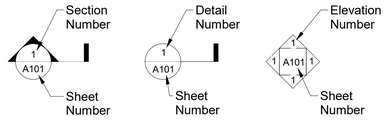
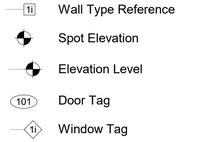
Architectural Abbreviations:

ADJ.	Adjacent	F.E.	Fire Extinguisher	P.C.F.	Pounds Per Cubic Foot
A.F.F.	Above Finish Floor	F.F.	Finish Floor	PERF.	Perforated
ALUM.	Aluminum	FLR.	Floor	P.L.F.	Pounds Per Linear Foot
ALT.	Alternate	F.O.	Face of	PLY.	Plywood
ARCH.	Architectural	F.O.C	Face of Concrete	P.S.F.	Pounds Per Square Foot
AVG.	Average	F.O.M	Face of Masonry	P.S.I.	Pounds Per Square Inch
		F.O.S	Face of Stud	P.T.	Pressure Treated
BD.	Board	FP.	Fireplace		
BDLG.	Building	FRMG.	Framing	RAG	Return Air Grille
BLKG.	Blocking	FTG.	Footing	REF.	Reference
BM.	Beam			REFR.	Refrigerator
BTWN.	Between	G.	Gas	REQ'D.	Required
		GA.	Gauge	REV.	Revision
CA.TV.	Cable Television	GALV.	Galvanized	RM.	Room
CBC	California Building Code	G.C.	General Contractor	R.O.	Rough Opening
C.I.P.	Cast-In-Place Concrete	G.F.I.	Ground Fault Interrupter		
C.J.	Control Joint	GL.	Glass	SECT.	Section
CLG.	Ceiling			S.F.	Square Foot
CLR.	Clear	HDR.	Header	SHWR.	Shower
C.M.U.	Concrete Masonry Unit	HGR.	Hanger	SIM.	Similar
COL.	Column	HORIZ.	Horizontal	SPECS	Specifications
CONC.	Concrete	HT.	Height	SQ.	Square
CONT.	Continuous	HTG.	Heating	S.S.	Stainless Steel
CPT	Carpet	HVAC.	Heating/Ventilating/Air-Conditioning	STD.	Standard
C.T.	Ceramic Tile	H.W.	Hot Water	STL.	Steel
CTR.	Center			SUSP.	Suspended
C.W.	Cold Water	INCL.	Included/Including	SYS.	System
		INFO.	Information		
D.F.	Douglas Fir	INSUL.	Insulation	TEL.	Telephone
DIA.	Diameter	INT.	Interior	T.O.C.	Top Of Concrete
DIM.	Dimension			THK.	Thickness
D.L.	Dead Load	LAV.	Lavatory	T.O.B.	Top Of Beam
DN	Down	LB.	Pound	T.O.S.	Top Of Slab
DWG.	Drawing	L.F.	Linear Foot	T.O.W.	Top Of Wall
		L.L.	Live Load	TYP.	Typical
EA.	Each				
E.I.F.S	Exterior Insulation Finish System	MAX.	Maximum	UBC	Uniform Building Code
		MECH.	Mechanical	U.O.N.	Unless Otherwise Noted
E.J.	Expansion Joint	MFR.	Manufacturer		
ELEC.	Electrical	MICRO	Microwave	V.I.F.	Verify In Field
ELEV.	Elevation	MIN.	Minimum	VNR.	Veneer
E.O.S.	Edge of Slab	MISC.	Miscellaneous	V.A.	Vinyl Tile
EQ.	Equal	MTL.	Metal		
EQUIP.	Equipment			W/	With
EXT.	Exterior	N/A	Not Applicable	W.C.	Water Closet
		NO.	Number	WD.	Wood
F.C.U.	Fan Coil Unit	N.T.S.	Not To Scale	W/D	Washer/Dryer
F.D.	Floor Drain			W/O	Without
FDN.	Foundation	O.C.	On Center	WP.	Waterproof
				WT.	Weight

Symbols:



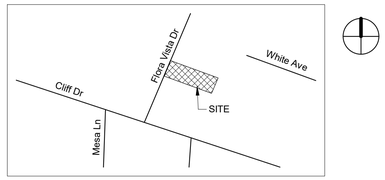


General Notes:

1. This project shall comply with the California Residential Code, 2022 Edition; The California Plumbing Code, 2022 Edition; The California Electrical Code, 2022 Edition; The California Mechanical Code, 2022 Edition; The California Fire Code, 2022 Edition; The California Energy Code, 2022 Edition; The California Green Building Standards Code, 2022 Edition; and all Amendments as adopted in Santa Barbara City Ordinance
2. This project shall comply with the Santa Barbar Municipal Code; the applicable zoning ordinace for this project is 'Title 30 - Inland Zoning Ordinance'
3. All dimensions are to face of stud, concrete or masonry, unless otherwise noted on drawings.
4. Yard setbacks are to be measured from the exterior wall finish to the property line and not from the outside of the footing (or face of studs).
5. Contractor shall bring to the attention of the architect any conflict, discrepancy or ambiguity in the contract documents and shall not proceed with any of the work effected thereby until clarification is given by the architect.
6. City of Santa Barbara minimum construction specifications shall be a part of the construction documents. Is is the sole respoisibility of the general contractor to review these specifications. Where these construction documents call for a higher standard than that called for in the city specifications, these documents shall take precedence.
7. Contractor shall comply with all OSHA requirements.
8. Tempered glass shall be permanently identified and visible when the unit is glazed.
9. All windows are to have labels attached by N.F.R.C. showing compliance with energy standards.
10. All showerheads for all shower fixtures shall be certified as having a maximum flow rate of no more than 1.8 gpm at 80 psi per CGC 4.303.1.
11. All lavatory and kitchen faucets shall be fitted with a flow-restricting aerator with a certified, maximum flow rate of no more than 1.5 gpm for lavatory faucets and 1.8 gpm for kitchen faucets per CGC 4.303.1.
12. All water closets and associated flushometer valves, if any, shall be certified as using no more than 1.28 gallons per flush and shall meet the performance standards established by the American National Standards Institute Standard A112.19.2.
13. Penetrations of fire-resistive walls, floor-ceilings and roof-ceilings shall be protected as required in CBC.
14. A miminum of 65% of construction waste and demolition debris is to be recycled and/or salvaged per CGC 4.408.1.
15. City will void all designed structural lumber if ripped.
16. Only low volume drip or bubbler emitters shall be used to irrigate existing or proposed non-turf, outside landscaping.
17. The contractor responsible for the construction of the seismic-force-resisting system shall submit a written Statement of Responsibility to the building official prior to the commencement of work on the system.
18. Contractor is to provide an operation and maintenance manual for the owner at the time of final inspection per CGC 4.410.1.
19. VOC's must comply with the limitations listed in CGC Section 4.504.3 and Tables 4.504.1, 4.504.2, 4.504.3 and 4.504.5 for: Adhesives, Paints and Coatings, Carpet and Composition Wood Products. CGC Section 4.504.2.
20. Prior to final approval, Contractor will complete and sign the Green Building Standards Certification form to be filed with the building department official.
21. The moisture content of wood shall not exceed 19% before it is enclosed in construction. Buildings materials with visible signs of water damage should not be used in construction. The moisture content shall be verified by the contractor by one of 3 methods specified under CGC 4.505.3.
22. Contractor shall submit a Construction Waste Management Plan to the jurisdictional agency that regulates waste management, per CGC 4.408.2.
23. Concrete slabs will be provided with a capillary break. CGC 4.505.2.1.
24. Compliance with the documentation requirements of the 2022 Energy Efficiency Standards is necessary for this project. Registered, signed, and dated copies of the appropriate CF1R, CF2R, and CF3R forms shall be made available at necessary intervals for Building Inspector review. Final completed forms will be available for the building owner.
25. During construction, ends of duct openings are to be sealed, and mechanical equipment is to be covered. CGC 4.504.1
26. Bathroom Exhaust Fans are to be capable of providing 5 air changes per hour, and shall be Energy Star rated, vented directly to the outside.

Drawing Index:

Vicinity Map:



F.A.R. Calculations:

Project Address:	412 Flora Vista
Proposed TOTAL NET FAR:	2,594 sq. ft. 3
Zone:	RS-7.5 (SBMC Title 30)
Net Lot Area:	5,911 sq. ft.
Is the height of existing or proposed buildings 17 ft. or greater:	Yes
Are existing or proposed buildings two stories or greater:	Yes
Average Slope of Lot:	7%
Does the height of existing or proposed buildings exceed 25 ft:	No
Is the site in the Hillside Design District:	No
Does the project include 500 or more cu. yds. of grading outside the main building footprint:	No
Floor Area Ratio (FAR):	0.444
Lot Size Range:	4,000 - 9,999 sq. ft.
MAX FAR Calculation:	1,200 + (0.25 x lot size)
100% MAX FAR:	2,678 sq. ft. (0.453)
85% of MAX FAR:	2,276 sq. ft.
80% of MAX FAR:	2,142 sq. ft.

Mandatory BMP Inspections:

Note: Inspections shall be called in by Contractor for inspection 72 hours prior to needed inspection. The City will then route the request to the QSP Inspector or third-party company.

Inspections for Storm Water Post-Constuction Improvements:
- Confirmation that roof downspouts identified on sheet BMP-6 distribute storm water over rain garden area

1

Project Directory:

Owner:
Nate, Natalie, & Karen Evans
412 Flora Vista Drive
Santa Barbara, CA 93109
(805) 453-1723
nevans@tynangroup.com

Contractor:
TBD

Designer:
Nicodemus Design
Nate Nicodemus
8861 Villa La Jolla Dr.
P.O. Box # 13367
La Jolla, CA 92037
(760) 473-1041
nn@natenicodemus.com

Engineer:
Ashley & Vance Engineering, Inc.
R. Paul Belmont, P.E.
210 East Cota Street
Santa Barbara, CA 93101
(805) 962-9966
paul@ashleyvance.com

Project Information:

Project Description:

Remodel of the existing single family residence. No changes to existing accessory dwelling unit are proposed. One small addition of 51 sq. ft. proposed to the second floor primary bedroom. No additions proposed to the first floor. New roof proposed at the second floor and all new windows and doors proposed throughout the home. All existing windows will be either replaced in kind or altered per elevations. New windows and doors will match the windows and doors on the existing ADU (per previous permit). New front porch and new chimney proposed at the first floor. Runoff treatment landscape area to be provided in side yard for redeveloped impervious areas (2nd floor roof and front porch). 2

A Minor Zoning Exception is required per SBMC30.165.040.B.2. for the change in openings with the setback on the second floor (new windows in an existing exterior wall that is over the setback by approximately 9 inches). 2

Project Address: 412 Flora Vista, Santa Barbara, CA
Assessor's Parcel Number: 041-242-030
Construction Type: V B - Wood Frame
Occupancy Classification: R3
Automatic Fire Sprinklers: Yes

Santa Barbara Parcel Zoning: RS-7.5 (SBMC Title 30)
Lot Area: 5,911 sq. ft.
Stories: Two
Proposed Main House Height: 22'-9"
Existing ADU Height (No Change): 15'-11 1/2"
Existing ADU Bedrooms: 2
High Fire: No
Flood Plain: No
Parcel Slope: 7%

Parking Spaces Provided (EXISTING TO REMAIN):
Accessory Dwelling Unit:
Existing: *0*
Main Residence:
Existing: *2 uncovered*

Areas:

FLOOR AREA CALCULATIONS:

Total Existing Floor Area:	**2,543 net sq. ft. / 2,764 gross sq. ft.**
Accessory Dwelling Unit:	945 net sq. ft. / 1,046 gross sq. ft.
2-Story Primary Residence:	1,598 net sq. ft. / 1,718 gross sq. ft.
1st Floor:	*1,305 net sq. ft. / 1,394 gross sq. ft.*
2nd Floor:*	*293 net sq. ft. / 324 gross sq. ft.*
**excludes stair:*	*53 net sq. ft. / 65 gross sq. ft.*
2nd Floor Addition:	**51 net sq. ft. / 51 gross sq. ft.**
TOTAL PROPOSED AREA ON SITE:	**2,594 net sq. ft. / 2,815 gross sq. ft.**

IMPERMEABLE / PERMEABLE AREA:

Existing Building Footprint:	2,440 sq. ft.
Existing Hardscape:	1,152 sq. ft.
Existing Landscape:	2,319 sq. ft.

Per SBMC 22.87:

New Impervious Area: 87 sq. ft.
**Includes new front porch and chimney*

Redeveloped Impervious Area: 596 sq. ft.
**Includes revised roof over 2nd floor & updated entry hardscape*

1 Removed Impervious Area: 25 sq. ft.
**Includes some removal of hardscape in front yard*

NICODEMUS DESIGN
8861 Villa La Jolla Dr.,
P.O. Box # 13367,
La Jolla, CA 92037
Phone: (760) 473-1041
DESIGNER:

Drawn By:
NN

Drawing Date:
October 10, 2023

Revisions:

revision	date	notes
1	12/13/23	Plan Check
2	02/05/24	Plan Check
3	05/04/24	Plan Check

PROJECT:
Evans Remodel
412 Flora Vista, Santa Barbara, CA

SHEET TITLE:
Title Sheet

DRAWING NUMBER:
TS

BUILDING ENERGY ANALYSIS REPORT

PROJECT:

Evans Residence
412 Flora Vista Dr
Santa Barbara, Ca 93109

Project Designer:

NN Design
9114 Regents Rd, #C
San Diego, Ca 92037
760-473-1041

Report Prepared by:

Brian Hansen
Technical Energy
4336 Goldfinch St
San Diego, Ca 92103
858-472-2680

Job Number:

23-347

Date:

10/1/2023

The EnergyPro computer program has been used to perform the calculations summarized in this compliance report. This program has approval and is authorized by the California Energy Commission for use with both the Residential and Nonresidential 2022 Building Energy Efficiency Standards.

This program developed by EnergySoft, LLC – www.energysoft.com.

TABLE OF CONTENTS

GENERAL INFORMATION

01	**Project Name**	Evans Residence			
02	**Run Title**	Title 24 Analysis			
03	**Project Location**	412 Flora Vista Dr			
04	**City**	Santa Barbara	05	**Standards Version**	2022
06	**Zip code**	93109	07	**Software Version**	EnergyPro 9.2
08	**Climate Zone**	6	09	**Front Orientation (deg/ Cardinal)**	290
10	**Building Type**	Single family	11	**Number of Dwelling Units**	1
12	**Project Scope**	Addition and/or Alteration	13	**Number of Bedrooms**	3
14	**Addition Cond. Floor Area (ft^2)**	65	15	**Number of Stories**	2
16	**Existing Cond. Floor Area (ft^2)**	1718	17	**Fenestration Average U-factor**	0.35
18	**Total Cond. Floor Area (ft^2)**	1783	19	**Glazing Percentage (%)**	18.47%
20	**ADU Bedroom Count**	n/a	21	**ADU Conditioned Floor Area**	n/a
22	**Fuel Type**	Natural gas	23	**Occupancy U:**	No

COMPLIANCE RESULTS

01	**Building Complies with Computer Performance**
02	**This building incorporates features that require field testing and/or verification by a certified HERS rater under the supervision of a CEC-approved HERS provider.**
03	**Building does not incorporate Special Features**

NOTICE: This document has been generated by California Home Energy Efficiency Rating Services (CHEERS) using information uploaded by third parties not affiliated with or related to CHEERS. Therefore, CHEERS is not responsible for, and cannot guarantee, the accuracy or completeness of the information contained in this document.

ENERGY USE SUMMARY

Energy Use	Standard Design Source Energy (EDR1) (kBtu/ft^2 -yr)	Standard Design TDV Energy (EDR2) (kTDV/ft^2 -yr)	Proposed Design Source Energy (EDR1) (kBtu/ft^2 -yr)	Proposed Design TDV Energy (EDR2) (kTDV/ft^2 -yr)	Compliance Margin (EDR1)	Compliance Margin (EDR2)
Space Heating	0	7.69	0	8.17	0	-0.48
Space Cooling	0	19.16	0	17.91	0	1.25
IAQ Ventilation	0	0	0	0	0	0
Water Heating	0	32.16	0	32.16	0	0
Self Utilization/Flexibility Credit						
Efficiency Compliance Total	**0**	**59.01**	**0**	**58.24**	**0**	**0.77**
Photovoltaics		0		0		
Battery				0		
Flexibility						
Indoor Lighting	0	7.27	0	7.27		
Appl. & Cooking	0	22.4	0	22.38		
Plug Loads	0	32.09	0	32.09		
Outdoor Lighting	0	1.75	0	1.75		
TOTAL COMPLIANCE	**0**	**122.52**	**0**	**121.73**		

NOTICE: This document has been generated by California Home Energy Efficiency Rating Services (CHEERS) using information uploaded by third parties not affiliated with or related to CHEERS. Therefore, CHEERS is not responsible for, and cannot guarantee, the accuracy or completeness of the information contained in this document.

ENERGY USE INTENSITY

	Standard Design (kBtu/ft^2 - yr)	Proposed Design (kBtu/ft^2 - yr)	Compliance Margin (kBtu/ft^2 - yr)	Margin Percentage
Gross EUI[1]	19.53	19.47	0.06	0.31
Net EUI[2]	19.53	19.47	0.06	0.31

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.

- NO SPECIAL FEATURES REQUIRED

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

- Kitchen range hood
- Minimum Airflow
- Verified SEER/SEER2
- Fan Efficacy Watts/CFM
- Verified heat pump rated heating capacity
- Duct leakage testing

BUILDING - FEATURES INFORMATION

01	02	03	04	05	06	07
Project Name	**Conditioned Floor Area (ft^2)**	**Number of Dwelling Units**	**Number of Bedrooms**	**Number of Zones**	**Number of Ventilation Cooling Systems**	**Number of Water Heating Systems**
Evans Residence	1783	1	3	2	0	1

NOTICE: This document has been generated by California Home Energy Efficiency Rating Services (CHEERS) using information uploaded by third parties not affiliated with or related to CHEERS. Therefore, CHEERS is not responsible for, and cannot guarantee, the accuracy or completeness of the information contained in this document.

ZONE INFORMATION

01	02	03	04	05	06	07
Zone Name	**Zone Type**	**HVAC System Name**	**Zone Floor Area (ft^2)**	**Avg. Ceiling Height**	**Water Heating System 1**	**Status**
Addition	Conditioned	n) heat pump1	65	8	DHW Sys 1	New
existing	Conditioned	n) heat pump1	1718	8	DHW Sys 1	Existing

OPAQUE SURFACES

01	02	03	04	05	06	07	08	09	10	11
Name	**Zone**	**Construction**	**Azimuth**	**Orientation**	**Gross Area (ft^2)**	**Window and Door Area (ft2)**	**Tilt (deg)**	**Wall Exceptions**	**Status**	**Verified Existing Condition**
Front Wall	Addition	R-13 Wall	290	Front	65	8	90	none	New	n/a
Right Wall	Addition	R-13 Wall	200	Right	65	12	90	none	New	n/a
Front Wall	existing	R-11 Wall	290	Front	281	76	90	none	Existing	No
Left Wall	existing	R-11 Wall	20	Left	425	66	90	none	Existing	No
back Wall	existing	R-11 Wall	110	Back	281	24.3	90	none	Existing	No
Right Wall 2	existing	R-11 Wall	200	Right	495	65	90	none	Existing	No
Front Wall 2	existing	R-11 Wall	290	Front	65	6	90	none	Existing	No
Left Wall 2	existing	R-11 Wall	20	Left	216	40	90	none	Existing	No
back Wall 2	existing	R-11 Wall	110	Back	130	24	90	none	Existing	No
Right Wall 3	existing	R-11 Wall	200	Right	152	8	90	none	Existing	No
to 2e	Addition>>existing	R-0 Wall	n/a	n/a	65	0	n/a		New	n/a
to 2e 2	Addition>>existing	R-0 Wall	n/a	n/a	65	0	n/a		New	n/a
Roof	Addition	R-30 Roof Attic	n/a	n/a	65	n/a	n/a		New	n/a
Roof 2	existing	R-19 Roof Attic	n/a	n/a	1005	n/a	n/a		Existing	No
Roof 3	existing	R-19 Roof Attic	n/a	n/a	324	n/a	n/a		Existing	No
Raised Floor	existing	R-19 Floor Crawlspace	n/a	n/a	1394	n/a	n/a		Existing	No

NOTICE: This document has been generated by California Home Energy Efficiency Rating Services (CHEERS) using information uploaded by third parties not affiliated with or related to CHEERS. Therefore, CHEERS is not responsible for, and cannot guarantee, the accuracy or completeness of the information contained in this document.

NN DESIGN

NICODEMUS DESIGN

8861 Villa La Jolla Dr.,
P.O. Box # 13367,
La Jolla, CA 92037
Phone: (760) 473-1041

DESIGNER:

Drawn By:
NN

Drawing Date:
October 10, 2023

Revisions:

revision	date	notes

PROJECT:
Evans Remodel
412 Flora Vista, Santa Barbara, CA

SHEET TITLE:
Title 24

DRAWING NUMBER:
T1

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
to 1e	Addition	R-0 Floor No Crawlspace	n/a	n/a	65	n/a	n/a		New	n/a
to 1e 2	existing	R-0 Floor No Crawlspace	n/a	n/a	324	n/a	n/a		Existing	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	Attic RoofAddition	Ventilated	4	0.1	0.85	No	No	New	n/a
Attic existing	Attic Roofexisting	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
16	Window	Front Wall	Front	290			1	8	0.35	NFRC	0.25	NFRC	Bug Screen	New	NA
15	Window	Right Wall	Right	200			1	12	0.35	NFRC	0.25	NFRC	Bug Screen	New	NA
1	Window	Front Wall	Front	290			1	12	0.35	NFRC	0.25	NFRC	Bug Screen	Altered	No
2	Window	Front Wall	Front	290			1	12	0.35	NFRC	0.25	NFRC	Bug Screen	Altered	No
3	Window	Front Wall	Front	290			1	8	0.35	NFRC	0.25	NFRC	Bug Screen	Altered	No
Door 1	Window	Front Wall	Front	290			1	20	0.35	NFRC	0.25	NFRC	Bug Screen	Altered	No
E1	Window	Front Wall	Front	290			1	24	0.55	Table 110.6-A	0.67	Table 110.6-B	Bug Screen	Existing	No

NOTICE: This document has been generated by California Home Energy Efficiency Rating Services (CHEERS) using information uploaded by third parties not affiliated with or related to CHEERS. Therefore, CHEERS is not responsible for, and cannot guarantee, the accuracy or completeness of the information contained in this document.

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
Door 6	Window	Left Wall	Left	20			1	42	0.37	NFRC	0.23	NFRC	Bug Screen	Altered	No
E2	Window	Left Wall	Left	20			1	12	0.55	Table 110.6-A	0.67	Table 110.6-B	Bug Screen	Existing	No
E3	Window	Left Wall	Left	20			1	12	0.55	Table 110.6-A	0.67	Table 110.6-B	Bug Screen	Existing	No
E4	Window	back Wall	Back	110			1	18	0.55	Table 110.6-A	0.67	Table 110.6-B	Bug Screen	Existing	No
E5	Window	back Wall	Back	110			1	6.3	0.55	Table 110.6-A	0.67	Table 110.6-B	Bug Screen	Existing	No
4	Window	Right Wall 2	Right	200			1	8	0.3	NFRC	0.23	NFRC	Bug Screen	New	NA
5	Window	Right Wall 2	Right	200			1	12	0.3	NFRC	0.23	NFRC	Bug Screen	Altered	No
6	Window	Right Wall 2	Right	200			1	12	0.35	NFRC	0.25	NFRC	Bug Screen	Altered	No
7	Window	Right Wall 2	Right	200			1	12	0.35	NFRC	0.25	NFRC	Bug Screen	Altered	No
8	Window	Right Wall 2	Right	200			1	6	0.35	NFRC	0.25	NFRC	Bug Screen	Altered	No
9	Window	Right Wall 2	Right	200			1	9	0.35	NFRC	0.25	NFRC	Bug Screen	Altered	No
10	Window	Right Wall 2	Right	200			1	6	0.35	NFRC	0.25	NFRC	Bug Screen	Altered	No
17	Window	Front Wall 2	Front	290			1	6	0.35	NFRC	0.25	NFRC	Bug Screen	Altered	No
18	Window	Left Wall 2	Left	20			1	24	0.35	NFRC	0.25	NFRC	Bug Screen	Altered	No
19	Window	Left Wall 2	Left	20			1	16	0.35	NFRC	0.25	NFRC	Bug Screen	Altered	No
11	Window	back Wall 2	Back	110			1	8	0.35	NFRC	0.25	NFRC	Bug Screen	New	NA

NOTICE: This document has been generated by California Home Energy Efficiency Rating Services (CHEERS) using information uploaded by third parties not affiliated with or related to CHEERS. Therefore, CHEERS is not responsible for, and cannot guarantee, the accuracy or completeness of the information contained in this document.

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
12	Window	back Wall 2	Back	110			1	8	0.35	NFRC	0.25	NFRC	Bug Screen	Altered	No
13	Window	back Wall 2	Back	110			1	8	0.35	NFRC	0.25	NFRC	Bug Screen	Altered	No
14	Window	Right Wall 3	Right	200			1	8	0.35	NFRC	0.25	NFRC	Bug Screen	Altered	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
R-13 Wall	Exterior Walls	Wood Framed Wall	2x4 @ 16 in. O. C.	R-13	None / None	0.101	Inside Finish: Gypsum Board Cavity / Frame: R-13 / 2x4 Exterior Finish: 3 Coat Stucco
R-11 Wall	Exterior Walls	Wood Framed Wall	2x4 @ 16 in. O. C.	R-11	None / None	0.11	Inside Finish: Gypsum Board Cavity / Frame: R-11 / 2x4 Exterior Finish: 3 Coat Stucco
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
Attic RoofAddition	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	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

NOTICE: This document has been generated by California Home Energy Efficiency Rating Services (CHEERS) using information uploaded by third parties not affiliated with or related to CHEERS. Therefore, CHEERS is not responsible for, and cannot guarantee, the accuracy or completeness of the information contained in this document.

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
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 @ 24 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-19 Roof Attic	Ceilings (below attic)	Wood Framed Ceiling	2x4 @ 24 in. O. C.	R-19	None / None	0.049	Over Ceiling Joists: R-9.9 insul. Cavity / Frame: R-9.1 / 2x4 Inside Finish: Gypsum Board
R-0 Floor No Crawlspace	Interior Floors	Wood Framed Floor	2x12 @ 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

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

NOTICE: This document has been generated by California Home Energy Efficiency Rating Services (CHEERS) using information uploaded by third parties not affiliated with or related to CHEERS. Therefore, CHEERS is not responsible for, and cannot guarantee, the accuracy or completeness of the information contained in this document.

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)	Existing	No	

WATER HEATERS

01 Name	02 Heating Element Type	03 Tank Type	04 # of Units	05 Tank Vol. (gal)	06 Heating Efficiency Type	07 Efficiency	08 Rated Input Type	09 Input Rating or Pilot	10 Tank Insulation R-value (Int/Ext)	11 Standby Loss or Recovery Eff	12 1st Hr. Rating or Flow Rate	13 Tank Location	14 Status	15 Verified Existing Condition
DHW Heater 1	Gas	Small Storage	1	40	EF	0.58	Btu/Hr	75000	0	78	n/a		Existing	No

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
n) heat pump1	Heat pump heating cooling	Heat Pump System 1	1	Heat Pump System 1	1	HVAC Fan 1	Air Distribution System 1	Setback	New	No	

NOTICE: This document has been generated by California Home Energy Efficiency Rating Services (CHEERS) using information uploaded by third parties not affiliated with or related to CHEERS. Therefore, CHEERS is not responsible for, and cannot guarantee, the accuracy or completeness of the information contained in this document.

HVAC - HEAT PUMPS

01 Name	02 System Type	03 Number of Units	04 Heating Efficiency Type	05 Heating HSPF / HSPF2 / COP	06 Heating Cap 47	07 Heating Cap 17	08 Cooling Efficiency Type	09 Cooling SEER / SEER2	10 Cooling EER / EER / CEER	11 Zonally Controlled	12 Compressor Type	13 HERS Verification
Heat Pump System 1	Central split HP	1	HSPF2	7.5	48000	32500	EER2SEER2	16	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	Required	No	No	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	Air Distribution System 1-hers-dist	New	n/a		No

NOTICE: This document has been generated by California Home Energy Efficiency Rating Services (CHEERS) using information uploaded by third parties not affiliated with or related to CHEERS. Therefore, CHEERS is not responsible for, and cannot guarantee, the accuracy or completeness of the information contained in this document.

NICODEMUS DESIGN
8861 Villa La Jolla Dr.,
P.O. Box # 13367,
La Jolla, CA 92037
Phone: (760) 473-1041

DESIGNER:

Drawn By:
NN

Drawing Date:
October 10, 2023

Revisions:

revision	date	notes

PROJECT:
Evans Remodel
412 Flora Vista, Santa Barbara, CA

SHEET TITLE:
Title 24

DRAWING NUMBER:
T2

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD **CF1R-PRF-01E**

Project Name: Evans Residence **Calculation Date/Time:** 2023-10-01T08:03:53-07:00 **(Page 11 of 12)**

Calculation Description: Title 24 Analysis **Input File Name:** 23-347 EvansEA.ribd22x

HVAC DISTRIBUTION - HERS VERIFICATION

01	02	03	04	05	06	07	08	09
Name	Duct Leakage Verification	Duct Leakage Target (%)	Verified Duct Location	Verified Duct Design	Buried Ducts	Deeply Buried Ducts	Low-leakage Air Handler	Low Leakage Ducts Entirely in Conditioned Space
Air Distribution System 1-hers-dist	Yes	5.0	Not Required	Not Required	Not Required	Credit not taken	Not Required	No

HVAC - FAN SYSTEMS

01	02	03	04
Name	Type	Fan Power (Watts/CFM)	Name
HVAC Fan 1	HVAC Fan	0.58	HVAC Fan 1-hers-fan

HVAC FAN SYSTEMS - HERS VERIFICATION

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

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD **CF1R-PRF-01E**

Project Name: Evans Residence **Calculation Date/Time:** 2023-10-01T08:03:53-07:00 **(Page 12 of 12)**

Calculation Description: Title 24 Analysis **Input File Name:** 23-347 EvansEA.ribd22x

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

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

Documentation Author Name: Brian Hansen	Documentation Author Signature: Brian Hansen
Company: Technical Energy Calculations	Signature Date: 10/01/2023
Address: 4336 Goldfinch Street	CEA/ HERS Certification Identification (If applicable):
City/State/Zip: San Diego, CA 92103	Phone: 858-472-2680

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: Nate Nicodemus	Responsible Designer Signature: Nate Nicodemus
Company: Nate Nicodemus Design	Date Signed: 10/01/2023
Address: 9114 Regents Rd #C	License:
City/State/Zip: La Jolla, CA 92037	Phone: 760-473-1041

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.

RESIDENTIAL MEASURES SUMMARY — RMS-1

Project Name	Building Type		Date
Evans Residence	☑ Single Family ☐ Multi Family	☐ Addition Alone ☑ Existing+ Addition/Alteration	10/1/2023

Project Address	California Energy Climate Zone	Total Cond. Floor Area	Addition	# of Units
412 Flora Vista Dr Santa Barbara	CA Climate Zone 06	1,783	65	1

INSULATION

Construction	Type	Cavity	Area (ft^2)	Special Features	Status
Wall	Wood Framed	R 13	110		New
Roof	Wood Framed Attic	R 30	65		New
Demising	Wood Framed	- no insulation	130		New
Demising	Wood Framed w/o Crawl Space	- no insulation	65		New
Wall	Wood Framed	R 11	205		Existing
Wall	Wood Framed	R 11	359		Existing
Wall	Wood Framed	R 11	257		Existing
Wall	Wood Framed	R 11	430		Existing

FENESTRATION Total Area: 329 Glazing Percentage: 18.5% New/Altered Average U-Factor: 0.35

Orientation	Area(ft^2)	U-Fac	SHGC	Overhang	Sidefins	Exterior Shades	Status
Front (W)	8.0	0.350	0.25	none	none	N/A	New
Right (S)	12.0	0.350	0.25	none	none	N/A	New
Front (W)	58.0	0.350	0.25	none	none	N/A	Altered
Front (W)	24.0	0.550	0.67	none	none	N/A	Existing
Left (N)	42.0	0.370	0.23	none	none	N/A	Altered
Left (N)	24.0	0.550	0.67	none	none	N/A	Existing
Rear (E)	24.3	0.550	0.67	none	none	N/A	Existing
Right (S)	8.0	0.300	0.23	none	none	N/A	New
Right (S)	12.0	0.300	0.23	none	none	N/A	Altered
Right (S)	53.0	0.350	0.25	none	none	N/A	Altered
Left (N)	40.0	0.350	0.25	none	none	N/A	Altered
Rear (E)	8.0	0.350	0.25	none	none	N/A	New
Rear (E)	16.0	0.350	0.25	none	none	N/A	Altered

HVAC SYSTEMS

Qty.	Heating	Min. Eff	Cooling	Min. Eff	Thermostat	Status
1	Electric Heat Pump	7.50 HSPF2	Split Heat Pump	16.0 SEER2	Setback	New

HVAC DISTRIBUTION

Location	Heating	Cooling	Duct Location	Duct R-Value	Status
n) heat pump	Ducted	Ducted	Attic	6.0	New

WATER HEATING

Qty.	Type	Gallons	Min. Eff	Distribution	Status

RESIDENTIAL MEASURES SUMMARY — RMS-1

Project Name	Building Type		Date
Evans Residence	☑ Single Family ☐ Multi Family	☐ Addition Alone ☑ Existing+ Addition/Alteration	10/1/2023

Project Address	California Energy Climate Zone	Total Cond. Floor Area	Addition	# of Units
412 Flora Vista Dr Santa Barbara	CA Climate Zone 06	1,783	65	1

INSULATION

Construction	Type	Cavity	Area (ft^2)	Special Features	Status
Roof	Wood Framed Attic	R 19	1,005		Existing
Floor	Wood Framed w/Crawl Space	R 19	1,394		Existing
Wall	Wood Framed	R 11	59		Existing
Wall	Wood Framed	R 11	176		Existing
Wall	Wood Framed	R 11	106		Existing
Wall	Wood Framed	R 11	144		Existing
Roof	Wood Framed Attic	R 19	324		Existing
Demising	Wood Framed w/o Crawl Space	- no insulation	324		Existing

FENESTRATION Total Area: 329 Glazing Percentage: 18.5% New/Altered Average U-Factor: 0.35

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

HVAC SYSTEMS

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

HVAC DISTRIBUTION

Location	Heating	Cooling	Duct Location	Duct R-Value	Status

WATER HEATING

Qty.	Type	Gallons	Min. Eff	Distribution	Status

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.

5/6/22

2022 Single-Family Residential Mandatory Requirements Summary

§ 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 § 150.0(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. *

5/6/22

NICODEMUS DESIGN
8861 Villa La Jolla Dr.,
P.O. Box # 13367,
La Jolla, CA 92037
Phone: (760) 473-1041

DESIGNER:

Drawn By:
NN

Drawing Date:
October 10, 2023

Revisions:

revision	date	notes

PROJECT:
Evans Remodel
412 Flora Vista, Santa Barbara, CA

SHEET TITLE:
Title 24

DRAWING NUMBER:
T3

2022 Single-Family Residential Mandatory Requirements Summary

§ 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)1C-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)1Gii,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 §150.0(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). *

5/6/22

2022 Single-Family Residential Mandatory Requirements Summary

§ 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:

5/6/22

2022 Single-Family Residential Mandatory Requirements Summary

§ 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."

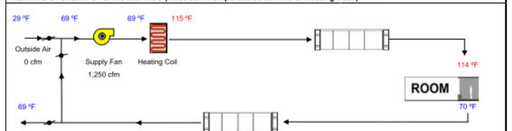
*Exceptions may apply.

5/6/22

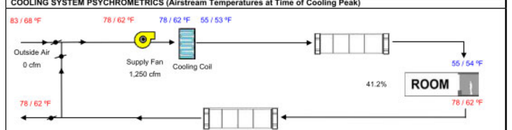
HVAC SYSTEM HEATING AND COOLING LOADS SUMMARY

Project Name: Evans Residence					Date: 10/1/2023	
System Name: n) heat pump					Floor Area: 1,783	
ENGINEERING CHECKS		**SYSTEM LOAD**				
			COIL COOLING PEAK		COIL HTG. PEAK	
			CFM	Sensible	Latent	CFM	Sensible
Number of Systems	1						
Heating System							
Output per System	48,000	Total Room Loads	740	17,990	1,039	494	23,631
Total Output (Btuh)	48,000	Return Vented Lighting		0			
Output (Btuh/sqft)	26.9	Return Air Ducts		668			946
Cooling System		Return Fan		0			0
Output per System	42,000	Ventilation	0	0	0	0	0
Total Output (Btuh)	42,000	Supply Fan		0			0
Total Output (Tons)	3.5	Supply Air Ducts		668			946
Total Output (Btuh/sqft)	23.6						
Total Output (sqft/Ton)	509.4	TOTAL SYSTEM LOAD		19,325	1,039		25,524
Air System							
CFM per System	1,250	**HVAC EQUIPMENT SELECTION**					
Airflow (cfm)	1,250	Mitsubishi MXZ-5C42NA4		35,722	5,643		32,468
Airflow (cfm/sqft)	0.70						
Airflow (cfm/Ton)	357.1						
Outside Air (%)	0.0%	Total Adjusted System Output (Adjusted for Peak Design conditions)		35,722	5,643		32,468
Outside Air (cfm/sqft)	0.00						
Note: values above given at ARI conditions		TIME OF SYSTEM PEAK		Aug 3 PM			Jan 1 AM

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



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



NICODEMUS DESIGN
8861 Villa La Jolla Dr.,
P.O. Box # 13367,
La Jolla, CA 92037
Phone: (760) 473-1041

DESIGNER:

Drawn By:
NN

Drawing Date:
October 10, 2023

Revisions:

revision	date	notes

PROJECT:
Evans Remodel
412 Flora Vista, Santa Barbara, CA

SHEET TITLE:
Title 24

DRAWING NUMBER:
T4

SPECIFICATIONS

DIVISION 1 – GENERAL REQUIREMENTS AND CONDITIONS

I. GENERAL REQUIREMENTS

A. General Conditions: The project specifications, construction drawings and bid package are part of the construction documents.

B. Substitutions: The General Contractor shall inform the Designer in writing of any variances or substitutions to the project specifications or construction drawings with the project bid. Any substitutions or deviation from these documents must be submitted as a proposed alternate and include all information necessary for evaluation together with reason or justification for substitution to the Designer and Owner before the final contract for construction is signed. The written decision accepting or denying the proposed alternate shall govern. It is the responsibility of the General Contractor to obtain approval from the Owner for all materials or items not herein specified.

C. Dimensions:

1. All dimensions and conditions shall be checked and verified by the General Contractor prior to the commencement of work. Any errors or discrepancies shall be brought to the attention of the Designer before construction begins.

2. Reproductions of the construction documents may be subject to distortion. Do not scale construction documents. Contact the Designer or Engineer for any dimension(s) that may appear to be missing.

3. Yard setbacks are to be measured from the exterior wall finish to the property line and not from the outside of footing or face of studs. The plan must be designed with the wall finish thickness (i.e. 7/8" stucco, etc.) added to the plans for setback requirements. The field inspector will add the planned wall finish thickness to the foundation setback. If the wall finish is to be changed after approval, the effect on meeting the setback requirement must be considered to get the change approved by the building and planning departments.

D. These requirements shall apply continuously and not be limited to normal working hours.

1. The General Contractor shall furnish all labor, materials, utensils, utilities, temporary facilities, etc. for the full performance of work specified herein. The General Contractor shall insure the work is to be properly pursued, completed and ready to occupy in a timely manner. The General Contractor shall recycle all demolition and construction waste when possible.

2. The General Contractor shall maintain facilities for the inspection of all work. All hold-downs to be tied in place prior to calling for foundation inspection.

3. The General Contractor shall properly protect all structures, facilities, grounds, plants, trees, paving etc. from damage by natural causes or by acts of carelessness or vandalism.

4. The General Contractor agrees to assume sole and complete responsibility for job site conditions during the course of construction including the safety of all persons and property.

E. The General Contractor shall defend, indemnify and hold the Owner and Consultants harmless from any and all liability, real or alleged, in connection with the performance of the work on this project except for liability arising from the sole negligence of the Owner or Consultants.

F. The General Contractor shall remove all rubbish, leaving the building and site in clean, perfect working order and condition upon completion of the work.

G. All public improvements shall be made in accordance with the latest adopted city standard drawings and specifications. All work shall conform to applicable city ordinances.

H. The General Contractor shall guarantee all work against defective materials or faulty workmanship for a period of one year after the date of final payment.

I. An encroachment permit shall be required for all work in the public right of way.

J. The Contractor shall comply with all OSHA requirements.

II. SPECIAL REQUIREMENTS

A. Permits, Fees, Taxes, Licenses and Deposits: Shall be paid for by each Subcontractor and the General Contractor as they relate to their work. The Owner shall pay all building permit fees and associated fees. If arrangements are made in advance with the Owner, the General Contractor may pay these fees at the time of issuance of the permit and be reimbursed by the Owner.

B. Code Compliance: Project shall comply with the **2019 California Building Code (CBC)** that adopts the **2018 International Building Code (IBC)**, the, **2018 International Residential Code (IRC)**, the **2018 Uniform Mechanical Code (UMC)**, the **2018 Uniform Plumbing Code (UPC)** and the **2017 National Electric Code (NEC)**. Compliance with all current adopted Codes, Ordinances, Rules and Regulations governing the work shall be made and/or enforced by the General Contractor and Subcontractors at all times.

C. Special Inspection: Special inspections, as required, shall be arranged for and scheduled by the General Contractor and paid for by the Owner.

D. Deferred Submittals: Submittal documents for deferred submittal items shall be submitted to the designer or engineer of record, who shall review them and forward them to the building official with a notation indicating that the deferred submittal documents have been reviewed and that they have been found to be in general conformance with the design of the building. The deferred submittal items shall not be installed until their design and submittal documents have been approved by the building official. Deferred submittals for this project, if any, are located within the construction documents on sheet T1.

E. Reproduction: These construction documents may not be altered or used at any other location without written authorization of all professionals involved. The project specifications and construction drawings are property of NN Design (Nathaniel Nicodemus) and are protected by copyright. Reproduction in any form without express written permission is prohibited.

III. TEMPORARY FACILITIES

A. The General Contractor shall provide and maintain all temporary facilities for the project for the duration of the Contract including, but not limited to the following: (Unless otherwise agreed to by the Owner.)

1. Electricity and water.

2. Work site toilet facilities.

3. Fences, barricades and protective devices necessary for the safety of workmen, conforming to all governing laws and regulations.

4. Trash bin.

DIVISION 2 – SECTION 1 – DEMOLITION

I. GENERAL REQUIREMENTS

A. Scope: This section includes all labor, material and equipment necessary to complete all work specified herein and as indicated within the construction documents. The work of this section includes, but is not limited to; demolition of all structures, fencing, paving, etc. not specifically noted to remain.

B. Job Conditions: Perform all work in accordance with accepted safety standards. All work areas left exposed during non-working hours shall be sufficiently barricaded to prevent pedestrian or vehicular hazards.

II. PERFORMANCE OF WORK

A. General Requirements: Contractor to provide all labor, materials and equipment to demolish and legally dispose of all structures, fencing, paving, etc. not specifically noted to remain.

DIVISION 2 – SECTION 2 – EARTH WORK

I. GENERAL REQUIREMENTS

A. Scope: This section includes all labor, material and equipment necessary to complete all work specified herein and as indicated within the construction documents. The work of this section includes, but is not limited to; grading, filling, compaction and backfilling.

B. Special Requirements: All work performed under this section shall be performed by a State of California licensed grading contractor.

C. Job Conditions: Perform all work in accordance with accepted safety standards. All excavation work left exposed during non-working hours shall be sufficiently barricaded to prevent pedestrian or vehicular hazards.

II. PERFORMANCE OF WORK

A. General Requirements: Contractor to provide all labor, materials and equipment to excavate, backfill, compact and grade as required for a complete finished job. If existing elevations, dimensions and/or site conditions are different from those indicated on the plans, report discrepancy and obtain instructions from Designer before starting work. The Contractor shall be responsible for the accuracy of all work.

B. Preparation for Grading: Verify elevations, dimensions and site conditions before commencing work. In addition, verify disposition of all site vegetation before any removal. If a soils report has been prepared for this project, the soils engineer must be notified 2 days prior to the commencement of any site or foundation work. The soils engineer shall be present during such work and upon completion of the foundation shall submit a letter stating his acceptance to the Owner, General Contractor, Designer and City.

C. Excavation: Excavate foundations to size and depth shown. Footings shall be entirely into solid undisturbed soil or entirely into compacted fill. No uncompacted fill is permitted under footings. Bottoms of all footing excavations to be level. Excavations to be kept free of standing water.

D. Backfilling, Fill and Compaction: All structural fill underlying building areas, and within two horizontal feet of pavement and sidewalk sub-grade, shall be compacted to at least 90% of its maximum dry density.

E. Trenching: All trenching for underground piping, electrical conduits, etc. shall be done by trade installing pipes, conduits, etc. in a manner to prevent settlement. Backfilling of trenches shall conform to the requirements for compacted fill.

F. Finish Grading: Slope all grades a minimum of 2% away from structure and foundation unless otherwise noted. At the conclusion of the work all earth shall be raked free of debris and left with a uniformly fine graded surface. All finish grades shall be held 8" below top of building slab and 2" below flat-work unless otherwise noted on plans. The General Contractor shall oversee and approve all site grading and site drainage.

DIVISION 3 – SECTION 1 – STRUCTURAL CONCRETE

See Sheet S-1 for additional requirements.

I. GENERAL REQUIREMENTS

A. Scope: This section includes all labor, material and equipment necessary to complete all work specified herein and as indicated within the construction documents. The work of this section includes, but is not limited to; structural concrete, under-slab vapor barrier.

II. MATERIALS

A. Under-slab Vapor Barrier: **FORTIFIBER** *Moistop Ultra 10* (10-mil polyolefin film) and *Moistop Joint Tape*, or approved equal.

B. Rebar Chairs: Plastic

III. PERFORMANCE OF WORK

A. General Requirements: Contractor to provide all labor, materials and equipment to form, place and finish concrete as required for a complete finished job.

B. Install under-slab vapor barrier over capillary break as detailed within construction documents. Lap and tape all seams and penetrations per manufacturer's recommendations. Seal edges and items projecting through vapor retarders and vapor barriers. Inspect and repair membrane; tape tears, perforations and similar damage. Provide 2" thick sand cushion over vapor barrier prior to placing slab reinforcing.

C. Interior slabs shall be level with no variations of greater than 1/8" in 10 feet unless sloping surface is specifically noted on plans.

DIVISION 4 – SECTION 1 – STRUCTURAL MASONRY

See sheet S-1

DIVISION 4 – SECTION 2 – EXTERIOR STONE CLADDING

I. GENERAL REQUIREMENTS

A. Scope: This section contains all labor, material and equipment necessary to complete all work specified herein and as indicated on within the construction documents. The work of this section includes, but is not limited to; tile non-structural veneer.

II. MATERIALS

A. Natural Stone Tile: To be determined by Owner. Sample to be submitted for approval by Designer.

B. Type N mortar.

C. Grout: Color to be determined by Owner.

III. PERFORMANCE OF WORK

A. Tile veneer shall be installed as indicated within the construction documents in accordance with **Chapter 14** of the **International Building Code (IBC)**.

B. Protect adjacent finishes and clean surface of tile of all loose grout after installation.

C. Cut pieces to length as required. Layout joint locations to avoid small cut pieces and to provide the most visually balanced joint pattern.

DIVISION 5 – SECTIONS 1 – STRUCTURAL METALS

See Sheet S-1

DIVISION 5 – SECTION 3 – DECORATIVE METAL

I. GENERAL REQUIREMENTS

A. Scope: This section includes all labor, material and equipment necessary to complete all work specified herein and as indicated within the construction documents. The work of this section includes, but is not limited to; the furnishing and installation of all non-structural metal fabrication with the exception of exterior metal stairs and grating.

II. MATERIALS

A. Steel Members: Size and type per plan. All members shall conform to ASTM A-36 except as noted or shown within the construction documents.

B. Bolts: All bolts shall conform to ASTM A-305 except as noted or shown on plans.

III. PERFORMANCE OF WORK

A. Steel parts shall be accurately fabricated as shown on plans. Field-verify measurements prior to fabrication. Cut, drill and tap to receive hardware as required. Grind all welds smooth.

B. Provide necessary anchorage devices and fasteners for securing items in place.

C. Exterior metal items shall be powder coated unless otherwise indicated within the construction documents.

D. Interior metal items shall receive 1 shop coat of inorganic zinc primer after fabrication.

DIVISION 6 – SECTION 1 – STRUCTURAL CARPENTRY

I. GENERAL REQUIREMENTS

A. Scope: See Sheet S-1 for general information.

II. MATERIALS

A. In addition to requirements noted on S-1, all structural framing designed to be exposed is to be of lumber #1 or better, clear, or #1 Free of Heart Center (FOHC).

DIVISION 6 – SECTION 2 – EXTERIOR FINISH CARPENTRY

III. GENERAL REQUIREMENTS

A. Scope: This section contains all labor, material and equipment necessary to complete all work specified herein and as indicated on the plans. The work of this section includes, but is not limited to, furnishing and installation of all non-structural exterior finished wood members and wall siding.

IV. MATERIALS

A. Trim, Soffits and Porch Ceilings: **BORAL** TruExterior trim, except as noted or shown on plans.

B. Decking: Natural stone tile to be determined by Owner. Sample to be submitted for approval by Designer.

V. PERFORMANCE OF WORK

A. Finish Carpentry: Members shall be installed level and plumb, neatly and accurately scribed in place. All members shall be installed in full lengths. Joints shall be scarfed, corners mitered or coped.

B. Nails and Fasteners: Arranged in a straight line, uniform pattern, evenly spaced. All exposed fasteners set and filled. Hammer marks are not acceptable. Members damaged shall be replaced. Exterior finish wood fasteners: stainless steel nails unless shown otherwise.

DIVISION 6 – SECTION 3 – INTERIOR FINISH CARPENTRY AND MILLWORK

I. GENERAL REQUIREMENTS

A. Scope: This section includes all labor, material and equipment necessary to complete all work specified herein and as indicated within the construction documents. The work of this section includes, but is not limited to; the furnishing and installation of all non-structural finished wood members, shaped wood members and miscellaneous specialties.

B. Special Requirements: All millwork shall conform to the latest edition of the **Woodwork Institute of California, (W.I.C.) Manual of Millwork. - Custom grade.**

II. MATERIALS

A. Interior Trim: Pine, except as noted or shown within the construction documents.

B. Door Jambs: All door frames shall be 3/4" thick clear pine, width shall match wall thickness.

C. Handrail: As detailed within the construction documents.

D. Decorative Beams: Pine unless otherwise noted, as detailed within the construction documents.

E. Closet Accessories: All closets shall be equipped with closet hanging poles and support fittings shall be chrome finished metal. Hanging poles shall be provided with center supports for spans longer than 4'-0" in length.

III. PERFORMANCE OF WORK

A. Finish Carpentry: Members shall be neatly and accurately scribed in place. All members shall be installed in full lengths. Joints shall be scarfed, corners mitered or coped. Fasten securely in place accurately, scribe neatly into walls, ceilings or other surfaces so open joints do not occur. All joints shall be filled and sanded after installation.

B. Nails and Fasteners: Arranged in a straight line, uniform pattern, evenly spaced. All exposed fasteners set and filled. Hammer marks are not acceptable. Members damaged shall be replaced.

DIVISION 6 – SECTION 4 – CABINETRY

I. GENERAL REQUIREMENTS

A. Scope: This section includes all labor, material and equipment necessary to complete all work specified herein and as indicated within the construction documents. The work of this section includes, but is not limited to; the fabrication and installation of cabinetry.

II. MATERIALS

A. Stain grade cabinetry shall be birch veneer plywood with solid alder face frames, stiles, rails and drawer fronts, unless otherwise noted.

B. Paint grade cabinetry shall be medium density fiberboard with solid poplar face frames, stiles, rails and drawer fronts, unless otherwise noted.

C. Closet built-ins shall be medium density fiberboard; painted, unless otherwise noted.

D. Cabinet interiors shall be melamine faced, except that the interior of open cabinets and cabinets with glass doors shall match the cabinet finish.

E. Door and drawer front style shall be as detailed within the construction documents, see interior elevations and schedules.

F. Door and drawer type and style shall be per the construction documents, see interior elevations and schedules.

G. All drawers shall have **BLUM** side mounted full extension drawer glides, or approved equal. Door hinges shall be concealed 110-degree opening European type, unless otherwise noted.

H. Pulls shall be as selected by Owner (provide allowance).

III. PERFORMANCE OF WORK

A. Cabinets shall be fabricated to conform to the **Woodwork Institute of California, (W.I.C.) Manual of Millwork, Style B, Type II, Premium Grade** and as detailed within the construction documents.

B. All cabinets shall be installed level, plumb and true, securely fastened to the walls and each other. Cabinets abutting walls shall be scribed to fit. Finished casework items and surfaces shall have no visible gaps or seams.

C. Cabinet installer shall adjust hinges, glides and convenience hardware as need to allow even reveals and smooth operation. Install cabinet pulls as directed by Designer/Owner.

DIVISION 7 – SECTION 1 – CORRUGATED METAL ROOF

I. GENERAL REQUIREMENTS

A. Scope: This section includes all labor, material and equipment necessary to complete all work specified herein and as indicated within the construction documents. . This section covers the pre-finished, pre-fabricated Architectural standing seam roof system All metal trim, accessories, fasteners, insulation and sealants indicated on the drawings as part of this section

B. Special Requirements: All work under this section shall be performed by a State of California licensed roofing contractor.

NN DESIGN

NICODEMUS DESIGN

8861 Villa La Jolla Dr.,
P.O. Box # 13367,
La Jolla, CA 92037
Phone: (760) 473-1041

DESIGNER:

Drawn By:
NN

Drawing Date:
October 10, 2023

Revisions:

revision	date	notes

PROJECT:
Evans Remodel
412 Flora Vista, Santa Barbara, CA

SHEET TITLE:
Specifications

DRAWING NUMBER:
GN1

II. MATERIALS

A. Corrugated Metal Roof: Custom-Bilt Metals **ESR # 2048**, "Class A" U.L. fire rating, ICC# ESR-2048, or approved equal, color to be selected by Owner. Contour Corrugated 7/8" Through-Fastened Panels, fabricated of 24 GA metal.. Panels to be spaced and fastened as required by the manufacturer to provide for both positive and negative design loads, while allowing for the expansion and contraction of the entire roof system resulting from variations in temperature.

B. Trim: Trim shall be fabricated of the same material and finish to match the profile, and will be press broken in lengths of 10 to 12 feet. Trim shall be formed only by the manufacturer of their approved dealer. Trim to be erected in overlapped condition. Miter conditions shall be factory welded material to match the sheeting.

C. Closures: use composition or metal profiled closures at the top of each elevation to close ends of the panels. Metal closures to be made in the same material and finish as face sheet.

D. Fasteners: Fasteners shall be of type, material, size, corrosion resistance, holding power and other properties required to fasten miscellaneous framing members to substrates.

E. Substrate shall be ¼" *DensDeck Roof Board* as manufactured by **GEORGIA PACIFIC** or approved equal, over plywood sheathing.

F. Roofing Underlayment: *CLAD-GARD SA-FR Underlayment* as manufactured by **Firestone** or approved equal, over plywood sheathing.

G. Sealants: Exterior grade silicone sealant recommended by roofing manufacturer.

III. PERFORMANCE OF WORK

A. Panels shall be installed plumb and true in a proper alignment and in relation to the structural framing. The erector must have at least five years successful experience with similar applications.

B. Install metal panels, fasteners, trim and related sealants in accordance with manufacturer's written specification and the construction documents and as may be required for a weather-tight installation.

C. Remove all strippable coating and provide a dry-wipe down cleaning of the panels as they are erected.

DIVISION 7 – SECTION 2 – INSULATION

I. GENERAL REQUIREMENTS

A. Scope: This section includes all labor, material and equipment necessary to complete all work specified herein and as indicated within the construction documents. The work of this section includes, but is not limited to; insulation at all interior and exterior walls, ceilings, floors over unconditioned and conditioned space and other locations indicated within the construction documents.

II. MATERIALS

A. Batt Insulation: **OWENS/CORNING** or equal, fiberglass batts sized to fit cavity. R-value per construction documents.

B. Blown–In Insulation: **OWENS/CORNING** "*PROPINK L77*" loose fill insulation or approved equal. Provide R-value per construction documents and Title 24 requirements.

C. Closed Cell Blown–In Insulation: **Touch 'N Foam** closed cell spray foam insulation or approved equal. Provide R-value per construction documents and Title 24 requirements

III. PERFORMANCE OF WORK

A. Install with facing toward interior. Insulation shall fit snugly into all voids and cavities.

B. Provide baffle between at attic vents to maintain 1" clear airspace.

DIVISION 7 – SECTION 3 – BUILDING WRAP AND NONMETAL FLASHING

I. GENERAL REQUIREMENTS

A. Scope: This section includes all labor, material and equipment necessary to complete all work specified herein and as indicated within the construction documents. The work of this section includes, but is not limited to; building weather protection wrap, parapet and other horizontal surface waterproofing, door and window flashing, at grade flashing, etc.

II. MATERIALS

A. Building Weather Protection Wrap: **DUPONT** "*Tyvek HomeWrap*", or approved equal.

B. Parapet and other Horizontal Surface Waterproofing: Nonmetallic flashing shall be **PROTECTOWRAP** "*Jiffy-Seal 140/60*" membrane, or approved equal. For sealant in contact with "*Jiffy-Seal*", use products manufactured by **PROTECTOWRAP**, 160 H mastic or JSLM urethane.

C. Door and Window Flashing: Opening flashing shall be "*Moistop*" by **FORTIFIBER**, or approved equal.

D. At Grade Flashing: Copper-faced nonmetallic flashing shall be **PROTECTOWRAP** "*Fast-Flash H.D.*" flashing tape, or approved equal.

III. PERFORMANCE OF WORK

A. Vertical Surfaces: Comply with CBC Section 1402. Apply building paper horizontally with upper course lapped over lower course not less than 2" and end laps of not less than 6". Provide two layers of building papers over solidly sheathed portions of the structure.

B. Parapet and other Horizontal Surface Waterproofing: Installed in accordance with manufacturer's instructions over building paper. Extend a continuous membrane a minimum of 4" below edge of parapet, each side. Provide a minimum end lap of 4" over adjoining membrane sheet. Where membrane encounters vertical surfaces, the membrane shall extend up surface 4" and be lapped under building wrap. No nailing shall be done on horizontal surface of "*Jiffy-Seal*".

C. Door and Window Flashing: Install per details on plans. Install sill flashing prior to setting windows. Install jamb, then head flashing with minimum 2" lap over flashing below.

DIVISION 7 – SECTION 4 – SHEET METAL

I. GENERAL REQUIREMENTS

A. Scope: This section includes all labor, material and equipment necessary to complete all work specified herein and as indicated within the construction documents. The work of this section includes, but is not limited to, flashing, counter flashing, gutters, downspouts, scuppers, roof penetrations and miscellaneous exterior metal.

B. Special Requirements: All work performed under this section shall be performed by a State of California licensed sheet metal contractor.

C. Workmanship: All work shall conform to the **Sheet Metal and Air Conditioning Contractors National Association (S.M.A.C.N.A) Architectural Sheet Metal Manual**, latest edition.

II. MATERIALS

A. Gutters and Downspouts: 16 oz. copper sheet metal, continuous roll-formed to required length, style and size per plans.

B. Flashing and all other Sheet Metal: 16 oz. copper sheet metal, unless detailed otherwise.

III. PERFORMANCE OF WORK

A. Install sheet metal in maximum practical lengths.

B. Lap joints 4" in full bed of sealant unless otherwise noted on plans.

C. Fasten to substrate with corrosion resistant fasteners. Do not nail through horizontal surface of flashing.

DIVISION 7 – SECTION 5 – BELOW GRADE WATERPROOFING

I. GENERAL REQUIREMENTS

A. Scope: This section includes all labor, material and equipment necessary to complete all work specified herein and as indicated within the construction documents. The work of this section includes, but is not limited to; below grade waterproofing, sub-grade drainage.

II. MATERIALS

A. Waterproofing System:

1. Liquid Applied Waterproofing: **CARLISLE** *CCW 525* liquid applied waterproof membrane, or approved equal
2. Drainage Board: **CARLISLE** *CCW Miradrain 6000* geocomposite drainage board, or approved equal.
3. Below Slab Vapor Barrier: **STEGO** *Wrap Vapor Barrier 15-MIL* multi-layer plastic extrusion, or approved equal
4. Under Slab Waterproofing: **CARLISLE** *CCW Miraclay* Bentonite clay waterproofing, or approved equal (Mat. #305119)

B. Sub-grade Drainage:

1. 4" Perforated rigid plastic drain line: SCR35 or approved equal.
2. Filter fabric: **MIRAFI** 140N or approved equal.

III. PERFORMANCE OF WORK

A. Install 2 layers 60 mil. liquid applied waterproofing each at earth side of below-grade basement walls. Liquid applied waterproofing shall be installed per manufacturer's recommendations and specifications.

B. Install J-Drain SWD per manufacturer's instructions on basement walls. Connect drain to solid pipe beyond building line and daylight solid pipe as indicated on plans. DO NOT connect any surface drainage to sub-grade drain system.

C. Install Bentonite clay waterproofing over liquid applied waterproofing. Install per manufacturer's specifications. Surrounding affected earth to be recompacted to at least 90%.

DIVISION 7 – SECTION 6 – CAULKING AND SEALANTS

I. GENERAL REQUIREMENTS

A. Scope: This section includes all labor, material and equipment necessary to complete all work specified herein and as indicated within the construction documents. The work of this section includes, but is not limited to; caulking and sealants.

B. Special Requirements: All materials shall be in accordance with **2016 California Green Building Standards Code (CGC)** Section 4.504.2.1.

II. MATERIALS

A. Caulking and Sealant: Manufactured by **DOW CORNING**, or approved equal. Sealant type for specific application, substrate preparation and installation shall be verified by Contractor with the manufacturer's representative. The representative shall be consultant to verify sealant application and if surface primers will be required for proper installation. Sealant for each particular application shall be reviewed by the Contractor for compatibility with surrounding materials prior to application. Color of exposed sealant shall match surrounding materials, unless otherwise noted.

B. Warranty: Sealants shall have a 20 year warranty.

III. PERFORMANCE OF WORK

A. Installation: Sealant shall be non-drying gun applied to make a watertight seal at all joints, sills, windows, doors, trim elements, etc. Backer rods or bond breaker agents shall be used depending on the specific application. Surfaces to be sealed shall be properly cleaned prior to application. Sealant shall be applied per the manufacturer's specifications.

DIVISION 7 – SECTION 7 – WATERPROOF DECK MEMBRANE

I. GENERAL REQUIREMENTS

A. Scope: This section includes all labor, material and equipment necessary to complete all work specified herein and as indicated within the construction documents. The work of this section includes, but is not limited to; waterproof deck membranes.

B. Special Requirements: All work performed under this section shall be by an installer certified by the product manufacturer.

II. MATERIALS

A. Traffic Bearing Surfaces: **CROSSFIELD PRODUCTS** "*Dex-O-Tex Weatherwear*" (ICC# ESR-1757). Finish coat color to be selected by Owner/Designer, or approved equal.

B. Crickets & Counter-slopes: **CROSSFIELD PRODUCTS** "*A-81*" underlayment, or approved equal.

C. Under Concrete Porches: **PROTECTOWRAP** "*Jiffy-Seal 140/60*" membrane, "*Jiffy-Seal 500*" detail tape and "*Jiffy-Seal 80*" primer (ICC# ESR-1127), or approved equal.

III. PERFORMANCE OF WORK

A. General: Apply each component of waterproof neoprene composition traffic bearing roof deck surfacing system according to manufacturer's directions to produce monolithic surface of thickness indicated.

B. Prepare and prime the sheet metal or alternate flashing. Inspect all transitions and terminations for proper waterproof seal that the installation of the flashing is in accordance with the recommended application methods.

C. Apply slip-sheet over properly prepared substrate. Overlap seams a minimum of 2 inches. Apply latex bonding coat when required.

D. Apply reinforced membrane at all vertical junctures. Embed polypropylene fabric into neoprene membrane liquid.

E. Apply aqueous neoprene rubber waterproof membrane solution with glass fabric reinforcement to entire area to be coated. Overlap all seams a minimum of 2 inches.
F. Trowel apply two coats of neoprene and aggregate composition traffic surfacing over all surfaces previously covered with waterproof membrane. Sand surface to remove trowel marks or small surface imperfections.

G. Trowel apply two smoothing coats of neoprene and fine aggregate composition to achieve smooth, filled surface. Sand to remove trowel marks or small surface imperfections.

H. Roller apply two coats of final finish dressing to a uniform finish.

I. Finished neoprene composition traffic-bearing roof deck surfacing shall be a nominal 3/16 inch thick, smooth and uniform in color and texture.

DIVISION 8 – SECTION 1 – DOORS

I. GENERAL REQUIREMENTS

A. Scope: This section includes all labor, material and equipment necessary to complete all work specified herein and as indicated within the construction documents. This section includes furnishing and installing interior and exterior doors, except for doors covered in **DIVISION 8 – SECTION 4 – ALUMINUM SLIDING POCKET DOORS**, and **DIVISION 8 – SECTION 3 – CLAD WOOD WINDOWS AND DOORS**.

II. MATERIALS

A. Exterior Doors: Door size, style and finish shall be per the construction documents, see door schedule/legend. All doors shall be fabricated with Type I adhesives. Door thickness per door schedule.

B. Interior Doors: Doors to be MDF panel doors, single recess with square sticking, 1-3/4" thick, as manufactured by **TRUSTILE**, or approved equal. All doors shall be fabricated with Type I adhesives. All doors from interior of house to garage shall have a fire rating of 20 minutes for door and frame, equipped with a self closure.

C. Garage Door: Shall be per the construction documents, see door schedule/legend. Provide electrical automatic door opener system with two (2) remote controls.

D. Refer to door schedule/legend and Title 24 energy notes within the construction documents for additional requirements.

III. PERFORMANCE OF WORK

A. Installation: Install doors plumb and square with uniform 1/8" gap between door and frame. Undercut doors as required for floor finish.

DIVISION 8 – SECTION 2 – DOOR HARDWARE

I. GENERAL REQUIREMENTS

A. Scope: This section includes all labor, material and equipment necessary to complete all work specified herein and as indicated within the construction documents. The work of this section includes, but is not limited to; the furnishing of all finish hardware including door handles, door stops, door hinges etc.

II. MATERIALS

A. Door Hardware: Manufacturer, type, style and finish shall be per door schedule/legend within the construction documents.

DIVISION 8 – SECTION 3 – CLAD WOOD WINDOWS AND DOORS

I. GENERAL REQUIREMENTS

A. Scope: This section includes all labor, material and equipment necessary to complete all work specified herein and as indicated on the plans. The work of this section includes, but is not limited to, the furnishing and installation of all clad wood windows and doors as indicated on plans.

II. MATERIALS

A. Clad Windows and Doors: **LINCOLN WINDOWS** aluminum clad wood windows with nailing fins and doors, or approved equal. Size and type per plan and/or schedule.

B. Finish: Bronze Color Exterior, Pine Interior.

C. Glazing: Shall be Low-E II insulating glass with 7/8" SDL and bronze internal spacer, interior bars – square, glass tempered and/or laminated where noted on schedule, unless otherwise noted on plans. Refer to construction drawings for lite layout.

D. Hardware: Provide Contempo Handle on all casement and awning windows, Bronze Color.

E. Screens: All operable windows shall have Standard BetterVue screens in metal frames, color to match exterior window color.

F. Locks: All clad wood doors with glazing shall have keyed locks. Locks shall be keyed to match other exterior door locks.

III. PERFORMANCE OF WORK

A. Installation: Install clad windows and doors plumb and square.

B. Glazing:

1. Tempered glass shall be permanently identified and visible when unit is glazed.
2. All windows shall have labels attached by N.F.R.C. showing compliance with energy standards.

DIVISION 8 – SECTION 4 – ALUMINUM SLIDING DOORS

I. GENERAL REQUIREMENTS

A. Scope: This section includes all labor, material and equipment necessary to complete all work specified herein and as indicated within the construction documents. The work of this section includes, but is not limited to; the furnishing and installation of all aluminum sliding pocket doors.

II. MATERIALS

A. Aluminum Sliding Doors: *Series 1000 Traditional Sliding Door*, as manufactured by **FLEETWOOD WINDOWS & DOORS**, or approved equal. Size and type per construction documents, see schedule.

B. Finish: Black Anodize.

C. Glazing: Shall be Low-E II insulating glass, glass tempered.

D. Hardware: Rollers and other operating hardware shall be stainless steel.

E. Screen doors: Per construction drawings.

III. PERFORMANCE OF WORK

A. Installation: Install doors plumb, square and true in accordance with manufacturer's published installation instructions. Adjust for proper operation.

DIVISION 9 – SECTION 1 – LATH AND EXTERIOR PLASTER

I. GENERAL REQUIREMENTS

A. Scope: This section includes all labor, material and equipment necessary to complete all work specified herein and as indicated within the construction documents. This section of work includes, but is not limited to; building wrap, lath and lath attachments, corner reinforcement, expansion screeds and exterior Portland cement plaster (stucco).

B. Special Requirements: All work performed under this section shall be performed by a State of California licensed plastering contractor.

C. All lath and plaster shall be prepared and installed per the **International Building Code (IBC)** and the **California Lathing and Plastering Contractors Association Standards** unless otherwise noted.

D. See also **DIVISION 7 – SECTION 2 – INSULATION** and **DIVISION 9 – SECTION 2 – GYPSUM WALLBOARD** for related work.

II. MATERIALS

A. Lathing:

1. Vertical exterior lathing for exterior Portland cement plaster (stucco) shall be 17 ga. woven steel wire fabric (stucco netting) galvanized with 1-1/2" openings or as noted in the manufacturer's installation instructions for *Omega Stucco*.

2. Horizontal exterior lathing for exterior Portland cement plaster (stucco) shall be 3/8" high rib – 3.4 lbs / sq. yard, galvanized steel expanded metal or expanded metal (diamond mesh) lath design specifically for horizontal applications or as noted in the manufacturer's installation instructions for *Omega Stucco*.

B. Accessories:

1. Weep screed, corner bead, casing and miscellaneous stucco accessories as required by details or as needed to perform a complete and thorough job, shall be exterior grade vinyl by **AMICO** or equal.

C. Plaster:

1. Portland cement plaster shall be by **LAHABRA**. Conform to **Standard Specification for Portland Cement ASTM Designation: C 150, Type I or Type II**. When plastic or waterproof cement is used no lime or other plasticizer may be added to the mix.

NICODEMUS DESIGN
8861 Villa La Jolla Dr.,
P.O. Box # 13367,
La Jolla, CA 92037
Phone: (760) 473-1041

DESIGNER:

Drawn By:
NN

Drawing Date:
October 10, 2023

Revisions:

revision	date	notes

PROJECT:
Evans Remodel
412 Flora Vista, Santa Barbara, CA

SHEET TITLE:
Specifications

DRAWING NUMBER:
GN2

2. Sand shall be clean and well graded from coarse to fine.

3. The approved application shall be per manufacturer's recommended installation instructions.

4. Finish coat shall be integral color by **LAHABRA**, color as selected by Designer.

III. PERFORMANCE OF WORK

A. Install stucco true to lines and level. Stucco shall be installed to provide uniform surface flatness with a maximum surface variation of 1/8" in 10 feet in any direction. Square outside corners.

B. Extreme care shall be taken to fully mask all exposed aluminum, glass, wood and other exposed surfaces prior to plastering. Surfaces shall be protected until all plastered surfaces are hardened and fully cured. All stucco walls to have a stucco screed located not less than 8" above finish grade or 2" above concrete or deck surface unless otherwise noted.

C. Stucco finish coat texture shall be 'fine' per manufacturer's specifications.

DIVISION 9 – SECTION 2 – GYPSUM WALLBOARD

I. GENERAL REQUIREMENTS

A. Scope: This section includes all labor, material and equipment necessary to complete all work specified herein and as indicated within the construction documents. This section of work includes all gypsum wallboard materials and installation as shown on the plans. All gypsum wallboard shall be installed per the **International Building Code** and per the manufacturer's instructions for installation.

B. Special Requirements: All work performed under this section shall be performed by a State of California licensed drywall contractor.

II. MATERIALS

A. Wallboard: **U.S. GYPSUM** or equal, 5/8" thick, Type 'X' where noted within the construction documents. Gypsum wallboard shall have tapered or beveled edges.

B. Fasteners: Screws shall be 1-1/4" long minimum, Type 'W' drywall screw.

C. Joint Reinforcing Tape: Joint tape of same manufacturer as wallboard or fiberglass reinforced tape.

D. Corner Bead, Casing Bead & other Drywall Trim: Shall be 90-degree corner paper faced metal drywall corners (B1XWNB) and other similar trim by **BEADEX** or approved equal.

E. Reglets: as specified under **DIVISION 6 – SECTION 3 – INTERIOR FINISH CARPENTRY AND MILLWORK**

F. Tile Backer Board: as specified under **DIVISION 9 – SECTION 3 – CERAMIC TILE**

III. PERFORMANCE OF WORK

A. Application: Apply wallboard first to ceiling, then to walls with long dimension at right angles to framing members. Maximum spacing of fasteners shall be 12" o.c. Gypsum board shall be installed and finished per manufacturer's specifications.

B. Finishing:

1. Joints: Finish all exposed joints with reinforcing tape and joint cement in accordance with written instructions of wallboard manufacturer per specific finish coating system.

2. Corner Beads and Trim: Install at all exterior angles and where wallboard abuts other materials and no trim is shown

3. Finish Texture: Hand trowel smooth finish. Provide 3' x 3' finish texture sample for Owner and Designer approval prior to texture application.

DIVISION 9 – SECTION 3 – CERAMIC TILE

I. GENERAL REQUIREMENTS

A. Scope: This section includes all labor. material and equipment necessary to complete all work specified herein and as indicated within the construction documents. The work of this section includes, but is not limited to, the following areas; floors, walls, shower walls and floors, countertops, decks and balconies, patios and walkways.

B. Special Requirements: All work performed under this section shall be performed by a State of California licensed contractor.

C. Quality Assurance: All workmanship and material shall be in conformance with applicable portions of **ANSI Specifications and Standards** and **Handbook for Ceramic Tile Installation** by the Tile Council of America, current edition.

II. MATERIALS

A. Tile: As selected by Owner. Refer to the construction documents, see plans, finish schedule and interior elevations for areas receiving tile.

B. Tile Backer Board: **GEORGIA PACIFIC BUILDING PRODUCTS** *DensShield Tile Backer*.

C. Membranes:

1. Cleavage Membrane: 15# roofing felt or approved equal.

2. Moisture Barrier: 15# roofing felt.

3. Waterproof Membrane: hot mopped felt, or approved equal.

D. Mortar Bed: **CUSTOM BUILDING PRODUCTS** *Custom-Float Bedding Mortar* mixed with water and *Acrylic Mortar Admix*. Metal lath – 2.5 lbs/yard self furred expanded metal.

E. Tile Adhesives: **CUSTOM BUILDING PRODUCTS** *Master-Blend* mixed with *Custom-Flex* latex.

F. Grout: **CUSTOM BUILDING PRODUCTS** *Polyblend Sanded Colored Tile Grout* – for joints 1/8" - 1/2". All grout colors shall be selected by the Owner.

G. Elastomeric Joint Caulk: All joints between floors and walls and at all joints between tile and dissimilar materials. **CUSTOM BUILDING PRODUCTS** *Polyblend Ceramic Tile Caulk*. Texture and color shall match adjacent grout.

H. Tile Sealer: as recommended by **CUSTOM BUILDING PRODUCTS** and approved by Owner. Apply sealer per manufacturer's specifications.

III. INSTALLATION

A. Examine surfaces which are to receive tile or stone. Verify that surfaces to receive tile are stable, flat, firm, dry, clean and free of oil, waxes and curing compounds. Do not proceed with work until defects or conditions which would adversely affect quality, execution and permanence of finish work are corrected. All concrete substrates shall be at least 28 days old, completely cured and free of hydrostatic conditions and/or moisture problems. Protect adjacent surfaces prior to beginning tile work.

B. Installation Methods:

1. Over Wood Subfloor: Thin-set over glass mesh mortar units. Attach glass mesh mortar units to subfloor per manufacturer's recommendations.

2. Shower Floors, Tile-seat, Tub Platform Tops: Mortar bed over waterproof membrane over sloped mortar fill. Mortar bed shall be 3/4" thick minimum and 1-1/4" maximum. Verify mortar thickness with actual field conditions. Water test membranes at showers and other wet areas before installing mortar bed.

3. Shower & Tub Walls and Back-splashes: Mortar bed over 15# felt moisture barrier.

4. Walls (Dry Locations): Thin-set over glass mesh mortar units.

5. Countertop: Mortar bed over 15# felt moisture barrier.

C. Lay tile in grid pattern unless otherwise indicated on plans or directed by Designer. Terminate tile neatly at obstructions, edges and corners without disruption of pattern or joint alignment. Where tile cuts are necessary cuts shall be neat and scribed. Provide expansion joints, control joints, etc. as shown on plans and elsewhere as required.

D. Install grout in accordance with manufacturer's directions.

E. Clean and seal tile and grout in accordance with product manufacturer's recommendations.

DIVISION 9 – SECTION 4 – STONE

I. GENERAL REQUIREMENTS

A. Scope: This section includes all labor, material and equipment necessary to complete all work specified herein and as indicated on the plans.

B. Quality Assurance: All workmanship and material shall be in conformance with applicable portions of **ANSI Specifications and Standards** and **Handbook for Stone Installation** by the Marble Institute of America, current edition.

II. MATERIALS

A. Granite: Polished granite slab, 3/4" thick and 1-1/2" edge for countertops, edge profile to be determined by owner, 3/4" thick for backsplash. Provide cut-outs for sinks and faucets (refer to construction documents, see plumbing fixture schedule). Polish edges of sink cut-outs. Refer to construction documents for areas receiving stone. Slabs to be selected by Owner.

B. Stone Sealer: As recommended by **CUSTOM BUILDING PRODUCTS** and approved by Owner. Apply sealer per manufacturer's specifications.

III. INSTALLATION

A. Examine surfaces which are to receive stone. Verify that surfaces to receive stone are stable, flat, firm, dry, clean and free of oil, waxes and curing compounds. Do not proceed with work until defects or conditions which would adversely affect quality, execution and permanence of finished work are corrected.

B. Protect adjacent surfaces prior to beginning stone work.

C. Install grout in accordance with manufacturer's directions.

D. Clean, seal and grout in accordance with product manufacturer's recommendations.

DIVISION 9 – SECTION 5 – HARDWOOD FLOORING

I. GENERAL REQUIREMENTS

A. Scope: This section includes all labor, material and equipment necessary to complete all work specified herein and as indicated within the construction documents. The work of this section includes, but is not limited to; hardwood flooring and finishing.

B. Special Requirements: All work performed under this section shall be performed by a State of California licensed flooring contractor.

II. MATERIALS

A. Hardwood Flooring over Wood Sub-floor: Pre-finished Engineered T&G hardwood flooring as selected by Owner.

B. Provide matching hardwood floor registers at HVAC vents in areas to receive hardwood flooring.

C. Provide matching 1" thick stair treads and/or risers as noted within the construction documents.

D. Verify base shoe material and profile with Designer or Owner prior to install.

III. PERFORMANCE OF WORK

A. Hardwood flooring over wood sub-floors shall be blind nailed to sub-floor.

DIVISION 9 – SECTION 6 – PAINTING

I. GENERAL REQUIREMENTS

A. Scope: This section includes all labor, material and equipment necessary to complete all work specified herein and as indicated within the construction documents. This section includes, but is not limited to; the painting or staining of all surfaces as shown and/or specified. Refer to the construction documents, see finish schedule and notes for location and finish of surface to be painted.

B. Special Requirements: All work performed under this section shall be performed by a State of California licensed painting contractor.

C. Special Requirements: All paint materials shall be in accordance with **2016 California Green Building Standards Code (CGC)** Section 4.504.2.2.

II. MATERIALS

A. All paint materials shall be by **DUNN EDWARDS** or approved equal. Colors as selected by Designer and samples approved by Owner.

III. PERFORMANCE OF WORK

A. Application:

1. Where interior painting is specified for walls of a room, paint all incidental exposed surfaces in the room such as base trim, grilles and other miscellaneous items. Allow for three color scheme at interior (i.e. walls, ceiling and trim each a different color from the others). Hardware such as hinges, levers or vinyl weather-stripping shall not be painted unless specified. Items that are not to be painted shall be masked to prevent over spray or splatter.

2. Paint shall be applied at the manufacturer's recommended rate of coverage. Each coat shall be even, smooth and uniform; free of laps, skips, runs and color variations. Sand lightly between all coats. Edges of doors and windows scheduled to receive paint shall have complete coverage.

B. Woodwork Preparation: Sand rough spots; seal knots, pitch pockets and sappy spots; spackle nail holes, cracks and joints after primer coat; caulk baseboard and trim (as occur) to adjacent surfaces.

C. Paint Schedule:

1. Exterior wood doors, exterior trim: One coat primer, two coats semi-gloss acrylic enamel. Coating shall include all surfaces including top and bottom edges.

2. Clad French Doors and Windows: Interior to receive one coat enamel undercoat and two coats semi-gloss acrylic enamel. Coating shall include all surfaces including top and bottom edges.

3. Gypsum Board: One coat sealer and two coat flat acrylic-vinyl, except at kitchens and baths. Apply one coat sealer and two coats satin 100% acrylic enamel.

4. Stained Interior Woodwork and Cabinetry: One coat wiping stain (submit color samples for Owner's selection), one coat sanding sealer, two coats satin lacquer.

5. Paint-grade Interior Doors, Woodwork, and Paint-grade Cabinetry: one coat enamel undercoat and two coats semi-gloss acrylic enamel. Coating shall include all surfaces including top and bottom edges.

DIVISION 10 – SECTION 1 – PREFABRICATED FIREPLACES

I. GENERAL REQUIREMENTS

A. Scope: This section includes all labor, material and equipment necessary to complete all work specified herein and indicated within the construction documents. This section of work includes, but is not limited to; prefabricated fireplaces and flue, etc.

II. MATERIALS

A. Prefabricated Fireplace and Flue (Type A): **HEAT&GLO** *Phoenix TrueView* size 42 gas burning appliance with closable glass doors per 2019 California Energy Code 150.0(e). Include traditional interior & high definition logs. Listed to ANSI standards for "Vented Decorative Gas Appliances"; ANSI Z21.50-2016/CSA 2.22-2016. Install per manufacturer's instructions

1

B. Spark Arrestors and Chimney Screens: Provide an approved spark arrestor and custom welded copper chimney screen for all vents/chimneys, see construction drawings for information pertaining to the copper chimney screens.

III. PERFORMANCE OF WORK

A. Installation: Install per manufacturer's instructions.

DIVISION 10 – SECTION 2 – BATH ACCESSORIES

I. GENERAL REQUIREMENTS

A. Scope: This section includes all labor, material and equipment necessary to complete all work specified herein and as indicated within the construction documents. This section of work includes, but is not limited to; bath and shower enclosures, towel bars, etc.

II. MATERIALS

A. Frameless hinged Shower and Bath Enclosures:

1. Hinges: **CR LAURENCE** *Cardiff Series* pivot hinges for 3/8" glass, at top and bottom of each door. Coordinating wall mount offset bracket to be used when necessary, finish to coordinate with plumbing fixtures

B. Clamps: **CR LAURENCE** *Square Style Notch-in-Glass* clamps, finish to coordinate with plumbing fixtures

C. Glazing: use 3/8" clear tempered glass, silicone sealant, wipes where required

D. Shower Door Hardware: **CL LAURENCE** *BM Series* Pull Handle/Towel Bar Combination without Metal Washers 8" Pull Handle, 22" Towel bar, finish to coordinate with plumbing fixtures. Notify Designer if smaller towel bar size is needed due to space constraints

E. Miscellaneous Glass Door Hardware: *BM Series* Pull Handle without Metal Washers 8" Pull Handle, finish to coordinate with plumbing fixtures

F. Towel Bars, Toilet Paper Holder, Towel Hooks, Towel Ring: By Owner, refer to construction documents, see plans for mounting locations and towel bar length. Blocking to be provided at all bath hardware locations as indicated on the plans.

III. PERFORMANCE OF WORK

A. Installation: Install per manufacturer's instructions

DIVISION 10 – SECTION 3 – EXTERIOR ACCESSORIES

I. GENERAL REQUIREMENTS

A. Scope: This section includes all labor, material and equipment necessary to complete all work specified herein and as indicated within the construction documents. This section of work includes, but is not limited to; architectural house numbers, mail receptacle, eave and wall vents, etc.

II. MATERIALS

A. Architectural House Numbers: To be determined by Owner. Install per locations documented within construction documents, verify specific address numbers with Designer prior to order. Numbers shall be a min. of 4" high with a min. stroke width of ½" per CFC Section 505.1.

B. Mail slot: To be determined by Owner. Install per locations documented within construction documents.

C. Mail receptacle: To be determined by Owner. Install per locations documented within construction documents.

III. PERFORMANCE OF WORK

A. Installation: Refer to construction documents, see details

DIVISION 11 – SECTION 1 – RESIDENTIAL APPLIANCES

I. GENERAL REQUIREMENTS

A. Scope: This section includes all labor, material and equipment necessary to complete all work specified herein and as indicated within the construction documents.

II. MATERIALS

A. Appliances not specified within the construction documents are to be selected by the Owner. Provide cost allowance for items not selected.

III. PERFORMANCE OF WORK

A. Install all appliances per manufacturer's instructions.

B. All work and materials shall be in accordance with all governing and applicable codes, rules and regulations, the **Uniform Mechanical Code** and the **National Electrical Code**, latest adopted editions.

C. All equipment shall be clean, connected and tested for proper operation. All equipment operating instructions and component warranty information shall be given to Owner at project completion.

DIVISION 15 – SECTION 1 – PLUMBING

I. GENERAL REQUIREMENTS

A. Scope: This section includes all labor, material and equipment necessary to complete all work specified herein and as indicated within the construction documents. Furnish and install a complete plumbing system in full compliance with all applicable sections of the latest adopted codes and governing regulations.

B. Special Requirements: All work performed under this section shall be performed by a State of California licensed plumbing contractor.

II. MATERIALS

A. All materials shall be new and shall be in full conformance with all governing and applicable codes, rules and regulations.

B. All water lines shall be insulated PEX (cross-linked polyethylene pipe) and shall include the following; distribution manifold(s) with balancing and flow control valves where required, cold expansion and compression sleeve fittings, pipe fasteners as approved by the manufacturer of the PEX piping.

C. All waste lines above the slab within the building shall be cast iron. All others shall be A.B.S. DWV Schedule 40.

D. Fixtures and fittings shall be per the construction documents, see plumbing fixture schedule. Water closets and sinks shall have premium stainless steel flexible supply hoses with chrome connectors and fittings. Provide all accessories and connections required for proper operation of fixtures, appliances and equipment.

1. All water closets and associated flushometer valves, if any, shall be certified as using no more than 1.28 gallons per flush and shall meet the

NICODEMUS DESIGN
8861 Villa La Jolla Dr.,
P.O. Box # 13367,
La Jolla, CA 92037
Phone: (760) 473-1041

DESIGNER:

Drawn By:
NN

Drawing Date:
October 10, 2023

Revisions:

revision	date	notes
1	12/13/23	Plan Check

PROJECT:
Evans Remodel
412 Flora Vista, Santa Barbara, CA

SHEET TITLE:
Specifications

DRAWING NUMBER:
GN3

performance standards established by the American National Standard Institute Standard A112.19.2.

2. All lavatory and kitchen faucets shall be fitted with a flow-restricting aerator with a certified, maximum flow rate of no more than 1.2 gpm for lavatory faucets and 1.8 gpm for kitchen faucets per CGC 4.303.1

E. All showerheads for all shower fixtures shall be certified as having a maximum flow rate of no more than 1.8 gallons per minute per CGC 4.303.1.

F. Water Heaters: **NAVIEN** Residential Tankless Water Heater model NPE-240A & NPE-180A. Locations as indicated within the construction documents, see mechanical/electrical plans.

G. Provide recessed washing machine supply and discharge box as manufactured by **LSP Products** Model Kahuna Outlet Box.

H. Deck drains shall be bonderized copper with built-in overflow and snap-in stainless steel cover as manufactured by **THUNDERBIRD PRODUCTS**. See plans for sizes.

I. Shower Drain: **EBBE PRO** square drain; Finish per owner.

J. Shower Drain: QUICK DRAIN USA low profile linear shower drain in brushed stainless steel finish; model #LDBO SS, "Tile-in" option, lengths as needed.

III. PERFORMANCE OF WORK

A. All work and materials shall be installed in accordance with all governing and applicable codes, rules and regulations, including the **2015 International Building Code (IBC)**, and the **2015 Uniform Mechanical Code (UMC),** and the **2014 National Electric Code (NEC).**

B. Cold and hot water piping to fixtures shall be thoroughly flushed and rinsed prior to placing system in service.

C. Cold and hot water piping shall be a minimum of 12" apart where piping is parallel.

D. Plumbing contractor shall review all kitchen, bath and other equipment and make service connections to each as required.

E. All hose bibs shall be provided with permanent vacuum breakers and mounted 18" above the finish surface unless otherwise noted.

F. Provide new service (gas, water and sewer) at new projects. Verify existing meter and service capacity at remodel/addition projects and upgrade and relocate as required.

G. Where possible, water lines shall not run beneath slabs.

H. Insulate all hot water piping per Title 24 requirements.

I. Waste, vent and rain water leaders shall not run into shear walls.

J. Boring and notching of shear panels, plates and studs shall be neatly drilled or cut. Borings or notches shall be of the minimum size to accommodate the particular pipe. Refer to **DIVISION 6 – SECTION 1 – STRUCTURAL CARPENTRY**.

II. COMPLETION REQUIREMENTS

A. All equipment shall be clean, connected and tested for proper operation. Any extra parts and operating or maintenance instructions shall be given to the Owner.

DIVISION 15 – SECTION 2 – HEATING AND AIR CONDITIONING

I. GENERAL REQUIREMENTS

A. Scope: This section includes all labor, material and equipment necessary to complete all work specified herein and as indicated within the construction documents. The work of this section includes, but is not limited to, system layout, system sizing calculations, ducts and duct installation, equipment and equipment installation, grilles/registers and installation, thermostat, any system adjustment needed or required, and

any material or fitting not specifically mentioned, but which are necessary to make a complete, properly functioning system.

B. Special Requirements:

1. All work performed under this section shall be performed by a State of California licensed mechanical contractor.

2. Duct layout shown on plans is schematic. Contractor shall be responsible for design of all ductwork and registers. All duct work shall be sized and installed in accordance with **Chapter 8** of **2015 Uniform Mechanical Code (UMC),** and **C.C.R. Title 24, part 4.**

II. MATERIALS

A. All work and materials shall be in accordance with all governing and applicable codes, rules and regulations, the **2015 International Building Code (IBC)**, and **2015 Uniform Mechanical Code (UMC),** and the **2014 National Electric Code (NEC).**

1. Forced Air Units, Air Intake and Exhaust Fan and Cooling Equipment:

a. Split System: **FUJITSU** ASU9RLF& AOU9RLFW1 wall mounted split system, 9,000 BTU cooling/10,200 BTU heating

b. Air Intake and Exhaust Fan: **FANTECH** VHRT04. Refer to construction documents; see mechanical/electrical plans for locations and additional information.

2. Above-grade Supply and Return Ductwork: 26 ga. flex sheetmetal, insulated per Title 24.

a. Under-slab Ductwork: PVS clad steel ducts (ICBO #2872)

3. Supply Registers:

a. Wall: **HART & COOLLY** *A600 Series* or equal.

b. Ceiling: **HART & COOLLY** *A500* Series or equal.

4. Thermostat: **NEST** Learning Thermostat.

III. PERFORMANCE OF WORK

A. Under-slab ducts shall slope back to supply plenum at 1/8" /ft. Seal all joints with **GLENCOAT** compound. Encase all joints, transitions, register boxes and plenums in minimum 3" thick concrete. Wrap remaining ducts in .006" polyethylene, folded and stapled at top of duct, and encase in 3" minimum of clean sand.

B. All above-grade supply and return ducts and plenums shall be sealed airtight at all duct joints, branch takeoffs and connections to equipment with a non-hardening, non-migrating mastic or liquid elastic sealant as recommended by the manufacturer specifically for sealing joints and seams in ductwork.

C. The return air plenum serving the mechanical equipment must be fully ducted from equipment to the conditioned space. Dropped ceilings, wall cavities and equipment platforms may not be used as plenums.

D. Visible portions of supply and return ducts shall be painted black behind registers and grilles.

E. Coordinate equipment installation locations with all trades prior to installation of equipment.

F. Exhaust fans for baths and laundry room shall provide 5 air changes per hour. Refer to the construction documents, see lighting fixture schedule for exhaust fans, type and size. Exhaust discharge point shall be at least 3 ft. from any openings into the building.

G. Mechanical system seismic restraints shall conform to "*Guidelines for Seismic Restraints of Mechanical Systems*" as published by **SMACNA 2008** edition and/or **2015 International Building Code (IBC)**.

H. Air conditioning units cannot be placed in the front or side yard setbacks, or in the five foot rear yard (accessory building) setback. All machinery must conform to the City of Coronado Noise Ordinance.

I. Equipment access shall conform to **2015 Uniform Mechanical Code (UMC).**

IV. COMPLETION REQUIREMENTS

A. All equipment shall be clean, connected and tested prior to operation. Any extra parts and operating or maintenance instructions shall be given to the Owner.

B. Once system is in place Contractor shall test system for the following: Balance system to provide even heating and cooling in all rooms, adjust ducting to eliminate any air noises.

DIVISION 16 – SECTION 1 – ELECTRICAL POWER & LIGHTING

III. GENERAL REQUIREMENTS

A. Scope: This section includes all labor, material and equipment necessary to complete all work specified herein and as indicated within the construction documents. Also included are materials not specifically mentioned herein or shown, but which are necessary to make a complete, properly functioning electrical system.

1. A complete service and distribution system including the main panels, conduit, conductor, breakers, sub panels, etc. as required. Electrical contractor shall provide electrical load calculations, single line diagram and panel schedules to City Building Department prior to start of work.

2. Complete branch circuit wiring system for lighting, motors, vents, receptacles and junction boxes as shown or specified.

3. Furnishing and installation of lighting fixtures, receptacles, fans, etc. as shown on the plans complete with all lamps.

4. Minor cutting and notching as required for proper installation of electrical system.

5. Trenching necessary for underground telephone and electrical service needed.

6. Refer to the construction documents, see appliance schedule for appliances and their respective electrical requirements. Also refer to mechanical plan for equipment schedule.

B. Special Requirements: All work performed under this section shall be performed by a State of California Licensed electrical contractor.

IV. MATERIALS

A. All work and materials shall be in accordance with all governing and applicable codes, rules and regulations, the **2015 International Building Code (IBC)**, and the **2015 Uniform Mechanical Code (UMC),** and the **2014 National Electric Code (NEC).**

B. All materials shall be new and UL listed (Refer to the construction documents, see electrical plans and lighting schedule for fixtures). Provide a cost allowance for items not selected.

C. All wiring shall be copper. Wire gauge shall be sufficient for anticipated electrical loads.

D. Receptacles, wall plates and other related receptacles such as telephone jacks, GFIC receptacles and cable outlets shall be **LEVITON** *Decora*. Color of all items shall be white unless otherwise noted.

E. Switches and dimmers shall be **LEVITON** *Decora* controls. See **DIVISION 16 – SECTION 2 – GYPSUM WALLBOARD**.

F. Timer switches shall be fan/light time delay type, as manufactured by **EFI**

V. PERFORMANCE OF WORK

A. Contractor shall coordinate with all other trades (HVAC, Security System, Intercom/Phone System, etc.) to assist with electrical requirements as needed.

B. The locations of switches, outlets and light fixtures shown on electrical plans are approximate. Do not run wire until all boxes are in place and the Owner or Owner's agent has been called to make visual review of all locations.

C. All outlet receptacles shall be 5" above finish floor unless otherwise noted.

D. Mounting heights for light fixtures shown on plans are from finish floor or flatwork to the centerline of junction box unless otherwise noted. Also refer to Exterior and Interior Elevations for additional information regarding fixture mounting heights.

E. Convenience outlets in bathrooms, kitchens, outdoors, basements and garages shall be ground fault interrupt circuit (GFIC) type.

F. Electrical outlet plate gaskets shall be installed on all receptacles, switches or other electrical boxes in exterior walls and any walls on perimeter of conditioned space.

G. Verify electrical requirements for new appliances and mechanical equipment prior to running wire. See Appliance Schedule and plans for equipment.

H. All electrical panels shall have permanent legible labels indicating circuit use, amperage, etc.

I. Arc-fault circuit interrupted protection is required in family rooms, dining rooms, living rooms, parlors, libraries, dens, bedrooms, sunrooms, recreation rooms, closets, hallways, or similar rooms per CEC 210.12(B).

J. Junction boxes for ceiling fans shall be securely fastened to framing per fan manufacturer's instructions.

K. Smoke detectors shall be installed in each bedroom and at a point centrally located serving sleeping areas and on each level of residence. Smoke detectors shall be interconnected per CBC [F] 907.2.11.3, permanently wired to the building electrical system and shall be equipped with battery backup per CBC [F] 907.2.11.4.

L. Carbon monoxide alarms shall be installed outside bedrooms, at a point centrally located serving sleeping areas and on each level of residence. Carbon monoxide alarms shall be interconnected per CBC 420.4.1.2, permanently wired to the building electrical system and shall be equipped with battery backup per CBC 420.4.1.1.

VI. COMPLETION REQUIREMENTS

A. All fixtures shall be clean, lamps installed and tested to respond to appropriate switch. Other electrical devices shall be tested for proper operation. Any extra lamps and operating or maintenance instructions shall be given to the Owner.

DIVISION 16 – SECTION 2 – LOW VOLTAGE WIRING & LIGHTING CONTROLS

I. GENERAL REQUIREMENTS

1. Scope: This section includes all labor, material and equipment necessary to complete all work specified herein and as indicated within the construction documents. Also included are materials not specifically mentioned herein or shown, but which are necessary to make a complete, properly functioning low voltage wiring system and lighting control system.

2. Structured wiring for television cable, data network, telephone line, built-in speaker wiring and security system pre-wire (verify location with Owner if not shown). Coordinate telephone system with local telephone company.

3. Door bell.

4. Minor cutting and notching as required for proper installation of electrical system.

5. Trenching necessary for underground telephone and cable service needed.

II. MATERIALS

A. All work and materials shall be in accordance with all governing and applicable codes, rules and regulations, the **2015 International Building Code (IBC)**, and the **2015 Uniform Mechanical Code (UMC),** and the **2014 National Electric Code (NEC).**

B. Structured Wiring Central Panel: 8-zone surface mounted distribution panel with cover for structured wiring. **HONEYWELL** *Super-Pro*, **LEVITRON** *Structured Media Series*, or equal.

C. Jacks/Data Ports: Shall be single-gang **LEVITON** *Quickports* with *Decora* coverplates. Color off all items shall be white unless otherwise noted.

D. All wiring shall be copper. All materials shall be new and UL listed. Wire gauge shall be sufficient for anticipated electrical loads.

1. Phone Cable: CAT6

2. Co-axial: RG6

3. Audio/Visual Cable: 14 ga. **THX**-certified *Monster Cable*.

E. Door Bell:

1. Button: Hardwired doorbell button by owner; refer to construction drawings for location information.

2. Chime: Per Owner.

III. PERFORMANCE OF WORK

A. Contractor shall coordinate with all other trades as needed.

B. All electric switches, unless otherwise noted on plan, are to be located 48" above the finish floor. The locations of switches and jacks/data ports shown on electrical plans are approximate. Do not run wire until after all boxes are in place and the Owner or Owner's agent has been called to make visual review of all locations.

C. Mounting heights for jacks/data ports shown on plans are from finish floor or flatwork to the centerline of junction box unless otherwise noted.

D. Electrical outlet plate gaskets shall be installed on all jacks/data port boxes in exterior walls and any walls on perimeter of conditioned space.

NICODEMUS DESIGN

8861 Villa La Jolla Dr.,
P.O. Box # 13367,
La Jolla, CA 92037
Phone: (760) 473-1041

DESIGNER:

Drawn By:
NN

Drawing Date:
October 10, 2023

Revisions:

revision	date	notes

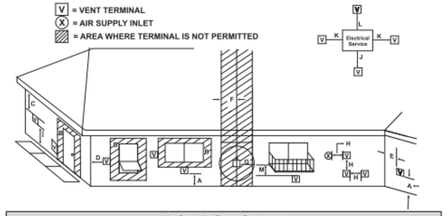
PROJECT:
Evans Remodel
412 Flora Vista, Santa Barbara, CA

SHEET TITLE:
Specifications

DRAWING NUMBER:
GN4

4 Termination Location and Vent Information

A. Chimney Diagram

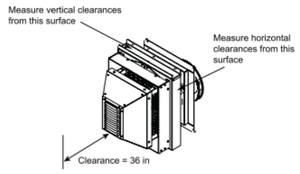


Vent Termination Clearance Requirements					
A	Clearance above grade, veranda, porch, deck or balcony	1' (12")	I	On public property: Clearance above paved sidewalk or a paved driveway.	7' (84")
B	Clearance above an operable window, door or gravity air inlet	1' (12")	J	Clearance below electrical service	30"
	Clearance below an operable window, door or gravity air inlet	1' (12")	K	Clearance from sides of electrical service	6"
	Clearance to side of an operable window, door or gravity air inlet	1' (12")	L	Clearance above electrical service	1' (12")
	Clearance to an non-operable window or door	1' (12")		*Note: Location of the vent termination must not interfere with access to the electrical service*	
C	Clearance below unventilated soffit	18"			
	Clearance below ventilated soffit	18"	M	Clearance under veranda, porch, deck, balcony or overhang	18"
	Clearance below vinyl soffit	30"		Clearance under veranda, porch, deck, balcony or overhang (vinyl or composite)	30"
D	Clearance to an outside corner	6"			
E	Clearance to an inside corner	1' (12")		*Note: Only permitted when veranda, porch, deck or balcony is fully open on a minimum of 2 sides beneath the floor.* *Note: Power exhauster terminations shall be located not less than 10 ft. from lot lines and adjacent buildings.*	
F	Not to be installed above a gas meter/ regulator assembly within 3 feet horizontally from the center-line of the regulator (Canada)	3' (36")			
G	Clearance to gas service regulator vent outlet	3' (36")			
H	Clearance above a mechanical (powered) air supply inlet if within 10ft horizontally Does not apply to the combustion air intake of a direct vent appliance.	3' (USA)			
		6' (Canada)			
	Note: A vent shall not terminate directly above a sidewalk or paved driveway which is located between two single family dwellings and serves both dwellings.				

Figure 4.1 Minimum Clearances for Termination

(cont.)

Chimney Diagram (cont.)



CAUTION! Risk of Burns! *Termination caps are HOT, consider proximity to doors, traffic areas or where people may pass or gather (sidewalk, deck, patio, etc.).*

- **LOCAL CODES OR REGULATIONS MAY REQUIRE DIFFERENT CLEARANCES.**
- Vent system termination is **NOT** permitted in screened porches.
- Vent system termination is permitted in porch areas with two or more sides open.
- Hearth & Home Technologies assumes no responsibility for the improper performance of the appliance when the venting system does not meet these requirements.

Figure 4.2 Minimum Clearances for Termination

B. Approved Pipe

This appliance is approved for use with Hearth & Home Technologies SLG venting system. Refer to Section 12.A for vent component information and dimensions.

DO NOT mix pipe, fittings or joining methods from different manufacturers.

The pipe is tested to be run inside an enclosed wall. There is no requirement for inspection openings at each joint within the wall.

WARNING! Risk of Fire or Asphyxiation. *This appliance requires a separate vent.* ***DO NOT*** *vent to a pipe serving a separate solid fuel burning appliance.*

C. Use of Elbows

- A maximum of three 90° elbows (or six 45°) may be used in any vent configuration.
- Each 90° elbow, whether installed vertically or horizontally, counts as two feet towards the total vent run.
- Each 45° elbow, whether installed vertically or horizontally, counts as one foot towards the total vent run.
- Elbows may be placed back to back anywhere in the system.
- Any 90° elbow may be replaced with two 45° elbows.

WARNING: Elbows may NOT be installed in a downward direction.

Figure 4.3 shows the vertical and horizontal offsets for SLG elbows.

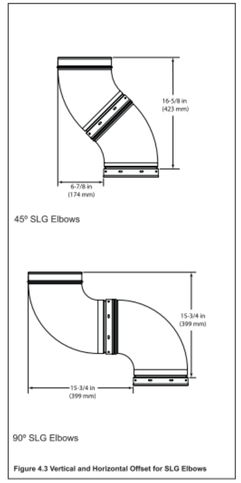
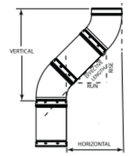


Figure 4.3 Vertical and Horizontal Offset for SLG Elbows

D. Measuring Standards

Vertical and horizontal measurements listed in the vent diagrams were made using the following standards:

- Pipe measurements are shown using the effective length of pipe. See Figure 4.4 for information on effective length of pipe components.
- Total vent length is measured from the start of the vent run, to the end of the vent run, including straight pipe as well as elbows.
- Horizontal pipe installed level with no rise.



SLG Pipe	Effective Length		Rise/Run	
	Inches	Millimeters	Inches	Millimeters
SLG4	2-3/4	70	2	49
SLG6	4-3/4	121	3-3/8	85
SLG12	10-3/4	273	7-5/8	193
SLG24	22-3/4	578	16-1/8	409
SLG36	34-3/4	883	24-5/8	624
SLG48	46-3/4	1187	33	840

SLG Pipe	Horizontal		Vertical	
	Inches	Millimeters	Inches	Millimeters
SLG4	8-7/8	225	18-5/8	473
SLG6	10-1/4	260	20	508
SLG12	14-1/2	368	24-1/4	616
SLG24	23	584	32-3/4	832
SLG36	31-1/2	800	41-1/4	1048
SLG48	39-7/8	1013	49-5/8	1260

Figure 4.4 Elbow Chart

⚠ WARNING

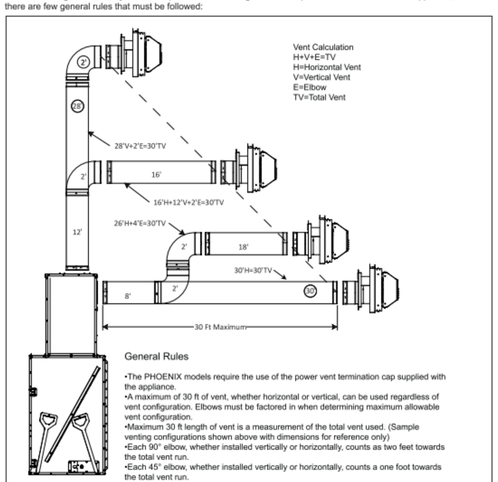
Fire Risk.

PHOENIX models must be power vented using the termination cap supplied with the appliance. Failure to vent properly could cause overheating and fire.

- The PHOENIX comes standard with a 2 minute pre-purge function designed to remove gas from the appliance and establish a positive draft for the vent system.
- The PHOENIX comes standard with a 20 minute post-purge function designed to eliminate condensation in the venting system components.

E. Vent Diagrams

As shown in Figure 4.5, many different top vent or vent configurations are possible with the PHOENIX appliance, however there are few general rules that must be followed:



General Rules

•The PHOENIX models require the use of the power vent termination cap supplied with the appliance.
•A maximum of 30 ft of vent, whether horizontal or vertical, can be used regardless of vent configuration. Elbows must be factored in when determining maximum allowable vent configuration.
•Maximum 30 ft length of vent is a measurement of the total vent used. (Sample venting configurations shown above with dimensions for reference only)
•Each 90° elbow, whether installed vertically or horizontally, counts as two feet towards the total vent run.
•Each 45° elbow, whether installed vertically or horizontally, counts a one foot towards the total vent run.
•A maximum of three 90° elbows (or six 45° elbows) may be used in any vent configuration.
•Elbows may be placed back to back anywhere in the system.
•Any 90° elbow may be replaced with two 45° elbows.
•When penetrating a combustible wall, a wall shield firestop must be installed on one side of the wall. The wall where the termination cap is located requires a wall shield only on the interior side.
•Horizontal runs of vent do not require vertical rise; horizontal runs may be level.

WARNING: Appliance vent runs or termination caps CANNOT be installed in a downward direction.

Figure 4.5 Venting

WARNING: Elbows may NOT be installed in a downward direction.

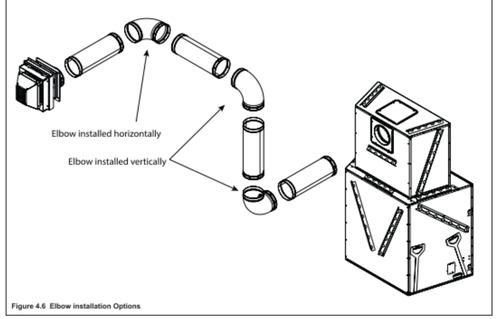


Figure 4.6 Elbow installation Options

5 Vent Clearances and Framing

A. Pipe Clearances to Combustibles

WARNING! Risk of Fire! *Maintain air space clearance to vent.* ***DO NOT*** *pack insulation or other combustibles:*

- *Between ceiling firestops*
- *Between wall shield firestops*
- *Around vent system*

Failure to keep insulation or other material away from vent pipe could cause overheating and fire.

Note: Heat shields MUST overlap by a minimum of 1-1/2 in. (38 mm).

- **SLG heat shield** - designed to be used on a wall 4 in. to 7 in. (102 mm to 178 mm) thick.
- If wall thickness is less than 4 in., the existing heat shields must be field trimmed. If wall thickness is greater than 7 in. a DVP-HSM-B and SLG-D-EXT will be required.

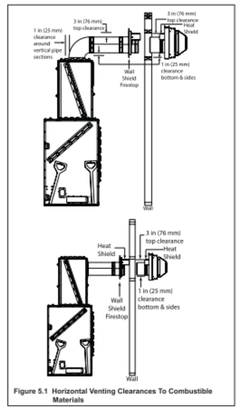


Figure 5.1 Horizontal Venting Clearances To Combustible Materials

B. Wall Penetration Framing/Firestops

Combustible Wall Penetration

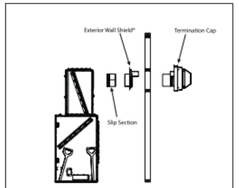
Whenever a combustible wall is penetrated, you must frame a hole for the wall shield firestop(s). The wall shield firestop maintains minimum clearances and prevents cold air infiltration.

- The opening must be framed on all four sides using the same size framing materials as those used in the wall construction.
- The PHOENIX appliance is supplied with a wall shield specifically designed for use on the inside of the exterior wall in which the termination cap is to be located. A minimum of 1-1/2 in. (38 mm) overlap of attached heat shields must be maintained.
- A wall shield (DVP-WS) must be placed on one side of the interior walls. See Section 7.E for information regarding the installation of a horizontal termination cap.

Non-Combustible Wall Penetration

If the hole being penetrated is surrounded by non-combustible materials such as concrete, a hole with diameter one inch greater than the pipe is acceptable.

Whenever a non-combustible wall is penetrated, the wall shield firestop is only required on one side and no heat shield is necessary.



*Exterior walls require the use of the wall shield/slip section assembly supplied with the appliance termination cap for proper installation.
Use DVP-WS (wall shield) for all interior wall penetrations

Figure 5.2 Non-Combustible Wall Penetration

NICODEMUS DESIGN
8861 Villa La Jolla Dr.,
P.O. Box # 13367,
La Jolla, CA 92037
Phone: (760) 473-1041

DESIGNER:

Drawn By:
NN

Drawing Date:
October 10, 2023

Revisions:

revision	date	notes

PROJECT:
Evans Remodel
412 Flora Vista, Santa Barbara, CA

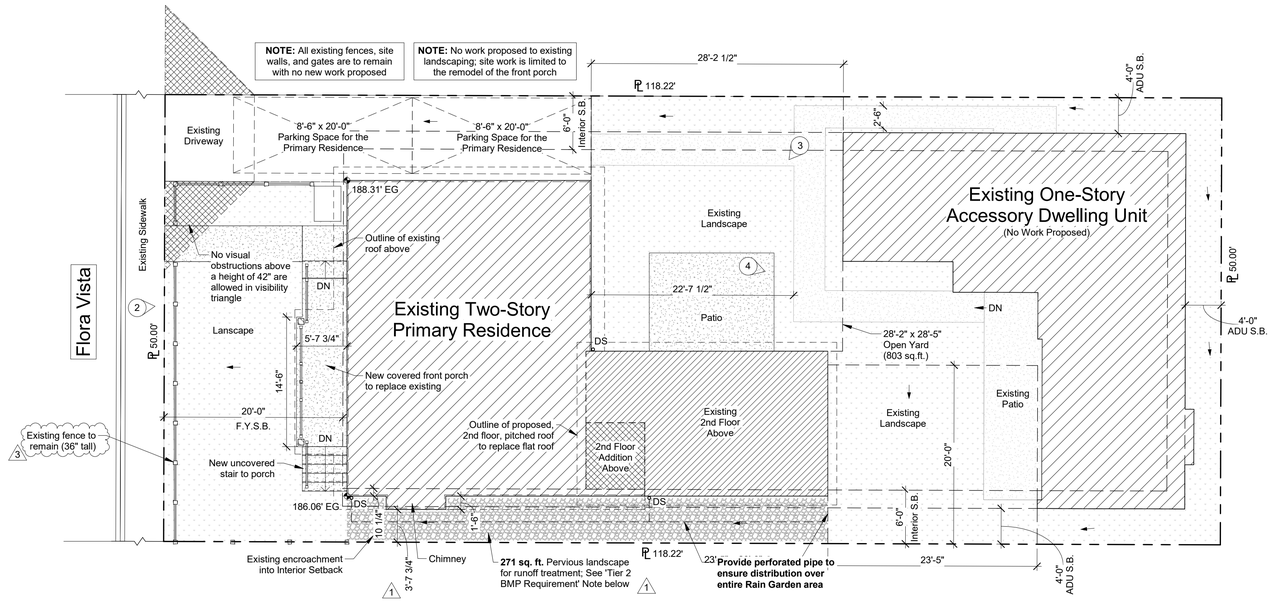
SHEET TITLE:
Fireplace Venting

DRAWING NUMBER:
GN5

2 Existing Photo

3 Existing Photo

4 Existing Photo



1 Site Plan
1/8" = 1'-0"

Mechanical and Other Equipment:

SBMC 30.140.130:

A. Attached Equipment. Equipment attached to the outside wall of a structure, located at least 30 inches above adjacent grade, may encroach a maximum of three feet into any interior setback or open yard, but shall be no closer than two feet to any property line.

B. Roof-Mounted Equipment. Roof-mounted equipment shall be hidden from view or screened pursuant to Section 30.15.120, Screening.

C. Free-Standing Equipment.

1. Location. Freestanding equipment, and associated screening or enclosures, may be located within the front yard and may encroach into any setback or open yard, except private open yard, and as follows:

a. Residential Uses. On lots developed with residential uses only, freestanding equipment and enclosures shall be no closer than 10 feet to any front lot line, and no closer than five feet to any interior lot line adjacent to property zoned for residential use or developed with residential uses.

b. Nonresidential and Mixed-Use. On lots developed with nonresidential uses or mixed-use, freestanding equipment and enclosures shall be no closer than five feet to any front lot line, and no closer than five feet to any interior lot line adjacent to property zoned or developed with residential uses.

c. Maximum Area. Freestanding equipment and enclosures in the front yard or open yard is limited to a cumulative total of 50 square feet.

2. Screening. All freestanding equipment shall be hidden from view or screened, pursuant to Section 30.15.120, Screening.

Open Yard:

Area 1 (North of Primary Residence):	803 sq. ft.
Area 2 (Easty of Primary Residence):	469 sq. ft.
Total:	**1,272 sq. ft.**

Legend

- Concrete
- Natural Stone Tile
- Landscape
- Site Drainage
- Existing 1-Story
- Existing 2-Story
- Proposed Addition
- Rain Garden for runoff treatment (1)

General Plot Plan Notes:

1) All plan dimensions given are to finish face, U.N.O.

2) Yard setbacks are to be measured from the exterior wall finish to the property line and not from the outside of the footing (or face of studs).

3) All fence construction, site walls, and gates will be under a separate Building Permit

4) Existing drainage to remain. All surface water is to drain away from buildings at a MIN of 5% slope within the first 10 feet (2% for impervious surfaces). Contractor to approve all drainage schemes prior to completion of the project.

5) Site grading or drainage system will manage all surface water flows to keep water from entering buildings (swales, water collection, French drains, etc.). CGC 4.106.3 Exception: Additions not altering the drainage path.

6) Automatic irrigation system controllers shall comply with the CGC Section 4.304.2 as follows: A. Controllers shall be weather or soil moisture based that automatically adjust irrigation in response to changes in needs as weather conditions change. B. Weather based controllers shall have separate wired or wireless rain sensor which connects or communicates with the controller(s). Soil moisture based controllers are not required to have rain sensors.

7) See specifications for general construction requirements

Tier 2 BMP Requirement - Runoff Treatment Area:

Per City of Santa Barbara Storm Water BMP Guidance Manual (page 61):
"One simple and inexpensive way to comply with Tier 2 requirements involves providing natural/vegetated/mulched area totaling at least 25% of tributary impervious surface area. Runoff shall be able to "access" the entire 25% treatment area to ensure maximum infiltration. The proposed permeable treatment area must have a slope less than 7%, and be at least 18" wide."

Proposed Redeveloped Impervious Area:	**683 sq. ft.**
2nd Floor Roof:	548 sq. ft. *(see roof plan 4/A3)*
Entry Porch Roof:	135 sq. ft. *(see plan 1/A3)*

683 sq. ft. x 0.25 = **170.75 sq. ft. Pervious Treatment Area Required**

Pervious Treatment Area Provided: 271 sq. ft. *(see southern side yard on Site Plan 1/A1)*

NOTE: See plans 4/A3 and 1/A3 for downspout locations. Runoff from downspouts to sheet flow over pervious landscape area; where sheet flow does not occur naturally, utilize a flow spreader such as a level spreader or disperser.

(1)

NICODEMUS DESIGN
8861 Villa La Jolla Dr.,
P.O. Box # 13367,
La Jolla, CA 92037
Phone: (760) 473-1041

DESIGNER:

Drawn By:
NN

Drawing Date:
October 10, 2023

Revisions:

revision	date	notes
1	12/13/23	Plan Check
3	05/04/24	Plan Check

PROJECT:
Evans Remodel
412 Flora Vista, Santa Barbara, CA

SHEET TITLE:
Site Plan

DRAWING NUMBER:
A1

Door Schedule:

No.	Size		Type	Operation	Glass	U-Factor	SHGC	Description
	Width	Height						
1	3' - 0"	6' - 8"	A	sw	Temp	0.3	0.22	
2	2' - 6"	6' - 8"	C	pkt				
3	4' - 8"	6' - 8"	E	sw				Dbl. Dr. w/ magnetic catch
4	3' - 6"	7' - 0"	D	sl				
5	2' - 0"	6' - 8"	C	sw				
6	6' - 0"	7' - 0"	B	sw	Temp	0.3	0.22	w/ 1'-6" sidelites
7	2' - 8"	6' - 8"	F	sw				
8	2' - 6"	7' - 0"	C	sw				
9	2' - 6"	6' - 8"	C	pkt				
10	2' - 6"	7' - 0"	C	sw				
E1	2' - 6"	6' - 8"	C	sw				Existing, confirm w/ Owner
E2	6' - 0"	6' - 8"	C	sw				Existing, confirm w/ Owner
E3	2' - 0"	6' - 8"	C	sw				Existing, confirm w/ Owner

Door Legend:

Type:

A	Custom Wood Dutch Door
B	Aluminum-Clad, Wood, French Doors by Lincoln Windows
C	Interior Door; 1 3/4" Thickness
D	Barn Door; BD 02 White Oak Whitewash by Urban Doors
E	Louvered Doors; 1 3/4" Thickness, MIN 100 sq. in. of free area opening
F	Fiberglass Exterior Door

Operation:

sw	Swing
sl	Slide
pkt	Pocket
fld	Fold
pvt	Pivot
byp	Bypass
oh	Overhead

Note: Door Hardware TBD

Note:
Contractor to submit door and window quotes for designer's review prior to order

Window Schedule:

No.	Size		Type	Glass	U-Factor	SHGC	Comments
	Width	Height					
1	3' - 0"	4' - 0"	Casement	Temp	0.3	0.22	
2	3' - 0"	4' - 0"	Casement		0.3	0.22	
3	2' - 0"	4' - 0"	Fixed		0.3	0.22	
4	2' - 0"	4' - 0"	Casement		0.3	0.22	
5	3' - 0"	4' - 0"	Casement		0.3	0.22	
6	3' - 0"	4' - 0"	Casement		0.3	0.22	
7	3' - 0"	4' - 0"	Casement		0.3	0.22	
8	2' - 0"	3' - 0"	Casement		0.3	0.22	
9	3' - 0"	3' - 0"	Fixed		0.3	0.22	
10	2' - 0"	3' - 0"	Casement		0.3	0.22	
11	2' - 0"	4' - 0"	Fixed		0.3	0.22	
12	2' - 0"	4' - 0"	Fixed		0.3	0.22	
13	2' - 0"	4' - 0"	Casement	Temp	0.3	0.22	
14	2' - 0"	4' - 0"	Casement	Temp	0.3	0.22	
15	3' - 0"	4' - 0"	Casement		0.3	0.22	
16	3' - 0"	2' - 0"	Awning		0.3	0.22	
17	3' - 0"	2' - 0"	Awning		0.3	0.22	
18	6' - 0"	4' - 0"	French Csmt		0.3	0.22	
19	4' - 0"	4' - 0"	French Csmt	Temp	0.3	0.22	
E1	6' - 0"	4' - 0"	Sliding		0.3	0.22	Existing Size, Confirm w/ Owner
E2	3' - 0"	4' - 0"	Casement		0.3	0.22	Existing Size, Confirm w/ Owner
E3	3' - 0"	4' - 0"	Casement	Temp	0.3	0.22	Existing Size, Confirm w/ Owner
E4	6' - 0"	3' - 0"	French Csmt		0.3	0.22	Existing Size, Confirm w/ Owner
E5	2' - 6"	2' - 6"	Casement		0.3	0.22	Existing Size, Confirm w/ Owner

Window Notes:

1) See Specification DIVISION 8 for additional information pertaining to windows
2) Provide Min. clear egress opening dimensions at each window marked for egress at room locations
3) Windows to be installed per detail 1/A6
4) See elevations for specific mullion design
5) Sash profiles of fixed windows to match adjacent operable windows

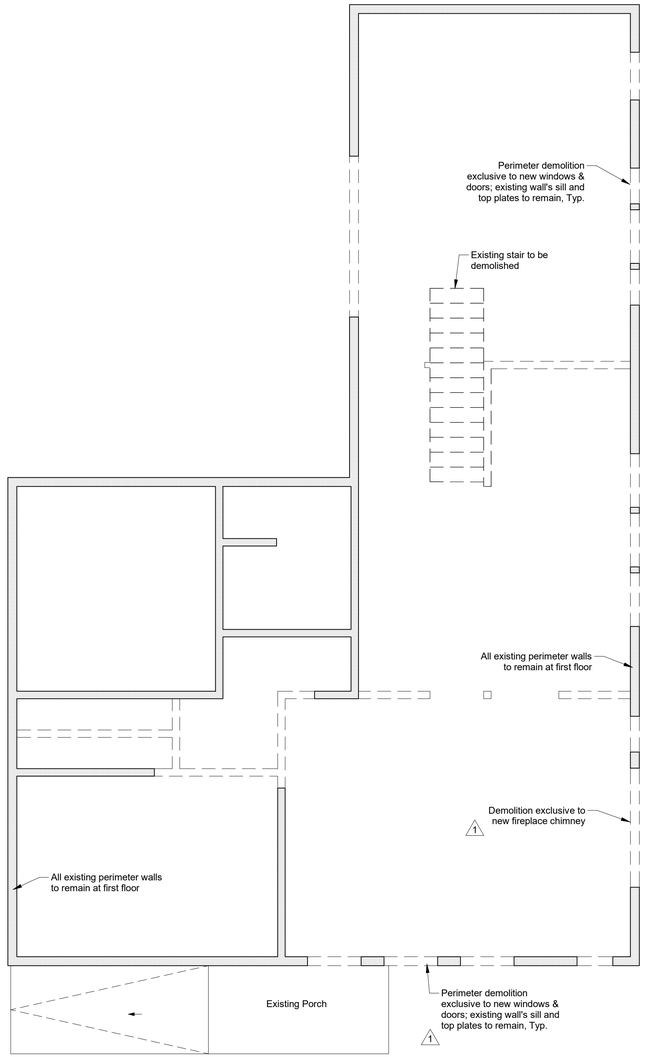
NOTE: The NFRC thermal performance labels shall remain on the windows and/or doors until final inspection

Finish Schedule:

Name	Floor	Floor Finish	Wall	Wall Finish	Ceiling	Ceiling Finish
Dining	Wood	Clear	Gyp.	Paint	Gyp.	Paint
Kitchen	Wood	Clear	Gyp.	Paint	Gyp.	Paint
Living	Wood	Clear	Gyp.	Paint	Gyp.	Paint
Primary Bath	Tile	--	Gyp.	Paint	Gyp.	Paint
Primary Bedroom	Wood	Clear	Gyp.	Paint	Gyp.	Paint
Primary Closet	Carpet	--	Gyp.	Paint	Gyp.	Paint

Finish Notes:

1) All finishes selected by Owner
2) Finish items to be installed per manufacturer's approved procedures, methods, an applicable industry standards
3) See specifications for additional information
4) Gypsum board walls and ceilings finish to be lightest hand trowel finish
5) Contractor is to install closet shelves and clothing rods as noted in plans or as specified by owner prior to completion of construction
6) Countertops in all kitchens, laundry rooms, and bathrooms to be stone or solid surface cultured stone. Specific material TBD



2 Demolition Plan - First Floor
1/4" = 1'-0"

Legend

Existing to remain

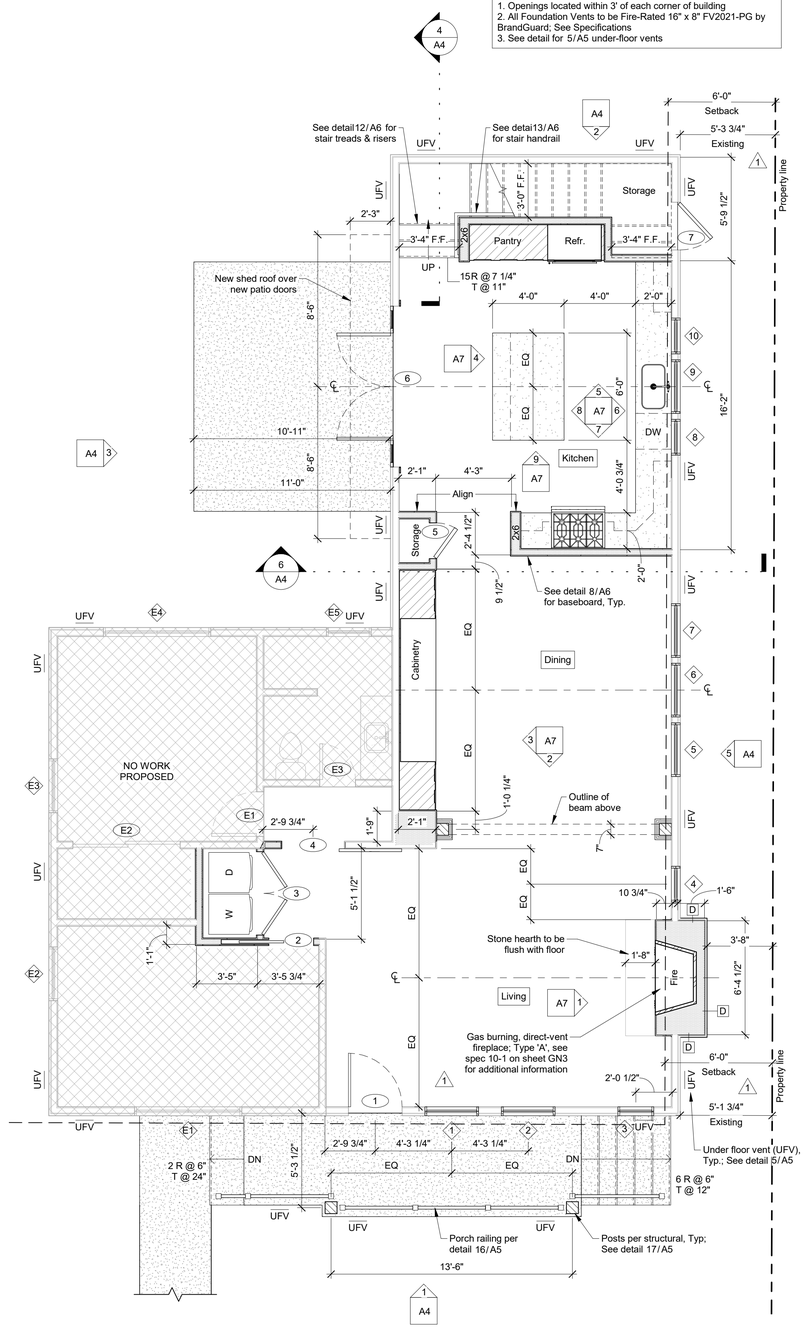
Demolished

Under-Floor Ventilation Calc's:

9.29 sq. ft. REQUIRED *(1,394 sq.ft./150 = 9.29 sq.ft.)*
63.2 sq. ft. PROVIDED

20 Under-floor Vents (UFV) x 3.16 sq. ft. = 63.2 sq. ft.
Under-floor Vents: 16" W x 8" H (38 sq. in. NFVA Airflow)

Notes:
1. Openings located within 3' of each corner of building
2. All Foundation Vents to be Fire-Rated 16" x 8" FV2021-PG by BrandGuard; See Specifications
3. See detail for 5/A5 under-floor vents



1 First Floor Plan
1/4" = 1'-0"

General Plan Notes

1. All plan dimensions given are to face of stud or masonry, U.N.O.
2. All interior walls are Type 'B' U.N.O., refer to structural drawings for framing information.
3. Contractor is to install MDF closet shelves and stainless steel clothing rods in each closet prior to completion of construction; unless directed by owner otherwise
4. See finish schedule on A2 for floor material at all locations
5. See window schedule on A2 for windows with tempered safety glazing
6. All glass shower enclosures are to be tempered safety glass

Wall Types

- A — See detail 1/A5
- B — See detail 2/A5
- C — See detail 2/A5
- D — See detail 16/A6 1

NICODEMUS DESIGN
8861 Villa La Jolla Dr.,
P.O. Box # 13367,
La Jolla, CA 92037
Phone: (760) 473-1041

DESIGNER:

Drawn By:
NN

Drawing Date:
October 10, 2023

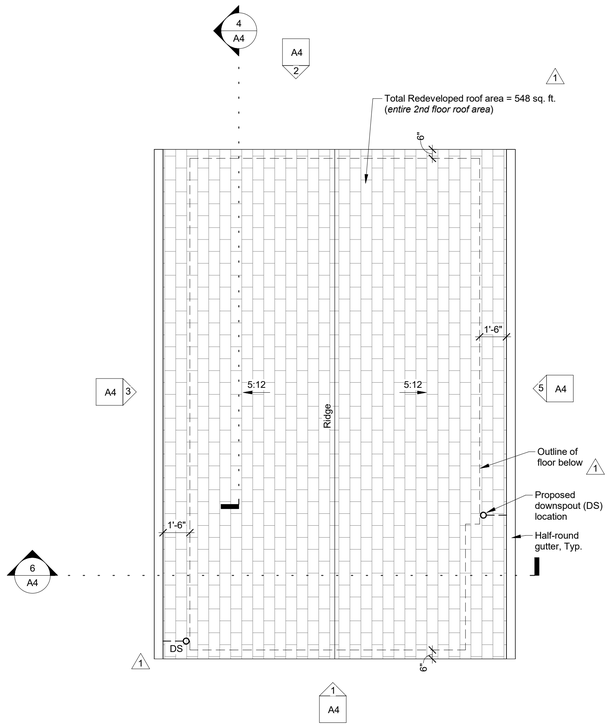
Revisions:

revision	date	notes
1	12/13/23	Plan Check
3	05/04/24	Plan Check

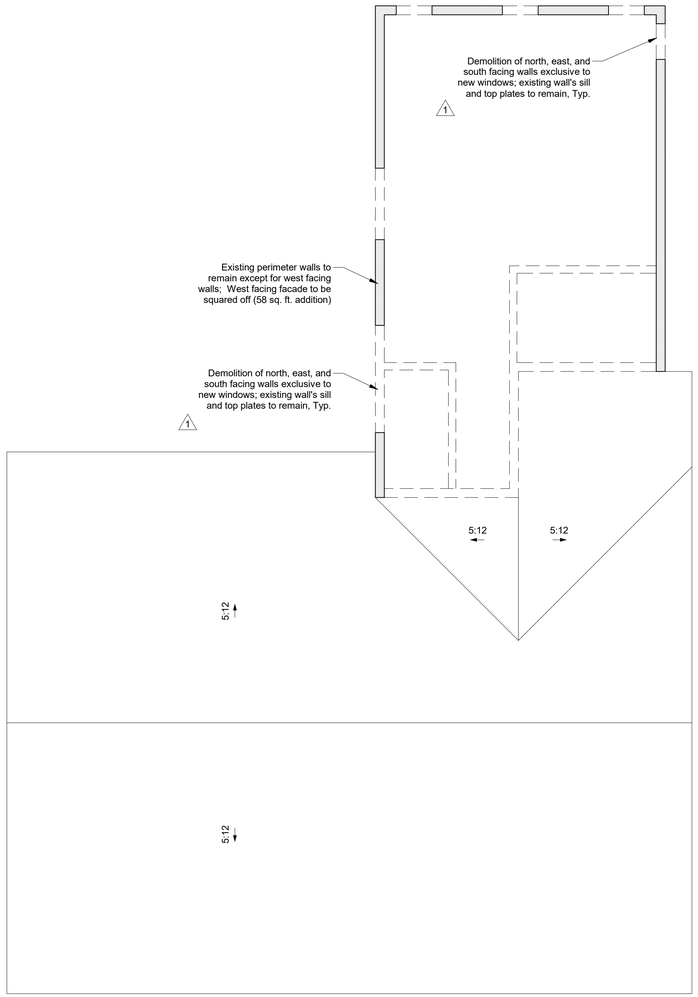
PROJECT:
Evans Remodel
412 Flora Vista, Santa Barbara, CA

SHEET TITLE:
First Floor Plan

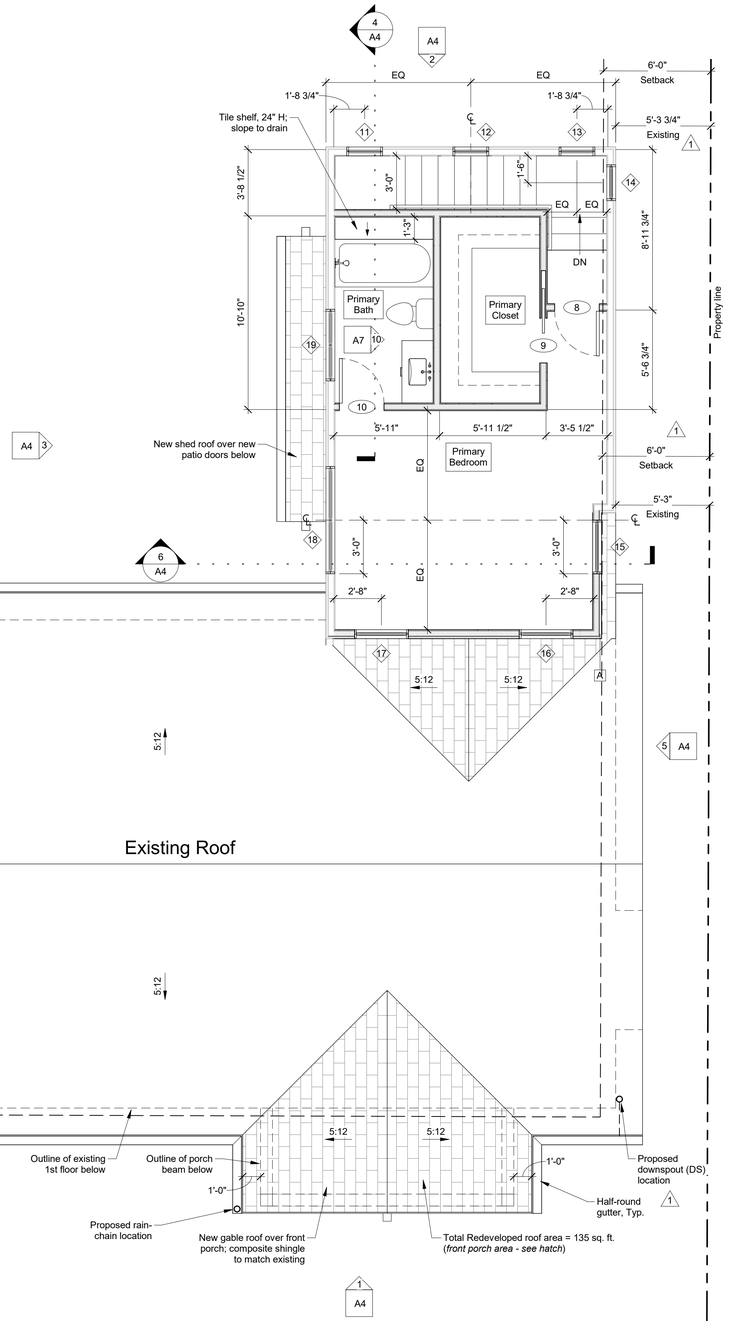
DRAWING NUMBER:
A2



4 Roof Plan
1/4" = 1'-0"



2 Demolition Plan - Second Floor
1/4" = 1'-0"



Legend

Existing to remain

Demolished

1 Second Floor Plan
1/4" = 1'-0"

NICODEMUS DESIGN
8861 Villa La Jolla Dr.,
P.O. Box # 13367,
La Jolla, CA 92037
Phone: (760) 473-1041

DESIGNER:

Drawn By:
NN

Drawing Date:
October 10, 2023

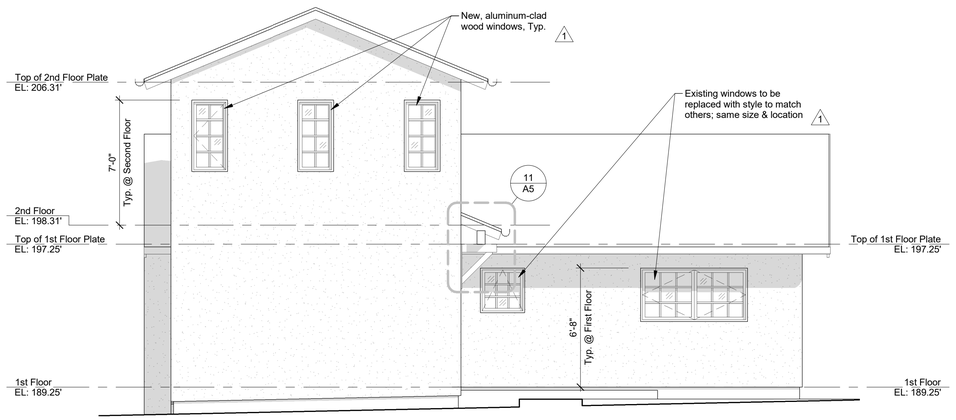
Revisions:

revision	date	notes
1	12/13/23	Plan Check

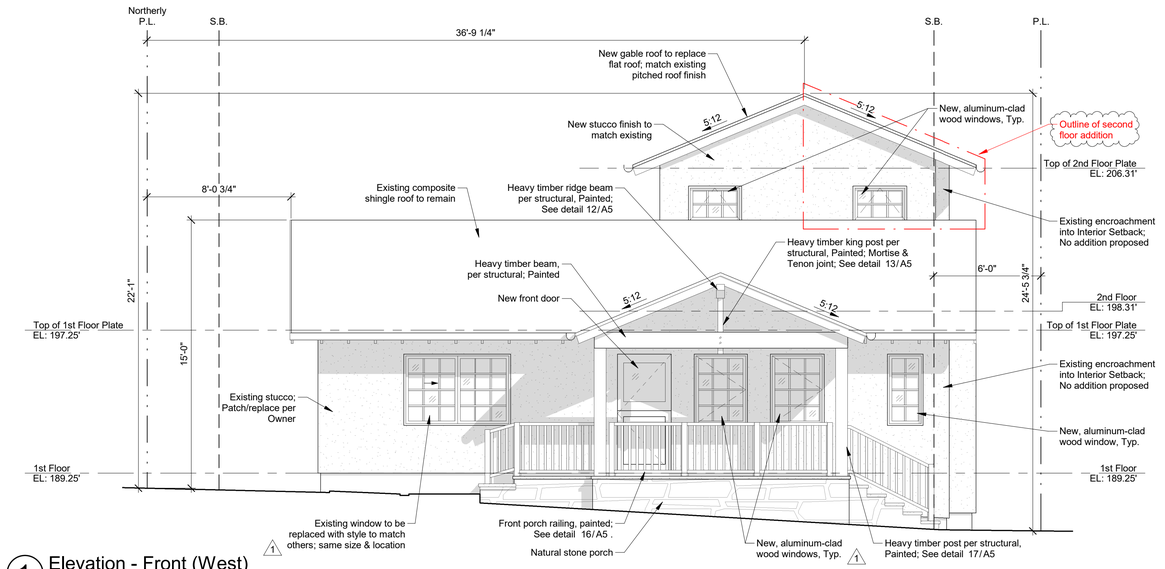
PROJECT:
Evans Remodel
412 Flora Vista, Santa Barbara, CA

SHEET TITLE:
Second Floor & Roof Plan

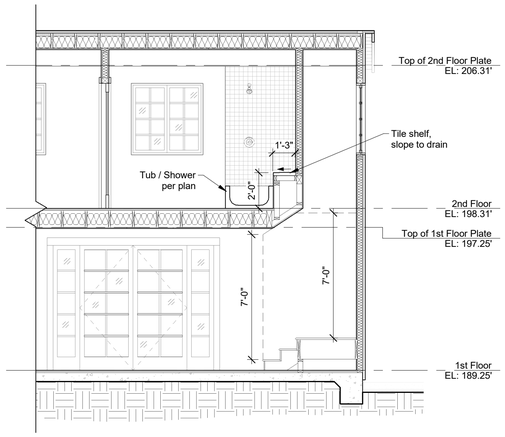
DRAWING NUMBER:
A3



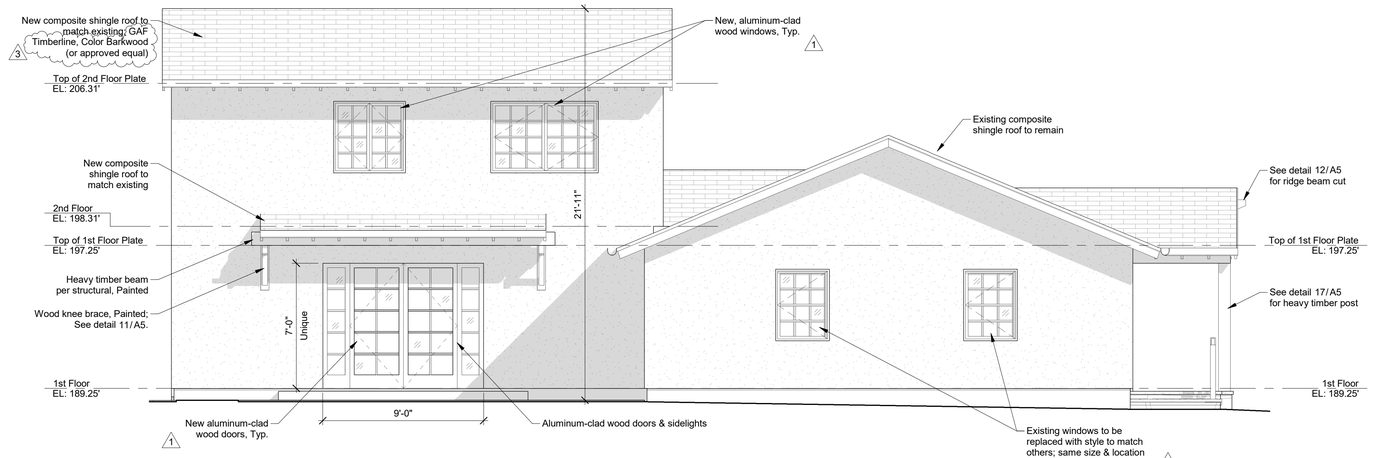
2 Elevation - Rear (East)
1/4" = 1'-0"



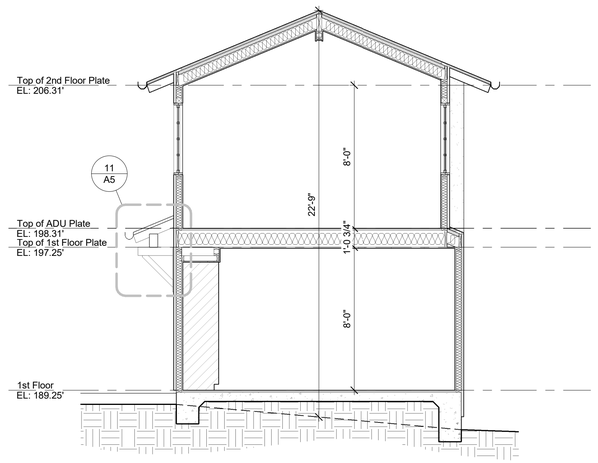
1 Elevation - Front (West)
1/4" = 1'-0"



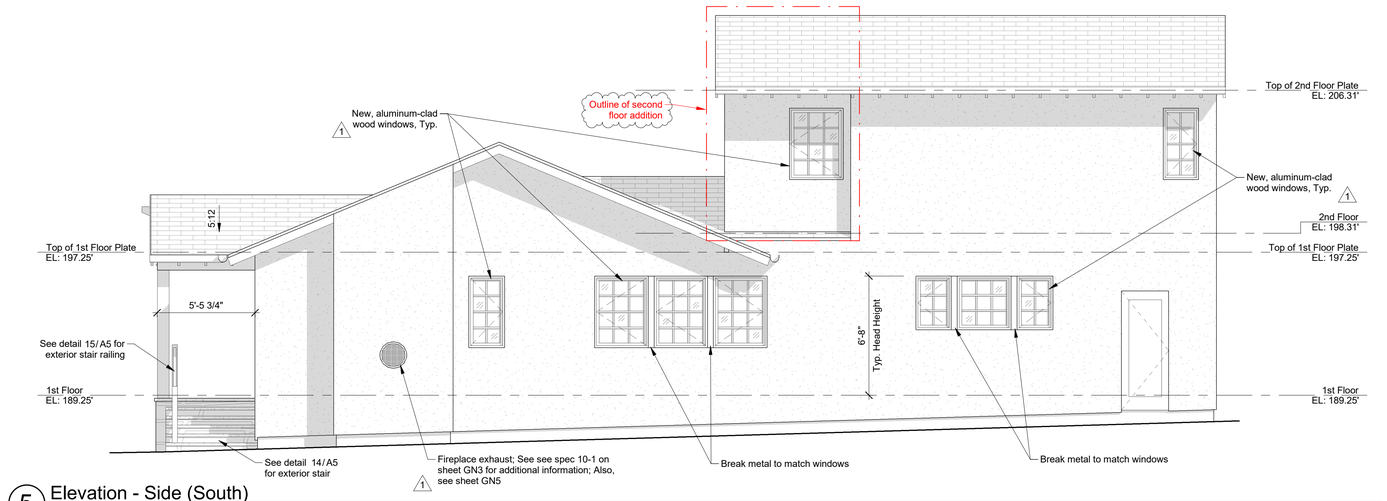
4 Building Section
1/4" = 1'-0"



3 Elevation - Side (North)
1/4" = 1'-0"



6 Building Section
1/4" = 1'-0"



5 Elevation - Side (South)
1/4" = 1'-0"

NICODEMUS DESIGN
8861 Villa La Jolla Dr.,
P.O. Box # 13367,
La Jolla, CA 92037
Phone: (760) 473-1041
DESIGNER:

Drawn By:
NN

Drawing Date:
October 10, 2023

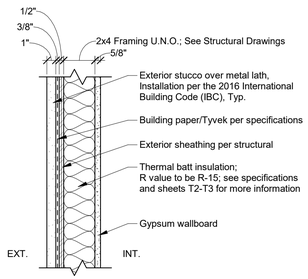
Revisions:

revision	date	notes
1	12/13/23	Plan Check
3	05/04/24	Plan Check

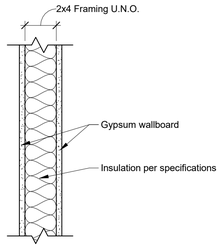
PROJECT:
Evans Remodel
412 Flora Vista, Santa Barbara, CA

SHEET TITLE:
Elevations & Sections

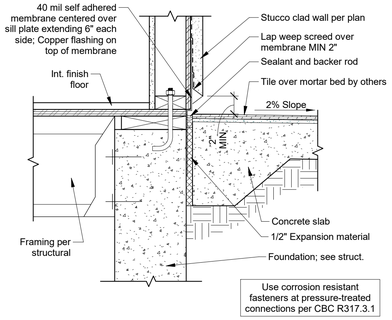
DRAWING NUMBER:
A4



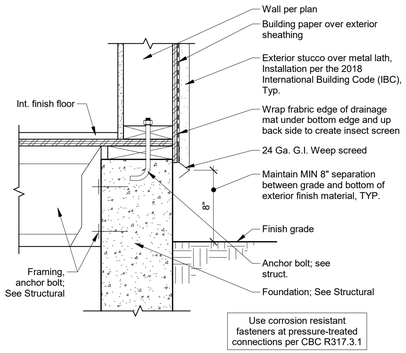
1 Wall Type A - Exterior Wall
1 1/2" = 1'-0"



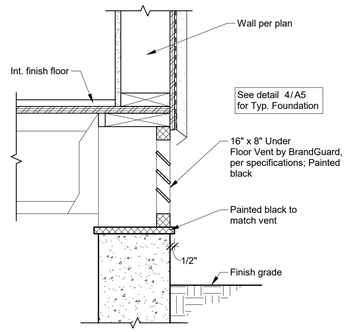
2 Wall Type B - Interior Wall
1 1/2" = 1'-0"



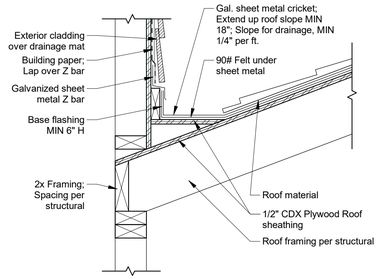
3 Section Detail - Foundation at Patio
1 1/2" = 1'-0"



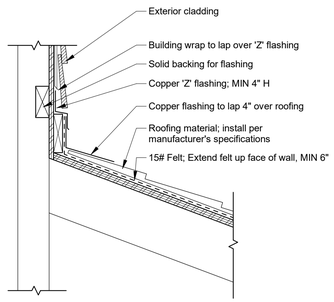
4 Section Detail - Typ. Foundation
1 1/2" = 1'-0"



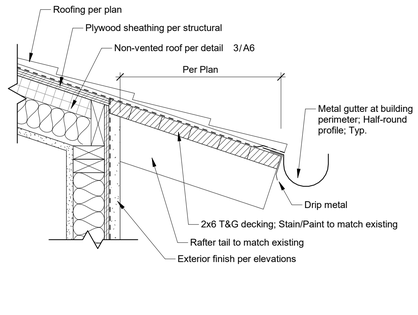
5 Section Detail - Under Floor Vent
1 1/2" = 1'-0"



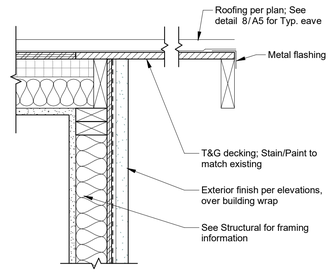
6 Section Detail - Typ. Valley
1 1/2" = 1'-0"



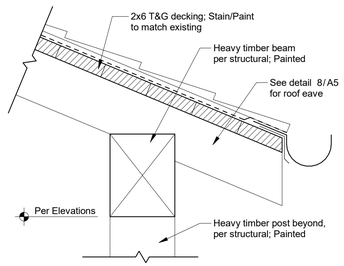
7 Section Detail - Roof at Wall
1 1/2" = 1'-0"



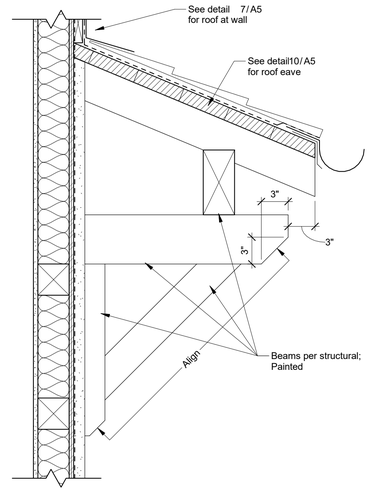
8 Section Detail - Typ. Roof Eave
1 1/2" = 1'-0"



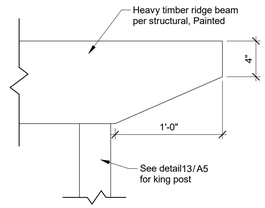
9 Section Detail - Typ. Gable End
1 1/2" = 1'-0"



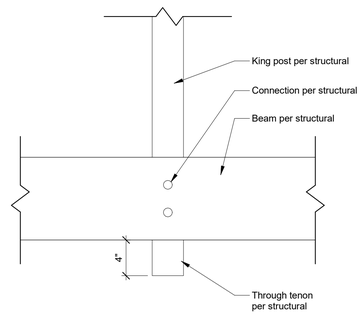
10 Section Detail - Eave at Patio
1 1/2" = 1'-0"



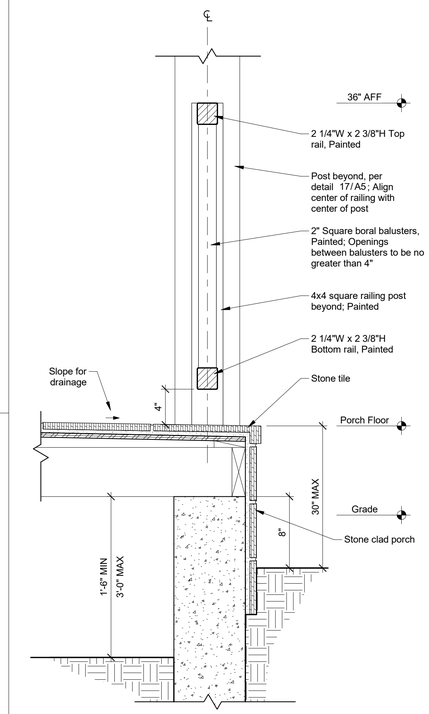
11 Section Detail - Knee Brace
1 1/2" = 1'-0"



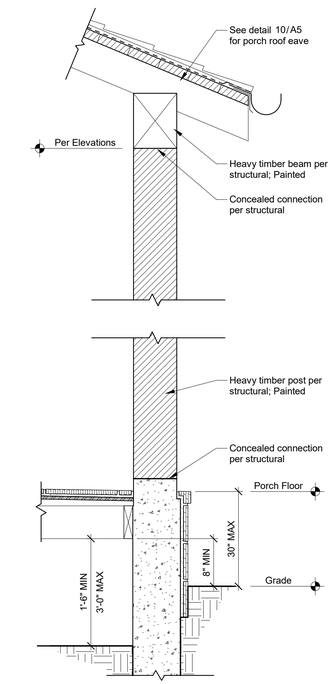
12 Elevation Detail - Ridge Beam Cut
1 1/2" = 1'-0"



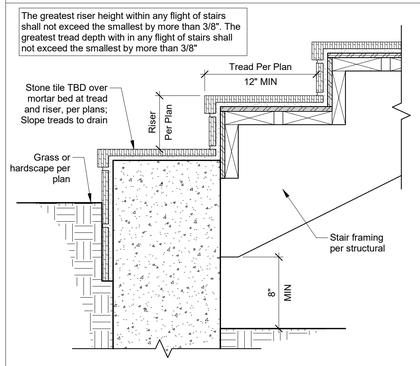
13 Elevation Detail - King Post
1 1/2" = 1'-0"



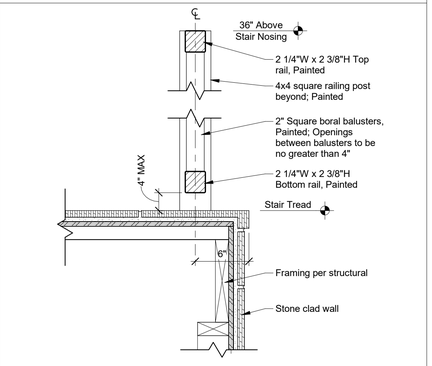
16 Section Detail - Porch Railing
1 1/2" = 1'-0"



17 Section Detail - Typ. Column
1" = 1'-0"



14 Section Detail - Exterior Stair
1 1/2" = 1'-0"



15 Section Detail - Exterior Stair Railing
1 1/2" = 1'-0"

NICODEMUS DESIGN
8861 Villa La Jolla Dr.,
P.O. Box # 13367,
La Jolla, CA 92037
Phone: (760) 473-1041

DESIGNER:

Drawn By:
NN

Drawing Date:
October 10, 2023

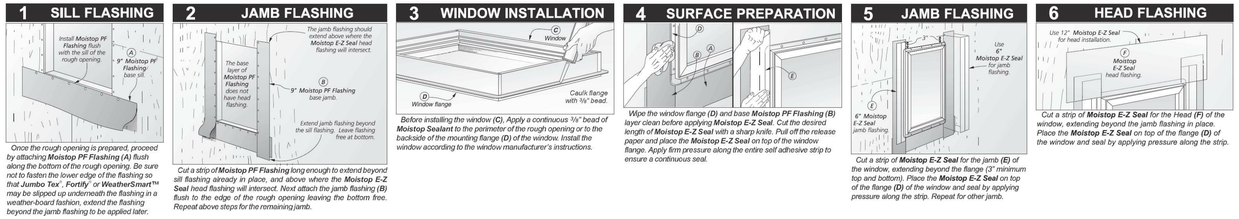
Revisions:

revision	date	notes

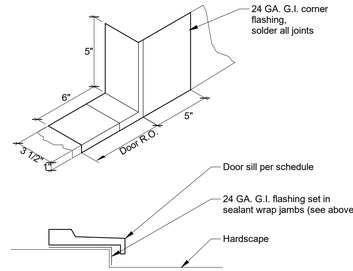
PROJECT:
Evans Remodel
412 Flora Vista, Santa Barbara, CA

SHEET TITLE:
Details

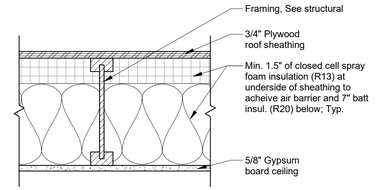
DRAWING NUMBER:
A5



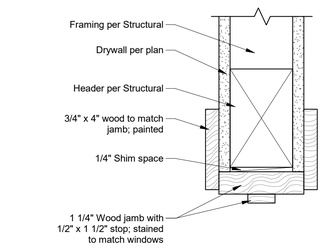
1 Typical Window Installation



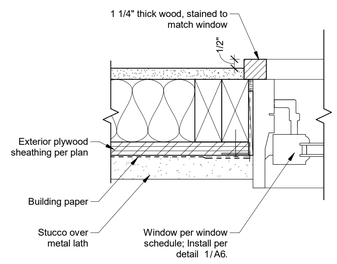
2 Door Flashing
1 1/2" = 1'-0"



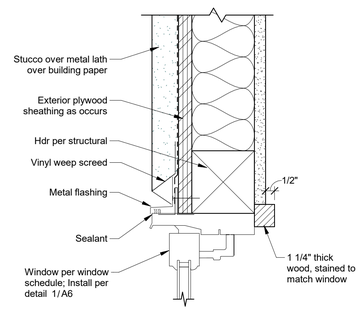
3 Non-Vented Roof Detail
1 1/2" = 1'-0"



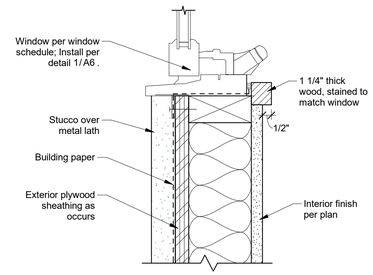
4 Section Detail - Door Jamb / Header
3" = 1'-0"



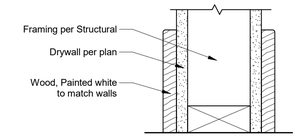
5 Section Detail - Typ. Window Jamb
3" = 1'-0"



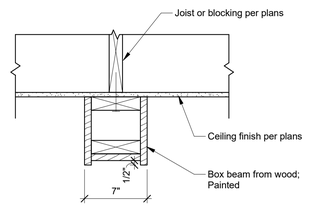
6 Section Detail - Typ. Window Head
3" = 1'-0"



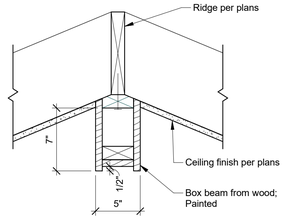
7 Section Detail - Typ. Window Sill
3" = 1'-0"



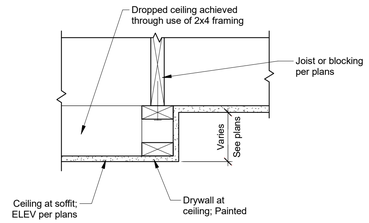
8 Section Detail - Typ. Baseboard
3" = 1'-0"



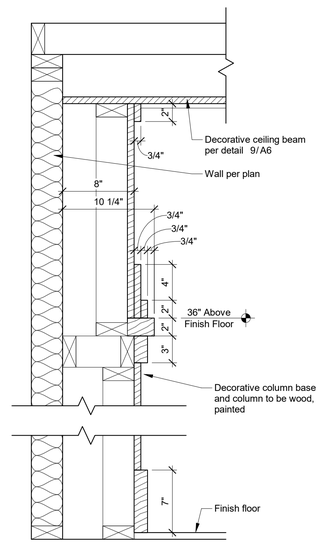
9 Section Detail - Decorative Ceiling Beam
1 1/2" = 1'-0"

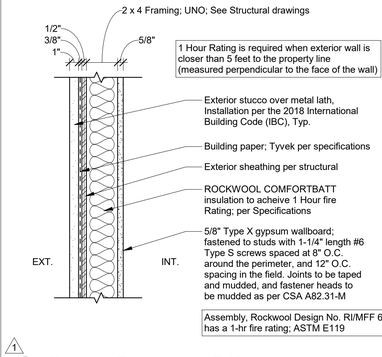


10 Section Detail - Decorative Ridge Beam
1 1/2" = 1'-0"

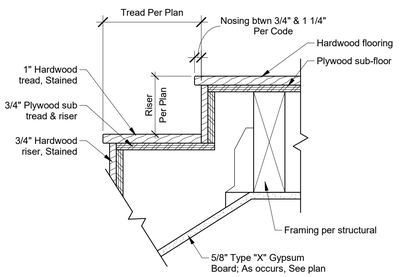


11 Section Detail - Typ. Soffit
1 1/2" = 1'-0"

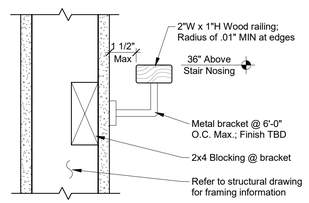




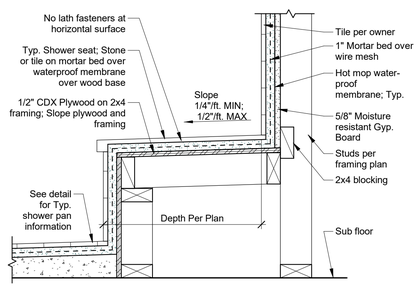
1
16 Section Detail - 1 HR Wall
1 1/2" = 1'-0"



12 Section Detail - Typ. Stair Tread & Riser
1 1/2" = 1'-0"



13 Section Detail - Handrail
3" = 1'-0"



14 Section Detail - Shower Seat / Shelf
1 1/2" = 1'-0"

15 Section Detail - Int. Column
1 1/2" = 1'-0"

NICODEMUS DESIGN
8861 Villa La Jolla Dr.,
P.O. Box # 13367,
La Jolla, CA 92037
Phone: (760) 473-1041

DESIGNER:

Drawn By:
NN

Drawing Date:
October 10, 2023

Revisions:

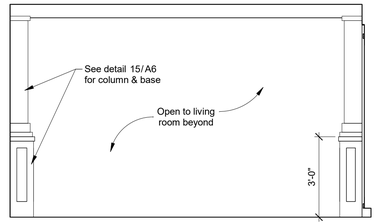
revision	date	notes
1	12/13/23	Plan Check

PROJECT:
Evans Remodel
412 Flora Vista, Santa Barbara, CA

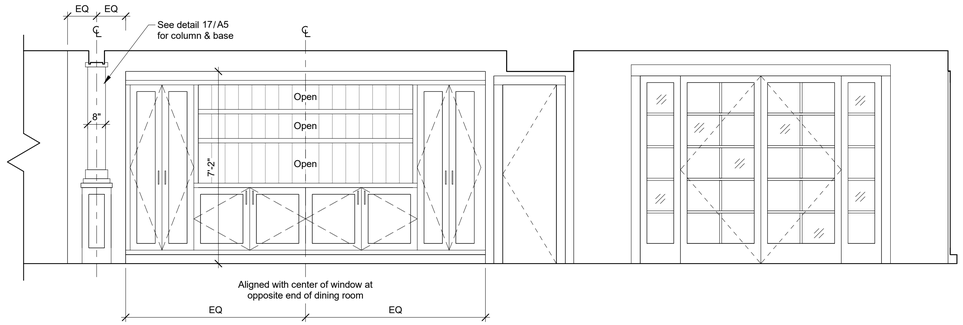
SHEET TITLE:
Details

DRAWING NUMBER:
A6

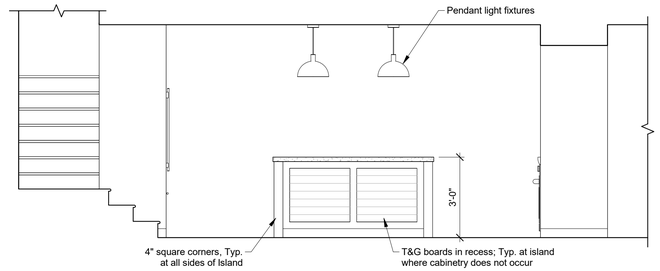
1 Fireplace & Dining
3/8" = 1'-0"



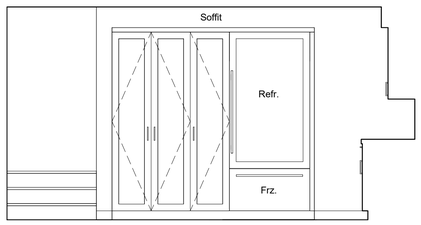
2 Posts & Beam
3/8" = 1'-0"



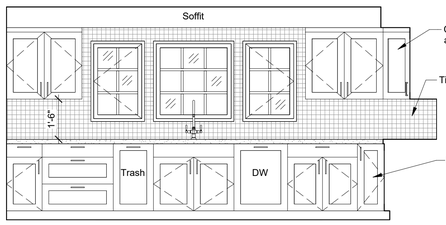
3 Dining Cabinetry
3/8" = 1'-0"



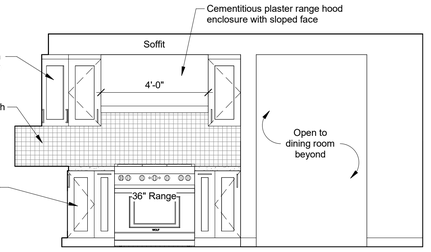
4 Island
3/8" = 1'-0"



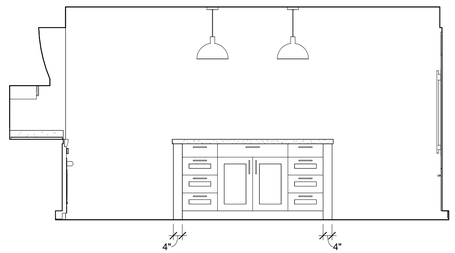
5 Kitchen
3/8" = 1'-0"



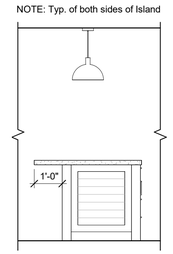
6 Kitchen
3/8" = 1'-0"



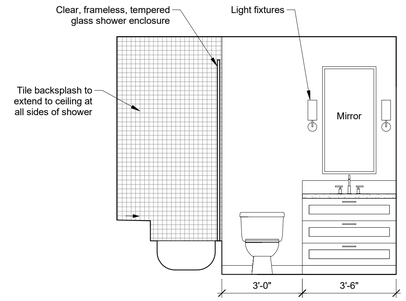
7 Kitchen
3/8" = 1'-0"



8 Island
3/8" = 1'-0"



9 Island
3/8" = 1'-0"



10 Primary Bath
3/8" = 1'-0"

NICODEMUS DESIGN

8861 Villa La Jolla Dr.,
P.O. Box # 13367,
La Jolla, CA 92037
Phone: (760) 473-1041

DESIGNER:

Drawn By:
NN

Drawing Date:
October 10, 2023

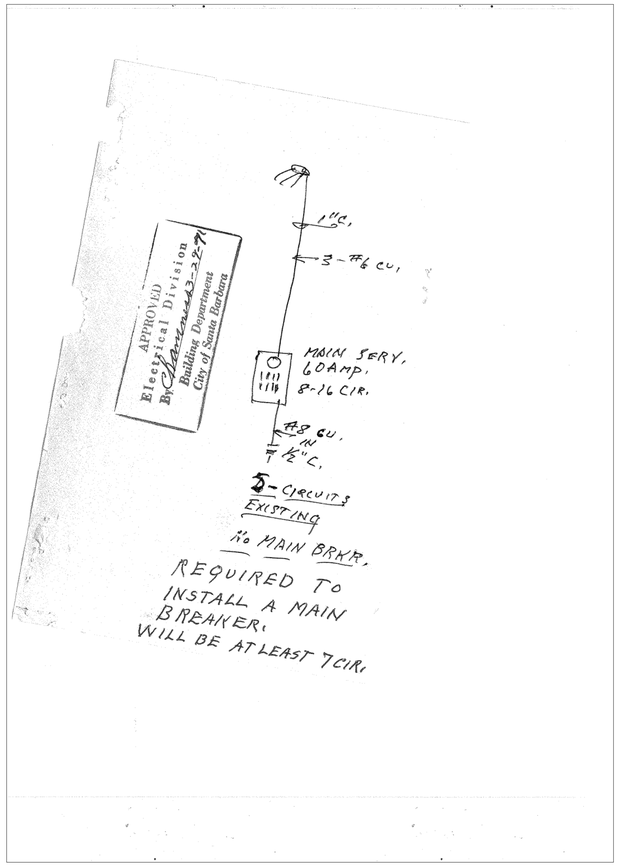
Revisions:

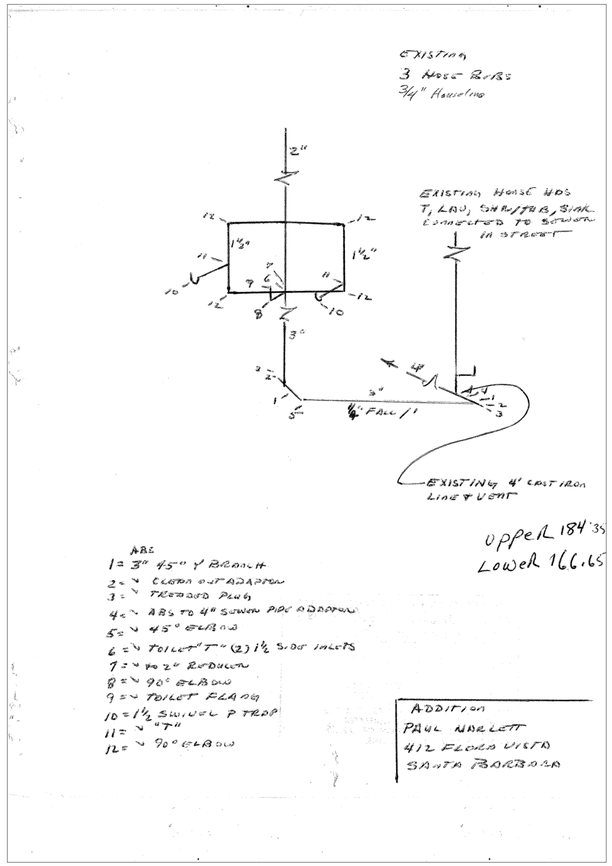
revision	date	notes

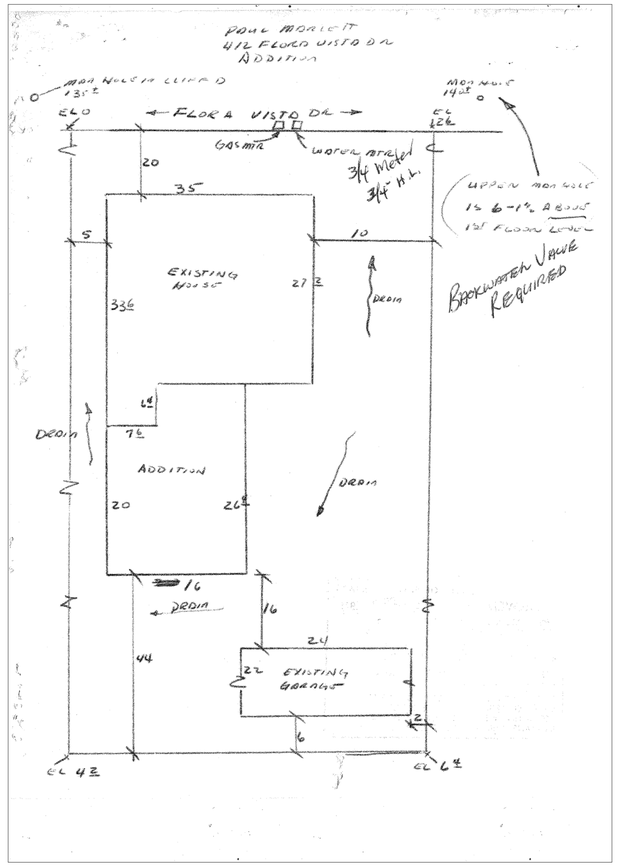
PROJECT:
Evans Remodel
412 Flora Vista, Santa Barbara, CA

SHEET TITLE:
Interior Elevations

DRAWING NUMBER:
A7







NICODEMUS DESIGN

8861 Villa La Jolla Dr.,
P.O. Box # 13367,
La Jolla, CA 92037
Phone: (760) 473-1041

DESIGNER:

Drawn By:
NN

Drawing Date:
October 10, 2023

Revisions:

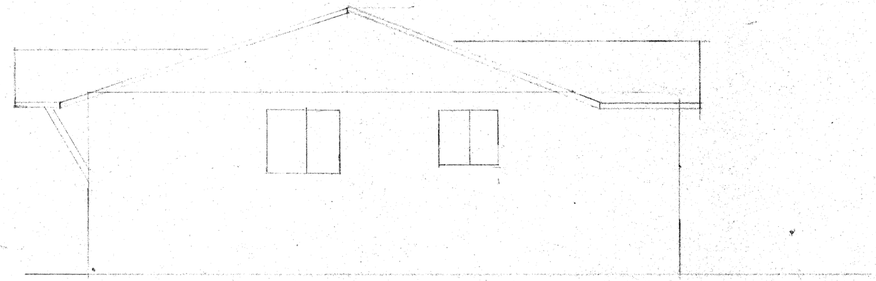
revision	date	notes

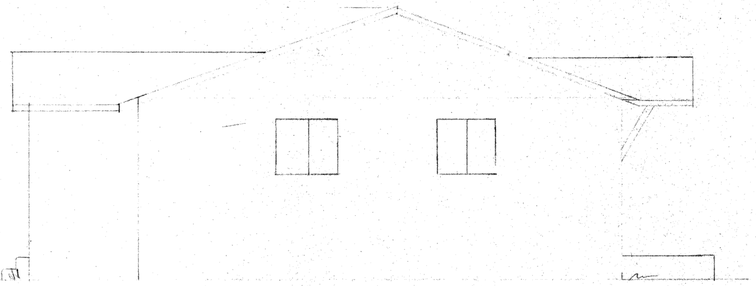
PROJECT:
Evans Remodel
412 Flora Vista, Santa Barbara, CA

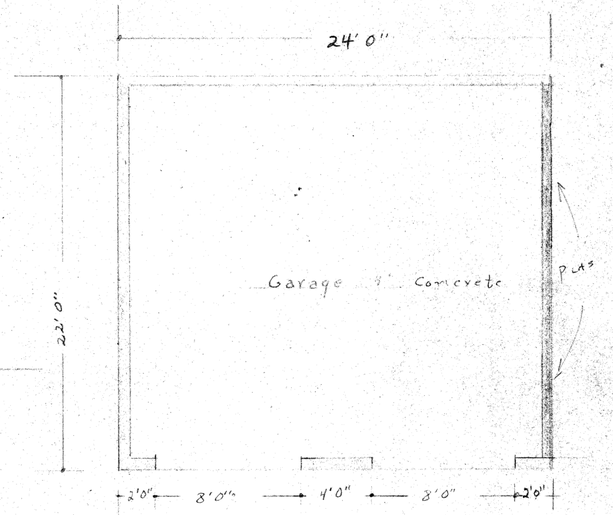
SHEET TITLE:
Existing Plans

DRAWING NUMBER:
A8.1

ROOM ADDITION FOR PAUL & LINDA MARLETT 412 FLORA VISTA
FOUNDATION SC 1/4"=1' & PLOT PLAN
REAR LOT LINE
EXISTING HOUSE
ROOF PLAN 1/4"=1'
COMP. & ROCK ROOF
EXTEND HIP TO GABLE AS SHOWN
EXISTING HIP SHAPE
2ND FLR. & CLG. JOIST PLAN SC 1/4"=1'
1ST FLOOR SC 1/4"=1'
FM. RM.
REMOVE EXISTING WINDOW FOR ENTRY TO ADDITION
REMOVE & COVER EXISTING DOOR
WALLS PLY PANEL
EXISTING STUCCO BLDG.
FLOOR LINE
EXTERIOR WALLS REVERSE BATTEN PLY. WD. 1/2"
HOLD TO EXISTING FLOOR LEVEL
50' BACK PROPERTY LINE
APPROVED Electrical Division Building Department City of Santa Barbara
SHALL INSTALL A MAIN BREAKER IN SERVICE. WILL BE 7 CIRCUITS.
BACKWATER VALVE REQUIRED
2ND FLOOR SC 1/4"=1'
BR. RM.
1ST FLOOR JOIST 2X10 SC DF 16" O.C.
JOIST SYSTEM SC 1/4"=1'
PLOT PLAN?
2X2 PICKETS 9" O.C.
2X4 RAIL
STRINGER 3X10
13 RISERS 7 3/4"
12 TREADS 10"
4X4 POST
EXISTING WALL
BUILDING DEPARTMENT OFFICE COPY
RETURN WITH CORRECTIONS



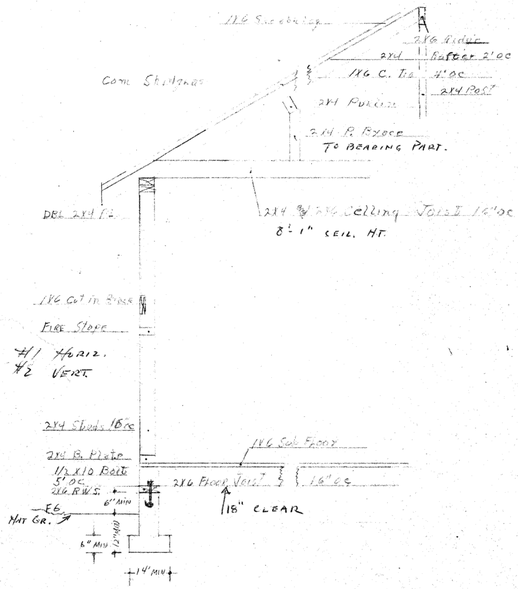


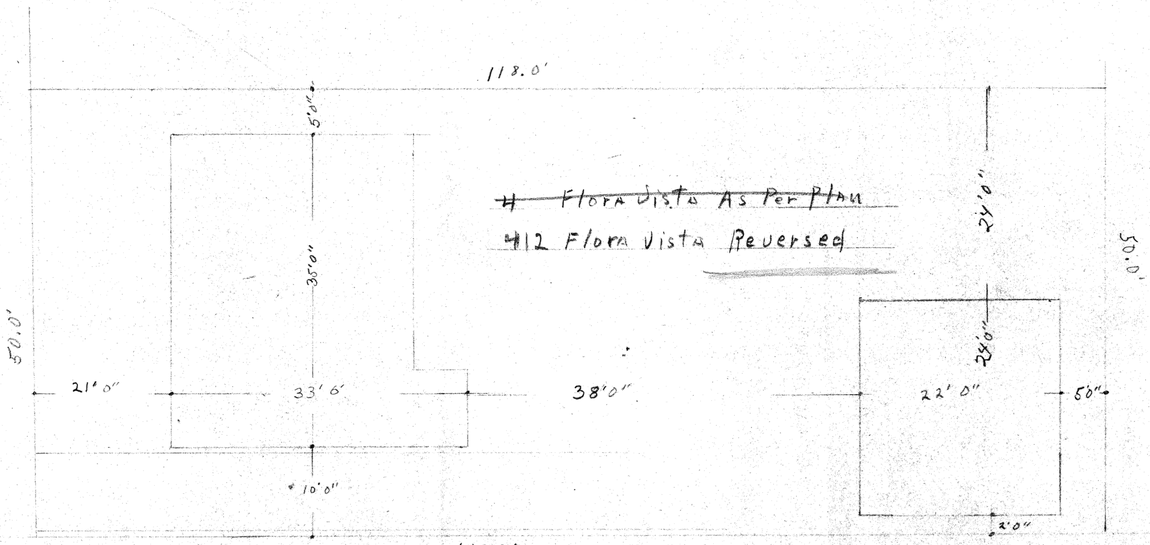


APPROVED
SEP 19 1955
BUILDING INSPECTOR
CITY OF SANTA BARBARA

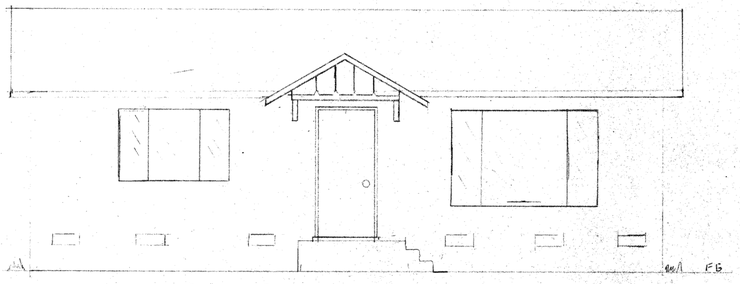
412 G.B. MARLETT
Flora Vista Dr
Lot 5

SPECIAL NOTICE!
PLUMBING, GAS, HEATING AND ELECTRICAL WORK REQUIRE SEPARATE PERMITS, WHICH SHALL BE OBTAINED BEFORE ANY WORK IS STARTED. CHECK CITY SEWER FOR ELEVATION AND LOCATION. NO FLOORING SHALL COVER ANY PLUMBING UNTIL INSPECTED AND APPROVED.

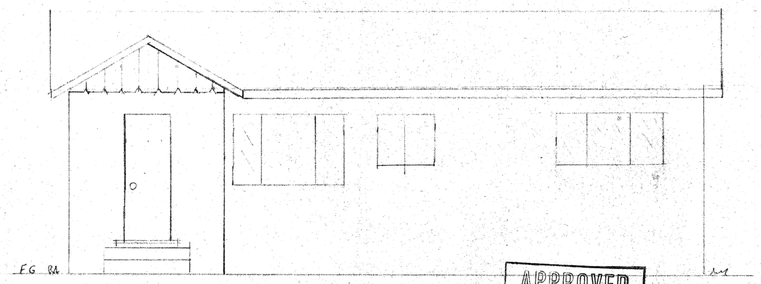




~~Flora Vista As Per Plan~~
412 Flora Vista Reversed



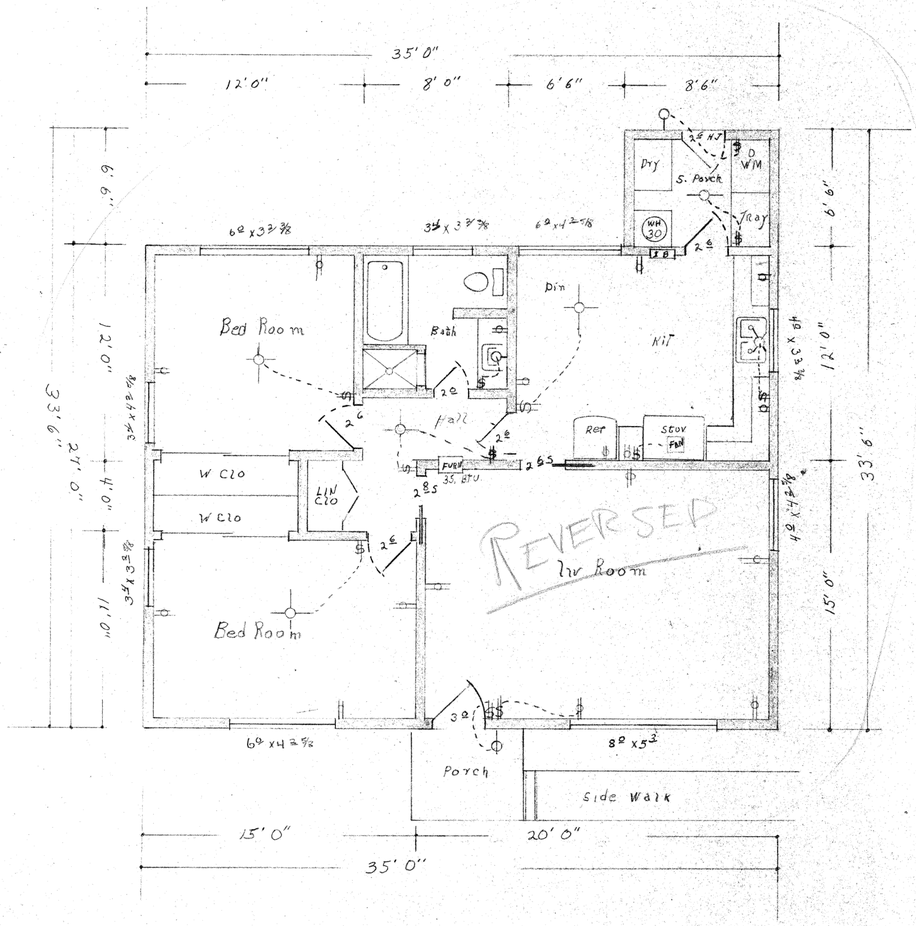
Front Elevation

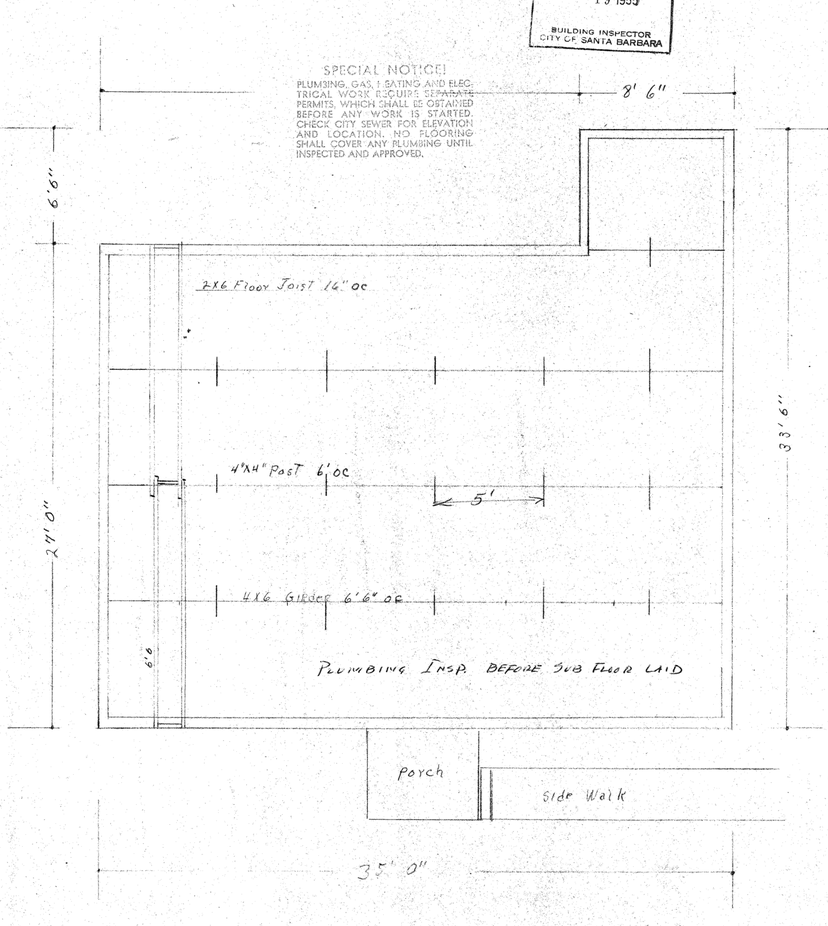


Rear Elevation

APPROVED
1 9 1955
BUILDING INSPECTOR
CITY OF SANTA BARBARA

SPECIAL NOTICE!
PLUMBING, GAS, HEATING AND ELECTRICAL WORK REQUIRE SEPARATE PERMITS, WHICH SHALL BE OBTAINED BEFORE ANY WORK IS STARTED. CHECK CITY SEWER FOR ELEVATION AND LOCATION. NO FLOORING SHALL COVER ANY PLUMBING UNTIL INSPECTED AND APPROVED.





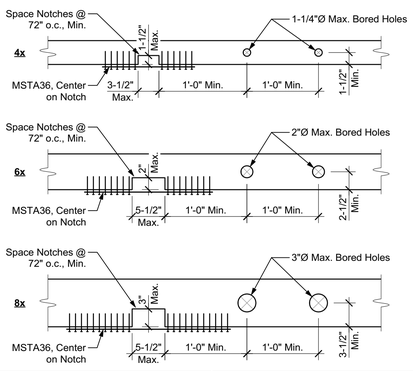
Evans Remodel

412 Flora Vista,
Santa Barbara, CA

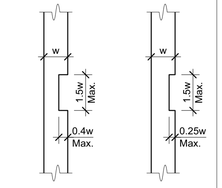
STANDARD DETAILS

9 TYPICAL NOTCHING & BORING

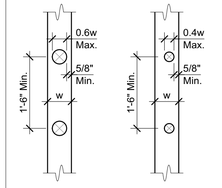
PENETRATIONS IN TOP PLATES & SILL PLATES



NOTCHING LIMITS FOR WOOD STUDS

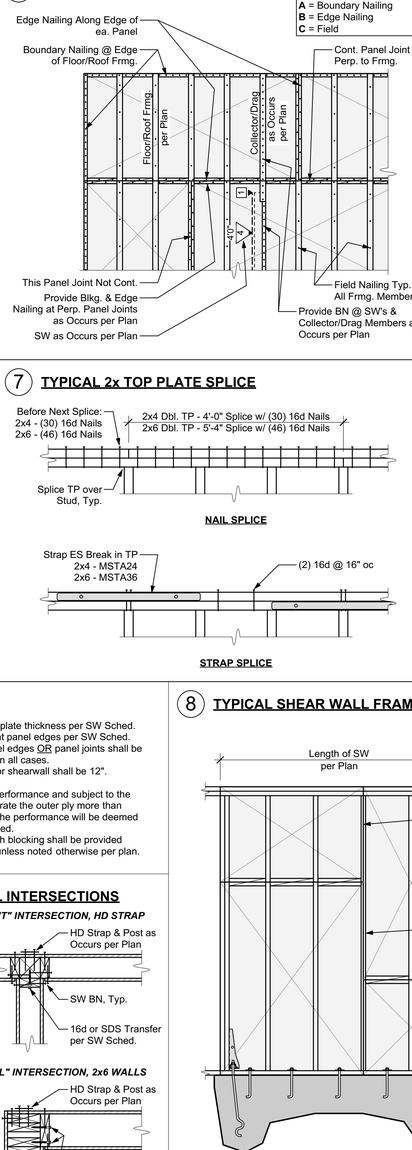


BORING LIMITS FOR WOOD STUDS

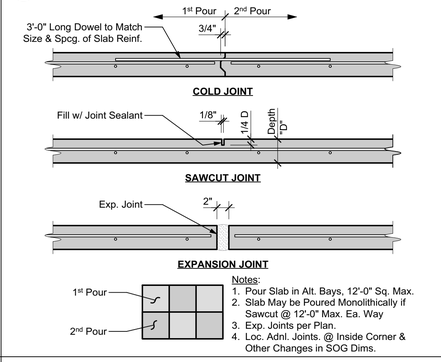


6 TYPICAL FLOOR / ROOF NAILING

Nailing per Plan w/ Spcg. Denoted as **@ A", B", C"**
A = Boundary Nailing
B = Edge Nailing
C = Field

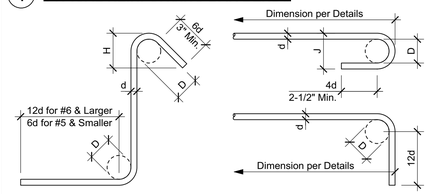


4 TYPICAL CONCRETE SLAB JOINTS



Notes:
1. Pour Slab in Alt. Bays, 12'-0" Sq. Max.
2. Slab May be Poured Monolithically if Sawcut @ 12'-0" Max. Ea. Way
3. Exp. Joints per Plan.
4. Loc. Adnl. Joints. @ Inside Corner & Other Changes in SOG Dims.

1 TYPICAL REINFORCING BAR BENDS



STANDARD TIES & STIRRUPS

Bar Size	D	H (Approx.)
#3	1-1/2"	3"
#4	2"	3"
#5	2-1/2"	3-3/4"
#6	4-1/2"	4-1/2"
#7	5-1/4"	5-1/4"
#8	6"	6"

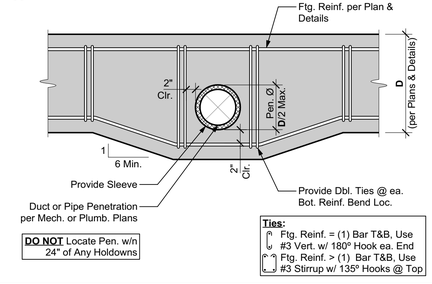
STANDARD END HOOKS

Bar Size	D	J
#3	2-1/4"	3"
#4	3"	4"
#5	3-3/4"	5"
#6	4-1/2"	6"
#7	5-1/4"	7"
#8	6"	8"

Note:
All Bar Bend Diameters & End Lengths Must Conform to the CRSI Manual of Standard Practice

7 TYPICAL 2x TOP PLATE SPLICE

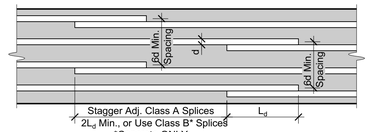
5 TYP. PENETRATION THROUGH FOUNDATION



DO NOT Locate Pen. w/n 24" of Any Holdowns

Ties:
Ftg. Reinf. = (1) Bar T&B, Use #3 Vert. w/ 180° Hook ea. End
Ftg. Reinf. > (1) Bar T&B, Use #3 Stirrup w/ 135° Hooks @ Top

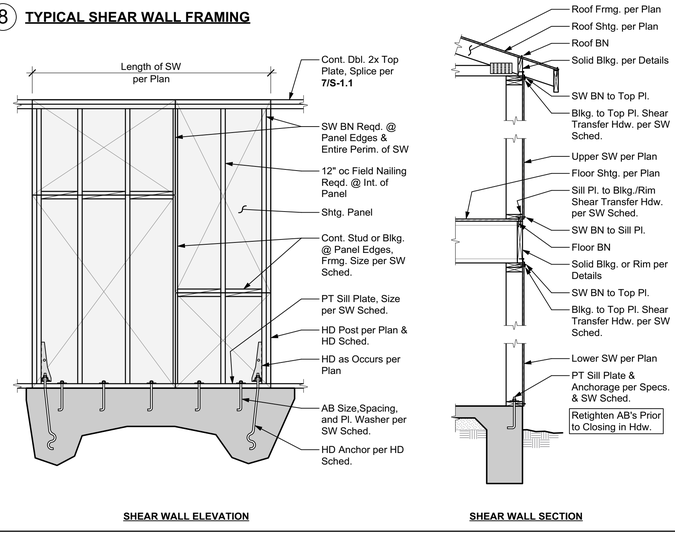
2 STD. DEVELOPMENT LENGTHS & LAP SPLICES



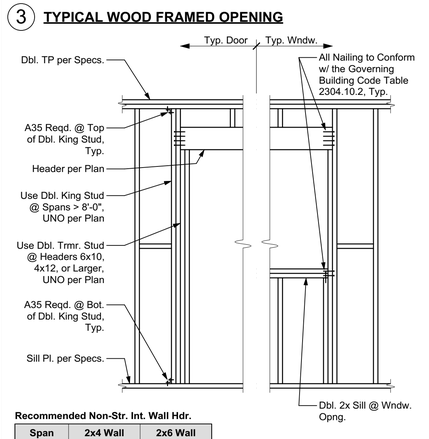
Bar Size	CONCRETE f'c = 2500 psi Length of Lap Class A	Class B	Hook Embed ℓdh
#3	15"	19"	7"
#4	19"	25"	10"
#5	24"	31"	14"
#6	29"	37"	18"
#7	41"	54"	22"
#8	47"	61"	27"

Bar Size	MASONRY f'm = 1500 psi Length of Lap, ℓd	Hook Embed ℓdh
#3	12"	5"
#4	20"	7"
#5	31"	8"
#6	59"	10"
#7	80"	11"
#8	121"	13"

8 TYPICAL SHEAR WALL FRAMING



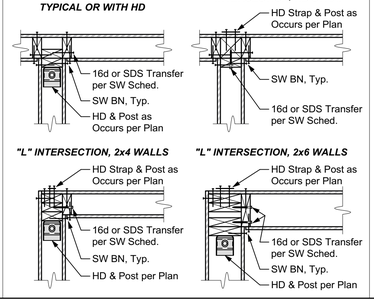
3 TYPICAL WOOD FRAMED OPENING



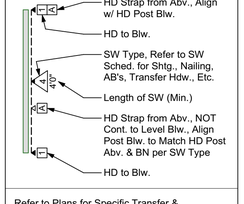
Recommended Non-Str. Int. Wall Hdr.

Span	2x4 Wall	2x6 Wall
< 4'-0"	Dbl. 2x4 Flat	Dbl. 2x6 Flat
< 6'-0"	4x4	4x6 Flat
< 8'-0"	4x6	6x6
> 8'-0"	Span in Feet Equals Beam Depth in Inches	

10 TYPICAL SHEAR WALL INTERSECTIONS



SHEAR WALL LEGEND



Refer to Plans for Specific Transfer & Connection Detail at each Shear Wall Location

TYPICAL SHEAR WALL FRAMING NOTES:

1. Single sided shear walls may be placed on EITHER side of the framed wall.
2. Sill plates on masonry or concrete to be pressure treated per Timber / Lumber specifications. Sill plate thickness per SW Sched.
3. Wall studs and blkg. are required at all adjoining panel edges. Thickness of wall studs and blkg. at panel edges per SW Sched.
4. Where plywood is applied on both faces of a wall, edge nails shall be staggered on adjacent panel edges OR panel joints shall be offset to fall on different framing members. Plywood joint and sill plate nailing shall be staggered in all cases.
5. Plywood panels shall butt along centerlines of framing members. Minimum plywood dimension for shearwall shall be 12".
6. Nails shall be located at least 3/8" from all panel edges.
7. The use of pneumatic nail guns for shear wall nailing is subject to continued satisfactory jobsite performance and subject to the review and approval by the Engineer of Record and/or Building Inspector. If the nail heads penetrate the outer ply more than would be normal for a hand held hammer, or if the minimum edge distances are not maintained, the performance will be deemed as unsatisfactory and the continued use of pneumatic nail for shear wall nailing will not be permitted.
8. At all bearing walls (both exterior and interior walls) not noted as shear walls, continuous full depth blocking shall be provided between joists and rafters with LTP4 or A35 to top plates @ 32" oc at floors and 48" oc at roofs, unless noted otherwise per plan.
9. Refer to material specifications for additional framing requirements.

ABBREVIATIONS

AB	Anchor Bolt	Mas.	Masonry
A&B	Above and Below	Max.	Maximum
Abv.	Above	MB	Machine Bolt
Adn.	Addition (al)	MF	Moment Frame
Adj.	Adjacent,Adjustable	Mfr.	Manufacture(r)
Alt.	Alternate (ive)	Min.	Minimum, Minute
Appd.	Approved	Mod.	Modif(y), (cation)
Arch.	Architect(ural)	Mtl.	Metal
Avg.	Average	(N)	New
Bdry.	Boundary	N/A	Not Applicable
Bldg.	Building	Nat.	Natural
Blk(g).	Block (ing)	NTS	Not to Scale
Bm.	Beam	o/	Over
BN	Boundary Nailing	oc	On Center
B-O	Bottom of	OD	Outside Diameter
BO	By Others	Opng.	Opening
Bot.	Bottom	Opp.	Opposite
Brg.	Bearing	Opt.	Optional
Btwn.	Between	Para.	Parallel
BW	Both Ways	PCF	Lbs per Cubic Ft.
Cant.	Cantilever(ed)	Pen.	Penetrate, (tion)
CIP	Cast in Place	Perf.	Perforated
CJ	Ceiling Joist	Perim.	Perimeter
CJP	Complete Joint Penetration	Perp.	Perpendicular
		Pl	Panel Index
CL	Center Line	PJP	Partial Joint Pen.
Clg.	Ceiling	PL	Plate
CMU	Conc. Masonry Unit	PLF	Lbs per Linear Ft.
Col.	Column	Ply.	Plywood
Com.	Common	Prep.	Prepare, (ation)
Comp.	Component	Press.	Pressure
Conc.	Concrete	Proj.	Project
Conn.	Connection	Prop.	Property
Const.	Construction	PSF	Lbs per Square Ft.
Cont.	Continue (ous)	PSI	Lbs per Square In.
Ctr.	Center	PT	Pressure-Treated
d	Penny	PV	Photovoltaic (Solar Panels)
Dbl.	Double		
Defl.	Deflection	R	Radius
Deg.	Degree	Rec(s).	Recommendation(s)
Demo.	Demolish(tion)	Rect.	Rectangular
Dep.	Depress(ed)	Ref.	Reference
DF	Douglas Fir	Reinf.	Reinforce(d), (ment),(ing)
Dia.	Diameter		
Diaph.	Diaphragm	Req(d).	Require(d)
Dif.	Different	Reqs.	Requirements
Dim.	Dimension	Ret.	Retain(ing)
Dist.	Distance	RJ	Roof Joist
DJ	Deck Joist	RR	Roof Rafter
DL	Dead Load	RW	Redwood
Dwg.	Drawing	SAD	See Arch Dwg's
(E)	Existing	Sched.	Schedule
Ea.	Each	Sgl.	Single
EF	Each Face	Shtg.	Sheathing
EFP	Equivalent Fluid Pressure	Sim.	Similar
		SIP	Str. Insulated Panel
Elev.	Elevator, Elevation	SM	Sheet Metal
Embed.	Embed(ed), (ment)	SMS	Sheet Metal Screw
Engr.	Engineer	SOG	Slab on Grade
EOR	Engineer of Record	Spec.	Specif(ied),(cations)
Eq.	Equal, Equivalent	Sq.	Square
ES	Each Side	SS	Structural Steel
EW	Each Way	Std.	Standard
Exp.	Expand, Expansion	Stgr.	Stagger(ed)
Ext.	Exterior	Stl.	Steel
Fdn.	Foundation	Struc.	Structure, (al)
FF	Finished Floor	SW	Shear Wall
FJ	Floor Joist	Sym.	Symmet(ry), (rical)
Flr(g).	Floor (ing)	T&B	Top and Bottom
FOC	Face of Concrete	T&G	Tongue and Groove
FOM	Face of Masonry	Temp.	Temporary
FOS	Face of Studs	Thk.	Thick(ness)
FOW	Face of Wall	Thru	Through
Frmg.	Framing	TN	Toe-Nail
Ft.	Foot, Feet	TP	Top Plate
Ftg.	Footing	T-O	Top of
Ga.	Gage, Gauge	TOB	Top of Beam
Galv.	Galvanized	TOC	Top of Concrete
GB	Grade Beam	TOG	Top of Grade
GC	General Contractor	TOM	Top of Masonry
Gyp.	Gypsum	TOS	Top of Steel
HD	Holdown	TOW	Top of Wall
Hdr.	Header	TRU	To Remain Unchanged
Hdw.	Hardware		
Hgr.	Hanger	Trmr.	Trimmer Stud
Hor(iz).	Horizontal	Typ.	Typical
Ht.	Height	UNO	Unless Noted Otherwise
ID	Inside Diameter		
In.	Inch(es)	Vert.	Vertical
Insp.	Inspect(ion)	VIF	Verify in Field
Int.	Interior	VWA	Verify with Arch
Inv.	Invert, Inverted	w/	With
Jst.	Joist	w/n	Within
K	Kips (1,000 pounds)	w/o	Without
KLF	Kips per Linear Ft.	WS	Wood Screw
King	King Stud	Wndw.	Window
KP	King Post	Wt.	Weight
KSF	Kips per Square Ft.	WWF	Welded Wire Fabric
KSI	Kips per Square In.	Yd.	Yard
Lb(s).	Pound(s)		
LL	Live Load	@	At
Loc.	Location	°	Degrees
LW	Light Weight	Ø	Diameter
		>	Greater Than
		<	Less Than
		#	Number, Pound(s)
		/	Per
		%	Percent(age)
		±	Plus or Minus

PROJECT INFORMATION

CLIENT:
Nate Evans
412 Flora Vista,
Santa Barbara, CA 93109

DESIGNER:
NN Design
9114 Regents Rd, #C
La Jolla, CA 92037
(760) 473-1041

DESIGN PARAMETERS

GENERAL PARAMETERS

Building Code	2022 CBC *
Roof Loads	
Dead Loads** (DL)	15 psf
**Includes 3 psf PV Loads	
Live Loads (LL)	20 psf
Floor Loads - Typ.	
Dead Loads (DL)	15 psf
Live Loads (LL)	40 psf

SOILS VALUES (Table 1806.2)

Bearing Pressure	1500 psf

WIND DESIGN BASIS

Ultimate Wind Speed, V_{ULT}	95 mph
Nominal Wind Speed, V_{ASD}	74 mph
Risk Category	II
Exposure	B

SEISMIC DESIGN BASIS

Seismic Design Category	E
Site Class	D
Seismic Factors	
S_S / S_1	2.316 / 0.821
S_{DS} / S_{D1}	1.853 / 0.930
Risk Category	II
Importance Factor, I_e	1.00
Resisting System:	Wood Shear Walls
Response Mod. Coefficient, R	6.5
Design Base Shear	V = 0.285W
Analysis Procedure:	Eqv. Lateral Force (ASCE 7-16, T. 12.6-1)

* The 2022 California Building Code (CBC), based on the 2021 International Building Code (IBC), is the governing code in the State of California.

SHEET INDEX

Ashley&Vance ENGINEERING, INC.
210 East Cota Street
Santa Barbara, CA 93101
(805) 962-9966
www.ashleyvance.com
CIVIL • STRUCTURAL

The use of these plans and specifications shall be restricted to the original site for which they were prepared and publication thereof is expressly limited to such use. Reproduction or publication by any method, in whole or in part, is prohibited. Title to these plans and specifications remain with Ashley & Vance Engineering, Inc. without prejudice. Visual contact with these plans and specifications shall constitute prima facie evidence of the acceptance of these restrictions.

Engineer of Record:

REGISTERED PROFESSIONAL ENGINEER R. PAUL BELMONT C 76732 CIVIL STATE OF CALIFORNIA

PLAN REVIEW SET NOT FOR CONSTRUCTION

Evans Remodel
412 Flora Vista,
Santa Barbara, CA

Revision:

Proj. Engr.: C. Huffman Phone Ext.: 142
Proj. Mngr.: P. Belmont
Date: 7 Apr. 2023 Scale: NTS
A&V Job No.: 230101

STRUCTURAL TITLE SHEET

S-1.1

DO NOT SCALE THESE DRAWINGS. Refer to Architectural plans for all dimensions.

Apr 7, 2023
10:51:48 AM

STATEMENT OF SPECIAL INSPECTIONS

1. This Statement of Special Inspection is submitted in fulfillment of the requirements of the Governing Building Code, section 1704 and 1705.
2. Special Inspections and Testings will be preformed in accordance with the approved plans and specifications, this statement and the Governing Building Code, Section 1704 , 1705 , 1707 , and 1708.
3. The schedule of Special Inspections summarizes the Special Inspections and tests required. Special Inspectors will refer to the approved plans and specifications for detailed special inspection requirements. Any additional tests and inspections required by the approved plans and specifications will also be performed.
4. Interim reports will be submitted to the Building Official and the Registered Design Professional in Responsible Charge in accordance with the Governing Building Code Section 1704.2.4.
5. A Final Report of Special Inspections documenting required Special Inspections, testing and correction of any discrepancies noted in the inspections shall be submitted prior to issuance of a Certificate of Use and Occupancy (Section 1704.2.4). The Final Report will document:
   (a) Required special inspections.
   (b) Correction of discrepancies noted in inspections.
6. The Owner recognizes his or her obligation to ensure that the construction complies with the approved permit documents and to implement this program of special inspections. In partial fulfillment of these obligations, the Owner will retain and directly pay for the Special Inspections as required in the Governing Building Code, Section 1704.2.
7. 1704.4 Contractor responsibility. Each contractor responsible for the construction of a main wind- or seismic force-resisting system, designated seismic system or a wind- or seismic force-resisting component listed in the statement of special inspections shall submit a written statement of responsibility to the building official and the owner or the owner's authorized agent prior to the commencement of work on the system or component. The contractor's statement of responsibility shall contain acknowledgement of awareness of the special requirements contained in the statement of special inspection.

SCHEDULE OF TESTING AGENCIES & SPECIAL INSPECTORS

The following are the testing agencies and special inspectors that will be retained to conduct tests and inspection on this project.

Responsibility	Firm	Address, Telephone, Email
1. Special Inspection (Except for Geotechnical)		
2. Materials Testing		
3. Geotechnical Inspection		
*		

* Additional inspections may be required at the discretion of the Building Official.

SEISMIC REQUIREMENTS (Section 1705.13)

Description of seismic-force-resisting system and designated seismic systems subject to special inspections per Section 1705.13:

Light-framed walls sheathed with wood structural panels rated for shear resistance or steel sheets (ASCE 7, Table 12.2-1, Line A.15)

The extent of the main seismic-force-resisting system is defined in more detail in the construction documents.

WIND REQUIREMENTS (Section 1705.12)

Description of main wind-force-resisting system and designated seismic systems subject to special inspections per Section 1705.12:

Not Applicable

The extent of the main wind-force-resisting system is defined in more detail in the construction documents.

SCHEDULE OF SPECIAL INSPECTIONS

Column Header Notation Used in Table:
- C Indicates continuous inspection is required.
- P Indicates periodic inspections are required. The notes and/or contract documents should clarify.

Box Entry Notation Used in Table:
- X Is placed in the appropriate column to denote either "C" continuous or "P" periodic inspections.
- -- Denotes a one-time activitiy or one whose frequency is defined in some other manner.

Additional details regarding inspections are provided in the project specifications or notes on the drawings.

Verification & Inspection	C	P	Notes
1705.6 - Soils			
1. Verify materials below shallow footings are adequate to achieve the desired bearing capacity		X	
2. Verify excavations are extended to proper depth and have reached proper material		X	
3. Perform classification and testing of compacted fill materials		X	
4. Verify use of proper materials, densities, and lift thicknesses during placement and compaction of compacted fill	X		
5. Prior to placement of compacted fill, inspect subgrade and verify that site has been prepared properly		X	
1705.3 - Concrete			
4. Inspect anchors post-installed in hardened concrete			
a. Adhesive anchors[1] installed in horizontally or upwardly inclinded orientations to resist sustained tension	X		
b. Mechanical anchors[2] and adhesive anchors[1] not defined in 4.a		X	

FOOTNOTES:
1. Prior to epoxy placement, it must be verified that the hole is clean, dry, and free of loose debris
2. Periodic inspection shall take place such that the installation of a minimum of two (2) anchors per each shear wall are observed

GENERAL NOTES

1. The following notes, details, schedules & specifications shall apply to all phases of this project unless specifically noted otherwise. Notes and details on the structural plans shall take precedence over general notes and typical details. Where no details are given, construction shall be as shown for similar work.
2. All drawings are considered to be part of the contract documents. The Contractor shall be responsible for the review and coordination of all drawings and specifications prior to the start of construction. Any discrepancies shall be brought to the attention of the Engineer prior to the start of construction so that a clarification can be issued. Any work performed in conflict with the contract documents or any applicable code requirements shall be corrected by the Contractor at no expense to the Owner or Engineer.
3. All information on existing conditions shown on the structural plans are based on best present knowledge available, but without guarantee of accuracy. The Contractor shall be responsible for the verifications of all dimension and conditions at the site. Any discrepancies between actual site conditions and information shown on the drawings or in the specifications shall be brought to the attention of the EOR prior to the start of construction.
4. Refer to the Architectural plans for the following:
   (a) Dimensions
   (b) Size and location of all interior and exterior wall locations.
   (c) Size and location of all floor, roof and wall openings
   (d) Size and location of all drains, slopes, depressions, steps, etc.
   (e) Specification of all finishes & waterproofing
   (f) All other non-structural elements
5. Refer to the mechanical, electrical and plumbing plans for the following:
   (a) Size and location of all equipment
   (b) Pipe runs, sleeves, hangers and trenches
   (c) All other mechanical, electrical or plumbing related elements
6. **DO NOT** scale structural plans. Contractor shall use all written dimensions on Architectural plans.
7. Construction materials shall be uniformly spread out if placed on floor or roof so as to not overload the framing. Load shall not exceed the design live load per square foot. It is the Contractor's responsibility to provide adequate shoring and/or bracing as required.
8. Specifications and detailing of all waterproofing and drainage items, while sometimes shown on the structural plans for general information purposes only, are solely the design responsibility of others.
9. The Engineer will not be responsible for and will not have control or charge of construction means, methods, techniques, sequences or procedures, or for safety precautions and programs in connection with the construction delineated by these plans. It should be understood that the Contractor or his/her agent(s) shall supervise and direct all work and shall be solely and completely responsible for all construction means, methods, techniques, sequences, procedures and conditions on the job site, including safety of all persons and property during the entire period of construction. Periodic observations by the Engineer, his staff or representatives are intended to include verification of dimensions or review the adequacy of the Contractor's safety measures on or near the construction site.
10. Modifications of the plans, notes, details and specifications shall not be permitted without prior approval from the Engineer.
11. All workmanship shall conform to the best practice prevailing in the various trades performing the work. The Contractor shall be responsible for coordinating the work of all trades.
12. It is the Contractor's responsibility to ensure that only approved structural plans are used during the course of construction. The use of unapproved documents shall be at the contractor's own risk. Corrections of all work based on such documents shall be performed at the Contractor's expense.
13. These plans and specifications represent the structural design only. No information nor warranty is provided for the work of any other Consultant (Architect, Mechanical, Electrical, etc.). This includes, but is not limited to, waterproofing, drainage, ventilation, accessibility, or dimensions.

FOUNDATIONS

1. Refer to Structural Design Parameters section on sheet S-1.1 for all soil design values used in calculations.
2. Soils values per Table 1806.2 of the latest edition of the Governing Building Code.
3. Unexpected Soil Conditions: At the discretion of the engineer of record, or the local building department, a soils report may be required in the event that substandard material is discovered on site. If this occurs, contact Engineer of Record for further guidance.
4. All compaction, fill, backfilling and site preparation shall be performed in accordance with project soils report or the Governing Building Code Chapter 18 & Appendix J. All such work shall be performed under the supervision of the building official.
5. Excavate to required depths and dimensions (as indicated in the drawings), cut square and smooth with firm level bottoms. Care shall be taken not to over-excavate foundation at lower elevation and prevent disturbance of soils around high elevation.
6. Foundations shall be poured in neat excavations.
7. Excavate all foundations to required depths into compacted fill or natural soil (as per plans and details) and as verified by the building official.
8. All foundations shall be inspected and approved by the appropriate building official prior to forming and placement of reinforcing or concrete.
9. Foundations shall not be poured until all required reinforcing steel, framing hardware, sleeves, inserts, conduits, pipes, etc. and formwork is properly placed and inspected by the appropriate building official/inspector(s).
10. It is the responsibility of the contractor in charge of framing to properly position all holdown bolts, anchor bolts, column bases, and all other cast-in-place hardware. Refer to typical details. All hardware to be secured prior to foundation inspections.
11. The sides and bottoms of dry excavations must be moistened to optimum moisture content or just above, just prior to placing concrete. Conversely, de-water footings as required to remove standing water and to maintain optimum working conditions.
12. The Contractor shall be solely responsible for all excavation procedures including lagging, shoring, and the protection of adjacent property, structures, streets, and utilities in accordance with all federal, state and local safety ordinances. The Contractor shall provide for the design and installation of all cribbing, bracing and shoring required.

CONCRETE

1. All concrete shall have:
   (a) an ultimate compressive strength (f'c) of 3,000 psi at 28 days (UNO).
   (b) a maximum slump of 5" at point of placement.
   (c) a W/C ratio of 0.55 or less for all slabs, walls, and columns, and 0.60 or less for all foundations.
   (d) a normal dry-weight density (UNO).
2. Special inspection is NOT required as the foundations have been *designed* with f'c = 2,500 psi in accordance with the Governing Building Code, section 1705.3, exceptions 1, 2.1, and 2.3, unless explicitly specified herein, on the structural plans, or by the Building Department. At a minimum, special inspection is always required on:
   (a) structural slabs, flat plates
   (b) walls, columns, beams
   (c) piles, caissons
   (d) welding of reinforcement, installation of mechanical bar splice devices, epoxy application

   When required or specified, special inspection services shall conform to the Governing Building Code, Chapter 17 and shall be provided by an ICC certified inspector or Building Department approved engineer. The Building Department reserves the right to waive or require special inspections. Nothing in these plans waives the Building Department's right to require special inspection at any point and on any material.
3. Testing of materials used in concrete construction must be performed as noted on structural plans or at the request of the Building Department to determine if materials are quality specified. Tests of materials and of concrete shall be made by an approved agency and at the expense of the contractor; such tests shall be made in accordance with the standards listed in the Governing Building Code, Table 1705.3. When testing of concrete is required, four (4) test cylinders shall be taken from each 150 yards, or fraction thereof, poured in any one day. One (1) cylinder shall be tested at seven (7) days; two (2) at 28 days; one (1) shall be held in reserve. Where 4x8 cylinders are used, (5) test cylinders shall be taken, with (3) cylinders tested at 28 days. If Contractor elects to have additional tests performed for "early-break" results, additional test cylinders must be taken. At no time shall the Contractor instruct the testing agency to perform tests on a schedule different than above without the prior authorization of the Engineer. Contractor is responsible for complying with applicable testing requirements of theBuilding Department. Copies of all test reports shall be provided to Engineer and Building Department for review in a timely manner.
4. The Contractor shall remove and replace any concrete which fails to attain specified 28 day compressive strength if so directed by the Engineer. Any defects in the hardened concrete shall be repaired to the satisfaction of the Engineer and/or Architect or the hardened concrete shall be replaced at the Contractor's expense.
5. All concrete work shall conform with the Governing Building Code, Chapter 19.
6. All cement shall be Portland Cement Type I or II and shall conform to ASTM C150.
7. All aggregates shall conform to ASTM C33. Maximum aggregate sizes:
   (a) Footings: 1-1/2"
   (b) All other work: 3/4"
8. Where not specifically detailed, the minimum concrete cover on reinforcing steel shall be:
   (a) Permanently exposed to earth or weather
      i. Cast against earth: 3"
      ii. Cast against forms: 2"
   (b) Not exposed to earth or weather
      i. Slabs, walls, joists: 3/4"
      ii. Beams, girders, columns: 1-1/2"
9. The minimum lap splice length for all reinforcing steel shall be as noted in the typical details on sheet S-1.1. All lap splices to be staggered.
10. All reinforcing steel, anchor bolts, dowels, inserts, and any other hardware to be cast in concrete shall be well secured in position prior to foundation inspection. All hardware to be installed in accordance with respective manufacturer's specifications. Refer to architectural and structural plans for locations of embedded items.
11. Locations of all construction joints, other than specified on the structural plans, shall be approved by the Architect and Engineer prior to forming. Construction joints shall be thoroughly air and water cleaned and heavily roughened so as to expose coarse aggregates. All surfaces to receive fresh concrete shall be maintained continuously wet at least three (3) hours in advance of concrete placement. Unless specifically detailed or otherwise noted, construction and control joints shall be provided in all concrete slabs-on-grade. Joints shall be located such that the area does not exceed 400 sq. feet.
12. The Architect, Engineer and appropriate inspectors shall be notified in a timely manner for a reinforcement inspection prior to the placement of any concrete.
13. The Contractor shall obtain approval from the Architect and the Engineer prior to placing sleeves, pipes, ducts, chases, coring and opening on or through structural concrete beams, walls, floors, and roof slabs unless specifically detailed or noted on the plans. All piles or conduits passing through concrete members shall be sleeved with standard steel pipe sections.
14. The Contractor is responsible for design, installation, maintenance and removal of all formwork. Forms shall be properly constructed, sufficiently tight to prevent leakage, sufficiently strong, and braced to maintain their shape and alignment until no longer needed for concrete support. Joints in formwork shall be tightly fitted and blocked, and shall produce a finished concrete surface that is true and free from blemishes. Forms for exposed concrete shall be pre-approved by the Architect to ensure conformance with design intent.
15. Remove formwork in accordance with the following schedule:
   (a) Forms at slab edge: 1 day
   (b) Side forms at footings: 2 days
   (c) All other vertical surfaces: 7 days
   (d) Beams, columns, girders: 15 days
   (e) Elevated slabs: 28 days

   Engineer reserves the right to modify removal schedule above based on field observations, concrete conditions, and/or concrete test results.
16. Retaining walls shall not be backfilled until concrete has set a minimum of 14 days. Refer to structural plans for slab and/or framing installation sequencing.
17. All concrete (except slabs-on-grade 6" or less) shall be mechanically vibrated as it is placed. Vibrator to be operated by experienced personnel. The vibrator shall be used to consolidate the concrete. The vibrator shall not be used to convey concrete, nor shall it be placed on reinforcing and/or forms.
18. Concrete shall be maintained in a moist condition for a min. of five (5) days after placement.
19. Concrete shall not be permitted to free fall more than six (6) feet. For heights greater than six (6) feet, use tremie, pump or other method consistent with applicable standards.
20. When specified ultimate compressive strength is greater than 2500 psi, Contractor shall submit mix designs to Architect and Engineer for approval seven (7) days prior to placement. Mix designs shall be prepared by an approved testing laboratory. Sufficient data must be provided for all admixtures.
21. Refer to Architectural plans for locations of all dimensions, slab depressions, slopes, drains, curbs, and control joints.

REINFORCEMENT

1. Reinforcing steel shall be deformed, clean, free of rust, grease or any other material likely to impair concrete bond.
2. All bars shall conform to ASTM A615, Grade 60 minimum (UNO on structural plans). All weld wire fabric (WWF) shall conform to ASTM A185.
3. Reinforcing steel that is to be welded shall conform to ASTM A706. All welding of reinforcement shall be subject to special inspection.
4. Contractor shall take necessary steps (standard ties, anchorage devices, etc.) to secure all reinforcing steel in their true position and prevent displacement during concrete placement.
5. Fabrication, placement and installation of reinforcing steel shall conform to:
   (a) Concrete Reinforcing Steel Institute (CRSI) Manual of Standard Practice
   (b) the Governing Building Code.
6. Shop drawings for fabrication of reinforcing steel shall be approved by the Contractor and submitted to the Architect and Engineer for review and approval prior to fabrication. Shop drawings are not required for slabs-on-grade or foundations unless specifically noted on the structural plans.
7. Heating of reinforcing steel to aid in bending and shaping of bars is not permitted. All bends in reinforcing steel are to be made cold. All bend radii shall conform to CRSI Manual of Standard Practice.
8. Refer to Concrete and Masonry notes for specific minimum splice length and splice staggering requirements. Lap welded wire fabric (WWF) reinforcement two (2) modules minimum (UNO). All splices are to be staggered.

ROUGH CARPENTRY

1. Refer to latest edition of the Governing Building Code, Table 2304.10.2. for all minimum nailing requirements.
2. Refer to individual sections for applicable material specifications.
3. Fabricate, size, install, connect, fasten, bore, notch, and cut wood and plywood with joints true, tight, and well-nailed, screwed or bolted as required, all members to have solid bearing without being shimmed, unless noted otherwise. Set horizontal members subject to bending with the crown up. Install framing plumb, square, true and cut for full bearing. Splices are not permitted between bearings. Use full lengths unless otherwise specified.
4. Metal framing angles, anchor, clips, straps, ties, holdowns, etc. shall be mfg by Simpson Strong-Tie Co. No substitutions shall be permitted without prior approval of the Engineer.
5. All walls are to have continuous double 2x top plates spliced as followings unless specifically noted otherwise on the plans and details.
6. Wall Studs:
   (a) Unless specifically noted on the plan and details, use the following guidelines for wall framing:
      i. Use 2x4 studs at 16" oc for walls less than 9'-0" tall.
      ii. Walls 9'-0" to 16'-0" tall shall be constructed of 2x6 studs at 16" oc
      iii. Request specifically engineered wall details for walls greater than 16'-0" tall.
7. Blocking:
   (a) Provide min. one row of nominal 2" thick blocking of same width as stud, fitted snugly and spiked into studs at mid-height of partitions or walls over 8' high.
   (b) All foundation cripple walls (or "pony walls") less than 14" in height shall be solid blocking.
   (c) Refer to shearwall section for additional blocking requirements.
8. Notching:
   (a) Is not permitted of any structural member without prior approval
   (b) In exterior and bearing walls, notches shall not exceed 25% of the stud depth.
   (c) Non-bearing partition walls, notches shall not exceed 40% of the stud depth.
   (d) Successive notches in the same member shall be spaced a min of 18" apart.
9. Boring:
   (a) Is not permitted of any structural member without prior approval
   (b) In exterior and bearing walls, holes shall not exceed 40% of the stud depth.
   (c) Non-bearing partition walls, may be drilled not greater than 60% of stud depth.
   (d) Successive holes in the same member shall be spaced a minimum of 18" apart.
10. Bearing:
   (a) Provide a min. of 1-1/2" of bearing for all 2x joists and hdrs 4x10 / 6x8 & smaller.
   (b) Provide a min. of 3" of bearing for all beams and hdrs 4x12 / 6x10 & larger, UNO on plans.
   (c) Members bearing on prefabricated hangers are to have full bearing and nailing per manufacturer's specifications.
11. Posts:
   (a) Posts inside walls shall bear on sill plates and shall be continuous between top and bottom plates, unless specifically noted otherwise.
   (b) Provide posts under all beams, girders or double joists equal to the width of the supported member.
   (c) Posts on upper levels are to be stacked on posts of equal size at levels below, unless a larger post is specified on the plans.
   (d) Vertically oriented blocking ("squash blocking") shall be used to fully transfer the post area through floors to foundation. Vertical blocking shall be equal to floor thickness plus 1/16".
   (e) Headers framing into continuous posts without trimmer studs shall be supported in Simpson HUC hangers unless noted otherwise on the plans.
   (f) Posts when isolated, shall be seated in Simpson post or column bases, unless noted otherwise on the plans
12. Roof Framing:
   (a) Provide wood joists, as specified, laid with the crown up and spaced as indicated.
   (b) Provide a minimum of 1-1/2" end bearing unless otherwise shown.
   (c) Provide full depth solid 2x blkg or cross-bridging between the joists at 8' oc max.
   (d) Provide all cricket framing required to achieve positive drainage per Arch.
   (e) Install plywood panels with the face grain across the framing and close joints and nail at each support. Fully nail with common nails per the plans.
   (f) Plywood panels shall not be less than 4' x 8' except at boundaries and changes in framing direction, where the minimum panel dimension shall be no less than 24", unless all edges of undersized panels are supported by and fastened to framing members or blocking.
   (g) Provide Simpson "PSCL" clips at all plywood joints perpendicular to framing. Provide clips midway between framing members at the unsupported edges of plywood when members are spaced at 24" oc or greater. If clips are not used, provide solid blocking for joints perpendicular to framing.
13. Floor Framing:
   (a) Provide wood joists, as specified, laid with the crown up and spaced as indicated.
   (b) Provide a minimum of 1-1/2" end bearing unless otherwise shown.
   (c) Provide full depth solid 2x blkg or cross-bridging between the joists at 8' oc max. For floors framed with I joists, refer to the mfg's spec's for blkg requirements.
   (d) Provide full depth solid 2x blocking between the joists under all walls and partitions where the wall or partition is perpendicular to the floor framing (including floors framed with I joists)
   (e) Install plywood sheathing with the face grain across supports, end supports staggered, and the edges of sheets centered over supports. If T&G plywood is used, blocking need not be provided at all plywood edges (UNO per plan). If T&G plywood is not used, blocking shall be provided at all plywood edges. Glue plywood to joists and fully nail with common nails per the plans.
   (f) Plywood panels shall not be less than 4' x 8' except at boundaries and changes in framing direction, where the minimum panel dimension shall be no less than 24", unless all edges of undersized panels are supported by and fastened to framing members or blocking.
14. Shear Walls:
   (a) Refer to plans for all shearwall locations, length type and nailing.
   (b) Refer to Shearwall Schedule on title sheet for additional information.
   (c) Shear wall lengths specified on plans are minimum required.
   (d) Shear walls to be nailed with common nails. All nails to have minimum 3/8" edge distance to panel or framing member.
   (e) Where 3x framing is required per the shear wall schedule, stagger edge nailing.
   (f) Oriented Strand Board (OSB) may be used in lieu of plywood.

TIMBER / LUMBER

1. All structural lumber shall be Douglas Fir-Larch, S4S and shall conform to the Governing Building Code, section 2303.1.1.
2. The minimum lumber grade of each member shall be as follows (unless specifically noted otherwise on plans and details) :
   (a) 2x studs, blocking, plates:Stud
   (b) 2x joists #2 or better
   (c) 4x4, 4x6, or 6x6 beams or posts #2 or better
   (d) 4x8, 6x8, or larger beams or posts #1 or better

   It is recommended (but not required) that all exposed members be Select Structural or better and free of heart center due to visual characteristics.
3. All lumber in contact with concrete or masonry shall be pressure treated Douglas Fir. Whenever it is necessary to cut, notch, bore or splice pressure treated material, all newly cut surfaces shall be thoroughly painted with the same preservative.
4. Maximum moisture content for all structural members shall not exceed 19%.
5. All plywood sheathing shall be CDX grade (or better) Douglas Fir with exterior glue. All sheathing shall conform to the Governing Building Code and grade-marked by the American Plywood Association (APA). Panel index to be 40/20 for floors and 24/0 for roofs unless specifically noted otherwise on the plans and details.

ENGINEERED LUMBER

1. Glu-laminated Beams (GLB):
   (a) shall have the following properties:

Use	EWS Combination Symbol	Species / Grade	Flexural Stress, Fb (psi)	Modulus of Elasticity, E (ksi)	Horiz. Shear Stress, Fv (psi)	Compression Fc para. (psi)	Compression Fc perp. (psi)
Simple Span Bm.	24F-V4	DF	+2,400/-1,850	1,800	265	1,650	650
Continuous or Cantilever Bm.	24F-V8	DF	+/- 2,400	1,800	265	1,650	650
Columns	2	DF / L2	+/- 1,800	1,600	265	1,650	650

   (b) shall not be notched, cut or drilled without prior approval from the Engineer
   (c) shall have exterior glue and weather-treatment prior to installation
   (d) shall be fabricated by an approved manufacturer & in accordance with ANSI A 190.1
   (e) shall have factory standard camber of 3,500-5,000 ft on beams UNO per Plan
2. Laminated Veneer Lumber (LVL) :
   (a) shall be 1-3/4" minimum thickness with the following minimum properties:
      i. E = 2000 ksi
      ii. Fb = 2600 psi
      iii. Fv = 285 psi
      iv. Fc (parallel) = 2500 psi
      v. Fc (perp.) = 750 psi
      vi. Ft (parallel) = 1500 psi
      vii. Specific Gravity = 0.50
   (b) shall be fabricated by an approved manufacturer
   (c) shall bear a minimum of 3-1/2" on specified supports. Provide full depth solid blocking at all bearing points
   (d) shall be nailed in accordance with mfg's specifications. Unless otherwise approved, nailing into the top edge shall not be spaced any closer than:
      i. 16d @ 6" oc, 10d @ 4" oc, and 8d @ 3" oc
      ii. When nailing must be reduced, stagger rows a minimum of 1/2" apart while maintaining proper edge distances.
   (e) shall be, when comprised of multiple members, connected with 16d nail, 1/2" bolts or 1/4" lag screws in accordance with manufacturer's specifications.
   (f) shall not be cut, notched or drilled without specific written approval of the EOR.
3. Laminated Strand Lumber (LSL) :
   (a) shall be 1-1/4" minimum thickness with the following minimum properties:
      i. E = 1550 ksi
      ii. Fb = 2325 psi
      iii. Fv = 310 psi
      iv. Fc (parallel) = 2500 psi
      v. Fc (perp.) = 800 psi
      vi. Ft (parallel) = 1070 psi
      vii. Specific Gravity = 0.50
   (b) shall be fabricated by an approved manufacturer
   (c) shall bear a minimum of 3-1/2" on specified supports. Provide full depth solid blocking at all bearing points
   (d) shall be nailed in accordance with mfg's specifications. Unless otherwise approved, nailing into the top edge shall not be spaced any closer than:
      i. 16d @ 6" oc, 10d @ 4" oc, and 8d @ 3" oc
      ii. When nailing must be reduced, stagger rows a minimum of 1/2" apart while maintaining proper edge distances.
   (e) shall be, when comprised of multiple members, connected with 16d nail, 1/2" bolts or 1/4" lag screws in accordance with manufacturer's specifications.
   (f) shall not be cut, notched or drilled without specific written approval of the EOR.
4. Parallel Strand Lumber (PSL) :
   (a) shall be 2-1/2" minimum thickness with the following minimum properties:
      i. E = 2200 ksi
      ii. Fb = 2900 psi
      iii. Fv = 290 psi
      iv. Fc (parallel) = 2900 psi
      v. Fc (perp.) = 750 psi
      vi. Ft (parallel) = 2025 psi
      vii. Specific Gravity = 0.50
   (b) shall be fabricated by an approved manufacturer
   (c) shall bear a minimum of 3-1/2" on specified supports. Provide full depth solid blocking at all bearing points
   (d) shall be nailed in accordance with manufacturer's specifications. Unless otherwise approved, nailing shall not be spaced any closer than:
      i. Narrow face: 16d @ 6" oc, 10d @ 4" oc, and 8d @ 3" oc
      ii. Wide Face: 16d @ 8" oc, and 10d & 8d @ 6" oc
      iii. When nailing must be reduced, stagger rows a minimum of 1/2" apart while maintaining proper edge distances
   (e) shall not be cut, notched or drilled without specific written approval of the EOR.
5. Plywood I Joists:
   (a) type and manufacturer shall be clearly noted on the plans. Substitutions shall not be permitted without prior approval of the Engineer.
   (b) shall be installed in accordance with applicable code approvals and mfg's spec's.
   (c) shall bear a minimum of 1-3/4" at all end supports, and 3-1/2" at intermediate supports. Provide full depth solid blocking at all bearing points.
   (d) shall be installed with intermediate blocking or bridging as specified by the Mfr. Only omit intermediate blocking when specifically allowed by the Mfr.
   (e) shall not be cut, notched or drilled without specific written approval of the EOR.

FASTENERS

1. Nails:
   (a) shall be with "common" nails unless noted otherwise.
   (b) shall not be driven closer than 1/2 their length nor closer than 1/4 of their length to the edge or end of a member, except for sheathing.
   (c) shall be installed in pre-drilled lead holes if necessary to avoid splitting.
   (d) shall be hot-dipped zinc-coated galvanized steel, stainless steel, silicon bronze, or copper when in contact with preservative-treated wood.
      i. When used in exterior applications, nails shall have coating types and weights in accordance with the treated wood or bolt manufacturer's Recs. A Min. of ASTM A653, type G185 zinc-coated galvanized steel (or equiv.) shall be used.
      ii. When used in an interior, dry environment in SBX/DOT or zinc borate preservative-treated wood, plain carbon nails shall be permitted.
   (e) All nailing shall conform to the Governing Building Code, Table 2304.10.2.
2. Lag screws:
   (a) shall be installed into pre-drilled lead holes. Lubricant (or soap) shall be used to facilitate installation and prevent damage to the screws.
   (b) shall be hot-dipped zinc-coated galvanized steel or stainless steel when in contact with preservative-treated wood.
      i. When used in exterior applications, bolts shall have coating types and weights in accordance with the treated wood or bolt manufacturer's rec's. A minimum of ASTM A653, type G185 zinc-coated galvanized steel (or equal) shall be used.
      ii. When used in dry interior environments in SBX/DOT or zinc borate preservative-treated wood, plain carbon screws, nuts, and washers shall be permitted.
3. Bolts:
   (a) shall conform to ASTM A307, UNO specifically on plans and details.
   (b) shall be installed in pre-drilled holes a max of 1/16" larger than the specified bolt dia.
   (c) when installed against wood surfaces, shall have standard washers under the heads and nuts.
   (d) shall be hot-dipped zinc-coated galvanized steel or stainless steel when in contact with preservative-treated wood.
      i. When used in exterior applications, bolts shall have coating types and weights in accordance with the treated wood or bolt manufacturer's rec's. A minimum of ASTM A653, type G185 zinc-coated galvanized steel (or equal) shall be used.
      ii. When used in dry interior environments in SBX/DOT or zinc borate preservative-treated wood, plain carbon screws, nuts, and washers shall be permitted.
4. Anchor Bolts:
   (a) shall be installed at all exterior walls and all interior shear and/or bearing walls.
   (b) shall be 5/8" diameter with 3x3x0.229" steel plate washers at shearwalls.
   (c) shall be 5/8" diameter with 2x2x3/16" steel plate washers at non-shearwalls.
   (d) shall have 7" minimum embedment. (Contractor to coordinate length of bolts with sill plate thicknesses).
   (e) shall conform to ASTM F1554, Grade 36.
   (f) shall be hot-dipped zinc-coated galvanized steel or stainless steel when in contact with preservative-treated wood.
      i. When used in exterior applications, bolts shall have coating types and weights in accordance with the treated wood or bolt manufacturer's rec's. A minimum of ASTM A653, type G185 zinc-coated galvanized steel (or equal) shall be used.
      ii. When used in dry interior environments in SBX/DOT or zinc borate preservative-treated wood, plain carbon screws, nuts, and washers shall be permitted.
   (g) shall not be spaced greater than 72" oc Refer to shearwall schedule for specific anchor bolt spacing requirements.
   (h) shall be placed a maximum of 12" from wall corners, wall ends, and sill plate splices (but not less than 7 dia.) , and a min. of two bolts per piece of sill plate is required.
   (i) shall be secured in place prior to foundation inspection.
5. Powder Actuated Shot Pins:
   (a) shall be installed at all interior non-bearing, non-shearwalls.
   (b) shall be 0.145x3" with 1.5" diameter steel washers.
   (c) shall not be spaced greater than 32" o.c.

Ashley&Vance ENGINEERING, INC.
210 East Cota Street
Santa Barbara, CA 93101
(805) 962-9966
www.ashleyvance.com
CIVIL • STRUCTURAL

The use of these plans and specifications shall be restricted to the original site for which they were prepared and publication thereof is expressly limited to such use. Reproduction or publication by any method, in whole or in part, is prohibited. Title to these plans and specifications remain with Ashley & Vance Engineering, Inc. without prejudice. Visual contact with these plans and specifications shall constitute prima facie evidence of the acceptance of these restrictions.

Engineer of Record:

REGISTERED PROFESSIONAL ENGINEER R. PAUL BELMONT C 76732 CIVIL STATE OF CALIFORNIA

PLAN REVIEW SET NOT FOR CONSTRUCTION

Evans Remodel

412 Flora Vista,
Santa Barbara, CA

Revision:

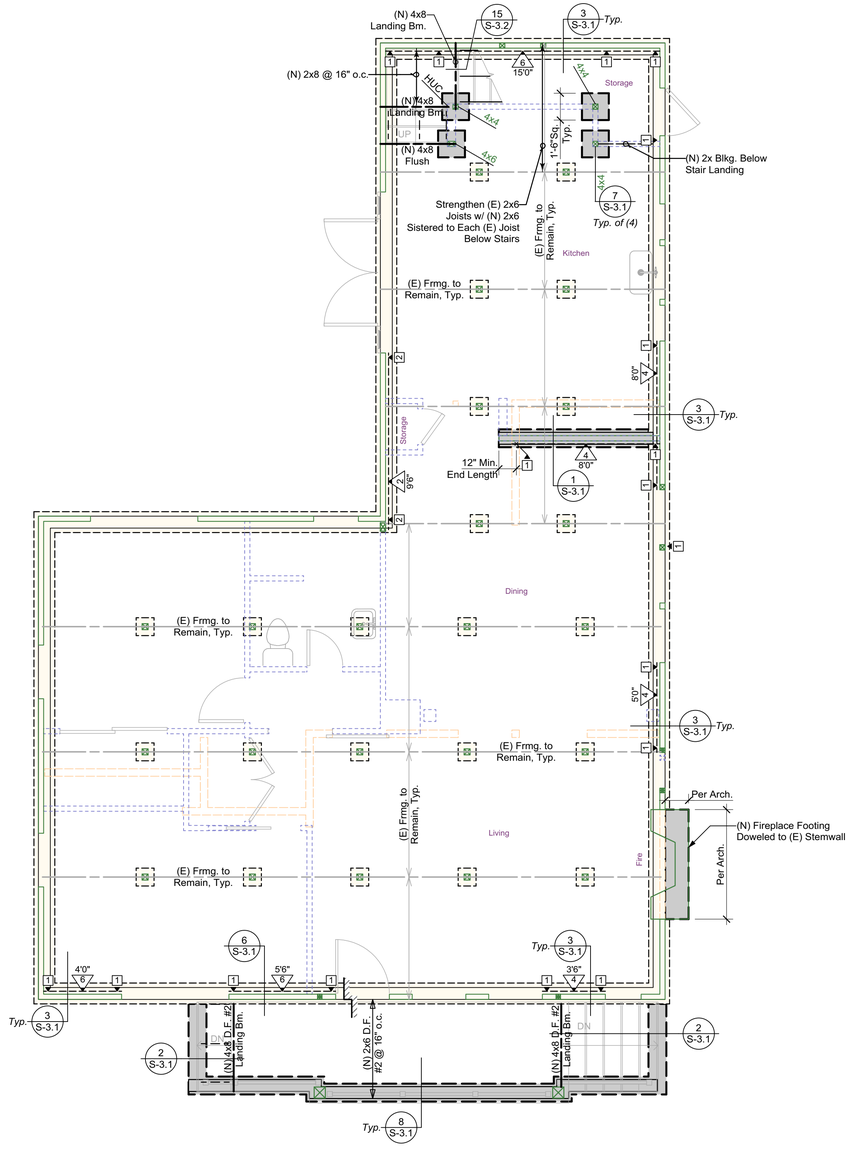
Proj. Engr.:	C. Huffman Phone Ext.: 142
Proj. Mngr.:	P. Belmont
Date:	7 Apr. 2023 Scale: NTS
A&V Job No.:	230101

STRUCTURAL SPECIFICATIONS

S-1.2

DO NOT SCALE THESE DRAWINGS. Refer to Architectural plans for all dimensions.

Apr 7, 2023
10:58:01 AM



GENERAL FRAMING NOTES

(N) Beams (per Call-out)

(E) Beams (to Remain)

All Lumber 4x6, 6x6 and Smaller to be DF #2 UNO
All Lumber 4x8, 6x8 and Larger to be DF #1 UNO

All Beams to Bear on Plates w/ Indicated Post or Doubler Below UNO

All Hangers Shall be Installed w/ Max. Nailing per Mfr. & Sized for Full Width & Depth of Supported Members, UNO

Floor sheathing to be 3/4" plywood or OSB, T & G, PI 40/20, glued and nailed w/ 10d commons at 6", 6", 12"

Provide wall length continuous full depth solid blocking (where floor joists perpendicular) or double floor joist (where joists parallel) for all walls above.

(N) Floor Joists -- 2x6 D.F. #2 @ 16" oc in Simpson LU Hangers, Typ. (UNO)

(N) Deck Joists -- 2x6 D.F. #2 @ 16" oc in Simpson U Hangers. (UNO)

(E) Framing (to Remain)

Waterproofing, flashing, & finish details per Architecturals.

GENERAL FOUNDATION NOTES

Foundations per Governing Building Code, Table 1806.2
At the request of the client (or client's agent), Ashley & Vance Engineering has designed the foundations in conformance with Table 1806.2. If the building official determines that expansive soils are present, or other geologic issues of concern, then they may require that special provisions be made to the foundation design to safeguard against damage due to the expansiveness or due to other geologic issues. If this becomes the situation, all foundation construction must be halted and the client, at their own expense, shall: (a) obtain a soils report prepared by a Soils Engineer licensed in the state of the project; (b) commission Ashley & Vance Engineering to revise the foundation plans and details, and framing plans if necessary, to reflect the recommendations of the soils report; (c) submit the revised plans to the Building Department for approval.

See General Notes & Specifications for additional requirements and material specifications.

All dimensions per Architectural plans

Contractor to VERIFY all dimensions w/ Architectural plans PRIOR to commencement of construction.

Contractor shall verify all existing conditions prior to construction & contact Engineer and Architect regarding any discrepancies.

(E) Foundation & Stem Wall to Remain

(E) Pad Foundation to Remain

(N) Foundation & Stem Wall per Details
12" Wide x 8" Deep x 24" Embedment w/ (2) #4 Cont. (UNO)

Foundation per Details
12" Wide x 24" Embedment w/ (2) #4 Top & Bot. (UNO)

(N) Pad Foundation per Details
Dimensions per Plan
w/ #4 @ 12" oc EW, (3) Min.

Denotes Step in Framing, Step Ht. & Extent per Arch.

All Walls to have Continuous Double Top Plates, All Splices to be per Detail **7/S-1.1**

Wood Framed Wall Above (See S-2.2)

(E) Wood-Framed Wall to be Removed

HOLDOWN SCHEDULE

TYPE	HOLDOWN[1,2]	MIN. POST	ANCHOR / EMBEDMENT	DETAILS
A	CS14	(2) 2x	N/A	18/S-3.2
E	MSTC66B3	(2) 2x	N/A	19 & 20/S-3.2
1	HDU4	(2) 2x	Per Details	4 & 5/S-3.1
2	HDU8	4x		

FOOTNOTES:
1. Shared holdowns to be installed per detail **10/S-1.1**, *Typical Shearwall Intersections*, (UNO)
2. All holdowns shown shall be continued down to the foundation with the same size holdowns and post, (UNO)

EXISTING BUILDING NOTES

All As-Built Structural Information Taken From Archived Plans dated 9/19/1955

SHEARWALL SCHEDULE

NO.	MATERIALS	DESCRIPTION: DBL. SIDED	SILL PLATE	PANEL B'DRY	NAILING[1]: SIZE	SPC'G	TRANSFERS[2]: 5/8"Ø[3] AB	SDS[4] Screw	SDWS[5] Screw	A35, LTP4[6,7,8] or LTP5	RBC	16d[9]
6	15/32" CDX Plywood	N	2x	2x	10d	6"	48"	10"	13"	17"	13"	5"
4	15/32" CDX Plywood	N	2x	3x	10d	4"	38"	7"	9"	12"	9"	3"

FOOTNOTES:
1. All nails to be COMMONS. **DO NOT** use box type nails. All "field" nailing to be 12"oc, UNO. Penetration shall be 1-1/2" Min. in framing.
2. All transfers to be installed into min. 1-1/2" thick members, UNO. Where clips are spaced less than 6" oc, stagger clips on each side of wall.
3. All shear walls to have 5/8" anchor bolts, embeded 7" into concrete foundations, with 3"x3"x0.229" thick plate washers, minimum. Washers may be slotted (slot length not to exceed 1-3/4") w/ standard cut washer placed between nut and plate washer. Washers shall extend within 1/2" of the edge of the bottom plate on the sheathed side. At walls sheathed on 2 sides, plate washers shall be alternated to each side of plate. [Governing Building Code, Section 2308.3.1] [AF&PA SDPWS 4.3.6.4.3]
4. Simpson SDS 1/4"x5" Screws through 2x sill, or SDS 1/4"x8" Screws through 3x sill or double plates. Install into minimum 1-3/4" thick members (rim and/or blocking). [ICC ESR 2236]
5. Simpson SDWS 0.22"x5" Screws through 2x sill, or SDWS 0.22"x8" Screws through 3x sill or double plates. Install into minimum 1-3/4" thick members (rim and/or blocking). [ICC ES AC233]
6. See details for permitted transfer clip types and locations.
7. Orient LTP4 and LTP5 clips such that the long dimension is horizontal.
8. Where LTP4 clips are installed over shear wall sheathing, fasten with full length 8d common nails.
9. 16d common nails through the sill plate to rim member or blocking.
10. Install screws into 3-1/2" wide continuous member, staggered 1-1/2" apart.
11. Install screws into Glulams or solid sawn member. LSL, LVL, or PSL members are NOT acceptable, UNO.

Ashley&Vance ENGINEERING, INC.
210 East Cota Street
Santa Barbara, CA 93101
(805) 962-9966
www.ashleyvance.com
CIVIL • STRUCTURAL

The use of these plans and specifications shall be restricted to the original site for which they were prepared and publication thereof is expressly limited to such use. Reproduction or publication by any method, in whole or in part, is prohibited. Title to these plans and specifications remain with Ashley & Vance Engineering, Inc. without prejudice. Visual contact with these plans and specifications shall constitute prima facie evidence of the acceptance of these restrictions.

Engineer of Record:

REGISTERED PROFESSIONAL ENGINEER R. PAUL BELMONT C 76732 CIVIL STATE OF CALIFORNIA

PLAN REVIEW SET NOT FOR CONSTRUCTION

Evans Remodel

412 Flora Vista,
Santa Barbara, CA

Revision:

1	
2	
3	
4	
5	
6	
7	
8	
9	

Proj. Engr.: C. Huffman Phone Ext.: 142

Proj. Mngr.: P. Belmont

Date: 7 Apr. 2023 Scale: 1/4"=1'-0"

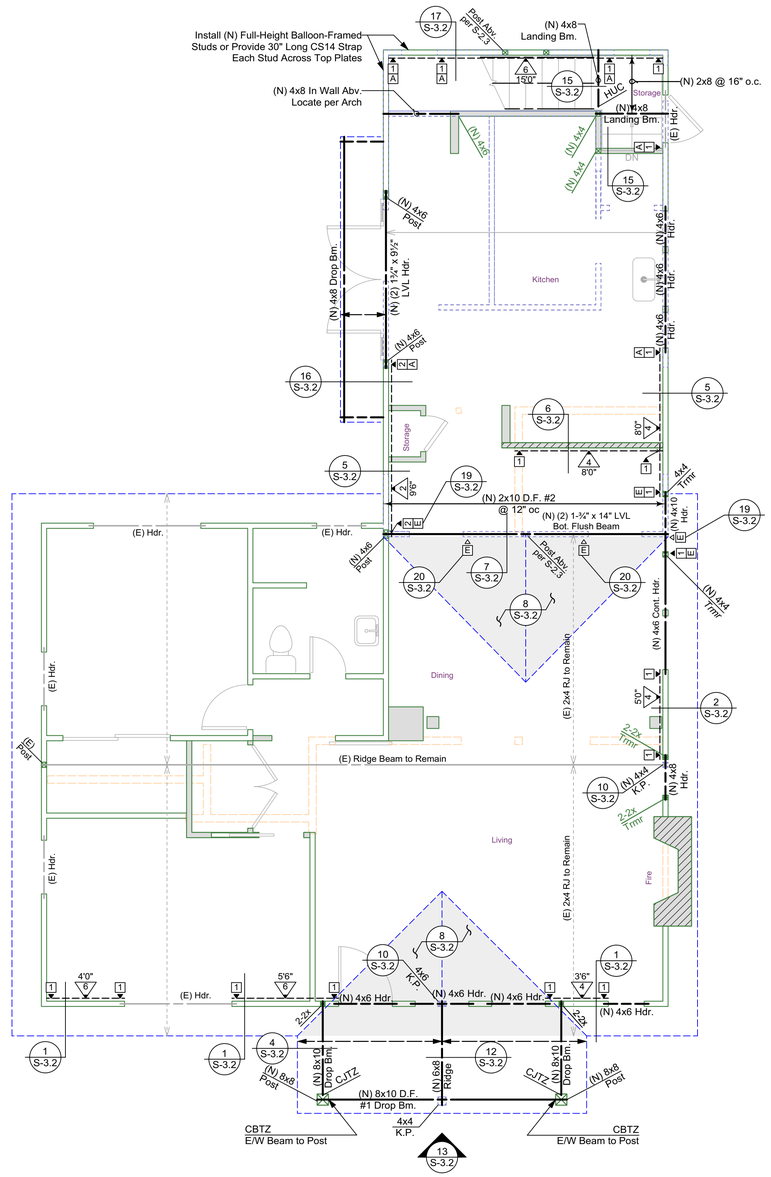
A&V Job No.: 230101

FOUNDATION PLAN

S-2.1

DO NOT SCALE THESE DRAWINGS. Refer to Architectural plans for all dimensions.

Apr 7, 2023
10:52:04 AM



Danotes Approximate Areas of Overbuild. Overbuild Framing Consists of 2x8 Ridge, 2x6 Rafters, with 2x4 Vertical Supports @ 48" o.c., Staggered.

WALL SCHEDULE

Stud wall locations per Architecturals.

(E) Wood-Framed Wall to be Removed

(E) Wood-Framed Wall to Remain

(N) Non-Struc. Wood-Framed Wall

Wall Thickness per Arch.
Min. 2x4 D.F. Stud @ 16" o.c.

(N) Struc. Wood-Framed Wall

Wall Thickness per Arch.
Min. 2x4 D.F. Stud @ 16" o.c.

All Walls to have Continuous Double Top Plates, All Splices to be per Detail **7/S-1.1**

Walls above

(shown for clarity)

GENERAL FRAMING NOTES

(N) Beams (per Call-out)

(E) Beams (to Remain)

All Lumber 4x6, 6x8 and Smaller to be DF #2 UNO
All Lumber 4x8, 6x8 and Larger to be DF #1 UNO

All Beams to Bear on Plates w/ Indicated Post or Doubler Below UNO

All Hangers Shall be Installed w/ Max. Nailing per Mfr. & Sized for Full Width & Depth of Supported Members, UNO

Roof sheathing to be ½" plywood or OSB, PI 24/0, nailed w/ 10d commons at 6", 6", 12"

Floor sheathing to be 3/4" plywood or OSB, T & G, PI 40/20, glued and nailed w/ 10d commons at 6", 6", 12"

Provide wall length continuous full depth solid blocking (where floor joists perpendicular) or double floor joist (where joists parallel) for all walls above.

(N) Roof Rafters -- 2x6 D.F. #2 @ 24" oc in Simpson LUS Hangers, Typ. (UNO)

(N) Floor Joists -- 2x10 @ 12" oc in Simpson ITS Hangers, Typ. (UNO)

(E) Framing (to Remain)

Waterproofing, flashing, & finish details per Architecturals.

See General Notes & Specifications for additional requirements and material specifications.

All dimensions per Architectural plans

Contractor to VERIFY all dimensions w/ Architectural plans PRIOR to commencement of construction.

Contractor shall verify all existing conditions prior to construction & contact Engineer and Architect regarding any discrepancies.

HOLDOWN SCHEDULE

TYPE	HOLDOWN[1,2]	MIN. POST	ANCHOR / EMBEDMENT	DETAILS
A	CS14	(2) 2x	N/A	18/S-3.2
E	MSTC66B3	(2) 2x	N/A	19 & 20/S-3.2
1	HDU4	(2) 2x	Per Details	4/S-3.1
2	HDU8	4x		

FOOTNOTES:
1. Shared holdowns to be installed per detail **10/S-1.1**, *Typical Shearwall Intersections*, (UNO)
2. All holdowns shown shall be continued down to the foundation with the same size holdowns and post, (UNO)

SHEARWALL SCHEDULE

NO.	MATERIALS	DESCRIPTION: DBL SIDED	SILL PLATE	PANEL B'DRY	NAILING[1]: SIZE	SPC'G	TRANSFERS[2]: 5/8"ø[3] AB	SDS[4] Screw	SDWS[5] Screw	A35, LTP4[6,7,8] or LTP5	RBC	16d[9]
6	15/32" CDX Plywood	N	2x	2x	10d	6"	48"	10"	13"	17"	13"	5"
4	15/32" CDX Plywood	N	2x	3x	10d	4"	38"	7"	9"	12"	9"	3"

FOOTNOTES:
1. All nails to be COMMONS. **DO NOT** use box type nails. All "field" nailing to be 12"oc, UNO. Penetration shall be 1-1/2" Min. in framing.
2. All transfers to be installed into min. 1-1/2" thick members, UNO. Where clips are spaced less than 6" oc, stagger clips on each side of wall.
3. All shear walls to have 5/8" anchor bolts, embeded 7" into concrete foundations, with 3"x3"x0.229" thick plate washers, minimum. Washers may be slotted (slot length not to exceed 1-3/4") w/ standard cut washer placed between nut and plate washer. Washers shall extend within 1/2" of the edge of the bottom plate on the sheathed side. At walls sheathed on 2 sides, plate washers shall be alternated to each side of plate. [Governing Bulding Code, Section 2308.3.1] [AF&PA SDPWS 4.3.6.4.3]
4. Simpson SDS 1/4"x5" Screws through 2x sill, or SDS 1/4"x8" Screws through 3x sill or double plates. Install into minimum 1-3/4" thick members (rim and/or blocking). [ICC ESR 2236]
5. Simpson SDWS 0.22"x5" Screws through 2x sill, or SDWS 0.22"x8" Screws through 3x sill or double plates. Install into minimum 1-3/4" thick members (rim and/or blocking). [ICC ES AC233]
6. See details for permitted transfer clip types and locations.
7. Orient LTP4 and LTP5 clips such that the long dimension is horizontal.
8. Where LTP4 clips are installed over shear wall sheathing, fasten with full length 8d common nails.
9. 16d common nails through the sill plate to rim member or blocking.
10. Install screws into 3-1/2" wide continuous member, staggered 1-1/2" apart.
11. Install screws into Glulams or solid sawn member. LSL, LVL, or PSL members are NOT acceptable, UNO.

EXISTING BUILDING NOTES

All As-Built Structural Information Taken From Archived Plans dated 9/19/1955

Ashley&Vance ENGINEERING, INC.
CIVIL • STRUCTURAL
210 East Cota Street
Santa Barbara, CA 93101
(805) 962-9966
www.ashleyvance.com

The use of these plans and specifications shall be restricted to the original site for which they were prepared and publication thereof is expressly limited to such use. Reproduction or publication by any method, in whole or in part, is prohibited. Title to these plans and specifications remain with Ashley & Vance Engineering, Inc. without prejudice. Visual contact with these plans and specifications shall constitute prima facie evidence of the acceptance of these restrictions.

Engineer of Record:

REGISTERED PROFESSIONAL ENGINEER R. PAUL BELMONT C 76732 CIVIL STATE OF CALIFORNIA

PLAN REVIEW SET NOT FOR CONSTRUCTION

Evans Remodel

412 Flora Vista,
Santa Barbara, CA

Revision:

1	
2	
3	
4	
5	
6	
7	
8	
9	

Proj. Engr.: C. Huffman Phone Ext.: 142

Proj. Mngr.: P. Belmont

Date: 7 Apr. 2023 Scale: 1/4"=1'-0"

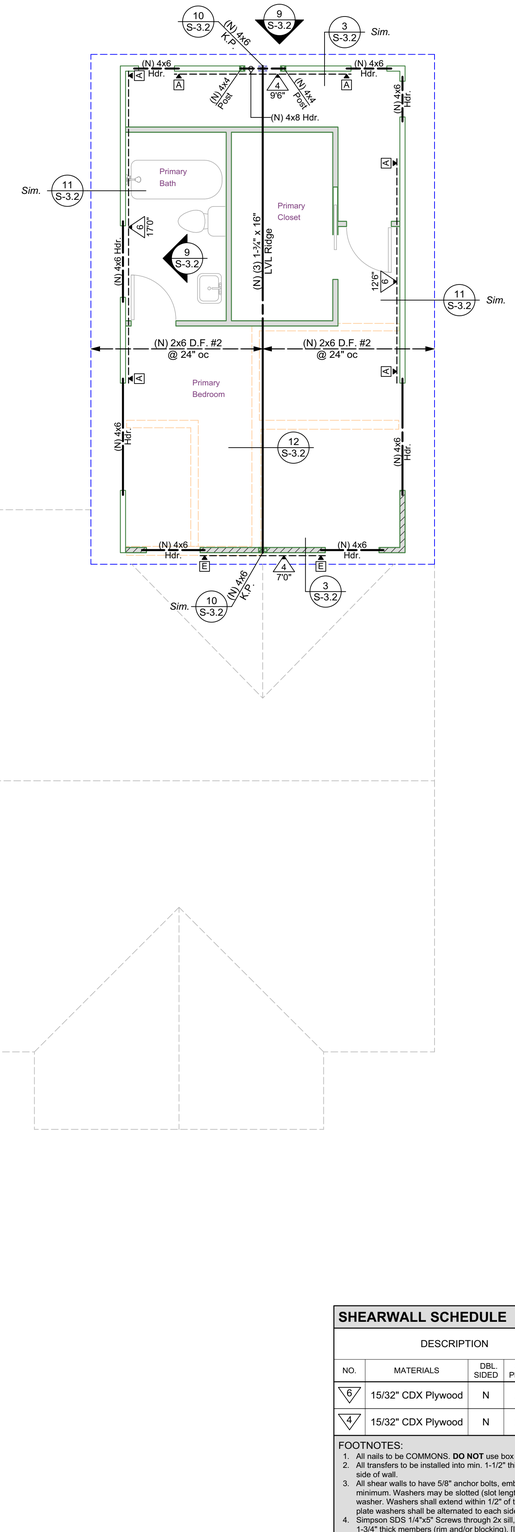
A&V Job No.: 230101

FLOOR FRAMING PLAN

S-2.2

DO NOT SCALE THESE DRAWINGS. Refer to Architectural plans for all dimensions.

Apr 7, 2023
09:52:04 AM



WALL SCHEDULE

Stud wall locations per Architecturals.

(E) Wood-Framed Wall to be Removed

(E) Wood-Framed Wall to Remain

(N) Non-Struc. Wood-Framed Wall

Wall Thickness per Arch.
Min. 2x4 D.F. Stud @ 16" o.c.

(N) Struc. Wood-Framed Wall

Wall Thickness per Arch.
Min. 2x4 D.F. Stud @ 16" o.c.

All Walls to have Continuous Double Top Plates, All Splices to be per Detail **7/S-1.1**

GENERAL FRAMING NOTES

(N) Beams (per Call-out)

(E) Beams (to Remain)

All Lumber 4x6, 6x6 and Smaller to be DF #2 UNO
All Lumber 4x8, 6x8 and Larger to be DF #1 UNO

All Beams to Bear on Plates w/ Indicated Post or Doubler Below UNO

All Hangers Shall be Installed w/ Max. Nailing per Mfr. & Sized for Full Width & Depth of Supported Members, UNO

Roof sheathing to be ½" plywood or OSB, PI 24/0, nailed w/ 10d commons at 6", 6", 12"

(N) Roof Rafters -- 2x6 D.F. #2 @ 24" oc in Simpson LUS Hangers, Typ. (UNO)

(E) Framing (to Remain)

Waterproofing, flashing, & finish details per Architecturals.

See General Notes & Specifications for additional requirements and material specifications.

All dimensions per Architectural plans

Contractor to VERIFY all dimensions w/ Architectural plans PRIOR to commencement of construction.

Contractor shall verify all existing conditions prior to construction & contact Engineer and Architect regarding any discrepancies.

HOLDOWN SCHEDULE

TYPE	HOLDOWN[1,2]	MIN. POST	ANCHOR / EMBEDMENT	DETAILS
A	CS14	(2) 2x	N/A	18/S-3.2
E	MSTC66B3	(2) 2x	N/A	19 & 20/S-3.2
1	HDU4	(2) 2x	Per Details	4/S-3.1
2	HDU8	4x		

FOOTNOTES:
1. Shared holdowns to be installed per detail **10/S-1.1**, *Typical Shearwall Intersections*, (UNO)
2. All holdowns shown shall be continued down to the foundation with the same size holdowns and post, (UNO)

SHEARWALL SCHEDULE

DESCRIPTION					NAILING[1]		TRANSFERS[2]					
NO.	MATERIALS	DBL. SIDED	SILL PLATE	PANEL B'DRY	SIZE	SPC'G	5/8"ø[3] AB	SDS[4] Screw	SDWS[5] Screw	A35, LTP4[6,7,8] or LTP5	RBC	16d[9]
6	15/32" CDX Plywood	N	2x	2x	10d	6"	48"	10"	13"	17"	13"	5"
4	15/32" CDX Plywood	N	2x	3x	10d	4"	38"	7"	9"	12"	9"	3"

FOOTNOTES:
1. All nails to be COMMONS. **DO NOT** use box type nails. All "field" nailing to be 12"oc, UNO. Penetration shall be 1-1/2" Min. in framing.
2. All transfers to be installed into min. 1-1/2" thick members, UNO. Where clips are spaced less than 6" oc, stagger clips on each side of wall.
3. All shear walls to have 5/8" anchor bolts, embeded 7" into concrete foundations, with 3"x3"x0.229" thick plate washers, minimum. Washers may be slotted (slot length not to exceed 1-3/4") w/ standard cut washer placed between nut and plate washer. Washers shall extend within 1/2" of the edge of the bottom plate on the sheathed side. At walls sheathed on 2 sides, plate washers shall be alternated to each side of plate. [Governing Bulding Code, Section 2308.3.1] [AF&PA SDPWS 4.3.6.4.3]
4. Simpson SDS 1/4"x5" Screws through 2x sill, or SDS 1/4"x8" Screws through 3x sill or double plates. Install into minimum 1-3/4" thick members (rim and/or blocking). [ICC ESR 2236]
5. Simpson SDWS 0.22"x5" Screws through 2x sill, or SDWS 0.22"x8" Screws through 3x sill or double plates. Install into minimum 1-3/4" thick members (rim and/or blocking). [ICC ES AC233]
6. See details for permitted transfer clip types and locations.
7. Orient LTP4 and LTP5 clips such that the long dimension is horizontal.
8. Where LTP4 clips are installed over shear wall sheathing, fasten with full length 8d common nails.
9. 16d common nails through the sill plate to rim member or blocking.
10. Install screws into 3-1/2" wide continuous member, staggered 1-1/2" apart.
11. Install screws into Glulams or solid sawn member. LSL, LVL, or PSL members are NOT acceptable, UNO.

EXISTING BUILDING NOTES

All As-Built Structural Information Taken From Archived Plans dated 9/19/1955

Ashley&Vance ENGINEERING, INC.
210 East Cota Street
Santa Barbara, CA 93101
(805) 962-9966
www.ashleyvance.com
CIVIL • STRUCTURAL

The use of these plans and specifications shall be restricted to the original site for which they were prepared and publication thereof is expressly limited to such use. Reproduction or publication by any method, in whole or in part, is prohibited. Title to these plans and specifications remain with Ashley & Vance Engineering, Inc. without prejudice. Visual contact with these plans and specifications shall constitute prima facie evidence of the acceptance of these restrictions.

Engineer of Record:

REGISTERED PROFESSIONAL ENGINEER
R. PAUL BELMONT
C 76732
CIVIL
STATE OF CALIFORNIA

PLAN REVIEW SET
NOT FOR CONSTRUCTION

Evans Remodel

412 Flora Vista,
Santa Barbara, CA

Revision:

1	
2	
3	
4	
5	
6	
7	
8	
9	

Proj. Engr.: C. Huffman Phone Ext.: 142

Proj. Mngr.: P. Belmont

Date: 7 Apr. 2023 Scale: 1/4"=1'-0"

A&V Job No.: 230101

ROOF FRAMING PLAN

S-2.3

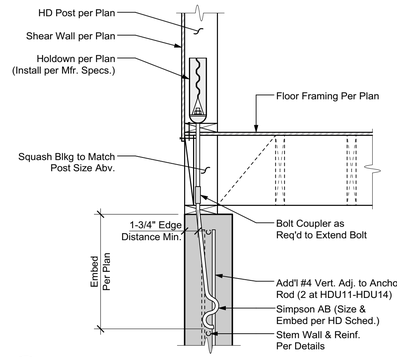
DO NOT SCALE THESE DRAWINGS. Refer to Architectural plans for all dimensions.

Apr 7, 2023
10:53:05 AM

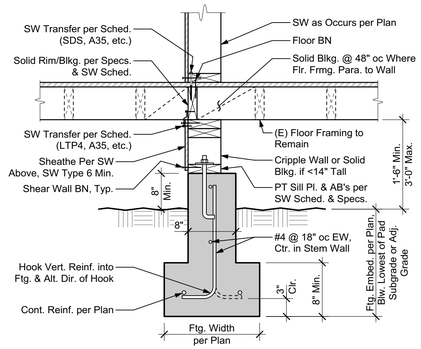
17 NOT USED

13 NOT USED

9 NOT USED



5 HOLDDOWN TO STEM WALL

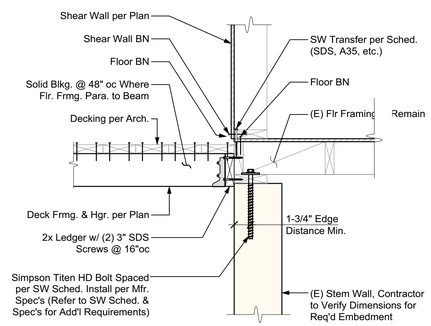


1 TYPICAL INTERIOR RAISED FOUNDATION

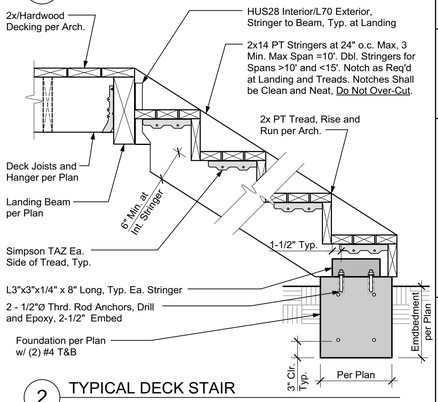
18 NOT USED

14 NOT USED

10 NOT USED



6 SHEAR WALL TO EXISTING STEM WALL

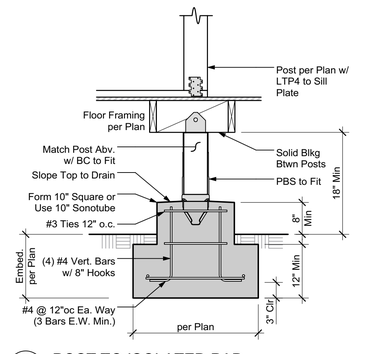


2 TYPICAL DECK STAIR

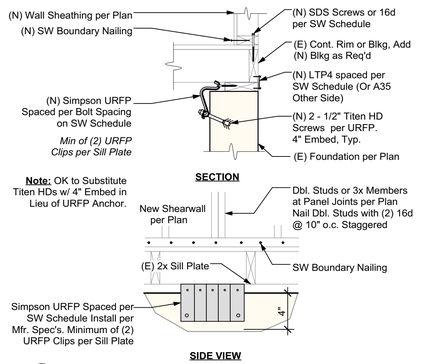
19 NOT USED

15 NOT USED

11 NOT USED



7 POST TO ISOLATED PAD

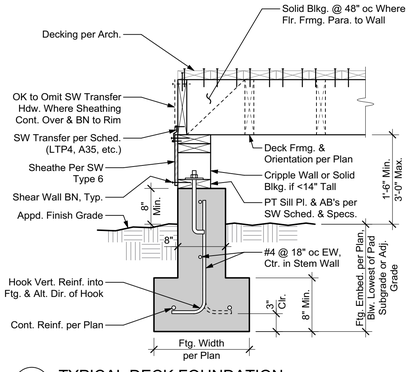


3 SHEAR @ (E) SILL PLATE @ RAISED FLOOR

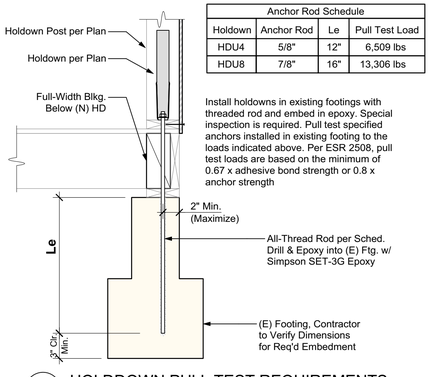
20 NOT USED

16 NOT USED

12 NOT USED



8 TYPICAL DECK FOUNDATION



4 HOLDDOWN PULL TEST REQUIREMENTS

Ashley&Vance ENGINEERING, INC.
210 East Cota Street
Santa Barbara, CA 93101
(805) 962-9966
www.ashleyvance.com
CIVIL • STRUCTURAL

The use of these plans and specifications shall be restricted to the original site for which they were prepared and publication thereof is expressly limited to such use. Reproduction or publication by any method, in whole or in part, is prohibited. Title to these plans and specifications remain with Ashley & Vance Engineering, Inc. without prejudice. Visual contact with these plans and specifications shall constitute prima facie evidence of the acceptance of these restrictions.

Engineer of Record:

REGISTERED PROFESSIONAL ENGINEER
R. PAUL BELMONT
C 76732
CIVIL
STATE OF CALIFORNIA

PLAN REVIEW SET
NOT FOR CONSTRUCTION

Evans Remodel

412 Flora Vista,
Santa Barbara, CA

Revision:

1	
2	
3	
4	
5	
6	
7	
8	
9	
10	

Proj. Engr.: C. Huffman Phone Ext.: 142

Proj. Mngr.: P. Belmont

Date: 7 Apr. 2023 Scale: NTS

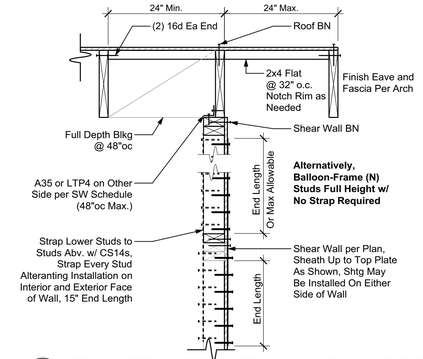
A&V Job No.: 230101

STRUCTURAL DETAILS

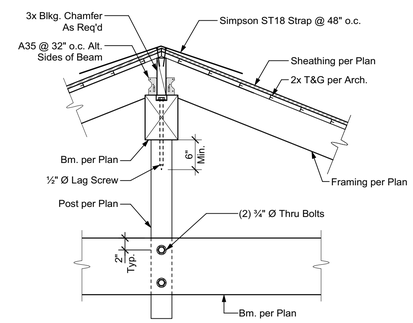
S-3.1

DO NOT SCALE THESE DRAWINGS. Refer to Architectural plans for all dimensions.

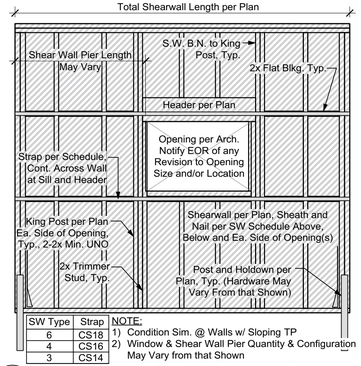
Apr 7, 2023
11:05:26 AM



17 TRANSFER AT STACKED WALL AT GABLE END



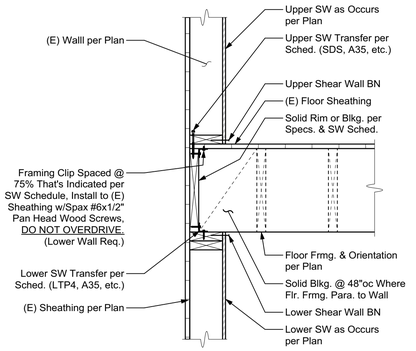
13 PORCH ROOF FRAMING



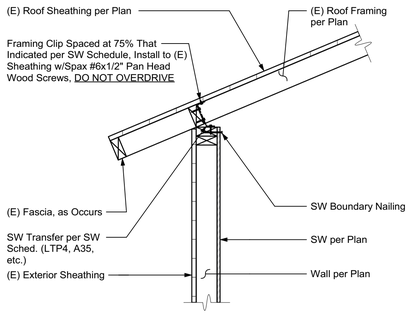
SW Type	Strap
6	CS18
4	CS16
3	CS14

NOTE:
1) Condition Sim. @ Walls w/ Sloping TP
2) Window & Shear Wall Pier Quantity & Configuration May Vary from that Shown

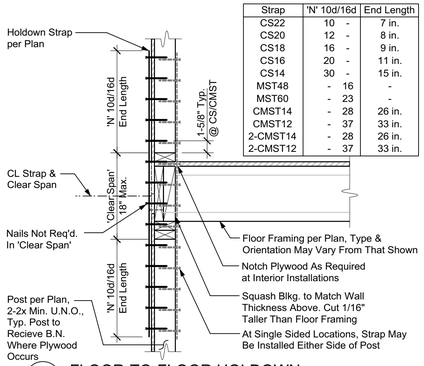
9 FORCE TRANSFER AROUND OPENINGS



5 SHEAR TRANSFER: AT (E) FLOOR FRAMING

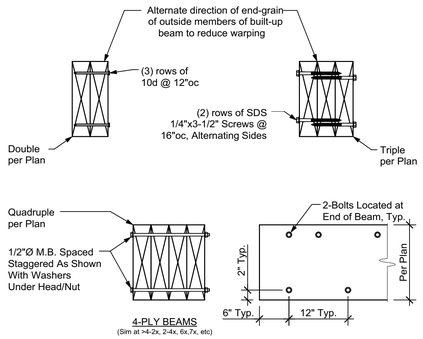


1 SHEAR TRANSFER AT EXISTING ROOF

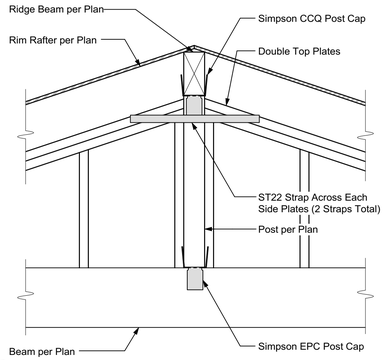


Strap	'N' 10d/16d		End Length
CS22	10	-	7 in.
CS20	12	-	8 in.
CS18	16	-	9 in.
CS16	20	-	11 in.
CS14	30	-	15 in.
MST48	-	16	-
MST60	-	23	-
CMST14	-	28	26 in.
CMST12	-	37	33 in.
2-CMST14	-	28	26 in.
2-CMST12	-	37	33 in.

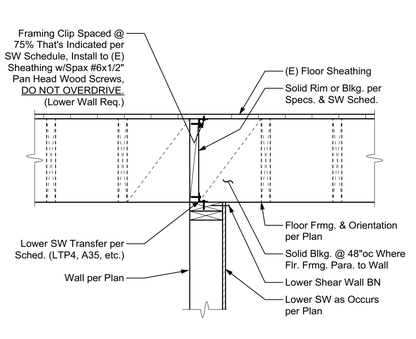
18 FLOOR-TO-FLOOR HOLDOWN



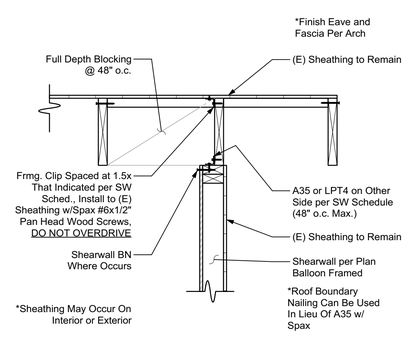
14 TYPICAL BUILT-UP BEAMS



10 RIDGE BEAM TO WALL



6 SHEAR TRANSFER: AT (E) FLOOR FRAMING

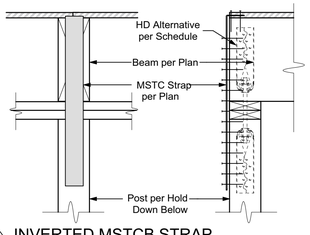


2 SHEAR TRANSFER AT (E) GABLE END

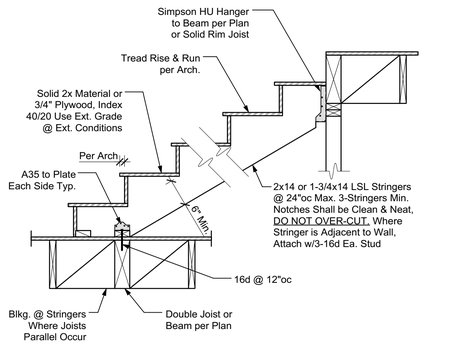
HD Alternative to Strap[1,2]		
Strap	HD (Height)	Post
MSTC66B3	HDU4 (11")	4x6
(2) MSTC66B3	(2) HDU4 (11") HDU11 (23")	6x6

[1]Provide HD T&B w/ Threaded Rod per HD Schedule as Needed
[2]Verify the Height of HD Will fit in Location as Needed.

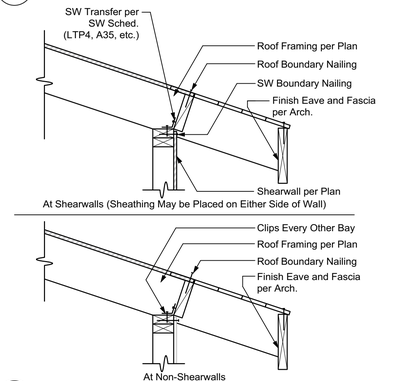
Note: May be installed on Face of Beam. Where Top Plates are Interrupted, Provide ST6224 Ea. Face of Top PL.



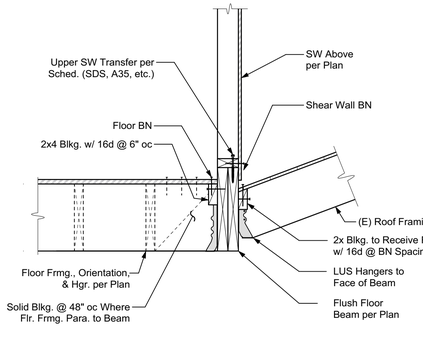
19 INVERTED MSTCB STRAP



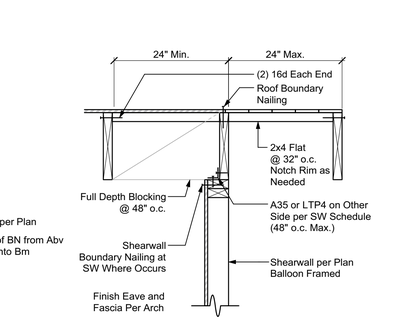
15 TYP. WOOD STAIR



11 SHEAR TRANSFER TO RAFTERS



7 SHEAR TRANSFER: EDGE BEAM AT WALL

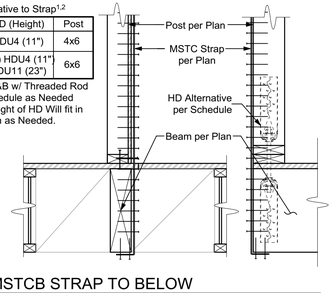


3 SHEAR TRANSFER AT GABLE END

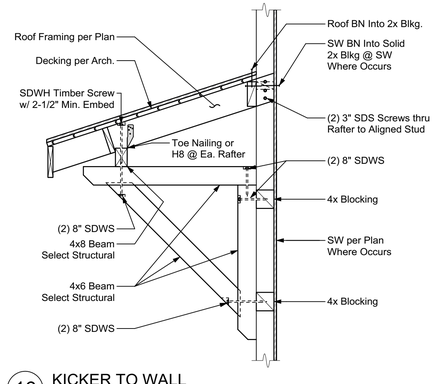
See Plan For Holdowns @ Ends of Beams. Use MSTA36 Each Side, Min.

HD Alternative to Strap[1,2]		
Strap	HD (Height)	Post
MSTC66B3	HDU4 (11")	4x6
(2) MSTC66B3	(2) HDU4 (11") HDU11 (23")	6x6

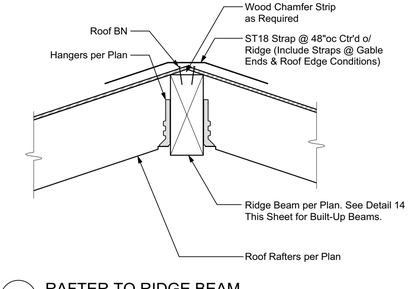
[1]Provide HD T&B w/ Threaded Rod per HD Schedule as Needed
[2]Verify the Height of HD Will fit in Location as Needed.



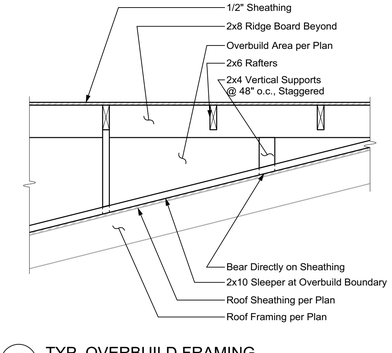
20 MSTCB STRAP TO BELOW



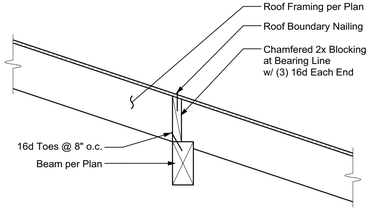
16 KICKER TO WALL



12 RAFTER TO RIDGE BEAM



8 TYP. OVERBUILD FRAMING



4 RAFTERS TO ROOF BEAM

Ashley&Vance ENGINEERING, INC.
210 East Cota Street
Santa Barbara, CA 93101
(805) 962-9966
www.ashleyvance.com
CIVIL • STRUCTURAL

The use of these plans and specifications shall be restricted to the original site for which they were prepared and publication thereof is expressly limited to such use. Reproduction or publication by any method, in whole or in part, is prohibited. Title to these plans and specifications remain with Ashley & Vance Engineering, Inc. without prejudice. Visual contact with these plans and specifications shall constitute prima facie evidence of the acceptance of these restrictions.

Engineer of Record:

REGISTERED PROFESSIONAL ENGINEER R. PAUL BELMONT C 76732 CIVIL STATE OF CALIFORNIA

PLAN REVIEW SET NOT FOR CONSTRUCTION

Evans Remodel

412 Flora Vista,
Santa Barbara, CA

Revision:

1	
2	
3	
4	
5	
6	
7	
8	
9	
10	

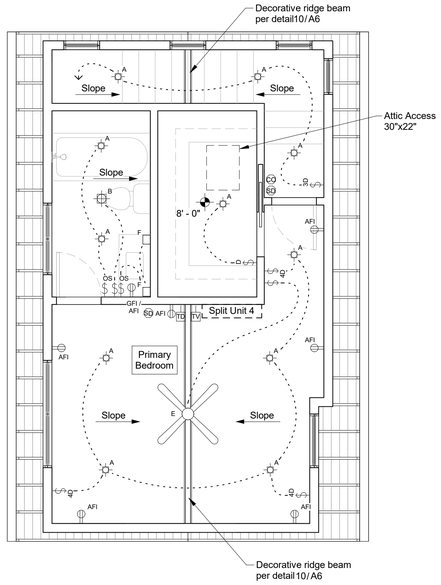
Proj. Engr.: C. Huffman Phone Ext.: 142
Proj. Mngr.: P. Belmont
Date: 7 Apr. 2023 Scale: NTS
A&V Job No.: 230101

STRUCTURAL DETAILS

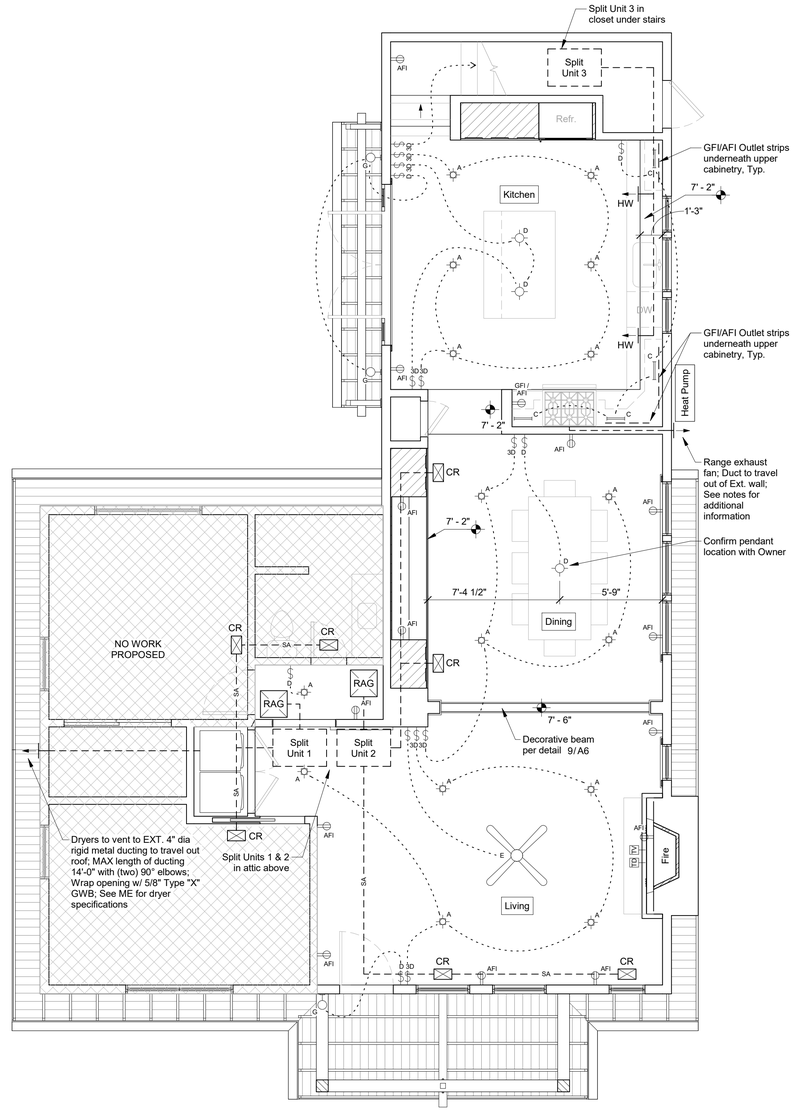
S-3.2

DO NOT SCALE THESE DRAWINGS. Refer to Architectural plans for all dimensions.

Apr 7, 2023
07:52:06 AM



2 2nd Floor
1/4" = 1'-0"



1 ME Plan - 1st Floor
1/4" = 1'-0"

Electrical Notes

1. Provide at least one 20 ampere circuit to supply only bathroom receptacle outlets.
2. All installed luminaires to be high-efficacy in accordance with ES TABLE 150.0-A. Light sources not marked JA8-2016-E shall not be installed in enclosed luminaires. ES 150.0(k).
3. Lighting installed in garages, laundry rooms, and utility rooms shall be controlled by vacancy sensors.
4. Fixtures in rooms other than those listed in #2 above shall be controlled by a dimmer when possible.
5. Outdoor lighting fixtures to be high efficacy, be manually on/off switch controlled, and have both motion sensor and photocell control.
6. Smoke detectors shall sound an alarm audible in all sleeping areas of the main house.
7. Ground-fault circuit-interrupter protection is to comply with NEC Art. 210-8: All 125-Volt, single phase, 15- and 20- amper receptacles installed in bathrooms, garages, basements, kitchens, and outdoors. Outlets for kitchen dishwashers to be GFCI protected.
8. Recessed light fixtures shown above showers and tubs are to be suitable for wet environments.
9. Receptacles installed in damp or wet locations to be weather resistant.
10. All recessed can lights installed in ceilings with insulation to be Type IC and with air-tight rated trim/housing. Recessed can lights are not to be equipped with a standard medium base screw shell lamp holder.
11. Tamper resistant receptacle outlet locations are to comply with CEC Article 210.52(A).
12. All outlets in Living, Dining, Bedroom, Halls, Kitchens, and Laundry Areas are to be arc fault circuit protected per NEC Article 210.12.
13. All kitchen fixtures to be either flourescent or LED high efficacy fixtures.
14. Dimmers or vacancy sensors shall control all LED style luminaires.
15. There shall be a minimum of 2 small appliance branch circuits within the locations specified in Article 210.52(B).
16. At least one 20-amp branch circuit shall be provided to supply laundry receptacle outlets. Such circuits shall have no other outlets. CEC 210.11(C)(2)

Mechanical Notes

1. The discharge point for exhaust air to be at least three feet from any opening which allows air entry into occupied portions of the building.
2. The ends of duct openings are to be sealed and mechanical equipment is to be covered during construction per CGC 4.504.1.
3. Bathroom Exhaust Fans are to be capable of providing 5 air changes per hour, and shall be Energy Star rated, vented directly to the outside.
4. Heating and AC system shall be sized, designed and selected using ASHRAE handbook and/or ACCA Manual J, per CGC 4.507.2.
5. The return air plenum serving the mechanical equipment must be fully ducted from the equipment to the conditioned space. Drop ceilings, wall cavities and equipment platforms may not be used as plenums.

Exhaust Notes

Exhaust fans to be PANASONIC WhisperRecessed FV-08VRL1 Recessed Fan w/ Flourescent Light, 80 CFM, 0.8 Sones; Duct size to be 4" Dia. Round, duct to exterior; UL and HVI-2100 certified; Locate one per bathroom; Fan to be capable of providing 5 air changes per hour; Bathroom exhaust fans to provide whole house ventilation and will be furnished with smart motion sensor set to provide 15 CFM continuous operation after 10 minutes of initial operation.

Range Exhaust Fan Notes

Kitchen: Over cooktop exhaust fan to be BROAN, Model # E6036SS, 48" stainless steel finish, internal blower 600 CFM, 13.5 Sones at working speed, 120 V, 60Hz; Duct size to be 10" Dia. Round, duct to exterior; UL and HVI-2100 certified.

Smoke Alarm Notes:

Smoke alarm location shall comply with the following:
1. They shall be not less than 3' from door opening of a bathroom
2. They shall be at least 20' from cooking appliance
3. They shall be at least 3' from supply registers of heating/cooling systems
4. They shall be at least 3' from the tip of the blade of ceiling-mounted fan

Dryer Notes

Gas dryer to be GE Model GFDR485GFMC, front loader, with 8.3 cu.ft. capacity; 20,000 BTU; 120 V AC, 60 Hz, 8A, 850 W; Ducting to be 4" dia. metal elbow and 4" dia., UL-listed flexible metal duct.

Title 24 Notes

1. See T2 & T3 for full Title 24 report.
2. Copies of the following Title 24 energy forms will be available for Building Inspector use: CF-1R, RMS-1, MF1R.

Mini Split Notes

Mitsubishi M-Series; Install per manufacturer's instructions

Heat Pump 1 *(Side Yard)*: **MXZ-5C42NA4**; 42,000 BTU/H; See 1/ME

Split Unit 1 *(Attic above Living)*: Low Static Intelli-Air Ducted Solutions **SEZ-KD12NA4**; 12,000 BTU Cooling & 15,000 BTU Heating; SEER 20.5, EER 12.9; See 1/ME

Split Unit 2 *(Attic above Living)*: Low Static Intelli-Air Ducted Solutions **SEZ-KD15NA4**; 15,000 BTU Cooling & 18,000 BTU Heating; SEER 19, EER 13; See 1/ME

Split Unit 3 *(Closet by Kitchen)*: Low Static Intelli-Air Ducted Solutions **SEZ-KD12NA4**; 12,000 BTU Cooling & 15,000 BTU Heating; SEER 20.5, EER 12.9; See 1/ME

Split Unit 4 *(Primary Bedroom)*: Wall-Mounted **MSZ-GL06NA**; 6,000 BTU Cooling & Heating; SEER 20; See 2/ME

Light Fixture Schedule

Type	Description	Manufacturer	Model	Comments
A	4" Recessed LED	Lithonia Lighting	L3	Color Temp to be 2700K; Trim to be 301MW
B	Ceiling Exhaust Fan	Panasonic	FV-11VK3	See Bathroom Exhaust Notes on this page
C	Under Cabinet LED	Halo	HU10-27-WH	Color Temp to be 2700K; Provide length to fit upper cabinet
D	Pendant Fixture	TBD	--	
E	Ceiling Fan	TBD	--	
F	Interior Wall Sconce	TBD	--	
G	Exterior Wall Sconce	TBD	--	
H	Interior Wall Mounted Fixture	TBD	--	
I	Ceiling Mounted LED Fixture	TBD	--	
J	Recessed Step Light	Juno	LMS-3K-C-SN	Color Temp to be 2700K
K	Gas Pendant	Bevolo	FQ-Y	See Plumbing Sheets for more information on gas lights

MP&E Legend

- Duplex Receptacle Outlet
- GFI Ground Fault Interrupter Outlet
- AFI Arc Fault Circuit Outlet
- ACT AFI Above Countertop Electrical Outlet
- CLG Ceiling/Floor Mounted Outlet
- Interior Surface Mounted Wall Fixture
- Exterior Surface Mounted Wall Fixture
- Recessed Ceiling Light Fixture
- Ceiling Mounted Exhaust Fan
- Floor Mounted Recessed
- Pendant Light Fixture
- Surface Mounted Ceiling Fixture
- Surface Mounted Ceiling Flourescent Fixture
- Recessed Step Light
- HW Air Register (HW: High Wall; LW: Low Wall; TKR: Toe Kick
- Air Register (CR: Ceiling; FR: Floor)
- Single Pole Electrical Switch
- 3-Way Electrical Switch
- D Dimmable Electrical Switch
- 3D 3-Way Dimmable Electrical Switch
- OS Manually-on Occupancy Sensor Switch
- T Telephone Outlet
- TD Data Outlet
- TV Cable Television Outlet
- SD Smoke Detector, Wired with Battery Backup
- CM Carbon Monoxide Detector
- Thermostat
- P/M Photo Control / Motion Sensor

NICODEMUS DESIGN
8861 Villa La Jolla Dr.,
P.O. Box # 13367,
La Jolla, CA 92037
Phone: (760) 473-1041

DESIGNER:

Drawn By:
NN

Drawing Date:
October 10, 2023

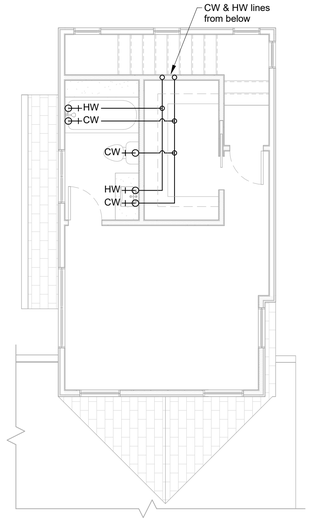
Revisions:

revision	date	notes

PROJECT:
Evans Remodel
412 Flora Vista, Santa Barbara, CA

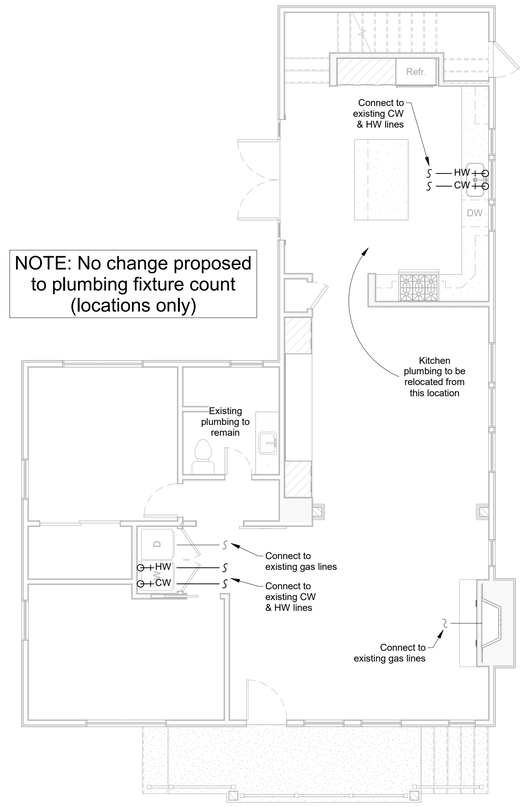
SHEET TITLE:
Mechanical & Electrical Plans

DRAWING NUMBER:
ME



2 Plumbing Plan - 2nd Floor
3/16" = 1'-0"

NOTE: No change proposed to plumbing fixture count (locations only)



1 Plumbing Plan - 1st Floor
3/16" = 1'-0"

FIXTURE FLOW RATES (SECT 4.303)	
FIXTURE TYPE	MAX ALLOW. FLOW RATE
Water closets	1.28 gallons/flush
Urinals (wall-mounted)	0.125 gallons/flush
Urinals (others)	0.5 gallons/flush
Showerheads	1.8 gpm @ 80 psi
Lavatory faucets	1.2 gpm @ 60 psi[1]
Kitchen faucets	1.8 @ 60 psi
Metering faucets	0.25 gallons per cycle

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

[1]. Lavatory faucets shall not have a flow rate less than 0.8 gpm at 20 psi.

Plumbing Notes:

1. All hot water piping from the heating source to the kitchen fixtures must be insulated with 1" thick insulation for pipes sizes 2" or less and 1 1/2" thick insulation for pipe sizes greater than 2".
2. Water piping connections shall use lead-free solder.
3. The control valves in showers and bathtubs must be pressure balanced or thermostatic mixing valves. CPC Sections 408, 409, 410
4. Building drain and vent piping materials shall comply with Sections 701.0 and 903.3 of the California Plumbing Code.
5. All sanitary system materials shall be listed by an approved listing agency.
6. If shower is provided with multiple shower heads, the sum of flow to all heads shall not exceed the 20% reduced limit, or the shower shall be designed so that only one head is on at a time per CGC 4.303.2
7. Below grade hot water piping is required to be installed in a waterproof and non-crushable sleeve or casing that allows for replacement of both the piping and insulation.

Hot Water Heater Notes:

Navien Hot Water Heater, model NPE-240A; 95% Thermal Efficiency; 0.95 Energy Factor; 199,000 BTU max input; 3/4" gas line feed; Provide outdoor venting cap for all locations; Install per manufacturer's specifications;located at exterior wall by Gallery (See 1/P1).

Note: For gas water heaters installed to serve individual dwelling units: ES 150.0(n)
1) Gas piping sizing based upon a minimum input of 200,000 btu/hr.
2) A condensate drain installed no higher than 2" above the base of the heater that also allows for gravity drainage.
3) A 120 volt receptacle accessible to the heater installed within 3'.
4) Instataneous water heaters shall have isolating valves on both the cold and hotwater piping leaving the water heater complete with hose bibs or other fittings on each valve for flushing the water heater when valves are closed. ES 110.3

NICODEMUS DESIGN
8861 Villa La Jolla Dr.,
P.O. Box # 13367,
La Jolla, CA 92037
Phone: (760) 473-1041

DESIGNER:

Drawn By:
NN

Drawing Date:
October 10, 2023

Revisions:

revision	date	notes

PROJECT:
Evans Remodel
412 Flora Vista, Santa Barbara, CA

SHEET TITLE:
Plumbing Plans

DRAWING NUMBER:
P

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.)

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 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.

4.106.4.2.1Multifamily 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 values 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.

DISCLAIMER: *THIS DOCUMENT IS PROVIDED AND INTENDED TO BE USED AS A MEANS TO INDICATE AREAS OF COMPLIANCE WITH THE CALIFORNIA GREEN BUILDING STANDARDS (CALGREEN) CODE. DUE TO THE VARIABLES BETWEEN BUILDING DEPARTMENT JURISDICTIONS, THIS CHECKLIST IS TO BE USED ON AN INDIVIDUAL PROJECT BASIS AND MAY BE MODIFIED BY THE END USER TO MEET THOSE INDIVIDUAL NEEDS. THE END USER ASSUMES ALL RESPONSIBILITY ASSOCIATED WITH THE USE OF THIS DOCUMENT, INCLUDING VERIFICATION WITH THE FULL CODE.*

2022 CALIFORNIA GREEN BUILDING STANDARDS CODE

RESIDENTIAL MANDATORY MEASURES, SHEET 2 (January 2023)

Y = YES
N/A = NOT APPLICABLE
RESPON. 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 O^3/g ROC).
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 tricloroethylene), 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.

DISCLAIMER: *THIS DOCUMENT IS PROVIDED AND INTENDED TO BE USED AS A MEANS TO INDICATE AREAS OF COMPLIANCE WITH THE CALIFORNIA GREEN BUILDING STANDARDS (CALGREEN) CODE. DUE TO THE VARIABLES BETWEEN BUILDING DEPARTMENT JURISDICTIONS, THIS CHECKLIST IS TO BE USED ON AN INDIVIDUAL PROJECT BASIS AND MAY BE MODIFIED BY THE END USER TO MEET THOSE INDIVIDUAL NEEDS. THE END USER ASSUMES ALL RESPONSIBILITY ASSOCIATED WITH THE USE OF THIS DOCUMENT, INCLUDING VERIFICATION WITH THE FULL CODE.*

Standard Erosion and Sediment Control Plan Requirements

a) Required Best Management Practices (BMPs). The following BMPs for soil erosi sediment control shall be used, as applicable, in a Standard Erosion Control Plan. Install these BMPs shall conform to the requirements found in the documents and/or websites l Section 4 of this policy.

Gravel Construction Entrance. A gravel construction entrance is generally required where traffic is anticipated off of existing paved or graveled roads. If there is more than one vehicle point, a gravel construction entrance should be installed at each entrance. The responsibility design to meet site conditions, and maintenance of the construction entrances remains v property owner or construction contractor. The owner/contractor shall remain responsible clean-up of any mud or dirt that is tracked onto streets or paved areas, even with the install gravel construction entrances.

Vehicles or equipment shall not enter a property adjacent to a creek, watercourse, or storr facility unless adequate measures are installed to prevent physical erosion into the water.

Catch Basin Protection. A filter system shall be used on catch basins (drop inlets) in pul private streets, and parking areas as a means of sediment control. Alternate methods will require the approval of the City.

Sediment Filters/Barriers. For all projects, a silt fence or straw wattle dike shall be installed along the down slope edge of the disturbed area, prior to the commencement of grading. The sediment filter structures will be located so that all runoff from the construction site is filtered, or passes through a sediment detention basin prior to crossing a property line, entering a creek, or entering the City storm drain system. Sediment shall be removed when the depth of sediment exceeds one half of the height of the structure. Silt fences and straw wattles shall be installed according to the standard references cited.

Straw wattles can be used as dikes to stabilize temporary channel flow lines or as a perimeter filter barrier. Straw wattles must be installed in a trench, staked and backfilled if they are to be effective in reducing flow velocity and filtering sediment from runoff.

Straw wattles should not remain in place more than 12 months after installation unless it can be determining significant deterioration has not occurred. When used as a perimeter filter, sediment should be removed when material is within 3 inches of the top of any wattle.

Silt fences should be installed where sediment from sheet flow or rill and gully erosion will enter directly onto adjacent property. When installing, it is important the fabric material be anchored into a trench and backfilled.

Maintenance of filter fences is similar to that of straw wattles in that the fabric must be inspected and needed repairs implemented after every storm event. Sediment deposits shall be removed when material reaches a depth of more than one-half of the fence height.

Plastic Sheeting Plastic sheeting shall generally not be used as an erosion control measure over large areas. Plastic sheeting may be used to protect small, highly erodible areas, or to protect temporary stockpiles of material. If plastic sheeting is used, all resulting concentrated water flow from the plastic must be directed to a properly designed or existing drainage system able to handle the runoff without causing additional erosion.

Existing Vegetation and Revegetation. As far as is practicable, existing vegetation shall be protected and left in place, in accordance with the clearing limits shown on the approved Building Permit or Grading Permit and the approved Erosion Control Plans. The exception is where exotic plant materials are to be removed, or fire fuels reduced in accordance with an approved Plan. Work areas shall be carefully located and marked to reduce unnecessary damage to existing vegetation.
Slope Protection: Hydro-seeding alone will normally not be considered satisfactory erosion protection for disturbed slopes steeper than 4H:1V. Disturbed slopes steeper than 4H:1V shall be protected using straw and tackifier. The installation of erosion control blankets shall be required for all disturbed slopes steeper than 2.5H:1V and greater than 20 feet in slope length. Installation of straw wattles staked on contour shall be required for all slopes steeper than 4H:1V with slope lengths greater than 30 feet. Straw wattles or silt fencing shall be installed at the toe of all slopes steeper than 4H:1V, and along (just below) top of bank along all creeks.

Wet Weather Measures. On sites where vegetation and ground cover have been removed from more than 0.5 acre of land, vegetative ground cover shall be planted on or before **September 15** with the ground cover established by **October 15**. As an alternative, if a protective ground cover is not established by **October 15**, the open areas shall be protected through the winter with straw mulch, erosion blankets, the installation of additional straw wattles, or other method(s) approved by the City.

Seeding. Seeding shall be as follows, or as recommended by a California Licensed Landscape Architect or a Certified Professional Soil Erosion and Sediment Control Specialist.

SEED MIX ONE (Application rate = 40 kg/ha or 35 lb/ac)		SEED MIX TWO Application rate=40 kg/ha or 35 lbs/acre)	
blando brome	40%	blando brome	35%
zorro annual fescue	8%	rose clover	20%
lana vetch	12%	annual ryegrass	15%
rose clover	15%	crimson clover	10%
crimson clover	15%	creeping red fescue	5%
sub clover	10%	zorro annual fescue	5%
TOTAL	100%	TOTAL	100%

Fertilizer

12-12-12 450 kg/ha (400 lb/ac), or 15-15-15 340 kg/ha (300 lb/ac), or 16-20-0 340 kg/ha (300 lb/ac).

Mulch

Straw 3,400 kg/ha (3,000 lb/ac), or wood fiber (if hydroseeded) 2,300 kg/ha (2,000 lb/ac)

b) Additional Erosion Control Measures. In addition to the required best management practices, the following erosion control measures shall be implemented as part of the standard erosion control plan when applicable.

- During any clearing, earth moving and/or grading phases of the project, water trucks or sprinkler systems shall be used in sufficient quantities to prevent dust from leaving the site. In addition, the entire area of disturbed soils shall be wetted down during the early morning hours and at the end of each day in such a manner as to create a crust.
- During the construction phase of the project, water trucks or sprinkler systems shall be used to keep all areas of vehicular movement damp enough to prevent dust raised from leaving the site. As a minimum, this will include the wetting down of such areas in the late morning hours and at the close of each day's activities.
- All trucks hauling soil materials to and from the site shall be covered with a tarp to prevent dust from blowing off the truck.
- All alleyways, circulation routes, haul routes, streets and sidewalks shall be kept clean and clear of dirt, dust and debris in a manner acceptable to the City of Santa Barbara's Public Works Department as outlined in their "Procedures for the Control of Runoff into Storm Drains and Watercourses". At a minimum, said areas shall be cleaned at the end of each working day or more often if directed by City personnel. The flushing of dirt or debris to storm drain or sanitary sewer facilities shall not be permitted. Failure to keep these areas clean will result in the issuance of a "Stop Work" order, which will not be released until such time as the area is cleaned in a manner acceptable to the City. Earth moving and grading activities shall be limited to the hours between 7:00 A.M. and 6:00 P.M. or as specified in the approved Erosion Control Plan or the project conditions of approval.
- After the completion of the clearing, grading, or excavation phase, the entire area of disturbed soil shall be treated to prevent wind pick up of the soil. Any one of the following methods may accomplish this:
    - The seeding and or watering of the site until such time as the ground cover has taken root.
    - The spreading of soil binders.
    - The wetting down of the area in such a manner as to create a crust on the surface and the repeated soaking of the area, as necessary, to maintain the crust and prevent soil blowing.
- The contractor or builder shall designate a person or persons to monitor the storm water pollution prevention and dust control programs, and to order increased watering as necessary to prevent the transport of dust off-site, and additional BMPs to prevent storm water pollutants from entering public right-of-way. This person's duty shall include holiday and weekend periods when work may not be in progress. The name and telephone number of such person or persons shall be provided to the City of Santa Barbara Community Development Department and be placed on the plans.

c) Protection Measure Removal

The erosion prevention and sediment control measures shall remain in place and be maintained in good condition until all disturbed soil areas are permanently stabilized by installation and establishment of landscaping, grass, mulching, or are otherwise covered and protected from erosion.

d) Standard Erosion Control Measures Submittal Requirements

The plans sheets for a **Standard Erosion Control Plan** shall include the following information:

- Specific measures to be installed
- Specific locations where measures will be installed.
- Installation details.

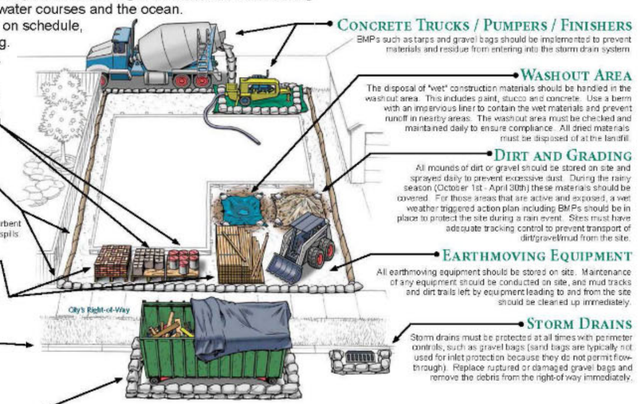
BMP Maintenance Requirements.

The permittee shall maintain the facilities and erosion control measures prescribed in the approved *Erosion Control Plan (Standard or Detailed)* so as to continue to be effective throughout the construction and establishment of permanent vegetation phases of the project. If the facilities and techniques approved in the Erosion Control Plans are not effective or sufficient, as determined by a City site inspection, the permittee shall submit a revised Plan within three working days of written notification by the City of unacceptable site erosion conditions. Upon approval of the revised plan by the City, the permittee shall immediately implement the additional facilities and measures included in the revised plan. In cases where significant erosion is likely to occur, the City may require that the applicant install interim control measures prior to submittal of the revised Erosion Control Plan

CONSTRUCTION SITE BEST MANAGEMENT PRACTICES

THE FOLLOWING BMPs MUST BE PROPERLY USED AT ALL CONSTRUCTION SITES IN THE CITY TO PROTECT STORM DRAINS AND MINIMIZE POLLUTION

The City of Santa Barbara Building & Safety Division Erosion/Sedimentation Control Program SBMC 22.85.020 and SBMC 16.15.010 prohibit pollutant discharges at work sites from flowing into storm drains and polluting local creeks, water courses and the ocean.
To stay in compliance and keep your project on schedule, make sure BMPs are in place and functioning.
Sites must be checked and maintained daily.



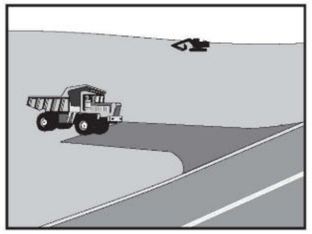
Protecting water resources improves and preserves Santa Barbara's quality of life for our children and future generations.

Questions? Contact your Building Inspector or call Building & Safety at (805) 564-5485

City of Santa Barbara
EROSION / SEDIMENTATION CONTROL AND STORMWATER QUALITY MANAGEMENT PROGRAM

Standard
BMP-1

Stabilized Construction Entrance/Exit TC-1



Categories

EC	Erosion Control	☒
SE	Sediment Control	☒
TC	Tracking Control	☑
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	
WM	Waste Management and Materials Pollution Control	

Legend:
☑ Primary Objective
☒ Secondary Objective

Targeted Constituents

Sediment	☑
Nutrients	
Trash	
Metals	
Bacteria	
Oil and Grease	
Organics	

Potential Alternatives

None

Description and Purpose

A stabilized construction access is defined by a point of entrance/exit to a construction site that is stabilized to reduce the tracking of mud and dirt onto public roads by construction vehicles.

Suitable Applications

Use at construction sites:

- Where dirt or mud can be tracked onto public roads.
- Adjacent to water bodies.
- Where poor soils are encountered.
- Where dust is a problem during dry weather conditions.

Limitations

- Entrances and exits require periodic top dressing with additional stones.
- This BMP should be used in conjunction with street sweeping on adjacent public right of way.
- Entrances and exits should be constructed on level ground only.
- Stabilized construction entrances are rather expensive to construct and when a wash rack is included, a sediment trap of some kind must also be provided to collect wash water

Stabilized Construction Entrance/Exit TC-1

runoff.

Implementation

General

A stabilized construction entrance is a pad of aggregate underlain with filter cloth located at any point where traffic will be entering or leaving a construction site to or from a public right of way, street, alley, sidewalk, or parking area. The purpose of a stabilized construction entrance is to reduce or eliminate the tracking of sediment onto public rights of way or streets. Reducing tracking of sediments and other pollutants onto paved roads helps prevent deposition of sediments into local storm drains and production of airborne dust.

Where traffic will be entering or leaving the construction site, a stabilized construction entrance should be used. NPDES permits require that appropriate measures be implemented to prevent tracking of sediments onto paved roadways, where a significant source of sediments is derived from mud and dirt carried out from unpaved roads and construction sites.

Stabilized construction entrances are moderately effective in removing sediment from equipment leaving a construction site. The entrance should be built on level ground. Advantages of the Stabilized Construction Entrance/Exit is that it does remove some sediment from equipment and serves to channel construction traffic in and out of the site at specified locations. Efficiency is greatly increased when a washing rack is included as part of a stabilized construction entrance/exit.

Design and Layout

- Construct on level ground where possible.
- Select 3 to 6 in. diameter stones.
- Use minimum depth of stones of 12 in. or as recommended by soils engineer.
- Construct length of 50 ft minimum, and 30 ft minimum width.
- Rumble racks constructed of steel panels with ridges and installed in the stabilized entrance/exit will help remove additional sediment and to keep adjacent streets clean.
- Provide ample turning radii as part of the entrance.
- Limit the points of entrance/exit to the construction site.
- Limit speed of vehicles to control dust.
- Properly grade each construction entrance/exit to prevent runoff from leaving the construction site.
- Route runoff from stabilized entrances/exits through a sediment trapping device before discharge.
- Design stabilized entrance/exit to support heaviest vehicles and equipment that will use it.

Stabilized Construction Entrance/Exit TC-1

- Select construction access stabilization (aggregate, asphaltic concrete, concrete) based on longevity, required performance, and site conditions. Do not use asphalt concrete (AC) grindings for stabilized construction access/roadway.
- If aggregate is selected, place crushed aggregate over geotextile fabric to at least 12 in. depth, or place aggregate to a depth recommended by a geotechnical engineer. A crushed aggregate greater than 3 in. but smaller than 6 in. should be used.
- Designate combination or single purpose entrances and exits to the construction site.
- Require that all employees, subcontractors, and suppliers utilize the stabilized construction access.
- Implement SE-7, Street Sweeping and Vacuuming, as needed.
- All exit locations intended to be used for more than a two-week period should have stabilized construction entrance/exit BMPs.

Inspection and Maintenance

- Inspect and verify that activity–based BMPs are in place prior to the commencement of associated activities. While activities associated with the BMPs are under way, inspect weekly during the rainy season and of two-week intervals in the non-rainy season to verify continued BMP implementation.
- Inspect local roads adjacent to the site daily. Sweep or vacuum to remove visible accumulated sediment.
- Remove aggregate, separate and dispose of sediment if construction entrance/exit is clogged with sediment.
- Keep all temporary roadway ditches clear.
- Check for damage and repair as needed.
- Replace gravel material when surface voids are visible.
- Remove all sediment deposited on paved roadways within 24 hours.
- Remove gravel and filter fabric at completion of construction

Stabilized Construction Entrance/Exit TC-1

National Management Measures to Control Nonpoint Source Pollution from Urban Areas, USEPA Agency, 2002.

Proposed Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters, Work Group Working Paper, USEPA, April 1992.

Stormwater Quality Handbooks Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), November 2000.

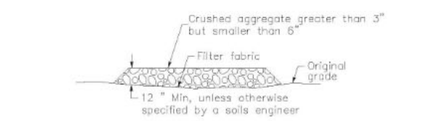
Stormwater Management of the Puget Sound Basin, Technical Manual, Publication #91-75, Washington State Department of Ecology, February 1992.

Virginia Erosion and Sedimentation Control Handbook, Virginia Department of Conservation and Recreation, Division of Soil and Water Conservation, 1991.

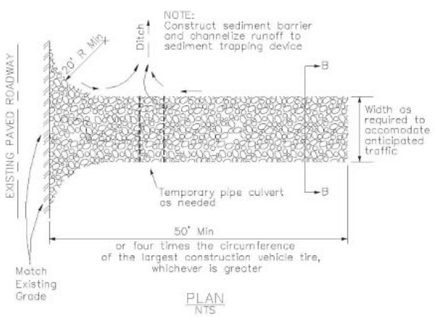
Guidance Specifying Management Measures for Nonpoint Pollution in Coastal Waters, EPA 840-B-9-002, USEPA, Office of Water, Washington, DC, 1993.

Water Quality Management Plan for the Lake Tahoe Region, Volume II, Handbook of Management Practices, Tahoe Regional Planning Agency, November 1988.

Stabilized Construction Entrance/Exit TC-1

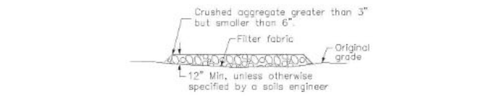


SECTION B–B
NTS

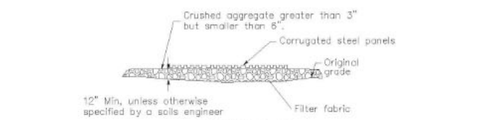


PLAN
NTS

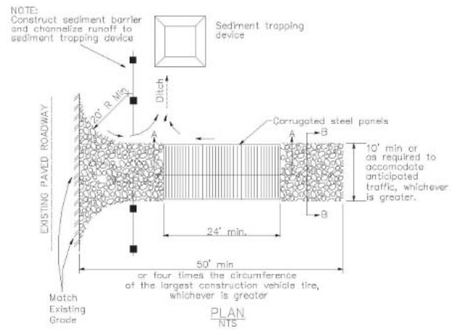
Stabilized Construction Entrance/Exit TC-1



SECTION B–B
NTS



SECTION A–A
NOT TO SCALE



PLAN
NTS

City of Santa Barbara
EROSION / SEDIMENT CONTROL AND
STORMWATER QUALITY MANAGEMENT PROGRAM

Standard
BMP-2

Temporary Silt Fence

SC-1

Standard Symbol

Definition and Purpose

A silt fence is a temporary linear sediment barrier of permeable fabric designed to intercept and slow the flow of sediment-laden sheet flow runoff. Silt fences allow sediment to settle from runoff before water leaves the construction site.

Appropriate Applications

Below the toe of exposed and erodible slopes.

Down-slope of exposed soil areas.

Around temporary stockpiles.

Along streams and channels.

Along the perimeter of a project.

Limitations

Not effective unless trenched and keyed in.

Not intended for use as mid-slope protection on slopes greater than 4:1 (H:V).

Must be maintained.

Must be removed and disposed of.

Don't use below slopes subject to creep, slumping, or landslides.

Temporary Silt Fence

SC-1

Don't use in streams, channels, drain inlets, or anywhere flow is concentrated.

Don't use silt fences to divert flow.

Don't use in locations where ponded water may cause a flooding hazard.

Standards and Specifications

Design and Layout

The drainage area above any fence should not exceed a quarter of an acre, (100-feet of silt fence per 10,000 square feet of DSA).

Slope of area draining to silt fence should be less than 1:1 (H:V).

Silt fences must be placed parallel to the slope contour.

Silt fences rely on temporary ponding to encourage sediment deposition and achieve water quality benefits. Limit application to areas where ponding and deposition may occur on the uphill side of the silt fence.

Temporary silt fence fabrics generally have life spans ranging between five and eight months. Projects with longer durations may require replacing silt fence fabric.

Silt fences constructed across concentrated flows are susceptible to washout. Silt fences shall not be installed across concentrated flows.

For slopes adjacent to water bodies or Environmentally Sensitive Areas (ESAs), additional temporary soil stabilization BMPs should be used.

For any 50 foot section of silt fence, the elevation of the base of the fence may not vary by more than 1/3 of the fence height.

Install along a level contour, so water does not pond more than 1.5 ft at any point along the silt fence.

Join separate sections to form reaches not more than 500 feet without openings. Ensure there are no gaps between posts.

Reinforced Silt Fence

Temporary reinforced silt fence is typically used in areas affected by high winds. They are also often used on slopes steeper than 2:1 (H:V) that contain a high number of rocks or large dirt clods that tend to dislodge, or where area draining fence contains moderate sediment loads.

Temporary reinforced silt fence (type 2) may also be used to provide sediment control and delineate ESAs.

Temporary Silt Fence

SC-1

Materials

Silt fence fabric should be a woven or unwoven geosynthetic textile that complies with Section 96-1.02E of the Standard Specifications. The Contractor must submit a certificate of compliance for silt fence fabric in accordance with Standard Specifications Section 6-2.03C.

Wood posts should be untreated fir, redwood, cedar, or pine lumber. Each silt fence post should be at least 4 feet long, except reinforced silt fence posts should be at least 6 feet for Type 1 and 5 feet for Type 2 installations. Posts should be free from decay, splits or cracks longer than the thickness of the post or other defects that would weaken the posts and cause the posts to be structurally unsuitable. Steel posts may be used as well. Posts should comply with the requirements in Standard Specifications sections 16-2.03B and 13-10.02C.

Anchors may be used. Anchors consist of a number 4 steel reinforcing bar. End protection shall be provided for any exposed bar reinforcement.

Staples used to fasten the fence fabric to the posts and to join adjacent silt fence sections shall be U-shaped and have 1/2-inch legs and a 1-inch crown. Staples should be 1/16-inch in diameter. At least four staples should be installed on each silt fence post for adequate fastening, with a maximum of 8-inches between each staple.

Installation

Install in accordance with Pages 5 and 6 of this BMP (Standard Plans T51 "Temporary Silt Fence" and T60 "Temporary Reinforced Silt Fence").

Generally, silt fences should be used in conjunction with soil stabilization source controls up slope to provide effective erosion and sediment control.

Excavate a trench that is 6-inches deep and 6-inches wide with a length consistent with the project design plans. Place the bottom of the silt fence fabric in the trench. Backfill the trench with soil over the base of the silt fence fabric. Compact the backfill soil by hand or mechanical methods.

Construct the length of each reach so that the change in base elevation along any 50-foot reach does not exceed 1/3 the height of the barrier; in no case should any reach of temporary silt fence exceed 500 feet in length.

Construct silt fences with a set-back of at least 3 feet from the toe of a slope. Where a silt fence is determined to be not practical with a 3 foot set-back from the toe due to specific site conditions, the silt fence may be constructed at the toe of the slope, but should be constructed as far from the toe of the slope as practical.

Temporary Silt Fence

SC-1

Maintenance and Inspection

Repair undercut silt fences.

Repair or replace split, torn, slumping, or weathered fabric.

Inspect silt fence when rain is forecast. Perform necessary maintenance, or maintenance required by the Engineer.

Inspect silt fence following rain events. Perform maintenance as necessary, or as required by the Engineer.

Maintain silt fences to provide an adequate sediment holding capacity. Sediment should be removed when the sediment accumulation reaches one-third (1/3) of the barrier height.

Silt fences that are damaged and become unsuitable for the intended purpose should be removed from the site of work, disposed of outside the highway right of way in conformance with the Standard Specifications, and replaced with new silt fence barriers.

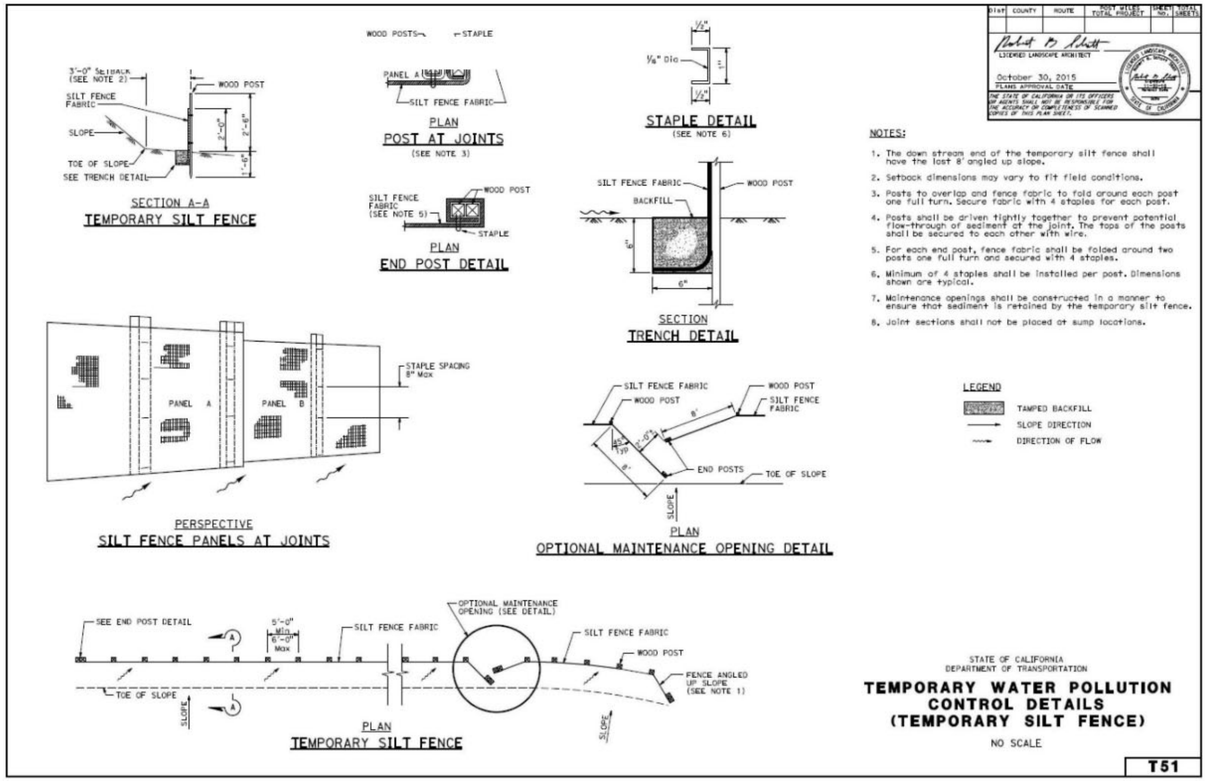
Holes, depressions or other ground disturbance caused by the removal of the temporary silt fences should be backfilled and repaired in conformance with the Standard Specifications.

Remove silt fence when no longer needed. Fill and compact post holes and anchorage trench, remove sediment accumulation, and grade fence alignment to blend with adjacent ground.

Silt Fence placement is to be shown in the WPCDs along with other BMPs.

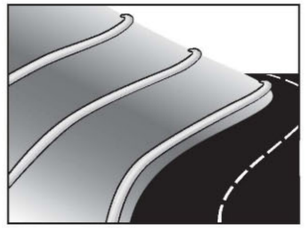
SWPPP or WPCP

Temporary Silt Fence or Reinforced Silt Fence must be discussed in Section 500.3.3 of the SWPPP or Section 30.2.2 of the WPCP.



City of Santa Barbara
EROSION / SEDIMENTATION CONTROL AND
STORMWATER QUALITY MANAGEMENT PROGRAM

Standard
BMP-3



Categories

EC	Erosion Control	☒
SE	Sediment Control	☑
TC	Tracking Control	
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	
WM	Waste Management and Materials Pollution Control	

Legend:
☑ Primary Category
☒ Secondary Category

Targeted Constituents

Sediment	☑
Nutrients	
Trash	
Metals	
Bacteria	
Oil and Grease	
Organics	

Potential Alternatives

SE-1 Silt Fence
SE-6 Gravel Bag Berm
SE-8 Sandbag Barrier
SE-14 Biofilter Bags

Description and Purpose

A fiber roll consists of straw, coir, or other biodegradable materials bound into a tight tubular roll wrapped by netting, which can be photodegradable or natural. Additionally, gravel core fiber rolls are available, which contain an imbedded ballast material such as gravel or sand for additional weight when staking the rolls are not feasible (such as use as inlet protection). When fiber rolls are placed at the toe and on the face of slopes along the contours, they intercept runoff, reduce its flow velocity, release the runoff as sheet flow, and provide removal of sediment from the runoff (through sedimentation). By interrupting the length of a slope, fiber rolls can also reduce sheet and rill erosion until vegetation is established.

Suitable Applications

Fiber rolls may be suitable:

- Along the toe, top, face, and at grade breaks of exposed and erodible slopes to shorten slope length and spread runoff as sheet flow.
- At the end of a downward slope where it transitions to a steeper slope.
- Along the perimeter of a project.
- As check dams in unlined ditches with minimal grade.
- Down-slope of exposed soil areas.
- At operational storm drains as a form of inlet protection.

- Around temporary stockpiles.

Limitations

- Fiber rolls are not effective unless trenched in and staked.
- Not intended for use in high flow situations.
- Difficult to move once saturated.
- If not properly staked and trenched in, fiber rolls could be transported by high flows.
- Fiber rolls have a very limited sediment capture zone.
- Fiber rolls should not be used on slopes subject to creep, slumping, or landslide.
- Rolls typically function for 12-24 months depending upon local conditions.

Implementation

Fiber Roll Materials

- Fiber rolls should be prefabricated.
- Fiber rolls may come manufactured containing polyacrylamide (PAM), a flocculating agent within the roll. Fiber rolls impregnated with PAM provide additional sediment removal capabilities and should be used in areas with fine, clayey or silty soils to provide additional sediment removal capabilities. Monitoring may be required for these installations.
- Fiber rolls are made from weed free rice straw, flax, or a similar agricultural material bound into a tight tubular roll by netting.
- Typical fiber rolls vary in diameter from 9 in. to 20 in. Larger diameter rolls are available as well.

Installation

- Locate fiber rolls on level contours spaced as follows:
  - Slope inclination of 4:1 (H:V) or flatter: Fiber rolls should be placed at a maximum interval of 20 ft.
  - Slope inclination between 4:1 and 2:1 (H:V): Fiber Rolls should be placed at a maximum interval of 15 ft. (a closer spacing is more effective).
  - Slope inclination 2:1 (H:V) or greater: Fiber Rolls should be placed at a maximum interval of 10 ft. (a closer spacing is more effective).
- Prepare the slope before beginning installation.
- Dig small trenches across the slope on the contour. The trench depth should be ¼ to 1/3 of the thickness of the roll, and the width should equal the roll diameter, in order to provide area to backfill the trench.

- It is critical that rolls are installed perpendicular to water movement, and parallel to the slope contour.
- Start building trenches and installing rolls from the bottom of the slope and work up.
- It is recommended that pilot holes be driven through the fiber roll. Use a straight bar to drive holes through the roll and into the soil for the wooden stakes.
- Turn the ends of the fiber roll up slope to prevent runoff from going around the roll.
- Stake fiber rolls into the trench.
  - Drive stakes at the end of each fiber roll and spaced 4 ft maximum on center.
  - Use wood stakes with a nominal classification of 0.75 by 0.75 in. and minimum length of 24 in.
- If more than one fiber roll is placed in a row, the rolls should be overlapped, not abutted.
- See typical fiber roll installation details at the end of this fact sheet.

Removal

- Fiber rolls can be left in place or removed depending on the type of fiber roll and application (temporary vs. permanent installation). Typically, fiber rolls encased with plastic netting are used for a temporary application because the netting does not biodegrade. Fiber rolls used in a permanent application are typically encased with a biodegradeable material and are left in place. Removal of a fiber roll used in a permanent application can result in greater disturbance.
- Temporary installations should only be removed when up gradient areas are stabilized per General Permit requirements, and/or pollutant sources no longer present a hazard. But, they should also be removed before vegetation becomes too mature so that the removal process does not disturb more soil and vegetation than is necessary.

Inspection and Maintenance

- BMPs must be inspected in accordance with General Permit requirements for the associated project type and risk level. It is recommended that at a minimum, BMPs be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.
- Repair or replace split, torn, unraveling, or slumping fiber rolls.
- If the fiber roll is used as a sediment capture device, or as an erosion control device to maintain sheet flows, sediment that accumulates in the BMP should be periodically removed

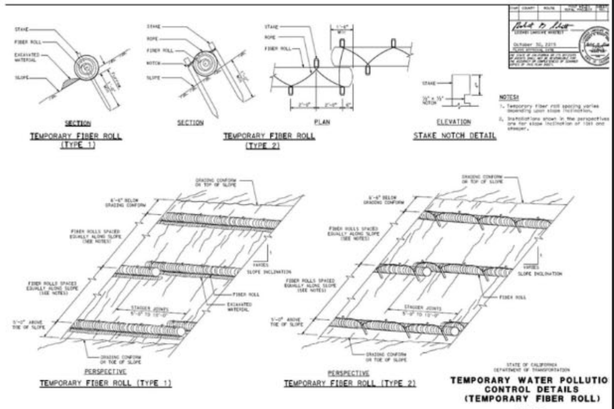
in order to maintain BMP effectiveness. Sediment should be removed when sediment accumulation reaches one-third the designated sediment storage depth.

- If fiber rolls are used for erosion control, such as in a check dam, sediment removal should not be required as long as the system continues to control the grade. Sediment control BMPs will likely be required in conjunction with this type of application.
- Repair any rills or gullies promptly.

References

Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), March 2003.

Erosion and Sediment Control Manual, Oregon Department of Environmental Quality, February 2005.



Standard Symbol

Definition and Purpose

A straw bale barrier is a temporary linear sediment barrier consisting of straw bales, designed to intercept and slow sediment-laden sheet flow runoff. Straw bale barriers allow sediment to settle from runoff before water leaves the construction site.

Appropriate Applications

Along the perimeter of a site.

Along streams and channels.

Below the toe of exposed and erodible slopes.

Down slope of exposed soil areas.

Around stockpiles.

Across minor swales or ditches with small catchments.

Around above grade type temporary concrete washouts (see WM-8, "Concrete Waste Management").

Parallel to a roadway to keep sediment off paved areas.

Limitations

Installation can be labor intensive.

Straw bale barriers are maintenance intensive.

Degraded straw bales may fall apart when removed or left in place for extended periods.

Can't be used on paved surfaces.

Not to be used for drain inlet protection.

Not to be used in areas of concentrated flow.

Can be an attractive food source for some animals.

May introduce undesirable non-native plants to the area.

Standards and Specifications

Materials

Straw must conform to the provisions in Standard Specifications Section 21-2.02H, "Straw."

Each straw bale should be a minimum of 14 in wide, 18 in high, 36 in long and shave a minimum weight of 50 lb.

The straw bale must be composed entirely of vegetative matter, except for the binding material.

Bales can be bound by either wire, nylon, or polypropylene string placed horizontally. Jute and cotton binding may not be used. Baling wire should be at least 16 gauge. Nylon or polypropylene string should have a diameter of approximately 0.08 in with a breaking strength of 80 lbs.

Wood or metal posts should be used as stakes. Posts for straw bale barriers must comply with Standard Specifications Section 16-2.03 "High-Visibility Fences."

Installation

Place a single row of straw bales end-to-end and parallel with the slope contour. For any 20-foot section of straw bale barrier, do not allow it to vary by more than 5% from level.

Place straw bales in a trench or key them into the slope. Place the bales such that the binding wire or string does not come in contact with the soil. Use wood or metal posts as stakes.

Secure each straw bale with two posts. The first post in each bale must be driven toward the previously laid bale to force the bales together. Drive the posts into the soil such that the top of the post is less than 2 in. above the top of the straw bale. The post must extend a minimum of 2 ft in the ground below the bottom of the straw bales.

Angle the last 6 feet upslope at the downhill end of the run.

See page 5 of this BMP for installation detail.

Other Considerations

Construct straw bale barriers with a set-back of at least 3 ft from the toe of a slope. Where it is determined to be not practical due to specific site conditions, the straw bale barrier may be constructed at the toe of the slope, but be constructed as far from the toe of the slope as practical.

This BMP may be implemented on a project-by-project basis in addition to other BMPs when determined necessary and feasible by the RE.

Straw bale barriers may be used in combination with a silt fence (see SC-2 "Silt Fence") for additional sediment control.

Maintenance and Inspection

At a minimum, BMPs must be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.

Inspect straw bale barriers for sediment accumulations and remove sediment when depth reaches one-third the barrier height. Removed sediment should be disposed of outside the highway right-of-way in conformance with the Standard Specifications.

Replace or repair damaged bales as needed or as directed by the RE.

Repair washouts or other damages as needed or as directed by the RE.

Remove straw bales when no longer needed. Remove sediment accumulation, and clean, re-grade, and stabilized the area.

Straw Bale Barrier placement must be shown on the WPCDs and reflect current site conditions.

SWPPP or WPCP

Straw Bale Barrier must be discussed in Section 500.3 of the SWPPP or Section 30.2 of the WPCP.

City of Santa Barbara
EROSION / SEDIMENTATION CONTROL AND
STORMWATER QUALITY MANAGEMENT PROGRAM

Standard
BMP-4

Standard Symbol

Definition and Purpose

These are procedures and practices that are designed to minimize or eliminate the discharge of concrete waste materials to the storm drain systems or watercourses.

Appropriate Applications

Concrete waste management procedures and practices are implemented on construction projects where concrete is used as a construction material or where concrete dust and debris result from demolition activities.

Where slurries containing portland cement concrete (PCC) or asphalt concrete (AC) are generated, such as from sawcutting, coring, grinding, grooving, and hydro-concrete demolition.

Where concrete trucks and other concrete-coated equipment are washed on site, when approved by the Resident Engineer (RE). See also NS-8, "Vehicle and Equipment Cleaning."

Where mortar-mixing stations exist.

Limitations

None identified.

Standards and Specifications

Education

Educate employees, subcontractors, and suppliers on the concrete waste management techniques described herein.

The WPC Manager shall oversee and enforce concrete waste management procedures.

Concrete Demolition Wastes

Stockpile concrete demolition wastes in accordance with BMP WM-3, "Stockpile Management."

Disposal of hardened PCC and AC waste shall be in conformance with Standard Specifications Section 14-10 Solid Waste Disposal and Recycling.

Concrete Slurry Waste Management and Disposal

PCC and AC waste shall not be allowed to enter storm drainage systems or watercourses.

A sign shall be installed adjacent to each temporary concrete washout facility to inform concrete equipment operators to utilize the proper facilities.

The WPCM must ensure that onsite concrete working tasks are being monitored, such as saw cutting, coring, grinding and grooving to ensure proper methods are implemented.

Residue from saw cutting, coring and grinding operations shall be picked up by means of a vacuum device. Residue shall not be allowed to flow across the pavement and shall not be left on the surface of the pavement. See also NS-3, "Paving and Grinding Operations."

Vacuumed slurry residue shall be disposed in accordance with WM-5, "Solid Waste Management" and Standard Specifications Section 7-1.13. Slurry residue shall be temporarily stored in a facility as described in "Onsite Temporary Concrete Washout Facility, Concrete Transit Truck Washout Procedures" below), or within an impermeable containment vessel or bin.

Collect and dispose of all residues from grooving and grinding operations in accordance with Standard Specifications Section 14-10 Solid Waste Disposal and Recycling and Standard Specifications 14-11 Hazardous Waste and Contamination.

Onsite Temporary Concrete Washout Facility, Concrete Transit Truck Washout Procedures

Temporary concrete washout facilities shall be located a minimum of 50 ft. from storm drain inlets, open drainage facilities, and watercourses, unless determined infeasible by the RE. Each facility shall be located away from construction traffic or access areas to prevent disturbance or tracking.

A sign shall be installed adjacent to each washout facility to inform concrete equipment operators to utilize the proper facilities. The sign shall be installed as shown on the plans and in conformance with the provisions in Standard Specifications Section 56 2, Overhead Sign Structure.

Temporary concrete washout facilities shall be constructed above grade or below grade at the option of the Contractor. Temporary concrete washout facilities shall be constructed and maintained in sufficient quantity and size to contain all liquid and concrete waste generated by washout operations.

Temporary washout facilities shall have a temporary pit or bermed areas of sufficient volume to completely contain all liquid and waste concrete materials generated during washout procedures.

Perform washout of concrete mixers, delivery trucks, and other delivery systems in designated areas only.

Wash concrete only from mixer chutes into approved concrete washout facility. Washout may be collected in an impermeable bag or other impermeable containment devices for disposal.

Pump excess concrete in concrete pump bin back into concrete mixer truck.

Concrete washout from concrete pumper bins can be washed into concrete pumper trucks and discharged into designated washout area or properly disposed offsite.

Once concrete wastes are washed into the designated area and allowed to harden, the concrete shall be broken up, removed, and disposed of in conformance with the provisions in Standard Specifications Section 7-1.13 or 15 3.02.

Temporary Concrete Washout Facility Type "Above Grade"

Temporary concrete washout facility Type "Above Grade" shall be constructed as shown on Page 6 or 7, with a recommended minimum length and minimum width of10 ft, but with sufficient quantity and volume to contain all liquid and concrete waste generated by washout operations. The length and width of a facility may be increased, at the Contractor's expense, upon approval from the RE.

Straw bales, wood stakes, and sandbag materials shall conform to the provisions in SC-9, "Straw Bale Barrier."

Plastic lining material shall be a minimum of 10-mil polyethylene sheeting and shall be free of holes, tears or other defects that compromise the impermeability of the material. Liner seams shall be installed in accordance with manufacturers' recommendations.

Portable delineators shall conform to the provisions in Standard Specifications Section 12 3.04, "Portable Delineators." The delineator bases shall be cemented to the pavement in the same manner as provided for cementing pavement markers to pavement. Portable delinators shall be applied only to a clean, dry surface.

Temporary Concrete Washout Facility (Type Below Grade)

Temporary concrete washout facility Type "Below Grade" shall be constructed as shown on page 6, with a recommended minimum length and minimum width of 10 ft. The quantity and volume shall be sufficient to contain all liquid and concrete waste generated by washout operations. The length and width of a facility may be increased, at the Contractor's expense, upon approval of the RE. Lath and flagging shall be commercial type.

Plastic lining material shall be a minimum of 10-mil polyethylene sheeting and shall be free of holes, tears or other defects that compromise the impermeability of the material. Liner seams shall be installed in accordance with manufacturers' recommendations.

The soil base shall be prepared free of rocks or other debris that may cause tears or holes in the plastic lining material.

Temporary washout facilities shall implement BMPs to prevent run-on and run-off from the facility.

Removal of Temporary Concrete Washout Facilities

When temporary concrete washout facilities are no longer required for the work, as determined by the RE, the hardened concrete shall be removed and disposed of. Disposal of PCC dried residues, slurries or liquid waste shall be disposed of outside the highway right-of-way in conformance with provisions of Standard Specifications Section 7-1-13. Materials used to construct temporary concrete washout facilities shall become

the property of the Contractor, shall be removed from the site of the work, and shall be disposed of outside the highway right-of-way.

Holes, depressions or other ground disturbance caused by the removal of the temporary concrete washout facilities shall be backfilled and repaired in conformance with the provisions in Standard Specifications Section 15 1.02, "Preservation of Property."

Maintenance and Inspection

Inspect Concrete Waste Management areas before, during and after rainfall events, and at least weekly during other times.

The WPC Manager shall monitor concrete working tasks, such as sawcutting, coring, grinding and grooving daily to ensure proper methods are employed or as directed by the RE.

Temporary concrete washout facilities shall be maintained to provide adequate holding capacity with a minimum freeboard of 4 inches for above grade facilities and 12 inches for below grade facilities.

Maintaining temporary concrete washout facilities shall include removing and disposing of hardened concrete and returning the facilities to a functional condition.

Hardened concrete materials shall be removed and disposed of in conformance with the provisions in Standard Specifications Section 7-1.13 or 15 3.02.

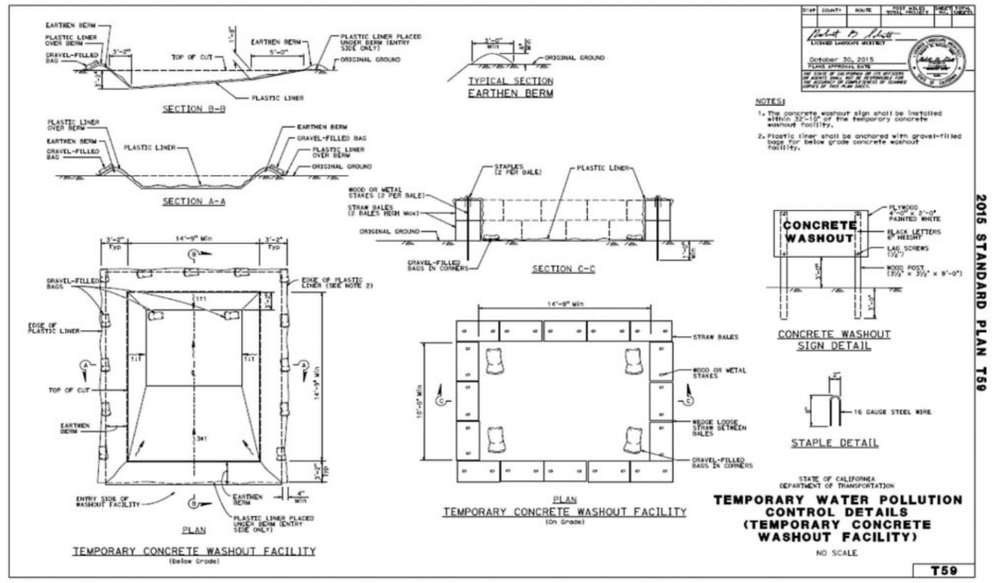
Existing facilities must be cleaned, or new facilities must be constructed and ready for use once the washout is 75% full.

Temporary concrete washout facilities shall be inspected for damage (i.e. tears in polyethylene liner, missing sandbags, etc.). Damaged facilities shall be repaired.

Inspection and Maintenance of these areas must be properly documented and ensure no potential for discharges occur from these areas as part of the non-visible monitoring requirements.

SWPPP or WPCP

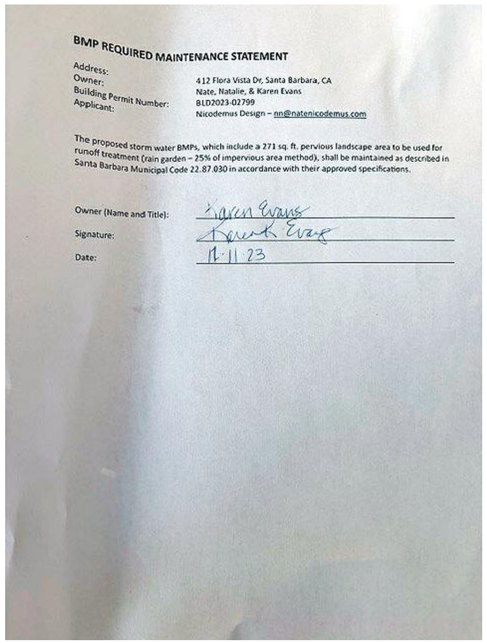
Concrete Waste Management must be discussed in Section 500.4.2 of the SWPPP or Section 30.3.2 of the WPCP.



City of Santa Barbara
EROSION / SEDIMENTATION CONTROL AND
STORMWATER QUALITY MANAGEMENT PROGRAM

Standard
BMP-5

BMP Required Maintenance:

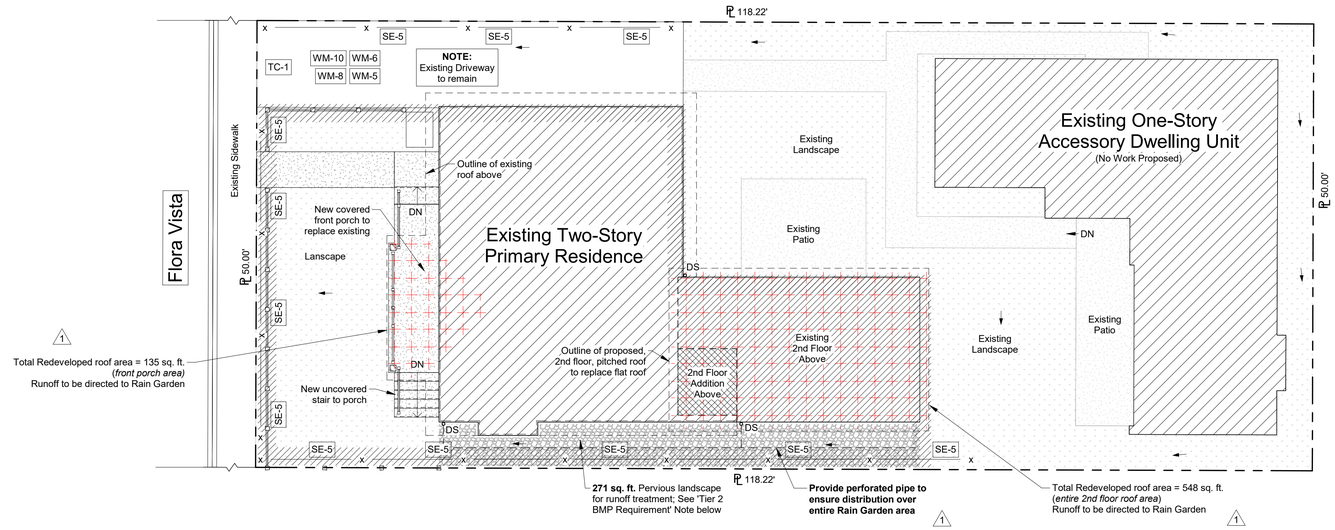


BMP REQUIRED MAINTENANCE STATEMENT

Address: 412 Flora Vista Dr, Santa Barbara, CA
Owner: Nate, Natalie, & Karen Evans
Building Permit Number: BLD2023-02799
Applicant: Nicodemus Design – nn@natenicodemus.com

The proposed storm water BMPs, which include a 271 sq. ft. pervious landscape area to be used for runoff treatment (rain garden – 25% of impervious area method), shall be maintained as described in Santa Barbara Municipal Code 22.87.030 in accordance with their approved specifications.

Owner (Name and Title): Karen Evans
Signature: Karen Evans
Date: 11.11.23



1 BMP Plan
1/8" = 1'-0"

Source Control BMPs:

3.1.7 Design Trash Storage Areas to Reduce Pollution Contribution
Trash storage areas shall:
- Be paved with an impervious surface designed to prevent run-on from adjoining areas and screened or walled to prevent off-site transport of trash.
- Contain attached lids on all trash containers to prevent rainfall intrusion.
- Contain a roof or awning, at the discretion of the City, for high usage trash areas such as those for fast food establishments, convenience stores, and high-density residential developments.

3.1.14 Use Non-Toxic Roofing Materials Where Feasible:
- Avoid the use of galvanized steel or copper for roofs, gutters, and downspouts
- If using such materials, reduce the potential for leaching of metals by applying a coating or patina
- Avoid composite roofing materials that contain copper

Legend

- Concrete
- Natural Stone Tile
- Landscape
- Site Drainage
- Limit of Work
- Rain Garden for runoff treatment
- Redeveloped Impervious Area (1)
- DS Downspout
- x — x — x Temporary Silt Fence

Tier 2 BMP Requirement - Runoff Treatment Area:

Per City of Santa Barbara Storm Water BMP Guidance Manual (page 61):
"One simple and inexpensive way to comply with Tier 2 requirements involves providing natural/vegetated/mulched area totaling at least 25% of tributary impervious surface area. Runoff shall be able to "access" the entire 25% treatment area to ensure maximum infiltration. The proposed permeable treatment area must have a slope less than 7%, and be at least 18" wide."

Proposed Redeveloped Impervious Area:	**683 sq. ft.**
2nd Floor Roof:	548 sq. ft. *(see roof plan 4/A3 & 1/BMP-6)*
Entry Porch Roof:	135 sq. ft. *(see plan 1/A3 & 1/BMP-6)*

683 sq. ft. x 0.25 = **170.75 sq. ft. Pervious Treatment Area Required**

Pervious Treatment Area Provided: 271 sq. ft. *(see southern side yard on Site Plan 1/A1 and 1/BMP-6)*

NOTE: See plans 4/A3 and 1/A3 for downspout locations. Runoff from downspouts to sheet flow over pervious landscape area; where sheet flow does not occur naturally, utilize a flow spreader such as a level spreader or disperser.

(1)

Low-Impact Development Design Practices:

All Standard Development Projects shall be subject to the LID BMP requirements detailed in this section. Additional LID requirements will apply to PDPs as outlined in section 4.4. The objectives of the Standard Development Project LID BMP requirements are to detain and filter runoff using natural features. Storm water retention for storm water reuse represents a potential added benefit of LID facilities, but is not specifically required as part of Standard Development Project LID requirements. The applicability of Standard Development Project LID BMP requirements varies depending on project characteristics such as development density, site location, or other land use issues. While certain landscaping LID features may be incorporated into a detached residential or commercial project, they may not fit into the development footprint of other projects, such as urban high-rise developments. Additional information regarding LID design approaches can be found in the Countywide Model SUSMP and the City's LID Design Manual (see Suggested Resources in Appendix A). LID strategies for Standard Development Projects include:

1. Optimize the Site Layout
To minimize storm water related impacts, apply the following design principles to the layout of newly developed and redeveloped sites.
- Utilize existing topography to optimize the site layout and reduce the need for grading. Development envelopes should be focused in the upper elevations of a site to promote sheet flow and natural surface drainage to BMPs or Integrated Management Practices (IMPs) located at lower elevations of the site (IMPs are discussed in detail in Appendix I of this manual).
- Where possible, conform the site layout along natural landforms, avoid excessive grading and disturbance of vegetation and soils, and replicate the site's natural drainage patterns. Set development sufficiently away from creeks, wetlands, and riparian habitats.

3. Disperse Runoff to Adjacent Landscaping
Project designs should direct runoff from impervious areas to adjacent landscaping areas. The design, including consideration of slopes and soils, must reflect a reasonable expectation that an inch of rainfall will soak into the soil and produce no runoff.

- Minimize directly connected impervious areas as follows:
  Drain rooftops into adjacent landscaping areas.
  Drain impervious parking lots, sidewalks, walkways, trails, and patios into adjacent landscaping areas.

Stormwater BMPs:

TC-1	Stabilized Construction Entrance (See Sheet BMP2)
SC-1	Temporary Silt Fence (See Sheet BMP3)
SE-5	Fiber Rolls (See Sheet BMP4)
SC-9	Straw Bale Barrier (See Sheet BMP4)
WM-8	Concrete Waste Management (See Sheet BMP5)
WM-9	Sanitary Waste Management
WM-8	Concrete Waste Management (See Sheet BMP5)

General Notes:

This drawing illustrates Best Management Practices (BMPs) that must be used at all construction sites in the City to protect storm drains and minimize pollution.

The following is a list of BMPs and pollution prevention measures that shall be implemented at all construction sites:

1) Conduct daily site cleanings.
2) Develop spill response and containment procedures.
3) Educate employees and subcontractors about BMPs.
4) Develop an erosion control plan for wind and rain.
5) Regularly maintain all BMPs at project site.

NICODEMUS DESIGN
8861 Villa La Jolla Dr.,
P.O. Box # 13367,
La Jolla, CA 92037
Phone: (760) 473-1041

DESIGNER:

Drawn By: NN

Drawing Date: October 10, 2023

Revisions:

revision	date	notes
1	12/13/23	Plan Check

PROJECT: Evans Remodel
412 Flora Vista, Santa Barbara, CA

SHEET TITLE: BMP Plan

DRAWING: BMP-6

PROJECT MATERIALS

Composite shingle roof to match existing:
GAF Timberline

Windows to match existing ADU;
Aluminum-Clad Wood Windows
by Lincoln; Black Exterior

Stucco to match existing ADU;
El Dorado by La Habra, Smooth

Evans Remodel

412 Flora Vista, Santa Barbara, CA

NN DESIGN

1) 412 Flora Vista - From Street (From West looking East)

Evans Remodel

412 Flora Vista, Santa Barbara, CA

NN DESIGN

2) 412 Flora Vista - Northwest Corner

Evans Remodel
412 Flora Vista, Santa Barbara, CA

NN DESIGN

3) 412 Flora Vista - From North looking South

Evans Remodel
412 Flora Vista, Santa Barbara, CA

NN DESIGN

4) 412 Flora Vista - From East looking West

Evans Remodel
412 Flora Vista, Santa Barbara, CA

NN DESIGN

5) 412 Flora Vista ADU - From West looking East

Evans Remodel
412 Flora Vista, Santa Barbara, CA

NN DESIGN

6) 412 Flora Vista ADU - From South looking North

Evans Remodel
412 Flora Vista, Santa Barbara, CA

NN DESIGN

7) 412 Flora Vista - From Cliff Drive (South looking North)

Evans Remodel

412 Flora Vista, Santa Barbara, CA

N DESIGN

8) 2336 Cliff Drive

Evans Remodel
412 Flora Vista, Santa Barbara, CA

N DESIGN

9) 416 Flora Vista Drive

Evans Remodel
412 Flora Vista, Santa Barbara, CA

NN DESIGN

10) 422 Flora Vista Drive

Evans Remodel
412 Flora Vista, Santa Barbara, CA

NN DESIGN

11) 419 Flora Vista Drive

Evans Remodel
412 Flora Vista, Santa Barbara, CA

NN DESIGN

12) 415 Flora Vista Drive

Evans Remodel
412 Flora Vista, Santa Barbara, CA

NN DESIGN

13) 409 Flora Vista Drive

Evans Remodel

412 Flora Vista, Santa Barbara, CA

N DESIGN

14) 2342 Cliff Drive

Evans Remodel
412 Flora Vista, Santa Barbara, CA

N DESIGN