HELBERTA RESIDENCE

Project Summary:

Job Address:	537 S. Helberta Ave. Redondo Beach, CA 90277
Zone:	R-1
Building Type:	Single-Family Residence w/ attached Garage
Occupancy Group:	R3/U
Construction Type:	Type V-B
Number of Stories:	2-Stories
Lot Size:	4,840 S.F.
Legal Description:	APN# 7507-001-017 Redondo Beach Lot 17; Block 127
Project Description:	second floor addition to existing SFR with attached 2-car Garage

Project Data:

Floor Area Ratio
4,840 x .65 = 3,146 S.F.

Floor Area Ratio Bonuses
Front Porch .04
2nd Floor Side Setback .04

Revised Floor Area Ratio
4,840 x .73 = 3,533.2 S.F.

Allowable: 3,533 S.F.
Proposed: 3,511 S.F. ✓

Living Area:	Existing:	Proposed:
Lower First Floor:	467 S.F.	667 S.F.
Upper First Floor:	585 S.F.	639 S.F.
Lower Second Floor:		791 S.F.
Upper Second Floor:		1,006 S.F.
Total Habitable Area:	1,052 S.F.	3,103 S.F.
Garage:	408 S.F.	408 S.F.
Gross floor area:	1,460 S.F.	3,511 S.F.

Outdoor Space:	Actual:	Counted:
Rear Yard:	827 S.F.	827 S.F.
Entry Courtyard:	340 S.F.	0 S.F.
Lower First Floor Deck	250 S.F.	0 S.F.
Lower Second Floor Balcony:	325 S.F.	650 S.F.
Upper Second Floor Balcony:	101 S.F.	0 S.F.
Total Outdoor Space:	1,843 S.F.	1,477 S.F.

Max Height: 30' Allowed, 29'-7" Actual

Contacts:

Owner	Architect
537 S Helberta Ave LLC 631 1st Street Hermosa Beach, CA 90254	Josh Tully Architecture 703 Pier Ave, Suite B #182 Hermosa Beach, CA 90254 T: 310.480.2429
Civil Engineer	**Structural Engineer**
B.A. Sims Engineering, Inc. 1341 Orizaba Ave Long Beach, CA 90804 T: 562.735.4955	McCullum Engineering Inc 727 2nd St. #104 Hermosa Beach, CA 90254 T: 310.944.0898
Energy Consultant	**Surveyor**
Campbell Consulting 14671 W. Harvard St. Goodyear, AZ 85395 T: 310.345.2761	Eagle Eye Land Surveying 1311 Manhattan Beach Blvd. #4 Manhattan Beach, CA 90266 T: 310.955.8901

Plans shall comply with Title 24 energy efficiency requirements and all mandatory measures

SYMBOLS:

FLOOR PLAN SYMBOLS LEGEND:

XXX	WINDOW TYPE INDICATION
XXX	DOOR TYPE INDICATION
XXXX / XXXXX / XXX	ROOMNAME AND NUMBER INDICATION
XXXXXXX / XXXXXXX	ELEVATION HEIGHT
X'-X"	DIMENSION TO FRAMED CONSTRUCTION
X"-X" X'-X"	DIMENSION TO FINISH
X / XXXX	ELEVATION / SECTION REFERENCE
℄	CENTER LINE INDICATION
℘	PROPERTY LINE INDICATION
SB	SETBACK LINE INDICATION
X	GRID LINE INDICATION
XX / XX	DETAIL REFERENCE

REFLECTED CEILING PLAN SYMBOLS LEGEND:

E	EXISTING		UNDER CABINET LIGHT	
EL	EXISTING LOCATION, NEW FIXTURE		TRACK LIGHTING	
FL	FLUORESCENT		EXTERIOR FLOOD LIGHT	
WP	WATERPROOF	T.V.	CABLE TV	12" A.F.F.
LV	LOW VOLTAGE	TEL	TELEPHONE	12" A.F.F.
HE	HIGH EFFICACY	DATA	DATA CABLE (INTERNET)	12" A.F.F.
GD	GARBAGE DISPOSAL	SAT	SATELLITE	12" A.F.F.
GFI	GROUND FAULT INTERRUPTER	CAT6	COM (CAT5) (NETWORK)	12" A.F.F.
AFI	ARC FAULT INTERRUPTER	ALARM	SECURITY SYSTEM	42" A.F.F.
AGDO	AUTOMATIC GARAGE DOOR OPENER	$	WALL SWITCH	42" A.F.F.
F	EXHAUST FAN	$D	WALL SWITCH W/ DIMMER CONTROL	42" A.F.F.
	RECESSED DOWNLIGHT	$3	3 WAY WALL SWITCH	42" A.F.F.
E	EMERGENCY LIGHT WITH BACK-UP BATTERY	$4	4 WAY WALL SWITCH	42" A.F.F.
	DIRECTIONAL RECESSED DOWNLIGHT		DUPLEX OUTLET	12" A.F.F.
	WALL SCONCE		DUPLEX OUTLET/ SWITCH CONTROL	12" A.F.F.
MOTION	MOTION SENSOR WITH INTEGRAL PHOTO CONTROL.		QUAD OUTLET	12" A.F.F.
	WALL MOUNTED FIXTURE	GAS	GAS LINE	12" A.F.F.
	CEILING MOUNTED FIXTURE	H.B.	HOSE BIB	12" A.F.F.
P	PENDANT FIXTURE	S	120-VOLT HARD WIRED & INTERCONNECTED SMOKE DETECTOR (WITH 9-VOLT BATTERY BACK-UP)	
	STRIP LIGHTING	H	INTERCONNECTED HEAT DETECTOR RATED 190 F OR ABOVE	

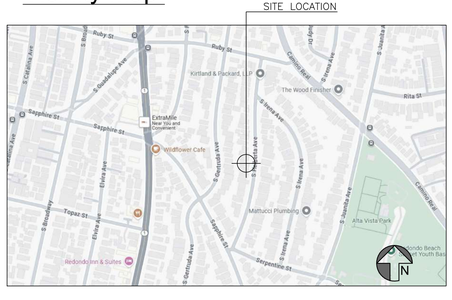
Sheet Index:

* Not a part of this submittal

All New Work Shall Comply With:

2022 California Building Code
2022 California Plumbing Code
2022 California Mechanical Code
2022 California Electrical Code
2022 California Residential Code
2022 California Green Building Standard Code
2022 California Energy Code
City of Redondo Beach Municipal Code

Vicinity Map:



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LICENSED ARCHITECT JOSHUA PAUL TULLY C-59842 REN. 08-30-25 STATE OF CALIFORNIA

HELBERTA RESIDENCE
Remodel + Addition
537 S Helberta Ave
Redondo Beach, CA 90277

Project Name :

Project Address :

Revisions :

No.	Date	Description

Sheet Title :
COVER SHEET

Assessor Parcel No.: 7507-001-017
Scale: AS NOTED
Issue Date: 04.15.2025
Drawn: JPT Checked:

Sheet Number :
A-1.0

AIA California 2022 CALIFORNIA GREEN BUILDING STANDARDS CODE

RESIDENTIAL MANDATORY MEASURES, SHEET 1 (January 2023)

Y = YES
N/A = NOT APPLICABLE
RESPON. PARTY = RESPONSIBLE PARTY (ie: ARCHITECT, ENGINEER, OWNER, CONTRACTOR, INSPECTOR, ETC.)

Y	N/A	RESPON. PARTY

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. Voluntary green building measures are also included in the application checklists and may be included in the design and construction of structures covered by this code, but are not required unless adopted by a city, county, or city and county as specified in Section 101.7.

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.

The mandatory provision of Section 4.106.4.2 may apply to additions or alterations of existing parking facilities or the addition of new parking facilities serving existing multifamily buildings. See Section 4.106.4.3 for application.

Note: Repairs including, but not limited to, resurfacing, restriping and repairing or maintaining existing lighting fixtures are not considered alterations for the purpose of this section.

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 fixture 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.

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. Individual sections will be designated by banners to indicate where the section applies specifically to low-rise only (LR) or high-rise only (HR). When the section applies to both low-rise and high-rise buildings, no banner will be used.

SECTION 302 MIXED OCCUPANCY BUILDINGS

302.1 MIXED OCCUPANCY BUILDINGS. In mixed occupancy buildings, each portion of a building shall comply with the specific green building measures applicable to each specific occupancy.

Exceptions:

1. [HCD] Accessory structures and accessory occupancies serving residential buildings shall comply with Chapter 4 and Appendix A4, as applicable.
2. [HCD] For purposes of CALGreen, live/work units, complying with Section 419 of the *California Building Code*, shall not be considered mixed occupancies. Live/Work units shall comply with Chapter 4 and Appendix A4, as applicable.

DIVISION 4.1 PLANNING AND DESIGN

ABBREVIATION DEFINITIONS:

HCD	Department of Housing and Community Development
BSC	California Building Standards Commission
DSA-SS	Division of the State Architect, Structural Safety
OSHPD	Office of Statewide Health Planning and Development
LR	Low Rise
HR	High Rise
AA	Additions and Alterations
N	New

CHAPTER 4
RESIDENTIAL MANDATORY MEASURES

SECTION 4.102 DEFINITIONS

4.102.1 DEFINITIONS
The following terms are defined in Chapter 2 *(and are included here for reference)*

FRENCH DRAIN. A trench, hole or other depressed area loosely filled with rock, gravel, fragments of brick or similar pervious material used to collect or channel drainage or runoff water.

WATTLES. Wattles are used to reduce sediment in runoff. Wattles are often constructed of natural plant materials such as hay, straw or similar material shaped in the form of tubes and placed on a downflow slope. Wattles are also used for perimeter and inlet controls.

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.

Note: Refer to the State Water Resources Control Board for projects which disturb one acre or more of soil, or are part of a larger common plan of development which in total disturbs one acre or more of soil.

(Website: https://www.waterboards.ca.gov/water_issues/programs/stormwater/construction.html)

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.

4.106.4 Electric vehicle (EV) charging for new construction. New construction shall comply with Sections 4.106.4.1 or 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:

1. 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:
   1.1 Where there is no local utility power supply or the local utility is unable to supply adequate power.
   1.2 Where there is evidence suitable to the local enforcing agency substantiating that additional local utility infrastructure design requirements, directly related to the implementation of Section 4.106.4, may adversely impact the construction cost of the project.
2. Accessory Dwelling Units (ADU) and Junior Accessory Dwelling Units (JADU) without additional parking facilities.

4.106.4.1 New one- and two-family dwellings and townhouses 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 208/240-volt minimum dedicated branch circuit and/or space(s) reserved to permit installation of a branch circuit overcurrent protective device.

Exemption: A raceway is not required if a minimum 40-ampere 208/240-volt dedicated EV branch circuit is installed in close proximity to the proposed location of an EV charger at the time of original construction in accordance with the *California Electrical Code*.

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, hotels and motels and new residential parking facilities.
When parking is provided, parking spaces for new multifamily dwellings, hotels and motels shall meet the requirements of Sections 4.106.4.2.1 and 4.106.4.2.2. Calculations for spaces shall be rounded up to the nearest whole number. A parking space served by electric vehicle supply equipment or designed as a future EV charging space shall count as at least one standard automobile parking space only for the purpose of complying with any applicable minimum parking space requirements established by a local jurisdiction. See Vehicle Code Section 22511.2 for further details.

4.106.4.2.1 Multifamily development projects with less than 20 dwelling units; and hotels and motels with less than 20 sleeping units or guest rooms.
The number of dwelling units, sleeping units or guest rooms shall be based on all buildings on a project site subject to this section.

1.EV Capable. Ten (10) percent of the total number of parking spaces on a building site, provided for all types of parking facilities, shall be electric vehicle charging spaces (EV spaces) capable of supporting future Level 2 EVSE. Electrical load calculations shall demonstrate 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 EV spaces at a minimum of 40 amperes.

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.

Exceptions:

1.When EV chargers (Level 2 EVSE) are installed in a number equal to or greater than the required number of EV capable spaces.

2.When EV chargers (Level 2 EVSE) are installed in a number less than the required number of EV capable spaces, the number of EV capable spaces required may be reduced by a number equal to the number of EV chargers installed.

Notes:

a.Construction documents are intended to demonstrate the project's capability and capacity for facilitating future EV charging.

b.There is no requirement for EV spaces to be constructed or available until receptacles for EV charging or EV chargers are installed for use.

2.EV Ready. Twenty-five (25) percent of the total number of parking spaces shall be equipped with low power Level 2 EV charging receptacles. For multifamily parking facilities, no more than one receptacle is required per dwelling unit when more than one parking space is provided for use by a single dwelling unit.

Exception: Areas of parking facilities served by parking lifts.

4.106.4.2.2 Multifamily development projects with 20 or more dwelling units, hotels and motels with 20 or more sleeping units or guest rooms.
The number of dwelling units, sleeping units or guest rooms shall be based on all buildings on a project site subject to this section.

1.EV Capable. Ten (10) percent of the total number of parking spaces on a building site, provided for all types of parking facilities, shall be electric vehicle charging spaces (EV spaces) capable of supporting future Level 2 EVSE. Electrical load calculations shall demonstrate 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 EV spaces at a minimum of 40 amperes.

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.

Exception: When EV chargers (Level 2 EVSE) are installed in a number greater than five (5) percent of parking spaces required by Section 4.106.4.2.2, Item 3, the number of EV capable spaces required may be reduced by a number equal to the number of EV chargers installed over the five (5) percent required.

Notes:

a.Construction documents shall show locations of future EV spaces.

b.There is no requirement for EV spaces to be constructed or available until receptacles for EV charging or EV chargers are installed for use.

2.EV Ready. Twenty-five (25) percent of the total number of parking spaces shall be equipped with low power Level 2 EV charging receptacles. For multifamily parking facilities, no more than one receptacle is required per dwelling unit when more than one parking space is provided for use by a single dwelling unit.

Exception: Areas of parking facilities served by parking lifts.

3.EV Chargers. Five (5) percent of the total number of parking spaces shall be equipped with Level 2 EVSE. Where common use parking is provided, at least one EV charger shall be located in the common use parking area and shall be available for use by all residents or guests.

When low power Level 2 EV charging receptacles or Level 2 EVSE are installed beyond the minimum required, an automatic load management system (ALMS) may be used to reduce the maximum required electrical capacity to each space served by the ALMS. The electrical system and any on-site distribution transformers shall have sufficient capacity to deliver at least 3.3 kW simultaneously to each EV charging station (EVCS) served by the ALMS. The branch circuit shall have a minimum capacity of 40 amperes, and installed EVSE shall have a capacity of not less than 30 amperes. ALMS shall not be used to reduce the minimum required electrical capacity to the required EV capable spaces.

4.106.4.2.2.1 Electric vehicle charging stations (EVCS).
Electric vehicle charging stations required by Section 4.106.4.2.2, Item 3, shall comply with Section 4.106.4.2.2.1.

Exception: Electric vehicle charging stations serving public accommodations, public housing, motels and hotels shall not be required to comply with this section. See California Building Code, Chapter 11B, for applicable requirements.

4.106.4.2.2.1.1 Location.
EVCS shall comply with at least one of the following options:

1.The charging space 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 charging space shall be located on an accessible route, as defined in the California Building Code, Chapter 2, to the building.

Exception: Electric vehicle charging stations designed and constructed in compliance with the California Building Code, Chapter 11B, are not required to comply with Section 4.106.4.2.2.1.1 and Section 4.106.4.2.2.1.2, Item 3.

4.106.4.2.2.1.2 Electric vehicle charging stations (EVCS) dimensions.
The charging spaces shall be designed to comply with the following:

1.The minimum length of each EV space shall be 18 feet (5486 mm).

2.The minimum width of each EV space shall be 9 feet (2743 mm).

3.One in every 25 charging spaces, but not less than one, 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 EV space is 12 feet (3658 mm).

a.Surface slope for this EV space and the aisle shall not exceed 1 unit vertical in 48 units horizontal (2.083 percent slope) in any direction.

4.106.4.2.2.1.3 Accessible EV spaces.
In addition to the requirements in Sections 4.106.4.2.2.1.1 and 4.106.4.2.2.1.2, all EVSE, when installed, shall comply with the accessibility provisions for EV chargers in the California Building Code, Chapter 11B. EV ready spaces and EVCS in multifamily developments shall comply with California Building Code, Chapter 11A, Section 1109A.

4.106.4.2.3 EV space requirements.
1.Single EV space 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 location or the proposed location of the EV space. Construction documents shall identify the raceway termination point, receptacle or charger location, as applicable. The service panel and/or subpanel shall have a 40-ampere minimum dedicated branch circuit, including branch circuit overcurrent protective device installed, or space(s) reserved to permit installation of a branch circuit overcurrent protective device.

Exception: A raceway is not required if a minimum 40-ampere 208/240-volt dedicated EV branch circuit is installed in close proximity to the location or the proposed location of the EV space, at the time of original construction in accordance with the California Electrical Code.

2.Multiple EV spaces required. Construction documents shall indicate the raceway termination point and the location of installed or future EV spaces, receptacles or EV chargers. Construction documents shall also provide information on amperage of installed or future receptacles or EVSE, raceway method(s), wiring schematics and electrical load calculations. Plan design shall be based upon a 40-ampere minimum branch circuit. Required 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.

Exception: A raceway is not required if a minimum 40-ampere 208/240-volt dedicated EV branch circuit is installed in close proximity to the location or the proposed location of the EV space at the time of original construction in accordance with the California Electrical Code.

4.106.4.2.4 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.

4.106.4.2.5 Electric Vehicle Ready Space Signage.
Electric vehicle ready spaces shall be identified by signage or pavement markings, in compliance with Caltrans Traffic Operations Policy Directive 13-01 (Zero Emission Vehicle Signs and Pavement Markings) or its successor(s).

4.106.4.3 Electric vehicle charging for additions and alterations of parking facilities serving existing multifamily buildings.
When new parking facilities are added, or electrical systems or lighting of existing parking facilities are added or altered and the work requires a building permit, ten (10) percent of the total number of parking spaces added or altered shall be electric vehicle charging spaces (EV spaces) capable of supporting future Level 2 EVSE.

Notes:

1.Construction documents are intended to demonstrate the project's capability and capacity for facilitating future EV charging.

2.There is no requirement for EV spaces to be constructed or available until EV chargers are installed for use.

DIVISION 4.2 ENERGY EFFICIENCY

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

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 sections 4.303.1.1, 4.303.1.2, 4.303.1.3, and 4.303.4.4.

Note: All noncompliant plumbing fixtures in any residential real property shall be replaced with water-conserving plumbing fixtures. Plumbing fixture 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.

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 wall mounted urinals shall not exceed 0.125 gallons per flush. The effective flush volume of all other 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 1.8 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 the showerheads and/or other shower outlets controlled by a single valve shall not exceed 1.8 gallons per minute at 80 psi, or the shower shall be designed to only allow 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 1.2 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 use 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 0.2 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.

4.303.1.4.5 Pre-rinse spray valves.
When installed, shall meet the requirements in the *California Code of Regulations*, Title 20 (Appliance Efficiency Regulations), Sections 1605.1 (h)(4) Table H-2, Section 1605.3 (h)(4)(A), and Section 1607 (d)(7) and shall be equipped with an integral automatic shutoff.

FOR REFERENCE ONLY: The following table and code section have been reprinted from the *California Code of Regulations*, Title 20 (Appliance Efficiency Regulations),Section 1605.1 (h)(4) and Section 1605.3 (h)(4)(A).

TABLE H-2

STANDARDS FOR COMMERCIAL PRE-RINSE SPRAY VALVES MANUFACTURED ON OR AFTER JANUARY 28, 2019

PRODUCT CLASS [spray force in ounce force (ozf)]	MAXIMUM FLOW RATE (gpm)
Product Class 1 (≤ 5.0 ozf)	1.00
Product Class 2 (> 5.0 ozf and ≤ 8.0 ozf)	1.20
Product Class 3 (> 8.0 ozf)	1.28

Title 20 Section 1605.3 (h)(4)(A). Commercial prerinse spray valves manufactured on or after January 1, 2006, shall have a minimum spray force of not less than 4.0 ounces-force (ozf)[113 grams-force(gf)]

4.303.2 Submeters for multifamily buildings and dwelling units in mixed-used residential/commercial buildings.
Submeters shall be installed to measure water usage of individual rental dwelling units in accordance with the *California Plumbing Code*.

4.303.3 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 1701.1 of the *California Plumbing Code*.

NOTE:
THIS TABLE COMPILES THE DATA IN SECTION 4.303.1, AND IS INCLUDED AS A CONVENIENCE FOR THE USER.

TABLE - MAXIMUM FIXTURE WATER USE

FIXTURE TYPE	FLOW RATE
SHOWER HEADS (RESIDENTIAL)	1.8 GMP @ 80 PSI
LAVATORY FAUCETS (RESIDENTIAL)	MAX. 1.2 GPM @ 60 PSI MIN. 0.8 GPM @ 20 PSI
LAVATORY FAUCETS IN COMMON & PUBLIC USE AREAS	0.5 GPM @ 60 PSI
KITCHEN FAUCETS	1.8 GPM @ 60 PSI
METERING FAUCETS	0.2 GAL/CYCLE
WATER CLOSET	1.28 GAL/FLUSH
URINALS	0.125 GAL/FLUSH

4.304 OUTDOOR WATER USE

4.304.1 OUTDOOR POTABLE WATER USE IN LANDSCAPE AREAS. Residential developments shall comply with a local water efficient landscape ordinance or the current California Department of Water Resources' Model Water Efficient Landscape Ordinance (MWELO), whichever is more stringent.

NOTES:

1. The Model Water Efficient Landscape Ordinance (MWELO) is located in the *California Code Regulations*, Title 23, Chapter 2.7, Division 2. MWELO and supporting documents, including water budget calculator, are available at: https://www.water.ca.gov/

DIVISION 4.4 MATERIAL CONSERVATION AND RESOURCE EFFICIENCY

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.

4.408 CONSTRUCTION WASTE REDUCTION, DISPOSAL AND RECYCLING

4.408.1 CONSTRUCTION WASTE MANAGEMENT. Recycle and/or salvage for reuse a minimum of 65 percent of the non-hazardous 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 collected 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 [LR]. Projects that generate a total combined weight of construction and demolition waste disposed of in landfills, which do not exceed 3.4 lbs./sq.ft. of the building area shall meet the minimum 65% construction waste reduction requirement in Section 4.408.1

4.408.4.1 WASTE STREAM REDUCTION ALTERNATIVE. Projects that generate a total combined weight of construction and demolition waste disposed of in landfills, which do not exceed 2 pounds per square foot of the building area, shall meet the minimum 65% 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).

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, photovoltaic systems, electric vehicle chargers, 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, grading around the building, etc.
9. Information about state solar energy and incentive programs available.
10. A copy of all special inspections verifications required by the enforcing agency or this code.
11. Information from the Department of Forestry and Fire Protection on maintenance of defensible space around residential structures.
12. Information and/or drawings identifying the location of grab bar reinforcements.

4.410.2 RECYCLING BY OCCUPANTS. Where 5 or more multifamily dwelling units are constructed on a building site, provide readily accessible area(s) that serves all buildings on the site and are identified for the depositing, storage and collection of non-hazardous materials for recycling, including (at a minimum) paper, corrugated cardboard, glass, plastics, organic waster, and metals, or meet a lawfully enacted local recycling ordinance, if more restrictive.

Exception: Rural jurisdictions that meet and apply for the exemption in Public Resources Code Section 42649.82 (a)(2)(A) et seq. are note required to comply with the organic waste portion of this section.

DIVISION 4.5 ENVIRONMENTAL QUALITY

SECTION 4.501 GENERAL

4.501.1 Scope
The provisions of this chapter shall outline means of reducing the quality 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 4.502 DEFINITIONS

5.102.1 DEFINITIONS
The following terms are defined in Chapter 2 *(and are included here for reference)*

AGRIFIBER PRODUCTS. Agrifiber products include wheatboard, strawboard, panel substrates and door cores, not including furniture, fixtures and equipment (FF&E) not considered base building elements.

COMPOSITE WOOD PRODUCTS. Composite wood products include hardwood plywood, particleboard and medium density fiberboard. "Composite wood products" does not include hardboard, structural plywood, structural panels, structural composite lumber, oriented strand board, glued laminated timber, prefabricated wood I-joists or finger-jointed lumber, all as specified in California Code of regulations (CCR), title 17, Section 93120.1.

DIRECT-VENT APPLIANCE. A fuel-burning appliance with a sealed combustion system that draws all air for combustion from the outside atmosphere and discharges all flue gases to the outside atmosphere.

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LICENSED ARCHITECT JOSHUA PAUL TULLY C-59842 REN. 08-30-25 STATE OF CALIFORNIA

HELBERTA RESIDENCE
Remodel + Addition
537 S Helberta Ave
Redondo Beach, CA 90277

Project Name :

Project Address :

Revisions :

No.	Date	Description

Sheet Title :
Green Notes

Assessor Parcel No.: 7507-001-017
Scale: 1/4" = 1'-0"
Issue Date: 04.15.2025
Drawn: JPT Checked:

Sheet Number :
A-1.1a

2022 CALIFORNIA GREEN BUILDING STANDARDS CODE
RESIDENTIAL MANDATORY MEASURES, SHEET 2 (January 2023)

Y = YES
N/A = NOT APPLICABLE
RESP'L PARTY = RESPONSIBLE PARTY (ie; ARCHITECT, ENGINEER, OWNER, CONTRACTOR, INSPECTOR ETC.)

MAXIMUM INCREMENTAL REACTIVITY (MIR). The maximum change in weight of ozone formed by adding a compound to the "Base Reactive Organic Gas (ROG) Mixture" per weight of compound added, expressed to hundredths of a gram (g O³/g ROG).
Note: MIR values for individual compounds and hydrocarbon solvents are specified in CCR, Title 17, Sections 94700 and 94701.

MOISTURE CONTENT. The weight of the water in wood expressed in percentage of the weight of the oven-dry wood.

PRODUCT-WEIGHTED MIR (PWMIR). The sum of all weighted-MIR for all ingredients in a product subject to this article. The PWMIR is the total product reactivity expressed to hundredths of a gram of ozone formed per gram of product (excluding container and packaging).
Note: PWMIR is calculated according to equations found in CCR, Title 17, Section 94521 (a).

REACTIVE ORGANIC COMPOUND (ROC). Any compound that has the potential, once emitted, to contribute to ozone formation in the troposphere.

VOC. A volatile organic compound (VOC) broadly defined as a chemical compound based on carbon chains or rings with vapor pressures greater than 0.1 millimeters of mercury at room temperature. These compounds typically contain hydrogen and may contain oxygen, nitrogen and other elements. See CCR Title 17, Section 94508(a).

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 New Source Performance Standards (NSPS) emission limits as applicable, and shall have a permanent label indicating they are certified to meet the emission limits. Woodstoves, pellet stoves and fireplaces shall also comply with applicable local ordinances.

4.504 POLLUTANT CONTROL
4.504.1 COVERING OF DUCT OPENINGS & PROTECTION OF MECHANICAL EQUIPMENT DURING CONSTRUCTION. At the time of rough installation, 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, sheet metal or other methods acceptable to the enforcing agency to reduce the amount of water, dust or debris which may enter 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, sealant 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)(2) and other requirements, including prohibitions on use of certain toxic compounds and ozone depleting substances, in Sections 94522(e)(1) and (f)(1) 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.

TABLE 4.504.1 - ADHESIVE VOC LIMIT[1,2]

(Less Water and Less Exempt Compounds in Grams per Liter)

ARCHITECTURAL APPLICATIONS	VOC LIMIT
INDOOR CARPET ADHESIVES	50
CARPET PAD ADHESIVES	50
OUTDOOR CARPET ADHESIVES	150
WOOD FLOORING ADHESIVES	100
RUBBER FLOOR ADHESIVES	60
SUBFLOOR ADHESIVES	50
CERAMIC TILE ADHESIVES	65
VCT & ASPHALT TILE ADHESIVES	50
DRYWALL & PANEL ADHESIVES	50
COVE BASE ADHESIVES	50
MULTIPURPOSE CONSTRUCTION ADHESIVE	70
STRUCTURAL GLAZING ADHESIVES	100
SINGLE-PLY ROOF MEMBRANE ADHESIVES	250
OTHER ADHESIVES NOT 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 & 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	VOC LIMIT
ARCHITECTURAL	250
MARINE DECK	760
NONMEMBRANE ROOF	300
ROADWAY	250
SINGLE PLY ROOF MEMBRANE	450
OTHER	420
SEALANT PRIMERS	
ARCHITECTURAL	
NON-POROUS	250
POROUS	775
MODIFIED BITUMINOUS	500
MARINE DECK	760
OTHER	750

TABLE 4.504.3 - VOC CONTENT LIMITS FOR ARCHITECTURAL COATINGS[2,3]

GRAMS OF VOC PER LITER OF COATING, LESS WATER & LESS EXEMPT COMPOUNDS

COATING CATEGORY	VOC LIMIT
FLAT COATINGS	50
NON-FLAT 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[1]	120
MAGNESITE CEMENT COATINGS	450
MASTIC TEXTURE COATINGS	100
METALLIC PIGMENTED COATINGS	500
MULTICOLOR COATINGS	250
PRETREATMENT WASH PRIMERS	420
PRIMERS, SEALERS, & UNDERCOATERS	100
REACTIVE PENETRATING SEALERS	350
RECYCLED COATINGS	250
ROOF COATINGS	50
RUST PREVENTATIVE COATINGS	250
SHELLACS	
CLEAR	730
OPAQUE	550
SPECIALTY PRIMERS, SEALERS & UNDERCOATERS	100
STAINS	250
STONE CONSOLIDANTS	450
SWIMMING POOL COATINGS	340
TRAFFIC MARKING COATINGS	100
TUB & 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 & 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, FEB. 1, 2008. MORE INFORMATION IS AVAILABLE FROM THE AIR RESOURCES BOARD.

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
PARTICLE BOARD	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 CALIF. AIR RESOURCES BOARD, AIR TOXICS CONTROL MEASURE FOR COMPOSITE WOOD AS TESTED IN ACCORDANCE WITH ASTM E 1333. FOR ADDITIONAL INFORMATION, SEE CALIF. CODE OF REGULATIONS, TITLE 17, SECTIONS 93120 THROUGH 93120.12.

2. THIN MEDIUM DENSITY FIBERBOARD HAS A MAXIMUM THICKNESS OF 5/16" (8 MM).

DIVISION 4.5 ENVIRONMENTAL QUALITY (continued)
4.504.3 CARPET SYSTEMS. All carpet installed in the building interior shall meet the requirements of the California Department of Public Health, "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers," Version 1.2, January 2017 (Emission testing method for California Specification 01350)

See California Department of Public Health's website for certification programs and testing labs.

https://www.cdph.ca.gov/Programs/CCDPHP/DEODC/EHLB/IAQ/Pages/VOC.aspx.

4.504.3.1 Carpet cushion. All carpet cushion installed in the building interior shall meet the requirements of the California Department of Public Health, "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers," Version 1.2, January 2017 (Emission testing method for California Specification 01350)

See California Department of Public Health's website for certification programs and testing labs.

https://www.cdph.ca.gov/Programs/CCDPHP/DEODC/EHLB/IAQ/Pages/VOC.aspx.

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% of floor area receiving resilient flooring shall meet the requirements of the California Department of Public Health, "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers," Version 1.2, January 2017 (Emission testing method for California Specification 01350)

See California Department of Public Health's website for certification programs and testing labs.

hhttps://www.cdph.ca.gov/Programs/CCDPHP/DEODC/EHLB/IAQ/Pages/VOC.aspx.

4.504.5 COMPOSITE WOOD PRODUCTS. Hardwood plywood, particleboard and medium density fiberboard composite wood products used on the interior or exterior of the buildings 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

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 certifications 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, European 636 3S standards, and Canadian CSA 0121, CSA 0151, CSA 0153 and CSA 0325 standards.
5. Other methods acceptable to the enforcing agency.

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 1/2 inch (12.7mm) 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 curling, 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 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.

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 less than or equal to 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)

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*.

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 - 2011 (Residential Load Calculation), ASHRAE handbooks or other equivalent design software or methods.
2. Duct systems are sized according to ANSI/ACCA 1 Manual D - 2014 (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 - 2014 (Residential Equipment Selection), or other equivalent design software or methods.

Exception: Use of alternate design temperatures necessary to ensure the system functions are acceptable.

CHAPTER 7
INSTALLER & SPECIAL INSPECTOR QUALIFICATIONS
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 appropriate 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).

[BSC] 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, the special inspector shall have a certification from a recognized state, national or international association, as determined by the local agency. The area of certification shall be closely related to the primary job function, as determined by the local agency.

Note: Special inspectors shall be independent entities with no financial interest in the materials or the project they are inspecting for compliance with this code.

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 applicable checklist.

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LICENSED ARCHITECT JOSHUA PAUL TULLY C-59842 REN. 08-30-25 STATE OF CALIFORNIA

Project Name : HELBERTA RESIDENCE
Remodel + Addition
Project Address : 537 S Helberta Ave
Redondo Beach, CA 90277

Revisions :

No.	Date	Description

Sheet Title : Green Notes

Assessor Parcel No.: 7507-001-017
Scale: 1/4" = 1'-0"
Issue Date: 04.15.2025
Drawn: JPT Checked:

Sheet Number : A-1.1b

NOTE

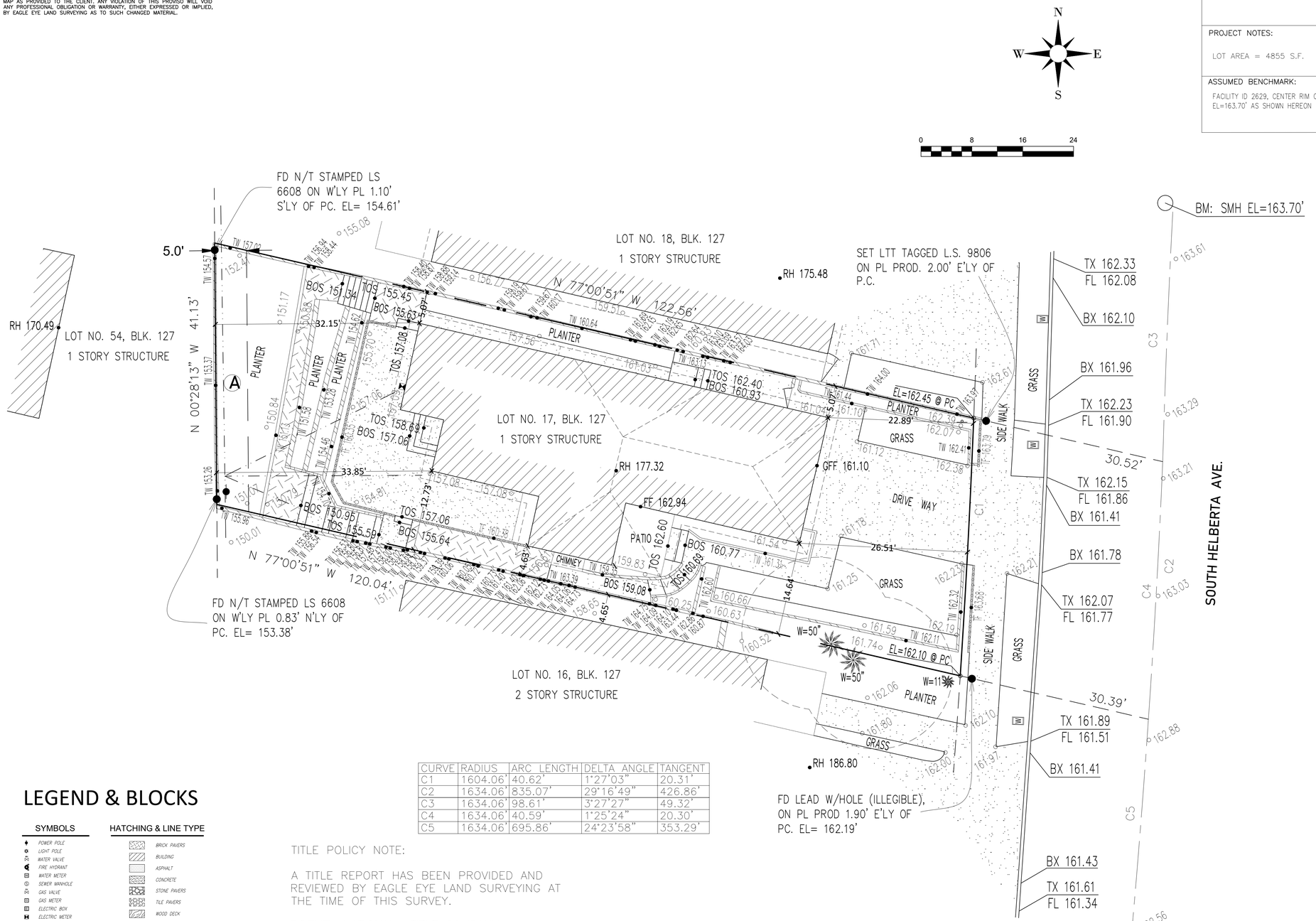
BASIS OF BEARINGS: N 59°14'00" W SHOWN AS THE CENTERLINE OF SOUTH HELBERTA AVE PER TOWNSITE OF REDONDO BEACH, M.B. 39/1-17 AS FILED IN THE RECORDS OF LOS ANGELES COUNTY.

PROJECT NOTES:

LOT AREA = 4855 S.F.

ASSUMED BENCHMARK:

FACILITY ID 2629, CENTER RIM OF SMH
EL=163.70' AS SHOWN HEREON



CURVE	RADIUS	ARC LENGTH	DELTA ANGLE	TANGENT
C1	1604.06'	40.62'	1°27'03"	20.31'
C2	1634.06'	835.07'	29°16'49"	426.86'
C3	1634.06'	98.61'	3°27'27"	49.32'
C4	1634.06'	40.59'	1°25'24"	20.30'
C5	1634.06'	695.86'	24°23'58"	353.29'

LEGEND & BLOCKS

SYMBOLS

- POWER POLE
- LIGHT POLE
- WATER VALVE
- FIRE HYDRANT
- WATER METER
- SEWER MANHOLE
- GAS VALVE
- GAS METER
- ELECTRIC BOX
- ELECTRIC METER
- ELECTRIC TRANSFORMER
- IRRIGATION VAULT
- WATER HEATER
- WATER SERVICE GRATE
- STORM DRAIN INLET
- MAIL BOX
- BOLLARD
- DOUBLE GATE
- SLIDE GATE
- SINGLE GATE
- CATV BOX
- TRAFFIC LIGHT
- SIGN
- UNKNOWN UTILITY

HATCHING & LINE TYPE

- BRICK PAVERS
- BUILDING
- ASPHALT
- CONCRETE
- STONE PAVERS
- TILE PAVERS
- WOOD DECK
- BRICK WALL
- CONCRETE BLOCK WALL
- CENTER LINE
- CHAIN LINK FENCE
- PLANTER WALL
- PROPERTY LINE
- POWER LINE
- IRON FENCE
- RETAINING WALL
- ROOF LINE
- STONE WALL
- VINYL FENCE
- WOOD FENCE
- DRIPLINE
- TREE

A

TITLE POLICY NOTE:

A TITLE REPORT HAS BEEN PROVIDED AND REVIEWED BY EAGLE EYE LAND SURVEYING AT THE TIME OF THIS SURVEY.

FIDELITY NATIONAL TITLE COMPANY
PRELIM ORDER NUMBER: 1500-2503475
AMENDMENT B
DATED AS OF FEBRUARY 14, 2014

AN EASEMENT FOR THE PURPOSE OF POLE LINES, CONDUITS AND RIGHTS INCIDENTAL THERETO, RECORDING NO.: BOOK 17916, PAGE 261 OF O.R.
AFFECTS: THE REAR 5 FEET

E.E.
LAND SURVEYING

CLIENT:
WOOMER
PROJECT NO.
25-77
DATE:
03/25/25
ASSESSORS'S I.D. NUMBER:
APN; 7507-001-017
LEGAL DESCRIPTION
LOT NO. 17, BLK. 127
TOWNSITE OF REDONDO BEACH
M.B. 39/1-17

DATE OF REVISIONS:	#	ITEM

MAP ISSUE DATE: 03/28/2025
DRAFTED BY: M.A.P.

ABBREVIATIONS :

AB	AGGREGATE BASE
AC	ASPHALT PAVEMENT
AD	AREA DRAIN
BM	BENCHMARK
BOS	BOTTOM OF STAIRS
BOW	BACK OF WALK
BRMP	BOTTOM OF RAMP
BS	BOTTOM OF SLOPE
CB	CATCH BASIN
CBW	CONCRETE BLOCK WALL
CF	CURB FACE
CLF	CHAIN LINK FENCE
CONC	CONCRETE
E	EAST
EG	EDGE OF GUTTER
EL	ELEVATION
EM	ELECTRIC METER
EMH	ELECTRIC MANHOLE
EP	EDGE OF PAVEMENT
EPB	ELECTRIC PULL BOX
EV	ELECTRIC VAULT
EEH	EAGE OF EAVE HEIGHT
FF	FINISH FLOOR
FG	FINISH GRADE
FH	FIRE HYDRANT
FL	FLOW LINE
FND	FOUND
FOW	FACE OF WALK
FS	FINISHED SURFACE
GB	GRADE BREAK
GM	GAS METER
GV	GAS VALVE
ICV	IRRIGATION CONTROL VALVE
IE	INVERT ELEVATION
IP	IRON PIPE
LP	LEAD, TACK & TAG
LT	LEAD & TACK
MP	METAL POST
N	NORTH
NG	NATURAL GROUND ELEVATION
O/S	OFFSET
OHW	OVERHEAD WIRE
PB	PULL BOX
PC	PROPERTY CORNER
PL	PROPERTY LINE
PLS	PROFESSIONAL LAND SURVEYOR
PLT	PARKING LOT LIGHT
PM	PARKING METER POST
PP	POWER POLE
PROD	PRODUCED
RCE	REGISTERED CIVIL ENGINEER
RW	RETAINING WALL
S	SOUTH
SB	SPLASH BOX
SDMH	STORM DRAIN MANHOLE
SMH	SEWER MANHOLE
SPB	SIGNAL PULL BOX
STLT	STREET LIGHT
SW	SPIKE & WASHER
TBM	TEMPORARY BENCHMARK
TC	TOP OF CURB
TELMH	TELEPHONE MANHOLE
TG	TOP OF GRATE ELEVATION
TOS	TOP OF STAIRS
TR	TREE
TS	TRAFFIC SIGNAL
TOP	TOP OF PARAPET
TW	TOP OF WALL
TX/BX	TOP/BOTTOM OF X
W	WEST
WD-FENCE	WOOD FENCE
WI-FENCE	WROUGH IRON FENCE
WM	WATER METER
WV	WATER VALVE

BOUNDARY/TOPOGRAPHIC SURVEY

SITE ADDRESS:
537 S Helberta Ave, Redondo Beach, CA 90277

LICENSED LAND SURVEYOR

ALL MAPS, PLATS, REPORTS, DESCRIPTIONS, OR OTHER DOCUMENTS ARE PREPARED UNDER THE RESPONSIBLE CHARGE OF A LICENSED LAND SURVEYOR, LICENSED TO PRACTICE LAND SURVEYING IN THE STATE OF CALIFORNIA, MICHAEL PROFET, LS 9806, PURSUANT TO THE PROFESSIONAL LAND SURVEYOR'S ACT BUSINESS AND PROFESSIONS CODE SECTION 8700-8805.

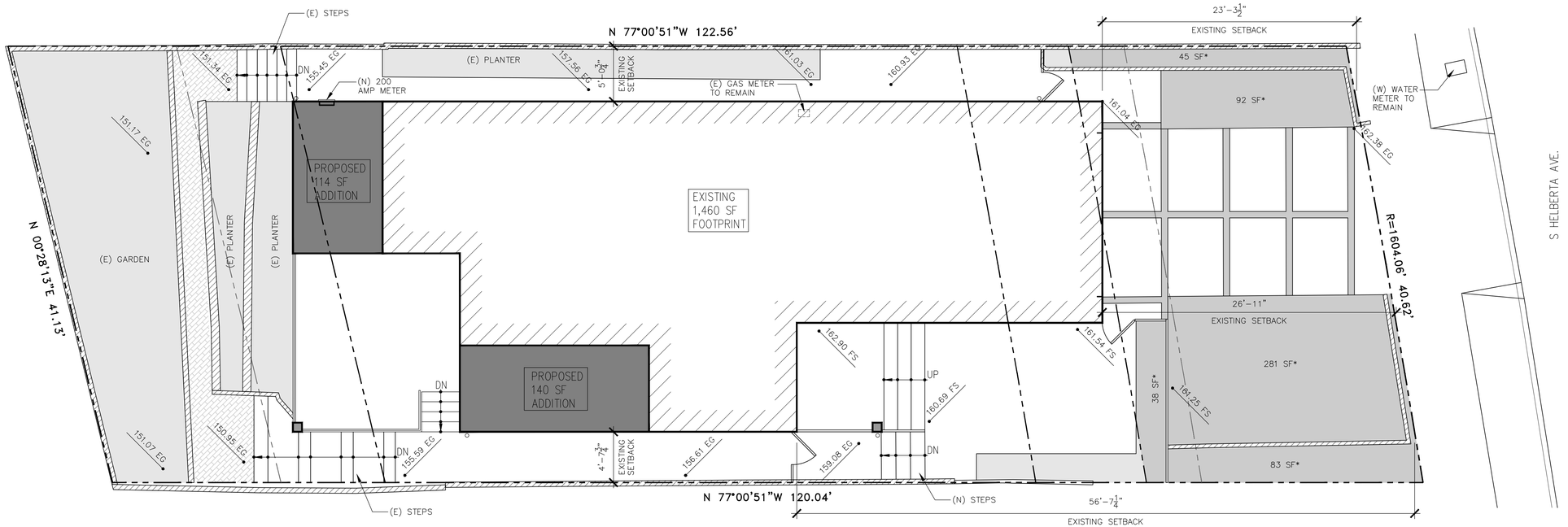
LICENSED LAND SURVEYOR
MICHAEL A. PROFET
9806
STATE OF CALIFORNIA

03/28/2025

PREPARED BY:

EAGLE EYE LAND SURVEYING

CIVIL ENGINEERING & LAND SURVEYING
1601 PACIFIC COAST HWY.
HERMOSA BEACH, CA 90254
PHONE (562) 452-3519



TRUE NORTH | PROJECT NORTH

1 SITE PLAN
1/4"=1'-0"

FRONT YARD SETBACK	1,065 SF
REQUIRED LANDSCAPE (50%)	532.5 SF
LANDSCAPED AREA PROVIDED	539 SF

* PLANTER SF IN FRONT SETBACK

PUBLIC WORKS STANDARD NOTES:

1. ALL LABOR, EQUIPMENT, AND MATERIAL REQUIRED FOR OFF-SITE IMPROVEMENT ARE THE RESPONSIBILITY OF THE DEVELOPER.

2. THE OFFSITE WORK SHALL BE DONE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS/ DRAWINGS FOR PUBLIC WORKS CONSTRUCTION, CURRENT EDITION AS AMENDED BY THE CITY OF LOS ANGELES AND THE CITY OF LOS ANGELES STANDARDS.

3. ULTRA-LOW FLOW PLUMBING FIXTURES ARE REQUIRED ON ALL NEW DEVELOPMENT AND REMODELING WHERE PLUMBING IS TO BE ADDED. (MAX. 1.6 GAL. TOILET AND 1.0 GAL. URINALS AND LOW FLOW SHOWER HEADS).

4. NO WORK SHALL BE DONE WITHIN THE PUBLIC RIGHT OF WAY WITHOUT PRIOR APPROVAL OF THE ENVIRONMENTAL AND PUBLIC WORKS MANAGEMENT DEPT.

5. TREES WITHIN THE PUBLIC RIGHT OF WAY CANNOT BE REMOVED BY THE PROPERTY OWNER FOR ANY REASON WITHOUT THE WRITTEN APPROVAL OF THE PARKS AND SPORTS DIVISION OR THE DIRECTOR OF ENVIRONMENTAL AND PUBLIC WORKS MANAGEMENT.

PERMIT:

1. THIS PERMIT APPLICATION IS FOR BUILDING PERMIT ONLY.

2. THIS PERMIT APPLICATION DOES NOT INCLUDE LANDSCAPE ELEMENTS, HARDSCAPE, GRADING, POOL/SPA/FOUNTAINS, TENNIS COURT OR TREE REMOVAL. SEPARATE PERMIT AND A APPLICATION WILL BE REQUIRED.

3. THIS PERMIT APPLICATION DOES NOT INCLUDE MECHANICAL, PLUMBING AND ELECTRICAL PERMITS.

4. ARCHITECT WILL PROCESS PLANS THROUGH PLAN CHECK REVIEW FOR THE BUILDING PERMIT ONLY. CONTRACTOR WILL BE RESPONSIBLE TO SIGN AND OBTAIN THE BUILDING PERMIT ON BEHALF OF THE OWNER.

5. CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL OTHER PERMITS INCLUDING ELECTRICAL, MECHANICAL, PLUMBING AND LANDSCAPE PERMITS. ANY APPLICATION FORMS OR DRAWING REQUIRED FOR SAID PERMITS WILL BE PREPARED BY THE SUBCONTRACTOR AND REMUNERATION SHALL BE INCLUDED IN BID.

GENERAL SITE PLAN NOTES:

A SEPARATE SET OF LANDSCAPE DRAWINGS WILL COMPLETE THIS ARCHITECTURAL SITE PLAN INCLUDING INFORMATION ON POOL/SPA GRADING, DRAINAGE, RETAINING WALLS, HARDSCAPE, PLANTING MATERIAL, LIGHTING AND IRRIGATION.

CONTRACTOR TO INFORM ARCHITECT OF ANY DISCREPANCIES BETWEEN ARCHITECTURAL AND LANDSCAPE DRAWINGS.

ALL GRADES SHALL SLOPE 2% MINIMUM AWAY FROM BUILDING AND BE A MINIMUM OF 8" BETWEEN WOOD SILL PLATE AT PERIMETER OF BUILDING. SEE GRADING PLAN FOR ADDITIONAL INFORMATION.

FOR GRADES SPECIFIED TO BE LESS THAN 8" FROM SILL PLATES AND FOR AREAS WHERE CONCRETE PAVING IS ADJACENT TO BUILDING, SILL PLATES SHALL BE PROTECTED WITH A CONTINUOUS STRIP OF W.P. GRACE 4000 BITHUTHENE WATERPROOFING MEMBRANE COVERED WITH CUPPER / GALVANIZED SHEET METAL FLASHING, BOTH BOTH PROJECTING 6" BELOW WOOD SILL PLATE AND ABOVE GRADE, WIDTH OF WATERPROOFING WILL VARY ACCORDING TO ELEVATION.

NOTES:

THE SERVICE PANEL OR SUBPANEL CIRCUIT DIRECTORY SHALL INDENTIFY THE OVERCURRENT PROTECTIVE DEVICE SPACE(S) RESERVED FOR FUTURE EV CHARGING AS AV CAPABLE. THE RACEWAY TERMINATION LOCATION SHALL BE PERMANENT AND VISIBLE MARKED EV CAPABLE.

THE PANEL 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.

SEE CIVIL ENGINEERING PLANS AND LANDSCAPE DRAWINGS FOR ADDITIONAL INFORMATION.

ALL DOWNSPOUTS TO AND ROOF RUNOFF TO DRAIN TO PROPOSED BELOW GRADE CISTERN. SEE CIVIL ENGINEERING DRAWINGS FOR ADDITIONAL INFORMATION.

A WATERPROOFING CONSULTANT / CONTRACTOR TO BE USED ON ALL BELOW GRADE FLASHING & ROOFING DETAIL & INSTALLATION.

ALL TRASH BIN SHALL BE COVERED.

CONTRACTOR:

VERIFY FRONT, REAR, SIDE YARDS, AND MAINTAIN ALL HEIGHT RESTRICTIONS. MEASURE FROM PROPERTY LINE TO FACE FINISH MATERIAL. VERIFICATIONS TO BE CERTIFIED BY LICENSED CIVIL ENGINEER/SURVEYOR BEFORE SETTING FOUNDATION FORMS.

CONTRACTOR TO NOTIFY ARCHITECT OF ANY DISCREPANCY FROM THE PERMITTED SET OF PLANS.

CIVIL ENGINEER:

A LICENSED CIVIL ENGINEER TO DESIGN AND ENGINEER ANY SUMP PUMPS AND REQUIRED DRAIN LINKS FROM PUMP WHICH WILL BE INCLUDED ON THIS PROJECT IF REQUIRED.

A LICENSED SURVEYOR OR CIVIL ENGINEER SHALL LAY OUT THE STRUCTURES ON THE SITE AND SHALL PROVIDE A CERTIFICATE PLAN INDICATING THAT THE STRUCTURES ARE LOCATED IN ACCORDANCE WITH APPROVED PLANS. THE SURVEYOR SHALL ALSO CERTIFY COMPLIANCE ALL HEIGHT REQUIREMENTS IF REQUIRED BY THE CITY OF LOS ANGELES.

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LICENSED ARCHITECT JOSHUA PAUL TULLY C-59842 REN. 08-30-25 STATE OF CALIFORNIA

HELBERTA RESIDENCE
Remodel + Addition
537 S Helberta Ave
Redondo Beach, CA 90277

Project Name :

Project Address :

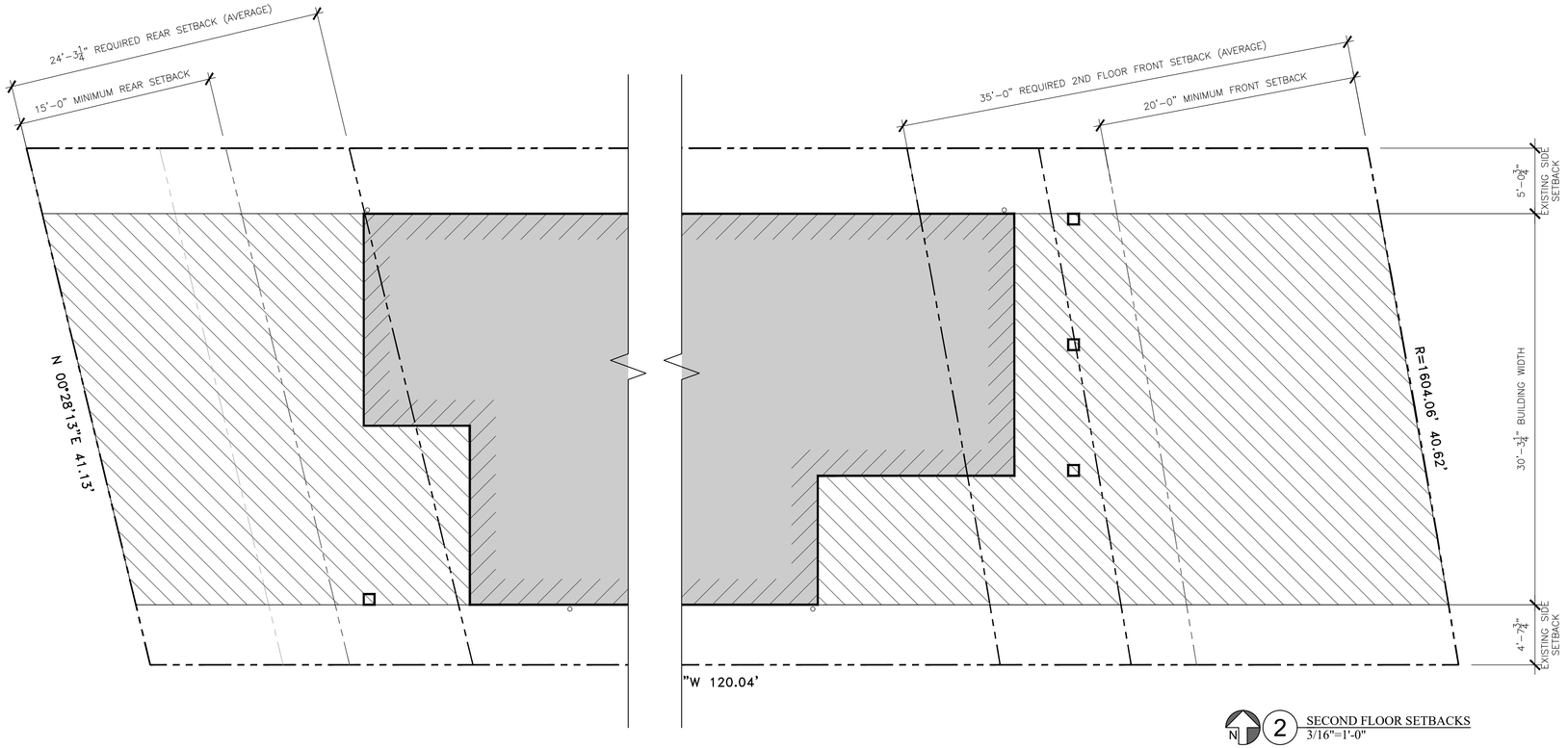
Revisions :

No.	Date	Description

Sheet Title :
SITE PLAN

Assessor Parcel No.: 7507-001-017
Scale: 1/4" = 1'-0"
Issue Date: 04.15.2025
Drawn: JPT Checked:

Sheet Number :
A-1.3



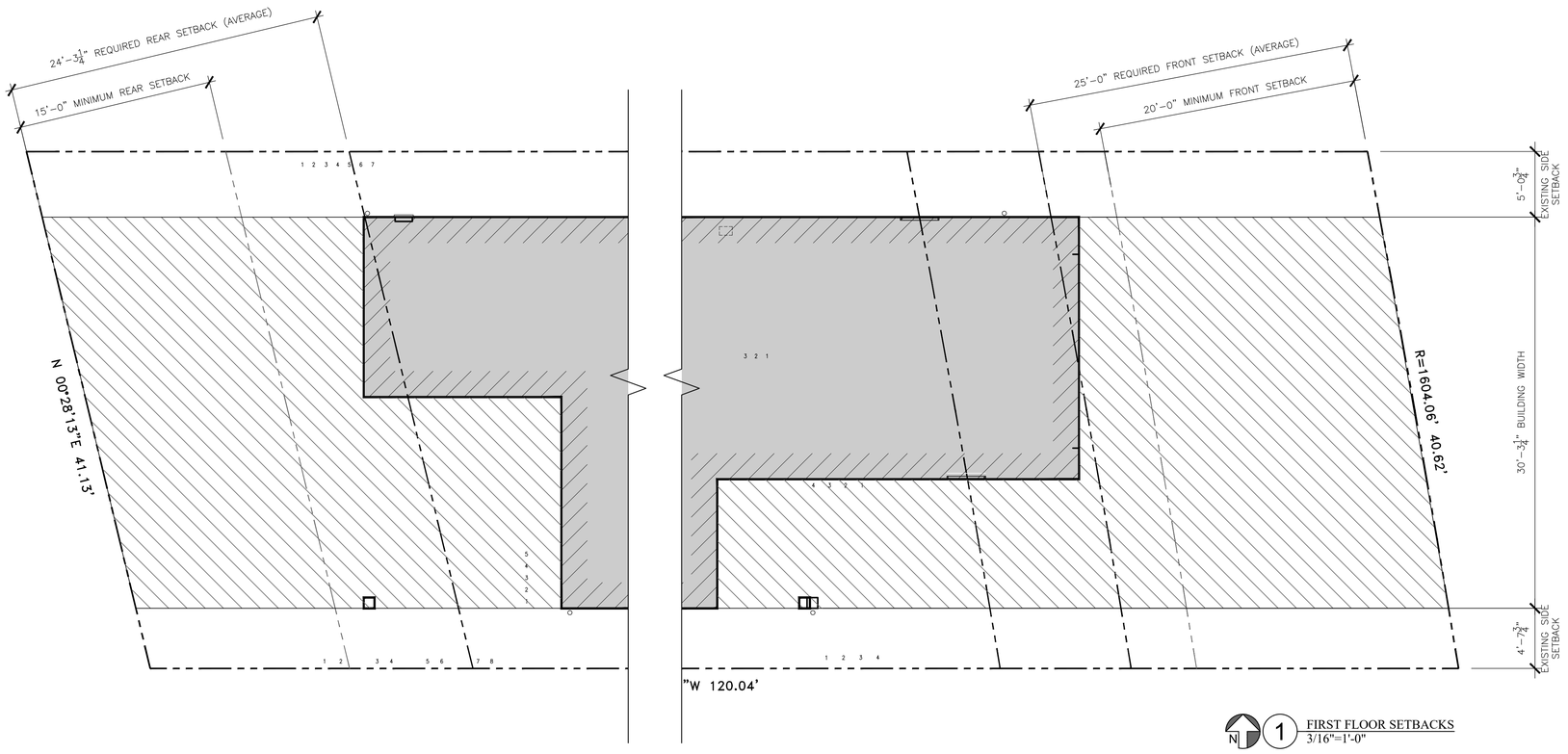
N 2 SECOND FLOOR SETBACKS
3/16"=1'-0"

SECOND FLOOR

REQUIRED FRONT SETBACK (30.27' X 35' = 1,059.45 S.F.)	1,060 SF
AVERAGE FRONT SETBACK	1,088 SF

SECOND FLOOR

REQUIRED REAR SETBACK (30.27' X 24.27' = 734.65 S.F.)	735 SF
AVERAGE REAR SETBACK	757 SF



N 1 FIRST FLOOR SETBACKS
3/16"=1'-0"

FIRST FLOOR

REQUIRED FRONT SETBACK (30.27' X 25' = 757 S.F.)	757 SF
AVERAGE FRONT SETBACK	1,065 SF

FIRST FLOOR

REQUIRED REAR SETBACK (30.27' X 24.27' = 734.65 S.F.)	735 SF
AVERAGE REAR SETBACK	966 SF

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LICENSED ARCHITECT JOSHUA PAUL TULLY C-58842 REN. 08-30-25 STATE OF CALIFORNIA

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Redondo Beach, CA 90277

Project Name :

Project Address :

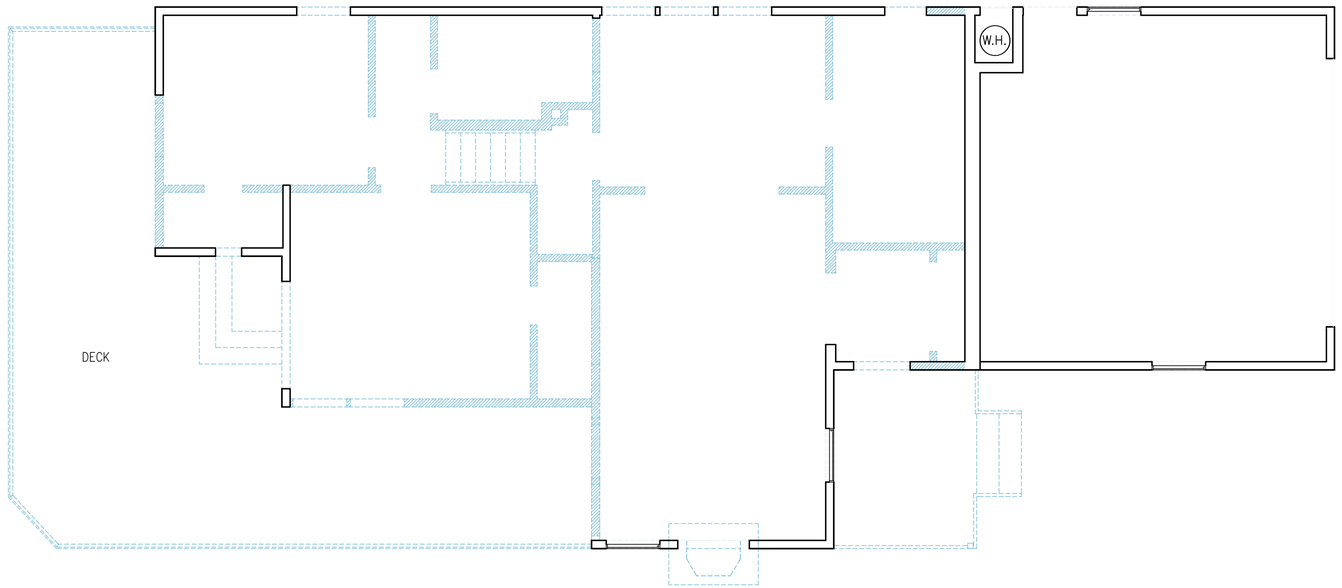
Revisions :

No.	Date	Description

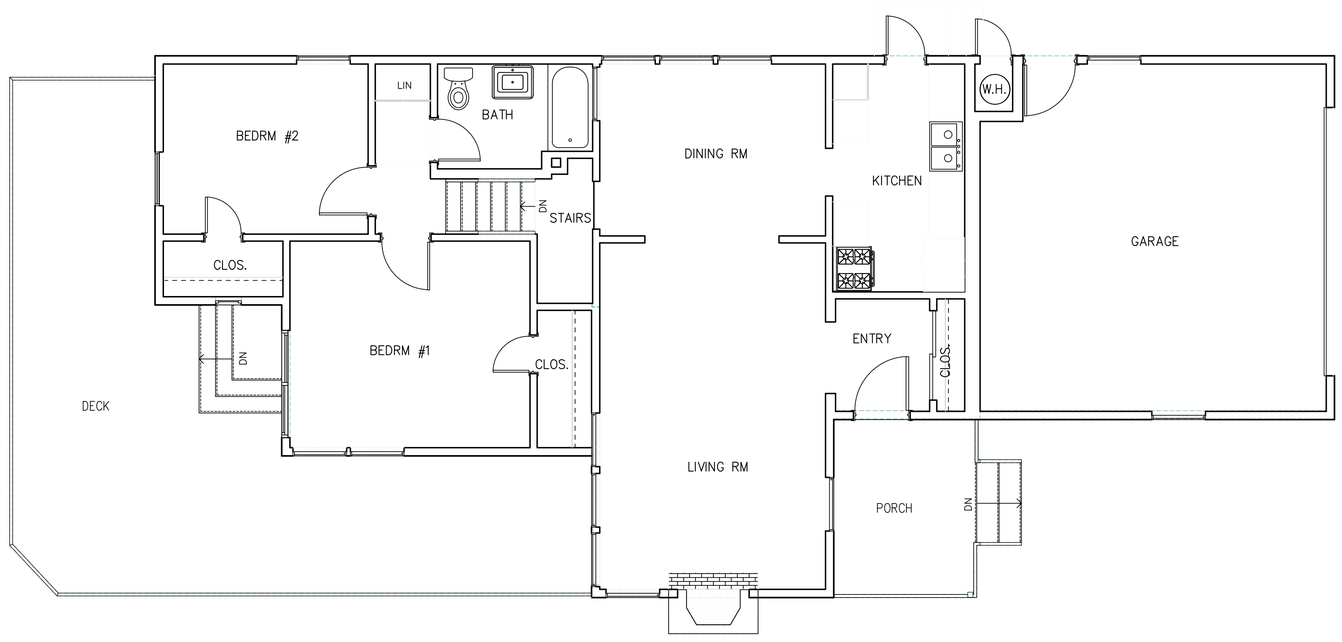
Sheet Title :
SETBACK DIAGRAMS

Assessor Parcel No.: 7507-001-017
Scale: 1/4" = 1'-0"
Issue Date: 04.15.2025
Drawn: JPT Checked:

Sheet Number :
A-1.4



2 FIRST FLOOR PLAN - DEMO
1/4"=1'-0"



1 FIRST FLOOR PLAN - EXISTING
1/4"=1'-0"

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LICENSED ARCHITECT
JOSHUA PAUL TULLY
C-59842
REN. 08-30-25
STATE OF CALIFORNIA

Project Name :
HELBERTA RESIDENCE
Remodel + Addition

Project Address :
537 S Helberta Ave
Redondo Beach, CA 90277

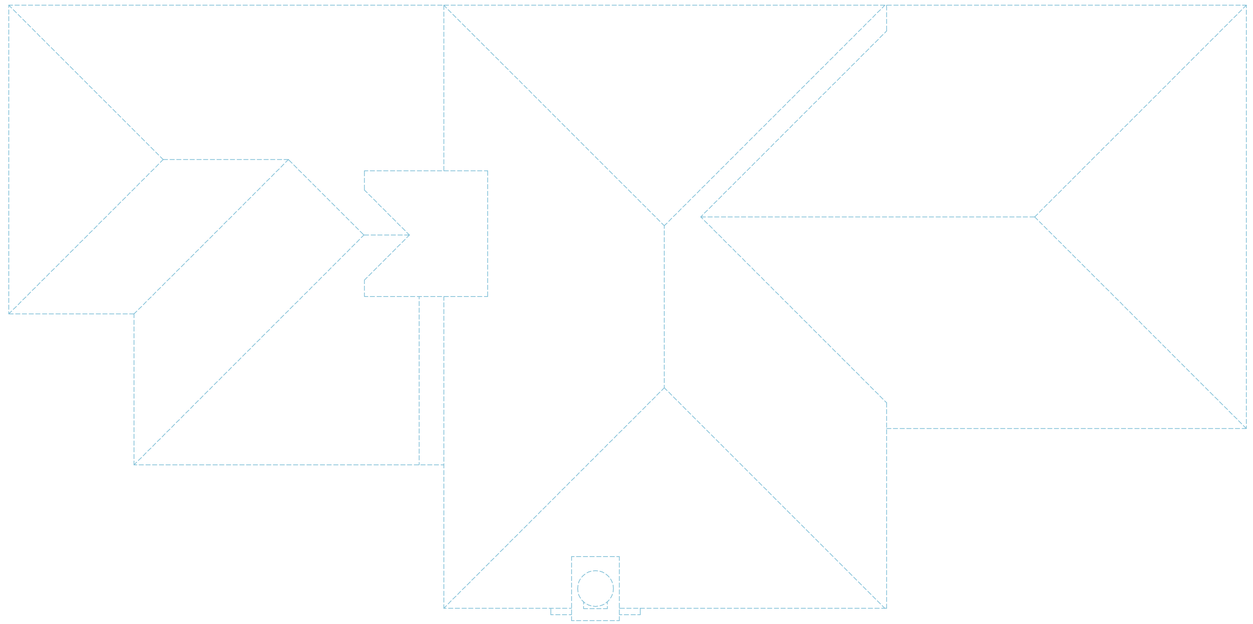
Revisions :

No.	Date	Description

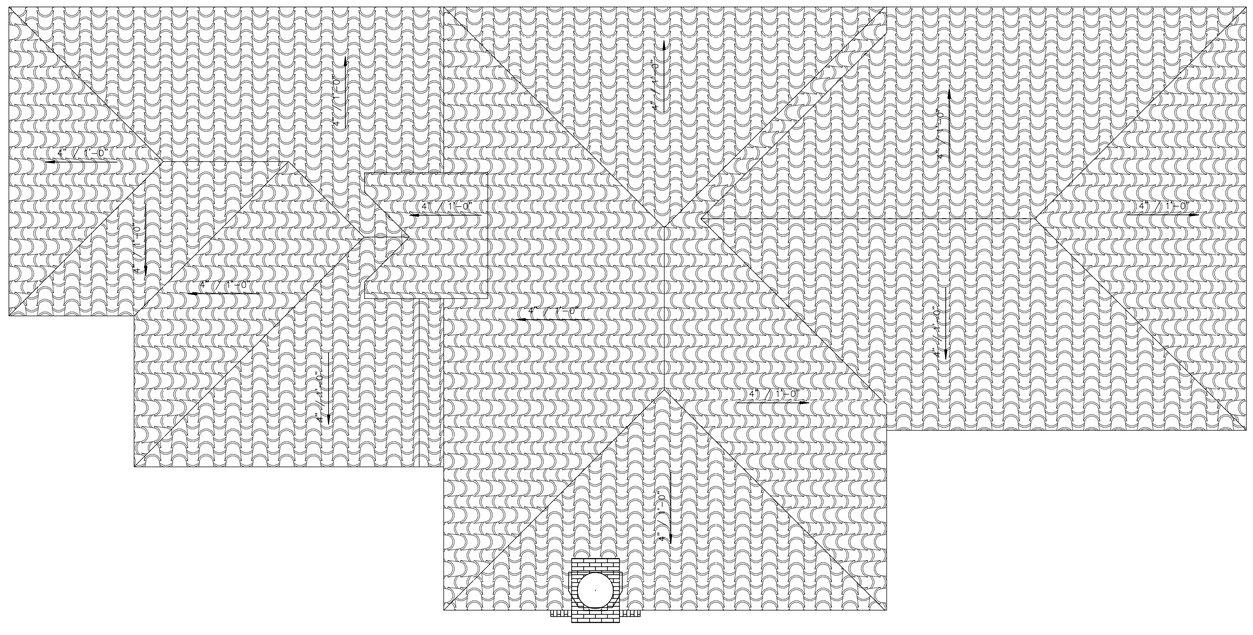
Sheet Title :
FIRST FLOOR PLAN EXISTING/DEMO

Assessor Parcel No.: 7507-001-017
Scale: 1/4" = 1'-0"
Issue Date: 04.15.2025
Drawn: JPT Checked:

Sheet Number :
A-1.7



N 2 SECOND FLOOR PLAN - DEMO
1/4"=1'-0"



N 1 SECOND FLOOR PLAN - EXISTING
1/4"=1'-0"

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LICENSED ARCHITECT
JOSHUA PAUL TULLY
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REN. 08-30-25
STATE OF CALIFORNIA

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RESIDENCE
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Redondo Beach, CA 90277

Project Name :

Project Address :

Revisions :

No.	Date	Description

Sheet Title :

ROOF
PLAN
EXISTING/DEMO

Assessor Parcel No.: 7507-001-017
Scale: 1/4" = 1'-0"
Issue Date: 04.15.2025
Drawn: JPT Checked:

Sheet Number :

A-1.8

GENERAL NOTES:

1. REQUIRED PARKING AREA IS TO BE 9'x19' CLEAR OF ANY OBSTRUCTIONS NOT LESS THAN SEVEN (7) FEET ABOVE THE FINISH FLOOR TO ANY CEILING, BEAM, PIPE, VENT, MECHANICAL EQUIPMENT OR SIMILAR CONSTRUCTION. EXCEPTION: AUTOMATIC GARAGE DOOR EQUIPMENT AND GARAGE DOOR ENTRANCE MAY BE 6.67 FEET.
PARKING SPACES MAY REMAIN NON-CONFORMING WITH RESPECT TO THE NUMBER OF SPACES, EXCEPT AS PROVIDED BELOW, AS WELL AS THE SIZE, CONSISTENT WITH THE PROVISIONS IN SECTION 10.64.090 EXCEPTIONS, WHICH ALLOWS A ONE FOOT (1') REDUCTION IN DIMENSIONS

2. VISIBILITY OF A DRIVEWAY CROSSING A STREET PROPERTY LINE SHALL NOT BE BLOCKED BETWEEN A HEIGHT OF 3 FEET AND 9 FEET FOR A DEPTH OF 5 FEET FROM THE STREET PROPERTY LINE AS VIEWED FROM THE EDGE OF THE RIGHT-OF-WAY ON EITHER SIDE OF THE DRIVEWAY AT A DISTANCE OF 15 FEET OR AT THE NEAREST PROPERTY LINE INTERSECTING THE STREET PROPERTY LINE, WHICHEVER IS LESS.

3. DUCTS PENETRATING WALL OR CEILING PENETRATIONS BETWEEN GARAGE AND DWELLING UNIT SHALL BE CONSTRUCTED OF 26 GAGE MINIMUM SHEET METAL AND SHALL HAVE NO OPENING IN TO THE GARAGE – PER SECT R302.5.2

4. SEPARATE PERMITS AND PLANS ARE REQUIRED FOR SPAS, POOLS, SOLAR SYSTEMS, DEMOLITION AND SEWER CAP OF EXISTING BUILDINGS. IF SUCH IMPROVEMENTS OR DEMOLITION IS REQUIRED AS CONDITION OF APPROVAL FOR DISCRETIONARY ACTIONS OR TO COMMENCE BUILDING, THEN SUCH PERMITS MUST BE OBTAINED BEFORE OR AT THE TIME THIS PROPOSED BUILDING PERMIT IS ISSUED.

5. FENCE / WALL /HANDRAIL AND HEDGE HEIGHTS, AS MEASURED FROM THE LOWEST FINISHED GRADE ADJACENT TO EACH SECTION OF THESE STRUCTURES, MAY BE A MAXIMUM OF 42" IN THE FRONT YARD SETBACK, AND 6' AT ALL OTHER LOCATIONS ON SITE (3' IN DRIVEWAY VISIBILITY TRIANGLE AND IN THE TRAFFIC VISION CLEARANCE TRIANGLE).

6. ESCAPE OR RESCUE WINDOWS SHALL HAVE A MINIMUM NET CLEAR OPENABLE AREA OF 5.7 SQUARE FEET, MINIMUM NET CLEAR OPENABLE HEIGHT OF 24" AND MINIMUM NET CLEAR OPENABLE WIDTH 20" AND HAVE A SILL HEIGHT NOT MORE THAN 44" ABOVE FINISH FLOOR.

7. INSTALL ON THE COLD WATER SUPPLY PIPE AT THE TOP OF THE WATER HEATER A CAPPED "T" FITTING TO PLUMB FOR FUTURE SOLAR WATER HEATING.

8. DECK & ROOF DECK WATERPROOFING TO BE DEX-O-TEX WHEATHERWEAR PROMENADE ROOF DECK SURFACING OVER EXTERIOR GRADE PLYWOOD WITH TILE FINISH. ICC ESR 1757.

9. GLAZING ADJACENT TO STAIRWAY OR LANDINGS, WHERE THE BOTTOM EXPOSED EDGE OF THE GLAZING IS LESS THAN 3 FEET ABOVE THE ADJACENT WALKING SURFACE SHALL BE SAFETY GLASS (CRC R308.4.6)

10. CLOTHES DRYER DUCT SHALL BE METAL WITH MIN. 4 INCHES IN DIAMETER. THE EXHAUST DUCTS SHALL NOT EXCEED A TOTAL COMBINED HORIZONTAL AND VERTICAL LENGTH OF 14 FEET, INCLUDING TWO 90 DEGREE ELBOWS. A LENGTH OF 2 FEET SHALL BE DEDUCTED FOR EACH 90 DEGREE ELBOW IN EXCESS OF TWO. (CMC 04.4.2.1). LAUNDRY VENTILATION EXHAUST TERMINATE AT LEAST 3 FEET FROM PROPERTY LINE AND 3 FEET FROM OPENING INTO ANY BUILDINGS. (CMC. 504.5).

11. RANGE EXHAUST VENTILATION;
MIN. EXHAUST RATE OF 100 CFM.
MAX.SOUND RATING OF 3 SONES @ 100 CFM. AND
VENTING DIRECTLY TO THE BUILDING EXTERIOR.
(CMC 504.2, ASHRAE 62.2 AND BEES 150.0(o)

12. WATER CLOSET SHALL HAVE 15 INCHES TO ANY WALL OR OBSTRUCTION ON EACH SIDE OF IT'S CENTERLINE AND 24 INCHES CLEAR SPACE IN FRONT (402.5 CPC).

13. CONDENSATE LINES FROM MECHANICAL EQUIPMENTS SHALL DISCHARGE TO PLUMBING FIXTURE OR AN APPROVED LOCATION BY MEANS OF AN INDIRECT WASTE PIPE.

14. CERTIFICATES OF INSTALLATION (CF2R-ENV, CF2R-LTG AND CF2R-MECH) SHALL BE COMPLETED BY THE APPLICABLE CONTRACTORS INSTALLING ENERGY FEATURES. WHEN COMPLIANCE REQUIRES 'HERS" FIELD VERIFICATION AND/OR TESTING, ALL CF2R FORM SHALL BE SUBMITTED ELECTRONICALLY TO AN APPROVED "HERS" PROVIDER DATA REGISTRY. THE CF2R FORMS SHALL BE POSTED AT THE JOB SITE IN A CONSPICUOUS LOCATION.

15. CERTIFICATE OF VERIFICATION (CF3R) SHALL BE COMPLETED, REGISTERED, AND SIGNED CERTIFIED BY THE "HERS" RATER. THE REGISTERED CF3R FORM SHALL BE AVAILABLE TO BUILDING DEPARTMENT AND BUILDER.

18. SMOKE ALARM SHALL BE INSTALLED INSIDE ALL BEDROOMS, ON CEILING OR WALL OUTSIDE OF EACH BEDROOM AND ON EVERY STORY – PER SECTION R314.3.

19. CARBON MONOXIDE ALARMS SHALL BE INSTALLED IMMEDIATELY OUTSIDE OF ALL BEDROOMS AND ON EVERY LEVEL – PER SECTION R315.3.

20. BATHROOMS SHALL HAVE AN EXHAUST FAN – PER SECTION 303.3. MIN. MECHANICAL VENTILATION RATES SHALL BE 50 CFM FOR INTERMITTENT VENTILATION AND 25 CFM FOR CONTINUOUS VENTILATION.

21. EGRESS GATES SHALL HAVE A MINIMUM CLEAR OPENING OF NOT LESS THAN 32" AND READILY OPENABLE FROM INSIDE THE DWELLING WITHOUT THE USE OF A KEY OR SPECIAL KNOWLEDGE OR EFFORT. PER SECTION R311.2

22. SOLAR PV MUST BE INSTALLED PRIOR APPROVAL OF FINAL INSPECTION AND PRIOR OCCUPANCY OF THE BUILDING

23. WATER HEATER INSTALLATIONS, REGARDLESS OF PROPOSE WATER HEATING SYSTEM, SHALL HAVE (BEES 150.0)
–A120V ELECTRICAL RECEPTACLE THAT IS WITHIN 3 FEET FROM THE WATER HEATER.
–A CATEGORY III OR IV VENT, OR A TYPE B VENT WITH STRAIGHT PIPE.
–CONDENSATE DRAIN THAT IS NO MORE THAN 2 INCHES HIGHER THAN THE FINISH SURFACE BELOW.
–A GAS SUPPLY LINE WITH AVAILABLE CAPACITY FOR NOT LESS THAN 200.000 BTU/ HR SYSTEM.

24. DECK SHALL NOT DRAIN OVER THE SLOPE BY SHEET FLOW OR SCUPPERS, PIPED ROOF AND OVERFLOW DRAIN SHALL BE INSTALLED AT LOW POINTS OF EACH DECK LEVEL. SECONDARY EMERGENCY OVERFLOW ROOF DRAINS OR SCUPPERS SHALL BE PROVIDED AS FOLLOW:
a) OVERFLOW DRAIN HAVING HAVING THE SAME SIZE AS THE ROOF DRAINS SHALL BE INSTALLED WITH THE INLET FLOW LINE LOCATED 2 INCHES ABOVE THE LOW POINT OF THE ROOF, AND SEPARATELY PIPED.
b) THE INSTALLATION OF OVERFLOW DRAINS, LEADERS AND CONDUCTORS SHALL COMPLY WITH CALIFORNIA PLUMBING CODE.

25. OVERFLOW SCUPPERS SHALL HAVE AN AREA 3 TIMES THE REQUIRED DECK DRAIN, A MINIMUM OPENING HEIGHT OF 4 INCHES AND HAVE AN INLET FLOW LINE LOCATED 2 INCHES ABOVE THE LOW POINT OF THE DECK. (CRC R903.4.1)

26. WINDOW FALL PROTECTION. WINDOW FALL PROTECTION SHALL BE PROVIDED IN ACCORDANCE WITH SECTIONS 9R312.2.1 AND R312.2.2.).
a) WINDOW SILL. IN DWELLING UNITS, WHERE THE TOP OF THE SILL OF AN OPERABLE WINDOW OPENING IS LOCATED LESS THAN 24 INCHES ABOVE THE FINISHED FLOOR AND GREATER THAN 72 INCHES ABOVE THE FINISHED GRADE OR OTHER SURFACE BELOW.
b) OPERABLE WINDOW WITH OPENINGS THAT WILL NOT ALLOW A4 INCHES DIAMETER SPHERE TO PASS THROUGH THE OPENING WHERE THE OPENING IS IN ITS LARGEST OPEN POSITION.
c) OPENING THAT ARE PROVIDED WITH WINDOW FALL PREVENTION DEVICES THAT COMPLY WITH ASTM F 2090.
d) WINDOWS THAT ARE PROVIDED WITH WINDOW OPENING CONTROL DEVICES THAT COMPLY WITH SECTION R312.2.2.

27. WINDOW OPENING CONTROL DEVICES. WINDOW OPENING CONTROL SHALL COMPLY WITH ASTM F 2090. THE WINDOW OPENING CONTROL DEVICE, AFTER OPERATION TO RELEASE THE CONTROL DEVICE ALLOWING THE WINDOW TO FULLY OPEN. SHALL NOT REDUCE THE MINIMUM NEW CLEAR OPENING AREA OF THE WINDOW UNIT TO LESS THAN THE AREA REQUIRED BY SECTION R310.1.1. (R312.2.2).

28. PROVIDE A 4 INCHES MINIMUM SEWER AND DRAIN LATERAL (DUE TO THE NUMBER OF TOILETS).

29. ALL KITCHEN CIRCUITS SHALL BE ON A COMBINATION AFCI/GFCI.

30. ALL RECEPTACLE IN THE GARAGE SHALL BE A MINIMUM OF 18" ABOVE THE FINISH FLOOR.

31. LAUNDRY SINK RECEPTACLE SHALL BE COMBINATION AFCI/GFCI.

32. ALL WALL SPACES, 2 FEET OR MORE IN WIDTH, SHALL HAVE RECEPTACLES INSTALLED
SUCH THAT NO POINT MEASURED HORIZONTALLY ALONG THE FLOOR LINE IS MORE
THAN 6 FEET FROM A RECEPTACLE (12 FEET MAXIMUM SPACING).
(210.52(A) (1) & (2) CEC).

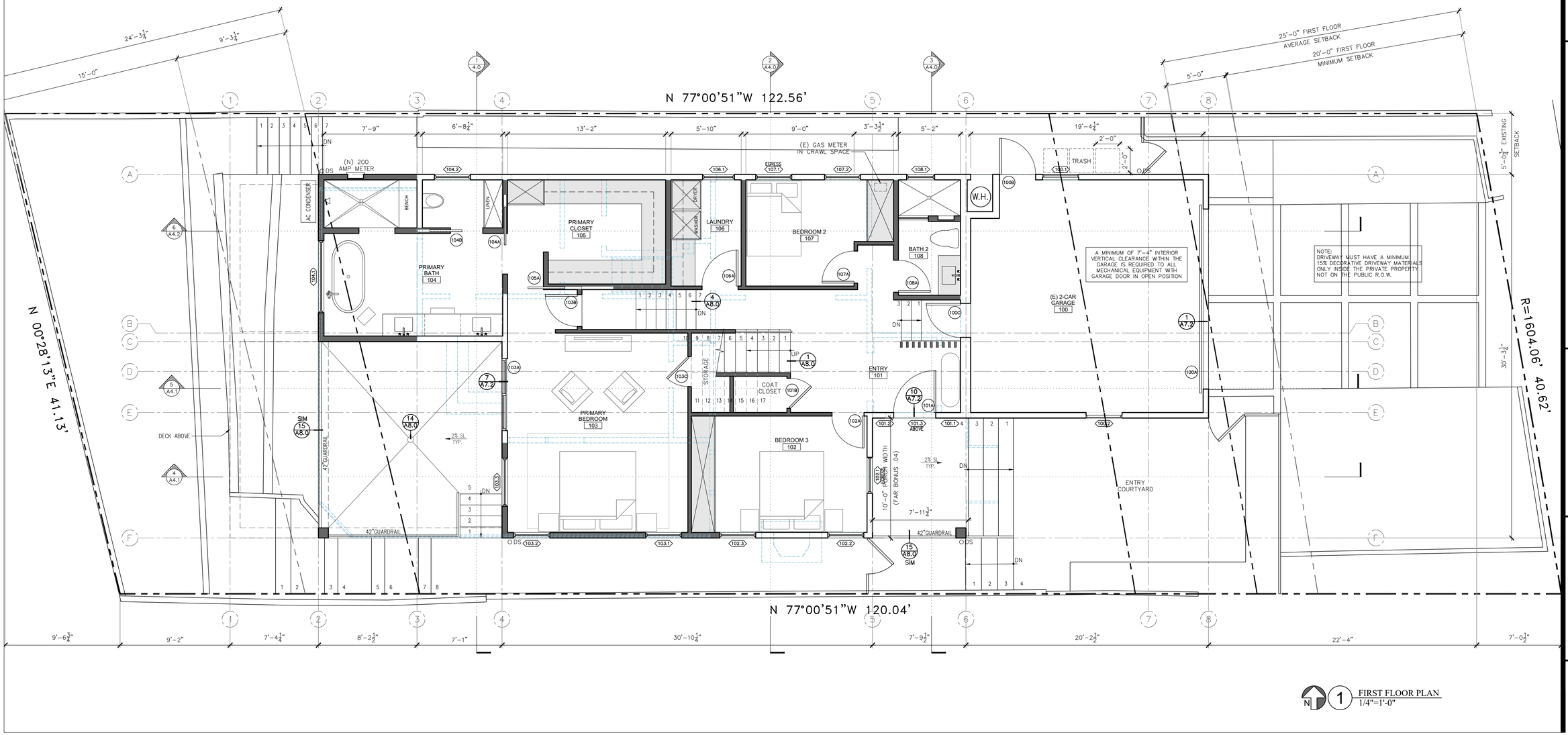
33. ISLAND AND PENINSULAR COUNTER 24 INCHES x 12 INCHES OR GREATER IN LENGTH
SHALL HAVE AT LEAST ONE RECEPTACLE. (210.25(C)(2) & (3) CEC).

34. SMOKE ALARM & CARBON MONOXIDE SHALL HAVE A 10-YEAR LIFE BATTERY BACK-UP
IN SEALED COMPARTMENT.

35. TOP OF FOOTING SHALL BE LOCATED 8" MINIMUM ABOVE EXPOSED EARTH (UNLESS WOOD FRAMING MEMBERS ARE OF NATURALLY DURABLE OR PRESERVATIVE-TREATED WOOD) – PER SECTION R317.1

LEGEND:

- NEW WALL
- EXISTING WALL
- EXISTING MASONRY WALL
- DEMO WALLS
- FLOOR / WALL ABOVE
- SETBACK
- (N) NEW
- (E) EXISTING
- CRAWL SPACE VENTILATION



N 1 FIRST FLOOR PLAN
1/4"=1'-0"

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LICENSED ARCHITECT JOSHUA PAUL TULLY C-59842 REN. 08-30-25 STATE OF CALIFORNIA

Project Name : HELBERTA RESIDENCE
Remodel + Addition

Project Address : 537 S Helberta Ave
Redondo Beach, CA 90277

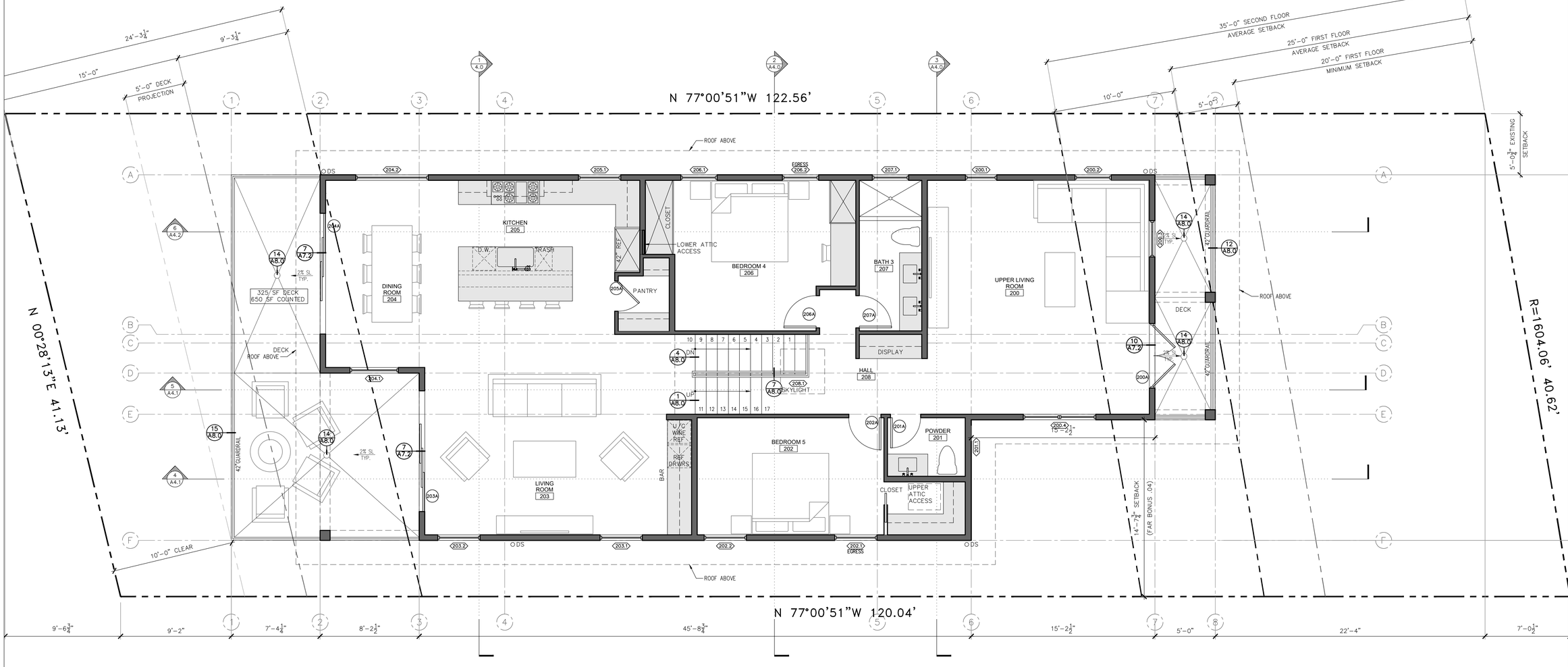
Revisions :

No.	Date	Description

Sheet Title : FIRST FLOOR PLAN

Assessor Parcel No.: 7507-001-017
Scale: 1/4" = 1'-0"
Issue Date: 04.15.2025
Drawn: JPT Checked:

Sheet Number : A-2.0



1 SECOND FLOOR PLAN
1/4"=1'-0"

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HELBERTA RESIDENCE
Remodel + Addition
537 S Helberta Ave
Redondo Beach, CA 90277

Project Name :

Project Address :

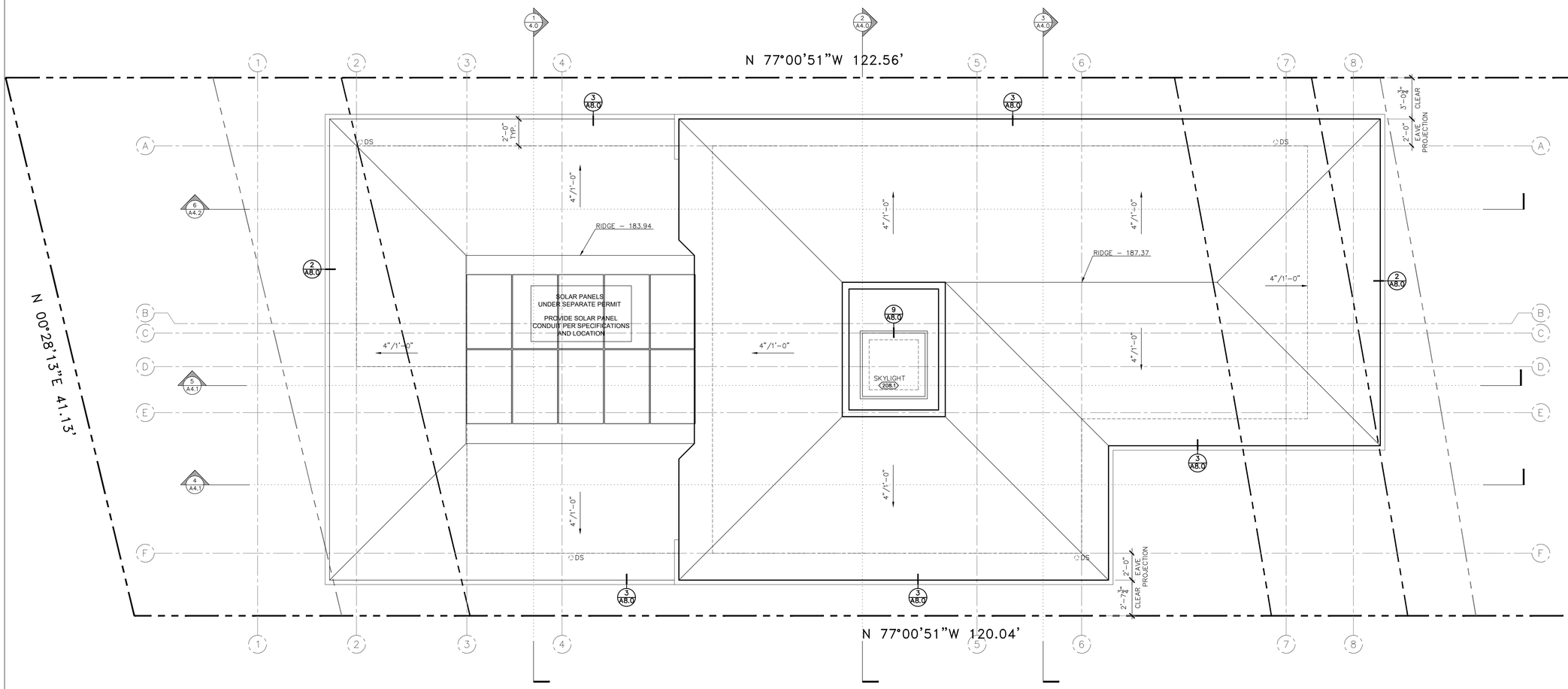
Revisions :

No.	Date	Description

Sheet Title :
SECOND FLOOR PLAN

Assessor Parcel No.: 7507-001-017
Scale: 1/4" = 1'-0"
Issue Date: 04.15.2025
Drawn: JPT Checked:

Sheet Number :
A-2.1



N 1 ROOF PLAN
1/4"=1'-0"

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LICENSED ARCHITECT
JOSHUA PAUL TULLY
C-59842
REN. 08-30-25
STATE OF CALIFORNIA

HELBERTA
RESIDENCE
Remodel + Addition
537 S Helberta Ave
Redondo Beach, CA 90277

Project Name :

Project Address :

Revisions :

No.	Date	Description

Sheet Title :
ROOF
PLAN

Assessor Parcel No.: 7507-001-017
Scale: 1/4" = 1'-0"
Issue Date: 04.15.2025
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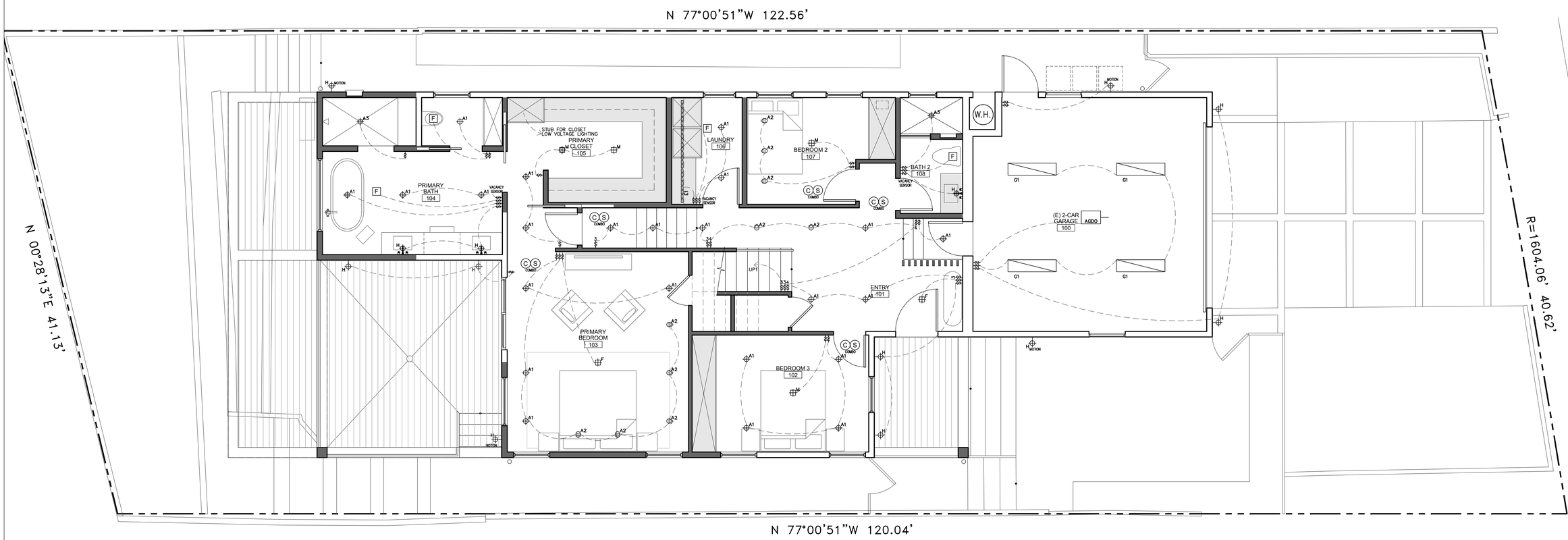
Sheet Number :
A-2.2



1 FIRST FLOOR RCP & LIGHTING PLAN
1/4"=1'-0"

REFLECTED CEILING PLAN SYMBOLS LEGEND:	
E	EXISTING
EL	EXISTING LOCATION, NEW FIXTURE
FL	FLUORESCENT
WP	WATERPROOF
ADJ	ADJUSTABLE
HE	HIGH EFFICIENCY
GFI	GROUND FAULT INTERRUPTER
AFI	ARC FAULT INTERRUPTER
F	EXHAUST FAN
	RECESSED DOWNLIGHT
	RECESSED UPLIGHT
$E	EMERGENCY LIGHT WITH BACK-UP BATTERY
	DIRECTIONAL RECESSED DOWNLIGHT
	WALL SCONCE

	RECESSED WALL MOUNTED FIXTURE	
	CEILING MOUNTED FIXTURE	
P	PENDANT FIXTURE	
	STRIP LIGHTING	
	FLUORESCENT SURFACE FIXTURE	
	UPPER CABINET, UNDER CABINET & COVE LIGHT	
	UNDER CABINET LIGHT	
	TRACK LIGHTING	
	EXTERIOR LANDSCAPE LIGHTING	
T.V.	CABLE TV	12" A.F.F.
TEL	TELEPHONE	12" A.F.F.
DATA	DATA CABLE (INTERNET)	12" A.F.F.
SAT	SATELLITE	12" A.F.F.
CAT6	COM (CAT6) (NETWORK)	12" A.F.F.
ALARM	SECURITY SYSTEM	42" A.F.F.

$	WALL SWITCH	42" A.F.F.
D	WALL SWITCH W/ DIMMER CONTROL	42" A.F.F.
3	3 WAY WALL SWITCH	42" A.F.F.
4	4 WAY WALL SWITCH	42" A.F.F.
M	WALL SWITCH W/ MOTION SENSOR	
	DUPLEX OUTLET	12" A.F.F.
	DUPLEX OUTLET/ SWITCH CONTROL	12" A.F.F.
	QUAD OUTLET	12" A.F.F.
GAS	GAS LINE	12" A.F.F.
H.B.	HOSE BIB	12" A.F.F.
S	120-VOLT HARD WIRED & INTERCONNECTED SMOKE DETECTOR	
C	120-VOLT HARD WIRED & INTERCONNECTED CARBON MON. ALARM	
H	INTERCONNECTED HEAT DETECTOR RATED 190 F OR ABOVE	
S	WIRE ROOM FOR SPEAKERS	

LIGHT FIXTURES SPECIFICATIONS

A1 ELCO 3" LED SQUARE TRIM – SQUARE PINHOLE

A2 ELCO 3" LED SQUARE WALL WASH TRIM – SQUARE PINHOLE

A3 ELCO 3" LED SQUARE TRIM – SQUARE PINHOLE SHOWER LIGHT

D1 B-K LIGHTING VERSA SQUARE STAR LED BRASS POWDER COATED WHITE DOWN LIGHT 36° FLOOD 2700K

D2 B-K LIGHTING MINI-MICRO UP/DOWN LIGHT (SOLID STATE) OM-LED-e38/e38-FL/FL-BZP-12/12-B

D3 WAC EXTERIOR LED STEP LIGHT STAINLESS STEEL FINISH – WL-LED100-C-SS

D4 DREAMSCAPE MESA GRANDE LED UPLIGHT WHITE WITH BRASS MOUNTING BOX

D5 LIGHTING FX REFLECTORE STELLATO RS-35H-BZ

D6 DASAL WALL LIGHT 2-300

D7 B-K LIGHTING SQUARE ADJUSTABLE WELL STAR (MR16) SW-16-BZW-9-11 BRONZE

D8 LUMIERE BOCA 631 – BELOW GRADE UPLIGHT 50MR16 12V, TRU-AIM 37W MR16 IR WFL60, LBB-(ORDER HOUSING AHEAD IF REQ'D)-DIF-LVR. VERIFY FINISH WITH ARCHITECT PRIOR TO ORDERING.

D9 DREAMSCAPE MESA DL-126 EXT.-B-702-11 SURFACE MOUNTED UPLIGHT, RUST BROWN FINISH, 20W MR-11 FLOOD LAMP, HOUSING NOT INCLUDED, VERIFY FINISH W/ ARCHITECT PRIOR TO ORDERING.

E1 ARDEE MODULEX CF 7S.051WH

E2 UNDER CABINET LED FIXTURE

E3 OVER CABINET LED FIXTURE

E4 UNDER CABINET LOW VOLTAGE PUCK LIGHT

F PENDENT SELECTED BY OWNER

G1 LITHONIA WIDE BODY SB 4 32 MVOLT 1/4 GEB10IS SURFACE MOUNT FLUORESCENT FIXTURE

G2 LITHONIA NARROW BODY SB 4 32 MVOLT 1/4 GEB10IS SURFACE MOUNT FLUORESCENT FIXTURE

H SURFACE WALL MOUNT SELECTED BY OWNER

I LITHONIA FM54 ACLS LP M4 SQUARE SURFACE MOUNT FLUORESCENT FIXTURE

K SURFACE WALL MOUNT DECK LIGHT

L LUTRON DUAL MOUNT ROLLER SHADE – SIVOIA QED CONTROL WITH ROLLER 200CW DUAL MOUNT BRACKET

M SURFACE MOUNTED CEILING FIXTURE TO BE SELECTED BY OWNER

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Project Name : HELBERTA RESIDENCE
Remodel + Addition
Project Address : 537 S Helberta Ave
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Revisions :

No.	Date	Description

Sheet Title : RCP & LIGHTING PLAN

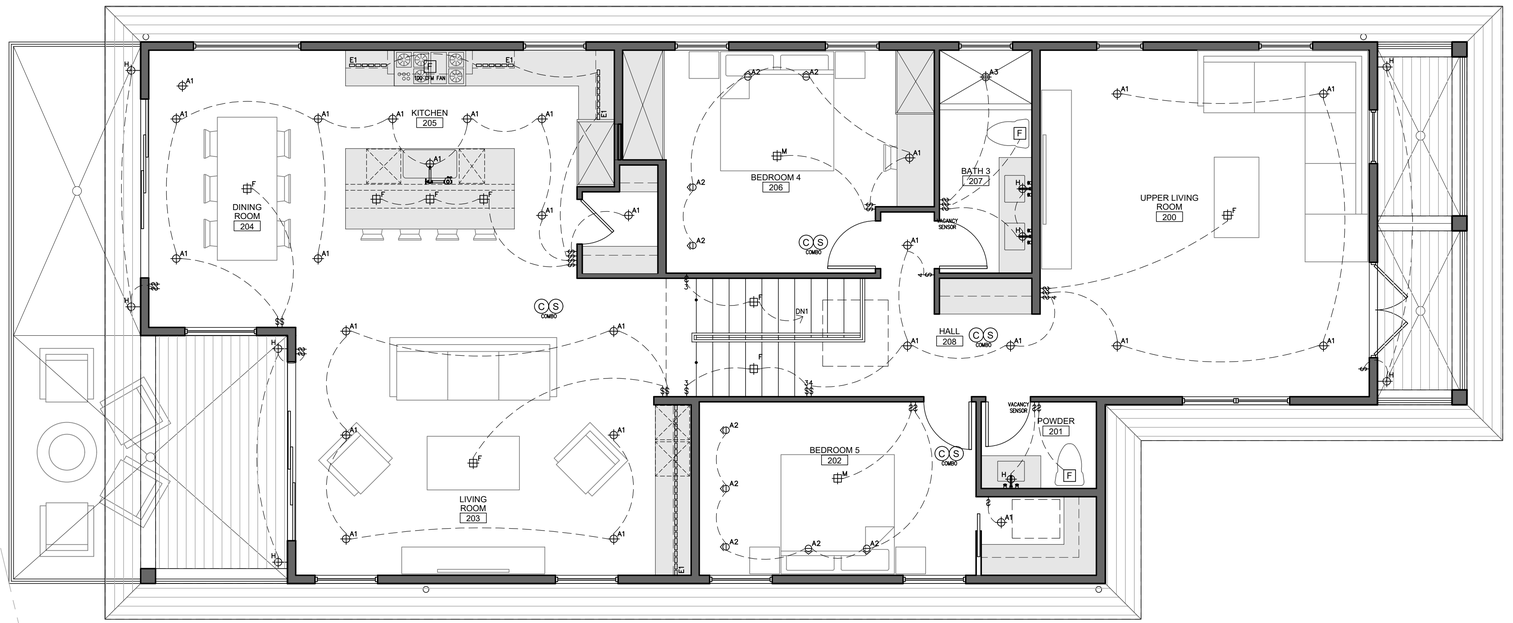
Assessor Parcel No.: 7507-001-017
Scale: 1/4" = 1'-0"
Issue Date: 04.15.2025
Drawn: JPT Checked:

Sheet Number : A-2.3

N 77°00'51"W 122.56'

N 00°28'13"E 41.13'

R=1604.06' 40.62'



N 77°00'51"W 120.04'

N 1 SECOND FLOOR RCP & LIGHTING PLAN
1/4"=1'-0"

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LICENSED ARCHITECT
JOSHUA PAUL TULLY
C-38842
REN. 06-30-25
STATE OF CALIFORNIA

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HELBERTA RESIDENCE
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No.	Date	Description

Sheet Title :
RCP & LIGHTING PLAN

Assessor Parcel No.: 7507-001-017
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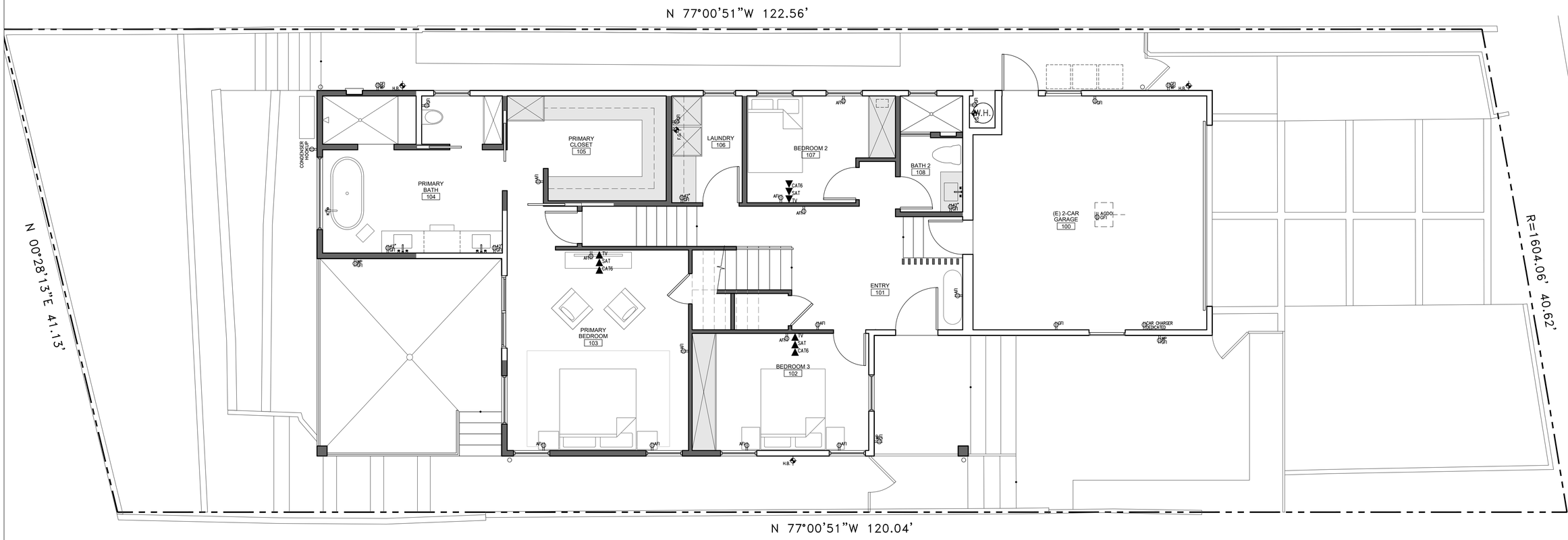
A-2.4



1 FIRST FLOOR POWER & SIGNAL PLAN
1/4"=1'-0"

NOTES:

1. ALL BUILT-IN APPLIANCES SHALL RECEIVE THEIR OWN DEDICATED CIRCUIT (EACH APPLIANCE)
2. ALL RECEPTACLES SHALL BE TAMPER RESISTANT
3. ALL RECEPTACLES ALONG COUNTERTOPS ARE REQUIRED TO BE GFCI PROTECTED, BE LOCATED NO FARTHER
4. THAN 4' APART AND NO FARTHER THAN 2' FROM EDGE OF COUNTER
5. ISLANDS AND PENINSULAS REQUIRE AT LEAST 1 GFCI PROTECTED RECEPTACLE.
6. EVERY GAS APPLIANCE IS REQUIRED TO HAVE AN ACCESSIBLE SHUTOFF VALVE IN THE SAME ROOM WITHIN 3' OF THE APPLIANCE.
7. IF ADDING OR MOVING A GAS LINE IT WILL REQUIRE A PRESSURE TEST WITH AN APPROVED GAUGE.
7. A MINIMUM VERTICAL CLEARANCE OF 30" IS REQUIRED ABOVE A COOK TOP TO COMBUSTIBLE MATERIALS. THE MINIMUM CLEARANCE MAY BE REDUCED TO 24" WHEN PROTECTED BY EXHAUST HOOD.
10. THE EXHAUST DUCT MUST TERMINATE 3' FROM ANY BUILDING OPENING OR PROPERTY LINE.
11. EXHAUST DUCT MUST BE METAL AND HAVE SMOOTH INTERIOR SURFACES. (NO FLEXIBLE DUCT ALLOWED)
12. EXHAUST FANS SHALL BE ENERGY STAR COMPLIANT AND BE DUCTED TO TERMINATE TO THE OUTSIDE OF THE BUILDING
13. AT ROOFTOP MECHANICAL WELL, PROVIDE READILY ACCESSIBLE ELECTRICAL DISCONNECTING MEANS, 120V OUTLET LOCATED ON SUPPLY SIDE OF DISCONNECT SWITCH, 30"X30" MIN. WORKING SPACE.

REFLECTED CEILING PLAN SYMBOLS LEGEND:	
E	EXISTING
EL	EXISTING LOCATION, NEW FIXTURE
FL	FLUORESCENT
WP	WATERPROOF
ADJ	ADJUSTABLE
HE	HIGH EFFICIENCY
GFI	GROUND FAULT INTERRUPTER
AFI	ARC FAULT INTERRUPTER
F	EXHAUST FAN
	RECESSED DOWNLIGHT
	RECESSED UPLIGHT
O_E	EMERGENCY LIGHT WITH BACK-UP BATTERY
	DIRECTIONAL RECESSED DOWNLIGHT
	WALL SCONCE

	RECESSED WALL MOUNTED FIXTURE	
	CEILING MOUNTED FIXTURE	
$_P$	PENDANT FIXTURE	
	STRIP LIGHTING	
	FLUORESCENT SURFACE FIXTURE	
	UPPER CABINET, UNDER CABINET & COVE LIGHT	
	UNDER CABINET LIGHT	
	TRACK LIGHTING	
	EXTERIOR LANDSCAPE LIGHTING	
$_{T.V.}$	CABLE TV	12" A.F.F.
$_{TEL}$	TELEPHONE	12" A.F.F.
$_{DATA}$	DATA CABLE (INTERNET)	12" A.F.F.
$_{SAT}$	SATELLITE	12" A.F.F.
$_{CAT6}$	COM (CAT6) (NETWORK)	12" A.F.F.
$_{ALARM}$	SECURITY SYSTEM	42" A.F.F.

$_S$	WALL SWITCH	42" A.F.F.
$_D$	WALL SWITCH W/ DIMMER CONTROL	42" A.F.F.
$_3$	3 WAY WALL SWITCH	42" A.F.F.
$_4$	4 WAY WALL SWITCH	42" A.F.F.
$_M$	WALL SWITCH W/ MOTION SENSOR	
	DUPLEX OUTLET	12" A.F.F.
	DUPLEX OUTLET/ SWITCH CONTROL	12" A.F.F.
	QUAD OUTLET	12" A.F.F.
$_{GAS}$	GAS LINE	12" A.F.F.
$_{H.B.}$	HOSE BIB	12" A.F.F.
(S)	120-VOLT HARD WIRED & INTERCONNECTED SMOKE DETECTOR	
(C)	120-VOLT HARD WIRED & INTERCONNECTED CARBON MON. ALARM	
(H)	INTERCONNECTED HEAT DETECTOR RATED 190 F OR ABOVE	
S	WIRE ROOM FOR SPEAKERS	

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LICENSED ARCHITECT JOSHUA PAUL TULLY C-38842 REN. 06-30-25 STATE OF CALIFORNIA

Project Name :
HELBERTA RESIDENCE
Remodel + Addition

Project Address :
537 S Helberta Ave
Redondo Beach, CA 90277

Revisions :

No.	Date	Description

Sheet Title :
POWER & SIGNAL PLAN

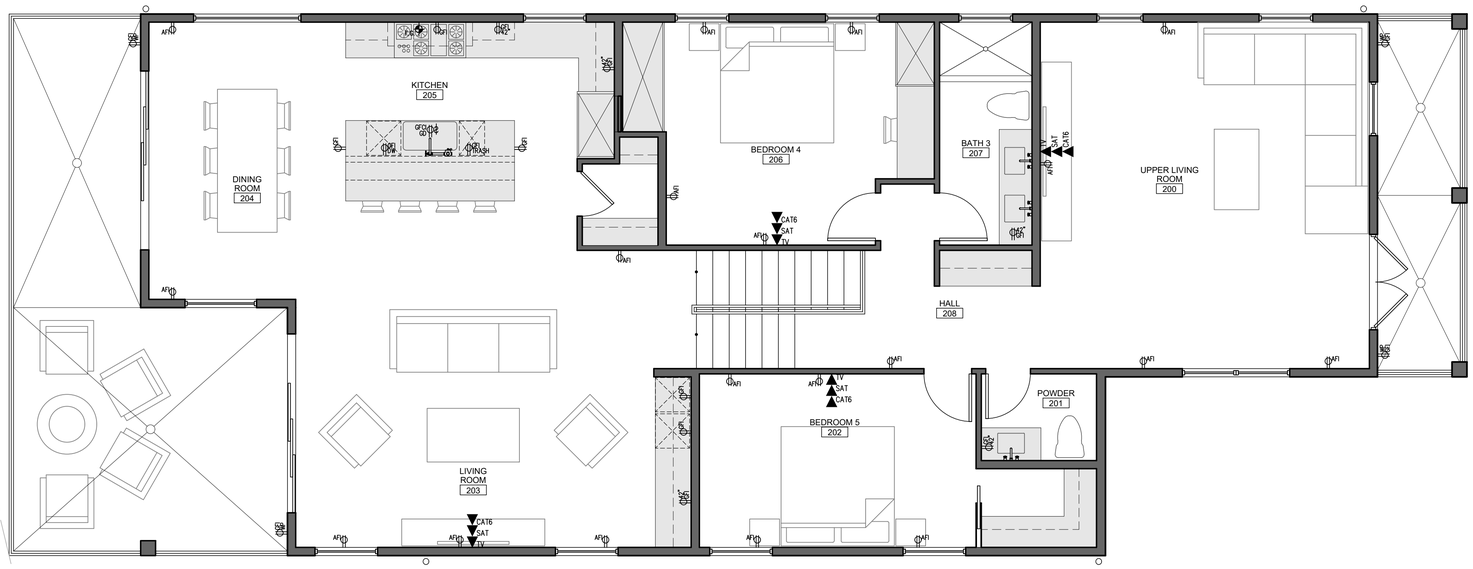
Assessor Parcel No.: 7507-001-017
Scale: 1/4" = 1'-0"
Issue Date: 04.15.2025
Drawn: JPT Checked:

Sheet Number :
A-2.5

N 77°00'51"W 122.56'

N 00°28'13"E 41.13'

R=1604.06' 40.62'



N 77°00'51"W 120.04'

1 SECOND FLOOR POWER & SIGNAL PLAN
1/4"=1'-0"

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LICENSED ARCHITECT
JOSHUA PAUL TULLY
C-38842
REN. 06-30-25
STATE OF CALIFORNIA

Project Name :
HELBERTA RESIDENCE
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Sheet Title :
POWER & SIGNAL PLAN

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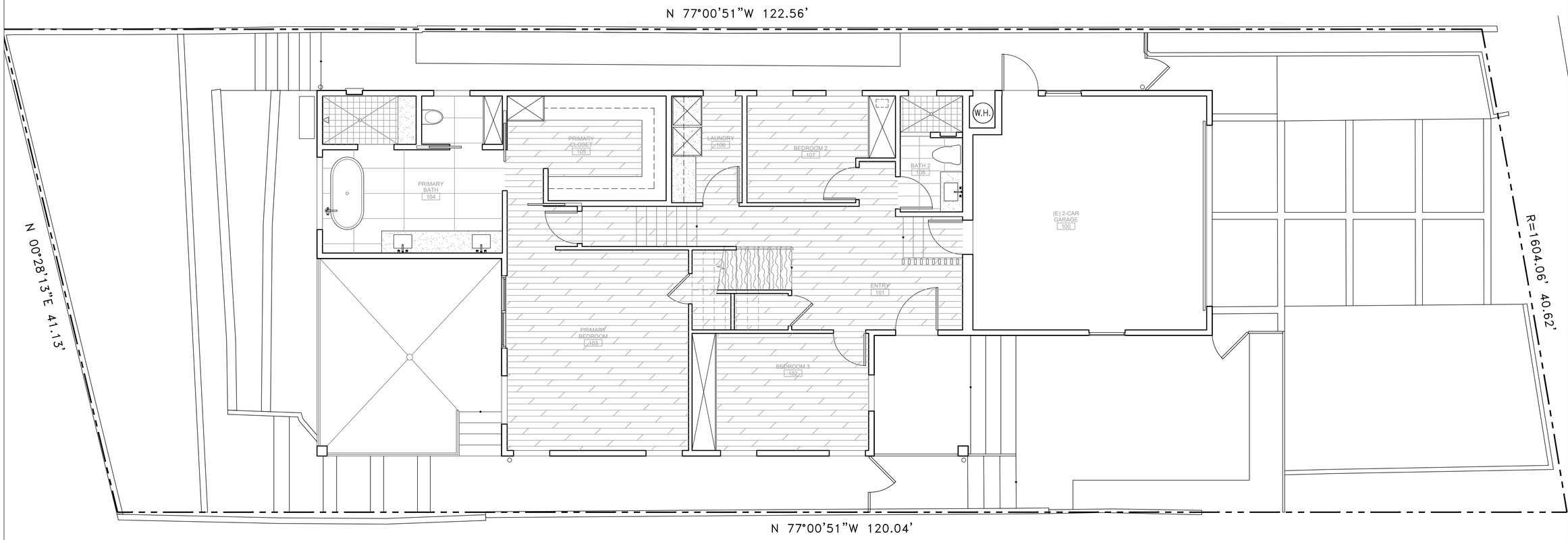
Sheet Number :
A-2.6



1 FIRST FLOOR FINISH PLAN
1/4"=1'-0"

LEGEND

- LINOLEUM FLOOR
- CONCRETE SLAB WITH INTERGRAL COLOR AND PRESSURE WASH FINISH
- ¾" TILE FINISH OVER 1¼" FLOAT BED
- ¾" HARDWOOD FLOORING
- WALL TO WALL CARPET
- STONE, QUARTZ OR PLASTER SURFACE
- WOOD SURFACE

FINISHES LEGEND INTERIOR

CODE	MATERIAL	SIZE	FINISH
ST-1	STONE TILE		
ST-2	STONE TILE		
ST-3	STONE SLAB		
T-1	PORCELAIN TILE		
T-2	PORCELAIN TILE		
T-3	GLASS TILE		
WD-1	WOOD - FLOORING		
WD-2	WOOD - DECKING		
WD-3	WOOD - CEILING T&G		
WD-4	WOOD - BEAM CLADDING		
WD-5	WOOD - CABINETS		
QZ-1	QUARTZITE COUNTER		
QZ-2	QUARTZITE COUNTER		
PT-1	PAINT		
PT-2	PAINT		
PT-3	PAINT		
CP-1	CARPET - BROADLOOM		

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LICENSED ARCHITECT JOSHUA PAUL TULLY C-58842 REN. 08-30-25 STATE OF CALIFORNIA

Project Name : HELBERTA RESIDENCE
Remodel + Addition

Project Address : 537 S Helberta Ave
Redondo Beach, CA 90277

Revisions :

No.	Date	Description

Sheet Title : FINISH PLAN

Assessor Parcel No.: 7507-001-017
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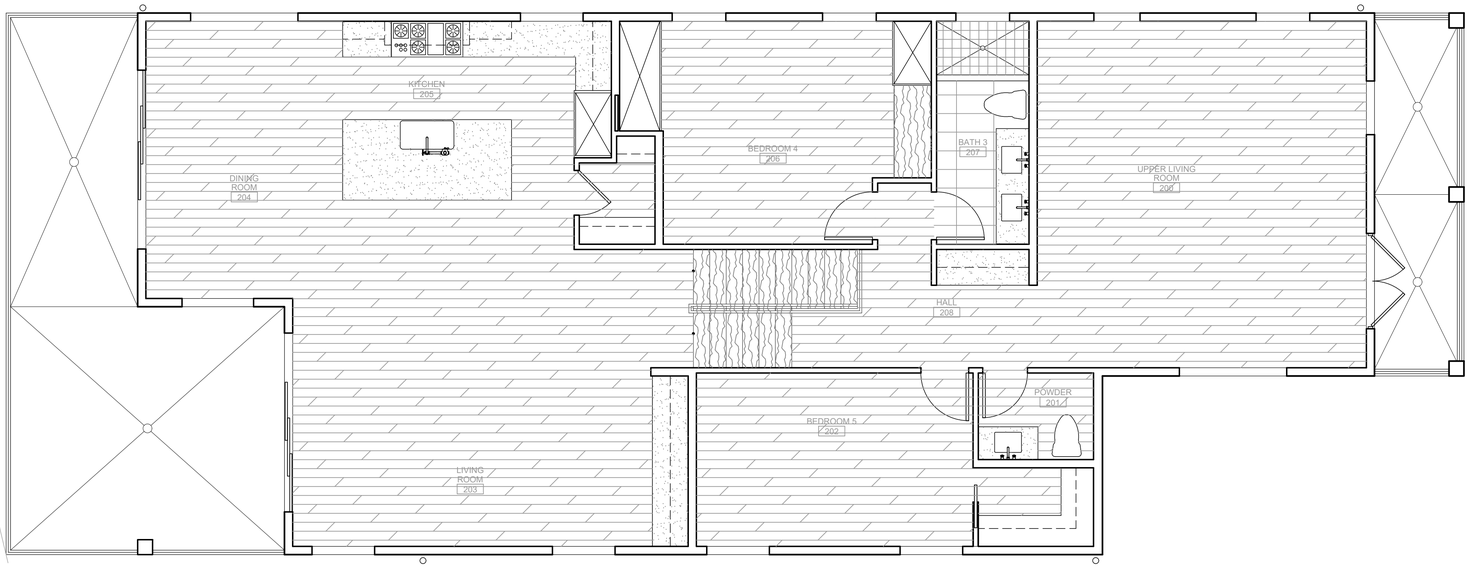
Issue Date: 04.15.2025
Drawn: JPT Checked:

Sheet Number : A-2.7

N 77°00'51"W 122.56'

N 00°28'13"E 41.13'

R=1604.06' 40.62'



N 77°00'51"W 120.04'

1 SECOND FLOOR FINISH PLAN
1/4"=1'-0"

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FINISH PLAN

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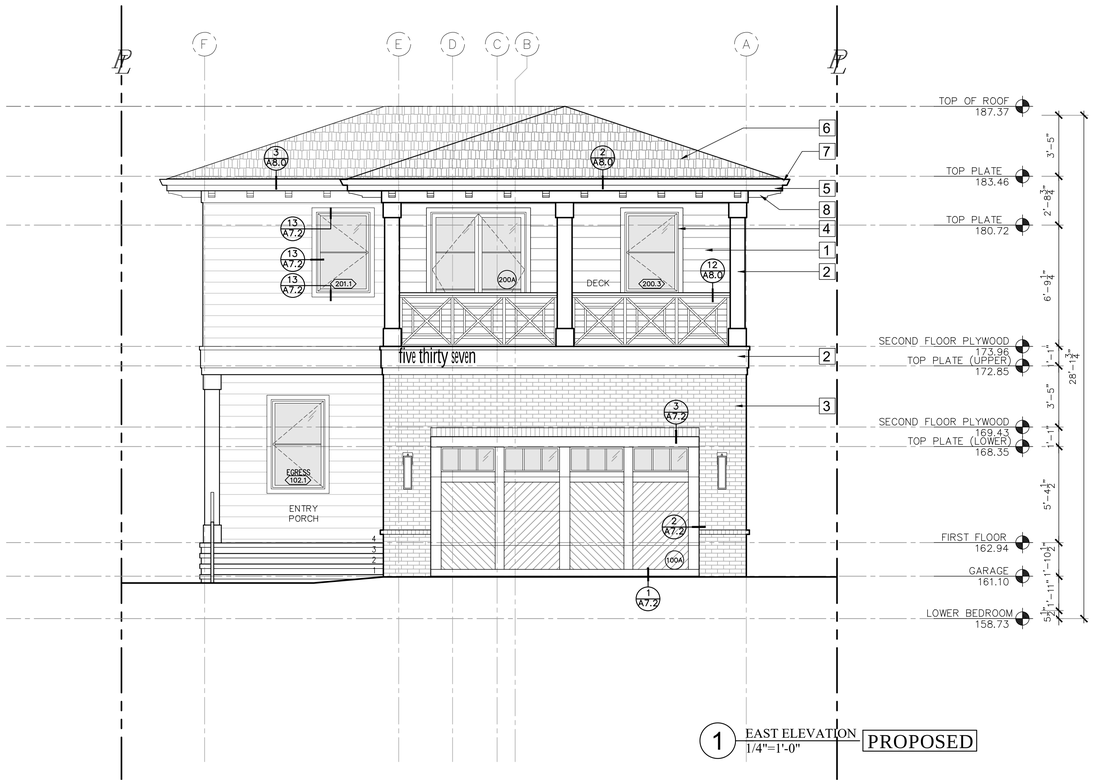
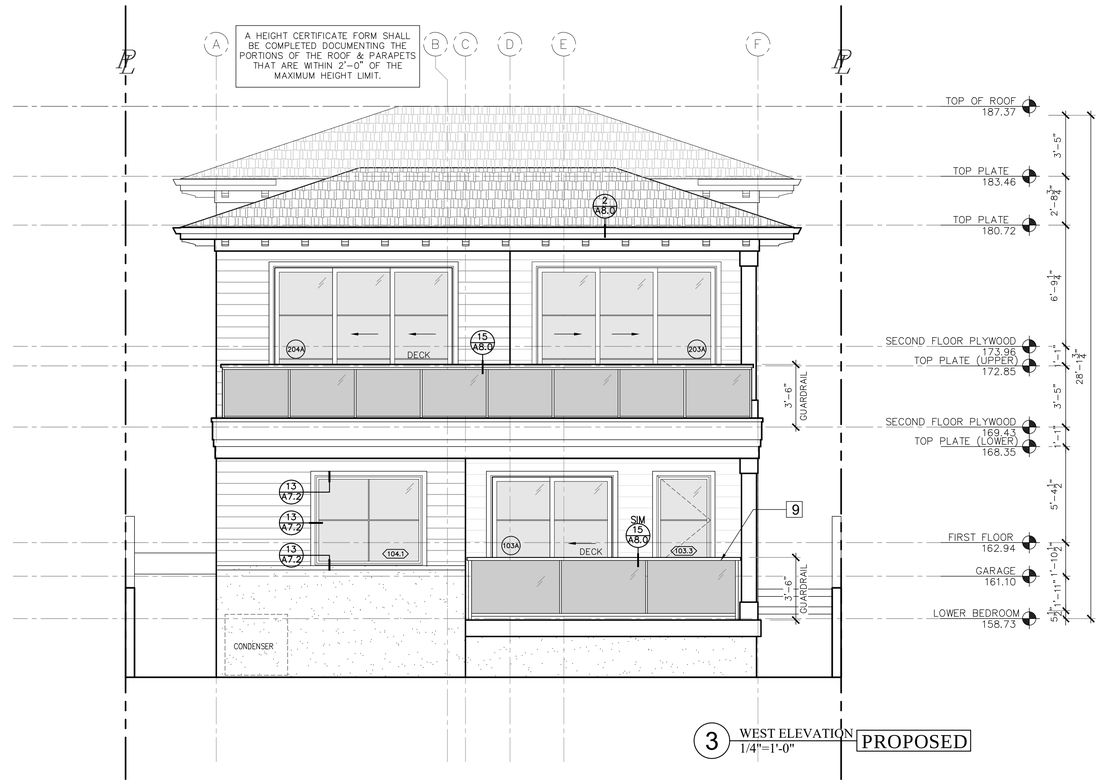
Sheet Number :

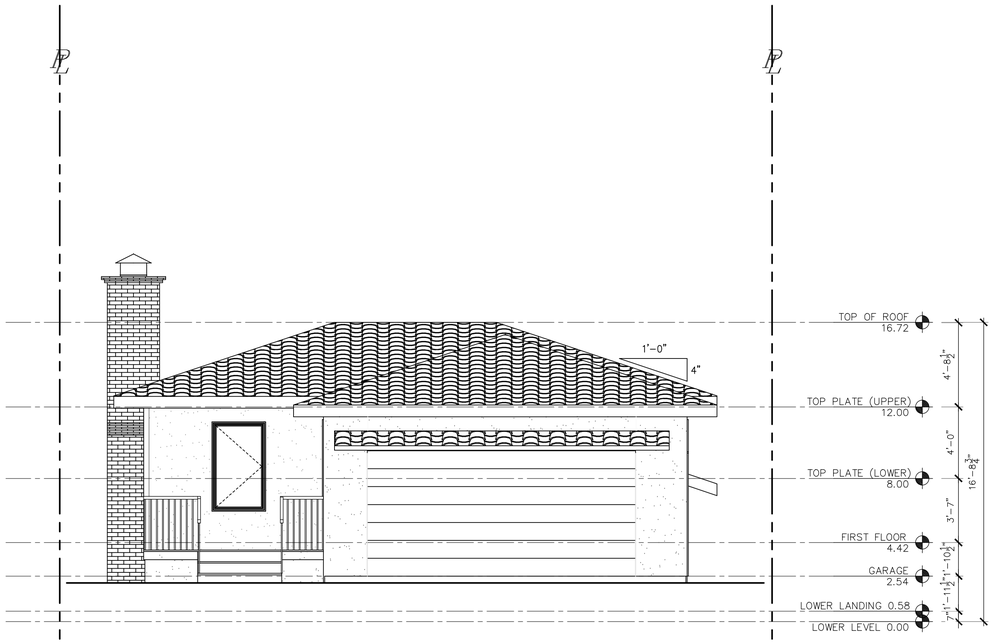
A-2.8



1 EAST ELEVATION
1/4"=1'-0"
PROPOSED

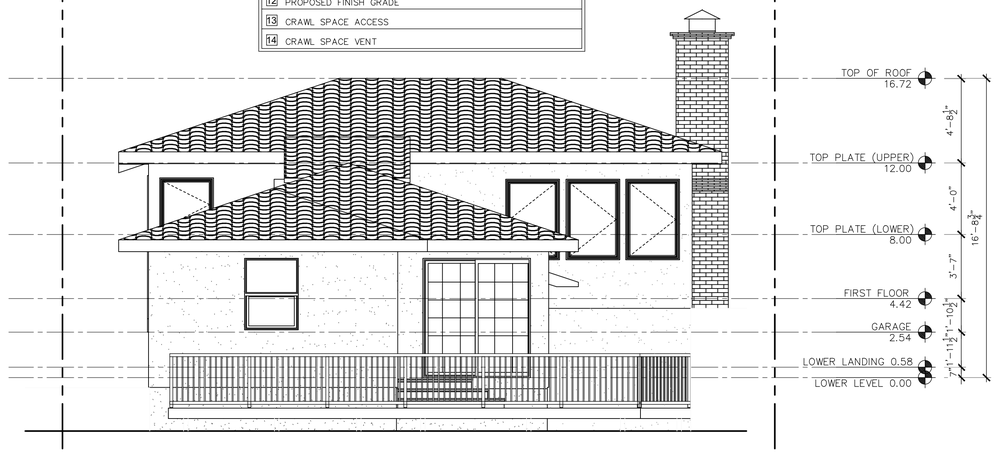


3 WEST ELEVATION
1/4"=1'-0"
PROPOSED



2 EAST ELEVATION
1/4"=1'-0"
EXISTING

EXTERIOR FINISHES:
1 FIBER CEMENT COMPOSITE SIDING – PAINTED
2 FIBER CEMENT PANEL/TRIM – PAINTED
3 BRICK VENEER
4 ALUMINUM CLAD WOOD DOORS AND WINDOWS
5 PAINTED WOOD FASCIA
6 A/C COMPOSITE SHINGLES
7 SURFACE MOUNTED ALUMINUM GUTTER W/ DOWNSPOUTS
8 CUSTOM PROFILE RAFTER TAIL
9 42" GLASS GUARDRAIL
10 42" WOOD AND CABLE GUARDRAIL
11 EXISTING GRADE AT NEIGHBOR
12 PROPOSED FINISH GRADE
13 CRAWL SPACE ACCESS
14 CRAWL SPACE VENT



4 WEST ELEVATION
1/4"=1'-0"
EXISTING

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C-59842
REN. 08-30-25
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Project Name :

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Sheet Title :
EXTERIOR
ELEVATIONS

Assessor Parcel No.: 7507-001-017
Scale: 1/4" = 1'-0"
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Drawn: JPT Checked:

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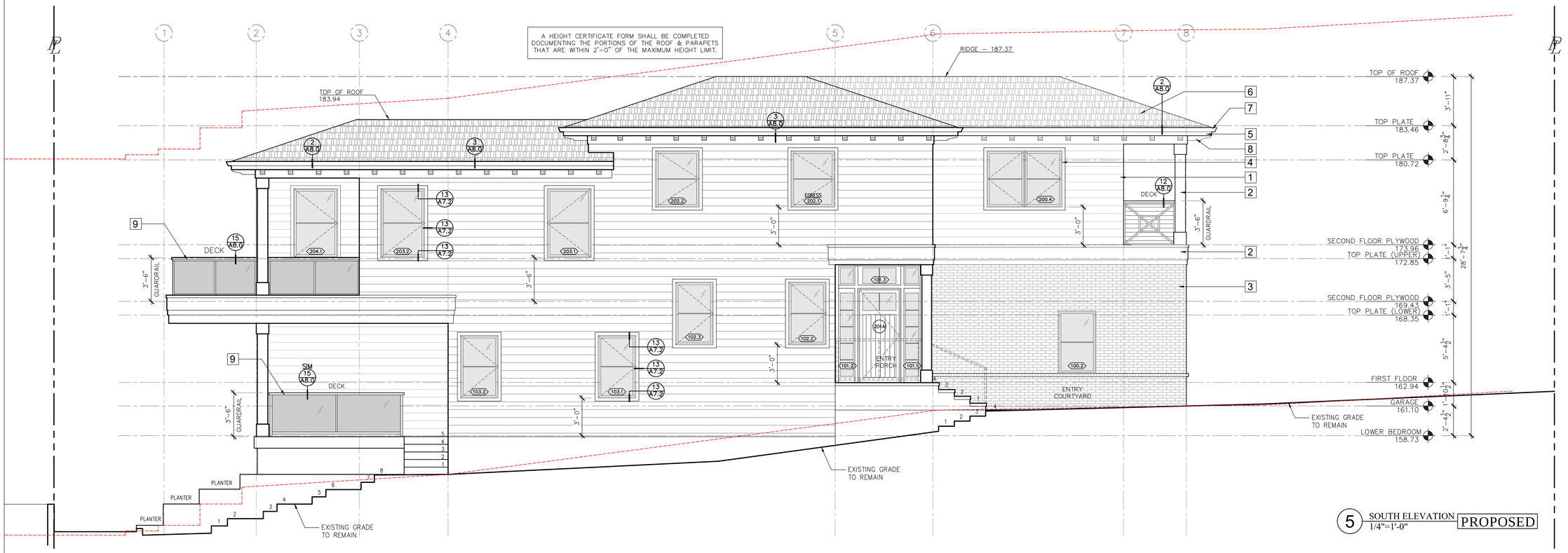
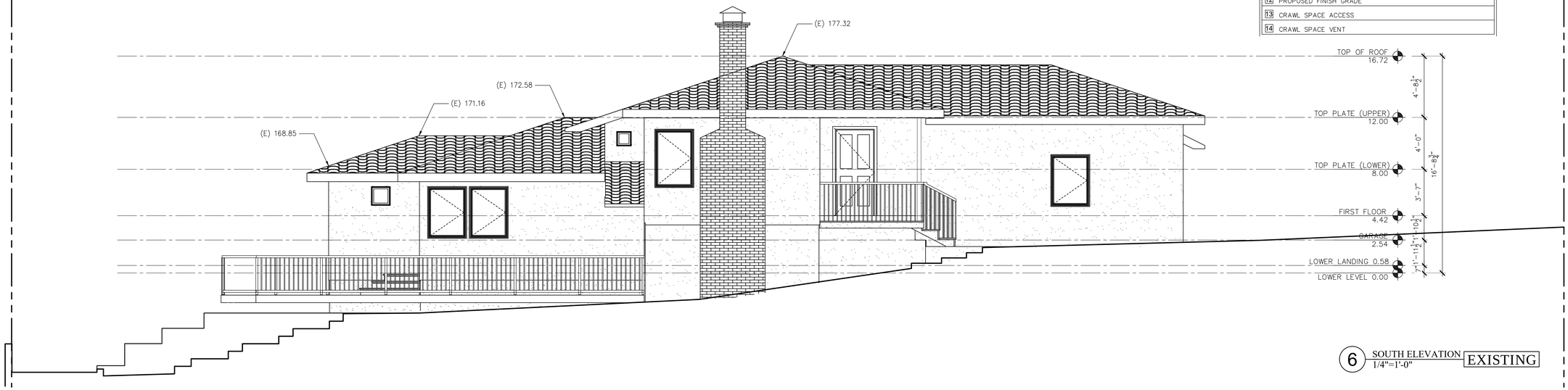
A-3.0

A HEIGHT CERTIFICATE FORM SHALL BE COMPLETED DOCUMENTING THE PORTIONS OF THE ROOF & PARAPETS THAT ARE WITHIN 2'-0" OF THE MAXIMUM HEIGHT LIMIT.



5 SOUTH ELEVATION 1/4"=1'-0" PROPOSED

EXTERIOR FINISHES:
1 FIBER CEMENT COMPOSITE SIDING – PAINTED
2 FIBER CEMENT PANEL/TRIM – PAINTED
3 BRICK VENEER
4 ALUMINUM CLAD WOOD DOORS AND WINDOWS
5 PAINTED WOOD FASCIA
6 A/C COMPOSITE SHINGLES
7 SURFACE MOUNTED ALUMINUM GUTTER W/ DOWNSPOUTS
8 CUSTOM PROFILE RAFTER TAIL
9 42" GLASS GUARDRAIL
10 42" WOOD AND CABLE GUARDRAIL
11 EXISTING GRADE AT NEIGHBOR
12 PROPOSED FINISH GRADE
13 CRAWL SPACE ACCESS
14 CRAWL SPACE VENT



6 SOUTH ELEVATION 1/4"=1'-0" EXISTING

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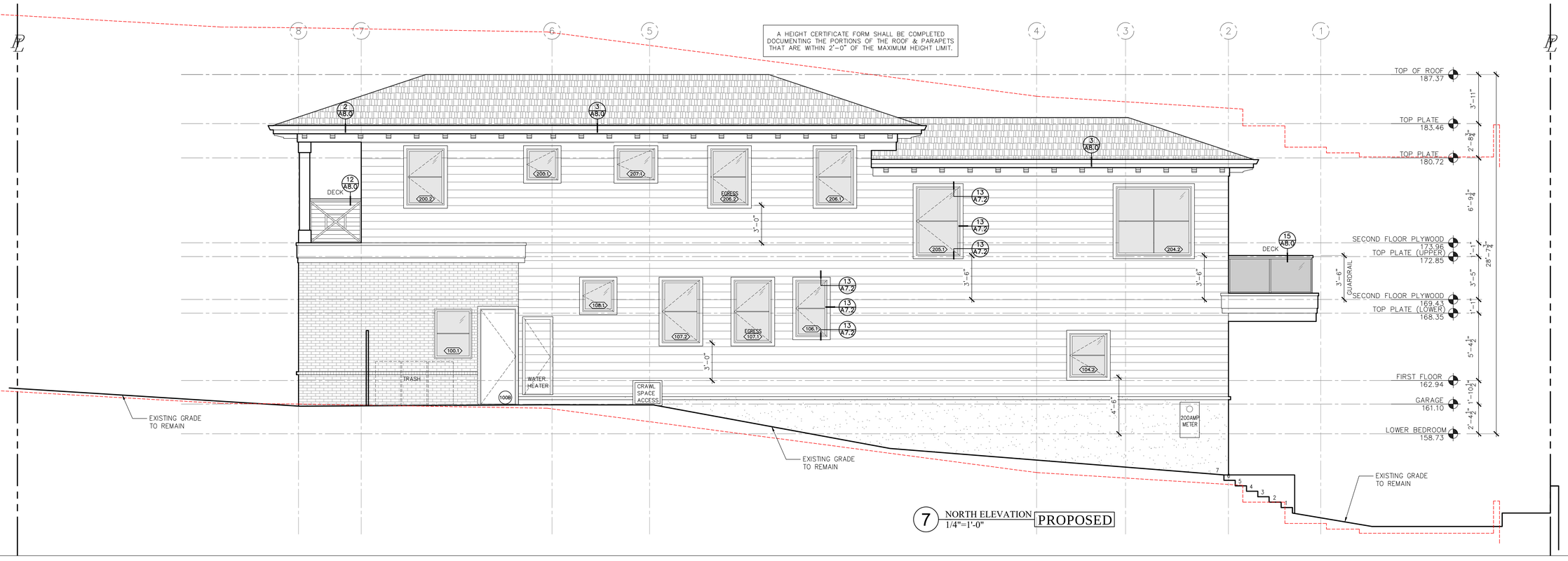
No.	Date	Description

Sheet Title : EXTERIOR ELEVATIONS

Assessor Parcel No.: 7507-001-017
Scale: 1/4" = 1'-0"
Issue Date: 04.15.2025
Drawn: JPT Checked:

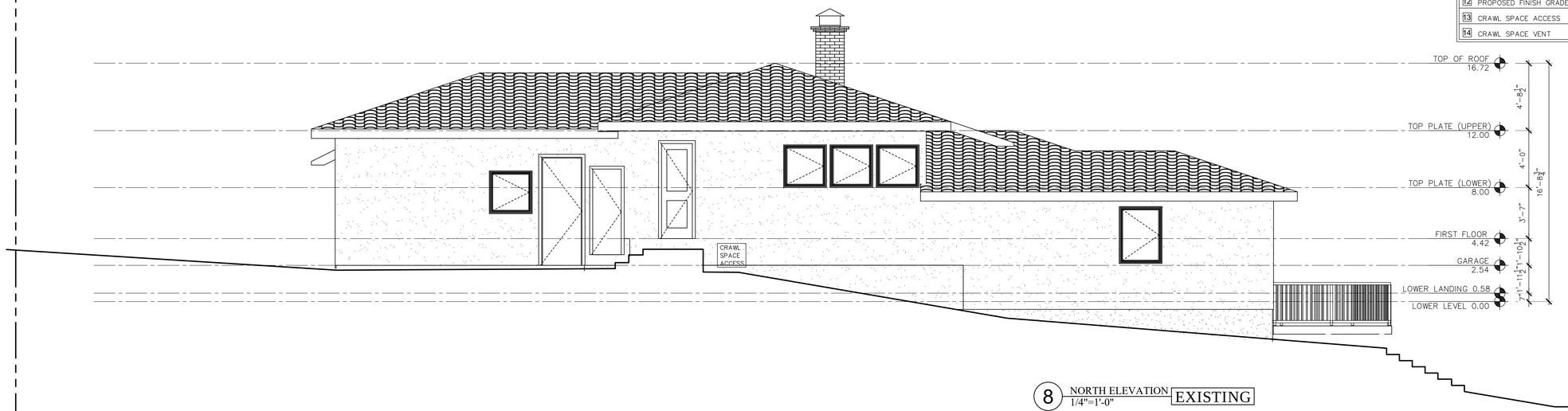
Sheet Number : A-3.1

A HEIGHT CERTIFICATE FORM SHALL BE COMPLETED DOCUMENTING THE PORTIONS OF THE ROOF & PARAPETS THAT ARE WITHIN 2'-0" OF THE MAXIMUM HEIGHT LIMIT.



7 NORTH ELEVATION 1/4"=1'-0" PROPOSED

EXTERIOR FINISHES:
1 FIBER CEMENT COMPOSITE SIDING – PAINTED
2 FIBER CEMENT PANEL/TRIM – PAINTED
3 BRICK VENEER
4 ALUMINUM CLAD WOOD DOORS AND WINDOWS
5 PAINTED WOOD FASCIA
6 A/C COMPOSITE SHINGLES
7 SURFACE MOUNTED ALUMINUM GUTTER W/ DOWNSPOUTS
8 CUSTOM PROFILE RAFTER TAIL
9 42" GLASS GUARDRAIL
10 42" WOOD AND CABLE GUARDRAIL
11 EXISTING GRADE AT NEIGHBOR
12 PROPOSED FINISH GRADE
13 CRAWL SPACE ACCESS
14 CRAWL SPACE VENT



8 NORTH ELEVATION 1/4"=1'-0" EXISTING

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LICENSED ARCHITECT JOSHUA PAUL TULLY C-59842 REN. 08-30-25 STATE OF CALIFORNIA

Project Name :
HELBERTA RESIDENCE
Remodel + Addition

Project Address :
537 S Helberta Ave
Redondo Beach, CA 90277

Revisions :

No.	Date	Description

Sheet Title :
EXTERIOR ELEVATIONS

Assessor Parcel No.: 7507-001-017
Scale: 1/4" = 1'-0"
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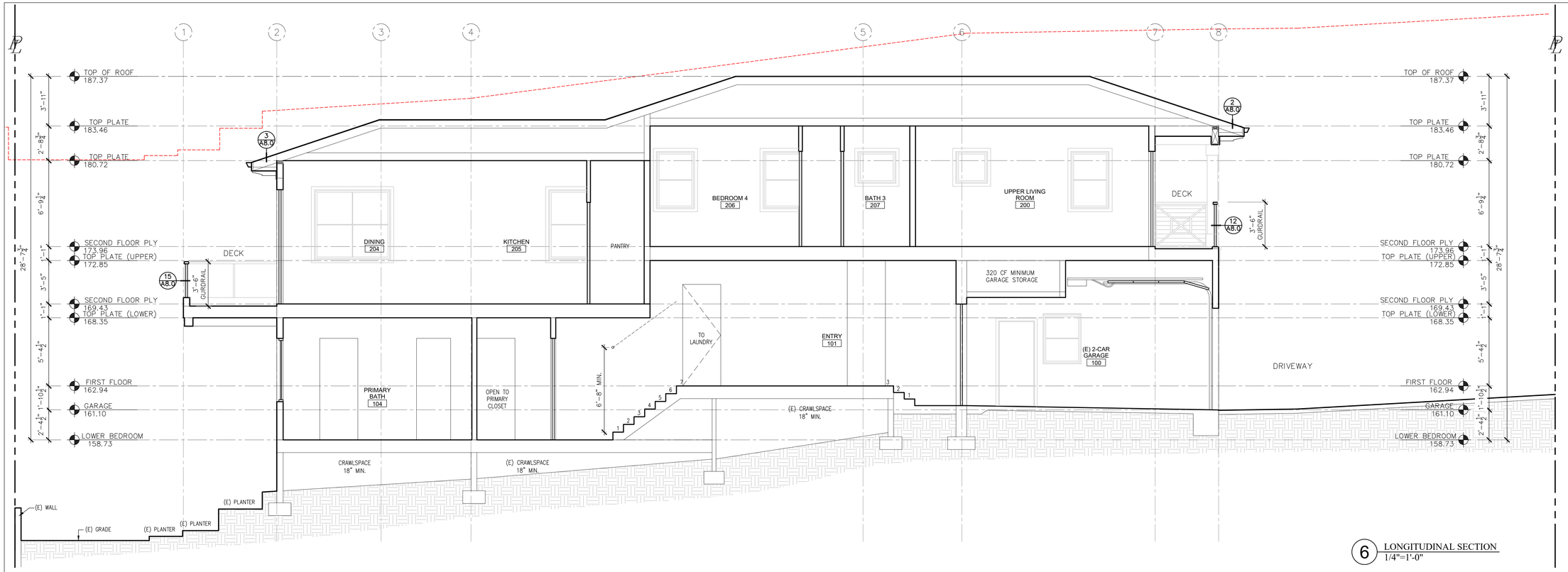
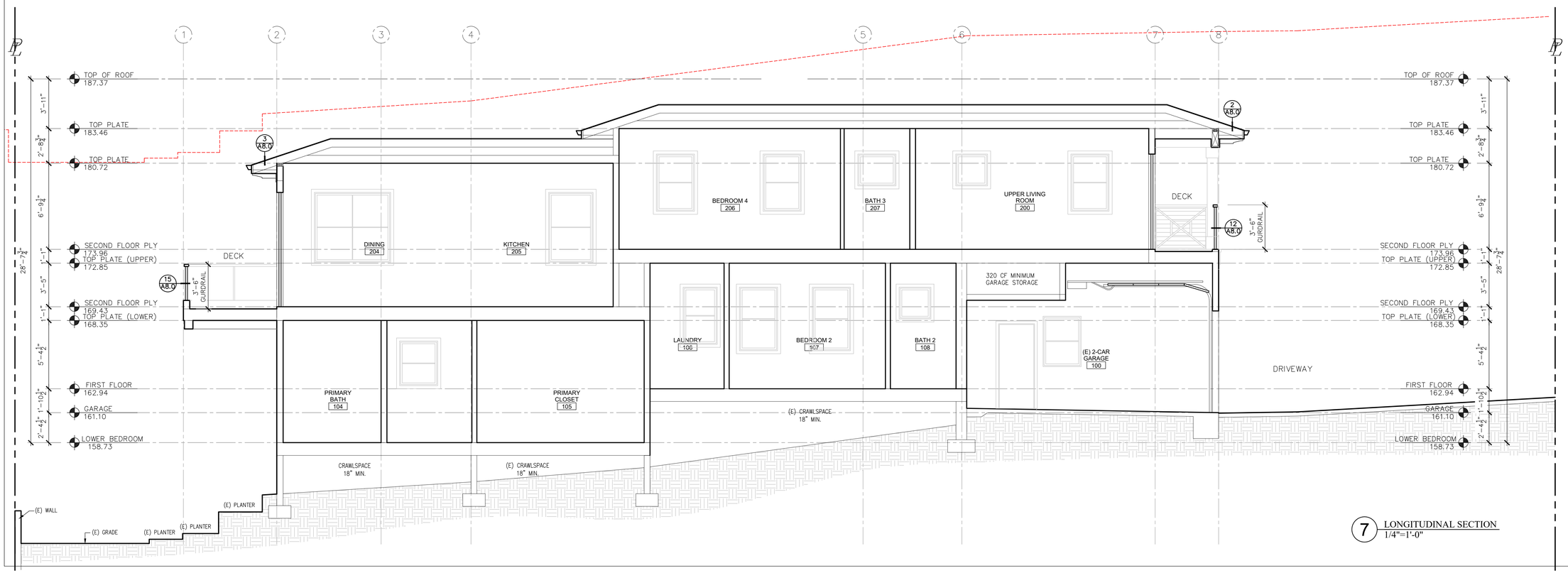
Sheet Number :
A-3.2



6 LONGITUDINAL SECTION
1/4"=1'-0"



7 LONGITUDINAL SECTION
1/4"=1'-0"

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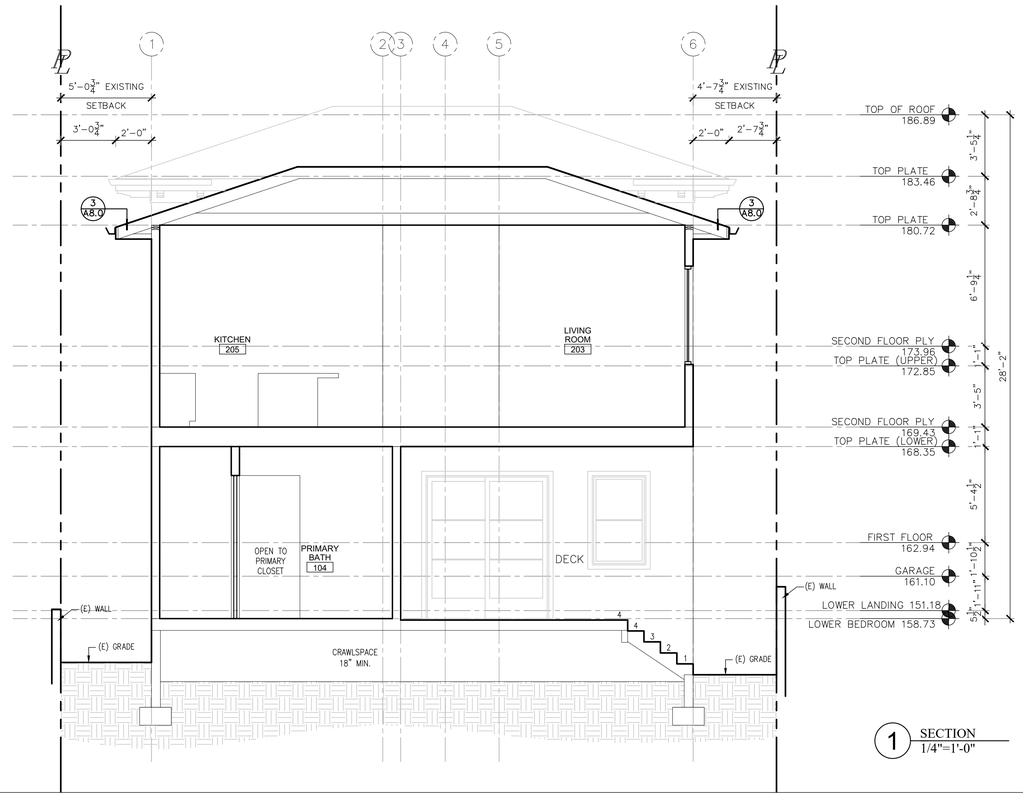
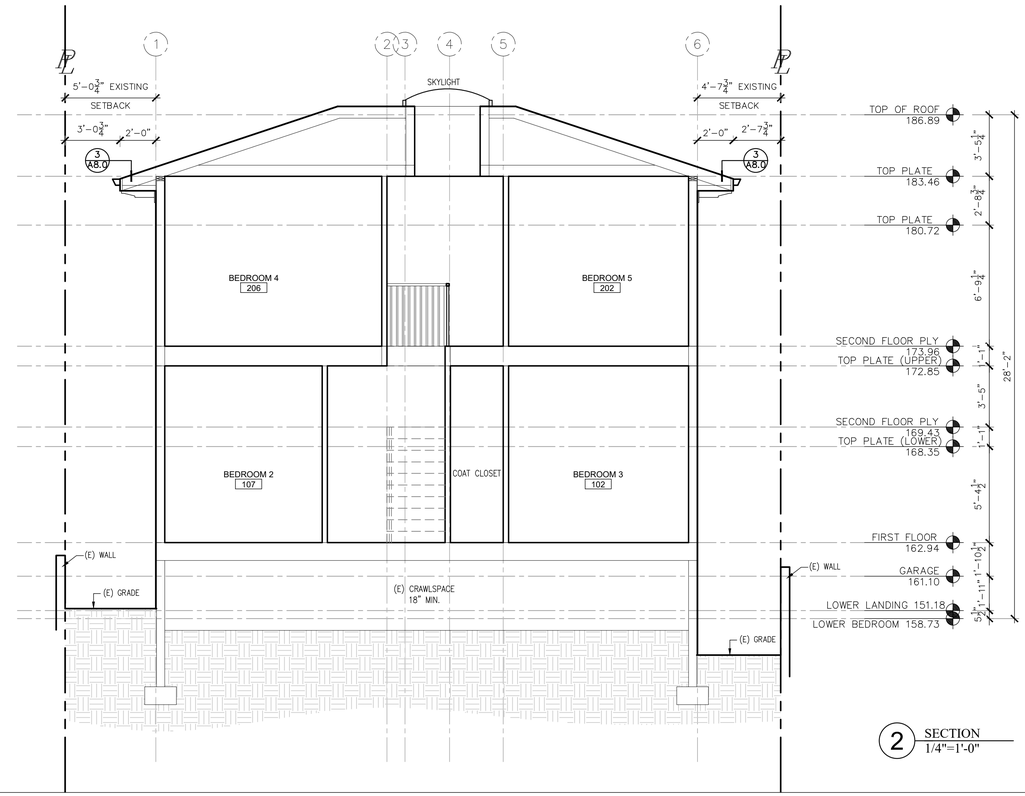
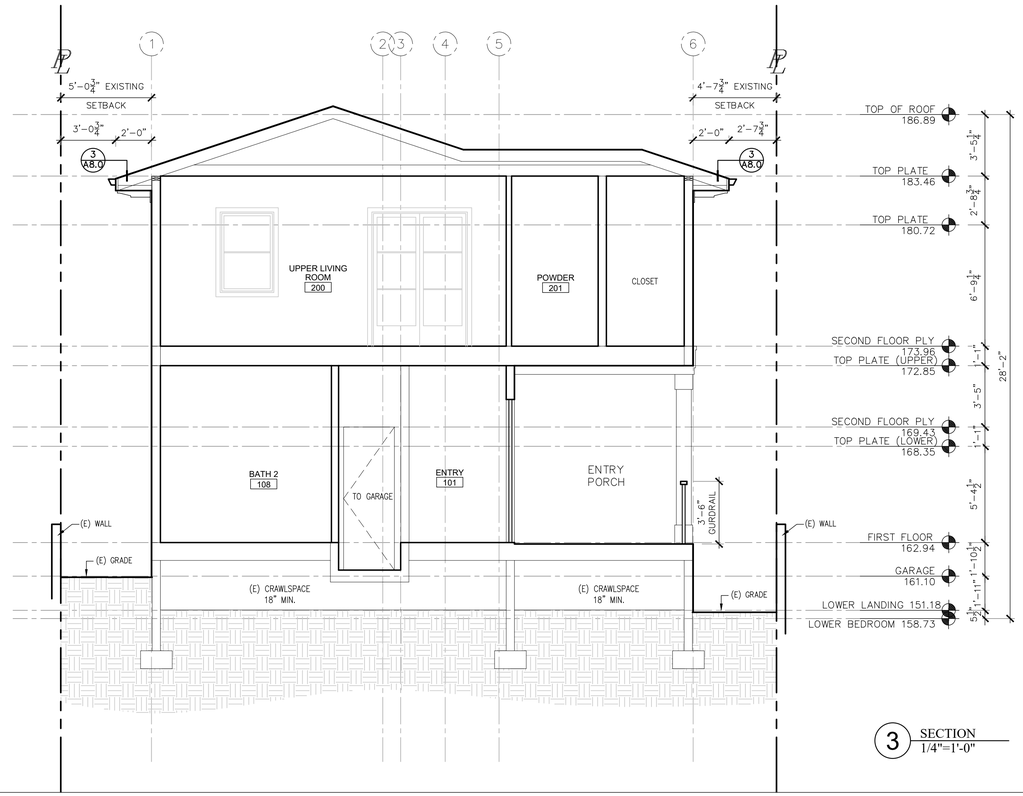


1 SECTION
1/4"=1'-0"



2 SECTION
1/4"=1'-0"



3 SECTION
1/4"=1'-0"

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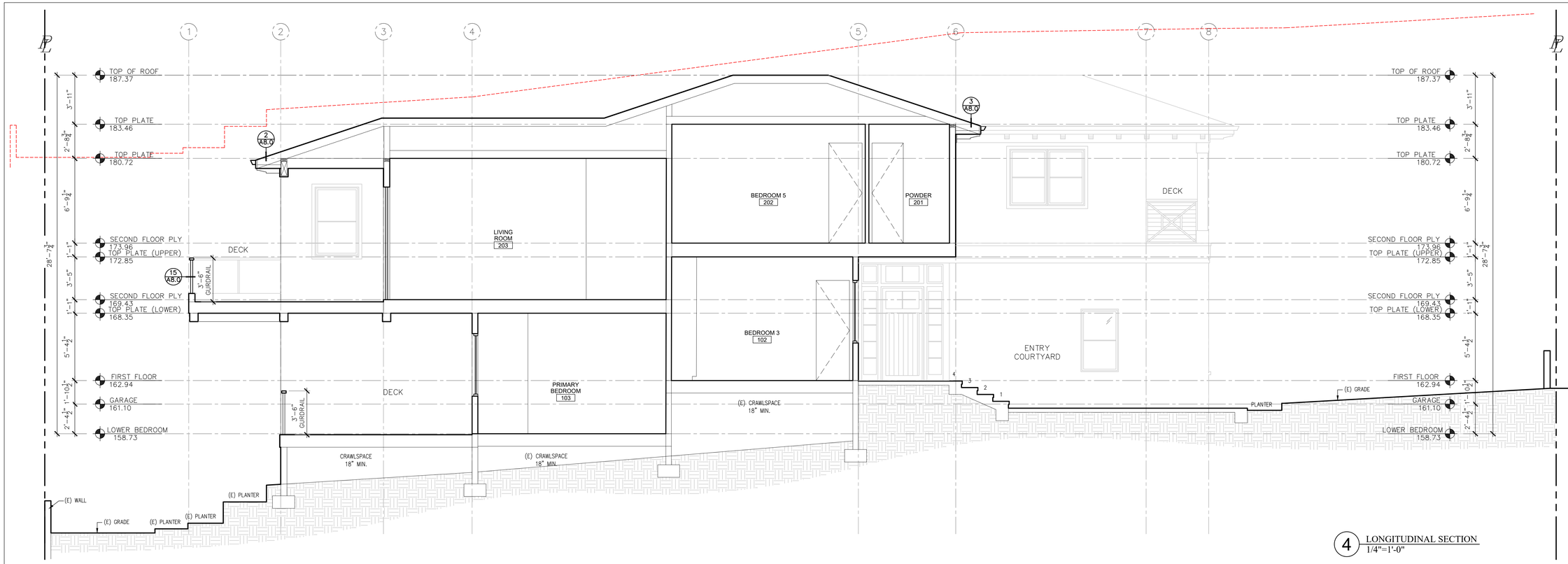

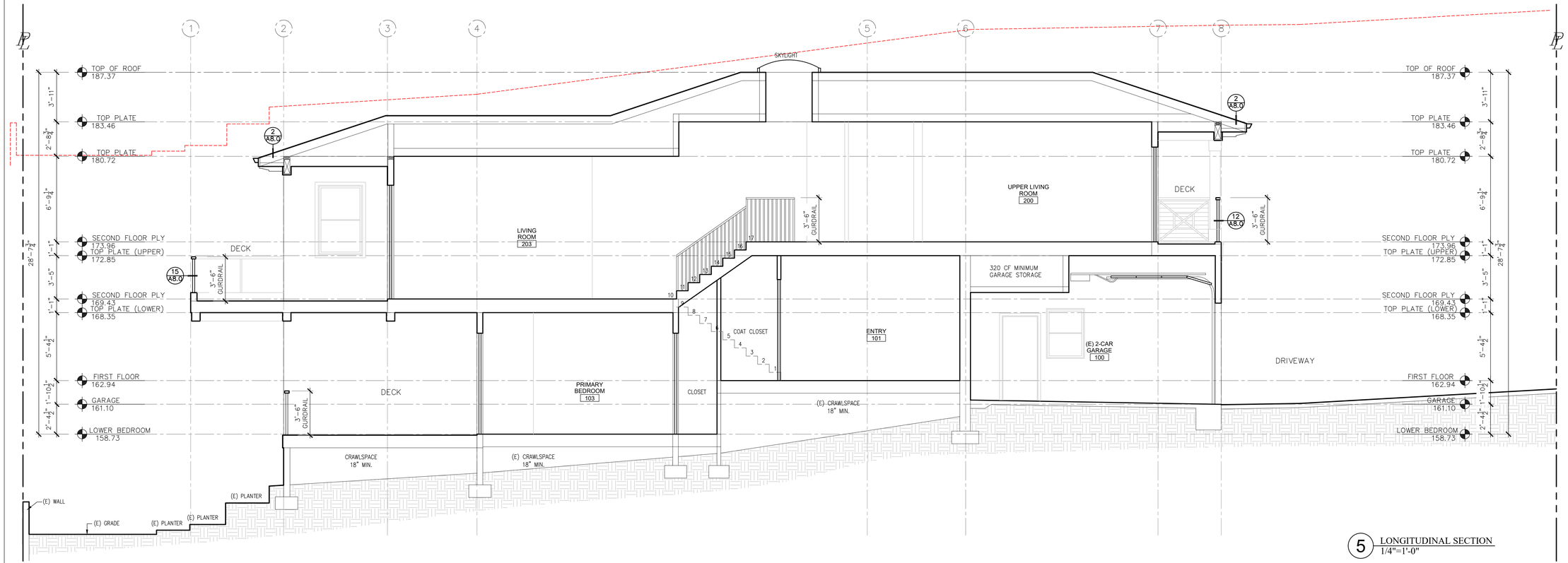

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Sheet Title :
BUILDING SECTIONS

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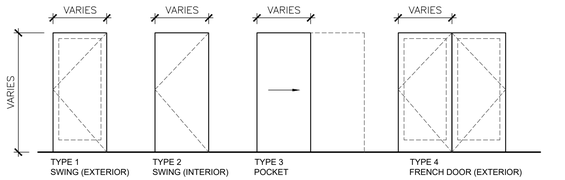
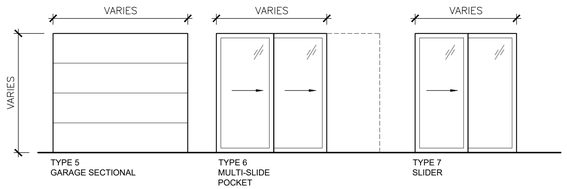
DOOR TYPES





SCHEDULE DIMENSIONS ARE FOR BIDDING PURPOSES ONLY. OPENINGS SHALL BE FIELD MEASURED BY CONTRACTOR PRIOR TO PLACING ORDER

NOTE:
1. DOOR STOPS OF ALL DOORS SHALL BE ONE-PEICE CONSTRUCTION WITH THE JAMB.
2. ALL PIN TYPE DOOR HINGES ACCESSIBLE FROM THE OUTSIDE SHALL HAVE NON-REMOVEABLE HINGE PINS. HINGES SHALL HAVE MIN. 1/4" DIA. STEEL JAMB STUD WITH 1/4" MIN. PROTECTION. THE STRIKE PLATE FOR LATCHES AND HOLDING DEVICE FOR PROJECTING DEAD BOLTS IN WOOD CONSTRUCTION SHALL BE SECURED TO THE JAMB AND WALL FRAMING WITH SCREWS NO LESS THAN 2-1/2" LONG.
3. PROVIDE DEAD BOLTS WITH HARDENED INSERTS; DEADLOCKING LATCH WITH KEY-OPERATED LOCKS ON EXTERIOR. LOCKS MUST BE OPENABLE FROM INSIDE WITHOUT KEY, SPECIAL KNOWLEDGE OR SPECIAL EFFORT.
4. STRAIGHT DEAD BOLTS SHALL HAVE A MIN. THROW OF 1" AND AN EMBEDMENT OF NOT LESS THAN 5/8", AND A HOOK-SHAPED OR AN EXPANDING-LUG DEAD BOLT SHALL HAVE A MIN. THROW OF 3/4". THE DOOR KNOB AND THE THUMB TURN WHICH OPERATES THE DEAD BLOT SHALL NOT BE SEPARATED BY MORE THAN 8 INCHES.
5. SLIDING DOORS AND WINDOWS SHALL BE PROVIDED WITH A DEVICE IN THE UPPER CHANNEL OF THE MOVING PANEL TO PROHIBIT RAISING AND REMOVING OF THE MOVING PANEL IN THE CLOSED OR PARTIALLY OPEN POSITION.
6. SLIDING GLASS DOORS AND SLIDING WINDOWS SHALL BE EQUIPPED WITH LOCKING DEVICES AND SHALL BE SO CONSTRUCTED AND INSTALLED THAT THEY REMAIN INTACT AND ENGAGED WHEN SUBJECYED TO THE TESTS SPECIFIED IN 91.6717.1
7. OVERHEAD OR SLIDING DOORS SHALL BE SECURED WITH A CYLINDER LOCK.
8. PROVIDE METAL GUIDES AT TOP AND BOTTOM OF METAL ACCORDIAN GATE OR GRILLE-TYPE DOORS AND FLUSH CYLINDER LOCKS.
9. ALL OPENABLE WINDOWS SHALL BE PROVIDED WITH SUBSTANTIAL LOCKING DEVICES.

NOTES:

1. ALL GLAZING IN HAZARDOUS LOCATIONS TO BE TEMPERED.

   A. INGRESS, EGRESS DOORS, PANELS IN SLIDING OR SWINGING DOORS AND WALL ENCLOSING STAIRWAY LANDING.

   B. DOORS AND ENCLOSURES FOR HOT TUB, BATHTUB, SHOWERS (ALSO GLAZING IN WALL ENCLOSING THESE COMPARTMENTS WITHIN 5' OF STANDING SURFACE)

   C. IF WITHIN 2' OF VERTICAL EDGE OF CLOSED DOOR AND WITHIN 5' OF STANDING SURFACE.

2. ALL EXTERIOR DOORS SHALL HAVE A MINIMUM 36" LANDING IN THE DIRECTION OF TRAVEL, ON EACH SIDE OF THE DOOR PER SECTION R311.3 OF THE CRC

DOOR SCHEDULE

		SYMBOL	DOOR SIZE (WxH)	EXISTING OPENING	TYPE	THICKNS.	CORE	MATERIAL	FINISH	U-FACTOR	SHGC	HEAD	JAMB	SILL	ORIENTATION	MANUFACTURER	NOTES AND GLAZING
FIRST FLOOR	EXTERIOR	100A	15'-0" x 8'-0"	15'-0" x 8'-0"	TYPE 5		SOLID	GLASS & WOOD	FLUSH PANEL	N/A	N/A				EAST		SECTIONAL ROLL-UP GARAGE DOOR
		100B	3'-0" x 8'-0"	8'-0" x 8'-0"	TYPE 1	1 3/4"	SOLID	WOOD	STAIN GRADE	N/A	N/A				NORTH		
		101A	3'-6" x 7'-6"		TYPE 1	1 3/4"	SOLID	GLASS & WOOD	STAIN GRADE	N/A	N/A				SOUTH		TEMPERED TOP GLAZING
		103A	6'-0" x 8'-0"		TYPE 7	1 3/4"	HOLLOW	GLASS & ALUM. CLAD WOOD	DARK BRONZE ANNODIZED						WEST		TEMPERED
	INTERIOR	100C	2'-10" x 8'-0"		TYPE 2	1 3/4"	SOLID	WOOD	STAIN GRADE	N/A	N/A						SELF-CLOSING & SELF-LATCHING 20-MIN FIRE RATED
		101B	2'-6" x 8'-0"		TYPE 2												20-MIN FIRE RATED
		102A	2'-10" x 8'-0"		TYPE 2												
		103B	2'-10" x 8'-0"		TYPE 2												
		103C	2'-6" x 8'-0"		TYPE 2												20-MIN FIRE RATED
		104A	3'-6" x 8'-0"		TYPE 3												
		104B	2'-8" x 8'-0"		TYPE 3												
		105A	3'-0" x 8'-0"		TYPE 3												
		106A	3'-0" x 8'-0"		TYPE 2												
		107A	2'-8" x 8'-0"		TYPE 2												
		108A	2'-8" x 8'-0"		TYPE 2												
SECOND FLOOR	EXTERIOR	200A	5'-0" x 7'-6"		TYPE 4	1 3/4"	HOLLOW	GLASS & ALUM. CLAD WOOD	DARK BRONZE ANNODIZED						EAST		TEMPERED
		203A	10'-0" x 9'-0"		TYPE 4	1 3/4"	HOLLOW	GLASS & ALUM. CLAD WOOD	DARK BRONZE ANNODIZED						WEST		TEMPERED
		204A	10'-0" x 9'-0"		TYPE 4	1 3/4"	HOLLOW	GLASS & ALUM. CLAD WOOD	DARK BRONZE ANNODIZED						WEST		TEMPERED
	INTERIOR	201A	2'-6" x 7'-6"		TYPE 2	1 3/4"	SOLID	WOOD	STAIN GRADE	N/A	N/A						
		201B	2'-0" x 7'-6"		TYPE 3												
		202A	2'-8" x 7'-6"		TYPE 2												
		205A	2'-6" x 8'-0"		TYPE 2												
		206A	2'-8" x 7'-6"		TYPE 2												
		206B	2'-8" x 7'-6"		TYPE 2												
		207A	2'-8" x 7'-6"		TYPE 2												

GATE SCHEDULE

	SYMBOL	DOOR SIZE	TYPE	THICKNS.	CORE	MATERIAL	FINISH	DETAIL						NOTES AND GLAZING
	S1				STEEL	WOOD	STAIN GRADE							
	S2													
	S3													
	S4													

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Sheet Title :
DOOR & WINDOW SCHEDULE

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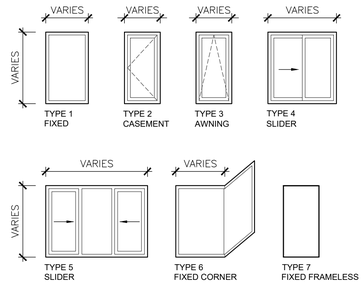
A-7.0

WINDOW SCHEDULE

ALL WINDOWS TO BE DUAL GLAZED U.N.O.

	SYMBOL	WINDOW SIZE (WxH)	EXISTING OPENING	TYPE	HEAD HEIGHT ABV. F.F.	FRAME MAT'L	FRAME FINISH	GLAZING	U-FACTOR	SHGC	ORIENTATION	MANUFACTURER	NOTES:
FIRST FLOOR	100.1	3'-0" x 4'-0"	3'-0" x 4'-0"	TYPE 2	7'-6"	ALUM. CLAD WOOD	DARK BRONZE ANODIZED	DUAL GLAZING LOW "E"			NORTH		TEMPERED
	100.2	3'-0" x 4'-0"	3'-0" x 4'-0"	TYPE 2	7'-6"						SOUTH		
	101.1	1'-8" x 7'-6"		TYPE 1	7'-6"						SOUTH		TEMPERED
	101.2	1'-8" x 7'-6"		TYPE 1	7'-6"						SOUTH		TEMPERED
	101.3	6'-6" x 1'-6"		TYPE 1							SOUTH		TEMPERED (ABOVE OF DOOR)
	102.1	3'-0" x 5'-0"	3'-0" x 5'-0"	TYPE 2	8'-0"						EAST		EGRESS
	102.2	3'-0" x 5'-0"		TYPE 2	8'-0"						SOUTH		
	102.3	3'-0" x 5'-0"	3'-0" x 5'-0"	TYPE 2	8'-0"						SOUTH		
	103.1	3'-0" x 5'-0"		TYPE 2	8'-0"						SOUTH		
	103.2	3'-0" x 5'-0"		TYPE 2	8'-0"						SOUTH		
	103.3	3'-0" x 5'-0"		TYPE 2	8'-0"						WEST		
	104.1	6'-0" x 5'-0"		TYPE 2	8'-0"						WEST		TEMPERED
	104.2	3'-0" x 3'-6"		TYPE 2	8'-0"						NORTH		
	106.1	2'-8" x 4'-6"		TYPE 2	8'-0"						NORTH		
	107.1	3'-0" x 5'-0"		TYPE 2	8'-0"						NORTH		EGRESS
	107.2	3'-0" x 5'-0"		TYPE 2	8'-0"						NORTH		
	108.1	2'-6" x 2'-6"		TYPE 2	8'-0"						NORTH		TEMPERED
SECOND FLOOR	200.1	2'-6" x 2'-6"		TYPE 2	7'-6"						NORTH		
	200.2	3'-0" x 4'-6"		TYPE 2	7'-6"						NORTH		
	200.3	3'-0" x 4'-6"		TYPE 2	7'-6"						EAST		
	200.4	6'-0" x 4'-6"		TYPE 2	7'-6"						SOUTH		
	201.1	3'-0" x 4'-6"		TYPE 2	7'-6"						EAST		
	202.1	3'-6" x 4'-6"		TYPE 2	7'-6"						SOUTH		EGRESS
	202.2	3'-6" x 4'-6"		TYPE 2	7'-6"						SOUTH		
	203.1	3'-6" x 5'-6"		TYPE 2	9'-0"						SOUTH		
	203.2	3'-6" x 5'-6"		TYPE 2	9'-0"						SOUTH		
	204.1	3'-6" x 5'-6"		TYPE 2	9'-0"						SOUTH		
	204.2	6'-0" x 5'-6"		TYPE 2	9'-0"						NORTH		
	205.1	3'-6" x 5'-6"		TYPE 2	9'-0"						NORTH		
	206.1	3'-0" x 4'-6"		TYPE 2	7'-6"						NORTH		
	206.2	3'-0" x 4'-6"		TYPE 2	7'-6"						NORTH		EGRESS
	207.1	3'-0" x 2'-6"		TYPE 2	7'-6"	↓	↓	↓			NORTH		TEMPERED
SKYLIGHTS	208.1	5'-0" x 5'-0"										VELUX	

WINDOW TYPES



NOTE:

1. ESCAPE OR RESCUE WINDOWS SHALL HAVE A MINIMUM NET CLEAR OPENABLE AREA OF 5.7 SQUARE FEET (5.0 S.F. AT GRADE FLOOR), MINIMUM NET CLEAR OPENABLE HEIGHT OF 24" AND MINIMUM NET CLEAR OPENABLE WIDTH 20" AND HAVE A SILL HEIGHT NOT MORE THAN 44" ABOVE FINISH FLOOR.

2. ALL WINDOWS MUST CONTAIN AT LEAST 1 PANE OF TEMPERED GLAZING.

3. PROVIDE WINDOW WELLS AT EMERGENCY ESCAPE AND RESCUE OPENING WITH SILL HT. LOCATED BELOW GROUND LEVEL. MIN. AREA OF 9 S.F. MIN, 3' WIDTH, AND PROVIDE FIXED LADDER FOR WINDOW WELLS WITH A MAX. VERTICAL DEPTH OF 44".

NOTES:

1. DOORS SHALL BE OF APPROVED NONCOMBUSTIBLE MATERIAL OR 1 3/8" THICK SOLID CORE WOOD OR 20 MIN. FIRE RATED.

2. EXTERIOR WINDOWS, WINDOW WALLS, GLAZED DOORS AND GLAZED OPENINGS WITHIN EXTERIOR DOORS SHALL HAVE TEMPERED GLASS OR GLASS BLOCK UNITS OR 20 MIN. FIRE RATED.

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Project Name : HELBERTA RESIDENCE
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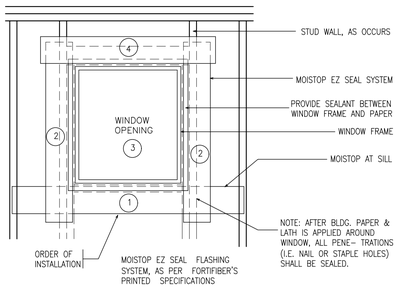
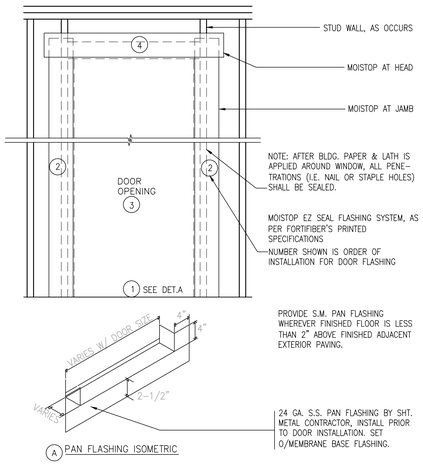


WINDOW FLASHING DETAIL
1" = 1'-0"

15

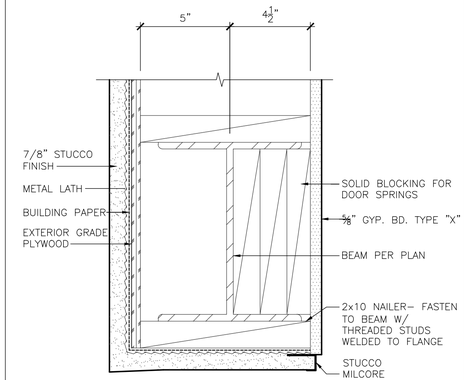


DOOR FLASHING DETAIL
1" = 1'-0"

12

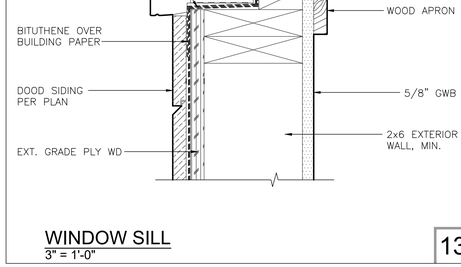
9

6



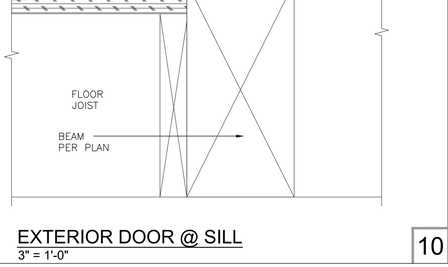
GARAGE DOOR HEAD
3" = 1'-0"

3



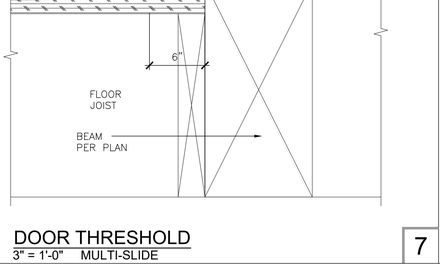
WINDOW HEAD / JAMB
3" = 1'-0"

14



EXTERIOR DOOR JAMB / HEAD
3" = 1'-0"

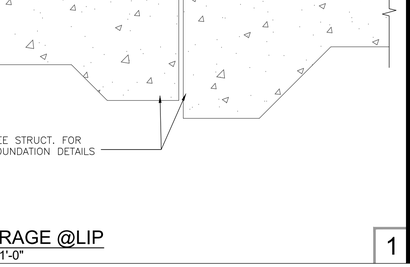
11



DOOR JAMB / HEAD SIM.
3" = 1'-0" MULTI-SLIDE

8

5

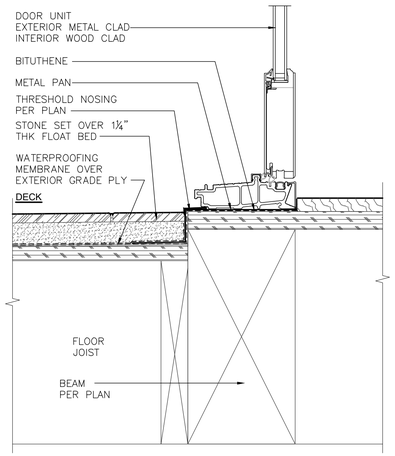


GARAGE DOOR JAMB
3" = 1'-0"

2

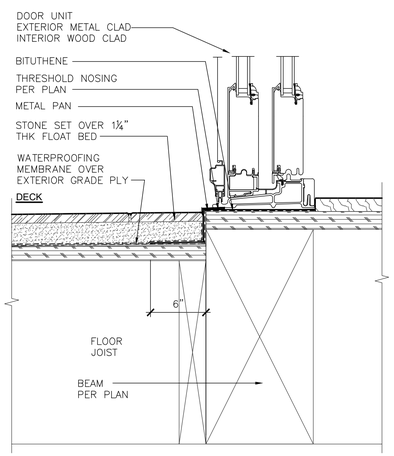
WINDOW SILL
3" = 1'-0"

13



EXTERIOR DOOR @ SILL
3" = 1'-0"

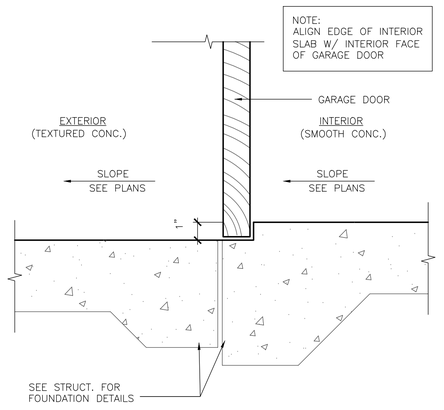
10



DOOR THRESHOLD
3" = 1'-0" MULTI-SLIDE

7

4



GARAGE @LIP
3" = 1'-0"

1

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LICENSED ARCHITECT JOSHUA PAUL TULLY C-38842 REN. 06-30-25 STATE OF CALIFORNIA

HELBERTA RESIDENCE
Remodel + Addition
537 S Helberta Ave
Redondo Beach, CA 90277

Project Name :

Project Address :

Revisions :

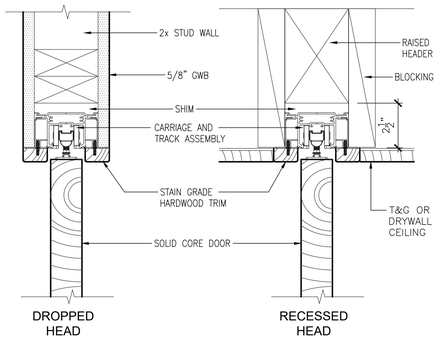
No.	Date	Description

Sheet Title :
DOOR & WINDOW DETAILS

Assessor Parcel No.: 7507-001-017
Scale: SEE DWGS
Issue Date: 04.15.2025
Drawn: JPT Checked:

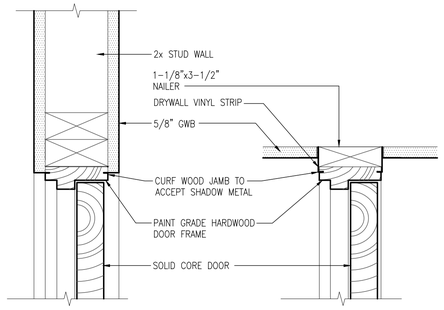
Sheet Number :
A-7.2

CavitySliders
The Pocket Door Experts
548 Finney Ct, Gardena, CA 90248
Phone +1 (888) 466 0030
Fax +1 (310) 769 5824
www.cavitysliders.com



INTERIOR DOOR POCKET HEAD
3" = 1'-0"

15



INTERIOR SWING DOOR HEAD & JAMB
3" = 1'-0"

12

9

6

3

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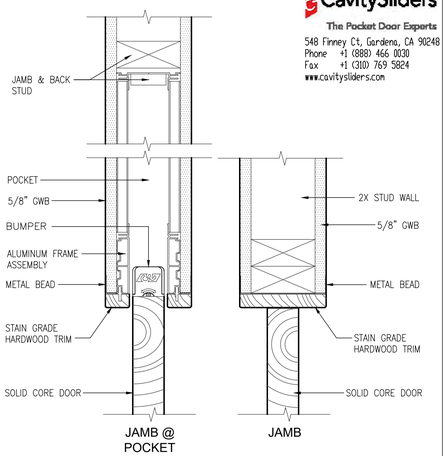
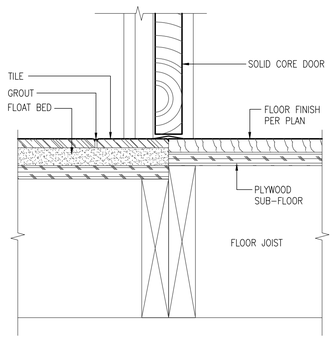


INTERIOR DOOR POCKET JAMB
3" = 1'-0"

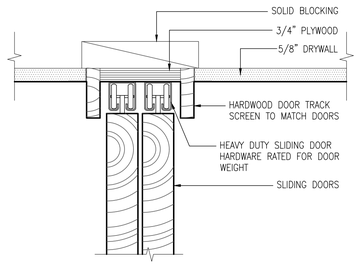
14

NOTE:
TILE FLOORING TO BE FLUSH W/ ADJOINING FINISH FLOOR. RECESS FLOOR 3/4"



INTERIOR SWING DOOR THRESHOLD
3" = 1'-0"

11



INTERIOR BYPASS DOOR HEAD & JAMB
3" = 1'-0"

8

5

2

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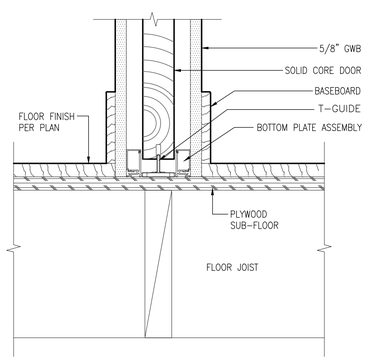
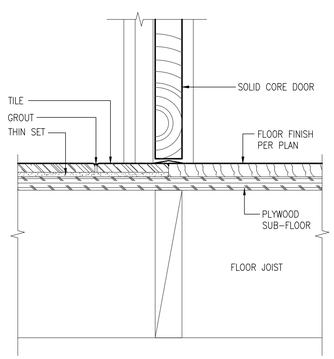


INTERIOR DOOR POCKET THRESHOLD
3" = 1'-0"

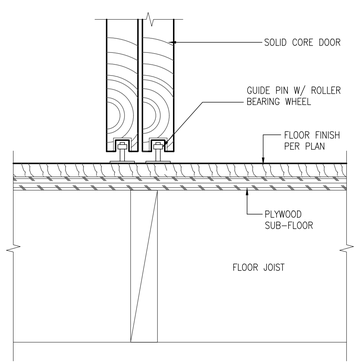
13

NOTE:
TILE FLOORING TO BE FLUSH W/ ADJOINING FINISH FLOOR. RECESS FLOOR 3/4"



INTERIOR SWING DOOR THRESHOLD
3" = 1'-0"

10



INTERIOR BYPASS DOOR THRESHOLD
3" = 1'-0"

7

4

1

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LICENSED ARCHITECT
JOSHUA PAUL TULLY
C-38842
REN. 06-30-25
STATE OF CALIFORNIA

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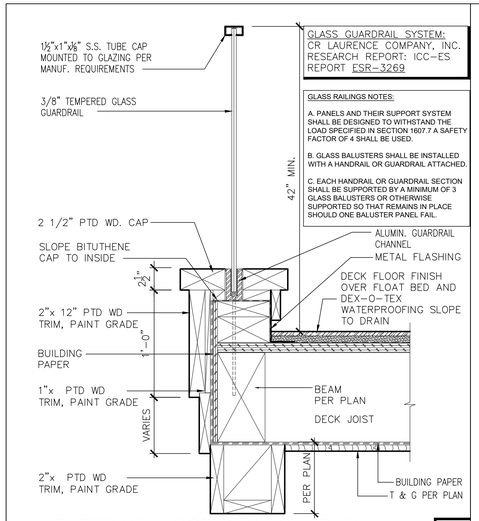
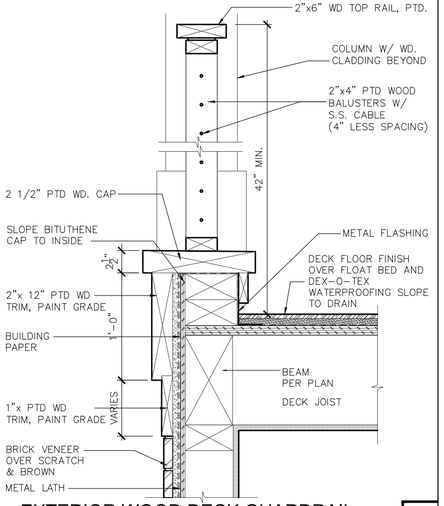


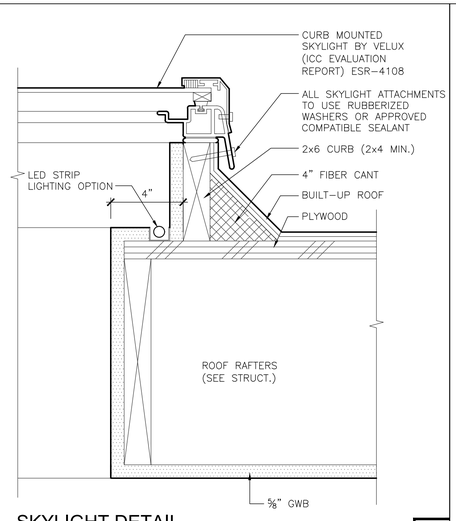
EXTERIOR WOOD DECK GUARDRAIL
1-1/2" = 1'-0"

15



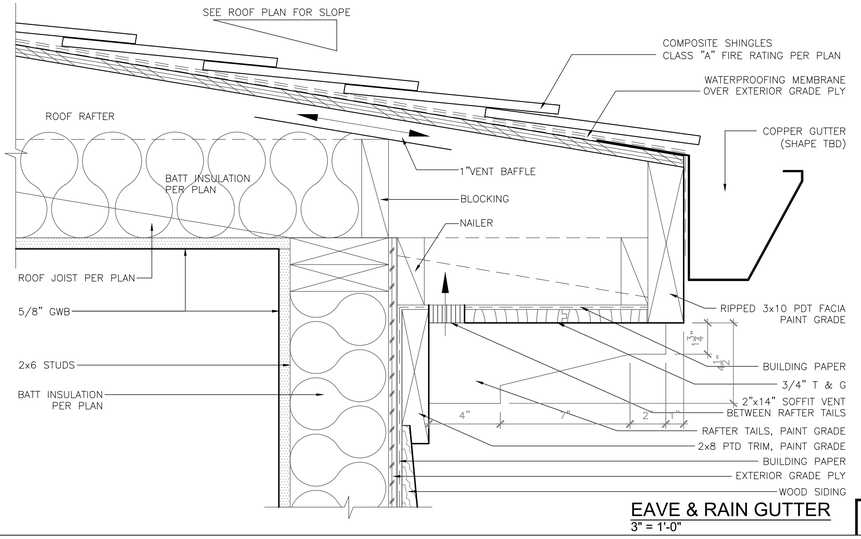
EXTERIOR WOOD DECK GUARDRAIL
1-1/2" = 1'-0"

12



SKYLIGHT DETAIL
3" = 1'-0"

9



EAVE & RAIN GUTTER
3" = 1'-0"

3

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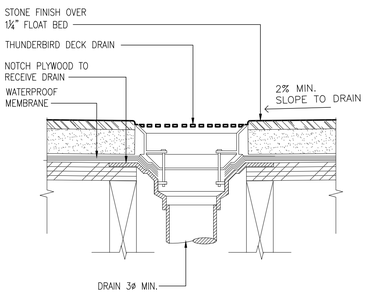
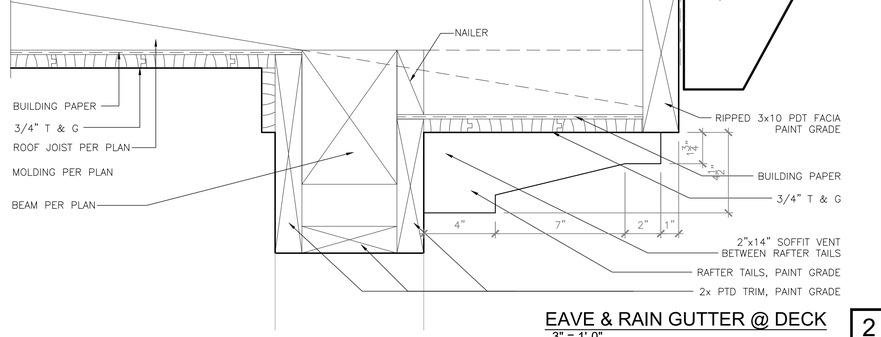
LICENSED ARCHITECT JOSHUA PAUL TULLY C-38842 REN. 06-30-25 STATE OF CALIFORNIA

NOTE:
DRAIN TO BE FLUSH WITH TOP OF DECKING.
NO STANDING WATER!



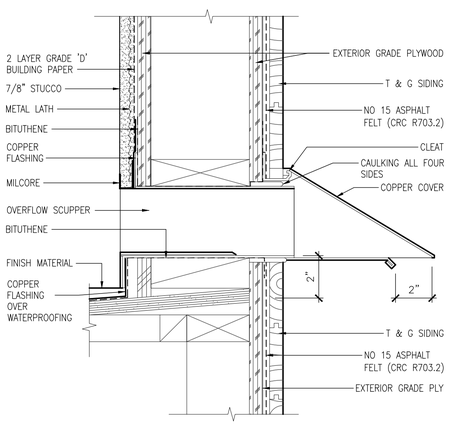
PRIMARY DECK DRAIN
3" = 1'-0"

14



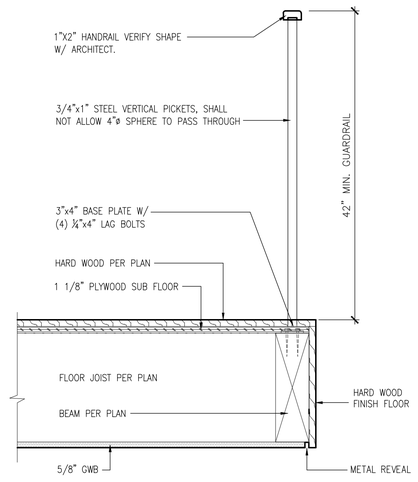
EAVE & RAIN GUTTER @ DECK
3" = 1'-0"

2



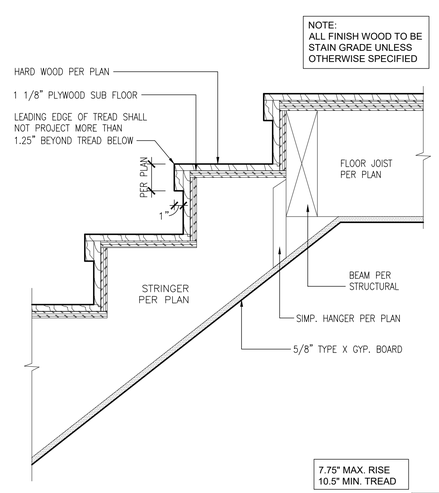
OVERFLOW DECK SCUPPER
3" = 1'-0"

13



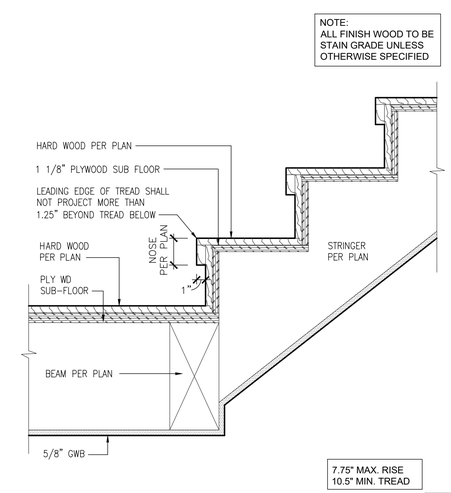
GUARDRAIL CONNECTION DETAIL
1-1/2" = 1'-0"

7



CLOSED WOOD STAIR DETAIL
1-1/2" = 1'-0"

4



CLOSED WOOD STAIR DETAIL
1-1/2" = 1'-0"

1

HELBERTA RESIDENCE
Remodel + Addition
537 S Helberta Ave
Redondo Beach, CA 90277

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Assessor Parcel No.: 7507-001-017
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Sheet Number :
A-8.0

SHEET INDEX

BEST MANAGEMENT PRACTICES NOTES:

1. ERODED SEDIMENTS AND OTHER POLLUTANTS MAY NOT BE TRANSPORTED FROM THE SITE VIA SHEET FLOW, SWALES, AREA DRAINS, NATURAL DRAINAGE COURSES, OR WIND.
2. STOCKPILES OF EARTH AND OTHER CONSTRUCTION RELATED MATERIALS MUST BE PROTECTED FROM BEING TRANSPORTED OFF SITE BY FORCES OF WIND OR WATER.
3. FUELS, OILS, SOLVENTS, AND OTHER TOXIC MATERIALS MUST BE PROTECTED FROM THE WEATHER. SPILLS MUST BE CLEANED UP IMMEDIATELY AND DISPOSED OF IN A PROPER MANNER. SPILLS MAY NOT BE WASHED INTO THE DRAINAGE SYSTEM.
4. NON-STORM WATER RUNOFF FROM EQUIPMENT AND VEHICLE WASHING AND ANY OTHER ACTIVITY SHALL BE CONTAINED AT THE PROJECT SITE.
5. EXCESS OR WASTE CONCRETE MAY NOT BE WASHED INTO THE PUBLIC WAY OR ANY OTHER DRAINAGE SYSTEM. PROVISIONS SHALL BE MADE TO RETAIN CONCRETE WASTES ON SITE UNTIL THEY CAN BE DISPOSED OF OR RECYCLED.
6. TRASH AND CONSTRUCTION RELATED SOLID WASTES MUST BE DEPOSITED INTO A COVERED RECEPTACLE TO PREVENT CONTAMINATION OF RAINWATER AND DISPERSAL BY WIND.
7. SEDIMENTS AND OTHER MATERIALS MAY NOT BE TRACKED FROM THE SITE BY VEHICLE OR EQUIPMENT TRAFFIC. THE CONSTRUCTION ENTRANCE ROADWAYS MUST BE STABILIZED SO AS TO INHIBIT SEDIMENTS FROM BEING DEPOSITED INTO THE PUBLIC WAYS. ACCIDENTAL DEPOSITIONS MUST BE SWEPT UP IMMEDIATELY AND MAY NOT BE WASHED DOWN BY RAIN OR OTHER MEANS.

CITY EROSION CONTROL:

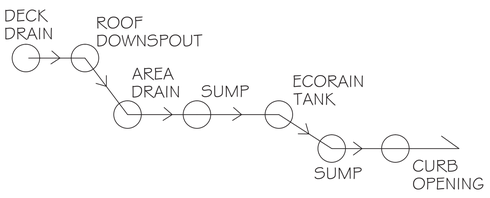
1. TEMPORARY EROSION CONTROL PLANS (WWECP) ARE REQUIRED FROM OCTOBER 15 TO MAY 15.
2. EROSION CONTROL DEVICES SHALL BE AVAILABLE ON-SITE BETWEEN OCTOBER 15 AND MAY 15.
3. BETWEEN OCTOBER 15 AND MAY 15, EROSION CONTROL MEASURES SHALL BE IN PLACE AT THE END OF EACH WORKING DAY WHENEVER THE FIVE-DAY PROBABILITY OF RAIN EXCEEDS 30 PERCENT. DURING THE REMAINDER OF THE YEAR,THEY SHALL BE IN PLACES AT THE AND OF THE WORKING DAY, WHENEVER THE DAILY RAINFALL PROBABILITY EXCEEDS 50 PERCENT.
4. TEMPORARY DISTILLING BANS, WHEN REQUIRED, SHALL BE INSTALLED AND MAINTAINED FOR THE DURATION OF THE PROJECT.

REQUIRED INSPECTION

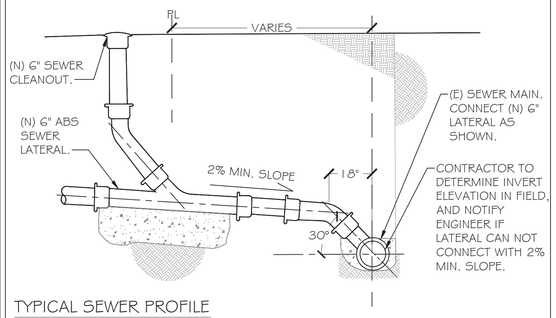
1. A PRE-GRADING MEETING SHALL BE SCHEDULED 48 HOURS PRIOR TO START OF GRADING WITH THE FOLLOWING PEOPLE PRESENT: OWNER, GRADING CONTRACTOR, DESIGN CIVIL ENGINEER, SOILS ENGINEER, GEOLOGIST, CITY BUILDING INSPECTOR OR THEIR REPRESENTATIVES. REQUIRED FIELD INSPECTIONS WILL BE OUTLINED AT THE MEETING.
2. A PRE-PAVING MEETING SHALL BE SCHEDULE 48 HOURS PRIOR TO START OF THE SUB-GRADE PREPARATION FOR THE PAVING WITH THE FOLLOWING PEOPLE PRESENT; OWNER, PAVING CONTRACTORS, DESIGN CIVIL ENGINEER, SOILS ENGINEER, CITY BUILDING INSPECTOR.

GRADING FILLS / CUTS

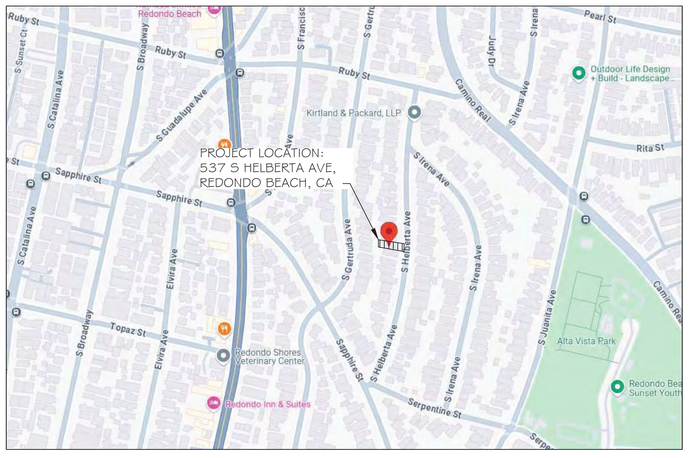
1. GRADED SLOPES SHALL BE NO STEEPER THAN 2 HORIZONTAL TO 1 VERTICAL.
2. FILL SLOPES SHALL BE COMPACTED TO NO LESS THAN 90 PERCENT RELATIVE COMPACT ON OUT TO THE FINISHED SURFACE.
3. ALL FILLS SHALL BE COMPACTED THROUGHOUT TO A MINIMUM OF 90 PERCENT RELATIVE COMPACTION AS DETERMINED BY ASTM TEST METHOD 1557, AND APPROVED BY THE SOILS ENGINEER. COMPACTION TESTS SHALL BE PERFORMED APPROXIMATELY EVERY TWO FEET IN VERTICAL HEIGHT AND OF SUFFICIENT AND QUANTITY TO ATTEST TO THE OVERALL COMPACTION EFFORT APPLIED TO THE FILL AREAS.
4. AREAS TO RECEIVE FILL SHALL BE CLEARED OF ALL VEGETATION AND DEBRIS, SCARIFIED AND APPROVED BY THE SOILS ENGINEER PRIOR TO PLACING THE FILL.
5. FILLS SHALL BE KEYED OR BENCHED INTO COMPETENT MATERIAL.
6. ALL EXISTING FILLS SHALL BE APPROVED BY THE SOILS ENGINEER OR REMOVED BEFORE ANY ADDITIONAL FILLS ARE ADDED.
7. ANY EXISTING IRRIGATION LINES SHALL BE REMOVED OR CRUSHED IN PLACE AND BACKFILLED AND APPROVED BY THE SOILS ENGINEER.
8. THE ENGINEERING GEOLOGIST AND SOILS ENGINEER SHALL, AFTER CLEARING AND PRIOR TO THE PLACEMENT OF FILL IN THE AREAS OF ADVERSE STABILITY AND DETERMINE THE PRESENCE OF, OR POSSIBILITY OF FUTURE ACCUMULATION OF, SUBSURFACE WATER OR SPRING FLOW. IF NEEDED, DRAINS WILL BE DESIGNED AND CONSTRUCTED PRIOR TO THE PLACEMENT OF FILL IN EACH CANYON.
9. THE EXACT LOCATION OF THE SUBDRAINS SHALL BE SURVEYED IN THE FIELD FOR LINE AND GRADE.
10. ALL TRENCH BACKFILLS SHALL BE COMPACTED THROUGHOUT TO A MINIMUM OF 90 PERCENT RELATIVE COMPACTION, AND APPROVED BY THE SOILS ENGINEER. THE BUILDING DEPARTMENT MAY REQUIRE CORING OF CONCRETE FLAT WORK PLACED OVER UNTESTED BACKFILLS TO FACILITATE TESTING.
11. THE STOCKPILING OF EXCESS MATERIAL SHALL BE APPROVED BY THE BUILDING DEPARTMENT.
12. ALL CUT SLOPES SHALL BE INVESTIGATED BOTH DURING AND AFTER GRADING BY AND ENGINEERING GEOLOGIST TO DETERMINE IF ANY STABILITY PROBLEMS EXIST. SHOULD EXCAVATION DISPOSE ANY GEOLOGICAL HAZARDS OR POTENTIAL GEOLOGICAL HAZARDS, THE ENGINEERING GEOLOGIST SHALL RECOMMEND AND SUBMIT NECESSARY TREATMENT TO THE BUILDING DEPARTMENT FOR APPROVAL.
13. WHERE SUPPORT OR BUTTRESSING OR CUT AND NATURAL SLOPES AS DETERMINED TO BE NECESSARY BY THE ENGINEERING GEOLOGIST AND SOILS ENGINEER, THE SOILS ENGINEER WILL OBTAIN APPROVAL OF DESIGN, LOCATION AND CALCULATIONS FROM THE BUILDING DEPARTMENT PRIOR TO CONSTRUCTION.
14. THE ENGINEERING GEOLOGIST AND SOILS ENGINEER SHALL INSPECT AND TEST THE CONSTRUCTION OF ALL BUTTRESS FILLS AND ATTEST TO THE STABILITY OF THE SLOPE AND ADJACENT STRUCTURES UPON COMPLETION.
15. WHEN CUT PADS ARE BROUGHT TO NEAR GRADE, THE ENGINEERING GEOLOGIST SHALL DETERMINE IF THE BEDROCK IS EXTENSIVELY FRACTURED OR FAULTED AND WILL READILY TRANSMIT WATER. IF CONSIDERED NECESSARY BY THE ENGINEERING GEOLOGIST AND SOILS ENGINEER, A COMPACTED FILL BLANKET WILL BE PLACED.
16. THE ENGINEERING GEOLOGIST SHALL PERFORM PERIODIC INSPECTIONS DURING GRADING.
17. NOTIFICATION OF NONCOMPLIANCE: IF, IN THE COURSE OF FULFILLING THEIR RESPONSIBILITY, THE CIVIL ENGINEER, THE SOILS ENGINEER, THE ENGINEERING GEOLOGIST OF THE TESTING AGENCY FINDS THAT THE WORK IS NOT BEING DONE IN CONFORMANCE WITH THE APPROVED GRADING PLANS, THE DISCREPANCIES SHALL BE REPORTED IMMEDIATELY IN WRITING TO THE PERSON IN CHARGE OF THE GRADING WORK AND TO THE BUILDING INSPECTOR. RECOMMENDATIONS FOR CORRECTIVE MEASURES, IF NECESSARY, SHALL BE SUBMITTED TO THE BUILDING DEPARTMENT FOR APPROVAL.



WORST CASE RISER DIAGRAM (NTS)



TYPICAL SEWER PROFILE
SCALE: NONE



N

VICINITY MAP
SCALE: NONE

CITY OF REDONDO BEACH - ENGINEERING SERVICES DIVISION NOTES

A. MYLAR COPY OF THE RECORDED TRACT MAP/PARCEL MAP SHALL BE SUBMITTED TO THE CITY ENGINEER, PRIOR TO REQUESTING FINAL BUILDING INSPECTION.
B. RECORDED COPY OF THE REQUIRED COVENANT/EASEMENT/DEED/DEED RESTRICTION SHALL BE SUBMITTED TO THE CITY ENGINEER, PRIOR TO REQUESTING FINAL BUILDING INSPECTION.
C. ALL EASEMENTS, OIL WELLS, SUBSTRUCTURES, SUPERSTRUCTURES, LANDSCAPE, HARDSCAPE, UTILITY POLES, UTILITY BOXES, UTILITY VENTS, UTILITY VAULTS, UTILITY CABINETS, UTILITY OVERHEAD LINES AND WATER HYDRANTS ARE SHOWN ON THIS SITE PLAN.
D. CONTRACTOR, AT ITS SOLE COST, SHALL ENSURE THAT PERMITTED WORK WILL NOT CREATE POTENTIAL FLOODING OF NEIGHBORING IMPROVEMENTS, NOR WILL IT ALTER THE EXISTING COURSE OF WATER FLOW.
E. CONTRACTOR SHALL NOTIFY CITY ENGINEERING DIVISION 48 HOURS PRIOR TO COMMENCING ANY WORK IN PUBLIC RIGHT OF WAY.
F. WORK IN PUBLIC RIGHT OF WAY, SHALL COMPLY WITH THE LATEST EDITION OF APWA STANDARD PLANS AND SPECIFICATIONS, AND SHALL BE EXECUTED TO THE SATISFACTION OF CITY ENGINEER AND/OR HIS REPRESENTATIVE.
G. WORK IN PUBLIC RIGHT OF WAY SHALL BE PERFORMED BY LICENSED CONTRACTORS. CONTRACTORS AND SUBCONTRACTORS SHALL POSSESS VALID REDONDO BEACH BUSINESS LICENSES.
H. CONTRACTOR SHALL MAINTAIN CONSTRUCTION PERMITS AND AN APPROVED SET OF PLANS ON SITE AT ALL TIME. CONTRACTOR SHALL SURRENDER ALL REQUIRED CONSTRUCTION DOCUMENTS TO THE CITY ENGINEER AND/OR HIS REPRESENTATIVE UPON DEMAND.
I. PRIOR TO ISSUANCE OF THE BUILDING/ENGINEERING PERMIT, CONTRACTOR MUST PROVIDE PROOF OF INSURANCE. CONTRACTOR SHALL MAINTAIN ON CITY FILES APPROVED ONE MILLION DOLLAR GENERAL LIABILITY NAMING THE CITY ADDITIONAL INSURED, WITH 30-DAY CANCELLATION NOTICE. THE INSURANCE POLICY SHALL STATE "THE CITY OF REDONDO BEACH, ITS OFFICERS, ELECTED OFFICIALS, ATTORNEYS, EMPLOYEES, MEMBERS OF BOARDS AND COMMISSIONS, AGENTS AND VOLUNTEERS ARE HEREBY NAMED ADDITIONAL INSURED." THE CERTIFICATE OF INSURANCE MUST STATE THAT THE INSURANCE IS "PRIMARY" AND NOT EXCESS. THE CANCELLATION CLAUSE SHALL STATE "SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING COMPANY WILL MAIL 30 DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED TO THE LEFT."
J. CONTRACTOR SHALL REPLACE AT ITS SOLE COST, DAMAGED SIDEWALK, DRIVEWAYS, CURB, GUTTER AND PAVEMENT TO THE SATISFACTION OF THE CITY ENGINEER AND/OR HIS REPRESENTATIVE.
K. CONSTRUCT NEW RESIDENTIAL CONCRETE DRIVEWAY TYPE N/A WHERE NOTED ON SITE PLAN. NEW CONRETE SHALL BE CLASS 520-C-5200.
L. CONSTRUCT NEW CONCRETE SIDEWALK WHERE NOTED ON SITE PLAN. NEW SIDEWALK SHALL MATCH EXISTING. NEW CONCRETE SHALL BE CLASS 520-C-2500.
M. CONSTRUCT NEW CONCRETE CURB AND GUTTER WHERE NOTED ON SITE PLAN. NEW CURB SHALL HAVE FACE HEIGHT OF 6 INCHES OR MATCH EXISTING. NEW GUTTER SHALL BE 12 INCHES WIDE OR MATCH EXISTING. NEW CONCRETE SHALL BE CLASS 520-C-2500.
N. CONSTRUCT NEW FULL-DEPTH ASPHALT CONCRETE PAVEMENT WHERE NOTED ON SITE PLAN. NEW ASPHALTIC CONCRETE SHALL BE CLASS D1-PG-64-10.
O. NEW SEWER LATERAL SHALL BE CONNECTED TO MAIN SEWER LINE WITHIN PROPERTY FRONTAGE. SEWER LATERAL SHALL BE PERPENDICULAR TO MAIN SEWER LINE. MINIMUM SEWER LATERAL DIAMETER SHALL BE 4-INCH. NO CONNECTION TO EXISTING SEWER IS ALLOWED UNLESS THE EXISTING SEWER MEETS THE CURRENT CODE REQUIREMENTS AND THE APPROVAL OF THE BUILDING DIVISION. QUALITY/QUANTITY OF SEWAGE CONSTITUENTS SHALL COMPLY WITH THE REQUIREMENTS OF THE LATEST EDITION OF THE WASTEWATER ORDINANCE OF THE SANITATION DISTRICTS OF LOS ANGELES COUNTY. PROVIDE 6-INCH CLEAN-OUT IMMEDIATELY BEHIND SIDEWALK. ENCASE CLEAN-OUT IN CONCRETE BOX MARKED "S" OR "SEWER". DESIGN SHALL BE PERFORMED BY A REGISTERED CIVIL ENGINEER.
P. NEW PUBLIC OR QUASI-PUBLIC UTILITY FACILITIES SHALL BE LOCATED IN PUBLIC PARKWAY (THE LANDSCAPED AREAS BETWEEN THE CURB AND THE SIDEWALK OR THE CITY'S RIGHT OF WAY LINE), OUTSIDE OF CURB RAMPS, DRIVEWAYS, AND SIDEWALK, UNLESS OTHERWISE NOTED ON SITE PLAN.
Q. TRAFFIC DELINEATION SHALL BE EXECUTED IN ACCORDANCE WITH THE LATEST EDITION OF THE CALIFORNIA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (CA MUTCD) AND TO THE SATISFACTION OF THE CITY ENGINEER AND/OR HIS REPRESENTATIVE.
R. COMMERCIAL VEHICLES TRANSPORTING SOIL, EQUIPMENT OR CONSTRUCTION MATERIALS, AND HAVING UNLADEN WEIGHT AS DEFINED IN SECTION 660 OF CVC OF 6,000 POUNDS OR MORE OR HAVING MANUFACTURER'S GROSS WEIGHT RATING AS DEFINED IN SECTION 390 OF CVC OF 10,000 POUNDS OR MORE SHALL USE DESIGNATED TRUCK ROUTE TO COMMUTE TO PROJECT SITE. ANY COMMERCIAL VEHICLE HAVING A FULLY LADEN WEIGHT OF 20,000 POUNDS OR MORE SHALL NOT USE CONDITIONAL TRUCK ROUTE.
S. PUBLIC WORKS INSPECTOR SHALL INSPECT ALL STREET IMPROVEMENTS; ALL SEWER SYSTEMS INCLUDING ALL PIPING, TRENCHING, BACKFILLING AND SEWER EJECTOR; ALL STORM DRAIN SYSTEMS INCLUDING ALL PIPING, TRENCHING, BACKFILLING, CATCH BASINS, SUMP PUMPS AND OIL/WATER SEPARATOR. FIRST INSPECTION SHALL TAKE PLACE AFTER FORMS ARE IN PLACE FOR SIDEWALKS, DRIVEWAYS, ETC. OR AT THE TIME OF CONSTRUCTING THE SEWER LINE SADDLE. SECOND INSPECTION SHALL TAKE PLACE WHILE SIDEWALKS, DRIVEWAYS, ETC., ARE BEING POURED AND FINISHED OR AT THE TIME OF BACKFILLING. BACKFILLING, COMPACTION AND TESTING SHALL BE CONDUCTED IN ACCORDANCE WITH CITY STANDARDS AND TO THE SATISFACTION OF THE CITY ENGINEER AND/OR HIS REPRESENTATIVE. FINAL INSPECTION WILL BE MADE PRIOR TO CITY BUILDING DIVISION FINAL INSPECTION. AT THAT TIME, IF ALL WORK PERTAINING TO PUBLIC RIGHT OF WAY IS IN GOOD ORDER, THE PERMIT DEPOSITS WILL BE RELEASED, LESS ANY AND ALL CHARGES.
T. CONTRACTOR SHALL ARRANGE FOR PUBLIC WORKS INSPECTION 24 HOURS IN ADVANCE. CONTRACTOR SHALL CONTACT THE DEPARTMENT OF ENGINEERING AND BUILDING SERVICES AT (310) 937-6653 BEFORE 3:00 PM FOR ALL INSPECTION REQUESTS. CALLS RECEIVED AFTER 3:00 PM SHALL NOT BE SCHEDULED FOR NEXT BUSINESS DAY INSPECTION.
U. CONTRACTOR SHALL SUBMIT COMPACTION REPORTS AND CONCRETE/ASPHALT CLASS CERTIFICATES TO CITY ENGINEERING DIVISION PRIOR TO REQUESTING FINAL INSPECTION.
V. DUST CONTROL SHALL BE ENFORCED TO THE SATISFACTION OF THE CITY ENGINEER AND/OR HIS REPRESENTATIVE THROUGHOUT CONSTRUCTION.
W. NOISE CONTROL SHALL BE ENFORCED TO THE SATISFACTION OF THE CITY ENGINEER AND/OR HIS REPRESENTATIVE THROUGHOUT CONSTRUCTION. ACTUAL CONSTRUCTION ACTIVITIES IN PUBLIC RIGHT OF WAY MAY OCCUR FROM 7:00 A.M. TO 6:00 P.M., MONDAY THROUGH FRIDAY. NO WORK IN PUBLIC RIGHT OF WAY SHALL OCCUR ON SATURDAYS WITHOUT PRIOR AUTHORIZATION FROM THE CITY ENGINEER AND/OR HIS REPRESENTATIVE. AUTHORIZED WORK ON SATURDAYS SHALL OCCUR FROM 9:00 A.M. TO 5:00 P.M. NO WORK IN PUBLIC RIGHT OF WAY SHALL OCCUR ON SUNDAYS OR NATIONAL HOLIDAYS.
X. PUBLIC RIGHT OF WAY SHALL BE KEPT CLEAR AND CLEAN TO THE SATISFACTION OF THE CITY ENGINEER AND/OR HIS REPRESENTATIVE THROUGHOUT CONSTRUCTION. NO STORAGE OF DEBRIS, MATERIALS OR EQUIPMENT SHALL BE ALLOWED ON PUBLIC RIGHT OF WAY WITHOUT PRIOR WRITTEN CONSENT FROM THE CITY ENGINEER AND/OR HIS REPRESENTATIVE. SUCH CONSENT SHALL BE RENEWED DAILY. IF CITY CREWS ARE CALLED UPON TO PERFORM WORK OF CONTRACTOR, REGARDING CITY RIGHT OF WAY, CONTRACTOR SHALL BE CHARGED FOR ALL EXPENSES INCURRED BY CITY CREWS.
Y. CONTRACTOR SHALL LOCATE AND PROTECT IN PLACE EXISTING UTILITIES AT ITS SOLE COST. CONTRACTOR SHALL REPAIR, AT ITS COST AND TO THE SATISFACTION OF THE CITY ENGINEER, HIS REPRESENTATIVE AND/OR TO THE UTILITY COMPANIES, ANY DAMAGE INFLICTED BY CONTRACTOR ON EXISTING UTILITIES.
Z. CONTRACTOR SHALL LOCATE AND PROTECT IN PLACE EXISTING SURVEY POINTS AT ITS SOLE COST. CONTRACTOR SHALL RE-ESTABLISH DAMAGED SURVEY POINTS, AT ITS SOLE COST, AND TO THE SATISFACTION OF THE CITY ENGINEER AND/OR HIS REPRESENTATIVE.
AA. CONTRACTOR SHALL REPLACE AT ITS SOLE COST, REMOVED/DAMAGED TREES/LANDSCAPING WITHIN PUBLIC RIGHT OF WAY, TO THE SATISFACTION OF THE CITY ENGINEER AND/OR HIS REPRESENTATIVE.

SEE SHEET C-3.0 FOR ADDITIONAL IMPORTANT NOTES.

SHEET TITLE:
DRAINAGE / LID PLAN (SITE LEVEL)

SCOPE OF WORK:
DRAINAGE PLAN FOR RESIDENTIAL DEVELOPMENT.

EXP: 6/30/26
6/3/2025

B.A. SIMS
ENGINEERING, INC
1341 ORIZABA AVENUE
LONG BEACH, CA 90804
(562) 735-4955
WWW.BASIMS.COM

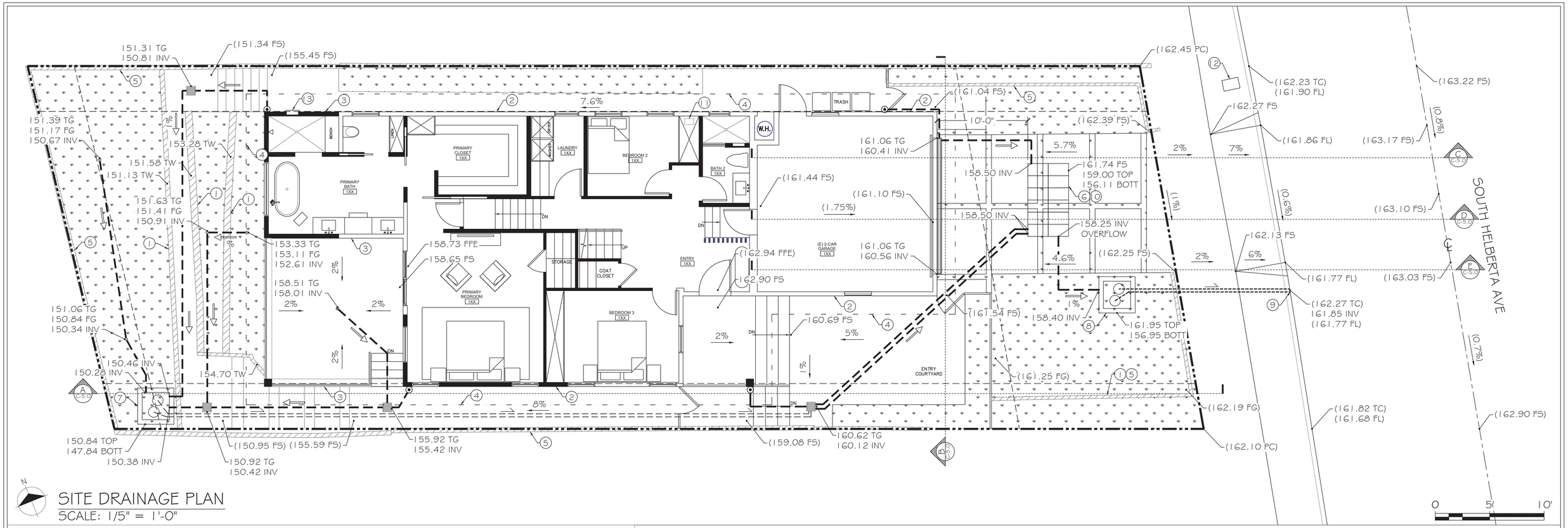
PROJECT/LOCATION
537 HELBERTA AVE,
REDONDO BEACH, CA
FLOOD ZONE: "X"

LEGAL DESCRIPTION
LOT 17
BLOCK 127
TOWNSITE OF REDONDO BEACH,
M.B. 39/1-17
APN 7507-001-017

PROJ. NO:
25149 RO

PRINT DATE:
6/3/2025

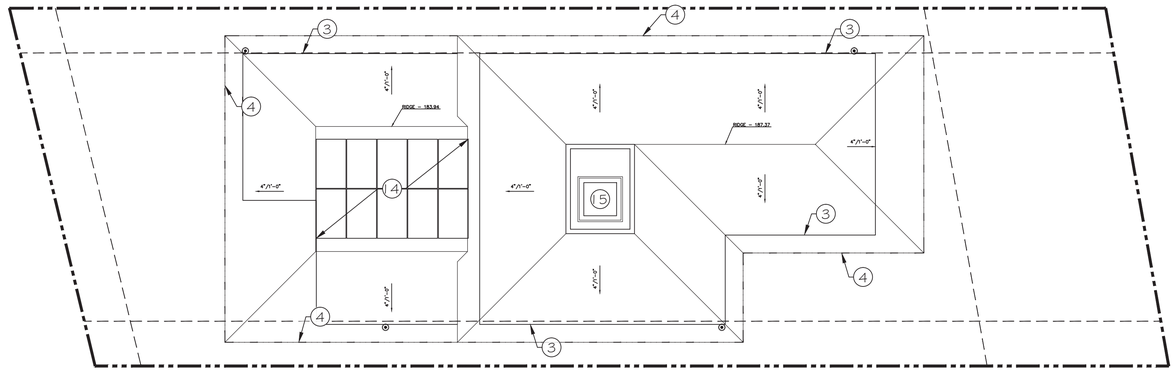
SHEET:
C-1.0



SITE DRAINAGE PLAN
SCALE: 1/5" = 1'-0"

CONSTRUCTION NOTES:

1. EXISTING TO REMAIN, CONTRACTOR TO PROTECT IN PLACE.
2. EXISTING RESIDENCE OUTLINE, SEE ARCHITECTURAL PLANS FOR MORE INFORMATION.
3. PROPOSED ADDITION OUTLINE, SEE ARCHITECTURAL PLANS FOR MORE INFORMATION.
4. OUTLINE OF ROOF ABOVE.
5. EXISTING SITE WALL TO REMAIN, CONTRACTOR TO PROTECT IN PLACE.
6. INSTALL (12) ECO-RAIN ET-1502 DOUBLE TANKS WITH DRAINAGE CELLS, WRAPPED IN GEOTEXTILE FABRIC. CONNECT 3" OVERFLOW VIA GRAVITY TO SUMP. SEE SECTION 'A' ON SHT C-1.0 FOR DETAILS.
   APPROX. BASIN SIZE: 8.04' L X 4.50' W X 2.89' H
   FINISHED SURFACE ELEVATION: 96.28'
   TOP OF TANK ELEV: 93.00'
   BOTT. OF TANK ELEV: 86.58'
7. SUMP SYSTEM: 3'X3'X3' PRECAST BASIN (OLDCASTLE OR SIMILAR) W/ (2) ZOELLER SUMP PUMPS MODEL 282 W/ 2"Ø DISCHARGE PIPES TO CATCH BASIN TO ECO-RAIN TANKS, SEE SECTION 'G' ON SHEET C-5.0 FOR DETAILS.
   TG = 150.84' ± ; BOTT = 147.84' ±
8. SUMP SYSTEM: 3'X3'X5' PRECAST BASIN (OLDCASTLE OR SIMILAR) W/ (2) ZOELLER SUMP PUMPS MODEL 282 W/ 3"Ø DISCHARGE PIPES TO CURB DRAIN, SEE SECTION 'H' ON SHEET C-5.0 FOR DETAILS.
   TG = 161.95' ± ; BOTT = 156.95' ±
9. CONSTRUCT 3" PIPE OVERFLOW TO CURB DRAIN PER SPPWC STANDARD PLAN NO. 150-3, INVERT ELEVATION PER PLAN.
10. PROVIDE 10 MIL VAPOR RETARDER VERTICALLY BETWEEN INFILTRATION SYSTEM AND NEARBY FOOTINGS. VAPOR RETARDER TO EXTEND FROM TOP OF TANKS TO BOTTOM OF FOOTINGS OR PER STRUCTURAL ENGINEER. VAPOR RETARDER SHALL MEET REQUIREMENTS STATED IN GEOTEK INC. SOILS REPORT NO. 2767-CR, PAGE 8.
11. EXISTING GAS METER, TO REMAIN. CONTRACTOR TO PROTECT IN PLACE.
12. EXISTING WATER METER TO REMAIN. CONTRACTOR TO PROTECT IN PLACE.
13. PROPOSED 200 AMP METER, PER ARCHITECTURAL PLANS.
14. PROPOSED SOLAR PANELS, PER SEPARATE PERMIT. REFER TO ARCHITECTURAL PLANS FOR MORE INFORMATION.
15. PROPOSED SKYLIGHT, PER SEPARATE PERMIT. REFER TO ARCHITECTURAL PLANS FOR MORE INFORMATION.

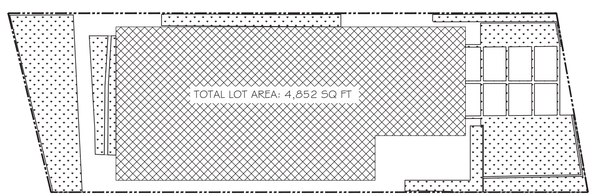


ROOF DRAINAGE PLAN
SCALE: 1/8" = 1'-0"

0 8' 16'

LEGEND

- PERMEABLE LANDSCAPE AREA.
- CONCRETE/HARDSCAPE AREA.
- 71.45 FG (E) APPROXIMATE ELEVATION.
- 71.45 FG PROPOSED ELEVATION.
- PROPERTY LINE
- SETBACK LINE
- SIDEYARD SWALE
- ROOF OUTLINE
- DIRECTION OF DRAINAGE CONCENTRATED PIPE FLOW.
- DIRECTION OF ROOF GUTTER AND SHEET FLOW.
- PRESSURIZED PIPE FLOW.
- 3" SCH. 40 (OR SDR 35) PVC DRAIN PIPE, 1% MIN SLOPE FOR GRAVITY LINES.
- 2" SCH. 80 PRESSURIZED PVC SUMP DISCHARGE PIPE.
- 3" SCH. 80 PRESSURIZED PVC SUMP DISCHARGE PIPE.
- NDS 12" SQ. CATCH BASIN (OR EQUAL) WITH CARBON FILTER INSERT. INVERT ELEV. PER PLANS. SEE DETAILS 1 & 2, SHT C-6.0.
- NDS 4" ATRIUM GRATE (OR EQUAL).INVERT ELEV. PER PLANS. SEE DETAIL 3, SHT C-6.0.
- NDS TRENCH DRAIN (OR EQUAL). SEE DETAILS 4 & 5, SHT C-6.0.
- DOWNSPOUT LOCATION. SEE DETAIL 6, SHT C-6.0.
- NDS 4" AREA DRAIN (OR EQUAL). INVERT ELEV. PER PLANS. SEE DETAIL 7, SHT C-6.0.



LEGEND
- A1: PERMEABLE LANDSCAPE AREA (PERVIOUS) = 2,477 SQ FT
- A2: ROOF / DECK AREA (IMPERVIOUS) = 1,108 SQ FT
- A3: CONCRETE / HARDSCAPE AREA (IMPERVIOUS) = 1,267 SQ FT

REFER TO PLAN VIEW FOR ALL OTHER DETAILS.

DRAINAGE AREA MAP
SCALE: 1/16" = 1'-0"

0 16' 32'

SHEET TITLE:
DRAINAGE / LID PLAN (SITE LEVEL)

SCOPE OF WORK:
DRAINAGE PLAN FOR RESIDENTIAL DEVELOPMENT.

LICENSED PROFESSIONAL ENGINEER — BRADLEY A. SIMS — C 58238 — CIVIL — STATE OF CALIFORNIA

EXP: 6/30/26
6/3/2025

B.A. SIMS
ENGINEERING, INC
1341 ORIZABA AVENUE
LONG BEACH, CA 90804
(562) 735-4955
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PROJECT/LOCATION
537 HELBERTA AVE,
REDONDO BEACH, CA

FLOOD ZONE: "X"

LEGAL DESCRIPTION
LOT 17
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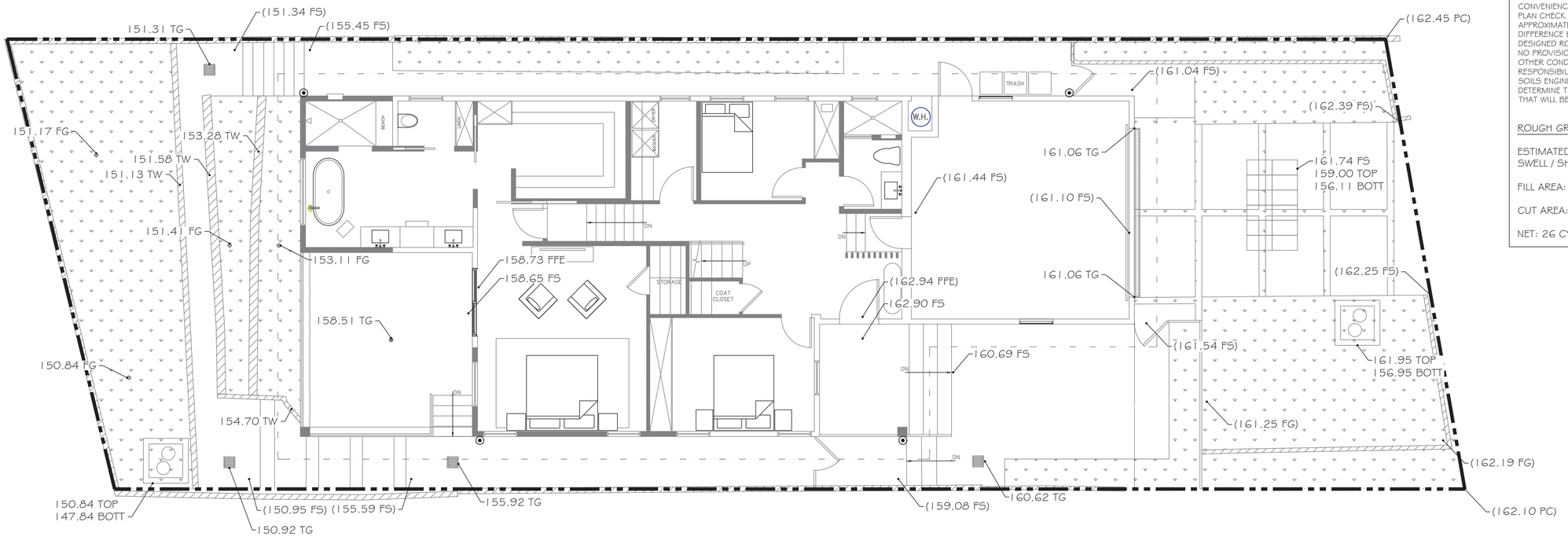
PROJ. NO: 25149 RO
PRINT DATE: 6/3/2025
SHEET: C-2.0



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PLAN VIEW - GRADING PLAN

SCALE: 1/5" = 1'-0"

0 5' 10'

CONTRACTOR'S NOTE:

THE EARTHWORK QUANTITIES ARE PROVIDED AS A COURTESY AND CONVENIENCE TO THE OWNER(S), AND ARE FOR BONDING AND PLAN CHECK PURPOSES ONLY. THE YARDAGE FIGURES SHOWN ARE APPROXIMATE CALCULATED QUANTITIES BASED ON THE DIFFERENCE BETWEEN EXISTING GROUND ELEVATIONS AND DESIGNED ROUGH GRADE ELEVATIONS. THE CALCULATIONS MAKE NO PROVISIONS FOR STRIPPING, SHRINKAGE, BULKING OR ANY OTHER CONDITION NOT IMPLIED. FOR THIS REASON, IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CONSULT THE PROJECT SOILS ENGINEER AND GEOLOGIC INVESTIGATIONS, AND TO DETERMINE THEMSELVES, THE QUANTITIES OF EARTH MOVING THAT WILL BE REQUIRED TO COMPLETE THE PROJECT.

ROUGH GRADING CALCULATIONS

ESTIMATED CUT / FILL QUANTITIES (INCLUDING 15% SWELL / SHRINKAGE FACTOR):

FILL AREA: 69 CY (FILL)

CUT AREA: 43 CY (CUT)

NET: 26 CY (FILL / IMPORT)

CONSTRUCTION NOTES:

1. EXISTING TO REMAIN, CONTRACTOR TO PROTECT IN PLACE.
2. EXISTING RESIDENCE OUTLINE, SEE ARCHITECTURAL PLANS FOR MORE INFORMATION.
3. PROPOSED ADDITION OUTLINE, SEE ARCHITECTURAL PLANS FOR MORE INFORMATION.
4. OUTLINE OF ROOF ABOVE.
5. EXISTING SITE WALL TO REMAIN, CONTRACTOR TO PROTECT IN PLACE.
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7. SUMP SYSTEM: 3'X3'X3' PRECAST BASIN (OLDCASTLE OR SIMILAR) W/ (2) ZOELLER SUMP PUMPS MODEL 282 W/ 2"Ø DISCHARGE PIPES TO CATCH BASIN TO ECO-RAIN TANKS, SEE SECTION 'G' ON SHEET C-5.0 FOR DETAILS. TG = 150.84' ± ; BOTT = 147.84' ±
8. SUMP SYSTEM: 3'X3'X5' PRECAST BASIN (OLDCASTLE OR SIMILAR) W/ (2) ZOELLER SUMP PUMPS MODEL 282 W/ 3"Ø DISCHARGE PIPES TO CURB DRAIN, SEE SECTION 'H' ON SHEET C-5.0 FOR DETAILS. TG = 161.95' ± ; BOTT = 156.95' ±
9. CONSTRUCT 3" PIPE OVERFLOW TO CURB DRAIN PER SPPWC STANDARD PLAN NO. 150-3, INVERT ELEVATION PER PLAN.
10. PROVIDE 10 MIL VAPOR RETARDER VERTICALLY BETWEEN INFILTRATION SYSTEM AND NEARBY FOOTINGS. VAPOR RETARDER TO EXTEND FROM TOP OF TANKS TO BOTTOM OF FOOTINGS OR PER STRUCTURAL ENGINEER. VAPOR RETARDER SHALL MEET REQUIREMENTS STATED IN GEOTEK INC. SOILS REPORT NO. 2767-CR, PAGE 8.
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14. PROPOSED SOLAR PANELS, PER SEPARATE PERMIT. REFER TO ARCHITECTURAL PLANS FOR MORE INFORMATION.
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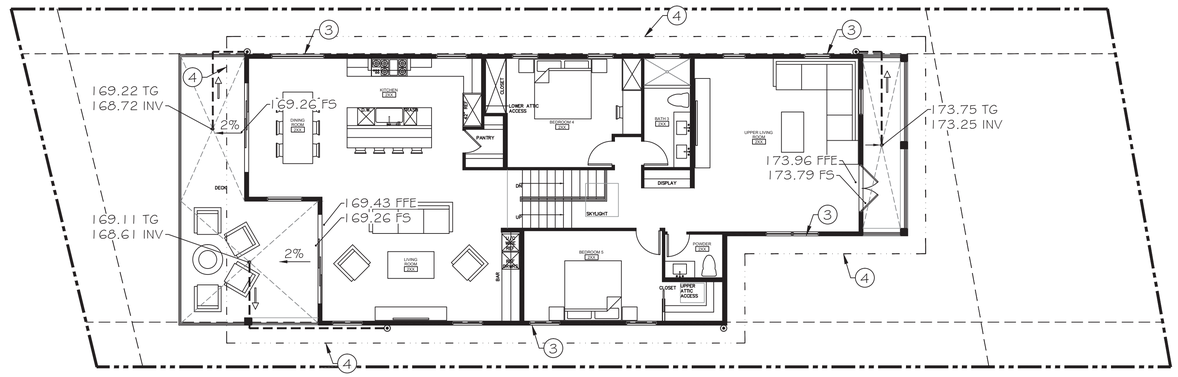
LEGEND

- PERMEABLE LANDSCAPE AREA.
- CONCRETE/HARDSCAPE AREA.
- 71.45 FG (E) APPROXIMATE ELEVATION.
- 71.45 FG PROPOSED ELEVATION.
- PROPERTY LINE
- SETBACK LINE
- SIDEYARD SWALE
- ROOF OUTLINE
- DIRECTION OF DRAINAGE CONCENTRATED PIPE FLOW.
- DIRECTION OF ROOF GUTTER AND SHEET FLOW.
- PRESSURIZED PIPE FLOW.
- 3" SCH. 40 (OR SDR 35) PVC DRAIN PIPE, 1% MIN SLOPE FOR GRAVITY LINES.
- 2" SCH. 80 PRESSURIZED PVC SUMP DISCHARGE PIPE.
- 3" SCH. 80 PRESSURIZED PVC SUMP DISCHARGE PIPE.
- NDS 12" SQ. CATCH BASIN (OR EQUAL) WITH CARBON FILTER INSERT. INVERT ELEV. PER PLANS. SEE DETAILS 1 & 2, SHT C-6.0.
- NDS 4" ATRIUM GRATE (OR EQUAL).INVERT ELEV. PER PLANS. SEE DETAIL 3, SHT C-6.0.
- NDS TRENCH DRAIN (OR EQUAL). SEE DETAILS 4 & 5, SHT C-6.0.
- DOWNSPOUT LOCATION. SEE DETAIL 6, SHT C-6.0.
- NDS 4" AREA DRAIN (OR EQUAL). INVERT ELEV. PER PLANS. SEE DETAIL 7, SHT C-6.0.



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SECOND FLOOR DRAINAGE PLAN

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

0 8' 16'

SHEET TITLE:

GRADING PLAN & ROOF DRAINAGE PLAN

SCOPE OF WORK:

GRADING & DRAINAGE PLANS FOR RESIDENTIAL DEVELOPMENT.

LICENSED PROFESSIONAL ENGINEER BRADLEY A. SIMS C 58235 CIVIL STATE OF CALIFORNIA

EXP: 6/30/26
6/3/2025

B.A. SIMS
ENGINEERING, INC
1341 ORIZABA AVENUE
LONG BEACH, CA 90804
(562) 735-4955
WWW.BASIMS.COM

PROJECT/LOCATION

537 HELBERTA AVE,
REDONDO BEACH, CA

FLOOD ZONE: "X"

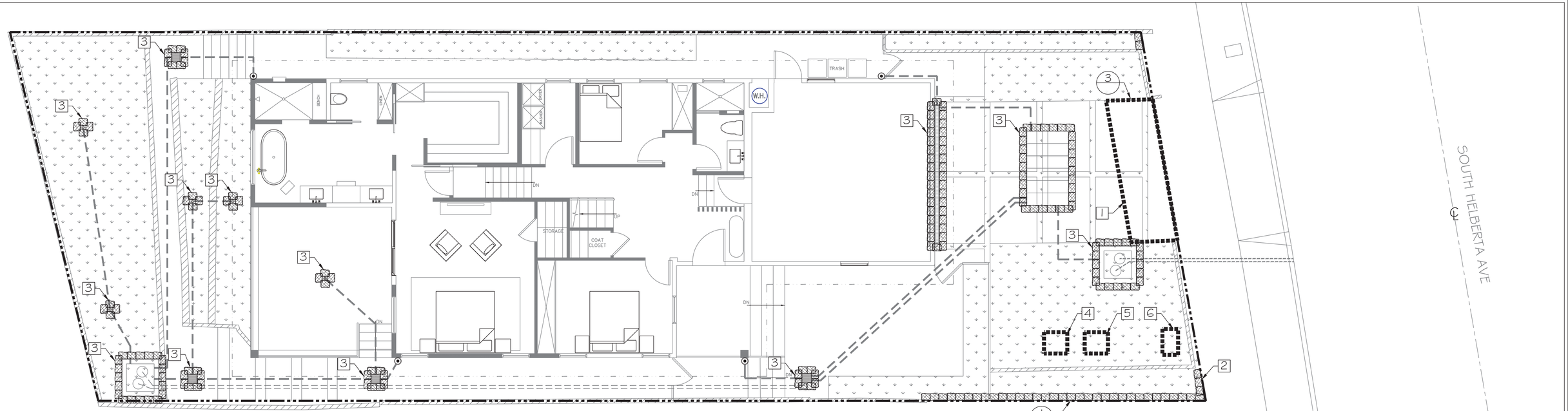
LEGAL DESCRIPTION

LOT 17
BLOCK 127
TOWNSITE OF REDONDO BEACH,
M.B. 39/1-17
APN 7507-001-017

PROJ. NO: 25149 RO

PRINT DATE: 6/3/2025

SHEET: C-3.0



EROSION CONTROL PLAN
SCALE: 1/5" = 1'-0"

BEST MANAGEMENT PRACTICES (BMP) NOTES

1. EVERY EFFORT SHOULD BE MADE TO ELIMINATE THE DISCHARGE OF NON-STORMWATER FROM THE PROJECT SITE AT ALL TIMES.
2. ERODED SEDIMENTS AND OTHER POLLUTANTS MUST BE RETAINED ON-SITE AND MAY NOT BE TRANSPORTED FROM THE SITE VIA SHEET FLOW, SWALES, AREA DRAINS, NATURAL DRAINAGE COURSES OR WIND.
3. STOCKPILES OF EARTH AND OTHER CONSTRUCTION RELATED MATERIALS MUST BE PROTECTED FROM BEING TRANSPORTED FROM THE SITE BY THE FORCES OF WIND OR WATER.
4. FUELS, OILS, SOLVENTS, AND OTHER TOXIC MATERIALS MUST BE STORED IN ACCORDANCE WITH THEIR LISTING AND ARE NOT TO CONTAMINATE THE SOIL AND SURFACE WATERS. ALL APPROVED STORAGE CONTAINERS ARE TO BE PROTECTED FROM THE WEATHER. SPILLS MUST BE CLEANED UP IMMEDIATELY AND DISPOSED OF IN A PROPER MANNER. SPILLS MAY NOT BE WASHED INTO THE DRAINAGE SYSTEM.
5. EXCESS OR WASTE CONCRETE MAY NOT BE WASHED INTO THE PUBLIC WAY OR ANY OTHER DRAINAGE SYSTEM. PROVISIONS SHALL BE MADE TO RETAIN CONCRETE WASTES ON-SITE UNTIL THEY CAN BE DISPOSED OF AS SOLID WASTE.
6. TRASH AND CONSTRUCTION RELATED SOLID WASTES MUST BE DEPOSITED INTO A COVERED RECEPTACLE TO PREVENT CONTAMINATION OF RAINWATER AND DISPERSAL BY WIND.
7. SEDIMENTS AND OTHER MATERIALS MAY NOT BE TRACKED FROM THE SITE BY VEHICLE TRAFFIC. THE CONSTRUCTION ENTRANCE ROADWAYS MUST BE STABILIZED SO AS TO INHIBIT SEDIMENTS FROM BEING DEPOSITED INTO THE PUBLIC WAY. ACCIDENTAL DEPOSITIONS MUST BE SWEPT UP IMMEDIATELY AND MAY NOT BE WASHED DOWN BY RAIN OR OTHER MEANS.
8. ANY SLOPES WITH DISTURBED SOILS OR DENUDED OF VEGETATION MUST BE STABILIZED SO AS TO INHIBIT EROSION BY WIND AND WATER.
9. AS THE PROJECT OWNER OR AUTHORIZED AGENT OF THE OWNER, I HAVE READ AND UNDERSTAND THE REQUIREMENTS LISTED ABOVE, NECESSARY TO CONTROL STORM WATER POLLUTION FROM SEDIMENTS, EROSION, AND CONSTRUCTION MATERIALS, AND I CERTIFY THAT I WILL COMPLY WITH THESE REQUIREMENTS.

PRINT NAME: _____ DATE: _____
(OWNER OR AUTHORIZED AGENT OF THE OWNER)

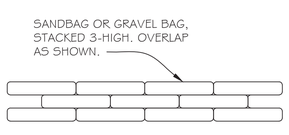
SIGNATURE: _____ DATE: _____
(OWNER OR AUTHORIZED AGENT OF THE OWNER)

EROSION CONTROL NOTES:

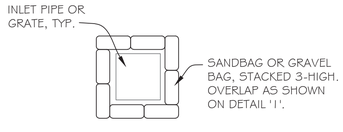
1. STABILIZE CONSTRUCTION ENTRANCE PER TC-1, TC-2, AND TC-3. CONTRACTOR TO MAINTAIN SITE AND ENTRANCE FREE OF TRASH, DEBRIS, AND EXCESS SEDIMENT ON A DAILY BASIS.
2. PLACE GRAVEL OR SANDBAG BARRIER AS SHOWN FOR EROSION & SEDIMENT CONTROL (SE-6 or SE-8 RESPECTIVELY).
3. PLACE 3 HIGH GRAVEL BAG INLET/OUTLET SEDIMENT PROTECTION PER SE-10.
4. MATERIALS HANDLING AND STORAGE AREA PER WM-1, WM-2, AND WM-3.
5. WASTE MANAGEMENT PER WM-5, WM-6, WM-7, WM-8, AND WM-9.
6. CONSTRUCT SEDIMENT TRAP PER SE-3.

ADDITIONAL NOTES:

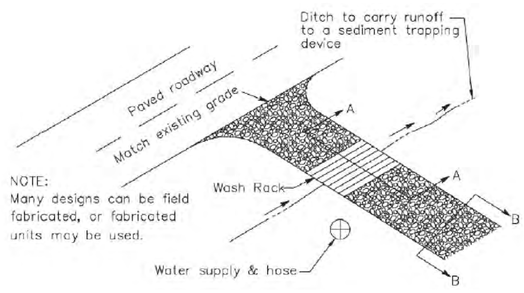
1. AVOID GRADING/CONSTRUCTION ACTIVITIES AT TIMES OF EXPECTED PRECIPITATION (EC-1).
2. ABOVE REFERENCED BMP DETAILS AVAILABLE ON-LINE AT WWW.CABMPHANDBOOKS.COM (SEE CONSTRUCTION LINK).



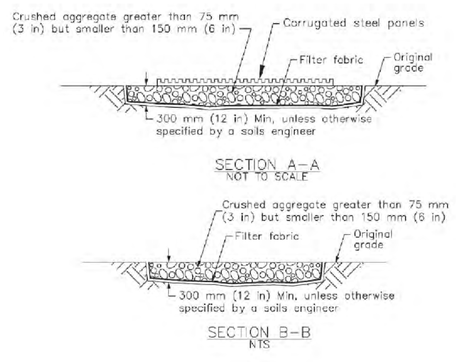
EROSION CONTROL BARRIER
TYPICAL DETAIL '1'
SCALE: NONE



INLET PROTECTION
TYPICAL DETAIL '2'
SCALE: NONE



SEE TC-1, TC-2 AND TC-3 IN CALTRANS BMP FIELD MANUAL FOR ADDITIONAL INFORMATION ON CONSTRUCTION ENTRANCE.



CONSTRUCTION ENTRANCE
TYPICAL DETAIL '3'
SCALE: NONE

THE FOLLOWING BMPS AS OUTLINED IN, BUT NOT LIMITED TO, THE LATEST EDITION OF THE CALTRANS STORMWATER QUALITY HANDBOOK (CONSTRUCTION SITE BMP MANUAL) OR SIMILAR IN THE LATEST EDITION OF THE CASQA CONSTRUCTION BMP ONLINE HANDBOOK, MAY APPLY DURING THE CONSTRUCTION OF THIS PROJECT (ADDITIONAL MEASURES MAY BE REQUIRED IF DEEMED APPROPRIATE BY THE PROJECT ENGINEER OR THE BUILDING OFFICIAL)

EROSION CONTROL
EC1 – SCHEDULING
EC2 – PRESERVATION OF EXISTING VEGETATION
EC3 – HYDRAULIC MULCH
EC4 – HYDROSEEDING
EC5 – SOIL BINDERS
EC6 – STRAW MULCH
EC7 – GEOTEXTILES & MATS
EC8 – WOOD MULCHING
EC9 – EARTH DIKES AND DRAINAGE SWALES
EC10 – VELOCITY DISSIPATION DEVICES
EC11 – SLOPE DRAINS
EC12 – STREAMBANK STABILIZATION
EC13 – RESERVED
EC14 – COMPOST BLANKETS
EC15 – SOIL PREPARATION\ROUGHENING
EC16 – NON-VEGETATED STABILIZATION

TEMPORARY SEDIMENT CONTROL
SC1 – SILT FENCE
SC2 – SEDIMENT BASIN
SC3 – SEDIMENT TRAP
SC4 – CHECK DAM
SC5 – FIBER ROLLS
SC6 – GRAVEL BAG BERM
SC7 – STREET SWEEPING AND VACUUMING
SC8 – SANDBAG BARRIER
SC9 – STRAW BALE BARRIER
SC10 – STORM DRAIN INLET PROTECTION
SC11 – ACTIVE TREATMENT SYSTEMS
SC12 – TEMPORARY SILT DIKE
SC13 – COMPOST SOCKS & BERMS
SC14 – BIOFILTER BAGS

WIND EROSION CONTROL
WE1 – WIND EROSION CONTROL

EQUIPMENT TRACKING CONTROL
TC1 – STABILIZED CONSTRUCTION ENTRANCE EXIT
TC2 – STABILIZED CONSTRUCTION ROADWAY
TC3 – ENTRANCE/OUTLET TIRE WASH

NON-STORMWATER MANAGEMENT
NS1 – WATER CONSERVATION
NS2 – DEWATERING OPERATIONS
NS3 – PAVING AND GRINDING OPERATIONS
NS4 – TEMPORARY STREAM CROSSING
NS5 – CLEAR WATER DIVERSION
NS6 – ILLICIT CONNECTION/DISCHARGE
NS7 – POTABLE WATER/IRRIGATION
NS8 – VEHICLE AND EQUIPMENT CLEANING
NS9 – VEHICLE AND EQUIPMENT FUELING
NS10 – VEHICLE AND EQUIPMENT MAINTENANCE
NS11 – PILE DRIVING OPERATIONS
NS12 – CONCRETE CURING
NS13 – MATERIAL AND EQUIPMENT USE
NS14 – CONCRETE FINISHING
NS15 – DEMOLITION ADJACENT TO WATER
NS16 – TEMPORARY BATCH PLANTS

WASTE MANAGEMENT & MATERIAL POLLUTION CONTROL
WM1 – MATERIAL DELIVERY AND STORAGE
WM2 – MATERIAL USE
WM3 – STOCKPILE MANAGEMENT
WM4 – SPILL PREVENTION AND CONTROL
WM5 – SOLID WASTE MANAGEMENT
WM6 – HAZARDOUS WASTE MANAGEMENT
WM7 – CONTAMINATED SOIL MANAGEMENT
WM8 – CONCRETE WASTE MANAGEMENT
WM9 – SANITARY/SEPTIC WASTE MANAGEMENT
WM10 – LIQUID WASTE MANAGEMENT

REFER TO SHEET C-1.0 FOR IMPORTANT NOTES

SHEET TITLE:
EROSION CONTROL PLAN (SITE LEVEL)

SCOPE OF WORK:
EROSION CONTROL PLAN FOR RESIDENTIAL DEVELOPMENT.

LICENSED PROFESSIONAL ENGINEER BRADLEY A. SIMS C 58238 CIVIL STATE OF CALIFORNIA
EXP: 6/30/26
6/3/2025

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1341 ORIZABA AVENUE
LONG BEACH, CA 90804
(562) 735-4955
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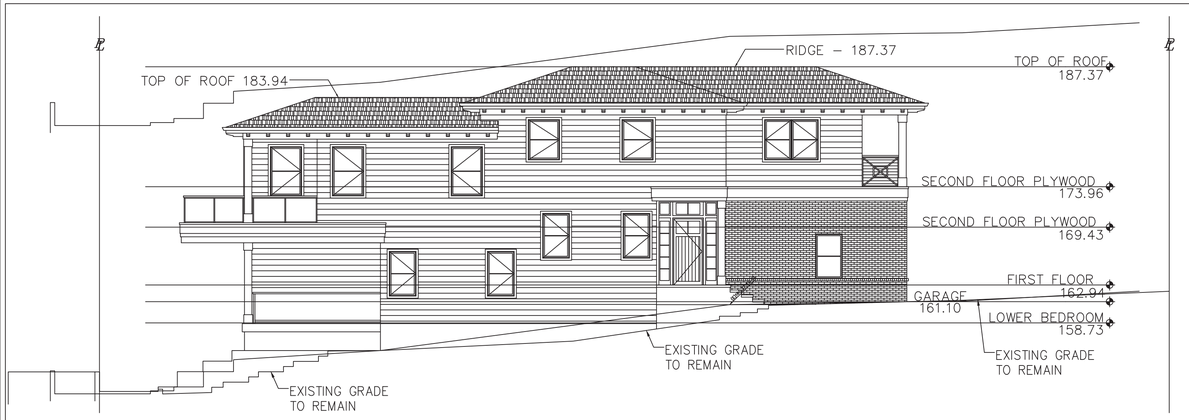
PROJECT/LOCATION
537 HELBERTA AVE,
REDONDO BEACH, CA
FLOOD ZONE: "X"

LEGAL DESCRIPTION
LOT 17
BLOCK 127
TOWNSITE OF REDONDO BEACH,
M.B. 39/1-17
APN 7507-001-017

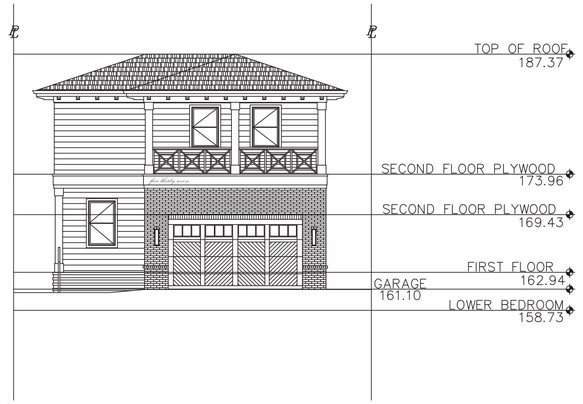
PROJ. NO:
25149 RO

PRINT DATE:
6/3/2025

SHEET:
C-4.0



A SECTION 'A'
SCALE: 1:96 (OR 1"-8'-0")



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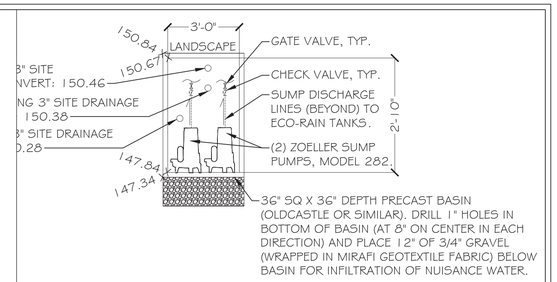
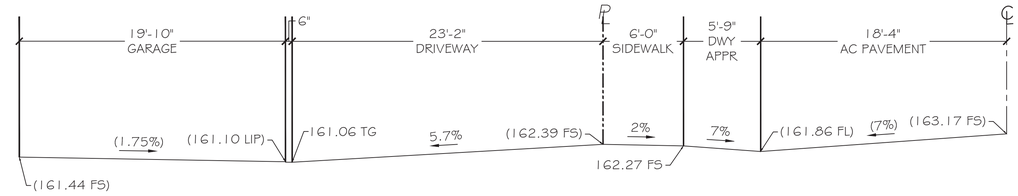
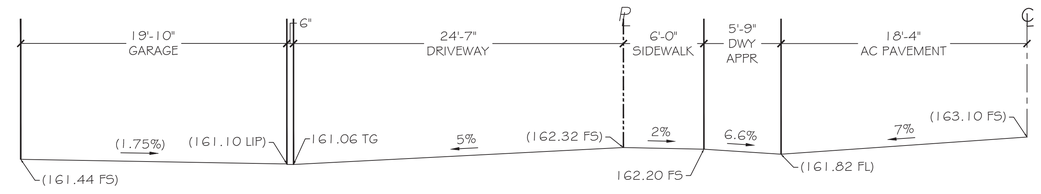


CONSTRUCTION NOTES:
A. SECONDARY POWER SOURCE IS RECOMMENDED FOR SUMP SYSTEM, DESIGNED BY OTHERS.
B. DESIGN OF THE SUMP POWER SUPPLY, ALARMS, CONTROL PANEL, CONNECTIONS, ETC. BY OTHERS. CONTRACTOR TO COORDINATE WITH M.E.P. ENGINEER, ARCHITECT, AND MANUFACTURER.
C. SEE ZOELLER PUMP INSTALLATION AND DETAILS FOR ALL PERTINENT INFORMATION FOR PUMP OPERATION.
D. CONTRACTOR TO FOLLOW MANUFACTURER'S RECOMMENDATIONS. CONTRACTOR TO NOTIFY ENGINEER IF MANUFACTURER'S RECOMMENDATIONS CONFLICT WITH INFORMATION ON PLANS.
E. OWNER TO PROVIDE BACKUP EMERGENCY POWER IN CASE OF A POWER FAILURE TO PREVENT FLOODING. ENGINEER TAKES NO RESPONSIBILITY IN THE EVENT OF A POWER FAILURE.

G SITE SUMP DETAIL 'G'
SCALE: NONE



C DRIVEWAY PROFILE 'C'
SCALE: 1:64 (OR 1"-5'-4")



D DRIVEWAY PROFILE 'D'
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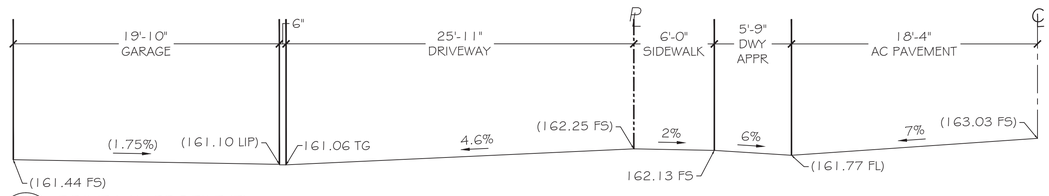
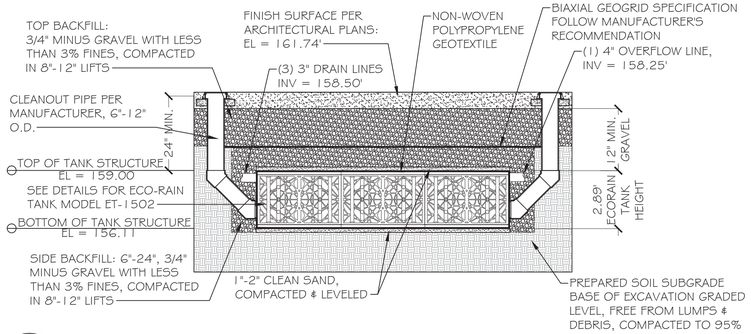
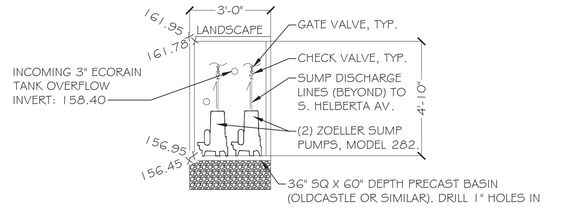


E DRIVEWAY PROFILE 'E'
SCALE: 1:64 (OR 1"-5'-4")



F ECO-RAIN TANK SECTION 'F'
SCALE: NONE



CONSTRUCTION NOTES:
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B. DESIGN OF THE SUMP POWER SUPPLY, ALARMS, CONTROL PANEL, CONNECTIONS, ETC. BY OTHERS. CONTRACTOR TO COORDINATE WITH M.E.P. ENGINEER, ARCHITECT, AND MANUFACTURER.
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E. OWNER TO PROVIDE BACKUP EMERGENCY POWER IN CASE OF A POWER FAILURE TO PREVENT FLOODING. ENGINEER TAKES NO RESPONSIBILITY IN THE EVENT OF A POWER FAILURE.

H SITE SUMP DETAIL 'H'
SCALE: NONE

ECO-RAIN TANK INSTALLATION CHECKLIST

PLEASE READ ECO-RAIN TANK SYSTEMS SUBMITTAL BEFORE START OF INSTALLATION

SCOPE OF WORK/INSTALLATION CHECK LIST

PROJECT NAME:	Inspector
GROUND PREPARATION	
1. Excavate trench larger than Eco-Rain Tank structure, level the ground & clean the area	
2. Compact the area beneath the Tank to engineered percentage, screed the surface	
3. Remove all stones, lumps, debris and sharp objects from sub-base	
4. Place 2" clean sand on sub-base and level with screed	
INDIVIDUAL TANK ASSEMBLY	
5. Follow assembly instructions for specified size of Tank. Contact Manufacturer for vehicular traffic assembly specifications.	
6. Insert & space pins of Small & Large Plates evenly	
7. Check to see that all Plates are connected securely and fully; multiples connected to each other; tap with dead weight hammer using a 2X2 piece of timber to protect the plates from the hammer blow	
8. Do not use any broken Plates	
INSTALLATION	
9. Liner (if used) to be laid per manufacturer's instructions with underlayment if specified by designer	
10. If using liner, backfill with a 2" to 6" layer of sand inside liner if specified by designer	
11. Lay Geotextile fabric with enough fabric to fully cover Tanks with 6" overlap of seams	
12. Lay out first row of individual Tanks of the application area with Large Plates facing outside to the width required, so that the perimeter of the structure has the Tank Large Plates facing the excavation walls *Exception when using Clean Out Portal/Plates	
13. Position subsequent rows of individual Tanks perpendicular to the first row so that only the Large Plate sides of the Tanks face the outside perimeter *Except when using Clean Out Portal/Plates – use Eco-Rain 2" Drainage Cells or Large Plates with cable ties to secure to Tank sides with Small Plates showing. Contact Manufacturer for Tank positions in vehicular traffic conditions and large structures	
14. Make sure there are no gaps between installed Tanks - abut to one another as tightly as possible	
15. Position last row the same as the first row, with Large Plates facing the excavation wall, *Except at Clean Out Portal/Plates	
16. For Eco-Rain structures over 4.3' tall, follow installation pattern as shown in Eco-Rain ET-1212b drawing	
17. If any, as with Clean Out Portal/Plates, reinforce exposed Small Plates using Large Plates or Eco-Rain 2" Drainage Cells	
18. Wrap Geotextile fabric around the Tanks & secure with HDPE tape	
19. Minimum 6-inch (150 mm) overlap of Geotextile fabric	
20. Secure Geotextile fabric overlapped joints to prevent sand/fill from entering Tank during backfill operation	
21. Tops of individual Tanks must be level with no uneven plates, Tanks do not "rock"	
INLET/OUTLET PIPE CONNECTION – (Connect Pipes, if any, before Backfilling)	
Pipes smaller than 6 inches (150mm) diameter	
22. Insert pipe into the Tank by cutting a hole no larger than 6" in the Large Plate between two of the Small Plates	
23. Cut and secure Geotextile fabric around the inserted pipe with boot, ties and tape to prevent sand/fill from entering Tank	
Pipes larger than 6 inches (150mm) diameter	
24. Do NOT cut hole or insert pipe over 6 inches diameter into the Tank	
25. Place & secure one layer of Eco-Rain 2" Drainage Cells to Tank at pipe entry/exit point	
26. In a second layer of Eco-Rain 2" Drainage Cells, cut a hole the diameter of the pipe at entry/exit point height	
27. Place & secure the cut second layer of Eco-Rain 2" Drainage Cells against the first layer - insert pipe, abutting the side of Tanks.	
28. Cut & secure Geotextile fabric to the pipe with boot, ties and HDPE tape to prevent sand/fill from entering Tank	
BACKFILL - (After Pipe Connections)	
29. 8-inch (200 mm) maximum height of backfill drop from tractor scoop	
30. Drop specified backfill material around the perimeter of the Tank in 8 – 12 inch (300-400 mm) depths	
32. Compact backfill per plan using compaction plate on opposite sides of the tank at the same time	
33. Place plywood sheet upright between Tank & backfill to protect Tank side, Geotextile & liner (if used) from compaction plate	
34. Compact in 8 – 12 inch (300-400 mm) lifts to top of Tank	
35. Compact sand/fill on top of Tank with low pressure tire or track vehicle, vibratory plate compactor, or low psi compactor per plan no more than 6,000 lbs.	
36. ***Mark perimeter of Tank with caution/barricade tape to keep out heavy equipment***	
37. Install all remaining backfill as described above or as specified by Engineer/Landscape Architect	
38. In traffic load installations, use Eco-Rain 2" Drainage Cell layer per Manufacturer or Biaxial Geogrid placed per Geogrid Manufacturer's recommendation	

NOTE: Secure the area of application with barriers/ropes during the entire scope of work. Prohibit all vehicular traffic.

Eco-Rain Tank Systems of America DOES NOT accept liability for incorrect installation.

SHEET TITLE:
SECTIONS

SCOPE OF WORK:
SECTION AND DETAILS FOR RESIDENTIAL DEVELOPMENT.

LICENSED PROFESSIONAL ENGINEER BRADLEY A. SIMS C 58238 CIVIL STATE OF CALIFORNIA

EXP: 6/30/26
6/3/2025

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PROJECT/LOCATION
537 HELBERTA AVE,
REDONDO BEACH, CA
FLOOD ZONE: "X"

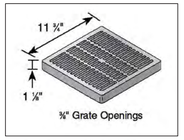
LEGAL DESCRIPTION
LOT 17
BLOCK 127
TOWNSITE OF REDONDO BEACH,
M.B. 39/1-17
APN 7507-001-017

PROJ. NO:
25149 RO

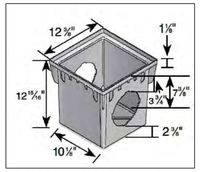
PRINT DATE:
6/3/2025

SHEET:
C-5.0

REFER TO SHEET C-1.0 FOR IMPORTANT NOTES

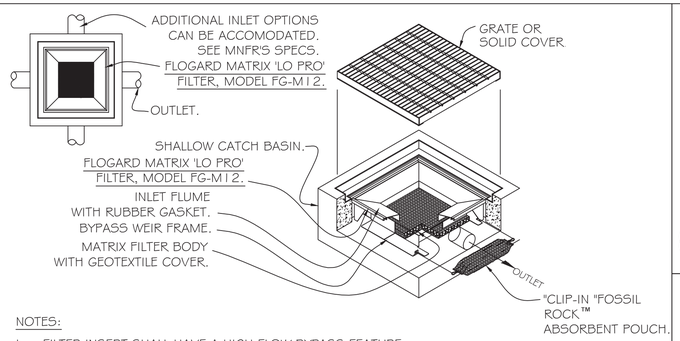


NDS 12" X 12" GRATE,
MODEL 1213
MATERIAL: DUCTILE IRON
TRAFFIC LOADED



NDS SQUARE CATCH BASIN,
MODEL 1204
MATERIAL: POLYPROPYLENE
SEE PLANS FOR LOCATION

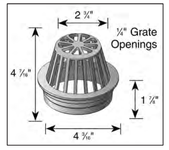
1 NDS 12" X 12" CATCH BASIN DETAIL
SCALE: NONE



NOTES:

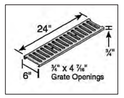
1. FILTER INSERT SHALL HAVE A HIGH FLOW BYPASS FEATURE.
2. INLET FLUME & BYPASS WEIR FRAME SHALL BE CONSTRUCTED FROM STAINLESS STEEL TYPE 304.
3. FILTER MEDIUM SHALL BE FOSSIL ROCK™, INSTALLED AND MAINTAINED IN ACCORDANCE WITH MANUFACTURER SPECIFICATIONS.
4. STORAGE CAPACITY REFLECTS 80% OF MAXIMUM SOLIDS COLLECTION PRIOR TO IMPEDING FILTERING BYPASS.

2 FLOGARD CATCH BASIN FILTER INSERT DETAIL
SCALE: NONE

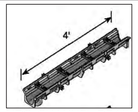


NDS 4" ATRIUM GRATE,
MODEL 75
SEE PLANS FOR LOCATION

3 NDS 4" ATRIUM GRATE DETAIL
SCALE: NONE



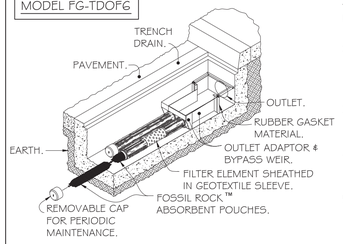
NDS 2' CHANNEL GRATE
MODEL DS-221
MATERIAL: GALV. STEEL
TRAFFIC LOADED



NDS CHANNEL DRAIN
MODEL DS-096 UP TO DS-104*
MATERIAL: POLYETHYLENE

4 NDS TRENCH DRAIN DETAIL
SCALE: NONE

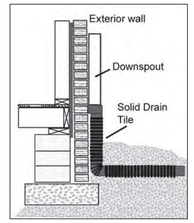
MODEL FG-TDOFG



NOTES:

1. FILTER INSERT SHALL HAVE A HIGH FLOW BYPASS FEATURE.
2. FILTER OUTLET ADAPTER SHALL BE CONSTRUCTED FROM STAINLESS STEEL TYPE 304. ALTERNATE OUTLET ADAPTOR FOR SHALLOW INSTALLATIONS SHALL BE PVC SCH-40.
3. FILTER MEDIUM SHALL BE FOSSIL ROCK‡, INSTALLED AND MAINTAINED IN ACCORDANCE WITH MANUFACTURER SPECIFICATIONS.
4. STORAGE CAPACITY REFLECTS 80% OF MAXIMUM SOLIDS COLLECTION PRIOR TO IMPEDING FILTERING BYPASS.
5. FOR ALTERNATE OUTLET ADAPTER CONFIGURATIONS USED FOR EXTREMELY SHALLOW TRENCH DRAINS CONTACT OLDCASTLE STORMWATER SOLUTIONS FOR ENGINEERING ASSISTANCE.
6. FILTER ELEMENT SHOULD BE A MINIMUM OF ONE HALF THE LENGTH OF TRENCH. CONFIRM FLOW RATE UPON ORDER.

5 FLOGARD TRENCH DRAIN FILTER INSERT DETAIL
SCALE: NONE



6 DOWNSPOUT CONNECTION DETAIL
SCALE: NONE

NDS AREA DRAIN 4" ROUND GRATE,
MODEL 11
SEE PLANS FOR LOCATION

7 NDS 4" AREA DRAIN DETAIL
SCALE: NONE

REFER TO SHEET C-1.0 FOR IMPORTANT NOTES

SHEET TITLE:
DETAILS

SCOPE OF WORK:
SECTION AND DETAILS FOR RESIDENTIAL DEVELOPMENT.

LICENSED PROFESSIONAL ENGINEER BRADLEY A. SIMS C 58238 CIVIL STATE OF CALIFORNIA
EXP: 6/30/26
6/3/2025

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TOWNSITE OF REDONDO BEACH,
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APN 7507-001-017

PROJ. NO:
25149 RO
PRINT DATE:
6/3/2025
SHEET:
C-6.0

ENERGY USE INTENSITY

	Standard Design (kBtu/ft² - yr)	Proposed Design (kBtu/ft² - yr)	Compliance Margin (kBtu/ft² - yr)	Margin Percentage
Gross EUI[1]	7.6	7.37	0.23	3.03
Net EUI[2]	7.6	7.37	0.23	3.03

Notes
1. Gross EUI is Energy Use Total (not including PV) / Total Building Area.
2. Net EUI is Energy Use Total (including PV) / Total Building Area.

REQUIRED SPECIAL FEATURES

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

- IAQ Ventilation System: as low as 0.0636364 W/CFM
- Floor has high level of insulation
- Northwest Energy Efficiency Alliance (NEEA) rated heat pump water heater; specific brand/model, or equivalent, must be installed

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 tables below. Registered CF2Rs and CF3Rs are required to be completed in the HERS Registry

- Indoor air quality ventilation
- Kitchen range hood
- Minimum Airflow
- Verified Refrigerant Charge
- Fan Efficacy Watts/CFM
- Verified HSPF2
- Verified heat pump rated heating capacity
- Duct leakage testing

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
Addition at 537 S Helberta Ave	2900	1	2	3	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 Status
Addition 2nd Floor Zone	Conditioned	Proposed HVAC1	1797	10	DHW Sys 1	New
Addition 1st Floor Zone	Conditioned	Proposed HVAC1	254	9	DHW Sys 1	New
Existing 1st Floor Zone	Conditioned	Proposed HVAC1	849	9	DHW Sys 1	Existing Unchanged

OPAQUE SURFACES

01 Name	02 Zone	03 Construction	04 Azimuth	05 Orientation	06 Gross Area (ft²)	07 Window and Door Area (ft2)	08 Tilt (deg)	09 Wall Exceptions	10 Status	11 Verified Existing Condition
Front Wall - 1	Addition 2nd Floor Zone	R-15 Wall	193	Front	725	116.25	90	Extension	New	n/a
Left Wall - 1	Addition 2nd Floor Zone	R-15 Wall	283	Left	315	180	90	Extension	New	n/a
Back Wall - 1	Addition 2nd Floor Zone	R-15 Wall	13	Back	725	106.5	90	Extension	New	n/a
Right Wall - 1	Addition 2nd Floor Zone	R-15 Wall	103	Right	315	64.5	90	Extension	New	n/a
Front Wall - 1 2	Addition 1st Floor Zone	R-15 Wall	193	Front	228	30	90	Extension	New	n/a
Left Wall - 1 2	Addition 1st Floor Zone	R-15 Wall	283	Left	200	45	90	Extension	New	n/a
Back Wall - 1 2	Addition 1st Floor Zone	R-15 Wall	13	Back	70	0	90	Extension	New	n/a
Front Wall : Remain - 1	Existing 1st Floor Zone	Default Wall Prior to 197	193	Front	257	91	90	none	Existing	No
Left Wall : Remain - 1	Existing 1st Floor Zone	Default Wall Prior to 197	283	Left	77	48	90	none	Existing	No
Back Wall : Remain - 1	Existing 1st Floor Zone	Default Wall Prior to 197	13	Back	360	58.72	90	none	Existing	No

OPAQUE SURFACES

01 Name	02 Construction	03 Azimuth	04 Orientation	05 Gross Area (ft²)	06 Window and Door Area (ft2)	07 Tilt (deg)	08 Wall Exceptions	09 Status	10 Verified Existing Condition
Right Wall : Remain - 1	Existing 1st Floor Zone	Default Wall Prior to 197	103	Right	218.74	15	90	none	Existing	No
Interior Wall	Addition 1st Floor Zone>>Existing 1st Floor Zone	R-0 Wall	n/a	n/a	270	0	n/a		New	n/a
Interior Wall 2	Existing 1st Floor Zone>>__Garage__	R-13 Wall	n/a	n/a	226	22.67	n/a		New	n/a
Roof 2	Addition 2nd Floor Zone	R-30 Roof Attic	n/a	n/a	1772	n/a	n/a		New	n/a
Roof - Alt	Existing 1st Floor Zone	R-30 Roof Attic Alt	n/a	n/a	9	n/a	n/a		Altered	No
Raised Floor o/ Open	Addition 2nd Floor Zone	R-30 Floor No Crawlspace1	n/a	n/a	1944	n/a	n/a		New	n/a
Raised Floor o/ Crawl	Addition 1st Floor Zone	R-19 Floor Crawlspace	n/a	n/a	254	n/a	n/a		New	n/a
Raised Floor o/ Crawl : R	Existing 1st Floor Zone	Default Floor Crawlspace	n/a	n/a	1052	n/a	n/a		Existing	No
Raised Floor o/ Crawl : R 2	__Garage__	Default Floor Crawlspace	n/a	n/a	340	n/a	n/a		Existing	No
Interior Floor	Addition 2nd Floor Zone	R-0 Floor No Crawlspace	n/a	n/a	254	n/a	n/a		New	n/a
Interior Floor 2	Addition 2nd Floor Zone	R-30 Floor No Crawlspace	n/a	n/a	306	n/a	n/a		New	n/a
Interior Floor 3	Addition 2nd Floor Zone	R-30 Floor No Crawlspace	n/a	n/a	1043	n/a	n/a		New	n/a
Front Wall : Remain - 1 2	__Garage__	Garage Ext Wall	193	Front	215	12	90	none	Existing	No

OPAQUE SURFACES

01 Name	02 Zone	03 Construction	04 Azimuth	05 Orientation	06 Gross Area (ft²)	07 Window and Door Area (ft2)	08 Tilt (deg)	09 Wall Exceptions	10 Status	11 Verified Existing Condition
Back Wall : Remain - 1 2	__Garage__	Garage Ext Wall	13	Back	215	36	90	none	Existing	No
Right Wall : Remain - 1 2	__Garage__	Garage Ext Wall	103	Right	226	120	90	none	Existing	No

OPAQUE SURFACES - CATHEDRAL CEILINGS

01 Name	02 Zone	03 Construction	04 Azimuth	05 Orientation	06 Area (ft²)	07 Skylight Area (ft²)	08 Roof Rise (x in 12)	09 Roof Reflectance	10 Roof Emittance	11 Cool Roof	12 Status	13 Verified Existing Condition	14 Existing Construction
Roof	Addition 2nd Floor Zone	R-30 Roof Attic1	0	n/a	25.1	25	4	0.1	0.85	No	New	n/a	
Roof - Remain	__Garage__	Garage Roof Vault	154	n/a	102	0	0	0.1	0.85	No	Altered	No	

ATTIC

01 Name	02 Construction	03 Type	04 Roof Rise (x in 12)	05 Roof Reflectance	06 Roof Emittance	07 Radiant Barrier	08 Cool Roof	09 Status	10 Verified Existing Condition
Attic Addition 2nd Floor Zone	Attic RoofAddition 2nd Floor Zone	Ventilated	4	0.1	0.85	Yes	No	New	n/a
Attic Existing 1st Floor Zone	Attic RoofExisting 1st Floor Zone	Ventilated	4	0.1	0.85	No	No	Existing	No

FENESTRATION / GLAZING

01 Name	02 Type	03 Surface	04 Orientation	05 Azimuth	06 Width (ft)	07 Height (ft)	08 Mult.	09 Area (ft²)	10 U-factor	11 U-factor Source	12 SHGC	13 SHGC Source	14 Exterior Shading	15 Status	16 Verified Existing Condition
Window - 204.1	Window	Front Wall - 1	Front	193			1	19.25	0.37	NFRC	0.31	NFRC	Bug Screen	New	NA
Window - 203.2	Window	Front Wall - 1	Front	193			1	19.25	0.37	NFRC	0.31	NFRC	Bug Screen	New	NA
Window - 203.1	Window	Front Wall - 1	Front	193			1	19.25	0.37	NFRC	0.31	NFRC	Bug Screen	New	NA
Window - 202.2	Window	Front Wall - 1	Front	193			1	15.75	0.37	NFRC	0.31	NFRC	Bug Screen	New	NA
Window - 202.1	Window	Front Wall - 1	Front	193			1	15.75	0.37	NFRC	0.31	NFRC	Bug Screen	New	NA
Window - 200.4	Window	Front Wall - 1	Front	193			1	27	0.37	NFRC	0.31	NFRC	Bug Screen	New	NA
Glass Door - 204.A	Window	Left Wall - 1	Left	283			1	90	0.37	NFRC	0.31	NFRC	Bug Screen	New	NA
Glass Door - 203.A	Window	Left Wall - 1	Left	283			1	90	0.37	NFRC	0.31	NFRC	Bug Screen	New	NA
Window - 204.2	Window	Back Wall - 1	Back	13			1	33	0.37	NFRC	0.31	NFRC	Bug Screen	New	NA
Window - 205.1	Window	Back Wall - 1	Back	13			1	19.25	0.37	NFRC	0.31	NFRC	Bug Screen	New	NA
Window - 206.1	Window	Back Wall - 1	Back	13			1	13.5	0.37	NFRC	0.31	NFRC	Bug Screen	New	NA

FENESTRATION / GLAZING

01 Name	02 Type	03 Surface	04 Orientation	05 Azimuth	06 Width (ft)	07 Height (ft)	08 Mult.	09 Area (ft²)	10 U-factor	11 U-factor Source	12 SHGC	13 SHGC Source	14 Exterior Shading	15 Status	16 Verified Existing Condition
Window - 206.2	Window	Back Wall - 1	Back	13			1	13.5	0.37	NFRC	0.31	NFRC	Bug Screen	New	NA
Window - 207.1	Window	Back Wall - 1	Back	13			1	7.5	0.37	NFRC	0.31	NFRC	Bug Screen	New	NA
Window - 200.1	Window	Back Wall - 1	Back	13			1	6.25	0.37	NFRC	0.31	NFRC	Bug Screen	New	NA
Window - 200.2	Window	Back Wall - 1	Back	13			1	13.5	0.37	NFRC	0.31	NFRC	Bug Screen	New	NA
Window - 200.3	Window	Right Wall - 1	Right	103			1	13.5	0.37	NFRC	0.31	NFRC	Bug Screen	New	NA
Glass Door - 200.A	Window	Right Wall - 1	Right	103			1	37.5	0.37	NFRC	0.31	NFRC	Bug Screen	New	NA
Window - 201.1	Window	Right Wall - 1	Right	103			1	13.5	0.37	NFRC	0.31	NFRC	Bug Screen	New	NA
Window - 103.2	Window	Front Wall - 1 2	Front	193			1	15	0.37	NFRC	0.31	NFRC	Bug Screen	New	NA
Window - 103.1	Window	Front Wall - 1 2	Front	193			1	15	0.37	NFRC	0.31	NFRC	Bug Screen	New	NA
Window - 104.1	Window	Left Wall - 1 2	Left	283			1	30	0.37	NFRC	0.31	NFRC	Bug Screen	New	NA
Window - 103.3	Window	Left Wall - 1 2	Left	283			1	15	0.37	NFRC	0.31	NFRC	Bug Screen	New	NA
Window : Alt - 102.3	Window	Front Wall : Remain - 1	Front	193			1	15	0.37	NFRC	0.31	NFRC	Bug Screen	Altered	No

FENESTRATION / GLAZING

01 Name	02 Type	03 Surface	04 Orientation	05 Azimuth	06 Width (ft)	07 Height (ft)	08 Mult.	09 Area (ft²)	10 U-factor	11 U-factor Source	12 SHGC	13 SHGC Source	14 Exterior Shading	15 Status	16 Verified Existing Condition
Window : Alt - 102.2	Window	Front Wall : Remain - 1 2	Front	193			1	15	0.37	NFRC	0.31	NFRC	Bug Screen	Altered	No
Window : Alt - 1071.2	Window	Front Wall : Remain - 1	Front	193			1	12.5	0.37	NFRC	0.31	NFRC	Bug Screen	Altered	No
Window : Alt - 101.3	Window	Front Wall : Remain - 1	Front	193			1	9.75	0.37	NFRC	0.31	NFRC	Bug Screen	Altered	No
Window : Alt - 101.1	Window	Front Wall : Remain - 1	Front	193			1	12.5	0.37	NFRC	0.31	NFRC	Bug Screen	Altered	No
Glass Door: Alt - 103.A	Window	Left Wall : Remain - 1	Left	283			1	48	0.37	NFRC	0.31	NFRC	Bug Screen	Altered	No
Window : Alt - 104.2	Window	Back Wall : Remain - 1	Back	13			1	10.5	0.37	NFRC	0.31	NFRC	Bug Screen	Altered	No
Window : Alt - 106.1	Window	Back Wall : Remain - 1	Back	13			1	11.97	0.37	NFRC	0.31	NFRC	Bug Screen	Altered	No
Window : Alt - 107.1	Window	Back Wall : Remain - 1	Back	13			1	15	0.37	NFRC	0.31	NFRC	Bug Screen	Altered	No
Window : Alt - 107.2	Window	Back Wall : Remain - 1	Back	13			1	15	0.37	NFRC	0.31	NFRC	Bug Screen	Altered	No
Window : Alt - 108.1	Window	Back Wall : Remain - 1	Back	13			1	6.25	0.37	NFRC	0.31	NFRC	Bug Screen	Altered	No
Window : Alt - 102.1	Window	Right Wall : Remain - 1	Right	103			1	15	0.37	NFRC	0.31	NFRC	Bug Screen	Altered	No
Window : Alt - 100.2	Window	Front Wall : Remain - 1 2	Front	193			1	12	0.37	NFRC	0.31	NFRC	Bug Screen	Altered	No

FENESTRATION / GLAZING

01 Name	02 Type	03 Surface	04 Orientation	05 Azimuth	06 Width (ft)	07 Height (ft)	08 Mult.	09 Area (ft²)	10 U-factor	11 U-factor Source	12 SHGC	13 SHGC Source	14 Exterior Shading	15 Status	16 Verified Existing Condition
Window : Alt - 100.1	Window	Back Wall : Remain - 1 2	Back	13			1	12	0.37	NFRC	0.31	NFRC	Bug Screen	Altered	No
Skylight - 208.1	Skylight	Roof		0			1	25	0.48	NFRC	0.27	NFRC		New	NA

OPAQUE DOORS

01 Name	02 Side of Building	03 Area (ft²)	04 U-factor	05 Status	06 Verified Existing Condition
Door : Alt - 101.A	Front Wall : Remain - 1	26.25	0.5	Altered	No
Door : Alt - 100.C	Interior Wall 2	22.67	0.5	Altered	No
Door : Alt - 100.B	Back Wall : Remain - 1 2	24	0.5	Existing	No
Door : Alt - 100.A	Right Wall : Remain - 1 2	120	0.5	Altered	No

SLAB FLOORS

01 Name	02 Zone	03 Area (ft²)	04 Perimeter (ft)	05 Edge Insul. R-value and Depth	06 Edge Insul. R-value and Depth	07 Carpeted Fraction	08 Heated	09 Status	10 Verified Existing Condition
Slab-on-Grade	__Garage__	408	60	none	0	0%	No	Existing	No

OPAQUE SURFACE CONSTRUCTIONS

01 Construction Name	02 Surface Type	03 Construction Type	04 Framing	05 Total Cavity R-value	06 Interior / Exterior Continuous R-value	07 U-factor	08 Assembly Layers
Garage Ext Wall	Exterior Walls	Wood Framed Wall	2x4 @ 16 in. O. C.	R-0	None / None	0.361	Inside Finish: Gypsum Board Cavity / Frame: no insul. / 2x4 Exterior Finish: 3 Coat Stucco
R-15 Wall	Exterior Walls	Wood Framed Wall	2x4 @ 16 in. O. C.	R-15	None / None	0.089	Inside Finish: Gypsum Board Cavity / Frame: R-15 / 2x4 Exterior Finish: Wood Siding/sheathing/decking
Default Wall Prior to 197	Exterior Walls	Wood Framed Wall	2x4 @ 16 in. O. C.	R-0	None / None	0.361	Inside Finish: Gypsum Board Cavity / Frame: no insul. / 2x4 Exterior Finish: 3 Coat Stucco
Garage Roof Vault	Cathedral Ceilings	Wood Framed Ceiling	2x4 @ 16 in. O. C.	R-0	None / None	0.484	Roofing: Light Roof (Asphalt Shingle) Roof Deck: Wood Siding/sheathing/decking Cavity / Frame: no insul. / 2x4 Inside Finish: Gypsum Board
R-30 Roof Attic1	Cathedral Ceilings	Wood Framed Ceiling	2x4 @ 16 in. O. C.	R-30	None / None	0.044	Roofing: Light Roof (Asphalt Shingle) Roof Deck: Wood Siding/sheathing/decking Radiant Barrier Cavity / Frame: R-30 / 2x4 Inside Finish: Gypsum Board
R-0 Wall	Interior Walls	Wood Framed Wall	2x4 @ 16 in. O. C.	R-0	None / None	0.277	Inside Finish: Gypsum Board Cavity / Frame: no insul. / 2x4 Other Side Finish: Gypsum Board
R-13 Wall	Interior Walls	Wood Framed Wall	2x4 @ 16 in. O. C.	R-13	None / None	0.092	Inside Finish: Gypsum Board Cavity / Frame: R-13 / 2x4 Other Side Finish: Gypsum Board

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LICENSED ARCHITECT JOSHUA PAUL TULLY C-59842 REN. 08-30-25 STATE OF CALIFORNIA

HELBERTA RESIDENCE
Remodel + Addition
537 S Helberta Ave
Redondo Beach, CA 90277

Project Name :

Project Address :

Revisions :

No.	Date	Description

Sheet Title :

TITLE 24

Assessor Parcel No.: 7507-001-017
Scale: NTS
Issue Date: 04.15.2025
Drawn: JPT Checked:

Sheet Number :

N-2.0

OPAQUE SURFACE CONSTRUCTIONS

01 Construction Name	02 Surface Type	03 Construction Type	04 Framing	05 Total Cavity R-value	06 Interior / Exterior Continuous P-value	07 U-factor	08 Assembly Layers
Attic RoofAddition 2nd Floor Zone	Attic Roofs	Wood Framed Ceiling	2x4 @ 24 in. O.C.	R-0	None / 0	0.644	Roofing: Light Roof (Asphalt Shingle) Roof Deck: Wood Siding/sheathing/decking Cavity / Frame: no insul. / 2x4
Attic RoofExisting 1st Floor Zone	Attic Roofs	Wood Framed Ceiling	2x4 @ 24 in. O.C.	R-0	None / 0	0.644	Roofing: Light Roof (Asphalt Shingle) Roof Deck: Wood Siding/sheathing/decking Cavity / Frame: no insul. / 2x4
Default Floor Crawlspace	Floors Over Crawlspace	Wood Framed Floor	2x11 @ 16 in. O.C.	R-0	None / None	0.216	Floor Surface: Carpeted Floor Deck: Wood Siding/sheathing/decking Cavity / Frame: no insul. / 2x12
R-19 Floor Crawlspace	Floors Over Crawlspace	Wood Framed Floor	2x6 @ 16 in. O.C.	R-19	None / None	0.05	Floor Surface: Carpeted Floor Deck: Wood Siding/sheathing/decking Cavity / Frame: R-19 in 5-1/2 in. (R-18) / 2x6
R-30 Roof Attic	Ceilings (below attic)	Wood Framed Ceiling	2x4 @ 16 in. O.C.	R-30	None / None	0.032	Over Ceiling Joists: R-20.9 insul. Cavity / Frame: R-9.1 / 2x4 Inside Finish: Gypsum Board
R-30 Roof Attic Alt	Ceilings (below attic)	Wood Framed Ceiling	2x4 @ 16 in. O.C.	R-30	None / None	0.032	Over Ceiling Joists: R-20.9 insul. Cavity / Frame: R-9.1 / 2x4 Inside Finish: Gypsum Board
R-30 Floor No Crawlspace1	Exterior Floors	Wood Framed Floor	2x12 @ 24 in. O.C.	R-30	None / None	0.032	Floor Surface: Carpeted Floor Deck: Wood Siding/sheathing/decking Cavity / Frame: R-30 / 2x12

OPAQUE SURFACE CONSTRUCTIONS

01 Construction Name	02 Surface Type	03 Construction Type	04 Framing	05 Total Cavity R-value	06 Interior / Exterior Continuous P-value	07 U-factor	08 Assembly Layers
R-0 Floor No Crawlspace	Interior Floors	Wood Framed Floor	2x11 @ 16 in. O.C.	R-0	None / None	0.196	Floor Surface: Carpeted Floor Deck: Wood Siding/sheathing/decking Cavity / Frame: no insul. / 2x12 Ceiling Below Finish: Gypsum Board
R-30 Floor No Crawlspace	Interior Floors	Wood Framed Floor	2x11 @ 24 in. O.C.	R-30	None / None	0.031	Floor Surface: Carpeted Floor Deck: Wood Siding/sheathing/decking Cavity / Frame: R-30 / 2x12 Ceiling Below Finish: Gypsum Board

BUILDING ENVELOPE - HERS VERIFICATION

01 Quality Insulation Installation (QII)	02 High R-value Spray Foam Insulation	03 Building Envelope Air Leakage	04 CFM50	05 CFM50
Not Required	Not Required	N/A	n/a	n/a

WATER HEATING SYSTEMS

01 Name	02 System Type	03 Distribution Type	04 Water Heater Name	05 Number of Units	06 Solar Heating System	07 Compact Distribution	08 HERS Verification	09 Water Heater Name (#)	10 Status	11 Verified Existing Condition	12 Existing Water Heating System
DHW Sys 1	Domestic Hot Water (DHW)	Standard	DHW Heater 1	1	n/a	None	n/a	DHW Heater 1 (1)	Altered	No	

WATER HEATERS - NEEA HEAT PUMP

01 Name	02 # of Units	03 Tank Vol. (gal)	04 NEEA Heat Pump Brand	05 NEEA Heat Pump Model	06 Tank Location	07 Duct Inlet Air Source	08 Duct Outlet Air Source
DHW Heater 1	1	80	A. O. Smith	PHPD-50-H45 or 3** (no ext. JA13)	Outside	__Garage__	__Garage__

WATER HEATING - HERS VERIFICATION

01 Name	02 Pipe Insulation	03 Parallel Piping	04 Compact Distribution	05 Compact Distribution Type	06 Recirculation Control	07 Shower Drain Water Heat Recovery
DHW Sys 1 - 1/1	Not Required	Not Required	Not Required	None	Not Required	Not Required

SPACE CONDITIONING SYSTEMS

01 Name	02 System Type	03 Heating Unit Name	04 Heating Equipment Count	05 Cooling Unit Name	06 Cooling Equipment Count	07 Fan Name	08 Distribution Name	09 Required Thermostat Type	10 Status	11 Verified Existing Condition	12 Existing HVAC System
Proposed HVAC1	Heat pump heating cooling	Heat Pump System 1	2	Heat Pump System 1	2	HVAC Fan 1	Distribution System 1	Setback	New	No	

HVAC - HEAT PUMPS

01 Name	02 System Type	03 Number of Units	04 Heating Efficiency Type	05 HSPF/HSPF2/COP	06 Cap 47	07 Cap 17	08 Cooling Efficiency Type	09 SEER/SEER2	10 EER/EER2/CEER	11 Zonally Controlled	12 Compressor Type	13 HERS Verification
			Heating				Cooling					
Heat Pump System 1	Central split HP	2	HSPF2	8.2	24000	17800	EER2SEER2	14.3	11.7	Not Zonal	Single Speed	Heat Pump System 1-hers-htpump

HVAC HEAT PUMPS - HERS VERIFICATION

01 Name	02 Verified Airflow	03 Airflow Target	04 Verified EER/EER2	05 Verified SEER/SEER2	06 Verified Refrigerant Charge	07 Verified HSPF/HSPF2	08 Verified Heating Cap 47	09 Verified Heating Cap 17
Heat Pump System 1-hers-htpump	Required	350	Not Required	Not Required	Yes	Yes	Yes	Yes

HVAC - DISTRIBUTION SYSTEMS

01 Name	02 Type	03 Design Type	04 Duct Ins. R-value Supply	05 Duct Ins. R-value Return	06 Duct Location Supply	07 Duct Location Return	08 Surface Area Supply	09 Surface Area Return	10 Bypass Duct	11 Duct Leakage	12 HERS Verification	13 Status	14 Verified Existing Condition	15 Existing Distribution system	16 New Ducts >= 25 ft
Air Distribution System 1	Unconditioned attic	Non-Verified	R-6	R-6	Attic	Attic	N/A	N/A	No Bypass Duct	Sealed and Tested	AH Distribution System 1-hers-dist	Alteration	No		No

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	09 Low Leakage Ducts Entirely in Conditioned Space
Air Distribution System 1-hers-dist	Yes	10.0	Not Required	Not Required	Not Required	Credit not taken	Not Required	No

HVAC - FAN SYSTEMS

01 Name	03 Type	03 Fan Power (Watts/CFM)	04 Name
HVAC Fan 1	HVAC Fan	0.45	HVAC Fan 1-hers-fan

HVAC FAN SYSTEMS - HERS VERIFICATION

01 Name	02 Verified Fan Watt Draw	03 Required Fan Efficacy (Watts/CFM)
HVAC Fan 1-hers-fan	Required	0.45

INDOOR AIR QUALITY (IAQ) FANS

01 Dwelling Unit	02 Airflow (CFM)	03 Fan Efficacy (W/CFM)	04 IAQ Fan Type	05 Includes Heat/Energy Recovery?	06 IAQ Recovery Effectiveness - SRE/ASRE	07 Includes Fault Indicator Display?	08 HERS Verification	09 Status
SFam IAQVentRpt 1-1	110	0.0636364	Exhaust	No	n/a / n/a	No	Yes	

HERS RATER VERIFICATION OF EXISTING CONDITIONS

INDOOR AIR QUALITY (IAQ) FANS - VERIFIED AND ALTERED

01 Name	02 Airflow (CFM)	03 Fan Efficacy (W/CFM)	04 IAQ Fan Type	05 Includes Heat/Energy Recovery?	06 IAQ Recovery Effectiveness - SREIAQ Recovery Effectiveness - SRE	07 IAQ Recovery Effectiveness - ASREIAQ Recovery Effectiveness - ASRE
Dwelling Unit 0/0	110	0.0636364	Exhaust	No	n/a	n/a

PROJECT NOTES

Note: Load calculations within this report are for building energy compliance purposes only. A mechanical engineer should design the HVAC system using the loads here as a basis from which to stat their calculations.
Conditioned floor area (CFA) is the total floor area (in square feet) of enclosed conditioned space on all floors of a building, as measured at the floor level of the exterior surfaces of exterior walls enclosing the conditioned space (?100.1). This term is also referred to in the Energy Standards simply as the floor area.
CFA is calculated from the plan dimensions of the building, including the floor area of all conditioned and indirectly conditioned space on all floors. It includes lofts and mezzanines but does not include covered walkways, open roofed-over areas, porches, pipe trenches, exterior terraces or steps, chimneys, roof overhangs, or parking garages. Unheated basements or closets for central gas-forced air furnaces are also not included, unless shown to be indirectly conditioned.
The floor area of an interior stairway is determined as the CFA formed by the stairs and the tread area of the stairs themselves.

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

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

Documentation Author Name: Chad Campbell	Documentation Author Signature: Chad Campbell
Company: Campbell Consulting	Signature Date: 06/11/2025
Address: 14671 W. Harvard Street	CEA / HERS Certification Identification (if applicable): #29-33-38169
City/State/Zip: Goodyear, AZ 85395	Phone: (310) 345-0761

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: Josh Tully	Responsible Designer Signature: Josh Tully
Company: Homeowner - Josh Tully	Date Signed: 06/11/2025
Address: 703 Pier Ave.	License:
City/State/Zip: Hermosa Beach, CA 90254	Phone: 310-480-2429

Digitally signed by California Home Energy Efficiency Rating Services (CHEERS). This digital signature is provided in order to secure the content of this registered document, and in no way implies Registration Provider responsibility for the accuracy of the information.

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LICENSED ARCHITECT JOSHUA PAUL TULLY C-38842 REN. 08-30-25 STATE OF CALIFORNIA

HELBERTA RESIDENCE
Remodel + Addition
537 S Helberta Ave
Redondo Beach, CA 90277

Project Name :

Project Address :

Revisions :

No.	Date	Description

Sheet Title :

TITLE 24

Assessor Parcel No.: 7507-001-017
Scale: NTS
Issue Date: 04.15.2025
Drawn: JPT Checked:

Sheet Number :

N-2.1

RESIDENTIAL MEASURES SUMMARY — RMS-1

Project Name	Building Type	Date
Addition at 537 S Helberta Ave	☐ Multi Family ☑ Existing+ Addition/Alteration	6/11/2025

Project Address	California Energy Climate Zone	Total Cond. Floor Area	Addition	# of Units
537 S Helberta Ave Redondo Beach	CA Climate Zone 06	2,900	2,051	1

INSULATION

Construction	Type	Cavity	Area (ft^2)	Special Features	Status
Wall	Wood Framed	R 13	609		New
Wall	Wood Framed	R 13	135		New
Wall	Wood Framed	R 13	619		New
Wall	Wood Framed	R 13	251		New
Demising	Wood Framed w/o Crawl Space	- no insulation	254		New
Demising	Wood Framed w/o Crawl Space	R 30	3,293		New
Roof	Wood Framed Attic	R 30	1,772		New
Wall	Wood Framed	R 13	198		New

FENESTRATION — Total Area: 754 | Glazing Percentage: 26.0% | New/Altered Average U-Factor: 0.37

Orientation	Area(ft^2)	U-Fac	SHGC	Overhang	Sidefins	Exterior Shades	Status
Front (S)	146.3	0.370	0.31	none	none	N/A	New
Left (W)	225.0	0.370	0.31	none	none	N/A	New
Rear (N)	106.5	0.370	0.31	none	none	N/A	New
Right (E)	64.5	0.370	0.31	none	none	N/A	New
Skylight	25.0	0.480	0.27	none	none	N/A	New
Front (S)	64.8	0.370	0.31	none	none	N/A	Altered
Left (W)	48.0	0.370	0.31	none	none	N/A	Altered
Rear (N)	58.7	0.370	0.31	none	none	N/A	Altered
Right (E)	15.0	0.370	0.31	none	none	N/A	Altered

HVAC SYSTEMS

Qty.	Heating	Min. Eff	Cooling	Min. Eff	Thermostat	Status
2	Electric Heat Pump	8.20 HSPF2	Split Heat Pump	14.3 SEER2	Setback	New

HVAC DISTRIBUTION

Location	Heating	Cooling	Duct Location	Duct R-Value	Status
Proposed HVAC	Ducted	Ducted	Attic	6.0	Altered

WATER HEATING

Qty.	Type	Gallons	Min. Eff	Distribution	Status
1	Heat Pump	80	3.88	Standard	Altered

RESIDENTIAL MEASURES SUMMARY — RMS-1

Project Name: Addition at 537 S Helberta Ave | Building Type: ☐ Multi Family ☑ Existing+ Addition/Alteration | Date: 6/11/2025

Project Address: 537 S Helberta Ave Redondo Beach | California Energy Climate Zone: CA Climate Zone 06 | Total Cond. Floor Area: 2,900 | Addition: 2,051 | # of Units: 1

INSULATION

Construction	Type	Cavity	Area (ft^2)	Special Features	Status
Wall	Wood Framed	R 13	609		New
Wall	Wood Framed	R 13	135		New
Wall	Wood Framed	R 13	619		New
Wall	Wood Framed	R 13	251		New
Demising	Wood Framed w/o Crawl Space	- no insulation	254		New
Demising	Wood Framed w/o Crawl Space	R 30	3,293		New
Roof	Wood Framed Attic	R 30	1,772		New
Wall	Wood Framed	R 13	198		New

FENESTRATION — Total Area: 754 | Glazing Percentage: 26.0% | New/Altered Average U-Factor: 0.37

Orientation	Area(ft^2)	U-Fac	SHGC	Overhang	Sidefins	Exterior Shades	Status
Front (S)	146.3	0.370	0.31	none	none	N/A	New
Left (W)	225.0	0.370	0.31	none	none	N/A	New
Rear (N)	106.5	0.370	0.31	none	none	N/A	New
Right (E)	64.5	0.370	0.31	none	none	N/A	New
Skylight	25.0	0.480	0.27	none	none	N/A	New
Front (S)	64.8	0.370	0.31	none	none	N/A	Altered
Left (W)	48.0	0.370	0.31	none	none	N/A	Altered
Rear (N)	58.7	0.370	0.31	none	none	N/A	Altered
Right (E)	15.0	0.370	0.31	none	none	N/A	Altered

HVAC SYSTEMS

Qty.	Heating	Min. Eff	Cooling	Min. Eff	Thermostat	Status
2	Electric Heat Pump	8.20 HSPF2	Split Heat Pump	14.3 SEER2	Setback	New

HVAC DISTRIBUTION

Location	Heating	Cooling	Duct Location	Duct R-Value	Status
Proposed HVAC	Ducted	Ducted	Attic	6.0	Altered

WATER HEATING

Qty.	Type	Gallons	Min. Eff	Distribution	Status
1	Heat Pump	80	3.88	Standard	Altered

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RESIDENTIAL MEASURES SUMMARY — RMS-1

Project Name: Addition at 537 S Helberta Ave | Building Type: ☐ Multi Family ☑ Existing+ Addition/Alteration | Date: 6/11/2025

Project Address: 537 S Helberta Ave Redondo Beach | California Energy Climate Zone: CA Climate Zone 06 | Total Cond. Floor Area: 2,900 | Addition: 2,051 | # of Units: 1

INSULATION

Construction	Type	Cavity	Area (ft^2)	Special Features	Status
Wall	Wood Framed	R 13	609		New
Wall	Wood Framed	R 13	135		New
Wall	Wood Framed	R 13	619		New
Wall	Wood Framed	R 13	251		New
Demising	Wood Framed w/o Crawl Space	- no insulation	254		New
Demising	Wood Framed w/o Crawl Space	R 30	3,293		New
Roof	Wood Framed Attic	R 30	1,772		New
Wall	Wood Framed	R 13	198		New
Wall	Wood Framed	- no insulation	166		Existing
Door	Opaque Door	- no insulation	26		Altered
Wall	Wood Framed	- no insulation	29		Existing
Wall	Wood Framed	- no insulation	301		Existing

FENESTRATION — Total Area: 754 | Glazing Percentage: 26.0% | New/Altered Average U-Factor: 0.37

Orientation	Area(ft^2)	U-Fac	SHGC	Overhang	Sidefins	Exterior Shades	Status
Front (S)	146.3	0.370	0.31	none	none	N/A	New
Left (W)	225.0	0.370	0.31	none	none	N/A	New
Rear (N)	106.5	0.370	0.31	none	none	N/A	New
Right (E)	64.5	0.370	0.31	none	none	N/A	New
Skylight	25.0	0.480	0.27	none	none	N/A	New
Front (S)	64.8	0.370	0.31	none	none	N/A	Altered
Left (W)	48.0	0.370	0.31	none	none	N/A	Altered
Rear (N)	58.7	0.370	0.31	none	none	N/A	Altered
Right (E)	15.0	0.370	0.31	none	none	N/A	Altered

HVAC SYSTEMS

Qty.	Heating	Min. Eff	Cooling	Min. Eff	Thermostat	Status
2	Electric Heat Pump	8.20 HSPF2	Split Heat Pump	14.3 SEER2	Setback	New

HVAC DISTRIBUTION

Location	Heating	Cooling	Duct Location	Duct R-Value	Status
Proposed HVAC	Ducted	Ducted	Attic	6.0	Altered

WATER HEATING

Qty.	Type	Gallons	Min. Eff	Distribution	Status
1	Heat Pump	80	3.88	Standard	Altered

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2022 Single-Family Residential Mandatory Requirements Summary

NOTE: Single-family residential buildings subject to the Energy Codes must comply with all applicable mandatory measures, regardless of the compliance approach used. Review the respective section for more information. (04/2022)

Building Envelope:

§ 110.6(a)1:	**Air Leakage.** Manufactured fenestration, exterior doors, and exterior pet doors must limit air leakage to 0.3 CFM per square foot or less when tested per NFRC-400, ASTM E283, or AAMA/WDMA/CSA 101/I.S.2/A440-2011. *
§ 110.6(a)5:	**Labeling.** Fenestration products and exterior doors must have a label meeting the requirements of § 10-111(a).
§ 110.6(b):	**Field fabricated exterior doors and fenestration** products must use U-factors and solar heat gain coefficient (SHGC) values from Tables 110.6-A, 110.6-B, or JA4.5 for exterior doors. They must be caulked and/or weather-stripped. *
§ 110.7:	**Air Leakage.** All joints, penetrations, and other openings in the building envelope that are potential sources of air leakage must be caulked, gasketed, or weather stripped.
§ 110.8(a):	**Insulation Certification by Manufacturers.** Insulation must be certified by the Department of Consumer Affairs, Bureau of Household Goods and Services (BHGS).
§ 110.8(g):	**Insulation Requirements for Heated Slab Floors.** Heated slab floors must be insulated per the requirements of § 110.8(g).
§ 110.8(i):	**Roofing Products Solar Reflectance and Thermal Emittance.** The thermal emittance and aged solar reflectance values of the roofing material must meet the requirements of § 110.8(i) and be labeled per §10-113 when the installation of a cool roof is specified on the CF1R.
§ 110.8(j):	**Radiant Barrier.** When required, radiant barriers must have an emittance of 0.05 or less and be certified to the Department of Consumer Affairs.
§ 150.0(a):	**Roof Deck, Ceiling and Rafter Roof Insulation.** Roof decks in newly constructed attics in climate zones 4 and 8-16 area-weighted average U-factor not exceeding U-0.184. Ceiling and rafter roofs minimum R-22 insulation in wood-frame ceiling; or area-weighted average U-factor must not exceed 0.043. Rafter roof alterations minimum R-19 or area-weighted average U-factor of 0.054 or less. Attic access doors must have permanently attached insulation using adhesive or mechanical fasteners. The attic access must be gasketed to prevent air leakage. Insulation must be installed in direct contact with a roof or ceiling which is sealed to limit infiltration and exfiltration, as specified in § 110.7, including but not limited to placing insulation either above or below the roof deck or on top of a drywall ceiling. *
§ 150.0(b):	**Loose-fill Insulation.** Loose fill insulation must meet the manufacturer's required density for the labeled R-value.
§ 150.0(c):	**Wall Insulation.** Minimum R-13 insulation in 2x4 inch wood framing wall or have a U-factor of 0.102 or less, or R-20 in 2x6 inch wood framing or have a U-factor of 0.071 or less. Opaque non-framed assemblies must have an overall assembly U-factor not exceeding 0.102. Masonry walls must meet Tables 150.1-A or B. *
§ 150.0(d):	**Raised-floor Insulation.** Minimum R-19 insulation in raised wood framed floor or 0.037 maximum U-factor. *
§ 150.0(f):	**Slab Edge Insulation.** Slab edge insulation must meet all of the following: have a water absorption rate, for the insulation material alone without facings, no greater than 0.3 percent; have a water vapor permeance no greater than 2.0 perm per inch; be protected from physical damage and UV light deterioration; and, when installed as part of a heated slab floor, meet the requirements of § 110.8(g).
§ 150.0(g)1:	**Vapor Retarder.** In climate zones 1 through 16, the earth floor of unvented crawl space must be covered with a Class I or Class II vapor retarder. This requirement also applies to controlled ventilation crawl space for buildings complying with the exception to §150.0(d).
§ 150.0(g)2:	**Vapor Retarder.** In climate zones 14 and 16, a Class I or Class II vapor retarder must be installed on the conditioned space side of all insulation in all exterior walls, vented attics, and unvented attics with air-permeable insulation.
§ 150.0(q):	**Fenestration Products.** Fenestration, including skylights, separating conditioned space from unconditioned space or outdoors must have a maximum U-factor of 0.45; or area-weighted average U-factor of all fenestration must not exceed 0.45.

Fireplaces, Decorative Gas Appliances, and Gas Log:

§ 110.5(e)	**Pilot Light.** Continuously burning pilot lights are not allowed for indoor and outdoor fireplaces.
§ 150.0(e)1:	**Closable Doors.** Masonry or factory-built fireplaces must have a closable metal or glass door covering the entire opening of the firebox.
§ 150.0(e)2:	**Combustion Intake.** Masonry or factory-built fireplaces must have a combustion outside air intake, which is at least six square inches in area and is equipped with a readily accessible, operable, and tight-fitting damper or combustion-air control device. *
§ 150.0(e)3:	**Flue Damper.** Masonry or factory-built fireplaces must have a flue damper with a readily accessible control. *

Space Conditioning, Water Heating, and Plumbing System:

§ 110.0-§ 110.3:	**Certification.** Heating, ventilation, and air conditioning (HVAC) equipment, water heaters, showerheads, faucets, and all other regulated appliances must be certified by the manufacturer to the California Energy Commission. *
§ 110.2(a):	**HVAC Efficiency.** Equipment must meet the applicable efficiency requirements in Table 110.2-A through Table 110.2-N. *
§ 110.2(b):	**Controls for Heat Pumps with Supplementary Electric Resistance Heaters.** Heat pumps with supplementary electric resistance heaters must have controls that prevent supplementary heater operation when the heating load can be met by the heat pump alone; and in which the cut-on temperature for compression heating is higher than the cut-on temperature for supplementary heating, and the cut-off temperature for compression heating is higher than the cut-off temperature for supplementary heating. *
§ 110.2(c):	**Thermostats.** All heating or cooling systems not controlled by a central energy management control system (EMCS) must have a setback thermostat. *
§ 110.3(c)3:	**Insulation.** Unfired service water heater storage tanks and solar water-heating backup tanks must have adequate insulation, or tank surface heat loss rating.
§ 110.3(c)6:	**Isolation Valves.** Instantaneous water heaters with an input rating greater than 6.8 kBtu per hour (2 kW) must have isolation valves with hose bibbs or other fittings on both cold and hot water lines to allow for flushing the water heater when the valves are closed.

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§ 110.5:	**Pilot Lights.** Continuously burning pilot lights are prohibited for natural gas: fan-type central furnaces; household cooking appliances (except appliances without an electrical supply voltage connection with pilot lights that consume less than 150 Btu per hour); and pool and spa heaters. *
§ 150.0(h)1:	**Building Cooling and Heating Loads.** Heating and/or cooling loads are calculated in accordance with the ASHRAE Handbook, Equipment Volume, Applications Volume, and Fundamentals Volume; the SMACNA Residential Comfort System Installation Standards Manual; or the ACCA Manual J using design conditions specified in § 150.(h)2.
§ 150.0(h)3A:	**Clearances.** Air conditioner and heat pump outdoor condensing units must have a clearance of at least five feet from the outlet of any dryer.
§ 150.0(h)3B:	**Liquid Line Drier.** Air conditioners and heat pump systems must be equipped with liquid line filter driers if required, as specified by the manufacturer's instructions.
§ 150.0(j)1:	**Water Piping, Solar Water-heating System Piping, and Space Conditioning System Line Insulation.** All domestic hot water piping must be insulated as specified in § 609.11 of the California Plumbing Code. *
§ 150.0(j)2:	**Insulation Protection.** Piping insulation must be protected from damage, including that due to sunlight, moisture, equipment maintenance, and wind as required by §120.3(b). Insulation exposed to weather must be water retardant and protected from UV light (no adhesive tapes). Insulation covering chilled water piping and refrigerant suction piping located outside the conditioned space must include, or be protected by, a Class I or Class II vapor retarder. Pipe insulation buried below grade must be installed in a waterproof and non-crushable casing or sleeve.
§ 150.0(n)1:	**Gas or Propane Water Heating Systems.** Systems using gas or propane water heaters to serve individual dwelling units must designate a space at least 2.5' x 2.5' x 7' suitable for the future installation of a heat pump water heater, and meet electrical and plumbing requirements, based on the distance between this designated space and the water heater location; and a condensate drain no more than 2' higher than the base of the water heater
§ 150.0(n)3:	**Solar Water-heating Systems.** Solar water-heating systems and collectors must be certified and rated by the Solar Rating and Certification Corporation (SRCC), the International Association of Plumbing and Mechanical Officials, Research and Testing (IAPMO R&T), or by a listing agency that is approved by the executive director.

Ducts and Fans:

§ 110.8(d)3:	**Ducts.** Insulation installed on an existing space-conditioning duct must comply with § 604.0 of the California Mechanical Code (CMC). If a contractor installs the insulation, the contractor must certify to the customer, in writing, that the insulation meets this requirement.
§ 150.0(m)1:	**CMC Compliance.** All air-distribution system ducts and plenums must meet CMC §§ 601.0-605.0 and ANSI/SMACNA-006-2006 HVAC Duct Construction Standards Metal and Flexible 3rd Edition. Portions of supply-air and return-air ducts and plenums must be insulated to R-6.0 or higher; ducts located entirely in conditioned space as confirmed through field verification and diagnostic testing (RA3.1.4.3.8) do not require insulation. Connections of metal ducts and inner core of flexible ducts must be mechanically fastened. Openings must be sealed with mastic, tape, or other duct-closure system that meets the applicable UL requirements, or aerosol sealant that meets UL 723. The combination of mastic and either mesh or tape must be used to seal openings greater than ¼". If mastic or tape is used. Building cavities, air handler support platforms, and plenums designed or constructed with materials other than sealed sheet metal, duct board or flexible duct must not be used to convey conditioned air. Building cavities and support platforms may contain ducts; ducts installed in these spaces must not be compressed. *
§ 150.0(m)2:	**Factory-Fabricated Duct Systems.** Factory-fabricated duct systems must comply with applicable requirements for duct construction, connections, and closures; joints and seams of duct systems and their components must not be sealed with cloth back rubber adhesive duct tapes unless such tape is used in combination with mastic and draw bands.
§ 150.0(m)3:	**Field-Fabricated Duct Systems.** Field-fabricated duct systems must comply with applicable requirements for: pressure-sensitive tapes, mastics, sealants, and other requirements specified for duct construction.
§ 150.0(m)7:	**Backdraft Damper.** Fan systems that exchange air between the conditioned space and outdoors must have backdraft or automatic dampers.
§ 150.0(m)8:	**Gravity Ventilation Dampers.** Gravity ventilating systems serving conditioned space must have either automatic or readily accessible, manually operated dampers in all openings to the outside, except combustion inlet and outlet air openings and elevator shaft vents.
§ 150.0(m)9:	**Protection of Insulation.** Insulation must be protected from damage due tosunlight, moisture, equipment maintenance, and wind. Insulation exposed to weather must be suitable for outdoor service (e.g., protected by aluminum, sheet metal, painted canvas, or plastic cover). Cellular foam insulation must be protected as above or painted with a water retardant and solar radiation-resistant coating.
§ 150.0(m)10:	**Porous Inner Core Flex Duct.** Porous inner cores of flex ducts must have a non-porous layer or air barrier between the inner core and outer vapor barrier.
§ 150.0(m)11:	**Duct System Sealing and Leakage Test.** When space conditioning systems use forced air duct systems to supply conditioned air to an occupiable space, the ducts must be sealed and duct leakage tested, as confirmed through field verification and diagnostic testing, in accordance with Reference Residential Appendix RA3.1.
§ 150.0(m)12:	**Air Filtration.** Space conditioning systems with ducts exceeding 10 feet and the supply side of ventilation systems must have MERV 13 or equivalent filters. Filters for space conditioning systems must have a two inch depth or can be one inch if sized per Equation 150.0-A. Clean-filter pressure drop and labeling must meet the requirements in §150.0(m)12. Filters must be accessible for regular service. Filter racks or grilles must use gaskets, sealing, or other means to close gaps around the inserted filters to and prevents air from bypassing the filter. *

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§ 150.0(m)13:	**Space Conditioning System Airflow Rate and Fan Efficacy.** Space conditioning systems that use ducts to supply cooling must have a hole for the placement of a static pressure probe, or a permanently installed static pressure probe in the supply plenum. Airflow must be ≥ 350 CFM per ton of nominal cooling capacity, and an air-handling unit fan efficacy ≤ 0.45 watts per CFM for gas furnace air handlers and ≤ 0.58 watts per CFM for all others. Small duct high velocity systems must provide an airflow ≥ 250 CFM per ton of nominal cooling capacity, and an air-handling unit fan efficacy ≤ 0.62 watts per CFM. Field verification testing is required in accordance with Reference Residential Appendix RA3.3. *

Ventilation and Indoor Air Quality:

§ 150.0(o)1:	**Requirements for Ventilation and Indoor Air Quality**. All dwelling units must meet the requirements of ASHRAE Standard 62.2, Ventilation and Acceptable Indoor Air Quality in Residential Buildings subject to the amendments specified in § 150.0(o)1. *
§ 150.0(o)1B:	**Central Fan Integrated (CFI) Ventilation Systems.** Continuous operation of CFI air handlers is not allowed to provide the whole-dwelling unit ventilation airflow required per §150.0(o)1C. A motorized damper(s) must be installed on the ventilation duct(s) that prevents all airflow through the space conditioning duct system when the damper(s) is closed andcontrolled per §150.0(o)1Biii&iv. CFI ventilation systems must have controls that track outdoor air ventilation run time, and either open or close the motorized damper(s) for compliance with §150.0(o)1C.
§ 150.0(o)1C:	**Whole-Dwelling Unit Mechanical Ventilation for Single-Family Detached and townhouses .** Single-family detached dwelling units, and attached dwelling units not sharing ceilings or floors with other dwelling units, occupiable spaces, public garages, or commercial spaces must have mechanical ventilation airflow specified in § 150.0(o)1Ci-iii.
§ 150.0(o)1G:	**Local Mechanical Exhaust.** Kitchens and bathrooms must have local mechanical exhaust; nonenclosed kitchens must have demand-controlled exhaust system meeting requirements of §150.0(o)1Giii,enclosed kitchens and bathrooms can use demand-controlled or continuous exhaust meeting §150.0(o)1Giii-iv. Airflow must be measured by the installer per §150.0(o)1Gv, and rated for sound per §150.0(o)1Gvi. *
§ 150.0(o)1H&I:	**Airflow Measurement and Sound Ratings of Whole-Dwelling Unit Ventilation Systems.** The airflow required per § 150.0(o)1C must be measured by using a flow hood, flow grid, or other airflow measuring device at the fan's inlet or outlet terminals/grilles per Reference Residential Appendix RA3.7. Whole-Dwelling unit ventilation systems must be rated for sound per ASHRAE 62.2 §7.2 at no less than the minimum airflow rate required by §150.0(o)1C.
§ 150.0(o)2:	**Field Verification and Diagnostic Testing.** Whole-Dwelling Unit ventilation airflow, vented range hood airflow and sound rating, and HRV and ERV fan efficacy must be verified in accordance with Reference Residential Appendix RA3.7. Vented range hoods must be verified per Reference Residential Appendix RA3.7.4.3 to confirm if it is rated by HVI or AHAM to comply with the airflow rates and sound requirements per §150.(o)1G

Pool and Spa Systems and Equipment:

§ 110.4(a):	**Certification by Manufacturers.** Any pool or spa heating system or equipment must be certified to have all of the following: compliance with the Appliance Efficiency Regulations and listing in MAEDbS; an on-off switch mounted outside of the heater that allows shutting off the heater without adjusting the thermostat setting; a permanent weatherproof plate or card with operating instructions; and must not use electric resistance heating. *
§ 110.4(b)1:	**Piping.** Any pool or spa heating system or equipment must be installed with at least 36 inches of pipe between the filter and the heater, or dedicated suction and return lines, or built-in or built-up connections to allow for future solar heating.
§ 110.4(b)2:	**Covers.** Outdoor pools or spas that have a heat pump or gas heater must have a cover.
§ 110.4(b)3:	**Directional Inlets and Time Switches for Pools.** Pools must have directional inlets that adequately mix the pool water, and a time switch that will allow all pumps to be set or programmed to run only during off-peak electric demand periods.
§ 110.5:	**Pilot Light.** Natural gas pool and spa heaters must not have a continuously burning pilot light.
§ 150.0(p):	**Pool Systems and Equipment Installation.** Residential pool systems or equipment must meet the specified requirements for pump sizing, flow rate, piping, filters, and valves. *

Lighting:

§ 110.9:	**Lighting Controls and Components.** All lighting control devices and systems, ballasts, and luminaires must meet the applicable requirements of § 110.9. *
§ 150.0(k)1A:	**Luminaire Efficacy.** All installed luminaires must meet the requirements in Table 150.0-A, except lighting integral to exhaust fans, kitchen range hoods, bath vanity mirrors, and garage door openers; navigation lighting less than 5 watts; and lighting internal to drawers, cabinets, and linen closets with an efficacy of at least 45 lumens per watt.
§ 150.0(k)1B:	**Screw based luminaires.** Screw based luminaires must contain lamps that comply with Reference Joint Appendix JA8. *
§ 150.0(k)1C:	**Recessed Downlight Luminaires in Ceilings.** Luminaires recessed into ceilings must not contain screw based sockets, must be airtight, and must be sealed with a gasket or caulk. California Electrical Code § 410.116 must also be met.
§ 150.0(k)1D:	**Light Sources in Enclosed or Recessed Luminaires.** Lamps and other separable light sources that are not compliant with the JA8 elevated temperature requirements, including marking requirements, must not be installed in enclosed or recessed luminaires.
§ 150.0(k)1E:	**Blank Electrical Boxes.** The number of electrical boxes that are more than five feet above the finished floor and do not contain a luminaire or other device shall be no more than the number of bedrooms. These boxes must be served by a dimmer, vacancy sensor control, low voltage wiring, or fan speed control.
§ 150.0(k)1F:	**Lighting Integral to Exhaust Fans.** Lighting integral to exhaust fans (except when installed by the manufacturer in kitchen exhaust hoods) must meet the applicable requirements of § 150.0(k). *

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§ 150.0(k)1G:	**Screw based luminaires.** Screw based luminaires must contain lamps that comply with Reference Joint Appendix JA8. *
§ 150.0(k)1H:	**Light Sources in Enclosed or Recessed Luminaires.** Lamps and other separable light sources that are not compliant with the JA8 elevated temperature requirements, including marking requirements, must not be installed in enclosed or recessed luminaires.
§ 150.0(k)1I:	**Light Sources in Drawers, Cabinets, and Linen Closets.** Light sources internal to drawers, cabinetry or linen closets are not required to comply with Table 150.0-A or be controlled by vacancy sensors provided that they are rated to consume no more than 5 watts of power, emit no more than 150 lumens, and are equipped with controls that automatically turn the lighting off when the drawer, cabinet or linen closet is closed.
§ 150.0(k)2A:	**Interior Switches and Controls.** All forward phase cut dimmers used with LED light sources must comply with NEMA SSL 7A.
§ 150.0(k)2B:	**Interior Switches and Controls.** Exhaust fans must be controlled separately from lighting systems. *
§ 150.0(k)2A:	**Accessible Controls.** Lighting must have readily accessible wall-mounted controls that allow the lighting to be manually turned on and off. *
§ 150.0(k)2B:	**Multiple Controls.** Controls must not bypass a dimmer, occupant sensor, or vacancy sensor function if the dimmer or sensor is installed to comply with § 150.0(k).
§ 150.0(k)2C:	**Mandatory Requirements.** Lighting controls must comply with the applicable requirements of § 110.9.
§ 150.0(k)2D:	**Energy Management Control Systems.** An energy management control system (EMCS) may be used to comply with dimming, occupancy, and control requirements if it provides the functionality of the specified control per § 110.9 and the physical controls specified in § 150.0(k)2A.
§ 150.0(k)2E:	**Automatic Shutoff Controls.** In bathrooms, garages, laundry rooms, utility rooms and walk-in closets, at least one installed luminaire must be controlled by an occupancy or vacancy sensor providing automatic-off functionality. Lighting inside drawers and cabinets with opaque fronts or doors must have controls that turn the light off when the drawer or door is closed.
§ 150.0(k)2F:	**Dimmers.** Lighting in habitable spaces (e.g., living rooms, dining rooms, kitchens, and bedrooms) must have readily accessible wall-mounted dimming controls that allow the lighting to be manually adjusted up and down. Forward phase cut dimmers controlling LED light sources in these spaces must comply with NEMA SSL 7A.
§ 150.0(k)2K:	**Independent controls.** Integrated lighting of exhaust fans shall be controlled independently from the fans. Lighting under cabinets or shelves, lighting in display cabinets, and switched outlets must be controlled separately from ceiling-installed lighting.
§ 150.0(k)3A:	**Residential Outdoor Lighting.** For single-family residential buildings, outdoor lighting permanently mounted to a residential building, or to other buildings on the same lot, must have a manual on/off switch and either a photocell and motion sensor or automatic time switch control) or an astronomical time clock. An energy management control system that provides the specified control functionality and meets all applicable requirements may be used to meet these requirements.
§ 150.0(k)4:	**Internally illuminated address signs.** Internally illuminated address signs must either comply with § 140.8 or consume no more than 5 watts of power.
§ 150.0(k)5:	**Residential Garages for Eight or More Vehicles.** Lighting for residential parking garages for eight or more vehicles must comply with the applicable requirements for nonresidential garages in §§ 110.9, 130.0, 130.1, 130.4, 140.6, and 141.0.

Solar Readiness:

§ 110.10(a)1:	**Single-family Residences.** Single-family residences located in subdivisions with 10 or more single-family residences and where the application for a tentative subdivision map for the residences has been deemed complete and approved by the enforcement agency, which do not have a photovoltaic system installed, must comply with the requirements of § 110.10(b)-(e).
§110.10(b)1A:	**Minimum Solar Zone Area.** The solar zone must have a minimum total area as described below. The solar zone must comply with access, pathway, smoke ventilation, and spacing requirements as specified in Title 24, Part 9 or other parts of Title 24 or in any requirements adopted by a local jurisdiction. The solar zone total area must be comprised of areas that have no dimension less than 5 feet and are no less than 80 square feet each for buildings with roof areas less than or equal to 10,000 square feet or no less than 160 square feet each for buildings with roof areas greater than 10,000 square feet. For single-family residences, the solar zone must be located on the roof or overhang of the building and have a total area no less than 250 square feet. *
§ 110.10(b)2:	**Azimuth.** All sections of the solar zone located on steep-sloped roofs must have an azimuth between 90-300° of true north.
§ 110.10(b)3A:	**Shading.** The solar zone must not contain any obstructions, including but not limited to: vents, chimneys, architectural features, and roof mounted equipment.
§ 110.10(b)3B:	**Shading.** Any obstruction located on the roof or any other part of the building that projects above a solar zone must be located at least twice the horizontal distance of the height difference between the highest point of the obstruction and the horizontal projection of the nearest point of the solar zone, measured in the vertical plane. *
§ 110.10(b)4:	**Structural Design Loads on Construction Documents.** For areas of the roof designated as a solar zone, the structural design loads for roof dead load and roof live load must be clearly indicated on the construction documents.
§ 110.10(c):	**Interconnection Pathways.** The construction documents must indicate: a location reserved for inverters and metering equipment and a pathway reserved for routing of conduit from the solar zone to the point of interconnection with the electrical service; and for single-family residences and central water-heating systems, a pathway reserved for routing plumbing from the solar zone to the water-heating system.
§ 110.10(d):	**Documentation.** A copy of the construction documents or a comparable document indicating the information from § 110.10(b)-(c) must be provided to the occupant.
§ 110.10(e)1:	**Main Electrical Service Panel.** The main electrical service panel must have a minimum busbar rating of 200 amps.
§ 110.10(e)2:	**Main Electrical Service Panel.** The main electrical service panel must have a reserved space to allow for the installation of a double pole circuit breaker for a future solar electric installation. The reserved space must be permanently marked as "For Future Solar Electric."

Electric and Energy Storage Ready:

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§ 150.0(s)	**Energy Storage System (ESS) Ready.** All single-family residences must meet all of the following: Either ESS-ready interconnection equipment with backed up capacity of 60 amps or more and four or more ESS supplied branch circuits, or a dedicated raceway from the main service to a subpanel that supplies the branch circuits in § 150.0(s); at least four branch circuits must be identified and have their source collocated at a single panelboard suitable to be supplied by the ESS, with one circuit supplying the refrigerator, one lighting circuit near the primary exit, and one circuit supplying a sleeping room receptacle outlet; main panelboard must have a minimum busbar rating of 225 amps; sufficient space must be reserved to allow future installation of a system isolation equipment/transfer switch within 3' of the main panelboard, with raceways installed between the panelboard and the switch location to allow the connection of backup power source.
§ 150.0(t)	**Heat Pump Space Heater Ready.** Systems using gas or propane furnaces to serve individual dwelling units must include: A dedicated unobstructed 240V branch circuit wiring installed within 3' of the furnace with circuit conductors rated at least 30 amps with the blank cover identified as "240V ready;" and a reserved main electrical service panel space to allow for the installation of a double pole circuit breaker permanently marked as "For Future 240V use."
§ 150.0(u)	**Electric Cooktop Ready.** Systems using gas or propane cooktop to serve individual dwelling units must include: A dedicated unobstructed 240V branch circuit wiring installed within 3' of the cooktop with circuit conductors rated at least 50 amps with the blank cover identified as "240V ready;" and a reserved main electrical service panel space to allow for the installation of a double pole circuit breaker permanently marked as "For Future 240V use."
§ 150.0(v)	**Electric Clothes Dryer Ready.** Clothes dryer locations with gas or propane plumbing to serve individual dwelling units must include: A dedicated unobstructed 240V branch circuit wiring installed within 3' of the dryer location with circuit conductors rated at least 30 amps with the blank cover identified as "240V ready;" and a reserved main electrical service panel space to allow for the installation of a double pole circuit breaker permanently marked as "For Future 240V use."

*Exceptions may apply.

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HELBERTA RESIDENCE
Remodel + Addition
537 S Helberta Ave
Redondo Beach, CA 90277

Project Name :

Project Address :

Revisions :

No.	Date	Description

Sheet Title :

TITLE 24

Assessor Parcel No.: 7507-001-017
Scale: NTS
Issue Date: 04.15.2025
Drawn: JPT Checked:

Sheet Number :

N-2.2

2022 CALIFORNIA BUILDING CODE SHEARWALL SCHEDULE (w/ 2022 LARUCP Ammendments)

1-1-2022

SHEAR-WALL NOTATION	STRUCTURAL I APA-RATED WOOD STRUCTURAL PANEL THICKNESS	COMMON NAIL SPACING @ BOUNDARIES & EDGES (B.N. & E.N.) FIELD NAILING @ 12" O.C.	ALLOWABLE SHEAR / FT (WOOD STUDS @16"o.c., U.N.O) (REDUCED BY 25%)	SLIDING ANCHOR SYSTEM			
				5/8" A.B. SPACING [2] 2x SILL V= 1184# 3x SILL V= 1520# O.C.	A35 OR LTP4 FRAMING CLIP SPACING V = 450# O.C.	16d COMMON NAIL SPACING [3] 2x SOLE PLATE ONLY: V= 121# O.C.	1/4" LAG[6] SCREW SPACING 3x SOLE PLATE ONLY: V= 880# (MIN. 2" PENETRATION) O.C.
A	15/32"	8d @ 6" o.c.	210#/FT.	48"	24"	6"	12"
B [1]	15/32"	8d @ 4" o.c.	320#/FT.	48"	16"	4"	9"
C [1]	15/32"	8d @ 3" o.c.	410#/FT.	44"	12"	3"	6"
D [1]	15/32"	8d @ 2" o.c.	540#/FT.	32"	9"	SEE LAG SCREW SPACING →	5"
E [1]	15/32"	10d @ 2" o.c.	650#/FT.	26"	8"	SEE LAG SCREW SPACING →	4"
DBL SIDED A [4]	15/32" EACH SIDE	8d @ 3" o.c. EACH SIDE	820#/FT.	22"	12" [5]	SEE LAG SCREW SPACING →	3"
DBL SIDED D [4]	15/32" EACH SIDE	8d @ 2" o.c. EACH SIDE	1080#/FT.	16"	9" [5]	SEE LAG SCREW SPACING →	3"
DBL SIDED E [4]	15/32" EACH SIDE	10d @ 2" o.c. EACH SIDE	1300#/FT.	13"	8" [5]	SEE LAG SCREW SPACING →	3"

1. FRAMING AT FOUNDATION SILL PLATES AND ADJOINING PANEL EDGE STUDS SHALL BE A SINGLE 3x NOMINAL MEMBER, AND ALL NAILS SHALL BE STAGGERED WITH 1/2" EDGE DISTANCE. 2x NOMINAL SOLE PLATE MAY BE USED AT RAISED FLOOR AND UPPER LEVELS.
2. SIMPSON BP5/8 BEARING PLATES (LARR 25293), OR OTHER LISTED MAKE, APPROVED BY BUILDING OFFICIAL, SHALL BE USED WITH ALL 5/8" ANCHORS. 5/8" SIMPSON TITAN HD ANCHORS (ICC ESR-1056) (LARR 25560) WITH 4-1\8" MIN. EMBEDMENT, MAY BE USED IN LIEU OF 5/8" ANCHOR BOLTS AT EXISTING FOOTINGS WITH SAME SPACING PER TABLE ABOVE. SPECIAL INSPECTION REQUIRED FOR ALL EPOXY ANCHOR INSTALLATIONS.
3. ALL SILL NAILING SHALL BE STAGGERED 1/2" MINIMUM. (TYPICAL)
4. FRAMING AT FOUNDATION SILL PLATE, SOLE PLATES AND STUDS SHALL BE A SINGLE 3x NOMINAL MEMBER, AND ALL NAILS SHALL BE STAGGERED W/ 1\2" EDGE DISTANCE. 2x NOMINAL DOUBLE TOP PLATE MAY BE USED.
5. LTP4 TO BE @ SPECIFIED SPACING AT BOTH FACES W/4x BLOCKING.
6. FOR 1/4" LAGS, USE SIMSPON "SDS" SCREWS (¼"x6", "SDS25600, U.N.O.).

GENERAL WOOD NOTES

A. FOUNDATION SILLS SHALL BE NATURALLY DURABLE OR PRESERVATIVE-TREATED WOOD. (PER 2022 CBC)
B. GLULAM BEAMS MUST BE FABRICATED IN AN APPROVED SHOP. IDENTIFY GRADE SYMBOL AND LAMINATION SPECIES PER 2018 NDS (NDS-18).
C. PROVIDE LEAD HOLE 40% TO 70% OF THREADED SHANK DIAMETER AND FULL DIAMETER FOR SMOOTH SHANK PORTION PER 2018 NDS (NDS-18).
D. ALL BOLT HOLES SHALL BE DRILLED 1/32" TO 1/16" OVERSIZED, PER 2018 NDS (NDS-18)
E. HOLD-DOWN CONNECTOR BOLTS INTO WOOD FRAMING REQUIRE APPROVED PLATE WASHERS; AND HOLD-DOWNS SHALL BE TIGHTENED JUST PRIOR TO COVERING THE WALL FRAMING. (PER 2022 CBC)
F. HOLD-DOWN HARDWARE MUST BE SECURED IN PLACE PRIOR TO FOUNDATION INSPECTION.
G. ROOF DIAPHRAGM NAILING TO BE INSPECTED BEFORE COVERING. STRENGTH AXIS OF WOOD STRUCTURAL PANEL SHALL BE PERPENDICULAR TO SUPPORTS. FLOOR DIAPHRAGMS SHALL BE TONGUE AND GROOVE OR HAVE BLOCKED PANEL EDGES. WOOD STRUCTURAL PANEL SPANS SHALL CONFORM TO (PER 2022 CBC).
H. ALL DIAPHRAGM AND SHEAR WALL NAILING SHALL UTILIZE COMMON NAILS WITH FULL HEADS UNLESS OTHERWISE APPROVED. (PER 2022 CBC)
I. FASTENERS IN PRESERVATIVE TREATED WOOD OR FIRE-RETARDANT TREATED WOOD SHALL BE HOT DIPPED, GALVANIZED STEEL OR STAINLESS STEEL. (PER 2022 CBC)
J. MECHANICALLY DRIVEN NAILS USED IN WOOD STRUCTURAL PANEL SHEAR WALLS SHALL MEET THE SAME DIMENSIONS AS THAT REQUIRED FOR HAND-DRIVEN NAILS, INCLUDING DIAMETER, MIN. LENGTH AND MIN. HEAD DIAMETER. CLIPPED HEAD OR BOX NAILS ARE NOT ACCEPTABLE. (PER 2022 CBC)
K. ENGINEERED WOOD PRODUCTS SUCH AS PREFABRICATED WOOD I-JOISTS, STRUCTURAL GLUED-LAMINATED TIMBER, STRUCTURAL COMPOSITE LUMBER AND DESIGN TRUSSES SHALL NOT BE NOTCHED OR DRILLED EXCEPT WHERE PERMITTED BY THE MANUFACTURERS' RECOMMENDATIONS OR WHERE THE EFFECTS OF SUCH ALTERATIONS ARE SPECIFICALLY CONSIDERED IN THE DESIGN OF THE MEMBER BY A REGISTERED DESIGN
L. THE QUALITY MARK SHALL BE ON THE STAMP OR LABEL AFFIXED TO PRESERVATIVE-TREATED WOOD AND SHALL INCLUDE THE FOLLOWING INFORMATION: IDENTIFICATION OF TREATING MANUFACTURER, TYPE OF PRESERVATIVE USED, MIN. PRESERVATIVE RETENTION (PCF), END USE FOR WHICH THE PRODUCT IS TREATED, AWPA STANDARD TO WHICH THE PRODUCT WAS TREATED AND IDENTITY OF THE ACCREDITED INSPECTION AGENCY. (PER 2022 CBC)
M. MOISTURE CONTENT OF PRESERVATIVE-TREATED WOOD SHALL BE 19% OR LESS BEFORE BEING COVERED WITH INSULATION, INTERIOR WALL FINISH, AND FLOOR COVERING OF OTHER MATERIALS.
N. MOISTURE CONTENT OF FIRE-RETARDANT-TREATED WOOD SHALL BE 19% OR LESS FOR LUMBER AND 15% OR LESS FOR WOOD STRUCTURAL PANELS BEFORE USE. (PER 2022 CBC)
O. SHEATHING NAILS OR OTHER APPROVED SHEATHING CONNECTORS SHALL BE DRIVEN SO THAT THEIR HEAD OR CROWN IS FLUSH WITH THE SURFACE OF THE SHEATHING. (PER 2022 CBC)
P. WEATHER-EXPOSED BEAMS OR POSTS SUPPORTING BALCONIES, PORCHES SHALL BE NATURALLY DURABLE OR PRESERVATIVE-TREATED WOOD (PER 2022 CBC)
Q. THE HOLE IN THE PLATE WASHER IS PERMITTED TO BE DIAGONALLY SLOTTED WITH A WIDTH OF UP TO 3/16" LARGER THAN THE BOLT DIAMETER AND A SLOT LENGTH NOT TO EXCEED 1-3/4", PROVIDED A STANDARD CUT WASHER IS PLACED BETWEEN THE PLATE WASHER AND THE NUT. (PER 2022 CBC)
R. FIRE-RETARDANT-TREATED LUMBER AND WOOD STRUCTURAL PANELS SHALL BE LABELED. THE LABEL SHALL CONTAIN THE FOLLOWING ITEMS: THE IDENTIFICATION MARK OF AN APPROVED AGENCY IN ACCORDANCE WITH CBC 1703.5, IDENTIFICATION OF THE TREATING MANUFACTURER, THE NAME OF THE FIRE-RETARDANT TREATMENT, THE SPECIES OF WOOD TREATED, FLAME SPREAD AND SMOKE-DEVELOPED INDEX, METHOD OF DRYING AFTER TREATMENT, CONFORMANCE WITH APPROPRIATE STANDARDS IN ACCORDANCE WITH 2022 CBC.
S. LABELING FOR FIRE-TREATED WOOD EXPOSED TO WEATHER, DAMP OR WET LOCATIONS, MUST INCLUDE THE WORDS "NO INCREASE IN THE LISTED CLASSIFICATION WHEN SUBJECTED TO THE STANDARD RAIN TEST." (ASTM D 2898).

NOTES

CONCRETE SHALL HAVE A MINIMUM ULTIMATE COMPRESSIVE STRENGTH OF 2500 PSI AT 28 DAYS FOR POURED-IN-PLACE CONTINUOUS AND SPREAD FOOTINGS.

PROVIDE A CORROSION RESISTANT WEEP SCREED AT FOUNDATION PLATE WHICH ALLOWS TRAPPED WATER TO DRAIN TO THE EXTERIOR OF THE BUILDING. MINIMUM HEIGHT ABOVE GRADE 4".

FOR ALL SHEARWALLS /B\ /C\ /D\ & /E\ – SILL PLATES AND PANEL EDGE STUDS SHALL BE 3x MEMBERS

FOUNDATION SILLS SHALL BE NATURALLY DURABLE OR PRESERVATIVE TREATED WOOD

ALL HOLD DOWNS MUST BE IN PLACE PRIOR TO FOUNDATION INSPECTION

ALL BOLT HOLES SHALL BE DRILLED 1/32 TO 1/16 INCHES OVERSIZED

MINIMUM 3"x3"x0.229" SQUARE PLATE WASHERS SHALL BE USED WITH ALL ANCHOR BOLTS IN SHEAR WALL SILL PLATES

A COPY OF THE LOS ANGELES RESEARCH REPORT AND/OR CONDITIONS OF LISTINGS SHALL BE MADE AVAILABLE AT THE JOB SITE.

PROVIDE LEAD HOLE 40%-70% TO THREADED SHANK DIAMETER AND FULL DIAMETER FOR SMOOTH SHANK PORTION.

ROOF DIAPHRAGM NAILING TO BE INSPECTED BEFORE COVERING. FACE GRAIN OF PLYWOOD SHALL BE PERPENDICULAR TO SUPPORTS. FLOOR SHALL HAVE TONGUE AND GROOVE OR BLOCKED PANEL EDGES. PLYWOOD SPANS SHALL CONFORM WITH TABLE 2306.2

ALL DIAPHRAGM AND SHEAR WALL NAILING SHALL UTILIZE COMMON NAILS

U.N.O., ALL 2x ROOF RAFTER AND FLOOR JOIST FRAMING MEMBERS SHALL BE MINIMUM GRADE DOUGLAS FIR-LARCH NO. 2 OR BETTER. ALL BEAMS, HEADERS, AND POSTS SHALL BE MINIMUM DOUGLAS FIR-LARCH NO. 1 OR BETTER. ALL VERTICAL WALL FRAMING MEMBERS SHALL BE DOUGLAS FIR -LARCH NO. 2 OR BETTER.

ROOF SHEATHING SHALL BE 15/32" CDX APA-RATED SHEATHING, EXPOSURE 1, MIN. SPAN RATING 24/0, NAILED WITH 8d COMMON @ 6"o.c. EDGES & BOUNDARIES AND 12"o.c AT INTERMEDIATE FRAMING MEMBERS.

FLOOR SHEATHING SHALL BE 23/32" CDX APA-RATED STURD-I-FLOOR, T&G, EXPOSURE 1, MIN. SPAN RATING 20" o.c., NAILED WITH 10d COMMON @ 6"o.c. EDGES & BOUNDARIES AND 12"o.c AT INTERMEDIATE FRAMING MEMBERS, U.N.O.

LADBS LICENSED FABRICATOR IS REQUIRED FOR ALL STRUCTURAL STEEL, GLULAM BEAMS AND PARALLAMS

GLULAM AND PARALLAM BEAMS MUST BE FABRICATED BY A LA DBS LICENSED SHOP

3x4 OR 2x6 MINIMUM STUD SIZE @ 16" o.c. REQUIRED FOR BEARING WALLS OVER 10 FEET IN HT.

ROOFING MATERIAL NOT TO EXCEED 6 PSF

CONTRACTORS RESPONSIBLE FOR THE CONSTRUCTION OF A WIND OR SEISMIC FORCE RESISTING SYSTME/COMPONENT LISTED IN THE "STATEMENT OF SPECIAL INSPECTION" SHALL SUBMIT A WRITTEN STATEMENT OF RESPONSIBILITY TO THE LADBS INSPECTORS AND THE OWNER PRIOR TO THE COMMENCEMENT OF WORK ON SUCH SYSTEM OR COMPONENT PER 2022 CBC.

HOLDOWN CONNECTOR BOLTS INTO WOOD FRAMING REQUIRE APPROVED PLATE WASHERS; AND HOLDOWS SHALL BE RETIGHTENED JUST PRIOR TO COVERING THE WALL FRAMING. CONNECTOR BOLTS INTO WOOD FRAMING REQUIRE STEEL PLATE WASHERS.

FIELD WELDING TO BE DONE BY WELDERS CERTIFIED BY THE LABDS FOR STRUCTURAL STEEL, REINFORCING STEEL. CONTINUOUS INSPECTION BY A DEPUTY INSPECTOR IS REQUIRED.

SHOP WELDS MUST BE PERFORMED IN A LA CITY BLDNG. DEPT. LICENSED FARBRICATOR'S SHOP.

DRAG LINE DL

DRAG LINE: SIMPSON ST6236 @ ALL BREAKS AND DIAPHRAGM EDGE NAILING.

SYMBOLS/ABBREVIATIONS:

F.J. = FLOOR JOISTS
R.R. = ROOF RAFTERS
C.J. = CEILING JOISTS
K.P. = KING POST
TYP. = TYPICAL
O.C. = ON CENTER
B.N. = BOUNDARY NAILING
E.N. = EDGE NAILING
SIM. = SIMILAR
V.I.F. = VERIFY IN FIELD
BLKN'G = BLOCKING

(N) = NEW
(E) = EXISTING
RB = ROOF BEAM/JOIST
FB = FLOOR BEAM/JOIST
HNGR = HANGER
SIMP. = SIMPSON
PSL = PARALLAM, TRUSJOIST
M.B. = MACHINE BOLT
R.B. = RIDGE BEAM/BOARD
HDR = HEADER
UNO = UNLESS NOTE OTHERWISE

INDICATES SHEAR WALL

INDICATES KING POST (4x4, UNO)

INDICATES POST (4x4, UNO)

INDICATES 6x6 POST (U.N.O.)

INDICATES 4x6 POST (U.N.O.)

INDICATES SIMPSON HANGER "HUCQ" FOR SOLID SAWN "HHUS" FOR PSL BEAMS (U.N.O. IN DETAILS OR ON PLANS)

WSWH SIMPSON STRONG WALL WOOD SHEARWALL PER PLANS – HOLDOWN BOLTS PER MANUFACTURER

DESIGN DEAD LOADS

ROOF	– 14 psf.
FLOOR	– 14 psf.
DECK	– 20 psf.
CEILING	– 7 psf.
EXT. WALL	– 16 psf.
INT. WALL	– 8 psf.

DESIGN LIVE LOADS

ROOF	– 20 psf.
CEILING	– 10 psf.
FLOOR	– 40 psf
DECK	– 60 psf.

SEISMIC COEFFICIENTS

F_a= 1.0 R= 6.5 Ω = 2.5
S_s= 1.879 I = 1.0 F_v= 1.5
S_{DS}= 1.253 Site Class D
ρ = 1.3 C_s = 3.0

–SEISMIC DESIGN CATEGORY D
–EQUIVALENT LATERAL FORCE PROC.
–FORCE RESISTING SYSTEM; BEARING WALL–SHEAR WALL SYSTEM/SPECIAL STEEL MOMENT FRAMES, OMF, (WUF-W) (R=3.5, Ω=3.0, C_d=3.0)

WIND PRESSURE COEFFICIENTS

110 mph, 30 Second Gust Force
I=1.0 Exposure C
P_{S30A}= 21.54 psf P_{S30C}= 14.4 psf
P_{S30B}= –5.69 psf P_{S30D}= –3.15 psf

SOIL DESCRIPTION

STIFF SOIL (SITE CLASS D) W/ 2000 psf. BEARING VALUE

PERIODIC SPECIAL INSPECTION IS REQUIRED FOR WOOD SHEAR WALLS, SHEAR PANELS, AND DIAPHRAGMS, INCLUDING NAILING, BOLTING, ANCHORING, AND OTHER FASTENING TO COMPONENTS OF THE SEISMIC FORCE RESISTING SYSTEM. SPECIAL INSPECTION BY A DEPUTY INSPECTOR IS REQUIRED WHERE THE FASTENER SPACING OF THE SHEATHING IS 4 INCHES ON CENTER OR LESS

CONTINUOUS INSPECTION BY A DEPUTY INSPECTOR IS REQUIRED FOR FIELD WELDING, CONCRETE DESIGNED WITH f'c GREATER THAN 2500 PSI., HIGH STRENGTH BOLTING, SPRAYED ON FIREPROOFING, ENGINEERED MASONRY, HIGH-LIFT GROUTING, PRE-STRESSED CONCRETE, HIGH LOAD DIAPHRAGMS, AND SPECIAL MOMENT RESISTING CONCRETE FRAMES.

THE FOLLOWING APPLIES TO ALL SHEAR WALLS DESIGNATIONS OF B, C, D, & E:

a. 3x SILL PLATE
b. 3x STUDS AND BLOCKS BETWEEN ADJACENT PANELS
c. ½" EDGE DISTANCES FOR PLYWOOD BOUNDARY NAILING
d. ALL PANEL JOINT AND SILL PLATE NAILING SHALL BE STAGGERED
e. FOR THE ANCHOR BOLTS IN SHEAR WALL SILL PLATES, PROVIDE 0.229"x3"x3" PLATE WASHERS WITH SLOTTED CUT HOLE

Structural Observation/Significant Construction Stages

(Only Checked items are required)

Firm or Individual to be responsible for the Structural Observation:
Name: McCullum Engineering, Inc. ☐ Licensed Architect ☑ Registered Engineer
Phone: (310) 944-0898 California Registration Number: C68850

CONSTRUCTION STAGE	Construction Type	Elements/Connections to be observed
Foundation	☑ Footing, Stem Walls, Piers ☐ Mat Foundation ☐ Caisson, Pile, Grade Beams ☐ Stepping/Retaining Foundation, Hillside Special Anchors ☐ Others:	Shear Wall Anchor Bolts and Holdowns, Foundation Reinforcement, Grade Beam Reinforcement, Steel Column Base/Pad Connection, WSWH Panel Anchor Bolts
Wall	☐ Concrete ☐ Masonry ☑ Wood ☐ Others:	Shear Wall Nailing, Shear Transfer Connections, Drag Straps/Struts, Steel Column Connections
Frame	☐ Steel Moment Frame ☐ Steel Braced Frame ☐ Concrete Moment Frame ☐ Masonry Moment Frame ☐ Others:	
Diaphragm	☐ Concrete ☐ Steel Deck ☐ Wood ☐ Others:	
Others		

DECLARATION BY OWNER OR OWNER'S REPRESENTATIVE

I, the owner of the project the owner's representative, declare that the above listed firm or individual is hired by me to be the Structural Observer.

Signature Date

GENERAL NOTES FOR STRUCTURAL OBSERVATION

(1) Structural Observation is required for the structural system in accordance with the Information Bulletin No. P/BC 2002-024 Structural Observation is the visual observation at the construction site of the elements and connections of the structural system at significant construction stages and the complete structure for general conformance to the approved plans and specifications. Structural Observation does not waive the responsibility for the inspections required of the building inspector or the deputy inspector.

(2) The owner shall employ a State of California registered civil or structural engineer or licensed architect to perform the structural observation. The Department of Building and Safety (LADBS) recommends the use of the engineer or architect responsible for the structural design who are independent of the contractor.

(3) The structural observer shall provide evidence of employment by the owner or the owner's representative. A letter from the owner, the owner's representative, or a copy of the service agreement for services shall be sent to the building inspector before the first site visit.

(4) The owner or owner's representative shall coordinate and call for a meeting between the engineer or architect responsible for the structural design, structural observer, contractor, affected subcontractors and deputy inspectors. The purpose of the meeting shall be to identify the major structural elements and connections that affect the vertical and lateral load systems of the structure and to review scheduling of the required observations. A record of the meeting shall be included in the first observation report submitted to the building department.

(5) The Structural Observer shall perfrom site visits at those steps in the progress of the work that allow for correction of deficiencies without substantial effort or uncovering of the work involved. At a minimum, the listed significatn construction stages on the following Structural Observation/Significant Construction Stages table require a site visit and an observation report from the structural observer.

(6) The structural observer shall prepare a report of the Structural Observatoin Report from IN/Form.08 (part 1) for each significant stage of construction observered. The original of the Structural Observation report shall be sent to the building inspector's office and shall be signed and sealed (wet stamp) by the responsible structural observer. One copy of the observation report shall be attached to the approved plans. The attached copy to the plans shall be signed and sealed (wet stamp) by the reponsible structural observer or their designee. Copied of the report shall also be given to the owner, contractor, and deputy inspector. Any deficiency noted on the observation report will become the responsibility of the structural engineer or record to verify its compliance by him (her), or by a registered deputy inspector at the discretion of the Structural Observer.

(7) A final structural observation report and that of the registered deputy inspector must be submitted which shows that all observed deficiences were resolved and structural system generally conforms with the approved plans and specifications. The Department of Building and Safety (LADBS) will not accept the structural work without this final observation report and that of the registered deputy inspector (when provided) and the correction of specific deficiencies noted during normal building inspection.

(8) The Structural Observer shall provide the original stamped and signed Structural Observation report to the City of Los Angeles Building Department of Building and Safety Building Inspector.

(9) When the owner elects to change the structural observer of record, the owner shall:

a) notify the building inspector in writing before the next inspection by submitting completed "Structural Observation Program" and Designation of the Structural Observer" from IN/Form.08 (part 2)
b) call an additional preconstruction meeting, and
c) furnish the replacement structural observer with a copy of all previous observation reports.

The replacement structural observer shall approve the correction of the orginal observed deficiencies unless otherwise approved by plan check supervisor. The policy of the Department shall be to correct any property noted deficiencies without consideration of thier source.

(10) The engineer or architect of record shall develop all changes relating to the structural systes. The building department shall review and approve all changes to the approved plans and specifications.

SPECIAL INSPECTION (BY A CERTIFIED INSPECTOR) IS REQUIRED FOR THE FOLLOWING:

ELEMENT(S)	TYPE OF INSPECTION
–SIMPSON SET-3G EPOXY	CONTINUOUS INSPECTION
–FIELD WELDS	CONTINUOUS INSPECTION
–SHEAR PANELS WHERE THE FASTENER SPACING OF THE SHEATHING IS 4 INCHES ON CENTER OR LESS	PERIODIC INSPECTION

McCullum Engineering Inc.
727 2nd St. Suite 104
Hermosa Beach, CA 90254
(310) 944-0898
email: EMenginearing@verizon.net

PROJECT
Addition & Remodel
537 S. Helberta Ave.
Redondo Beach, CA 90277

DRAWING
General Notes & Schedules

REVISIONS	BY
△	
△	
△	

JOB# 25-021
ENGINEER EWM
DRAWN
CHECKED
FILE 537 Helberta
DATE 6/12/25
SCALE 1/4"=1'-0"

SHEET
S0
OF 14 SHEETS

NOTES

CONCRETE SHALL HAVE A MINIMUM ULTIMATE COMPRESSIVE STRENGTH OF 2500 PSI AT 28 DAYS FOR POURED-IN-PLACE CONTINUOUS AND SPREAD FOOTINGS.

PROVIDE A CORROSION RESISTANT WEEP SCREED AT FOUNDATION PLATE WHICH ALLOWS TRAPPED WATER TO DRAIN TO THE EXTERIOR OF THE BUILDING. MINIMUM HEIGHT ABOVE GRADE 4".

FOR ALL SHEARWALLS △B △C △D & △E – SILL PLATES AND PANEL EDGE STUDS SHALL BE 3x MEMBERS

FOUNDATION SILLS SHALL BE NATURALLY DURABLE OR PRESERVATIVE TREATED WOOD

ALL HOLD DOWNS MUST BE IN PLACE PRIOR TO FOUNDATION INSPECTION

ALL BOLT HOLES SHALL BE DRILLED 1/32 TO 1/16 INCHES OVERSIZED

MINIMUM 3"x3"x0.229" SQUARE PLATE WASHERS SHALL BE USED WITH ALL ANCHOR BOLTS IN SHEAR WALL SILL PLATES

CONTRACTORS RESPONSIBLE FOR THE CONSTRUCTION OF A WIND OR SEISMIC FORCE RESISTING SYSTME/COMPONENT LISTED IN THE "STATEMENT OF SPECIAL INSPECTION" SHALL SUBMIT A WRITTEN STATEMENT OF RESPONSIBILITY TO THE LADBS INSPECTORS AND THE OWNER PRIOR TO THE COMMENCEMENT OF WORK ON SUCH SYSTEM OR COMPONENT PER 2022 CBC

HOLDOWN CONNECTOR BOLTS INTO WOOD FRAMING REQUIRE APPROVED PLATE WASHERS; AND HOLDOWS SHALL BE RETIGHTENED JUST PRIOR TO COVERING THE WALL FRAMING. CONNECTOR BOLTS INTO WOOD FRAMING REQUIRE STEEL PLATE WASHERS

PROVIDE LEAD HOLE 40%-70% TO THREADED SHANK DIAMETER AND FULL DIAMETER FOR SMOOTH SHANK PORTION.

SPECIAL INSPECTION (BY A CERTIFIED INSPECTOR) IS REQUIRED FOR THE FOLLOWING:

ELEMENT(S)	TYPE OF INSPECTION
-SIMPSON SET-3G EPOXY	CONTINUOUS INSPECTION
-FIELD WELDS	CONTINUOUS INSPECTION
-SHEAR PANELS WHERE THE FASTENER SPACING OF THE SHEATHING IS 4 INCHES ON CENTER OR LESS	PERIODIC INSPECTION

EXISTING STRUCTURAL SYSTEMS/CONDITIONS MAY DIFFER FROM THOSE SHOWN ON PLANS
**CONTRACTOR TO VERIFY ALL (E) CONDITIONS MATCH THOSE NOTED ON PLANS, E.O.R. TO BE CONTACTED SHOULD DISCREPANCIES EXIST.

NOTE: CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ADEQUATE TEMPORARY SHORING OF STRUCTURAL MEMBERS AND FRAMING AS NEEDED, AND TO INFORM THE ENGINEER OF RECORD OF ANY DEVIATION OF EXISTING FRAMING CONDITIONS

FASTENERS IN PRESERVATIVE TREATED WOOD OR FIRE RETARDANT TREATED WOOD SHALL BE OF HOT DIPPED GALVANIZED STEEL OR STAINLESS STEEL

FJ3	2x8 F.J. @ 16" o.c. (BB-1) MAX SPAN = 10'
FJ4	(2) 2x6 F.J. @ 16" o.c.
DJ2	2x8 D.J. @ 16" o.c. (BB-2)

NOTE: ALL NON-BEARING WALLS PARALLEL TO F.J. DIRECTION TO HAVE DOUBLE JOISTS DIRECTLY BELOW

FOUNDATION KEY

(N) 15"W CONT. FOOTING w/ (2) #4 BARS T&B, EMBED 24" INTO APPROVED SOIL (SEE 1/SD1)

(E) FOOTING

(N) PAD FOOTING PER PLANS

DESIGN DEAD LOADS

ROOF	- 14 psf.
FLOOR	- 14 psf.
DECK	- 20 psf.
CEILING	- 7 psf.
EXT. WALL	- 16 psf.
INT. WALL	- 8 psf.

DESIGN LIVE LOADS

ROOF	- 20 psf.
CEILING	- 10 psf.
FLOOR	- 40 psf
DECK	- 60 psf.

SEISMIC COEFFICIENTS

F_a= 1.0 R= 6.5 Ω_o = 2.5
S_S= 1.879 I = 1.0 F_v= 1.5
S_{DS}= 1.253 Site Class D
ρ = 1.3 C_s = 3.0

-SEISMIC DESIGN CATEGORY D
-EQUIVALENT LATERAL FORCE PROC.
-FORCE RESISTING SYSTEM: BEARING WALL-SHEAR WALL SYSTEM/SPECIAL STEEL MOMENT FRAMES, OMF, (WUF-W) (R=3.5, Ω_o=3.0, C_d=3.0)

WIND PRESSURE COEFFICIENTS

110 mph, 30 Second Gust Force
I=1.0 Exposure C
P_{S30A}= 21.54 psf P_{S30C}= 14.4 psf
P_{S30B}= -5.69 psf P_{S30D}= -3.15 psf

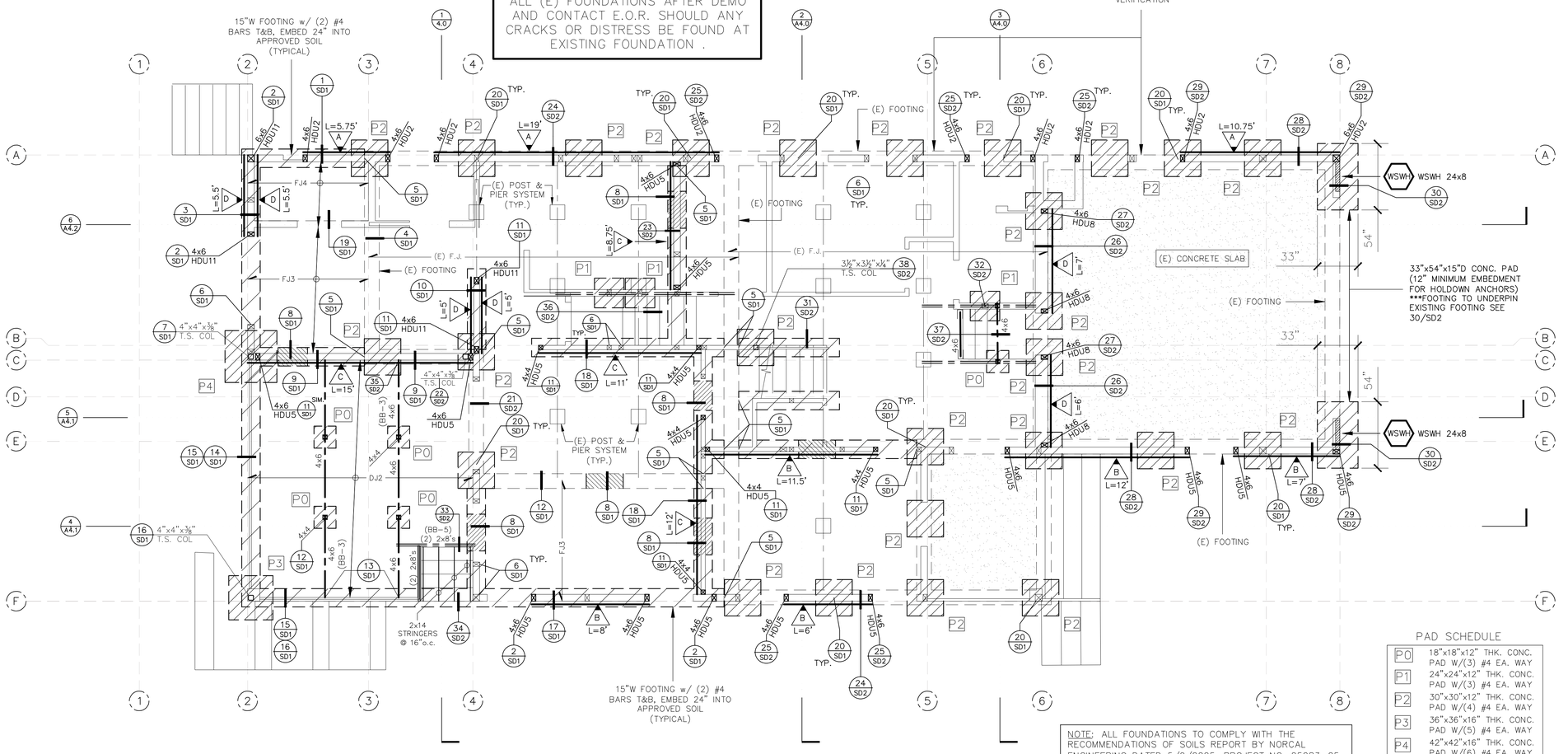
SOIL DESCRIPTION

STIFF SOIL (SITE CLASS D) W/ 2000 psf. BEARING VALUE

NOTE: CONTRACTOR SHALL EXAMINE ALL (E) FOUNDATIONS AFTER DEMO AND CONTACT E.O.R. SHOULD ANY CRACKS OR DISTRESS BE FOUND AT EXISTING FOUNDATION .

EXISTING 12"W CONCRETE FOOTING, EMBEDDED A MINIMUM OF 18" INTO EXISTING SOIL
***CONTRACTOR TO CONTACT E.O.R. SHOULD DISCREPANCIES EXIST

(E) 12"W FOOTING EMBEDDED A MINIMUM OF 18" INTO UNDISTURBED SOIL - CONTRACTOR TO EXCAVATE IN TWO LOCATIONS AND TO CONTACT E.O.R. FOR VERIFICATION



NOTE: ALL FOUNDATIONS TO COMPLY WITH THE RECOMMENDATIONS OF SOILS REPORT BY NORCAL ENGINEERING DATED 5/9/2025, PROJECT NO. 25283-25

PAD SCHEDULE

P0	18"x18"x12" THK. CONC. PAD W/(3) #4 EA. WAY
P1	24"x24"x12" THK. CONC. PAD W/(3) #4 EA. WAY
P2	30"x30"x12" THK. CONC. PAD W/(4) #4 EA. WAY
P3	36"x36"x16" THK. CONC. PAD W/(5) #4 EA. WAY
P4	42"x42"x16" THK. CONC. PAD W/(6) #4 EA. WAY

NORTH

FOUNDATION PLAN — SCALE 1/4"=1'-0"

McCullum Engineering Inc.
727 2nd St., Suite 104
Hermosa Beach, CA 90254
(310) 944-0898
email: EMenginearing@verizon.net

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STAMP

PROJECT
Addition & Remodel
537 S. Helberta Ave.
Redondo Beach, CA 90277

DRAWING
Foundation Plan

REVISIONS	BY
△	
△	
△	

JOB# 25-021
ENGINEER EWM
DRAWN
CHECKED
FILE 537 Helberta
DATE 6/12/25
SCALE 1/4"=1'-0"

SHEET S1 OF 14 SHEETS

NOTES

ROOF DIAPHRAGM NAILING TO BE INSPECTED BEFORE COVERING. FACE GRAIN OF PLYWOOD SHALL BE PERPENDICULAR TO SUPPORTS. FLOOR SHALL HAVE TONGUE AND GROOVE OR BLOCKED PANEL EDGES. PLYWOOD SPANS SHALL CONFORM WITH TABLE 2306.2

ALL DIAPHRAGM AND SHEAR WALL NAILING SHALL UTILIZE COMMON NAILS

U.N.O., ALL 2x ROOF RAFTER AND FLOOR JOIST FRAMING MEMBERS SHALL BE MINIMUM GRADE DOUGLAS FIR–LARCH NO. 2 OR BETTER. ALL BEAMS, HEADERS, AND POSTS SHALL BE MINIMUM DOUGLAS FIR–LARCH NO. 1 OR BETTER. ALL VERTICAL WALL FRAMING MEMBERS SHALL BE DOUGLAS FIR –LARCH NO. 2 OR BETTER.

FIELD WELDING TO BE DONE BY WELDERS CERTIFIED BY THE LABDS FOR STRUCTURAL STEEL, REINFORCING STEEL. CONTINUOUS INSPECTION BY A DEPUTY INSPECTOR IS REQUIRED.

SHOP WELDS MUST BE PERFORMED IN A LA CITY BLDNG. DEPT. LICENSED FARBRICATOR'S SHOP.

ROOFING MATERIAL NOT TO EXCEED 6 PSF

ROOF SHEATHING SHALL BE 15/32" CDX APA–RATED SHEATHING, EXPOSURE 1, MIN. SPAN RATING 24/0, NAILED WITH 8d COMMON @ 6"o.c. EDGES & BOUNDARIES AND 12"o.c AT INTERMEDIATE FRAMING MEMBERS.

FLOOR SHEATHING SHALL BE 23/32" CDX APA–RATED STURD–I–FLOOR, T&G, EXPOSURE 1, MIN. SPAN RATING 20" o.c., NAILED WITH 10d COMMON @ 6"o.c. EDGES & BOUNDARIES AND 12"o.c AT INTERMEDIATE FRAMING MEMBERS, U.N.O.

LADBS LICENSED FABRICATOR IS REQUIRED FOR ALL STRUCTURAL STEEL, GLULAM BEAMS AND PARALLAMS

GLULAM AND PARALLAM BEAMS MUST BE FABRICATED BY A LA DBS LICENSED SHOP

3x4 OR 2x6 MINIMUM STUD SIZE @ 16" o.c. REQUIRED FOR BEARING WALLS OVER 10 FEET IN HT.

DRAG LINE DL

DRAG LINE: SIMPSON ST6236 @ ALL BREAKS AND DIAPHRAGM EDGE NAILING.

SPECIAL INSPECTION (BY A CERTIFIED INSPECTOR) IS REQUIRED FOR THE FOLLOWING:

ELEMENT(S)	TYPE OF INSPECTION
–SIMPSON SET–3G EPOXY	CONTINUOUS INSPECTION
–FIELD WELDS	CONTINUOUS INSPECTION
–SHEAR PANELS WHERE THE FASTENER SPACING OF THE SHEATHING IS 4 INCHES ON CENTER OR LESS	PERIODIC INSPECTION

SYMBOLS/ABBREVIATIONS:

F.J. = FLOOR JOISTS
R.R. = ROOF RAFTERS
C.J. = CEILING JOISTS
K.P. = KING POST
TYP. = TYPICAL
O.C. = ON CENTER
B.N. = BOUNDARY NAILING
E.N. = EDGE NAILING
SIM. = SIMILAR
V.I.F. = VERIFY IN FIELD
BLKN'G = BLOCKING

(N) = NEW
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RB = ROOF BEAM/JOIST
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HNGR = HANGER
SIMP. = SIMPSON
PSL = PARALLAM, TRUSJOIST
M.B. = MACHINE BOLT
R.B. = RIDGE BEAM/BOARD
HDR = HEADER
UNO = UNLESS NOTE OTHERWISE

INDICATES SHEAR WALL

INDICATES POST (4x4, UNO)

INDICATES 4x6 POST (U.N.O.)

WSWH — SIMPSON STRONG WALL WOOD SHEARWALL PER PLANS – HOLDOWN BOLTS PER MANUFACTURER

INDICATES KING POST (4x4, UNO)

INDICATES 6x6 POST (U.N.O.)

INDICATES SIMPSON HANGER "HUCQ" FOR SOLID SAWN "HHUS" FOR PSL BEAMS (U.N.O. IN DETAILS OR ON PLANS)

THE FOLLOWING APPLIES TO ALL SHEAR WALLS DESIGNATIONS OF B, C, D, & E:

a. 3x SILL PLATE
b. 3x STUDS AND BLOCKS BETWEEN ADJACENT PANELS
c. ½" EDGE DISTANCES FOR PLYWOOD BOUNDARY NAILING
d. ALL PANEL JOINT AND SILL PLATE NAILING SHALL BE STAGGERED
e. FOR THE ANCHOR BOLTS IN SHEAR WALL SILL PLATES, PROVIDE 0.229"x3"x3" PLATE WASHERS WITH SLOTTED CUT HOLE

PERIODIC SPECIAL INSPECTION IS REQUIRED FOR WOOD SHEAR WALLS, SHEAR PANELS, AND DIAPHRAGMS, INCLUDING NAILING, BOLTING, ANCHORING, AND OTHER FASTENING TO COMPONENTS OF THE SEISMIC FORCE RESISTING SYSTEM. SPECIAL INSPECTION BY A DEPUTY INSPECTOR IS REQUIRED WHERE THE FASTENER SPACING OF THE SHEATHING IS 4 INCHES ON CENTER OR LESS

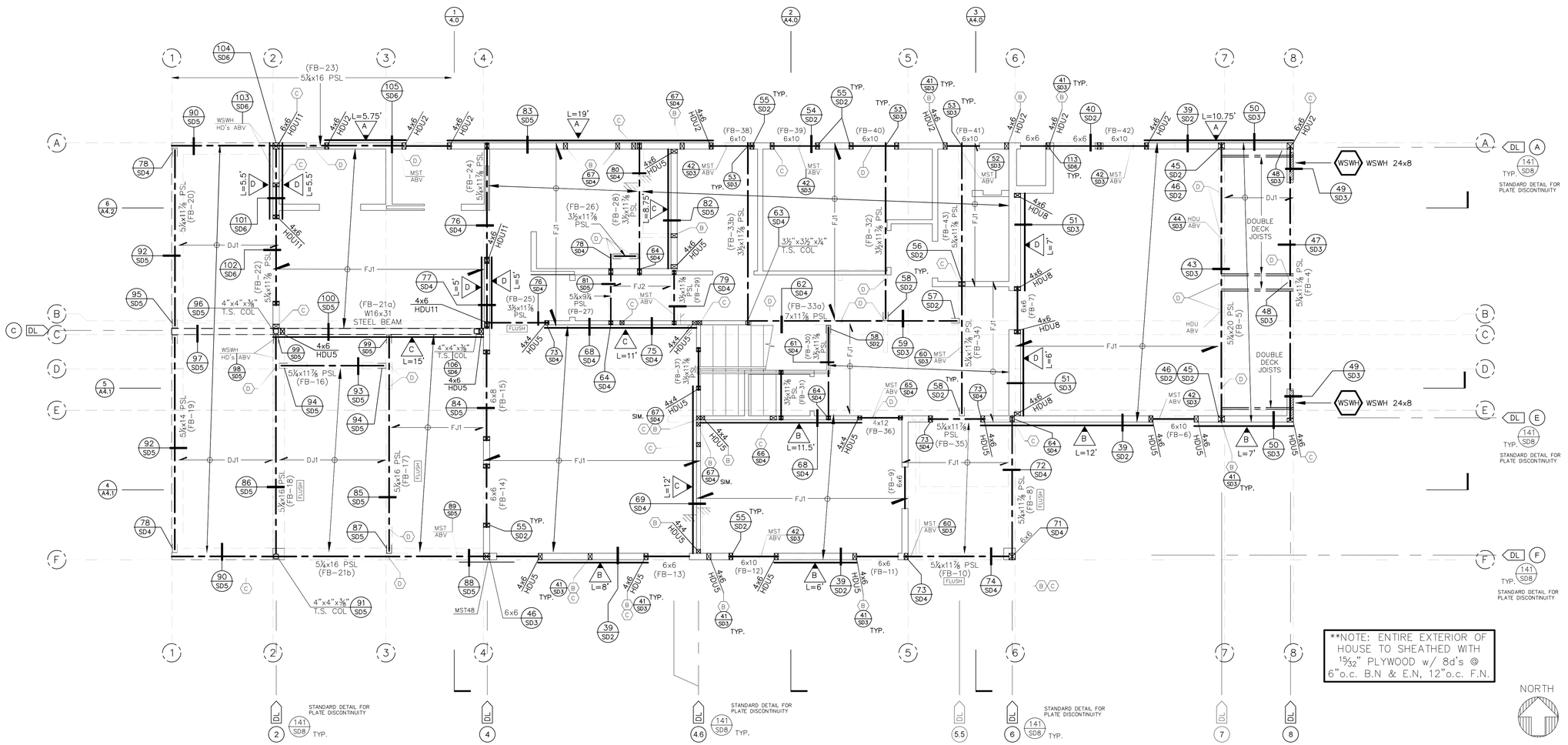
FJ1	11⅞" TJI 110 F.J. @ 16" o.c. (FB–1) MAX SPAN = 15'
DJ1	2x8 D.J. @ 16" o.c. (FB–2) MAX SPAN = 10' ***2x12 OR 2x10 DECK JOISTS MAY BE USED AND RIPPED DOWN TO 7.25"

NOTE: ALL NON–BEARING WALLS PARALLEL TO F.J. DIRECTION TO HAVE DOUBLE JOISTS DIRECTLY BELOW

FRAMING KEY

STEEL BEAM

WOOD BEAM



2nd FLOOR FRAMING PLAN

SCALE 1/4"=1'–0"

1

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PROJECT
Addition & Remodel
537 S. Helberta Ave.
Redondo Beach, CA 90277

DRAWING
2nd Floor Framing Plan

REVISIONS	BY
△	
△	
△	

JOB# 25–021
ENGINEER EWM
DRAWN
CHECKED
FILE 537 Helberta
DATE 6/12/25
SCALE 1/4"=1'–0"

SHEET S2
OF 14 SHEETS

NOTES

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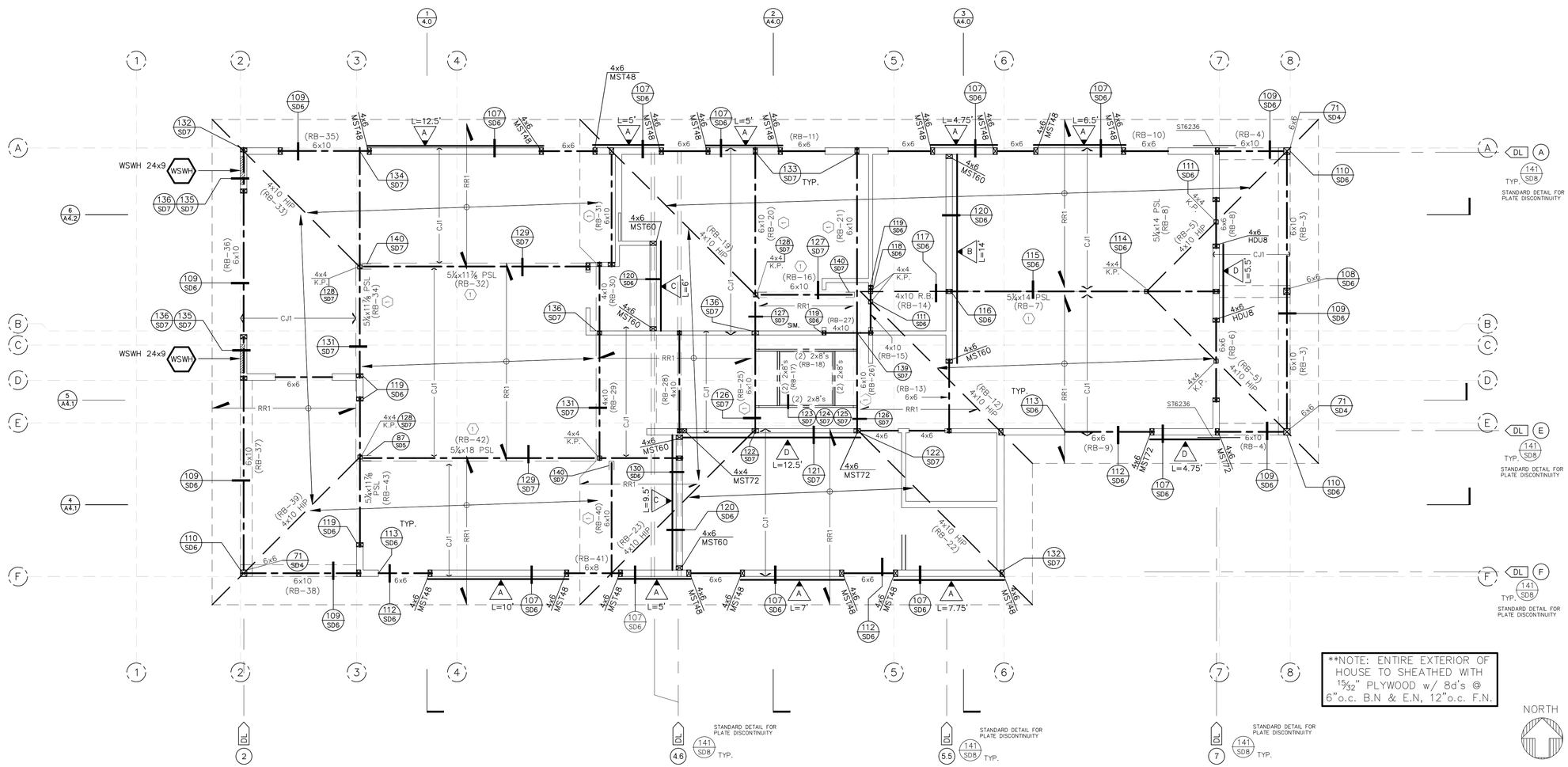
RR1	2x8 R.R. @ 16"o.c. (RB-1)
CJ1	2x6 C.J. @ 16"o.c. (RB-2)
CJ2	2x8 C.J. @ 16"o.c. (RB-2b)

KEY

(1) DESIGNATES BEAM AT CEILING LEVEL (HEIGHT OF CEILING JOISTS)



ROOF FRAMING PLAN

SCALE 1/4"=1'-0"

1

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PROJECT
Addition & Remodel
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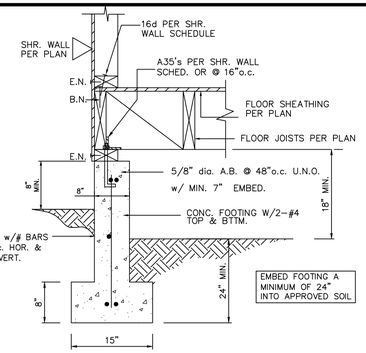
Redondo Beach, CA 90277

DRAWING
Roof Framing Plan

REVISIONS	BY
△	
△	
△	

JOB# 25-021
ENGINEER EWM
DRAWN
CHECKED
FILE 537 Helberta
DATE 6/12/25
SCALE 1/4"=1'-0"

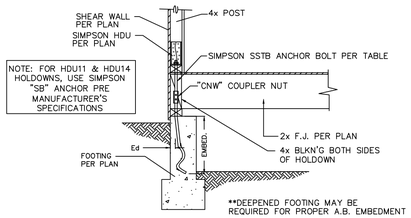
SHEET S3
OF 14 SHEETS



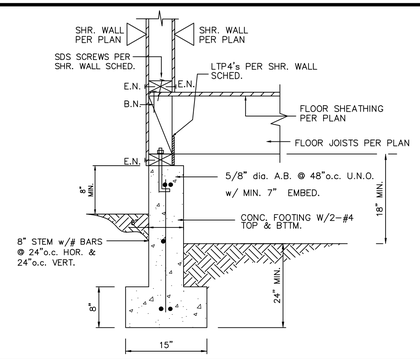
FOOTING DETAIL 1

HOLD DOWN	ANCHOR DIA.	SDS SCREWS	EDGE DISTANCE (Ed)	EMBEDMENT
HDU2	5/8"	6	1-7/8" MIN.	12"
HDU5	5/8"	14	1-7/8" MIN.	16"
HDU8	7/8"	20	2-3/4" MIN.	20"
HDU11	1"	30	2-3/4" MIN	24"
HDU14	1"	36	2-3/4" MIN	24"

**SDS SCREWS - 2½" LONG, PER MANUFACTURER SPECIFICATIONS



HOLDOWN DETAIL 2



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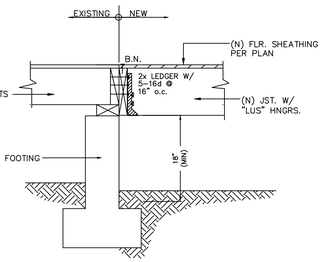

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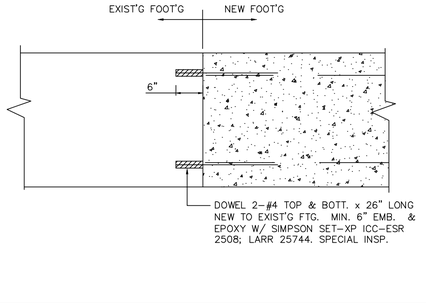

FOOTING-FOOTING DETAIL 5

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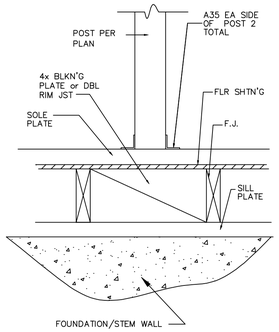
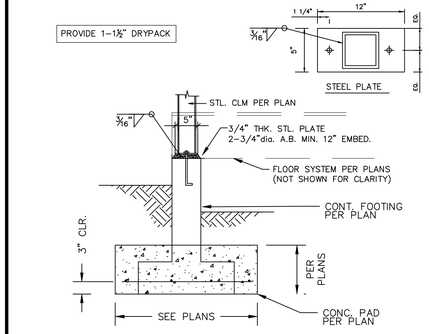
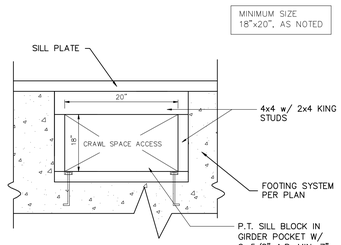


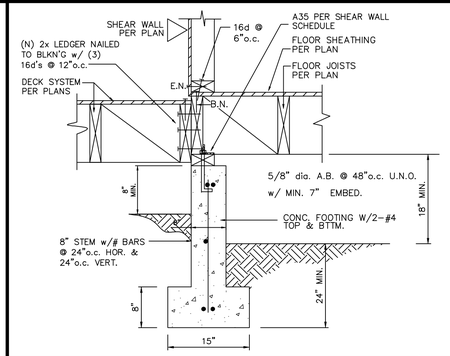
POST-BASE DETAIL 6



PAD FOOTING DETAIL 7



ACCESS DETAIL 8



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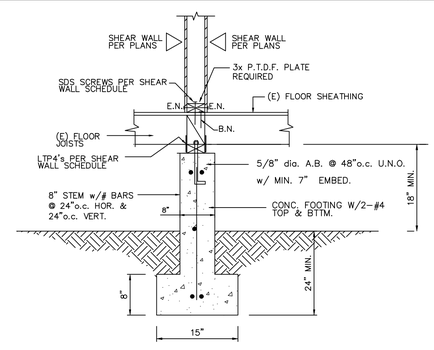


FOOTING DETAIL 10

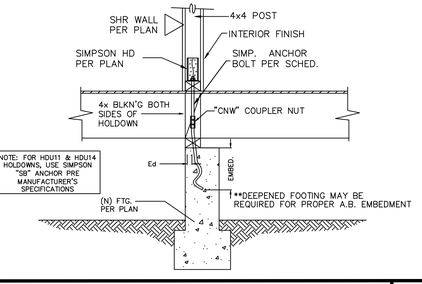
PROJECT
Addition & Remodel
537 S. Helberta Ave.
Redondo Beach, CA 90277

DRAWING
Structural Details

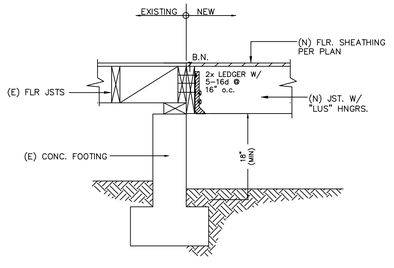
REVISIONS	BY
△	
△	
△	

JOB#	25-021
ENGINEER	EWM
DRAWN	
CHECKED	
FILE	537 Helberta
DATE	6/12/25
SCALE	NTS

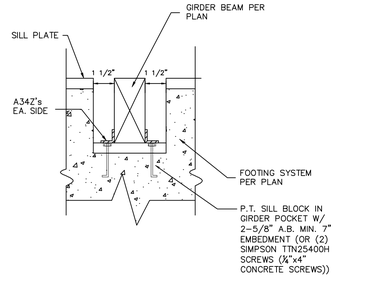
SHEET SD1
OF 14 SHEETS



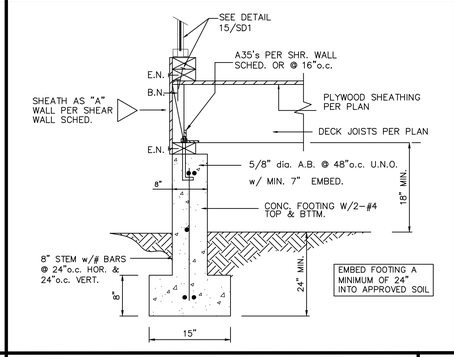
HOLDOWN DETAIL 11



FOOTING DETAIL 12



POCKET GIRDER DETAIL 13



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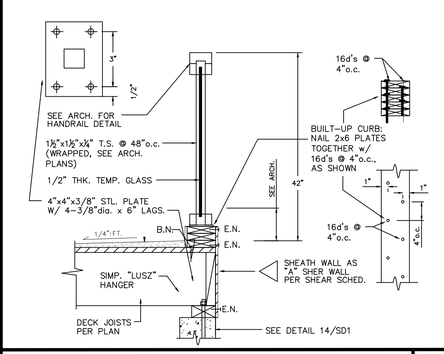
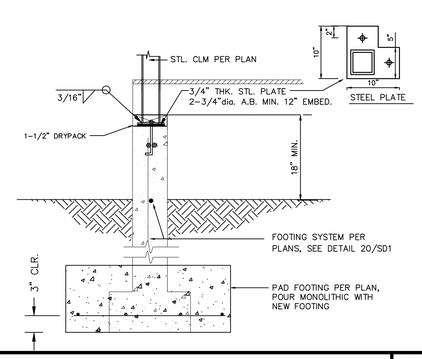
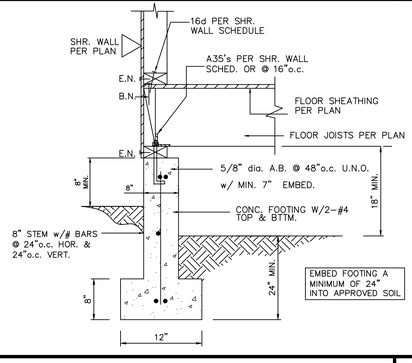


GUARDRAIL DETAIL 15



PAD FOOTING DETAIL 16



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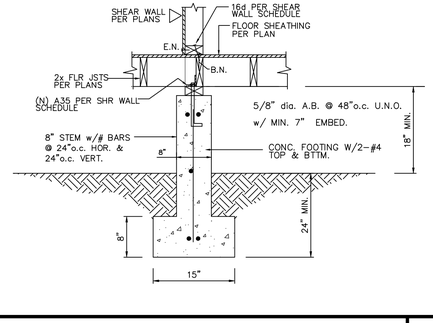

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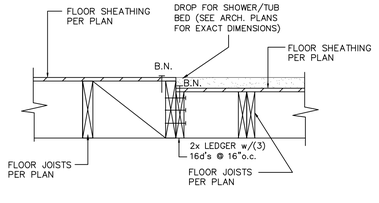
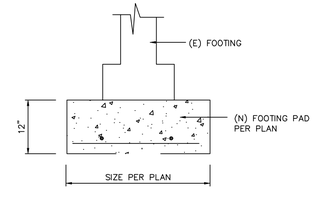
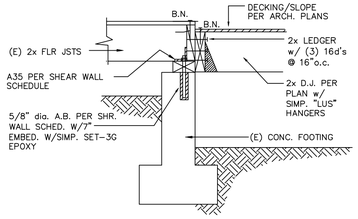


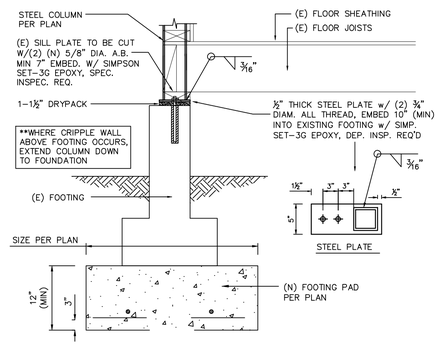
CURBLESS SHOWER DETAIL 19



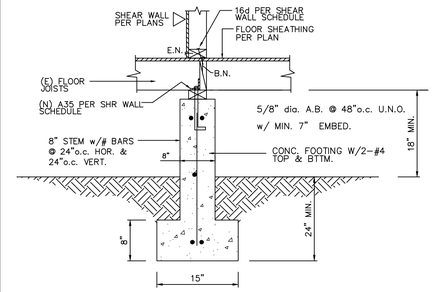
PAD FOOTING DETAIL 20



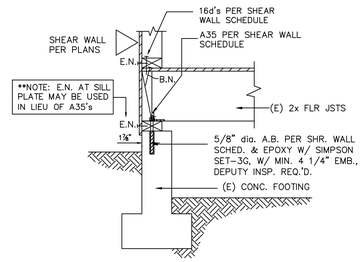
FOOTING DETAIL **21**



DETAIL **22**



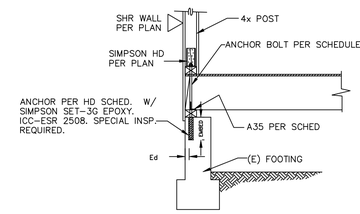
FOOTING DETAIL **23**



FOOTING DETAIL **24**

HOLD DOWN	ANCHOR DIA.	SDS SCREWS	EDGE DISTANCE (Ed)	EMBEDMENT
HDU2	5/8"	6	1-7/8" MIN.	10"
HDU5	5/8"	14	1-7/8" MIN.	10"
HDU8	7/8"	20	2-3/4" MIN.	15"

**SDS SCREWS - 2½" LONG, PER MANUFACTURER SPECIFICATIONS



HOLDOWN DETAIL **25**

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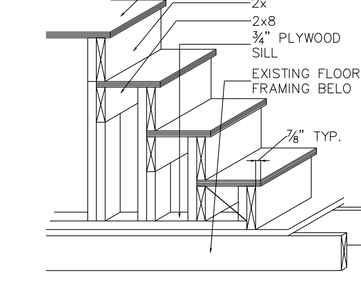
PROJECT
Addition & Remodel
537 S. Helberta Ave.
Redondo Beach, CA 90277

DRAWING
Structural Details

REVISIONS	BY

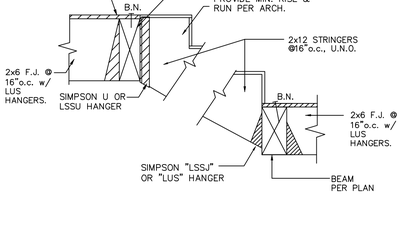
JOB# 25-021
ENGINEER EWM
DRAWN
CHECKED
FILE 537 Helberta
DATE 6/12/25
SCALE NTS

SHEET
SD2
OF 14 SHEETS

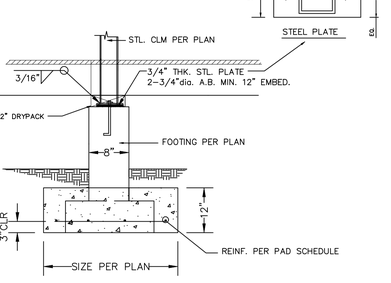


FOOTING DETAIL **26**

HOLD DOWN	ANCHOR DIA.	# SDS SCREWS	EDGE DISTANCE (Ed)	EMBEDMENT
HDU2	5/8"	6	1 7/8"	10"
HDU5	5/8"	14	1 7/8"	10"
HDU8	7/8"	20	2 3/4"	15"

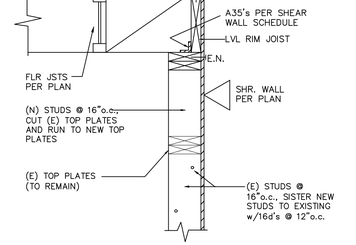


HOLDOWN DETAIL **27**

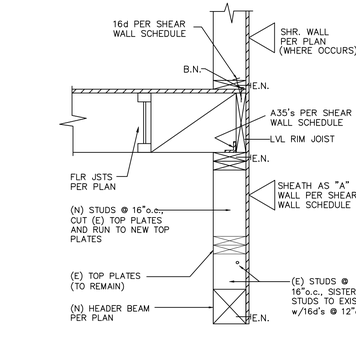


FOOTING DETAIL **28**

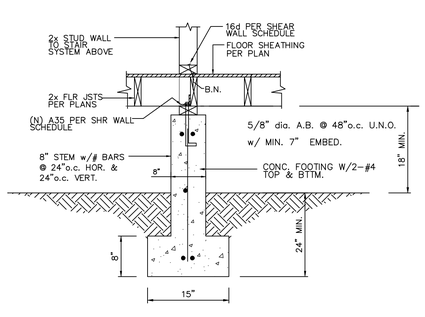
HOLD DOWN	ANCHOR DIA.	# SDS SCREWS	EDGE DISTANCE (Ed)	EMBEDMENT
HDU2	5/8"	6	1 7/8"	10"
HDU5	5/8"	14	1 7/8"	10"
HDU8	7/8"	20	2 3/4"	15"



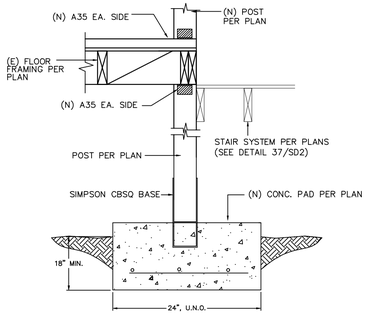
HOLDOWN DETAIL **29**



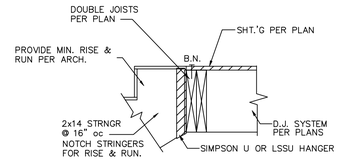
PAD FOOTING DETAIL **30**



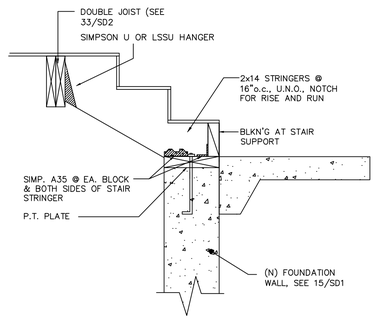
FOOTING DETAIL **31**



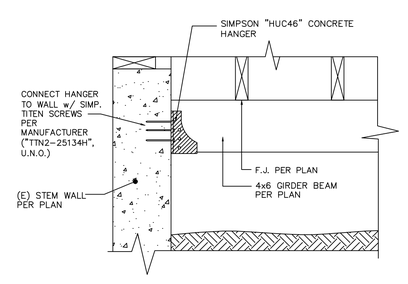
PAD FOOTING DETAIL **32**



STAIR DETAIL **33**



STAIR DETAIL **34**



GIRDER BEAM DETAIL **35**

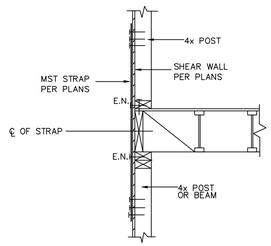
STAIR DETAIL **36**

STAIR DETAIL **37**

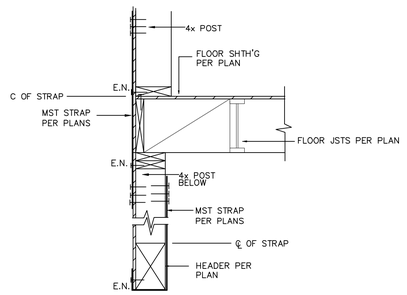
PAD FOOTING DETAIL **38**

SHEAR TRANSFER DETAIL **39**

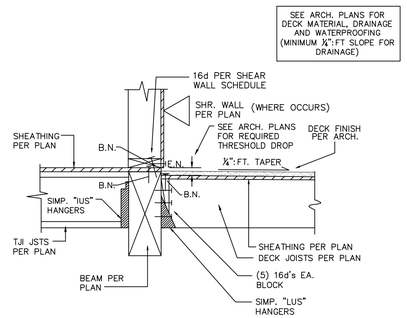
SHEAR TRANSFER DETAIL **40**



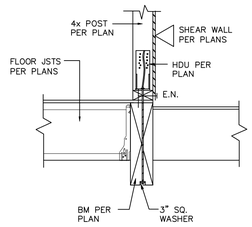
HOLDOWN STRAP DETAIL **41**



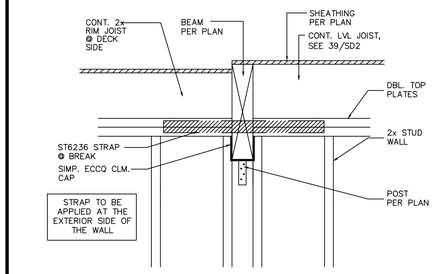
HOLDOWN STRAP DETAIL **42**



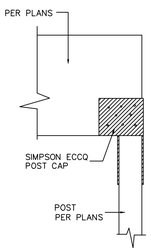
FLOOR BEAM DETAIL **43**



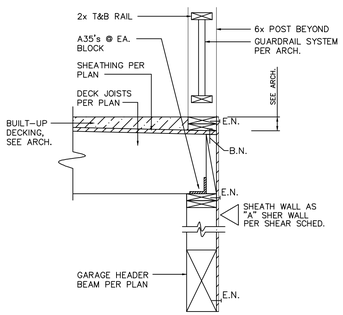
HOLDOWN–BEAM DETAIL **44**



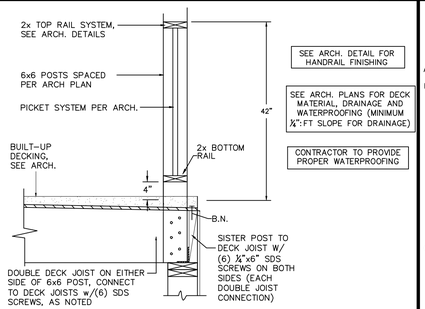
POST–BEAM DETAIL **45**



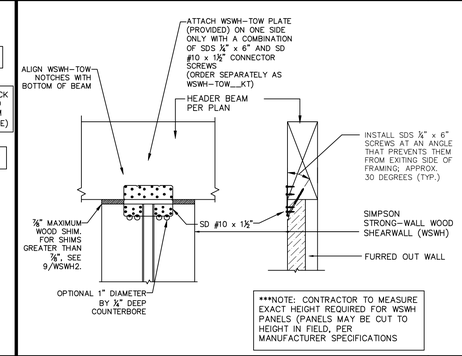
POST–BEAM DETAIL **46**



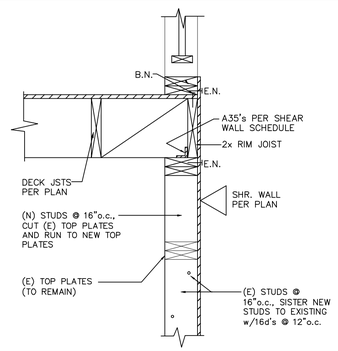
SHEAR TRANSFER DETAIL **47**



GUARDRAIL DETAIL **48**



WSWH PANEL DETAIL **49**



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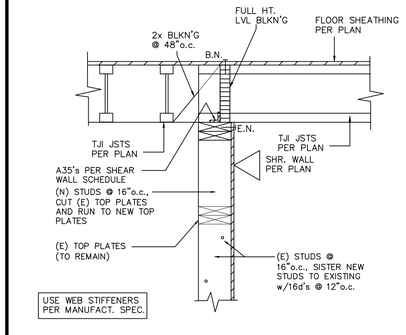
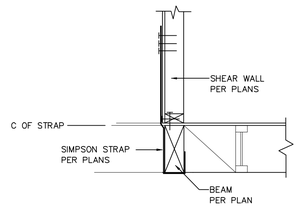
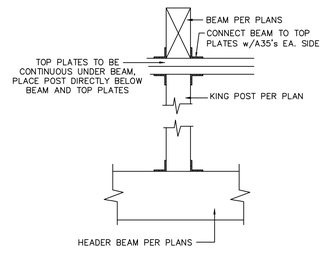


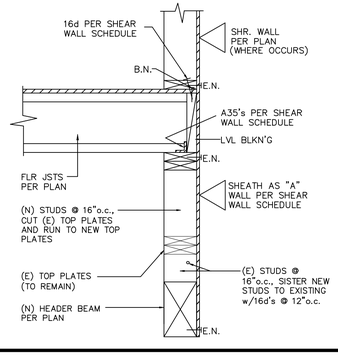
SHEAR TRANSFER DETAIL **51**



HOLDOWN STRAP DETAIL **52**



KING POST DETAIL **53**



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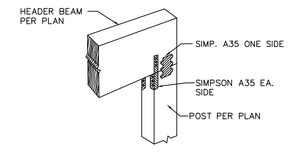
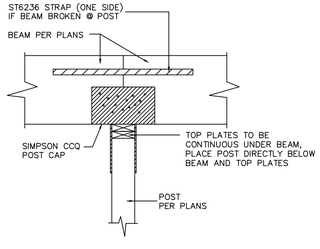


POST–BEAM DETAIL **55**



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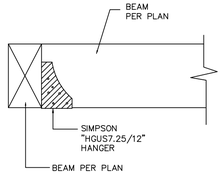
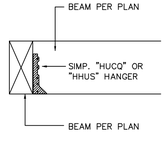
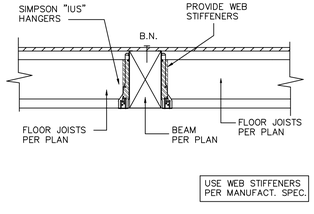


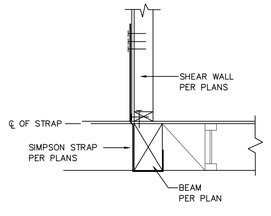
BEAM–BEAM DETAIL **57**



BEAM–BEAM DETAIL **58**



FLOOR BEAM DETAIL **59**



HOLDOWN STRAP DETAIL **60**

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email: EMenginearing@verizon.net

These drawings are not valid for construction unless stamped and signed by McCullum Engineer, Inc..

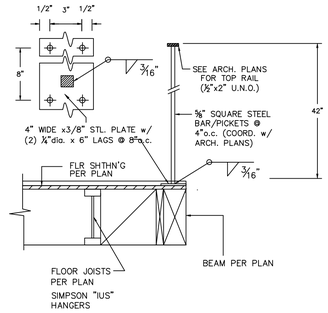
STAMP

PROJECT
Addition & Remodel
537 S. Helberta Ave.
Redondo Beach, CA 90277

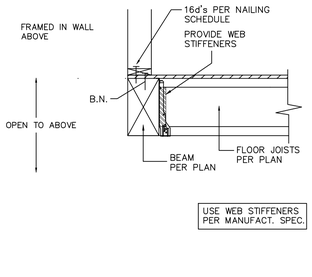
DRAWING
Structural Details

REVISIONS	BY
△	
△	
△	
JOB# 25–021	
ENGINEER EWM	
DRAWN	
CHECKED	
FILE 537 Helberta	
DATE 6/12/25	
SCALE NTS	

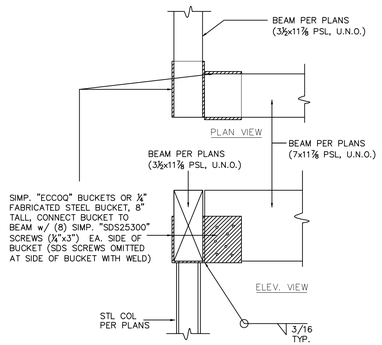
SHEET **SD3**
OF 14 SHEETS



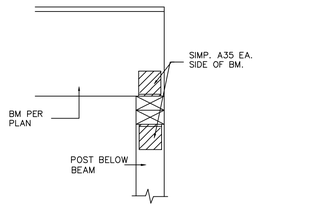
GUARDRAIL DETAIL **61**



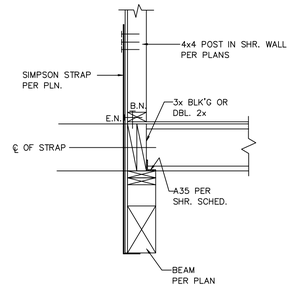
FLOOR BEAM DETAIL **62**



POST–BEAM DETAIL **63**



POST–BEAM DETAIL **64**



HOLDOWN STRAP DETAIL **65**

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Hermosa Beach, CA 90254
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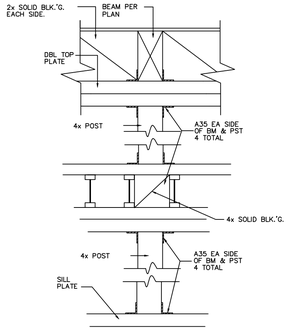
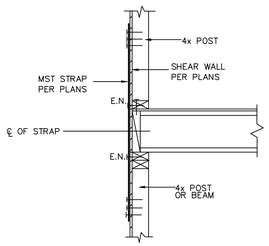
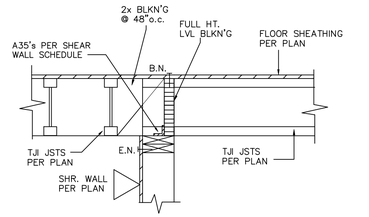


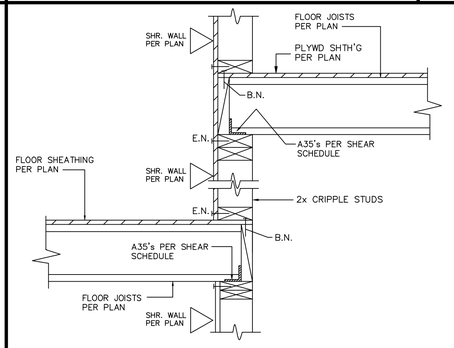
STACKING POSTS DETAIL **66**



HOLDOWN STRAP DETAIL **67**



SHEAR TRANSFER DETAIL **68**



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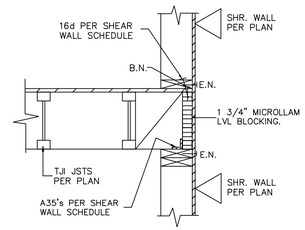
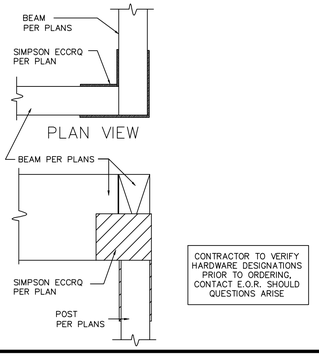
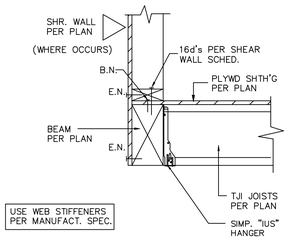


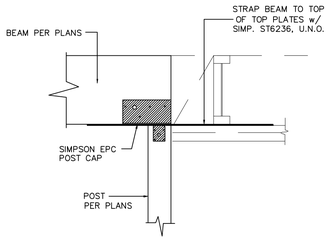
SHEAR TRANSFER DETAIL **70**



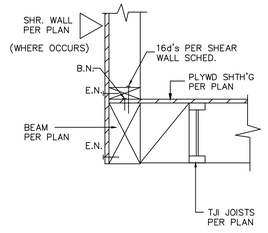
POST–BEAM DETAIL **71**



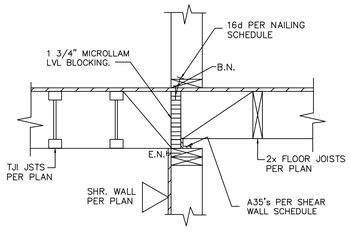
FLOOR BEAM DETAIL **72**



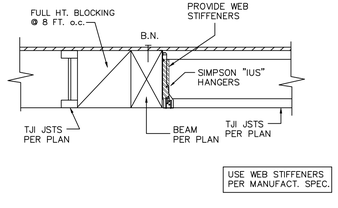
POST–BEAM DETAIL **73**



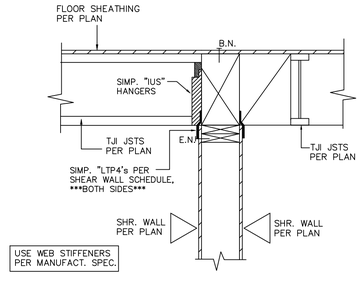
FLOOR BEAM DETAIL **74**



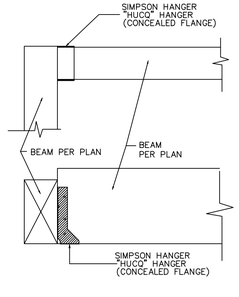
SHEAR TRANSFER DETAIL **75**



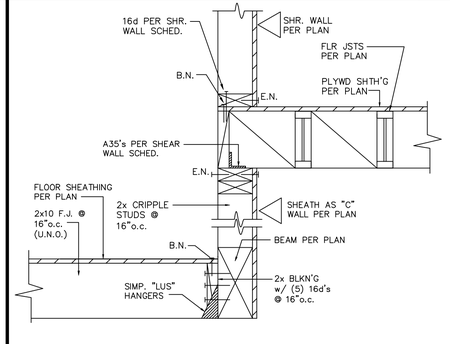
FLOOR BEAM DETAIL **76**



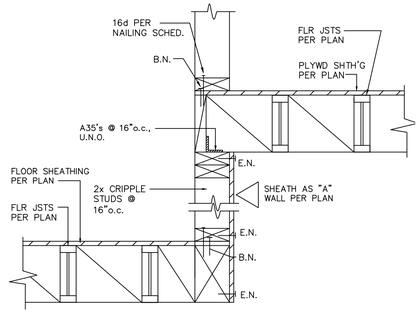
SHEAR TRANSFER DETAIL **77**



BEAM–BEAM DETAIL **78**



SHEAR TRANSFER DETAIL **79**



FLOOR BEAM DETAIL **80**

PROJECT
Addition & Remodel
537 S. Helberta Ave.
Redondo Beach, CA 90277

DRAWING
Structural Details

REVISIONS	BY
△	
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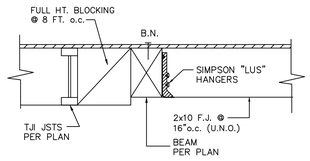
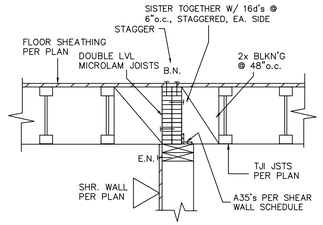
JOB# 25–021	
ENGINEER EWM	
DRAWN	
CHECKED	
FILE 537 Helberta	
DATE 6/12/25	
SCALE NTS	

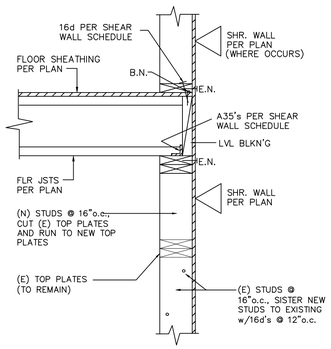
SHEET
SD4
OF 14 SHEETS



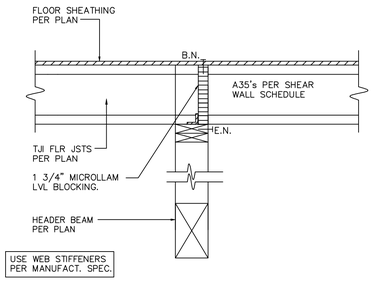
FLOOR BEAM DETAIL **81**



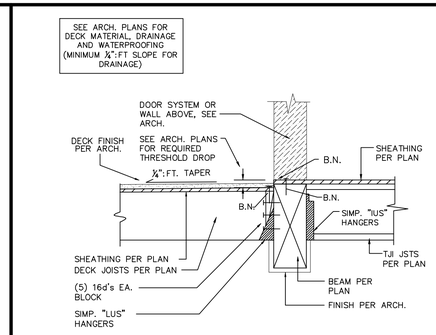
SHEAR TRANSFER DETAIL **82**



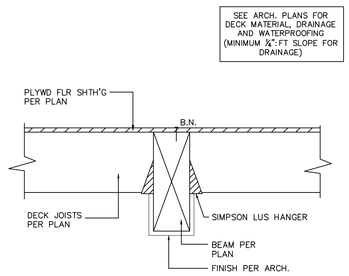
SHEAR TRANSFER DETAIL **83**



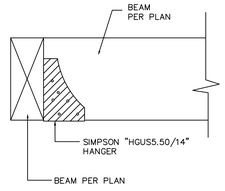
HEADER BEAM DETAIL **84**



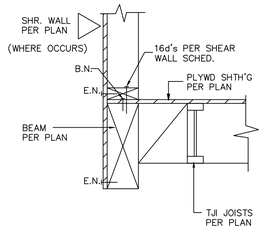
DECK BEAM DETAIL **85**



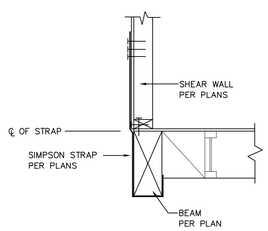
DECK BEAM DETAIL **86**



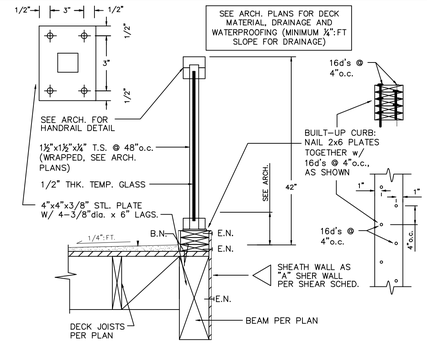
BEAM–BEAM DETAIL **87**



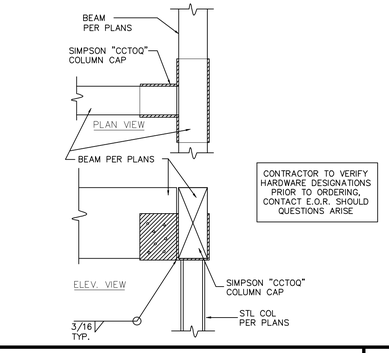
FLOOR BEAM DETAIL **88**



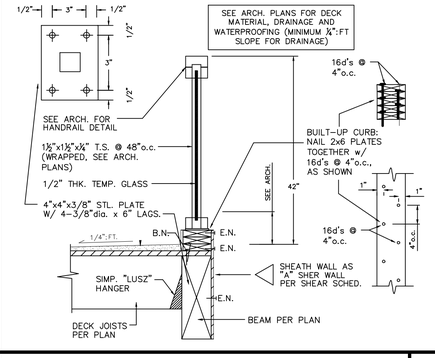
HOLDOWN STRAP DETAIL **89**



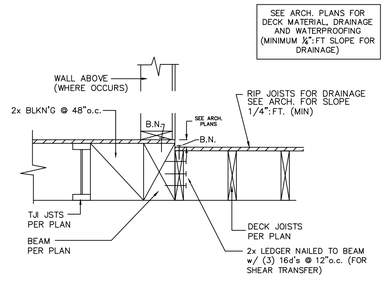
GUARDRAIL DETAIL **90**



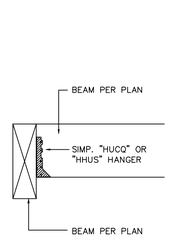
POST–BEAM DETAIL **91**



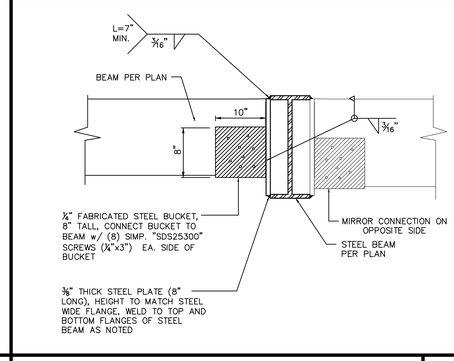
GUARDRAIL DETAIL **92**



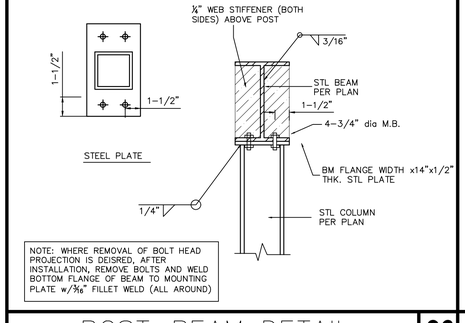
FLOOR BEAM DETAIL **93**



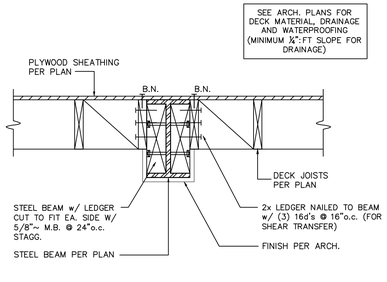
BEAM–BEAM DETAIL **94**



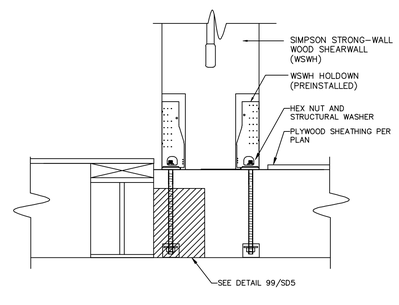
BEAM–BEAM DETAIL **95**



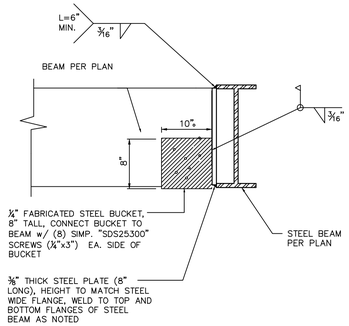
POST–BEAM DETAIL **96**



DECK BEAM DETAIL **97**



WSWH PANEL DETAIL **98**



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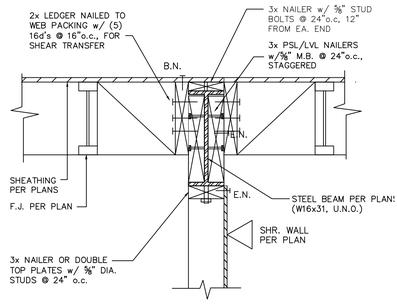

SHEAR TRANSFER DETAIL **100**

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(310) 944-0898
email: EMengineering@verizon.net

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Redondo Beach, CA 90277

DRAWING
Structural Details

REVISIONS	BY
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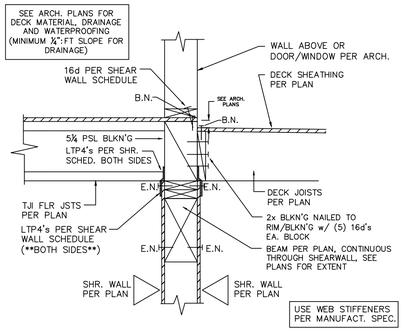
△	

JOB# 25–021
ENGINEER EWM
DRAWN
CHECKED
FILE 537 Helberta
DATE 6/12/25
SCALE NTS

SHEET
SD5
OF 14 SHEETS



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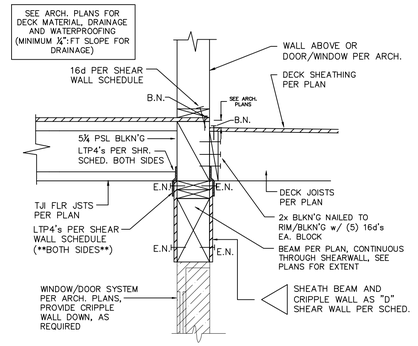

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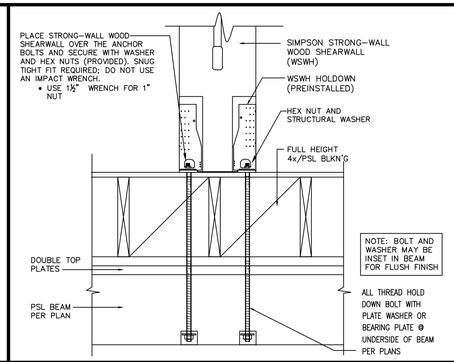
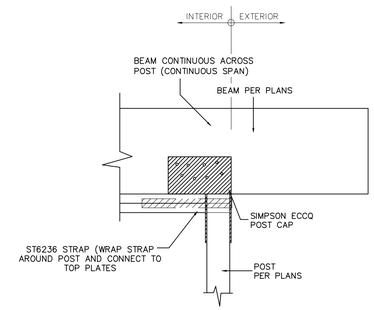
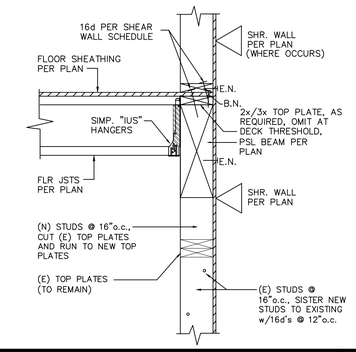


WSWH PANEL DETAIL **103**



POST-BEAM DETAIL **104**



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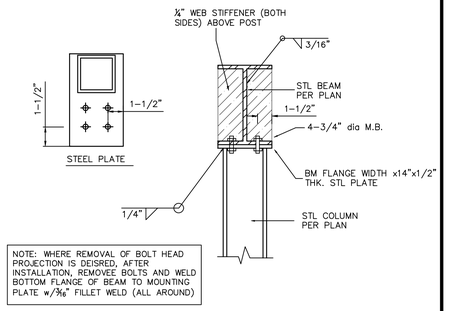
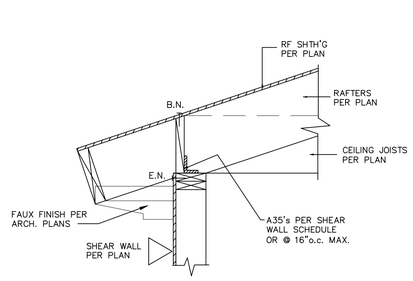


SHEAR TRANSFER DETAIL **106**



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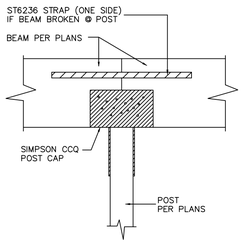

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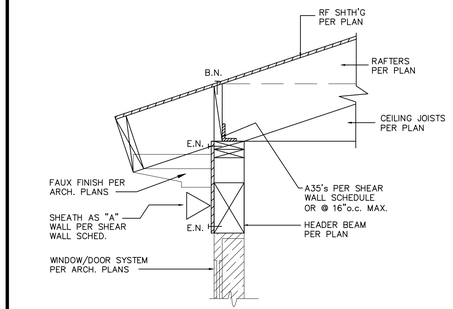
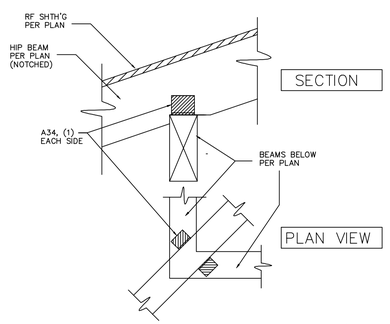
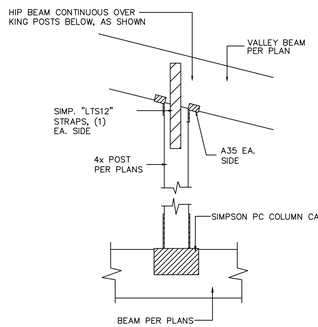


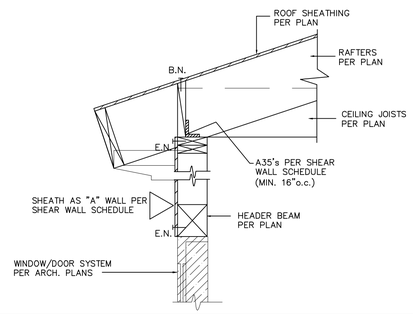
HEADER BEAM DETAIL **109**



HIP BEAM DETAIL **110**



HIP BEAM DETAIL **111**



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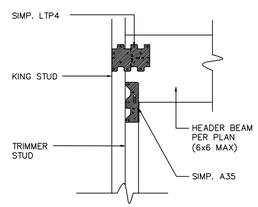

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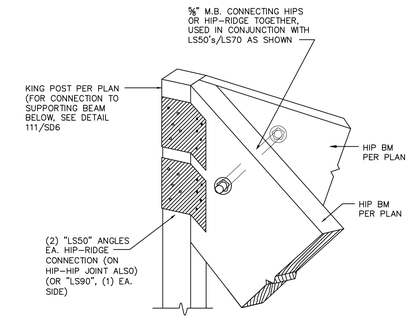
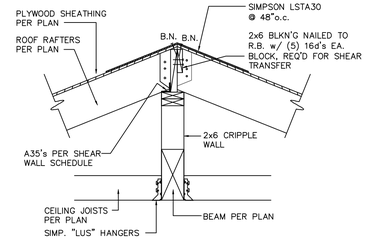
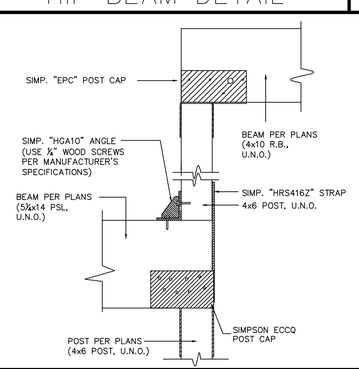


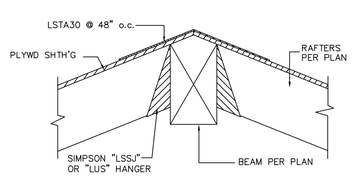
HIP-HIP DETAIL **114**



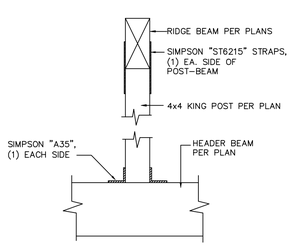
CEILING BEAM DETAIL **115**



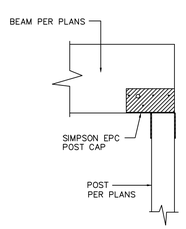
POST-BEAM DETAIL **116**



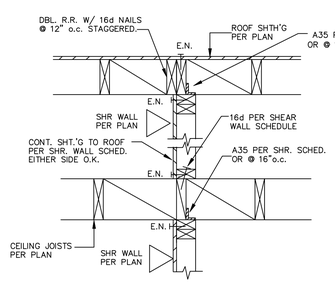
RIDGE DETAIL **117**



KING POST DETAIL **118**



SHEAR TRANSFER DETAIL **119**



SHEAR TRANSFER DETAIL **120**

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DRAWING
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REVISIONS	BY
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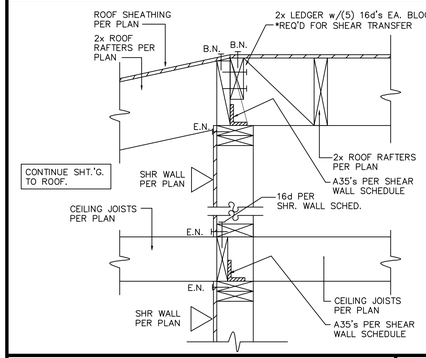
JOB# 25-021
ENGINEER EWM
DRAWN
CHECKED
FILE 537 Helberta
DATE 6/12/25
SCALE NTS

SHEET
SD6
OF 14 SHEETS



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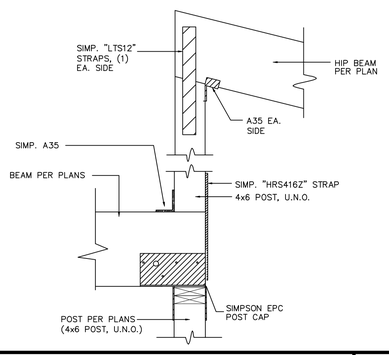
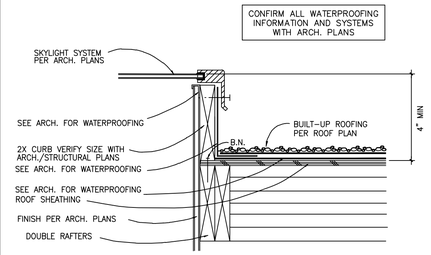
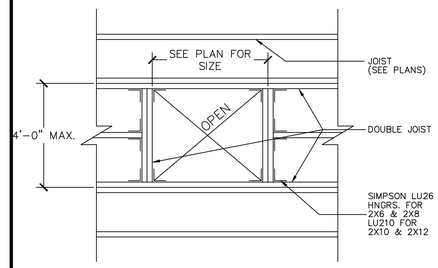


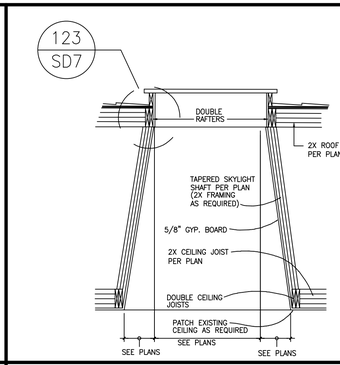
POST–BEAM DETAIL **122**



SKYLIGHT DETAIL **123**



SKYLIGHT DETAIL **124**



SKYLIGHT DETAIL **125**

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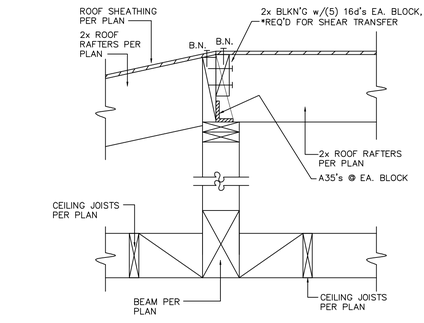
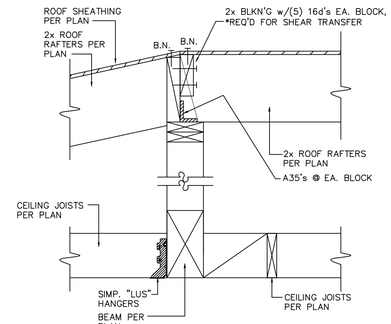
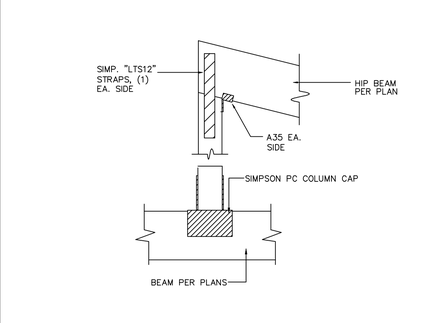
Hermosa Beach, CA 90254
(310) 944-0898
email: EMenginearing@verizon.net



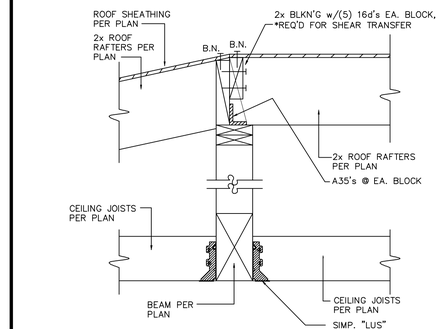
CEILING BEAM DETAIL **126**



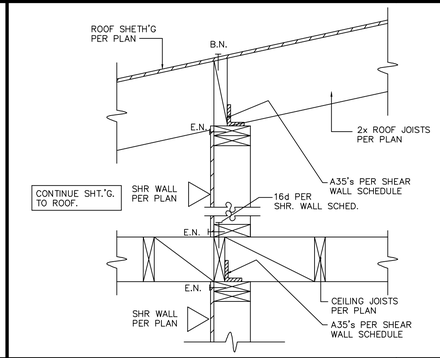
CEILING BEAM DETAIL **127**



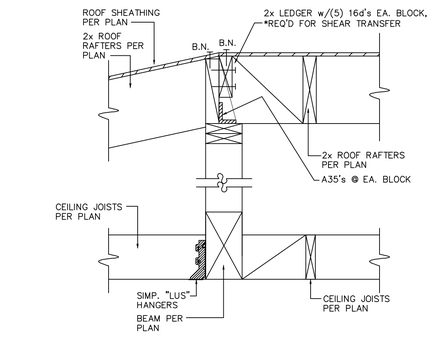
HIP BEAM DETAIL **128**



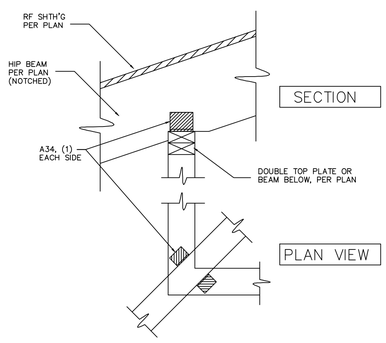
CEILING BEAM DETAIL **129**



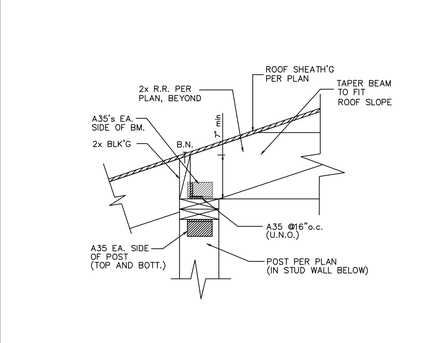
SHEAR TRANSFER DETAIL **130**



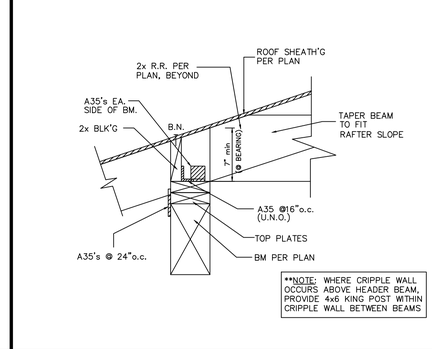
CEILING BEAM DETAIL **131**



HIP–BEAM DETAIL **132**



TAPERED BEAM DETAIL **133**



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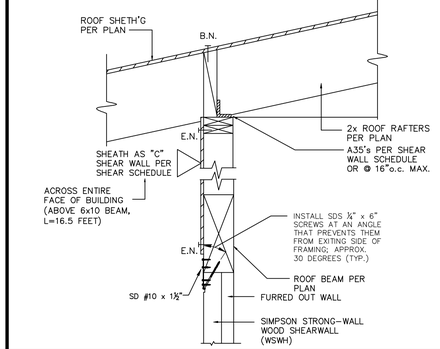

WSWH PANEL DETAIL **135**

PROJECT
Addition & Remodel
537 S. Helberta Ave.
Redondo Beach, CA 90277

DRAWING
Structural Details

REVISIONS	BY
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JOB#	25–021
ENGINEER	EWM
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FILE	537 Helberta
DATE	6/12/25
SCALE	NTS

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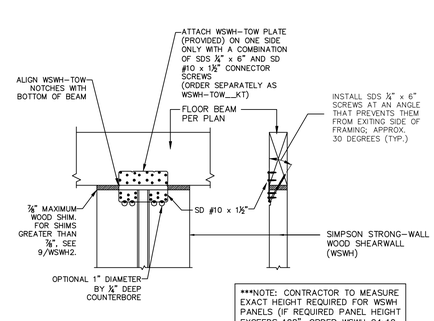
OF 14 SHEETS



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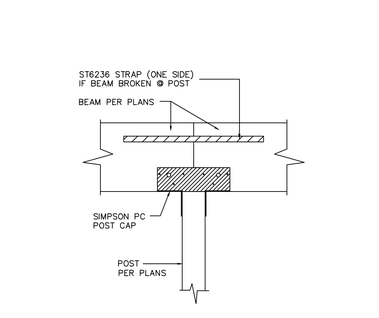
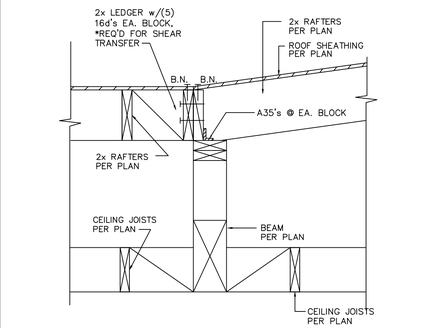


POST–BEAM DETAIL **137**



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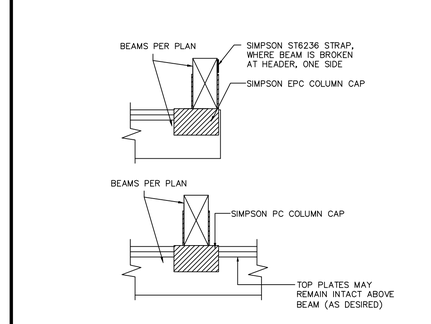

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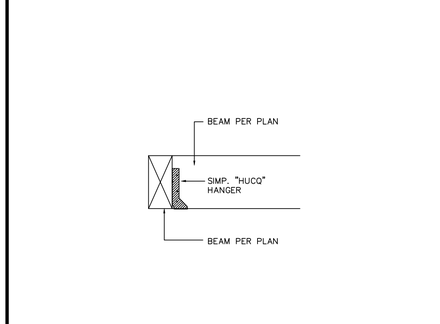

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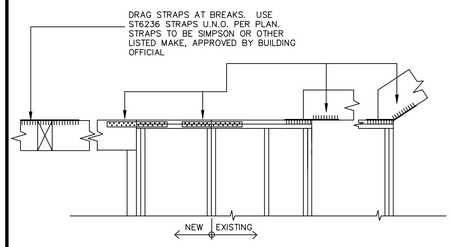

DRAG STRAP DETAIL **141** | **142** | **143** | **144** | **145**

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These drawings are not valid for construction unless stamped and signed by McCullum Engineer, Inc..

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Addition & Remodel
537 S. Helberta Ave.
Redondo Beach, CA 90277

DRAWING
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JOB# 25-021
ENGINEER EWM
DRAWN
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FILE 537 Helberta
DATE 6/12/25
SCALE NTS

SHEET
SD8
OF 14 SHEETS

GENERAL

1) ALL DESIGN, CONSTRUCTION, AND WORKMANSHIP SHALL CONFORM TO THE 2022 EDITION OF THE CALIFORNIA BUILDING CODE (CBC), AND ALL LOCAL ORDINANCES AND REQUIREMENTS. 2022 L.A. COUNTY BUILDING CODE AMENDMENTS AS REQUIRED.

2) THE APPROVED CONTRACT STRUCTURAL DRAWINGS AND SPECIFICATIONS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE METHOD OF CONSTRUCTION.

3) IT SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO PROVIDE ALL MEASURES NECESSARY TO PROTECT THE STRUCTURE DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE, BUT ARE NOT LIMITED TO, BRACING AND SHORING FOR LOADS DUE TO CONSTRUCTION EQUIPMENT, ETC. THE METHODS, TECHNIQUES, SEQUENCES, PROCEDURES, SUPERVISION, AND INSTALLATION OF ALL TEMPORARY BRACING AND SHORING SHOULD ENSURE THE SAFETY OF THE WORK. BRACING AND SHORING IS TO BE INSTALLED PER THE LATEST OSHA STANDARDS. ALL BRACING AND/OR SHORING SHALL STAY IN PLACE UNTIL ALL WORK HAS BEEN SUITABLY COMPLETED.

4) THE GENERAL CONTRACTOR SHALL VERIFY ALL DIMENSIONS PRIOR TO STARTING CONSTRUCTION. THE ENGINEER SHALL BE NOTIFIED OF ANY DISCREPANCIES OR INCONSISTENCIES.

5) DIMENSIONS SHALL TAKE PRECEDENCE OVER SCALES ON DRAWINGS. NOTES AND DETAILS ON DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL NOTES AND TYPICAL DETAILS.

6) IT SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO ENSURE THAT ALL APPLICABLE SAFETY LAWS ARE STRICTLY ENFORCED AND TO MAINTAIN A SAFE CONSTRUCTION PROJECT.

7) IT SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO PROVIDE SUPERVISION OF THE CONSTRUCTION WORK TO ENSURE THAT IT IS BUILT IN CONFORMANCE WITH THE APPROVED PLANS AND SPECIFICATIONS. THE ENGINEER WILL PROVIDE ONLY OBSERVATION OF THE WORK DURING CONSTRUCTION.

8) THE APPROVED SET OF CONSTRUCTION DOCUMENTS, INCLUDING ALL APPROVED REVISIONS, SHALL BE PRESENT AT THE JOB SITE AT ALL TIMES.

9) CONSTRUCTION MATERIALS SHALL BE SPREAD OUT IF PLACED ON FRAMED FLOORS OR ROOFS. LOADS SHALL NOT EXCEED THE DESIGN LOADING FOR THE SUPPORTING MEMBERS.

10) NO CHANGES IN THE PLANS WILL BE MADE AND NO EXTRA WORK PERFORMED UNLESS SO APPROVED BY THE OWNER, CIVIL/STRUCTURAL ENGINEER, SOILS ENGINEER/GEOLOGISTS, COUNTY/CITY INSPECTOR AND BUILDING OFFICIALS.

11) A CLAIM FOR EXTRAS WILL BE CONSIDERED IF A CONDITION ARISES WHICH WAS CHANGED BY DESIGN BY OTHERS, UNFORESEEN OR HAS NOT BEEN SHOWN ON THE PLANS. SUCH CLAIMS FOR EXTRAS WILL NOT BE ALLOWED UNLESS THE CONTRACTOR HAS NOTIFIED THE OWNER AND SUPERVISING ENGINEER IN WRITING, INCLUDING AN AGREED-TO REIMBURSEMENT SCHEDULE, PRIOR TO PERFORMING THE EXTRA WORK.

INTENT OF THE DOCUMENTS

IT IS THE INTENT OF THE DRAWINGS AND THE SPECIFICATIONS TO REQUIRE THE COMPLETION OF THE WORK IN A THOROUGH AND WORKMANLIKE MANNER IN EVERY RESPECT.

DESCRIPTION OF WORK

THE CONTRACTOR SHALL FURNISH PERMITS, LICENSES, FEES, MATERIAL, LABOR, TOOLS, PLANT, SUPPLIES, EQUIPMENT, TRANSPORTATION, SUPERINTENDENCE, TEMPORARY CONSTRUCTION OF EVERY NATURE, INSURANCE, TAXES, CONTRIBUTIONS, AND ALL OTHER SERVICES AND FACILITIES, UNLESS SPECIFICALLY EXCEPTED NECESSARY TO COMPLETE THIS PROJECT.

LIABILITY AND COMPENSATION INSURANCE

THE CONTRACTOR SHALL MAINTAIN AT ALL TIMES, FULL AND UNLIMITED WORKMEN'S COMPENSATION INSURANCE IN ACCORDANCE WITH THE LABOR CODE OF THE STATE OF CALIFORNIA, AND SHALL CARRY PUBLIC CONTINGENT LIABILITY OF INSURANCE, IN AMOUNTS SATISFACTORY TO AND IN COMPANIES SELECTED WITH THE CONSENT OF THE OWNER.

PERMITS

THE CONTRACTOR SHALL OBTAIN THE BUILDING PERMIT, AND ALL OTHER CERTIFICATIONS, INSPECTION REPORTS, RELEASES, JURISDICTIONAL SETTLEMENTS, NOTICES, RECEIPTS FOR FEE PAYMENTS, JUDGMENTS, AND SIMILAR DOCUMENTS, CORRESPONDENCE AND RECORDS IN COLLECTION.

SUBCONTRACTOR'S STATUS

EVERY ITEM MENTIONED IN THE SPECIFICATIONS IS INTENDED TO REPRESENT THE QUALITY OF MATERIALS THAT WILL BE DEMANDED. SHOULD THE SUBCONTRACTOR WISH TO SUGGEST ANY SUBSTITUTES THAT HE CONSIDERS EQUAL IN VALUE AND EFFICIENCY WITH THE ONE SPECIFIED, HE SHALL STATE WHAT THE ITEM SUGGESTED IS, AND THE DIFFERENCE IN COST, IF ANY.

IF SUBSTITUTES OF MATERIALS (EQUALLY GOOD) ARE OFFERED AT THE TIME BIDS ARE SUBMITTED, THEY WILL BE CONSIDERED. IN THE EVENT THE OWNER WISHES TO ACCEPT THE SUBSTITUTE, ARRANGEMENTS WILL BE MADE FOR THE CHANGE BEFORE ENTERING INTO A CONTRACT.

IF NO ITEMS ARE SUGGESTED AS A SUBSTITUTE AT THE TIME THE BIDS ARE SUBMITTED, THEN NO DEVIATION WILL BE ALLOWED FROM THE MATERIALS SPECIFIED WITHOUT FIRST SECURING THE APPROVAL OF THE OWNER.

TRASH REMOVAL

THE CONTRACTOR SHALL PROMPTLY REMOVE FROM THE BUILDING, LOT, SIDEWALKS, AND STREETS – ALL RUBBISH AND DIRT, AS IT ACCUMULATES, DUE TO THE WORK DONE UNDER THIS CONTRACT.

ALL COMBUSTIBLE DEBRIS SHALL BE REMOVED FROM THE BUILDING ON A DAILY BASIS.

FOUNDATION

1) CONCRETE SHALL HAVE A MINIMUM ULTIMATE COMPRESSIVE STRENGTH OF 2500 PSI AT 28 DAYS FOR POURED-IN-PLACE CONTINUOUS AND SPREAD FOOTINGS, AND 3000 PSI (SPECIAL INSP. REQ.'D) AT 28 DAYS FOR GRADE BEAMS.

2) PORTLAND CEMENT SHALL BE TYPE 1 PER ASTM C 150. AGGREGRATES SHALL BE PER ASTM C33 WITH MAXIMUM SIZE OF 11/2" FOR FOOTINGS AND 1" FOR ALL OTHER WORK.

3) REINFORCING STEEL SHALL BE ASTM A615, GRADE 60, CLEAN AND RUST FREE. LAPS AT SPLICES AND POUR LINES TO BE 40 BAR DIAMETERS (2'-0" MINIMUM) UNLESS NOTED OTHERWISE ON PLANS.

4) U.N.O., SLABS ON GRADE SHALL BE 4" THICK WITH #4 BARS @ 16" o.c. EACH WAY WITH 2 INCH COVER AT BOTTOM. 4" CLEAN SAND SHALL BE PLACED BELOW THE SLAB WITH A 6 MIL PLASTIC VAPOR BARRIER PLACED AT MID-HEIGHT. BARS SHALL BE LAPPED 20". SEE SOILS REPORT (IF AVAILABLE) FOR OTHER REQUIREMENTS.

5) ALL NEW SILL PLATE ANCHOR BOLTS TO BE INSTALLED IN FRESH CONCRETE SHALL BE 5/8" DIAMETER A307 "L" BOLTS SPACED PER PLAN AND SHEARWALL SCHEDULE WITH MINIMUM 7" EMBEDMENT. MAXIMUM ANCHOR BOLT SPACING SHALL BE 4'-0" o.c. ANCHOR BOLTS AT ENDS OF WALL PANELS SHALL BE LOCATED WITHIN 12" AND GREATER THAN 7 BOLT DIAMETERS FROM THE END OF SILL PLATE. THERE SHALL BE A MINIMUM OF TWO ANCHOR BOLTS PER WALL PANEL. (ANCHOR BOLTS TO EXISTING FOOTINGS PER NOTE #13 BELOW). PLATE WASHERS A MINIMUM 3"X3"X3/16" THICK SHALL BE USED ON EACH BOLT.

6) IF NO SOILS REPORT IS PROVIDED, ASSUMED ALLOWABLE SOIL BEARING PRESSURE (ASBP) SHALL BE 1500 PSF (PER SOIL TYPE SD) & EMBED FOOTINGS A MINIMUM OF 12" INTO COMPETENT SOIL.

7) REINFORCEMENT CLEARANCES FOR FOOTINGS AND GRADE BEAMS, (U.N.O.):
A) POURED AGAINST EARTH – 3"
B) FORMED SURFACE – 2"

8) REMOVAL OF FORMS:
A) SUPPORTING VERTICAL SURFACES – 2 DAYS MINIMUM
B) SUPPORTING BEAMS & GIRDERS – 15 DAYS MINIMUM

9) REINFORCING SHALL BE CONTINUOUS AROUND CORNERS AND THROUGH INTERSECTIONS.

10) DOWEL ANY NEW FOOTINGS TO EXISTING FOOTINGS WITH (2) #4 x 2'-0" BARS TOP AND BOTTOM WITH 6" EMBEDMENT IN 11/2" DIAMETER CORED HOLES IN APPROVED NON-SHRINK GROUT MATERIAL (e.g. EMBECO 636, POR-ROK, etc.).

11) ALL HOLD DOWNS INTO EXISTING FOOTINGS TO BE INSTALLED WITH SIMPSON SET-3G ADHESIVE EPOXY, ICC ESR-4844. CONTRACTOR TO INSTALL PER MANUFACTURER'S SPECIFICATIONS AND OBTAIN DEPUTY INSPECTION.

12) UNLESS NOTED OTHERWISE, DOWEL ANY NEW SLABS TO EXISTING FOOTINGS WITH (1)-#4 x 2'-0" BARS SPACED @ 36" O.C.WITH 6" EMBEDMENT IN 1" DIAMETER CORED HOLES IN APPROVED NON-SHRINK GROUT MATERIAL.

13) ALL NEW SILL PLATE ANCHOR BOLTS TO BE INSTALLED INTO EXISTING FOOTINGS SHALL BE SIMPSON TITAN HD ANCHORS (ICC ESR – 1056), 5/8" DIAMETER WITH MIN. 4-1/8" EMBEDMENT WITH MINIMUM EDGE DISTANCE REQUIRED TO BE 1 7/8"; SPACING PER SHEARWALL SCHEDULE.

14) CONSTRUCTION JOINTS SHALL BE PREPARED BY WIRE BRUSHING, CLEANING AND BRUSHING IN A PASTE OF NEAT CEMENT MORTAR IMMEDIATELY PRIOR TO POURING. LOCATION OF CONSTRUCTION JOINT SHALL BE APPROVED BY THE PROJECT STRUCTURAL ENGINEER.

15) ALL CONNECTORS AND METAL HARDWARE IN CONTACT WITH PRESSURE TREATED TIMBER SHALL HAVE CORROSION RESISTANT COATINGS OR PROTECTION, SUCH AS "ZMAX", HOT DIPPED GALVANIZED, OR BE STAINLESS STEEL.

16) PRIOR TO POURING INTERIOR CONCRETE FLOOR SLABS, ALL SOIL BELOW FLOOR SHALL BE COMPACTED TO REQUIRED DENSITY AND MOISTENED TO A DEPTH NOT LESS THAN 18" OR PER SOILS REPORT.

17) DEEPEN NEW FOOTINGS AS NECESSARY TO OBTAIN REQUIRED EMBEDMENT FOR ALL NEW HOLD DOWN BOLTS. ALL HOLD DOWN BOLTS TO HAVE A MINIMUM OF 3" OF CONCRETE COVER TO SOIL @ BOTTOM.

WORKMAN SAFETY-EXCAVATIONS

ALL REGULATIONS OF THE STATE OR FEDERAL OSHA SHOULD BE FOLLOWED BEFORE ALLOWING WORKMEN IN A TRENCH OR OTHER EXCAVATION.

IF EXCAVATIONS ARE TO BE MADE DURING THE RAINY SEASON PARTICULAR CARE SHOULD BE GIVEN TO INSURE THAT BERMS OR OTHER DEVICES PREVENT SURFACE WATER FROM FLOWING OVER THE TOP OF THE EXCAVATION OR PONDING AT THE TOP OF THE EXCAVATIONS.

NO TRENCHES OR EXCAVATIONS SHALL BE 5' OR MORE IN DEPTH INTO WHICH A PERSON IS REQUIRED TO DESCEND, OR OBTAIN NECESSARY PERMIT FROM THE STATE OF CALIFORNIA DIVISION OF INDUSTRIAL SAFETY PRIOR TO ISSUANCE OF A BUILDING OR GRADING PERMIT.

WRAP AND PROTECT ALL UTILITY LINES IN WAY OF CONSTRUCTION PER STANDARD CONSTRUCTION PRACTICES

REINFORCING STEEL

ALL PRIMARY REINFORCEMENT SHALL CONFORM TO A.S.T.M. A- 615, GRADE 60 K.S.I. STEEL.

ALL TIES AND STIRRUPS SHALL CONFORM TO A.S.T.M. A-615, GRADE 60 K.S.I. STEEL.

WIRE MESH SHALL BE A MINIMUM OF 6" x 6" – #10 / #10 MESH CONFORMING TO A.S.T.M. A-185. SEE DRAWINGS FOR ANY OTHER MESH SIZES.

SPLICES OF REINFORCING SHALL BE LAPPED A MINIMUM OF 40 BAR DIAMETERS AND SECURELY WIRED TOGETHER, USING A MINIMUM OF 16 GA. WIRE. SPLICES OF ADJACENT REINFORCING BARS SHALL BE STAGGERED WHEREVER POSSIBLE.

STRUCTURAL STEEL

1) ALL STRUCTURAL STEEL SHALL CONFORM TO THE FOLLOWING STANDARDS:

W-WIDE FLANGE SHAPES	ASTM A992, Fy = 50-65 KSI
PLATES, ANGLES, CHANNELS:	ASTM A36, Fy = 36 KSI
HOLLOW TUBE SHAPES:	ASTM A500, GRADE B, Fy = 46 KSI
ROUND PIPE SHAPES:	ASTM A53, GRADE B, Fy = 35 KSI

2) ALL STRUCTURAL STEEL SHALL BE FABRICATED IN A SHOP APPROVED BY THE LOCAL MUNICIPAL BUILDING DEPARTMENT.

3) STRUCTURAL SHOP DRAWINGS SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER FOR REVIEW PRIOR TO FABRICATION.

4) ALL STRUCTURAL STEEL SHALL BE IDENTIFIED PER 2022 CBC, SECTION 2203. DESIGN OF STEEL MEMBERS SHALL BE PER PER AISC 360, PER SECTION 2205 OF THE 2022 CBC.

5) STRUCTURAL STEEL SHALL HAVE A SHOP COAT OF RED-OXIDE PRIMER.

6) AFTER ERECTION, ALL FIELD CONNECTIONS, BOLTS, WELDS, AND ALL ABRADED PLACES ON THE SHOP PAINT SHALL BE TOUCHED UP WITH THE SAME TYPE OF PAINT AS THE SHOP COAT.

7) FIELD AND SHOP WELDING SHALL BE DONE BY A DULY CERTIFIED WELDER USING LOW-HYDROGEN E70-T6 ELECTRODE RODS, UNLESS NOTED OTHERWISE. CONTINUOUS INSPECTION BY A REGISTERED INSPECTOR IS REQUIRED FOR FIELD WELDING. ALL WELDING SHALL BE PER AWS D1.1, LATEST EDITION, AND AISC SPECIFICATIONS.

8) BOLTS SHALL BE OF A307 QUALITY WITH WASHERS, UNLESS OTHERWISE SPECIFIED ON PLANS. ANY HIGH STRENGTH A325 OR A490 BOLTS SHALL HAVE SPECIAL INSPECTION, UNLESS NOTED OTHERWISE.

9) STEEL ERECTOR SHALL PROVIDE ALL ERECTION BRACING REQUIRED TO MAINTAIN STRUCTURE PLUMB AND PROPERLY BRACED DURING CONSTRUCTION.

TIMBER

1) ALL TIMBER DESIGN AND CONSTRUCTION SHALL BE PER 2022 CBC CHAPTER 23 AND 2018 NATIONAL DESIGN SPECIFICATION (NDS, REVISED 2018 EDITION) WITH AMENDMENTS PER 2022 CBC. ALL SAWN LUMBER SHALL BE GRADED BY EITHER WWPA OR WCLIB.

2) U.N.O., ALL WOOD SILL PLATES AND LEDGERS BEARING ON CONCRETE OR MASONRY SHALL BE PRESSURE TREATED DOUGLAS FIR-LARCH. ANCHOR BOLTS SHALL BE 5/8" DIAMETER SPACED A MAXIMUM 4'-0" o.c. AND WITHIN 12" AND GREATER THAN SEVEN BOLT DIAMETERS FROM: EACH END OF A SILL, FROM A HOLE, OR FROM A NOTCH GREATER THAN 1/3 THE WIDTH OF THE SILL. SEE SHEARWALL SCHEDULE FOR OTHER REQUIREMENTS.

3) ALL WALL BRACING AND MATCHING OF STUDS SHALL CONFORM TO THE 2022 CALIFORNIA BUILDING CODE.

4) UNLESS NOTED OTHERWISE ON FRAMING PLANS:

ROOF SHEATHING SHALL BE 15/32" CDX APA-RATED SHEATHING, EXPOSURE 1, MIN. SPAN RATING 24/0, NAILED WITH 8d COMMON @ 6"o.c. EDGES & BOUNDARIES AND 12"o.c AT INTERMEDIATE FRAMING MEMBERS.

FLOOR SHEATHING SHALL BE 23/32" CDX APA-RATED STURD-I-FLOOR, T&G, EXPOSURE 1, MIN. SPAN RATING 20" o.c., NAILED WITH 10d COMMON @ 6"o.c. AT EDGES & BOUNDARIES AND 12"o.c. AT INTERMEDIATE FRAMING MEMBERS

SHEARWALL SHEATHING SHALL BE APA "STRUCTURAL I" RATED, EXPOSURE 1, GROUP 1. NAILING PER SHEARWALL SCHEDULE.

ALL WOOD STRUCTURAL PANEL SHEATHING SHALL BE GRADE MARKED BY APA, T.E.C.O., OR P.T.L.

TIMBER (CONTINUED)

5) HORIZONTAL WOOD STRUCTURAL PANELS SHALL BE LAID WITH THE LONG DIMENSION AND FACE GRAIN PERPENDICULAR TO THE RAFTERS OR JOISTS, AND THE SHEETS SHALL BE STAGGERED AS SHOWN IN 2022 CBC TABLE 2306.2 (CASES 1). EACH SHEET SHALL CONTAIN A MINIMUM OF 8 SQUARE FEET AND EXTEND TO 3 SUPPORTS. 1/8" SPACING BETWEEN PANEL ENDS AND EDGES IS REQUIRED. ALL WOOD STRUCTURAL PANEL DIAPHRAGMS SHALL BE REVIEWED BY CONTRACTOR FOR COMPLIANCE WITH NAILING AND PANEL REQUIREMENTS BEFORE FINISH IS APPLIED.

6) U.N.O., ALL 2x ROOF RAFTER AND FLOOR JOIST FRAMING MEMBERS SHALL BE MINIMUM GRADE DOUGLAS FIR-LARCH NO. 2 OR BETTER. ALL BEAMS, HEADERS, AND POSTS SHALL BE MINIMUM DOUGLAS FIR-LARCH NO. 1 OR BETTER. ALL VERTICAL WALL FRAMING MEMBERS SHALL BE DOUGLAS FIR -LARCH NO. 2 OR BETTER.

7) ALL PSL AND LVL ENGINEERED FRAMING MEMBERS SHOWN ON PLANS TO BE 2.0E PARALLAM (E=2000 ksi) AND 1.9E MICROLLAM BEAMS (E=1900 ksi), RESPECTIVELY, AS DESCRIBED IN ER-4979. ALL WOOD I-JOIST MEMBERS SHOWN ON PLANS TO BE AS DESCRIBED IN ESR-1153.

8) MOISTURE CONTENT OF SAWN LUMBER AT TIME OF INSTALLATION SHALL NOT EXCEED 19%.

9) ALL BOLT HEADS AND NUTS BEARING ON WOOD SHALL HAVE WASHERS. HOLES IN WOOD FOR BOLTS SHALL BE DRILLED MAX. 1/16" LARGER THAN NOMINAL BOLT SIZE.

10) NOTCHING OR DRILLING HOLES IN BEAMS OR JOISTS SHALL BE ONLY AS DETAILED PER ENGINEER AND SHALL COMPLY WITH 2022 CBC.

11) ALL SAWN LUMBER (2x, 4x, 6x) RAFTERS, FLOOR JOISTS, AND BEAMS SHALL HAVE SOLID WOOD BLOCKING AT ALL POINTS OF SUPPORT. MEMBERS WITH NOMINAL DEPTH 10" OR GREATER SHALL HAVE 2x FULL DEPTH SOLID BLOCKING OR CROSS BRIDGING SPACED AT 8'-0" FOR MAXIMUM.

12) U.N.O., ALL FRAMING CONNECTION HARDWARE SHALL BE AS MANUFACTURED BY THE SIMPSON STRONG-TIE COMPANY AND SHALL BE REFERENCED AS SHOWN IN THEIR LATEST CATALOG. ALL CONNECTOR NAILS AND BOLTS SHALL BE AS DESIGNATED PER MANUFACTURER. ALTERNATE MANUFACTURER CONNECTOR HARDWARE MAY BE USED PROVIDED ENGINEER'S WRITTEN APPROVAL IS OBTAINED BY CONTRACTOR AND ICBO APPROVAL IS PROVIDED.

13) TOP PLATES SHALL LAP LOWER PLATES AT CORNERS, AND BREAKS AT PLATE SHALL BE LAPPED A MINIMUM OF 4'-0", WITH 20-16d NAILS ON EACH SIDE.

14) ALL BEAMS SHALL BE SUPPORTED BY POSTS OR GIRDERS. FOR 4x8 AND SMALLER BEAMS A MINIMUM (2)-2X4 D.F. #2 POST SHALL BE USED, U.N.O. FOR 4x10 AND LARGER BEAMS A MINIMUM 4x4 D.F. #1 POST SHALL BE USED, U.N.O. ALL POSTS SHALL PROVIDE FULL BEARING WIDTH FOR THE BEAM, U.N.O.

15) ALL POSTS SHALL BE CONTINUED BETWEEN FLOORS WITH SOLID FULL WIDTH BLOCKING AND A POST OF EQUAL OR GREATER SIZE BELOW, UNTIL A BEAM OR FOUNDATION IS ENCOUNTERED. ALL POSTS INSIDE WALLS MAY BEAR ON THE SOLE OR SILL PLATE, U.N.O. ISOLATED POSTS SHALL BE SEATED IN POST OR COLUMN BASES PER PLAN.

16) ALL WALLS HIGHER THAN 10'-0" SHALL BE 2x6 OR 3x6 STUDS @ 16" o.c., UNLESS SPECIFICALLY DESIGNED OTHERWISE BY ENGINEER. ALL WALLS CONTAINING MECHANICAL PIPING 2" IN DIAMETER OR LARGER SHALL BE FRAMED WITH 2x6 STUDS @ 16" o.c.

17) CUTTING, NOTCHING, OR BORING HOLES IN STUDS SHALL COMPLY WITH 2016 CBC.

18) FRAMING AND NAILING NOT SPECIFICALLY DETAILED ON THE PLANS ARE TO CONFORM TO 2022 CBC TABLE 2304.10.1. COMMON NAILS ARE REQUIRED FOR ALL SHEARWALL, FLOOR AND ROOF DIAPHRAGMS. USE DOUBLE JOISTS UNDER PARALLEL PARTITIONS, U.N.O. DOUBLED HORIZONTAL MEMBERS SHALL BE STITCH-NAILED TOGETHER WITH TWO ROWS OF 16d NAILS @ 12" o.c. STAGGERED, UNLESS OTHERWISE DETAILED. TRIPLED HORIZONTAL MEMBERS SHALL HAVE MIN. 1/2" DIAMETER BOLTS AT 18" O.C. T&B, STAGGERED.

19) ANCHOR BOLTS TO SILL AND SOLE PLATES SHALL HAVE NUTS DRIVEN FLUSH WITH SQUARE PLATE WASHERS IN ACCORDANCE WITH THE FOLLOWING SCHEDULE:

BOLT DIAMETER	PLATE SIZE
5/8"	1/4" x 3" x 3"
3/4"	5/16" x 3" x 3"
7/8"	5/16" x 3" x 3"
1"	3/8" x 3 1/2" x 3 1/2"

THE ABOVE SCHEDULE ALSO APPLIES TO LAG SCREWS DRIVEN INTO SOLE PLATES FOR RAISED FLOOR AND UPPER STORY CONDITIONS.

20) LAG SCREWS SHALL BE INSTALLED IN PRE-DRILLED HOLES. THE CLEARANCE HOLE FOR THE SHANK PORTION SHALL HAVE THE SAME DIAMETER AND DEPTH AS THE SHANK. THE LEAD HOLE FOR THE THREADED PORTION SHALL HAVE A DIAMETER EQUAL TO 40%-70% OF THE SHANK DIAMETER (FOR ALL DOUG-FIR LARCH MEMBERS). LAG SCREWS ARE TO BE INSTALLED WITH THE TURN OF A WRENCH. DRIVING, AS WITH A HAMMER, IS NOT PERMITTED.

21) MINIMUM NAILING SHALL BE PER TABLE 2304.10.1 OF THE 2022 C.B.C.

22) ALL CONNECTORS AND METAL HARDWARE IN CONTACT WITH PRESSURE TREATED TIMBER SHALL HAVE CORROSION RESISTANT COATINGS OR PROTECTION, SUCH AS "ZMAX", HOT DIPPED GALVANIZED, OR BE STAINLESS STEEL.

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Addition & Remodel
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Notes and Specifications

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JOB# 25-021
ENGINEER EWM
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CHECKED
FILE 537 Helberta
DATE 6/12/25
SCALE NTS

SHEET SN1
OF 14 SHEETS

TABLE 2304.10.2
FASTENING SCHEDULE

CONNECTION	FASTENING"1"	LOCATION
1. Joist to sill or girder	3 – 8d common (2 1/2" x 0.131") 3 – 3" x 0.131" nails 3 – 3" 14 gage staples	toenail
2. Bridging to joist 3. 1" x 6" subfloor or less to each joist	2 –8d common (2 1/2" x 0.131") 2 – 3" x 0.131" nails 2–3" 14 gage staples 2 –8d common (2 1/2" x 0.131")	toenail each end face nail
4. Wider than 1" x 6" subfloor to each joist	3 – 8d common (2 1/2" x 0.131")	face nail
5. 2" subfloor to joist or girder	2 – 16d common (3 1/2" x 0.162")	blind and face nail
6. Sole plate to joist or blocking Sole plate to joist or blocking at braced wall panel	16d(3 1/2"x0.135") at 16"o.c. 3" x 0.131" nails at 8" o.c. 3" 14 gage staples at 12" o.c. 3"–16d(3 1/2"x0.135")at 16" 4 – 3" x 0.131" nails at 16" 4 – 3" 14 gage staples per 16"	typical face nail braced wall panels
7. Top plate to stud	2 – 16d common (3 1/2" x 0.162") 3 – 3" x 0.131" nails 3–3" 14 gage staples	end nail
8. Stud to sole plate	4 – 8d common (2 1/2" x 0.131") 4 – 3" x 0.131" nails 3 – 3" 14 gage staples 2 – 16d common (3 1/2" x 0.162") 3 – 3" x 0.131" nails 3 – 3" 14 gage staples	toenail end nail
9. Double studs	16d (3 1/2"x0.135")at24"o.c. 3" x 0.131" nail at 8" o.c. 3" 14 gage staple at 8" o.c.	face nail
10. Double top plates Double top plates	16d(3 1/2"x0.135")at 16"o.c. 3" x 0.131" nail at 12" o.c. 3" 14 gage staple at 12" o.c. 8–16d common (3 1/2" x 0.162") 12–3" x 0.131" nails 12–3" 14 gage staples	typical face nail lap splice
11. Blocking between joists or rafters to top plate	3 – 8d common (2 1/2" x 0.131") 3 – 3" x 0.131" nails 3 – 3" 14 gage staples	toenail
12. Rim j oist to top plate	8d(2 1/2"x0.131") at 6"o.c. 3" x 0.131" nail at 6" o.c. 3" 14 gage staple at 6" o.c.	toenail
13. Top plates, laps and intersections	2 – 16d common (3 1/2" x 0.162") 3 – 3" x 0.131" nails 3 –3" 14 gage staples	face nail
14. Continuous header, two pieces	16d common (3 1/2" x 0.162")	16" o.c. along edge
15. Ceiling joists to plate	3 – 8d common (2 1/2" x 0.131") 5 – 3" x 0.131" nails 5 – 3" 14 gage staples	toenail
16. Continuous header to stud	4 – 8d common (2 1/2" x 0.131")	toenail
17. Ceiling joists, laps over partitions (see Section 2308.10.4.1, Table 2308.10.4.1)	3 – 16d common (3 1/2" x 0.162") minimum, Table 2308.10.4.1 4 – 3" x 0.131" nails 4 – 3" 14 gage staples	face nail
18. Ceiling joists to parallel rafters (see Section 2308.10.4.1, Table 2308.10.4.1)	3 – 16d common (3 1/2" x 0.162") minimum, Table 2308.10.4.1 4 – 3" x 0.131" nails 4 – 3" 14 gage staples	face nail
19. Rafter to plate (see Section 2308.10.1, Table 2308.10.1)	3 – 8d common (2 1/2" x 0.131") 3 – 3" x 0.131" nails 3 – 3" 14 gage staples	toenail
20. 1" diagonal brace to each stud and plate	2 – 8d common (2 1/2" x 0.131") 2 – 3" x 0.131" nails 3 – 3" 14 gage staples	face nail
21. 1" x 8" sheathing to each bearing	3 – 8d common (2 1/2" x 0.131")	face nail
22. Wider than 1" x 8" sheathing to each bearing	3 – 8d common (2 1/2" x 0.131")	face nail
23. Built–up corner studs	16d common (3 1/2" x 0.162") 3" x 0.131" nails 3" 14 gage staples	24" o.c. 16" o.c. 16" o.c.
24. Built–up girder and beams	20d common (4" x 0.192") 32" o.c. 3" x 0.131" nail at 24" o.c. 3" 14 gage staple at 24" o.c. 2 – 20d common (4" x 0.192") 3 – 3" x 0.131" nails 3 – 3" 14 gage staples	face nail at top and bottom staggered on opposite sides face nail at ends and at each splice
25. 2" planks	16d common (3 1/2" x 0.162")	at each bearing
26. Collar tie to rafter	3– 10d common (3" x 0.148") 4 – 3" x 0.131" nails 4 – 3" 14 gage staples	face nail
27. Jack rafter to hip	3– 10d common (3" x 0.148") 4 – 3" x 0.131" nails 4 – 3" 14 gage staples 2 – 16d common (3 1/2" x 0.162") 3–3" x 0.131" nails 3 – 3" 14 gage staples	toenail face nail
28. Roof rafter to 2–by ridge beam	2 – 16d common (3 1/2" x 0.162") 3 – 3" x 0.131" nails 3 – 3" 14 gage staples 2–16d common (3 1/2" x 0.162") 3 – 3" x 0.131" nails 3 – 3" 14 gage staples	toenail face nail
29. Joist to band joist	3 – 16d common (3 1/2" x 0.162") 4 – 3" x 0.131" nails 4–3" 14 gage staples	face nail
30. Ledger strip	3 – 16d common (3 ½" x 0.162") 4 – 3" x 0.131" nails 4 – 3" 14 gage staples	face nail
31. Wood structural panels and particleboard1' Subfloor, roof and wall sheathing (to framing) Single Floor (combination subfloor– underlayment to framing)	1/2" and less 19/32" to ¾" 7/8" to 1" 1 1/8" to 1 ¼" 3/4" and less 7/8" to 1" 1 1/8" to 1 ¼"	6d c,1 2 3/8" x 0.113" nail n 1 3/4" 16 gage o 8d" or 6d e 2 3/8" x 0.113" nail p 2" 16 gage p 8d c 10d d or 8d d 6d e 8d e 10d d or 8d e	
32. Panel siding (to framing)	½" or less ⅝"	6d f 8df	
33. Fiberboard sheathing g	½" 25/32"	No. 11 gage roofing nail h 6d common nail (2" x 0.113") No. 16 gage staple i No. 11 gage roofing nail h 8d common nail (2 ½"x 0.131") No. 16 gage staple i	
34. Interior paneling	¼" 3/8"	4d j 6d k	

For SI: 1 inch = 25.4 mm.

a. Common or box nails are permitted to be used except where otherwise stated.
b. Nails spaced at 6 inches on center at edges, 12 inches at intermediate supports except 6 inches at supports where spans are 48 inches or more. For nailing of wood structural panel and particleboard diaphragms and shear walls, refer to Section 2304. Nails for wall sheathing are permitted to be common, box or casing.
c. Common or deformed shank (6d – 2" x0.113"; 8d–2 1/2"x 0.131"; l0d–3" x 0.148").
d. Common (6d – 2" x 0.113"; 8d – 2 ½" x 0.131"; 10d – 3" x 0.148").
e. Deformed shank (6d – 2" x 0.113"; 8d – 2 ½" x 0.131"; 10d – 3" x 0.148").
f. Corrosion–resistant siding (6d – 1 7/8" x 0.106"; 8d – 2 3/8" x 0.128") or casing (6d – 2" x 0.099"; 8d – 2 1/2" x 0.113") nail.
g. Fasteners spaced 3 inches on center at exterior edges and 6 inches on center at intermediate supports, when used as structural sheathing. Spacing shall be 6 inches on center on the edges and 12 inches on center at intermediate supports for nonstructural applications.
h. Corrosion–resistant roofing nails with 7/16–inch–diameter head and 1 1/2–inch length for 1/2–inch sheathing and 1 3/4–inch length for 25/32–inch sheathing.
i. Corrosion–resistant staples with nominal 7/16–inch crown and 1 1/8–inch length for 1/2–inch sheathing and 1 1/2–inch length for 25/32–inch sheathing. Panel supports at 16 inches (20 inches if strength axis in the long direction of the panel, unless otherwise marked).
j. Casing (1 ½" x 0.080") or finish (1 1/2" x 0.072") nails spaced 6 inches on panel edges, 12 inches at intermediate supports.
k. Panel supports at 24 inches. Casing or finish nails spaced 6 inches on panel edges, 12 inches at intermediate supports.
l. For roof sheathing applications, 8d nails (2 1/2" x 0.113") are the minimum required for wood structural panels.
m. Staples shall have a minimum crown width of 7/16 inch.
n. For roof sheathing applications, fasteners spaced 4 inches on center at edges, 8 inches at intermediate supports.
o. Fasteners spaced 4 inches on center at edges, 8 inches at intermediate supports for subfloor and wall sheathing and 3 inches on center at edges, 6 inches at intermediate supports for roof sheathing.
p. Fasteners spaced 4 inches on center at edges, 8 inches at intermediate supports.

FRAMING

ROOF DIAPHRAGM

15/32" APA RATED SHEATHING (MIN.), EXPOSURE 1, 24/0 MAX. SPAN RATING, w/ 8d COMMON NAILS @ 6"o.c. AT BOUNDARY & PANEL EDGE NAILING (E.N.), AND 12" o.c. AT INTERMEDIATE FRAMING MEMBERS

FLOOR DIAPHRAGM

23/32" APA STURD–I–FLOOR, EXPOSURE 1, TONGUE AND GROOVE, w/ 10d COMMON NAILS @ 6" o.c. AT BOUNDARY & PANEL EDGE NAILING (E.N.), AND 12" o.c. AT INTERMEDIATE FRAMING MEMBERS

FRAMING

* BUILT–UP WOOD FRAMING MEMBERS MAY NOT BE SUBSTITUTED FOR 4x AND WIDER BEAMS UNLESS NOTED BY ENGINEER
* ALL (2) 2x ROOF & FLOOR FRAMING TO HAVE MIN. 16d AT 12" O.C. T&B, STAGGERED
* ALL (3) 2x FRAMING TO HAVE MIN. 1/2" DIAMETER BOLTS AT 18" O.C. T&B, STAGGERED
* 2x SOLID BLOCKING REQUIRED AT POINTS OF SUPPORT FOR ALL HORIZONTAL FRAMING MEMBERS. IN ADDITION, ALL 2x10 AND LARGER MEMBERS SHALL HAVE SOLID FULL DEPTH BLOCKING OR BRIDGING AT MAX. 8'–0" o.c.
* ALL WOOD POSTS AT UPPER FLOORS TO CONTINUE TO BEAM OR FOUNDATION
* UNLESS DETAILED OTHERWISE, ALL RIDGE / HIP / VALLEY CONNECTIONS TO HAVE A SIMPSON A35 CONNECTOR AT EACH CORNER WITH A 2x KICKER TO BEARING WALL
* ALL NEW TO EXISTING TOP PLATES TO HAVE SIMPSON ST6236 STRAP
* AT ROOF–TO–WALL FRAMING, PROVIDE A35 FRAMING ANCHORS PER SHEARWALL SCHEDULE OR AT MAX. 48" O.C. FROM PLATES TO RAFTERS AND RAFTER BLOCKING AROUND PERIMETER OF BUILDING AND AT DRAG LINES AS INDICATED ON PLANS (SEE PLANS WHERE OTHER REQUIREMENTS MAY OCCUR)
* AT FIRST FLOOR AND SUBTERRANEAN LEVEL PROVIDE A35'S PER SHEARWALL SCHEDULE OR AT 32" O.C. MAX. FROM PLATES TO FLOOR JOISTS AND BLOCKING AROUND PERIMETER OF BUILDING AND AT DRAG LINES AS INDICATED ON PLANS (SEE PLANS WHERE OTHER REQUIREMENTS MAY OCCUR)
* PROVIDE DOUBLE JOISTS UNDER ALL PARALLEL WALLS, U.N.O.
* WHEN SHEAR WALLS ARE SUPPORTED BY WOOD JOISTS THAT ARE PERPENDICULAR TO THE SHEAR WALL, ATTACH SOLID 4x BLOCKING UNDER SHEAR WALLS BETWEEN JOISTS. PROVIDE 2x SOLID BLOCKING UNDER NON–SHEAR WALLS PERPENDICULAR TO FLOOR JOISTS. SEE PLANS AND DETAILS FOR ANY ADDITIONAL REQUIREMENTS.
* ATTACH MIN. 2x SOLID BLOCKING AND EDGE NAIL THE PERIMETER OF ALL OPENINGS OVER 10" IN WIDTH OR LENGTH IN ALL SHEAR PANELS AND DIAPHRAGMS. SEE DETAILS WHERE OTHER REQUIREMENTS MAY OCCUR.
* PROVIDE A MINIMUM 3x4 OR 2x6 @ 16" FOR ALL STUD WALLS SUPPORTING TWO FLOORS OR MORE.
* ALL CONNECTORS AND METAL HARDWARE IN CONTACT WITH PRESSURE TREATED TIMBER SHALL HAVE CORROSION RESISTANT COATINGS OR PROTECTION, SUCH AS "ZMAX", HOT DIPPED GALVANIZED, OR BE STAINLESS STEEL.

CONCRETE

1) ALL PHASES OF WORK PERTAINING TO CONCRETE CONSTRUCTION SHALL CONFORM TO 2022 CBC CHAPTER 19 (BASED ON ACI–318, LATEST ADOPTED EDITION) FOR REINFORCED CONCRETE.

2) MINIMUM ULTIMATE COMPRESSIVE CONCRETE STRENGTHS (f'c) SHALL BE:

SLAB ON GRADE	2500	PSI @ 28 DAYS
STRUCTURAL DECK	3500	PSI @ 28 DAYS
COLUMNS	3500	PSI @ 28 DAYS
FOOTINGS	2500	PSI @ 28 DAYS
CONCRETE/GRADE BEAMS	3000	PSI @ 28 DAYS
CAISSONS	3000	PSI @ 28 DAYS
POST TENSION SLABS	3000	PSI @ 28 DAYS

3) CONTINUOUS INSPECTION BY AN APPROVED DEPUTY INSPECTOR IS REQUIRED FOR CAISSONS, GRADE BEAMS, STRUCTURAL SLABS, AND OTHER CONCRETE MEMBERS WHERE DESIGN COMPRESSIVE STRENGTH VALUE EXCEEDS 2500 PSI.

4) CEMENT SHALL BE TYPE I, LOW ALKALI, CONFORMING TO A.S.T.M. C–150.

5) ALL PRIMARY REINFORCEMENT SHALL BE PER ASTM A–615, GRADE 60 ksi STEEL. ALL TIES AND STIRRUPS SHALL CONFORM TO A.S.T.M. A–615, GRADE 60 ksi STEEL.

6) UNLESS NOTED OTHERWISE, SPLICES OF REINFORCING SHALL BE LAPPED A MINIMUM OF 40 BAR DIAMETERS AND SECURELY WIRED TOGETHER, USING A MINIMUM OF 16 GA. WIRE. SPLICES OF ADJACENT REINFORCING BARS SHALL BE STAGGERED WHEREVER POSSIBLE. WHERE SPECIFICALLY CALLED OUT, WELDING OF REINFORCING BARS SHALL BE PERFORMED BY A CERTIFIED WELDER USING E90 SERIES ELECTRODES PER AWS D1.4, LATEST EDITION.

7) INTERIOR CONCRETE SLABS ON GRADE SHALL HAVE A STEEL TROWEL FINISH. DRIVEWAYS, WALKS, AND GARAGE SLABS SHALL HAVE A BROOM FINISH AND SHALL BE PITCHED TO SHED WATER.

8) PRIOR TO POURING INTERIOR CONCRETE FLOOR SLABS, ALL SOIL BELOW FLOOR SHALL BE COMPACTED TO REQUIRED DENSITY AND MOISTENED TO A DEPTH NOT LESS THAN 18" OR PER SOILS REPORT.

9) CLEAR COVERAGE OF CONCRETE OVER REINFORCING BARS, ANCHOR BOLTS, AND ALL OTHER CONCRETE INSERTS, UNLESS OTHERWISE SPECIFIED, SHALL BE AS FOLLOWS:
POURED AGAINST EARTH . . . . . .3" CLEAR
FORMED CONCRETE . . . . . 2" CLEAR

10) FORMS FOR CONCRETE SHALL BE LAID OUT AND CONSTRUCTED TO PROVIDE THE SPECIFIED CAMBERS SHOWN ON THE DRAWINGS. DECK CAMBERING SHOWN ON PLANS IS INTENDED TO PROVIDE A LEVEL DECK. ANY SLOPING FOR DRAINAGE SHALL BE ADDED OR SUBTRACTED FROM CAMBERING AS APPROPRIATE. THE DECK THICKNESS SHALL NOT BE REDUCED IN ORDER TO ACHIEVE DECK SLOPES.

11) DRYPACK UNDER BASEPLATES, SILL PLATES, AND WHERE OTHERWISE NOTED ON DRAWINGS SHALL CONSIST OF APPROVED NON–SHRINK HIGH STRENGTH GROUT. WHEN SPACE BETWEEN TWO SURFACES REQUIRES DRYPACK, IT SHALL BE PACKED BY TAMPING OR RAMMING WITH A BAR OR ROD UNTIL THE VOIDS ARE COMPLETELY FILLED.

12) PLACEMENT OF CONCRETE SHALL CONFORM TO A.C.I. STANDARD 614 AND PROJECT SPECIFICATIONS. WIRE BRUSH OR SANDBLAST ALL CONCRETE SURFACES AGAINST WHICH CONCRETE IS TO BE PLACED.

13) IF COLUMNS AND WALLS ARE PLACED WITH FLOORS, MINIMUM TIME OF TWO HOURS MUST ELAPSE BETWEEN END OF COLUMN OR WALL POUR AND BEGINNING OF FLOOR POUR.

14) PROVIDE SLEEVES FOR PLUMBING AND ELECTRICAL OPENINGS IN CONCRETE BEFORE PLACING. DO NOT CUT ANY REINFORCING WHICH MAY CONFLICT. COPING IN CONCRETE IS NOT PERMITTED, EXCEPT AS SHOWN. NOTIFY THE PROJECT STRUCTURAL ENGINEER IN ADVANCE OF CONDITIONS NOT SHOWN ON THE STRUCTURAL DRAWINGS.

15) COVER TO BEAM REINFORCEMENT TO BE 2" MINIMUM, UNLESS NOTED OTHERWISE.

16) ARCHITECTURAL DRAWINGS TO BE REFERRED TO FOR DECK SLOPES, DRAINAGE, PLUMBING, FRAMING AND ELECTRICAL HARDWARE.

17) REINFORCEMENT CALLED OUT IN DETAILS SHALL BE IN ADDITION TO THAT SHOWN ON PLANS (U.N.O). REINFORCING METHODS SHOWN IN DETAILS SHALL BE USED AS APPLICABLE.

18) WHEN A MONOLITHIC POUR IS NOT POSSIBLE, CONSTRUCTION JOINTS SHALL BE APPROVED BY THE PROJECT STRUCTURAL ENGINEER.

19) SHORING SHALL NOT BE REMOVED UNTIL CONCRETE HAS ACHIEVED MINIMUM 28 DAY COMPRESSIVE STRENGTH. FIFTEEN DAYS AFTER CONCRETE POUR IS COMPLETED THE PROJECT STRUCTURAL ENGINEER MAY DETERMINE, BASED ON COMPRESSION TESTS, IF SHORING MAY BE REMOVED.

20) ALL DECK SURFACES EXPOSED TO WEATHER SHALL BE WATERPROOFED. SEE ARCHITECTURAL DOCUMENTS FOR SPECIFICATIONS.

21) PER 2022 CBC SECTION 1704.4, SPECIAL DEPUTY INSPECTION IS REQUIRED FOR ALL EPOXY–ADHESIVE INSTALLATION OF ANCHOR BOLTS OR REINFORCING BARS INTO EXISTING CONCRETE. NON–SHRINK GROUT INSTALLATION OF REINFORCING BAR DOWELS (e.g. NEW SLAB TO EXISTING FOOTING) DOES NOT REQUIRE SPECIAL INSPECTION.

22) GROUT: GROUT BENEATH COLUMN BASES OR BEARING PLATES SHALL BE 5000 psi MINIMUM NON–SHRINK DRY PACK MATERIAL. FLOWABLE GROUT MAY BE USED WITH EOR APPROVAL. AT BEAMS, INSTALL GROUT UNDER BEARING PLATES BEFORE MEMBER IS INSTALLED. AT COLUMNS, INSTALL GROUT UNDER BASE PLATES AFTER COLUMN HAS BEEN PLUMBED BUT PRIOR TO FLOOR OR ROOF INSTALLATION. GROUT DEPTH SHALL BE SUFFICIENT TO ALLOW GROUT OR DRY PACK TO BE PLACED BENEATH PLATE WITHOUT VOIDS.

CONCRETE (continued)

22) CONCRETE SHALL BE THOROUGHLY CONSOLIDATED IN A MANNER THAT WILL ENCASE THE REINFORCEMENT AND INSERTS, FILL THE FORMS, AND PRODUCE A SURFACE OF UNIFORM TEXTURE FREE OF ROCK POCKETS AND EXCESSIVE VOIDS. CONCRETE SHALL BE CONSOLIDATED BY MEANS OF HIGH FREQUENCY INTERNAL VIBRATORS WITHOUT CAUSING WATER OR CEMENT PASTE TO FLUSH TO THE SURFACE. INTERNAL VIBRATORS TYPE, SIZE, AND NUMBER SHALL BE APPROVED BY THE ENGINEER.

23) ALL CONNECTORS AND METAL HARDWARE IN CONTACT WITH PRESSURE TREATED TIMBER SHALL HAVE CORROSION RESISTANT COATINGS OR PROTECTION, SUCH AS "ZMAX", HOT DIPPED GALVANIZED, OR BE STAINLESS STEEL.

2022 CALIFORNIA BUILDING CODE SHEARWALL SCHEDULE (w/ 2022 LARUCP Ammendments) 1–1–2022

SHEAR–WALL NOTATION	STRUCTURAL I APA–RATED WOOD STRUCTURAL PANEL THICKNESS	COMMON NAIL SPACING @ BOUNDARIES & EDGES (B.N. & E.N.) FIELD NAILING @ 12" O.C.	ALLOWABLE SHEAR / FT (WOOD STUDS @16"o.c., U.N.O) (REDUCED BY 25%)	SLIDING ANCHOR SYSTEM			
				5/8" A.B. SPACING [2] 2x SILL V= 1184# 3x SILL V= 1520# O.C.	A35 OR LTP4 FRAMING CLIP SPACING V = 450# O.C.	16d COMMON NAIL SPACING [3] 2x SOLE PLATE ONLY: V= 121# O.C.	1/4" LAG [6] SCREW SPACING 3x SOLE PLATE ONLY: V= 880# (MIN. 2" PENETRATION) O.C.
A	15/32"	8d @ 6" o.c.	210#/FT.	48"	24"	6"	12"
B [1]	15/32"	8d @ 4" o.c.	320#/FT.	48"	16"	4"	9"
C [1]	15/32"	8d @ 3" o.c.	410#/FT.	44"	12"	3"	6"
D [1]	15/32"	8d @ 2" o.c.	540#/FT.	32"	9"	SEE LAG SCREW SPACING →	5"
E [1]	15/32"	10d @ 2" o.c.	650#/FT.	26"	8"	SEE LAG SCREW SPACING →	4"
DBL SIDED C [4]	15/32" EACH SIDE	8d @ 3" o.c. EACH SIDE	820#/FT.	22"	12" [5]	SEE LAG SCREW SPACING →	3"
DBL SIDED D [4]	15/32" EACH SIDE	8d @ 2" o.c. EACH SIDE	1080#/FT.	16"	9" [5]	SEE LAG SCREW SPACING →	3"
DBL SIDED E [4]	15/32" EACH SIDE	10d @ 2" o.c. EACH SIDE	1300#/FT.	13"	8" [5]	SEE LAG SCREW SPACING →	3"

1. FRAMING AT FOUNDATION SILL PLATES AND ADJOINING PANEL EDGE STUDS SHALL BE A SINGLE 3x NOMINAL MEMBER, AND ALL NAILS SHALL BE STAGGERED WITH 1/2" EDGE DISTANCE. 2x NOMINAL SOLE PLATE MAY BE USED AT RAISED FLOOR AND UPPER LEVELS.
2. SIMPSON BP5/8 BEARING PLATES (LARR 25293), OR OTHER LISTED MAKE, APPROVED BY BUILDING OFFICIAL, SHALL BE USED WITH ALL 5/8" ANCHORS. 5/8" SIMPSON TITAN HD ANCHORS (ICC ESR–1056) (LARR 25560) WITH 4–1\8" MIN. EMBEDMENT, MAY BE USED IN LIEU OF 5/8" ANCHOR BOLTS AT EXISTING FOOTINGS WITH SAME SPACING PER TABLE ABOVE. SPECIAL INSPECTION REQUIRED FOR ALL EPOXY ANCHOR INSTALLATIONS.
3. ALL SILL NAILING SHALL BE STAGGERED 1/2" MINIMUM. (TYPICAL)
4. FRAMING AT FOUNDATION SILL PLATE, SOLE PLATES AND STUDS SHALL BE A SINGLE 3x NOMINAL MEMBER, AND ALL NAILS SHALL BE STAGGERED W/ 1\2" EDGE DISTANCE. 2x NOMINAL DOUBLE TOP PLATE MAY BE USED.
5. LTP4 TO BE @ SPECIFIED SPACING AT BOTH FACES W/4x BLOCKING.
6. FOR 1/4" LAGS, USE SIMSPON "SDS" SCREWS (¼"x6", "SDS25600, U.N.O.).

SHEAR WALL

1) ONLY COMMON NAILS SHALL BE PERMITTED FOR REQUIRED NAILING AT VERTICAL SHEAR PANELS AND HORIZONTAL DIAPHRAGMS (ROOF AND FLOOR).

2) ALL SHEARWALLS WITH AN ALLOWABLE SHEAR CAPACITY GREATER THAN 300 plf REQUIRE 3x MEMBERS AT THE FOUNDATION SILL PLATE AND AT ADJACENT PANEL EDGES. A MINIMUM OF 1/2" EDGE DISTANCE FROM THE PANEL EDGE TO THE CENTER OF THE NAIL IS REQUIRED FOR THESE 3x MEMBERS.

3) ALL HOLD DOWN CONNECTORS SHALL BE TIGHTENED JUST PRIOR TO COVERING THE WALL FRAMING. BOLT HOLES FOR HOLD DOWN CONNECTION TO POST SHALL BE 1/16" (MAX.) OVERSIZED. INSPECTOR TO VERIFY HOLD DOWN CONNECTIONS.

4) PROVIDE MINIMUM 4x4 POSTS FOR ALL HOLD DOWNS ENDS OF SHEARWALL.

5) APPROVED PLATE WASHERS SHALL BE PROVIDED FOR ALL WOOD STRUCTURAL PANEL SHEAR WALL ANCHOR BOLTS AND FOR ALL HOLD DOWN CONNECTOR BOLTS TO POSTS.

BOLT DIAMETER	PLATE SIZE
5/8"	1/4" x 3" x 3"
3/4"	5/16" x 3" x 3"
7/8"	5/16" x 3" x 3"
1"	3/8" x 3 1/2" x 3 1/2"

DRAG LINE DL

DRAG LINE: SIMPSON ST6236 @ ALL BREAKS AND DIAPHRAGM EDGE NAILING.

@ ROOF: SHEAR WALL TO CONTINUE UP TO ROOF FRAMING, EDGE NAIL, AND INSTALL A35 PER SHEAR WALL SCHEDULE.

@ FLOOR: SHEAR WALL TO CONTINUE UP TO DBL TOP PL. MINIMUM, EDGE NAIL, AND INSTALL A35 PER SHEAR WALL SCHEDULE.

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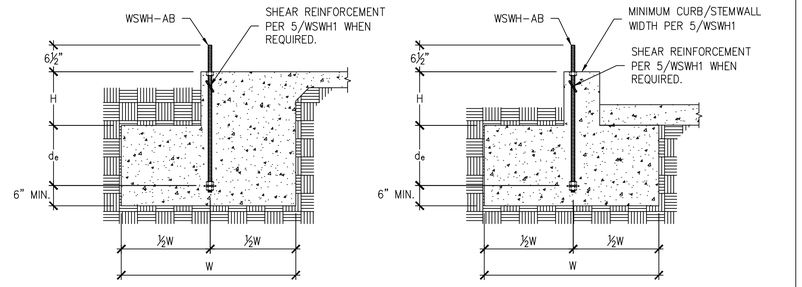
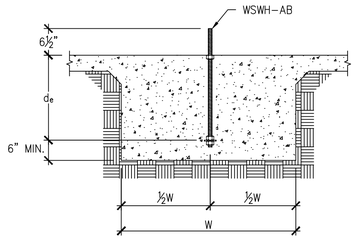


SLAB ON GRADE FOUNDATION

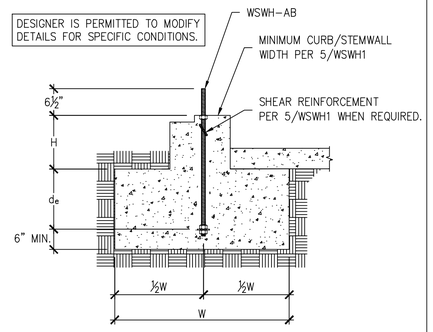
CURB OR STEMWALL FOUNDATION

NOTES :
1. SEE 2/WSWH1 FOR DIMENSIONS AND ADDITIONAL NOTES.
2. SEE 5/WSWH1 FOR SHEAR REINFORCEMENT WHEN REQUIRED.
3. MAXIMUM H = l_e–d_e. SEE 3/WSWH1 AND 4/WSWH1 FOR l_e.



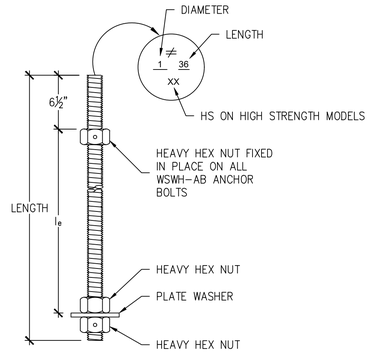
INTERIOR FOUNDATION

DESIGNER IS PERMITTED TO MODIFY DETAILS FOR SPECIFIC CONDITIONS.



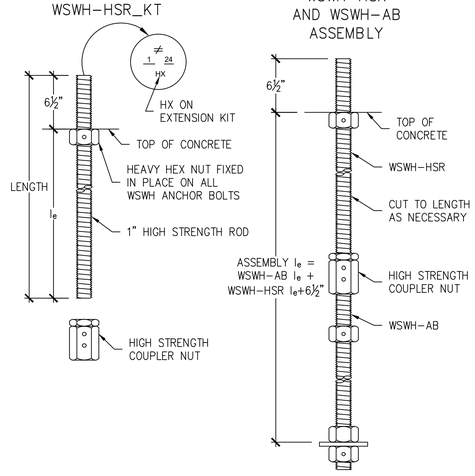
BRICK LEDGE FOUNDATION

STRONG–WALL® WSWH ANCHORAGE – TYPICAL SECTIONS | 1



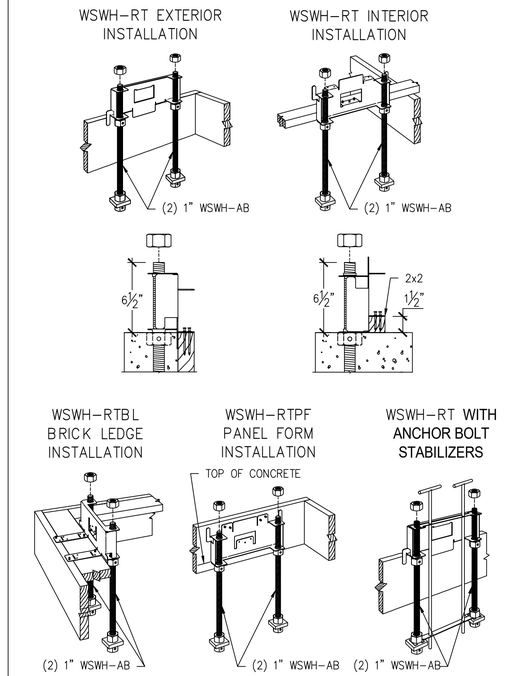
WSWH PANEL MODEL	MODEL NO.	DIAMETER	LENGTH	l_e
WSWH12, WSWH18 AND WSWH24	WSWH–AB1x24	1"	24"	15½"
	WSWH–AB1x24HS	1"	24"	15½"
	WSWH–AB1x30	1"	30"	21½"
	WSWH–AB1x30HS	1"	30"	21½"
	WSWH–AB1x36	1"	36"	27½"
	WSWH–AB1x36HS	1"	36"	27½"
	WSWH–AB1x42	1"	42"	33½"
	WSWH–AB1x42HS	1"	42"	33½"
	WSWH–AB1x48	1"	48"	39½"
	WSWH–AB1x48HS	1"	48"	39½"

WSWH ANCHOR BOLTS | 3

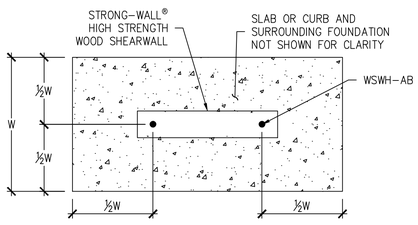


WSWH PANEL MODEL	MODEL NO.	DIAMETER	LENGTH	l_e
WSWH12, WSWH18 AND WSWH24	WSWH–HSR1x24KT	1"	24"	17½"
	WSWH–HSR1x36KT	1"	36"	29½"

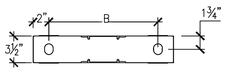
WSWH ANCHOR BOLT EXTENSION | 4



WSWH ANCHOR BOLT TEMPLATES | 6



FOUNDATION PLAN VIEW



WSWH PLAN VIEW
ANCHORAGE LAYOUT

ANCHOR BOLT LAYOUT	
STRONG–WALL® HIGH STRENGTH WOOD SHEARWALL MODEL NO.	DISTANCE FROM CENTER–TO–CENTER OF WSWH–AB, B (in)
WSWH12	8⅛
WSWH18	14
WSWH24	20

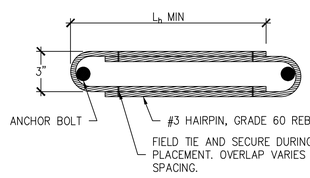
NOTES :
1. ANCHORAGE DESIGNS CONFORM TO ACI 318–11 APPENDIX D, ACI 318–14 CHAPTER 17 AND ACI 318–19 CHAPTER 17 WITH NO SUPPLEMENTARY REINFORCEMENT FOR CRACKED OR UNCRACKED CONCRETE AS NOTED.
2. ANCHOR STRENGTH INDICATES REQUIRED GRADE OF WSWH–AB ANCHOR BOLT. STANDARD (ASTM F1554 GRADE 36) OR HIGH STRENGTH (HS) (ASTM A193 GRADE B7).
3. SEISMIC INDICATES SEISMIC DESIGN CATEGORY C–F. DETACHED 1 AND 2 FAMILY DWELLINGS IN SDC C MAY USE WIND ANCHORAGE SOLUTIONS. SEISMIC ANCHORAGE DESIGNS CONFORM TO ACI 318–11 SECTION D.3.3.4.3, ACI 318–14 SECTION 17.2.3.4.3 AND ACI 318–19 SECTION 17.10.5.3.
4. WIND INCLUDES SEISMIC DESIGN CATEGORY A AND B AND DETACHED 1 AND 2 FAMILY DWELLINGS IN SDC C.
5. FOUNDATION DIMENSIONS ARE FOR ANCHORAGE ONLY. FOUNDATION DESIGN (SIZE AND REINFORCEMENT) BY OTHERS. THE DESIGNER MAY SPECIFY ALTERNATE EMBEDMENT, FOOTING SIZE OR ANCHOR BOLT.
6. REFER TO 1/WSWH1 FOR d_e.

WSWH ANCHORAGE SOLUTIONS FOR 2500 PSI CONCRETE					
DESIGN CRITERIA	CONCRETE CONDITION	ANCHOR STRENGTH	WSWH–AB1 ANCHOR BOLT		
			ASD ALLOWABLE UPLIFT (lbs)	W (in)	d_e (in)
SEISMIC	CRACKED	STANDARD	16,000	33	11
			17,100	35	12
		HIGH STRENGTH	34,100	52	18
			36,800	55	19
	UNCRACKED	STANDARD	15,700	28	10
			17,100	30	10
		HIGH STRENGTH	33,500	45	15
			36,800	48	16
WIND	CRACKED	STANDARD	6,200	16	6
			11,400	24	8
			17,100	32	11
		HIGH STRENGTH	21,100	36	12
			27,300	42	14
			34,100	48	16
			36,800	51	17
	UNCRACKED	STANDARD	6,400	14	6
			12,500	22	8
			17,100	28	10
		HIGH STRENGTH	22,900	33	11
			26,400	36	12
			34,200	42	14
			36,800	44	15

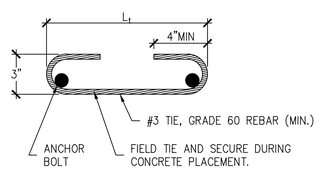
WSWH ANCHORAGE SOLUTIONS FOR 3000 PSI CONCRETE					
DESIGN CRITERIA	CONCRETE CONDITION	ANCHOR STRENGTH	WSWH–AB1 ANCHOR BOLT		
			ASD ALLOWABLE UPLIFT (lbs)	W (in)	d_e (in)
SEISMIC	CRACKED	STANDARD	16,000	31	11
			17,100	33	11
		HIGH STRENGTH	33,900	49	17
			36,800	52	18
	UNCRACKED	STANDARD	16,300	27	9
			17,100	28	10
		HIGH STRENGTH	34,000	43	15
			36,800	46	16
WIND	CRACKED	STANDARD	5,600	14	6
			10,200	21	7
			17,100	30	10
		HIGH STRENGTH	20,000	33	11
			26,500	39	13
			33,600	45	15
			36,800	48	16
	UNCRACKED	STANDARD	6,200	13	6
			12,800	21	7
			17,100	26	9
		HIGH STRENGTH	21,800	30	10
			28,900	36	12
			33,100	39	13
			36,800	42	14

WSWH ANCHORAGE SOLUTIONS FOR 4500 PSI CONCRETE					
DESIGN CRITERIA	CONCRETE CONDITION	ANCHOR STRENGTH	WSWH–AB1 ANCHOR BOLT		
			ASD ALLOWABLE UPLIFT (lbs)	W (in)	d_e (in)
SEISMIC	CRACKED	STANDARD	16,000	27	9
			17,100	29	10
		HIGH STRENGTH	34,700	44	15
			36,800	46	16
	UNCRACKED	STANDARD	15,700	23	8
			17,100	25	9
		HIGH STRENGTH	33,900	38	13
			36,800	40	14
WIND	CRACKED	STANDARD	6,800	14	6
			11,600	20	7
			17,100	26	9
		HIGH STRENGTH	21,400	30	10
			28,400	36	12
			32,400	39	13
			36,800	43	15
	UNCRACKED	STANDARD	6,800	12	6
			12,400	18	6
			17,100	23	8
		HIGH STRENGTH	22,800	27	9
			26,700	30	10
			30,700	33	11
			36,800	37	13

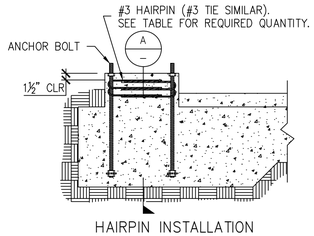
STRONG–WALL® HIGH STRENGTH WOOD SHEARWALL TENSION ANCHORAGE SCHEDULE 2,500, 3,000 AND 4,500 PSI | 2



HAIRPIN SHEAR REINFORCEMENT

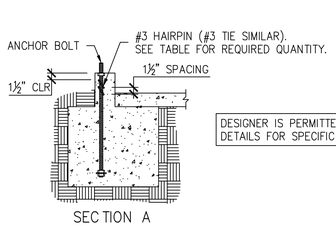


TIE SHEAR REINFORCEMENT



HAIRPIN INSTALLATION

(GARAGE CURB SHOWN. OTHER FOOTING TYPES SIMILAR.)



SECTION A

DESIGNER IS PERMITTED TO MODIFY DETAILS FOR SPECIFIC CONDITIONS.

STRONG–WALL® HIGH STRENGTH WOOD SHEARWALL SHEAR ANCHORAGE						
MODEL	SEISMIC[3]			WIND[4]		
	L_t OR L_h (in.)	SHEAR REINFORCEMENT	MIN. CURB/ STEMWALL WIDTH (in.)	SHEAR REINFORCEMENT	MIN. CURB/ STEMWALL WIDTH (in.)	ASD ALLOWABLE SHEAR LOAD, V (lb.)
						UNCRACKED / CRACKED
WSWH12	10¼	(1) #3 TIE	6	SEE NOTE 7	6	1,080 / 770
WSWH18	15	(2) #3 HAIRPINS[5,6]	6	(1) #3 HAIRPIN	6	HAIRPIN REINF. ACHIEVES MAX. ALLOW SHEAR LOAD OF THE WSWH
WSWH24	19	(2) #3 HAIRPINS[5]	6	(2) #3 HAIRPINS[5]	6	

NOTES :
1. SHEAR ANCHORAGE DESIGNS CONFORM TO ACI 318–19, ACI 318–11 AND ACI 318–14 AND ASSUME MINIMUM 2,500 PSI CONCRETE.
2. SHEAR REINFORCEMENT IS NOT REQUIRED FOR INTERIOR FOUNDATION APPLICATIONS (PANEL INSTALLED AWAY FROM EDGE OF CONCRETE), OR BRACED WALL PANEL APPLICATIONS.
3. SEISMIC INDICATES SEISMIC DESIGN CATEGORY C THROUGH F. DETACHED 1 AND 2 FAMILY DWELLINGS IN SDC C MAY USE WIND ANCHORAGE SOLUTIONS. SEISMIC SHEAR REINFORCEMENT DESIGNS CONFORM TO ACI 318–19, SECTION 17.10.6.3, ACI 318–14, SECTION 17.2.3.5.3
4. WIND INCLUDES SEISMIC DESIGN CATEGORY A AND B.
5. ADDITIONAL TIES MAY BE REQUIRED AT GARAGE CURB OR STEMWALL INSTALLATIONS BELOW ANCHOR REINFORCEMENT PER DESIGNER.
6. USE (1) #3 HAIRPIN FOR WSWH18 WHEN STANDARD STRENGTH ANCHOR IS USED.
7. USE (1) #3 TIE FOR WSWH12 WHEN PANEL DESIGN SHEAR FORCE EXCEEDS TABULATED ANCHORAGE ALLOWABLE SHEAR LOAD.
8. #4 GRADE 40 SHEAR REINFORCEMENT MAY BE SUBSTITUTED FOR WSWH SHEAR ANCHORAGE SOLUTIONS.
9. CONCRETE EDGE DISTANCE FOR ANCHORS MUST COMPLY WITH ACI 318–19 SECTION 17.9.2, ACI 318–14 SECTION 17.7.2 AND ACI 318–11 SECTION D.8.2.
10. THE DESIGNER MAY SPECIFY ALTERNATE SHEAR ANCHORAGE.

STRONG–WALL® WSWH SHEAR ANCHORAGE SCHEDULE AND DETAILS | 5

NO.	DATE	REVISIONS
0	02-26-2021	FIRST RELEASE - 2018 IBC
1	03-16-2021	2021 IBC REVISIONS
2	04-29-2022	ADDED WSWH-AB MODELS

SIMPSON Strong-Tie, Co. Inc.
• 5956 W. Las Positas Blvd.
Pleasanton, CA 94588
• Tel: (800) 999–5099
• Website: www.strongtie.com

SIMPSON Strong-Tie THERE IS NO EQUAL

STRONG-WALL® WSWH
ANCHORAGE DETAILS
ENGINEERED DESIGNS

SIMPSON Strong-Tie THERE IS NO EQUAL

NAME	
DATE	04-29-2022
SCALE	N.T.S.
CHECKED	
SHEET	WSWH1
OF	SHEETS
JOB NO.	

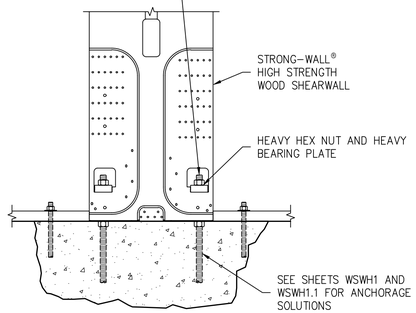
STRONG-WALL® HIGH STRENGTH WOOD SHEARWALL MODELS

MODEL NO.	W (in.)	H (in.)	ANCHOR BOLTS		TOTAL WALL WEIGHT (lb.)
			QUANTITY	DIA. (in.)	
WSWH12x7	12	84	2	1	105
WSWH18x7	18	84	2	1	155
WSWH12x8	12	96	2	1	120
WSWH18x8	18	96	2	1	175
WSWH24x8	24	96	2	1	225
WSWH12x9	12	108	2	1	130
WSWH18x9	18	108	2	1	195
WSWH24x9	24	108	2	1	250
WSWH12x10	12	120	2	1	145
WSWH18x10	18	120	2	1	210
WSWH24x10	24	120	2	1	275
WSWH12x12	12	144	2	1	165
WSWH18x12	18	144	2	1	245
WSWH24x12	24	144	2	1	325
WSWH18x14	18	168	2	1	285
WSWH24x14	24	168	2	1	370
WSWH24x16	24	192	2	1	420
WSWH18x20	18	240	2	1	390
WSWH24x20	24	240	2	1	520

NOTES :
1. FOR HEIGHTS NOT LISTED, ORDER THE NEXT TALLEST PANEL AND TRIM TO FIT. MINIMUM TRIMMED HEIGHT FOR ALL PANELS IS 74½".
2. ALL PANELS COME WITH PRE-ATTACHED HOLDOWNS, TWO HEAVY HEX NUTS, TWO HEAVY BEARING PLATES, ONE WSWH-TP TOP CONNECTION PLATE WITH REQUIRED FASTENERS AND INSTALLATION INSTRUCTIONS.
3. ALL PANELS ARE 3½" THICK.

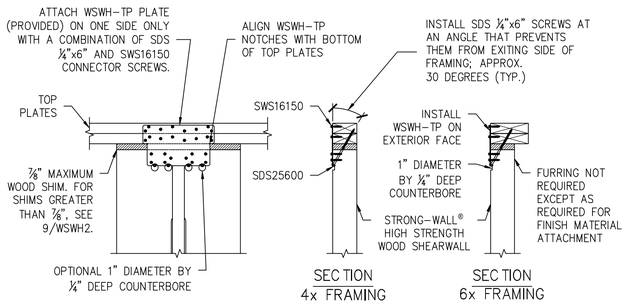
PLACE STRONG-WALL® HIGH STRENGTH WOOD SHEARWALL OVER THE ANCHOR BOLTS AND SECURE WITH HEAVY BEARING PLATES AND HEAVY HEX NUTS (PROVIDED). DO NOT USE AN IMPACT WRENCH. USE 1⅜" WRENCH FOR 1" NUT. TIGHTEN ANCHOR NUTS FINGER TIGHT + ½" TURN.

DESIGNER IS PERMITTED TO MODIFY DETAILS FOR SPECIFIC CONDITIONS.

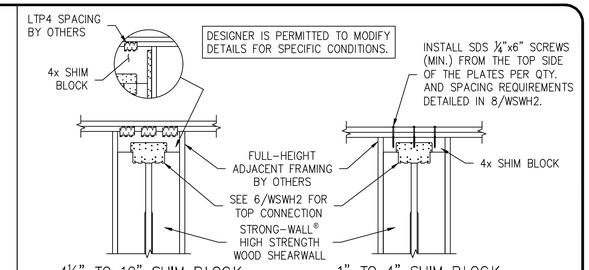


WSWH-TP CONNECTION		
MODEL NO.	FASTENER QUANTITY	
	SWS16150	SDS25600
WSWH-TP12	14	2
WSWH-TP18	26	4
WSWH-TP24	46	8

DESIGNER IS PERMITTED TO MODIFY DETAILS FOR SPECIFIC CONDITIONS.



DESIGNER IS PERMITTED TO MODIFY DETAILS FOR SPECIFIC CONDITIONS.

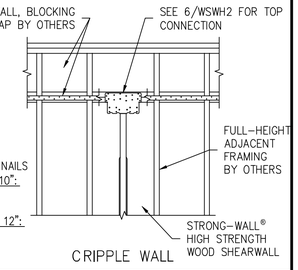


DESIGNER SHALL DESIGN AND DETAIL FOR:
1. SHEAR TRANSFER
2. OUT-OF-PLANE LOADING EFFECT
3. INCREASED OVERTURNING AND DRIFT DUE TO ADDITIONAL HEIGHT

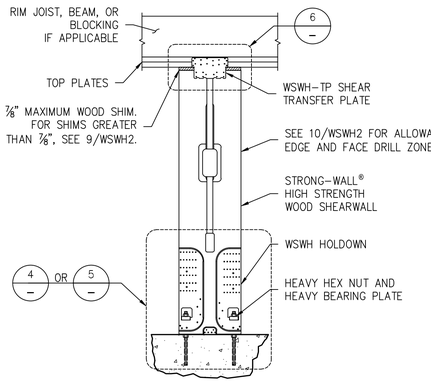
FOR 8" TO 12" BLOCK DEPTHS:
ATTACH SIMPSON STRONG-TIE® CS16 STRAPS AT EDGE OF WSWH PANEL (EACH SIDE) USING 10dx1½" NAILS

SHIM BLOCK HEIGHTS GREATER THAN 8" AND UP TO 10":
- 8 NAILS INTO BLOCK
- 8 NAILS INTO WSWH PANEL

SHIM BLOCK HEIGHTS GREATER THAN 10" AND UP TO 12":
- 10 NAILS INTO BLOCK
- 10 NAILS INTO WSWH PANEL



STRONG-WALL® WSWH MODELS | 1



DESIGNER IS PERMITTED TO MODIFY DETAILS FOR SPECIFIC CONDITIONS.

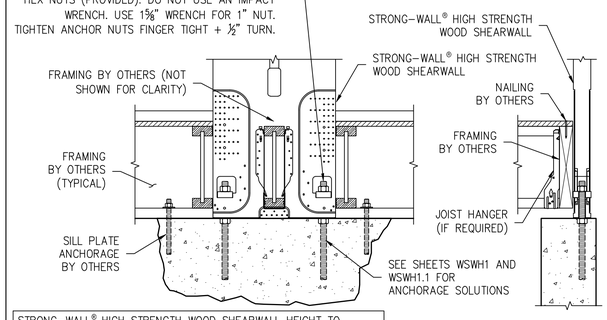
ENSURE CONCRETE IS LEVEL AND SMOOTH BENEATH PANEL. GRIND OR FILL AS NECESSARY.

SINGLE STORY WSWH ON CONCRETE | 2

STANDARD INSTALLATION BASE CONNECTION | 4

PLACE STRONG-WALL® HIGH STRENGTH WOOD SHEARWALL OVER THE ANCHOR BOLTS AND SECURE WITH HEAVY BEARING PLATES AND HEAVY HEX NUTS (PROVIDED). DO NOT USE AN IMPACT WRENCH. USE 1⅜" WRENCH FOR 1" NUT. TIGHTEN ANCHOR NUTS FINGER TIGHT + ½" TURN.

DESIGNER IS PERMITTED TO MODIFY DETAILS FOR SPECIFIC CONDITIONS.



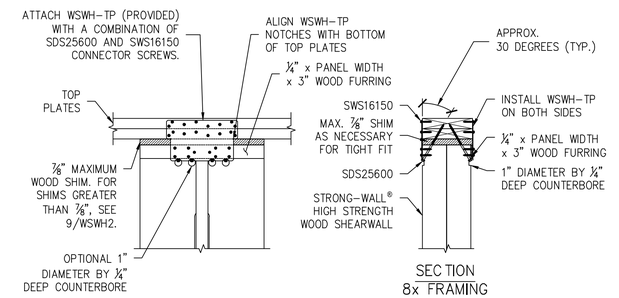
STRONG-WALL® HIGH STRENGTH WOOD SHEARWALL HEIGHT TO INCLUDE THE DEPTH OF THE FLOOR SYSTEM AND SHALL BE INSTALLED DIRECTLY ON THE FOUNDATION. SPECIFY PANEL HEIGHT FROM TOP OF FOUNDATION TO UNDERSIDE OF TOP PLATES OR BEAM.

WOOD FLOOR SYSTEM BASE CONNECTION | 5

TOP CONNECTION | 6

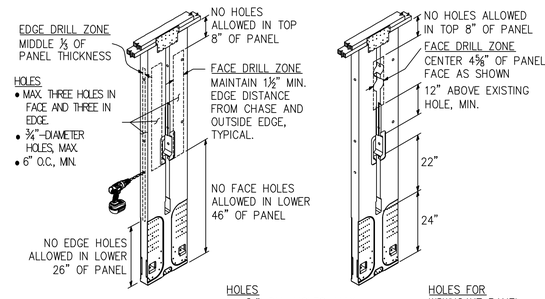
WSWH-TP CONNECTION		
MODEL NO.	FASTENER QUANTITY	
	SWS16150	SDS25600
WSWH-TP12	28	4
WSWH-TP18	52	8
WSWH-TP24	92	16

DESIGNER IS PERMITTED TO MODIFY DETAILS FOR SPECIFIC CONDITIONS.

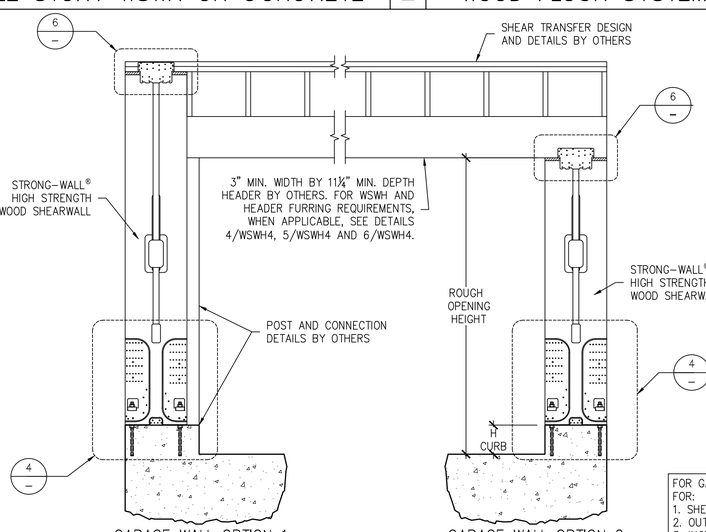


BACK-TO-BACK TOP CONNECTION | 7

TOP OF WALL HEIGHT ADJUSTMENTS | 9



TRIM ZONE AND ALLOWABLE HOLES | 10



DESIGNER IS PERMITTED TO MODIFY DETAILS FOR SPECIFIC CONDITIONS.

WHEN WSWH-PS STRAPS OMITTED, ALLOWABLE SHEAR VALUES FOR STANDARD PANEL APPLY.

GARAGE HEADER ROUGH OPENING HEIGHT

MODEL NO.	TRIMMED PANEL HEIGHT	H CURB	ROUGH OPENING HEIGHT
WSWH12x7 WSWH18x7 WSWH24x7	78"	5½"	6'-11½"
		6"	7'-0"
WSWH12x8 WSWH18x8 WSWH24x8	85½"	0"	7'-1½"
	93¼"	5½"	8'-2¾"
		6"	8'-3¼"

NOTES :
1. IF REQUIRED ROUGH OPENING HEIGHT EXCEEDS TABLE VALUE, SPECIFY NEXT TALLER PANEL AND TRIM AS NECESSARY. THE STRONG-WALL® HIGH STRENGTH WOOD SHEARWALL MAY BE TRIMMED TO A MINIMUM HEIGHT OF 74½".
2. FURRING DOWN GARAGE HEADER MAY BE REQUIRED FOR CORRECT ROUGH OPENING HEIGHT.

FOR GARAGE WALL OPTION 2, DESIGNER SHALL DESIGN AND DETAIL FOR:
1. SHEAR TRANSFER
2. OUT-OF-PLANE LOADING EFFECT
3. INCREASED OVERTURNING AND DRIFT DUE TO ADDITIONAL HEIGHT

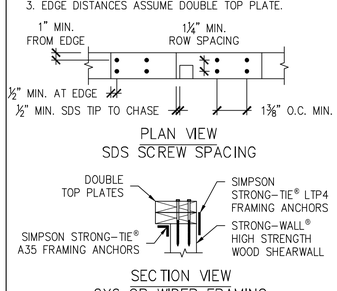
ALTERNATE WSWH GARAGE FRONT OPTIONS | 3

QTY. OF SDS¼"x6" SCREWS REQ'D.	
WSWH12	4
WSWH18	8
WSWH24	16

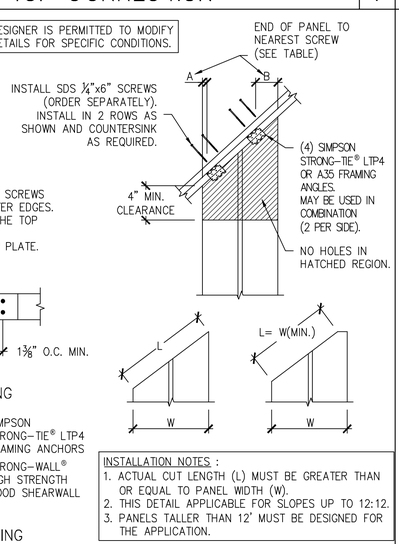
DESIGNER IS PERMITTED TO MODIFY DETAILS FOR SPECIFIC CONDITIONS.

EDGE DISTANCE FOR SCREWS		
SLOPE	A (in.)	B (in.)
0:12-4:12	2	3
5:12-8:12	1½	4½
9:12-12:12	1½	5½

NOTES :
1. MAINTAIN END DISTANCES TO PREVENT SCREWS FROM PENETRATING THROUGH THE OUTER EDGES.
2. INSTALL SCREWS PERPENDICULAR TO THE TOP PLATE.
3. EDGE DISTANCES ASSUME DOUBLE TOP PLATE.



DESIGNER IS PERMITTED TO MODIFY DETAILS FOR SPECIFIC CONDITIONS.



INSTALLATION NOTES :
1. ACTUAL CUT LENGTH (L) MUST BE GREATER THAN OR EQUAL TO PANEL WIDTH (W).
2. THIS DETAIL APPLICABLE FOR SLOPES UP TO 12:12.
3. PANELS TALLER THAN 12' MUST BE DESIGNED FOR THE APPLICATION.

RAKE WALL | 8

NOTES | 11

1. STRONG-WALL® HIGH STRENGTH WOOD SHEARWALL IS MANUFACTURED AND TRADEMARKED BY "SIMPSON STRONG-TIE COMPANY INC." HOME OFFICE: 5956 W. LAS POSITAS BLVD., PLEASANTON, CA 94588 TEL: (800) 999-5099, FAX: (925) 847-1597. "SIMPSON STRONG-TIE COMPANY INC." IS AN ISO 9001-2008 REGISTERED COMPANY.
2. USE OF THIS PRODUCT IS SUBJECT TO THE APPROVAL OF THE LOCAL BUILDING DEPARTMENT.
3. THIS PRODUCT IS PART OF THE OVERALL LATERAL FORCE RESISTING SYSTEM OF THE STRUCTURE. DESIGN OF THE BUILDING'S LATERAL FORCE RESISTING SYSTEM, INCLUDING THE LOAD PATH TO TRANSFER LATERAL FORCES FROM THE STRUCTURE TO THE GROUND, IS THE RESPONSIBILITY OF THE DESIGNER.
4. ENGINEER OF RECORD IS PERMITTED TO MODIFY DETAILS FOR SPECIFIC CONDITIONS.
5. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, CONDITIONS, ELEVATIONS, ETC. PRIOR TO INSTALLATION OF ANY COMPONENTS FOR THE STRONG-WALL SB SYSTEM. IF ANY DISCREPANCIES ARE FOUND, THEY SHALL BE BROUGHT TO THE ATTENTION OF THE DESIGNER FOR CLARIFICATION PRIOR TO CONSTRUCTION.
6. INSTALLATION OF PRODUCT SHALL BE DONE IN CONFORMANCE TO THESE DRAWINGS. THE PERFORMANCE OF MODIFIED PRODUCTS OR ALTERED INSTALLATION PROCEDURES ARE THE SOLE RESPONSIBILITY OF THE DESIGNER.
7. SIMPSON STRONG-TIE COMPANY INC. RESERVES THE RIGHT TO CHANGE SPECIFICATIONS, DESIGNS, AND MODELS WITHOUT NOTICE OR LIABILITY FOR SUCH CHANGES.
8. ALL HARDWARE CALLED OUT IS SIMPSON STRONG-TIE.
9. SEE ICC-ES ESR-2652 OR CITY OF LOS ANGELES RR25730 AS APPLICABLE FOR ADDITIONAL INFORMATION.

NO.	DATE	REVISIONS
0	11-20-2020	FIRST RELEASE - 2018 IBC
1	03-16-2021	2021 IBC REVISIONS

SIMPSON Strong-Tie, Co. Inc.
• 5956 W. Las Positas Blvd.
Pleasanton, CA 94588
• Tel: (800) 999-5099
• Website: www.strongtie.com

SIMPSON Strong-Tie THERE IS NO EQUAL

STRONG-WALL WSWH
FRAMING DETAILS
ENGINEERED DESIGNS

SIMPSON Strong-Tie THERE IS NO EQUAL

NAME	
DATE	03-16-2021
SCALE	N.T.S.
CHECKED	
SHEET	WSWH2
OF	SHEETS
JOB NO.	