDRAIN SYSTEM. NOT ALL INCIDENTAL FITTINGS ARE SHOWN ON THESE PLANS.
5. FINAL SUBDRAIN LAYOUT AND PLACEMENT TO BE DETERMINED BY GEOTECHNICAL ENGINEER AT TIME OF CONSTRUCTION.

DETAIL 2 – SOLID COLLECTOR PIPE DETAIL
NTS

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SAN MATEO CO. BL G. INSP. DIV.

BKF HAS PREPARED THESE PLANS BASED ON CORNERSTONE EARTH GROUP GEOTECHNICAL INVESTIGATION AND RECOMMENDATIONS.

REGISTERED PROFESSIONAL ENGINEER JONATHAN TANG No. C67726 CIVIL STATE OF CALIFORNIA

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RESUBMITTAL
NOV 20 2018
San Mateo County Building Inspection

REGISTERED PROFESSIONAL ENGINEER SCOTT E. FITINGHOFF No. 2379 6-30-20 GEOTECHNICAL STATE OF CALIFORNIA

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HIGHLAND ESTATES
LOT 9 IMPROVEMENT PLANS
GEOTECHNICAL MITIGATION CROSS SECTIONS (LOTS 9 AND 10)
CITY OF SAN MATEO SAN MATEO COUNTY CALIFORNIA

No.	Revisions

Date 10/8/2018
Scale AS SHOWN
Design RH
Drawn NH
Approved RH/JT
Job No 950168-20

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Building Inspection

2185 Cobblehill Pl

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