

PLANNING PERMIT SET

108 OLEMA BOLINAS ROAD, BOLINAS, CA

PROJECT DATA

	EXISTING	PROPOSED
LOT AREA	1 ACRE	1 ACRE
BUILDING AREA	2,448 S.F.	2,466 S.F.
FLOOR AREA	1,768 SF	2,326 SF
FLOOR AREA RATIO	.04	.05
AREA OF ADDITIONAL DISTURBANCE		
IMPERVIOUS COVERAGE	TBD BASED ON DRIVEWAY	
PERVIOUS COVERAGE	TBD BASED ON DRIVEWAY	
PARKING		2 FOR HOUSE 1 FOR ADU
MINIMUM SETBACKS FOR EXTERIOR WALLS OF PROPOSED BUILDING AREA	20'-6"	20'-6"
MAXIMUM HEIGHT OF PROPOSED BUILDING		20'-0"

AREA CALCULATIONS

EXISTING:		PROPOSED:	
SHED 140		SHED 140	
HOUSE 1666		HOUSE 1931 + 18 ADDTN = 1949	
DECK 848		ADU 377	
GARAGE 642		DECK 153	
EXISTING HOUSE	1666 SF	PROPOSED HOUSE	1949 SF
EXISTING GARAGE	642 SF	PROPOSED ADU	377 SF
EXISTING DECK	848 SF	TOTAL	<u>2326 SF</u>
EXISTING SHED	140 SF	PROPOSED DECKS	740 SF
BUILDING AREA: 1666 + 642 + 140 =	2,448 SF		198 SF
FLOOR AREA: 1666 + 642 + 540 =	1,768 SF		153 SF
F.A.R. 1,768 / 1 ACRE =	.04	TOTAL	<u>1141 SF</u>
		SHED	140 SF
		BUILDING AREA: 1,949 + 377 + 140 =	2,466 SF
		FLOOR AREA: 1,949 + 377 =	2,326 SF
		F.A.R. 2,326 / 1 ACRE =	.05
		2,326 / 43,560 =	

PROJECT NOTES

OWNER: REBECCA BART & KATER MURCH
306 DE MUN AVE. ST. LOUIS MO 63105

STARTING JULY 2025:
108 OLEMA BOLINAS RD, BOLINAS, CA 94924

510-225-5314
607-316-3543

APPLICABLE CODES: 2022 CALIFORNIA RESIDENTIAL CODE (CRC)
2022 CALIFORNIA BUILDING CODE (CBC)
2022 CALIFORNIA MECHANICAL CODE (CMC)
2022 CALIFORNIA ELECTRICAL CODE (CEC)
2022 CALIFORNIA PLUMBING CODE (CPC)
2022 CALIFORNIA ENERGY CODE
2022 CALIFORNIA GREEN BUILDING STANDARDS CODE (CALGREEN)

SCOPE OF WORK: COMPLETE REHAB TURNING 2 BEDROOM, 1 BATH SINGLE FAMILY HOME WITH ATTACHED GARAGE, IN DISREPAIR, INTO 2 BEDROOM, 3 HALF BATH & 1 SHOWER ROOM, WITHIN SAME FOOTPRINT & 18 S.F. ADDITION AT LIVING ROOM, INCLUDING ATTACHED 1 BED, 1 BATH ADU; NEW DECKS, NEW WINDOWS, NEW ROOF WITH NEW DORMERS.

TYPE OF CONSTRUCTION: V-B

PARCEL NUMBER: 195-290-14

PARCEL SIZE: 1 ACRE

SPRINKLERS: YES / NO

ZONING: C-ARP-10

STRUCTURAL ENGINEER

TBD

CIVIL ENGINEER

TBD

SHEET INDEX

ARCHITECTURAL	
A0	COVER SHEET
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STRUCTURAL	
S1.0	TBD

SIGNATURE

**KATER MURCH
& REBECCA BART**
108 OLEMA BOLINAS ROAD
BOLINAS, CA 94924

SHEET NAME

COVER SHEET

DRAWING SCALE
AS NOTED

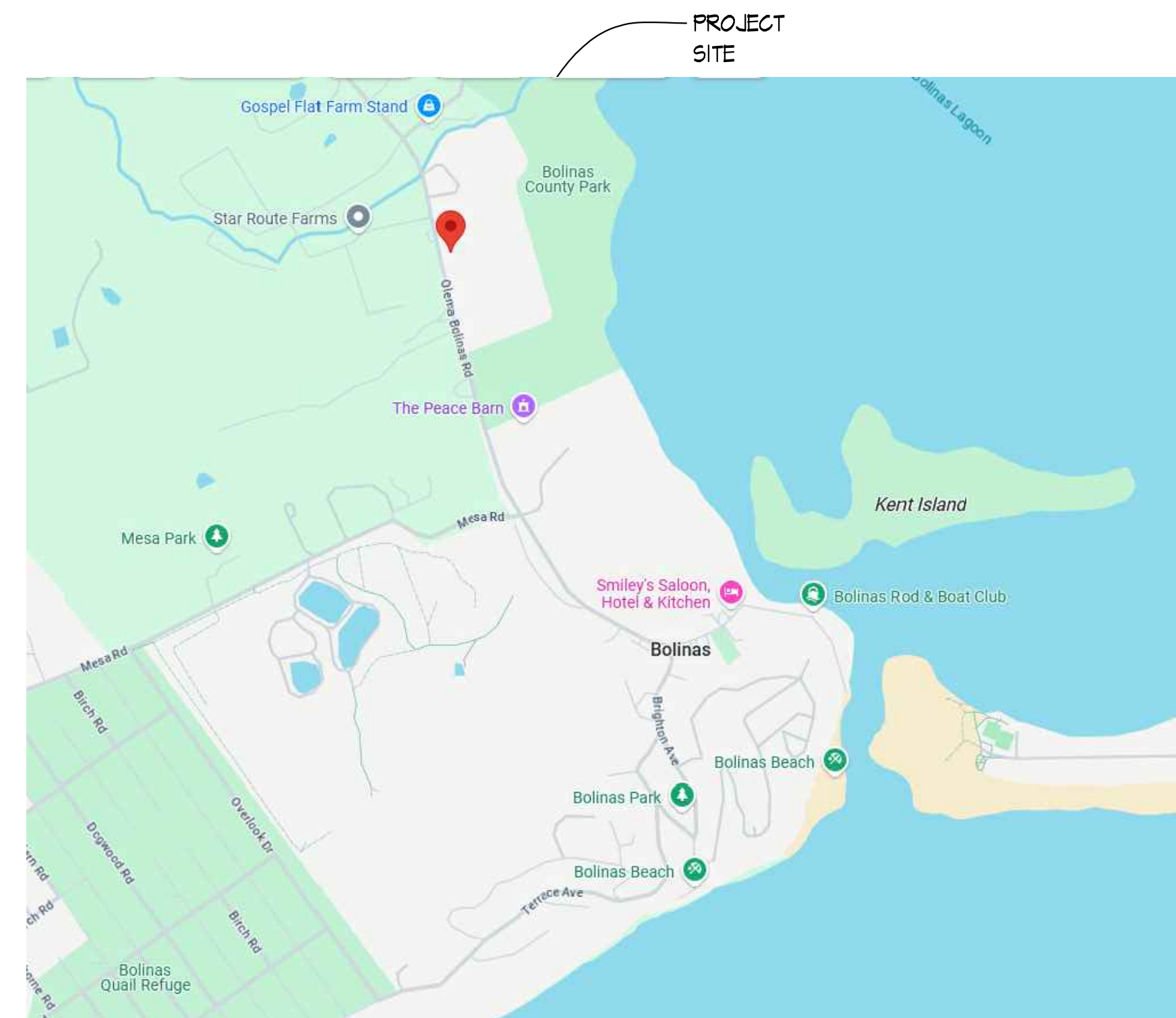
DRAWN:
KK

DATE:
05/20/2025

STATUS: PLANNING PERMIT

SHEET NUMBER

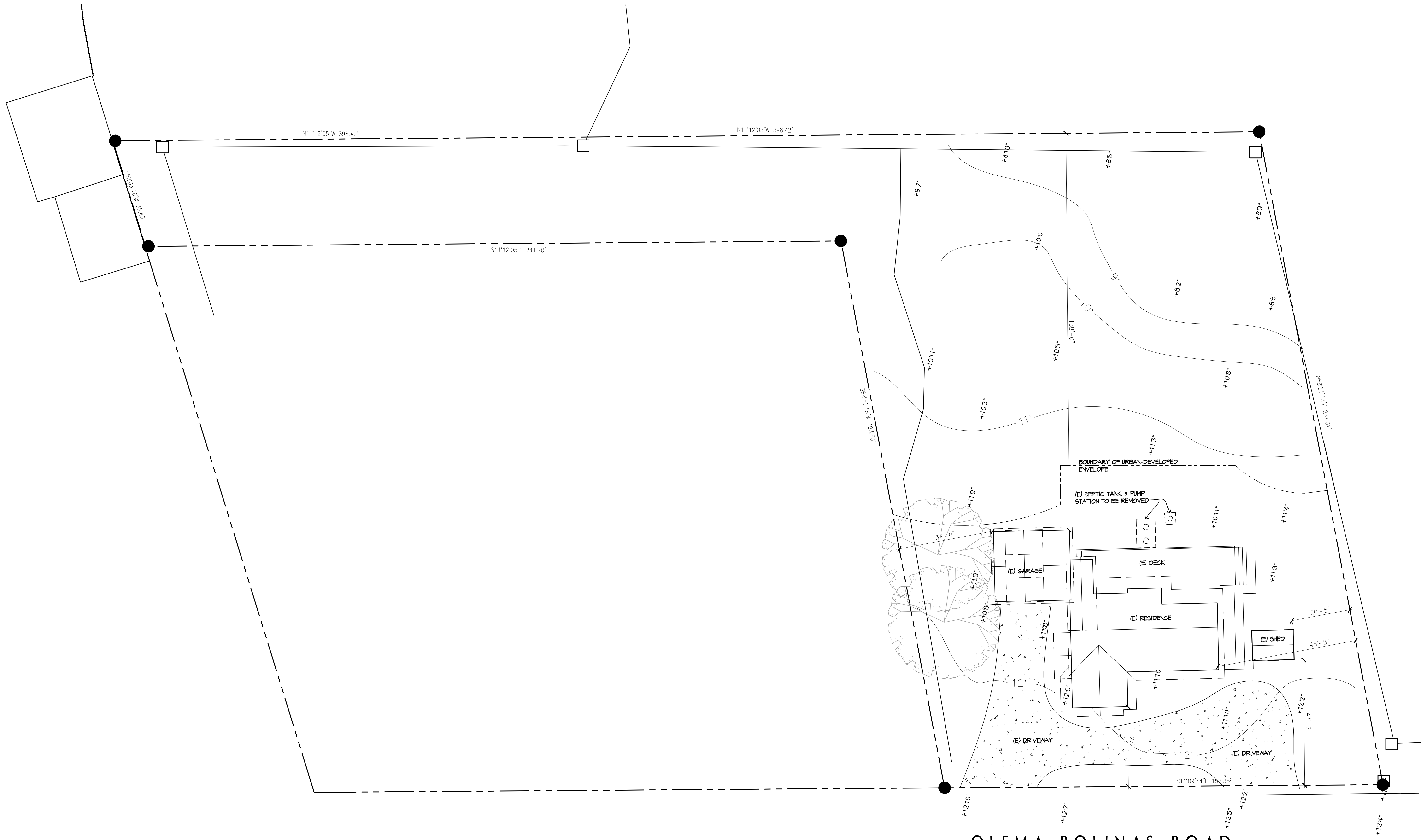
A0



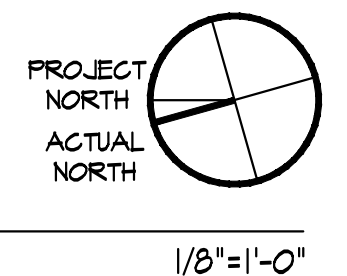
DIRECTIONS

DRIVE NORTH ON HWY 1 TO STINSON BEACH. CONTINUE NORTH ALONG THE BOLINAS LAGOON. AT THE NORTH END OF THE LAGOON, TURN LEFT ON THE FAIRFAX-BOLINAS ROAD. TURN LEFT ON OLEMA BOLINAS ROAD. DESTINATION WILL BE ON YOUR LEFT, ACROSS THE STREET FROM THE BOLINAS-STINSON UNION SCHOOL DISTRICT.

VICINITY MAP



EXISTING SITE PLAN



OLEMA BOLINAS ROAD

SIGNATURE

KATER MURCH & REBECCA BART
 108 OLEMA BOLINAS ROAD
 BOLINAS, CA 94924

SHEET NAME
 EXISTING SITE PLAN

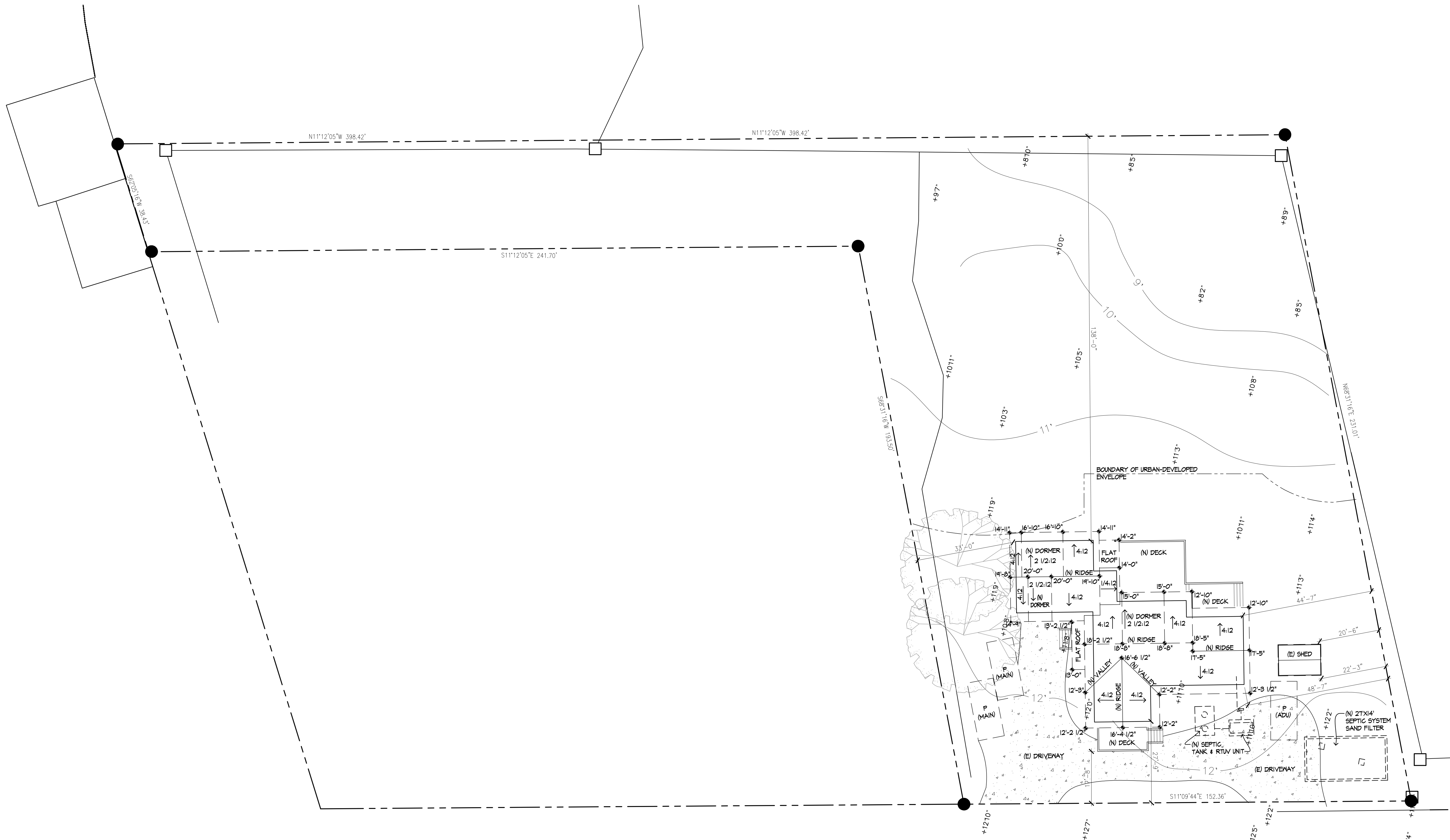
DRAWING SCALE
 1/8" = 1'-0"

DRAWN:
 KK

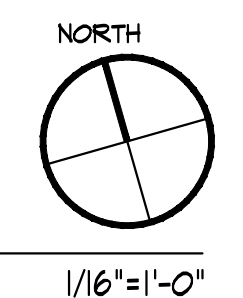
DATE:
 05/20/2025

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SHEET NUMBER
A1.1



PROPOSED SITE PLAN



OLEMA BOLINAS ROAD

SILVER LINING DESIGN || BUILD Co.
Intelligent design. Conscious Construction.
Carl Savitz
303-819-3086 License #1024550

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SHEET NAME
PROPOSED SITE PLAN

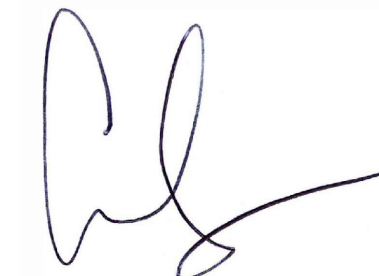
DRAWING SCALE
1/16" = 1'-0"

DRAWN: KK

DATE: 05/20/2025

STATUS: PLANNING PERMIT

SHEET NUMBER
A1.2

SIGNATURE


**KATER MURCH
 & REBECCA BART**
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SHEET NAME
 EXISTING
 MAIN
 FLOOR PLAN
 W/DEMOLITION

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

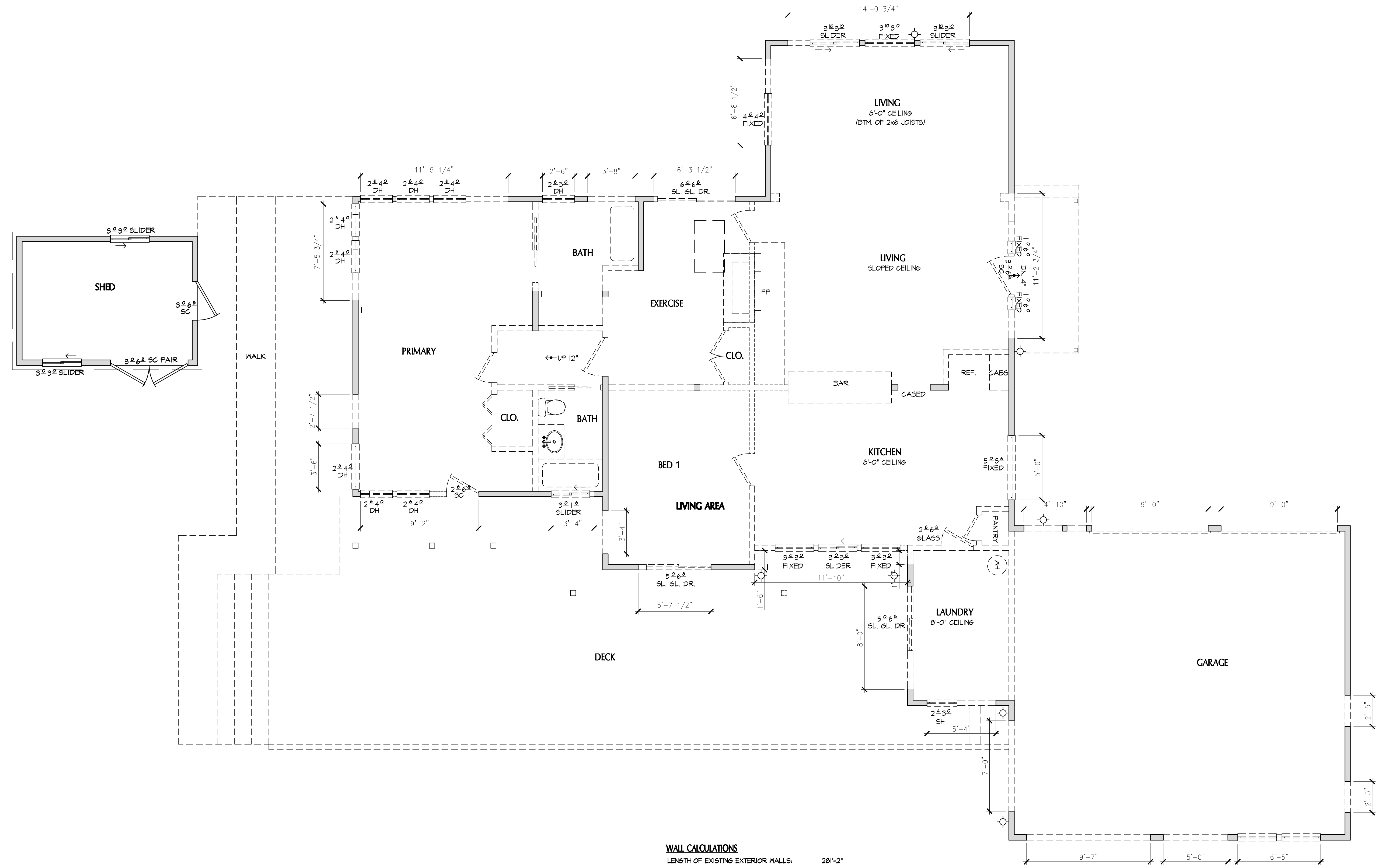
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DATE:
 05/20/2025

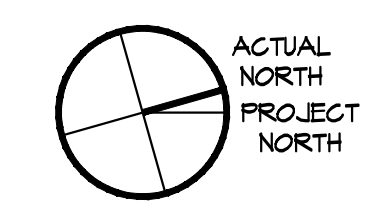
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SHEET NUMBER

A2.2

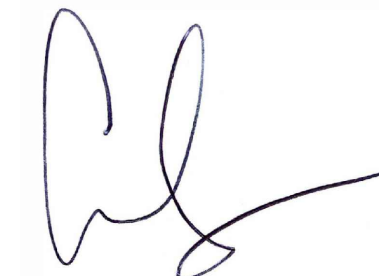


WALL CALCULATIONS
 LENGTH OF EXISTING EXTERIOR WALLS: 281'-2"
 LENGTH OF EXISTING EXTERIOR WALLS SHOWN TO BE DEMOLISHED: 180'-4 1/2"
WALL LEGEND
 ——— EXISTING WALLS
 - - - - - WALLS TO BE DEMOLISHED
 ALL DOORS, WINDOWS, FIXTURES, BUILT-INS AND FIREPLACES TO BE DEMOLISHED ARE SHOWN DASHED.



EXISTING MAIN FLOOR PLAN W/DEMOLITION

1/4" = 1'-0"

SIGNATURE


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SHEET NAME
PROPOSED ROOF PLAN

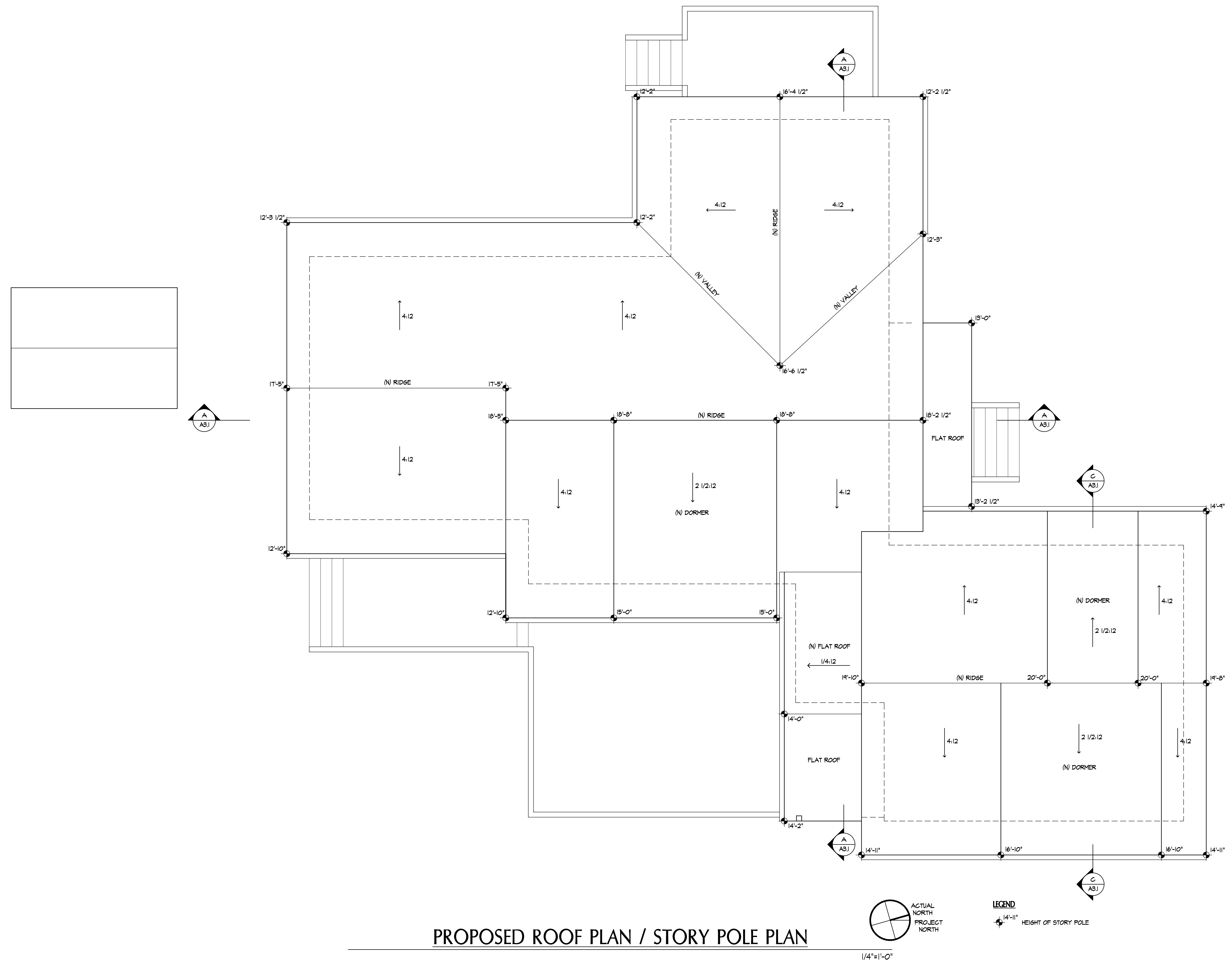
DRAWING SCALE
 1/4" = 1'-0"

DRAWN: KK

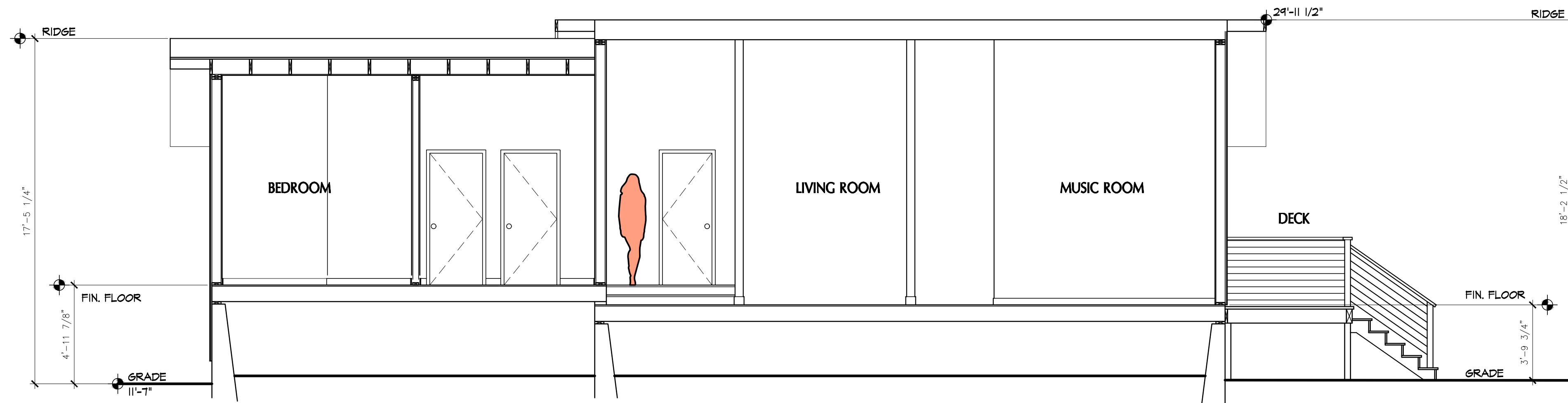
DATE: 05/20/2025

STATUS: PLANNING PERMIT

SHEET NUMBER
A2.4

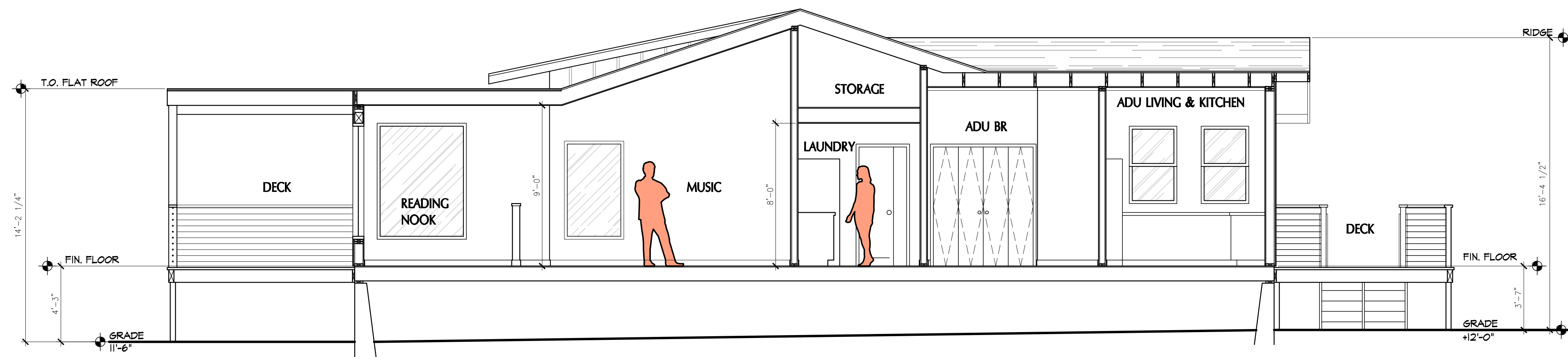


PROPOSED ROOF PLAN / STORY POLE PLAN



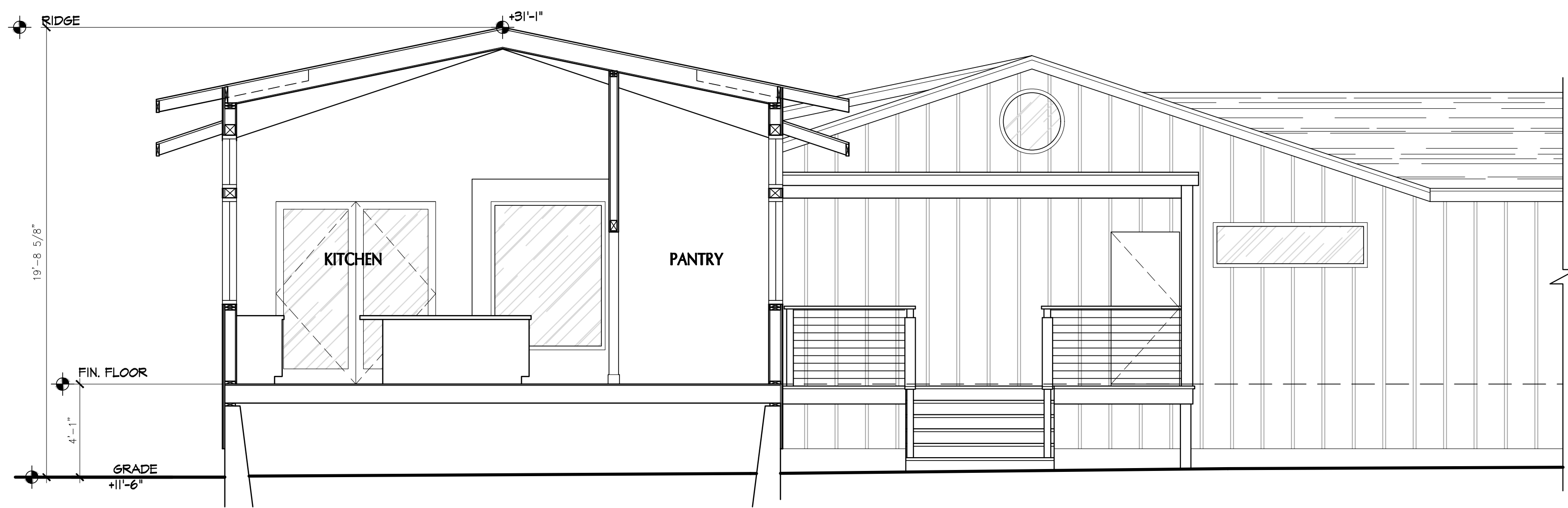
SECTION 'A'

1/4"=1'-0"



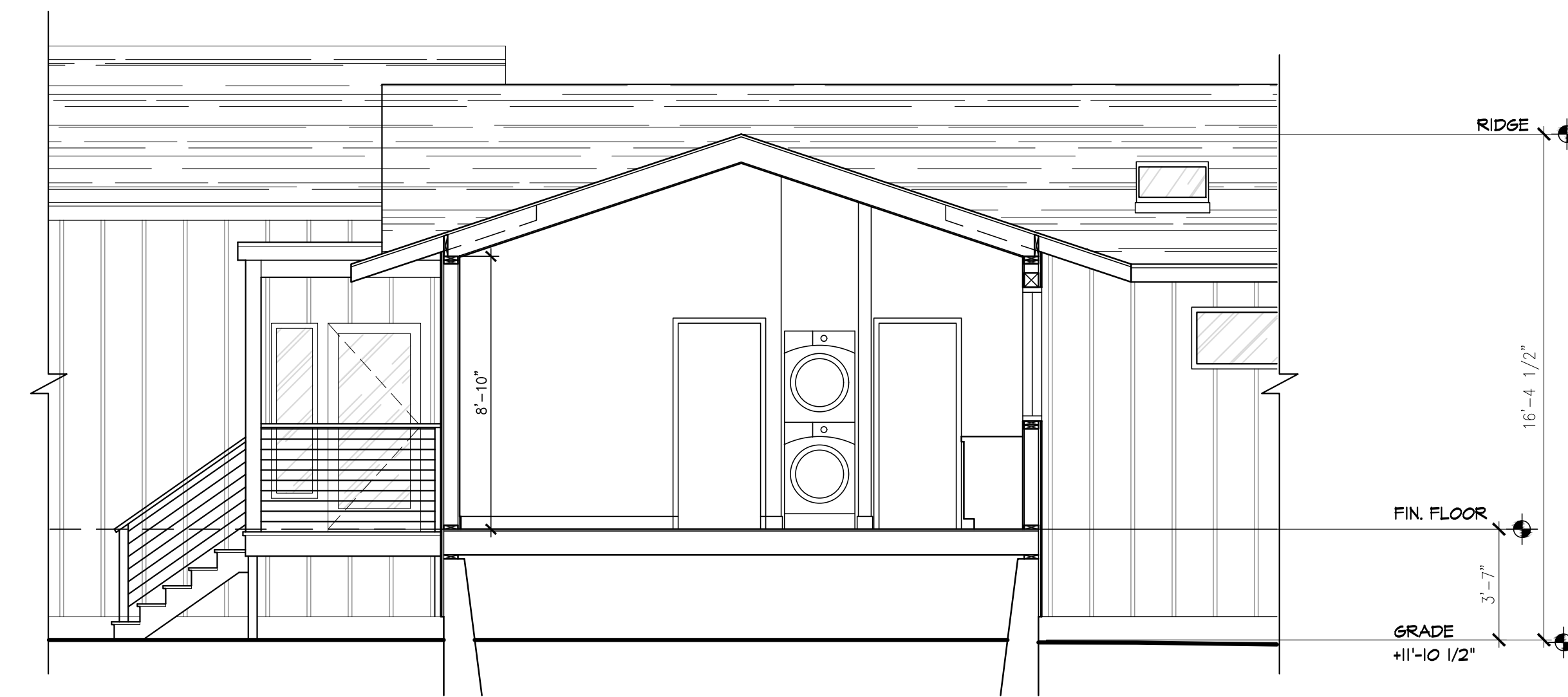
SECTION 'B'

1/4"=1'-0"



SECTION 'C'

1/4"=1'-0"



SECTION 'D'

1/4"=1'-0"

SIGNATURE

KATER MURCH
& REBECCA BART
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BOLINAS, CA 94924

SHEET NAME

SECTIONS

DRAWING SCALE

1/4" = 1'-0"

DRAWN:

KK

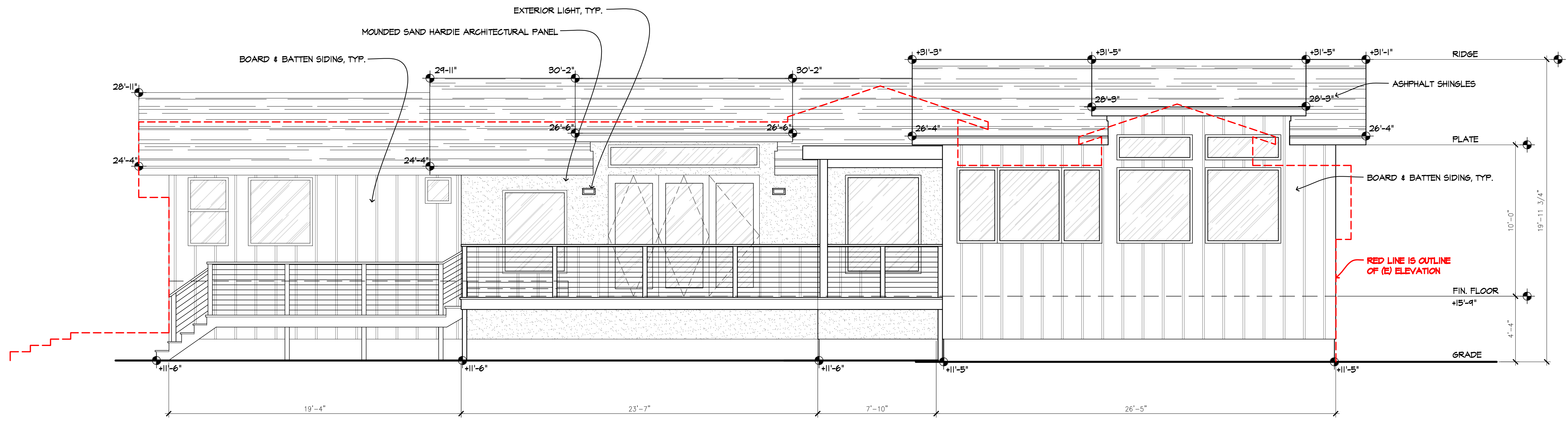
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05/20/2025

STATUS: PLANNING PERMIT

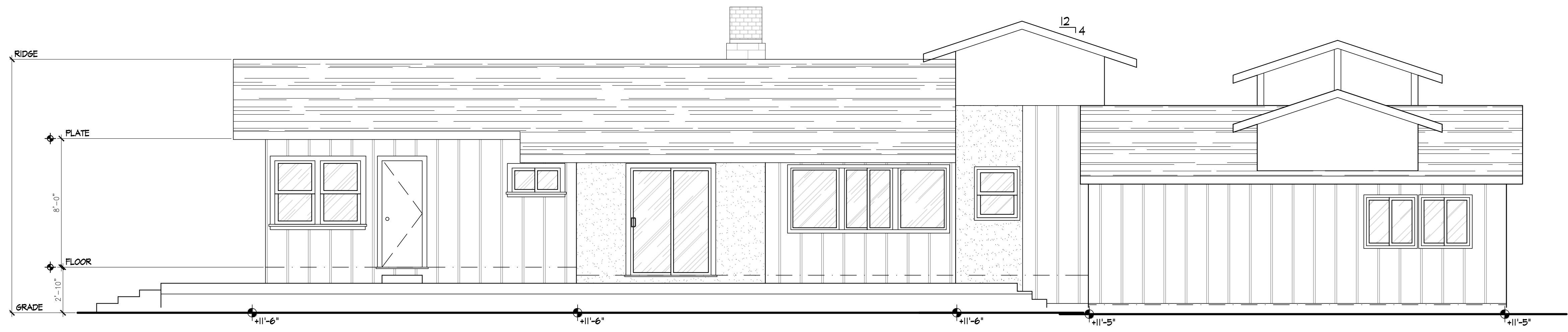
SHEET NUMBER

A3.1



PROPOSED EAST ELEVATION

1/4" = 1'-0"



EXISTING EAST ELEVATION

1/4" = 1'-0"

SIGNATURE

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 BOLINAS, CA 94924

SHEET NAME

EXTERIOR
 ELEVATIONS

DRAWING SCALE

1/4" = 1'-0"

DRAWN:

KK

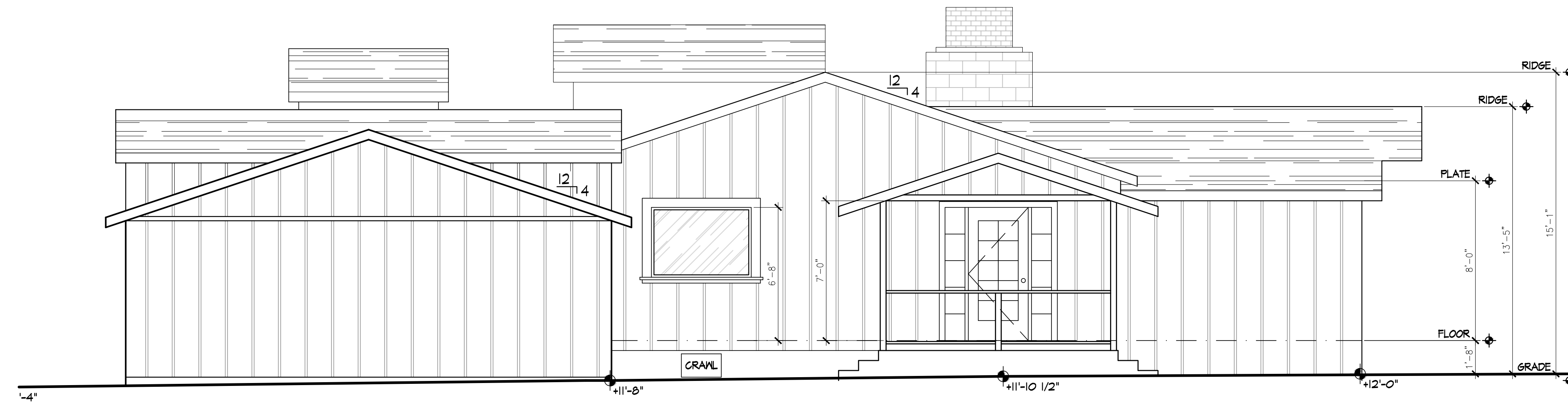
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05/20/2025

STATUS: PLANNING
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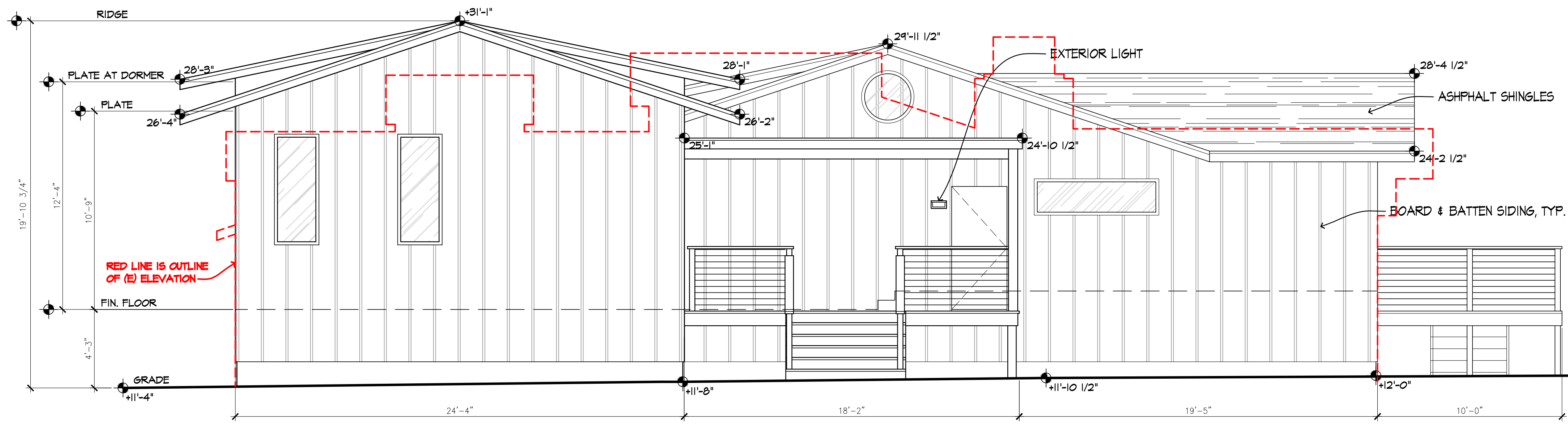
SHEET NUMBER

A4.1



EXISTING NORTH ELEVATION

1/4" = 1'-0"



PROPOSED NORTH ELEVATION

1/4" = 1'-0"

SIGNATURE

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 BOLINAS, CA 94924

SHEET NAME

EXTERIOR ELEVATIONS

DRAWING SCALE

1/4" = 1'-0"

DRAWN:

KK

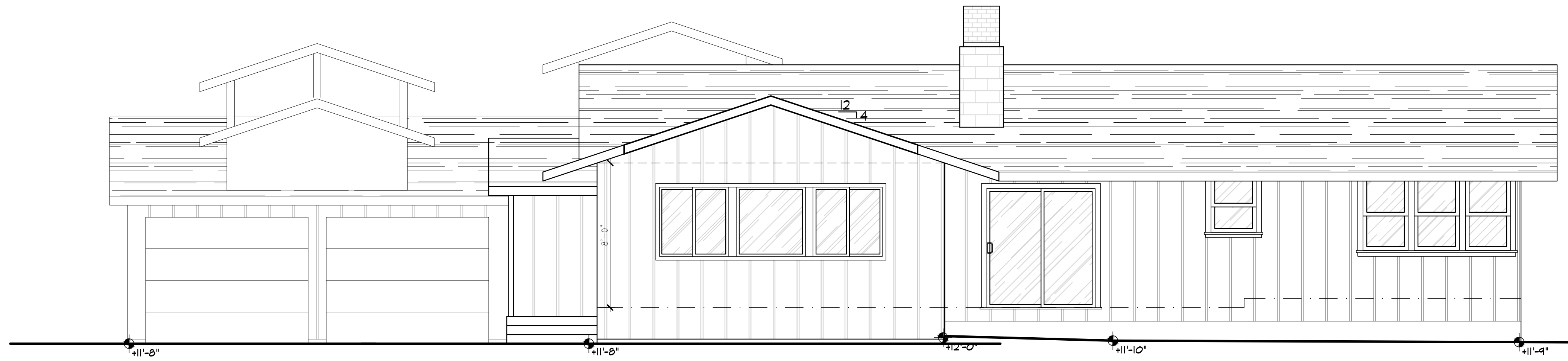
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05/20/2025

STATUS: PLANNING PERMIT

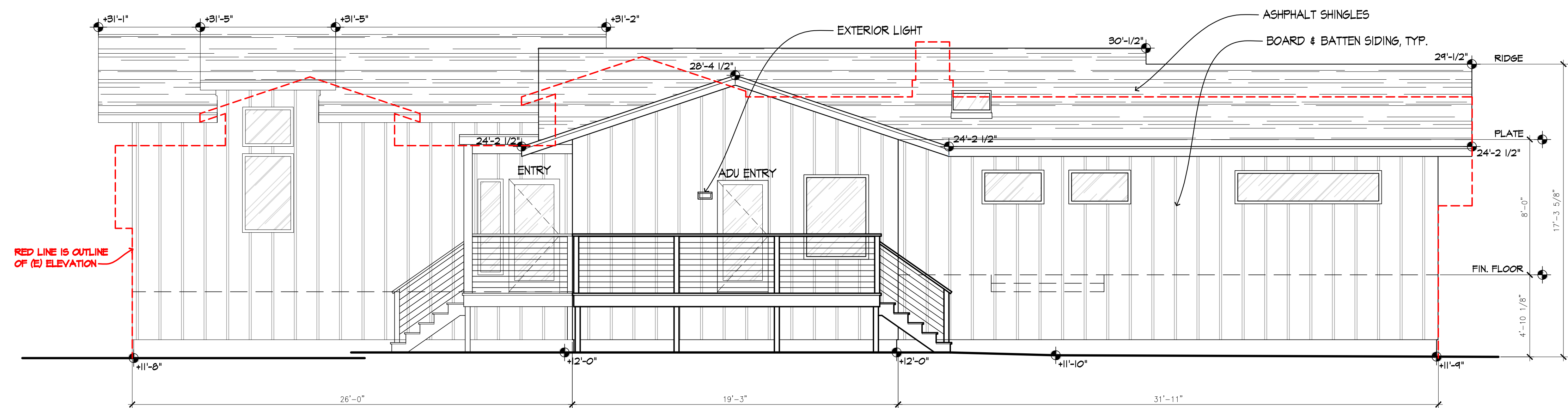
SHEET NUMBER

A4.2



EXISTING WEST ELEVATION

1/4" = 1'-0"



PROPOSED WEST ELEVATION

1/4" = 1'-0"

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 BOLINAS, CA 94924

SHEET NAME

EXTERIOR
 ELEVATIONS

DRAWING SCALE

1/4" = 1'-0"

DRAWN:

KK

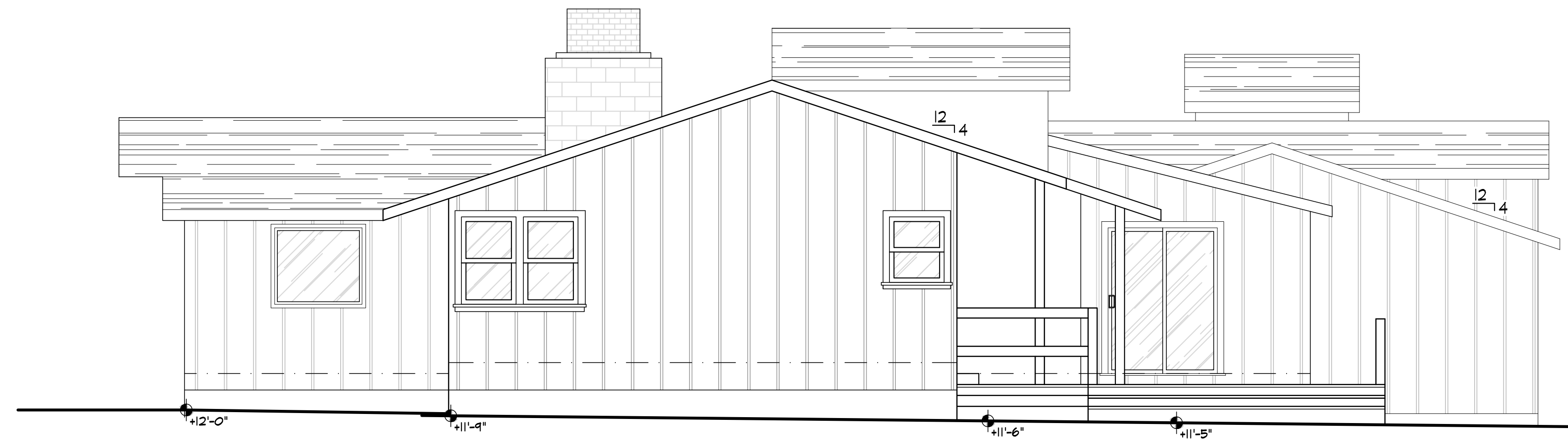
DATE:

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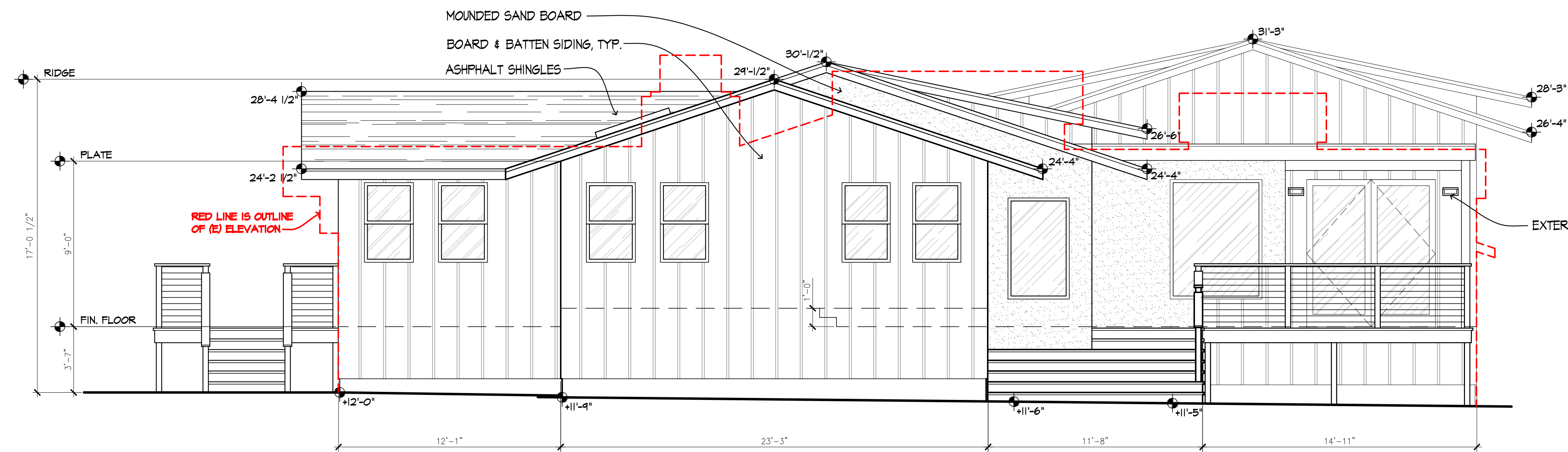
A4.3



EXISTING SOUTH ELEVATION

1/4" = 1'-0"

SIGNATURE



PROPOSED SOUTH ELEVATION

1/4" = 1'-0"

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 BOLINAS, CA 94924

SHEET NAME

EXTERIOR
 ELEVATIONS

DRAWING SCALE

1/4" = 1'-0"

DRAWN:

KK

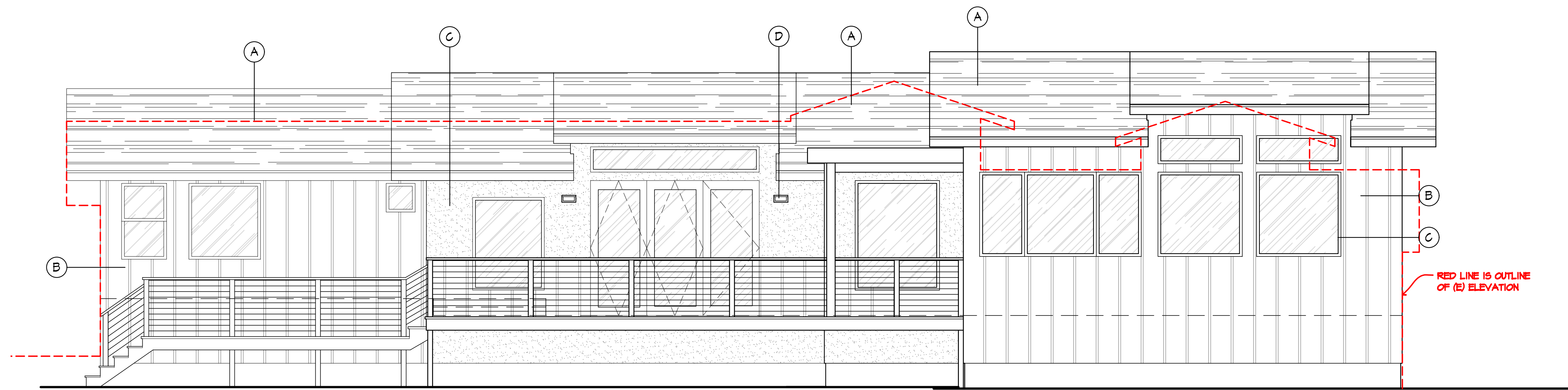
DATE:

05/20/2025

STATUS: PLANNING
 PERMIT

SHEET NUMBER

A4.4



PROPOSED WEST ELEVATION

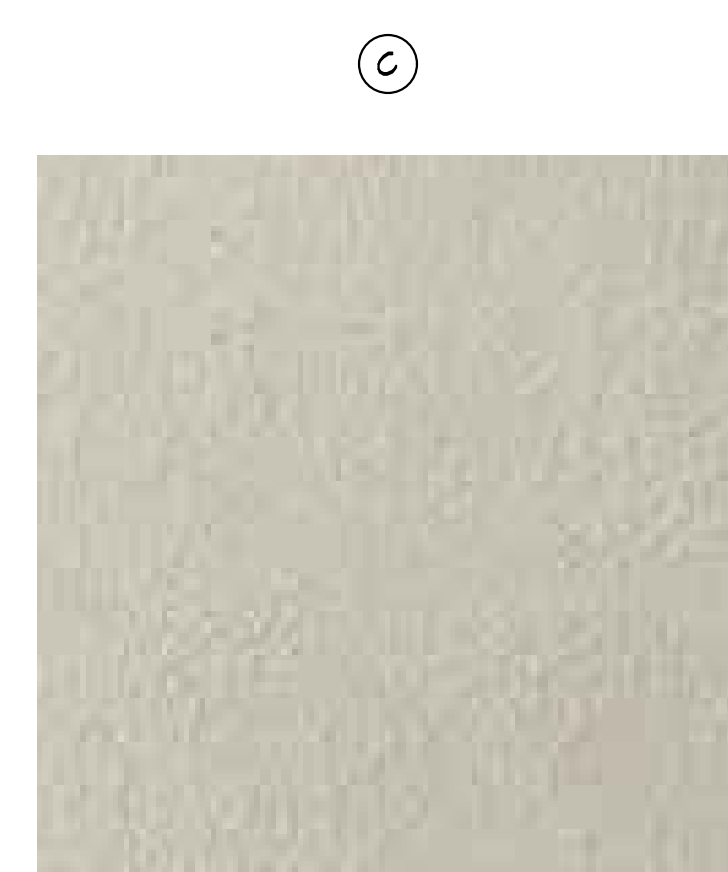
1/4" = 1'-0"



A
 TIMBERLINE NATURAL SHADOW
 FENTER GRAY
 ALGAE RESISTANT
 ARCHITECTURAL SHINGLES
 BY GAF



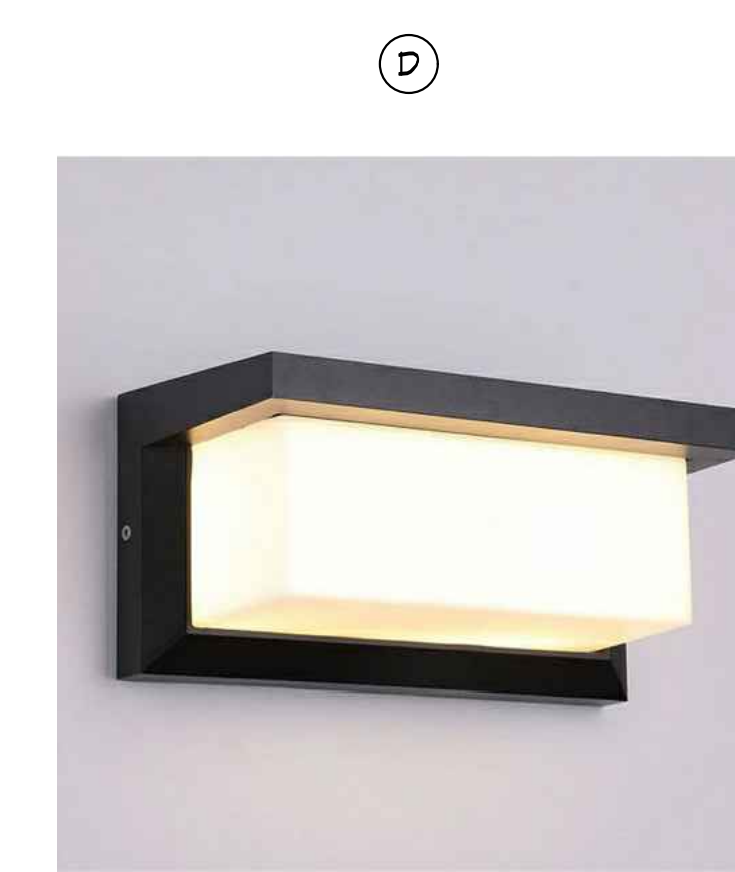
B
 SMOOTH FINISH
 BOARD & BATTEN
 BOOTHBAY BLUE
 HARDIE BOARD



C
 MOUNDED SAND
 HARDIE ARCHITECTURAL PANEL



D
 BLACK, MINIMAL, WINDOW TRIM



E
 EXTERIOR LIGHT FIXTURE
 HORIZONTAL LED OUTDOOR LIGHT
 BY FOCAL DECOR

COLORS & MATERIALS SCHEDULE

SIGNATURE

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 & REBECCA BART
 108 OLEMA BOLINAS ROAD
 BOLINAS, CA 94924

SHEET NAME

MATERIALS
 &
 COLORS

DRAWING SCALE

1/4" = 1'-0"

DRAWN:

KK

DATE:

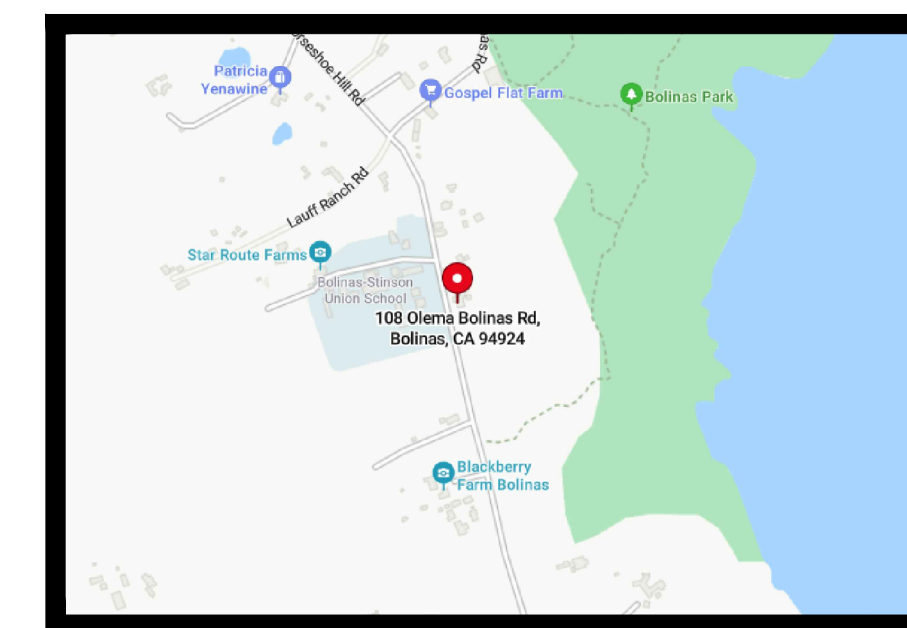
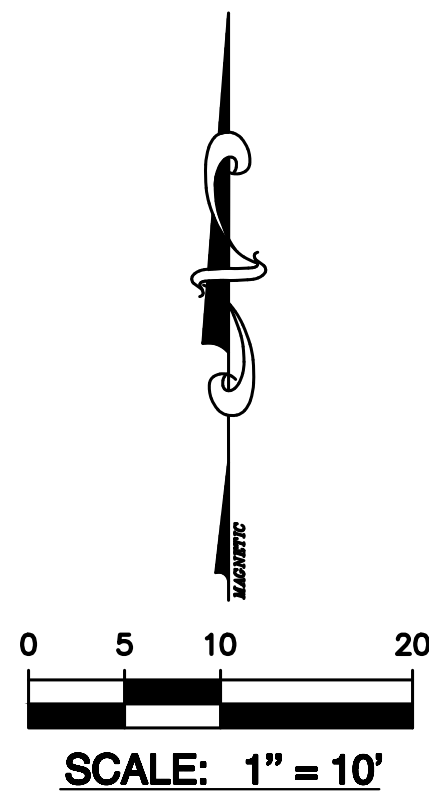
05/20/2025

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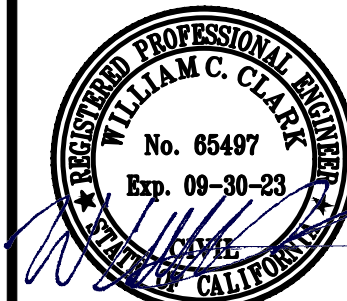
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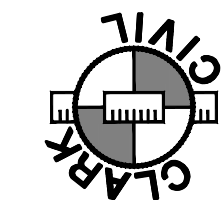
SEPTIC SYSTEM REPAIR 108 OLEMA BOLINAS RD, BOLINAS, CA 94924



VICINITY MAP



CLARK CIVIL ENGINEERING
DESIGN • CONSULTING • SURVEY
5500 Nicastro Valley Rd., Nicastro, CA 94946
PH: 415-295-4450 FAX: 510-372-0259



108 OLEMA BOLINAS RD,
BOLINAS, CA, 94924

APN: 195-290-14

MARIN COUNTY

SEPTIC SYSTEM REPAIR
TITLE SHEET

4-22-22 RG

- -

- -

- -

REVISIONS BY

JOB NO: 225013

DATE: 03-28-22

SCALE: AS NOTED

DESIGN BY: WCC

DRAWN BY: RG

SHEET NO:

SHEET INDEX

SEP-1 SEPTIC PLAN

SEP-2 NOTES

SEP-3 SAND FILTER DETAILS

SEP-4 DETAILS

SEP-1

SURVEY NOTE
BOUNDARY PROVIDED BY CARLSON SURVEYING
TOPOGRAPHIC INFORMATION PROVIDED BY OWNER
CONTRACTOR SHALL VERIFY GRADES PRIOR TO
CONSTRUCTION

CONSTRUCTION INSPECTION
THE CONTRACTOR SHALL NOTIFY CLARK CIVIL ENGINEERING PRIOR TO
CONSTRUCTION OF THE SYSTEM, AND SHALL NOTIFY CLARK CIVIL
ENGINEERING OF ON SITE MEETINGS FOR THE FOLLOWING PHASES AS
DESCRIBED BELOW. FAILURE TO CONTACT THE ENGINEER AS REQUIRED
MAY RESULT IN REMOVAL AND RE-INSTALLATION OF SYSTEM
COMPONENTS WITH THE ENGINEER PRESENT AT THE CONTRACTORS
EXPENSE.

THE CONTRACTOR SHALL NOTIFY THE ENGINEER AND COUNTY OF MARIN
REGISTERED ENVIRONMENTAL HEALTH SPECIALIST (REHS) IN A MINIMUM
OF 72 HOURS PRIOR TO CONSTRUCTION AND OBSERVATION OF THE
SYSTEM. ADDITIONAL COUNTY OF MARIN FEES WILL BE REQUIRED AFTER
5 SITE OBSERVATIONS. THE ENGINEER AND THE REHS SHALL OBSERVE
THE SYSTEM AT CRITICAL CONSTRUCTION PHASES AS FOLLOWS:

OBSERVE LOCATION/LAYOUT OF SAND FILTER, AND THE SEPTIC AND
SUMP TANKS. PRIOR TO ANY CONSTRUCTION.

OBSERVE SAND FILTER SAND & GRAVEL PRIOR TO INSTALLATION.

OBSERVE EXCAVATION FOR SAND FILTER INCLUDING FORMS, WALLS, AND
PUMP STATION.

OBSERVE THAT SOIL BENEATH SAND FILTER IS PROPERLY RIPPED AND
ON CONTOUR.

OBSERVE SAND FILTER LINER INSTALLATION INCLUDING LEVEL MARKINGS
OF VARIOUS SAND/GRAVEL/SOIL LAYERS.

OBSERVE SLEEVE ANALYSIS OF SAND FILTER SAND INCLUDING A
REPRESENTATIVE SAMPLE.

OBSERVE SAND FILTER PIPING PLACEMENT INCLUDING PERFORATION SIZE
AND SPACING.

OBSERVE SQUIRT TEST OF SAND FILTER.

OBSERVE CONTROL PANEL, FLOATS, AND CIRCUIT BREAKER FOR ENTIRE
SEPTIC SYSTEM.

OBSERVE FINISHED SEPTIC SYSTEM INCLUSIVE ANY NECESSARY EROSION
CONTROL MEASURES.

OBSERVE FLOOR PLAN OF STRUCTURE BEING SERVED BY THE SEPTIC
SYSTEM. OBSERVE, IF APPLICABLE, WHETHER LOX FLOW FIXTURES WERE
INSTALLED OR NOT.

PROVIDE REHS WITH BUILDING DEPARTMENT APPROVAL OF PUMP
INSTALLATION.

OBSERVE ANY ITEMS LISTED ABOVE WHICH HAVE NOT BEEN OBSERVED
YET.

PREPARATION FOR INSPECTIONS, OR FOR WORK TO BE DONE IN THE
PRESENCE OF THE ENGINEER AND ENVIRONMENTAL HEALTH SERVICES,
SHALL BE COMPLETED PRIOR TO THE INSPECTION REQUESTED. FAILURE
TO NOTIFY ENGINEER OR COUNTY REHS OFFICER OF ANY INSPECTION
SHALL RESULT IN A REFUSAL OF FINAL INSPECTION LETTER UNTIL
REQUIREMENTS OF ENGINEER AND REHS OFFICER ARE MET.



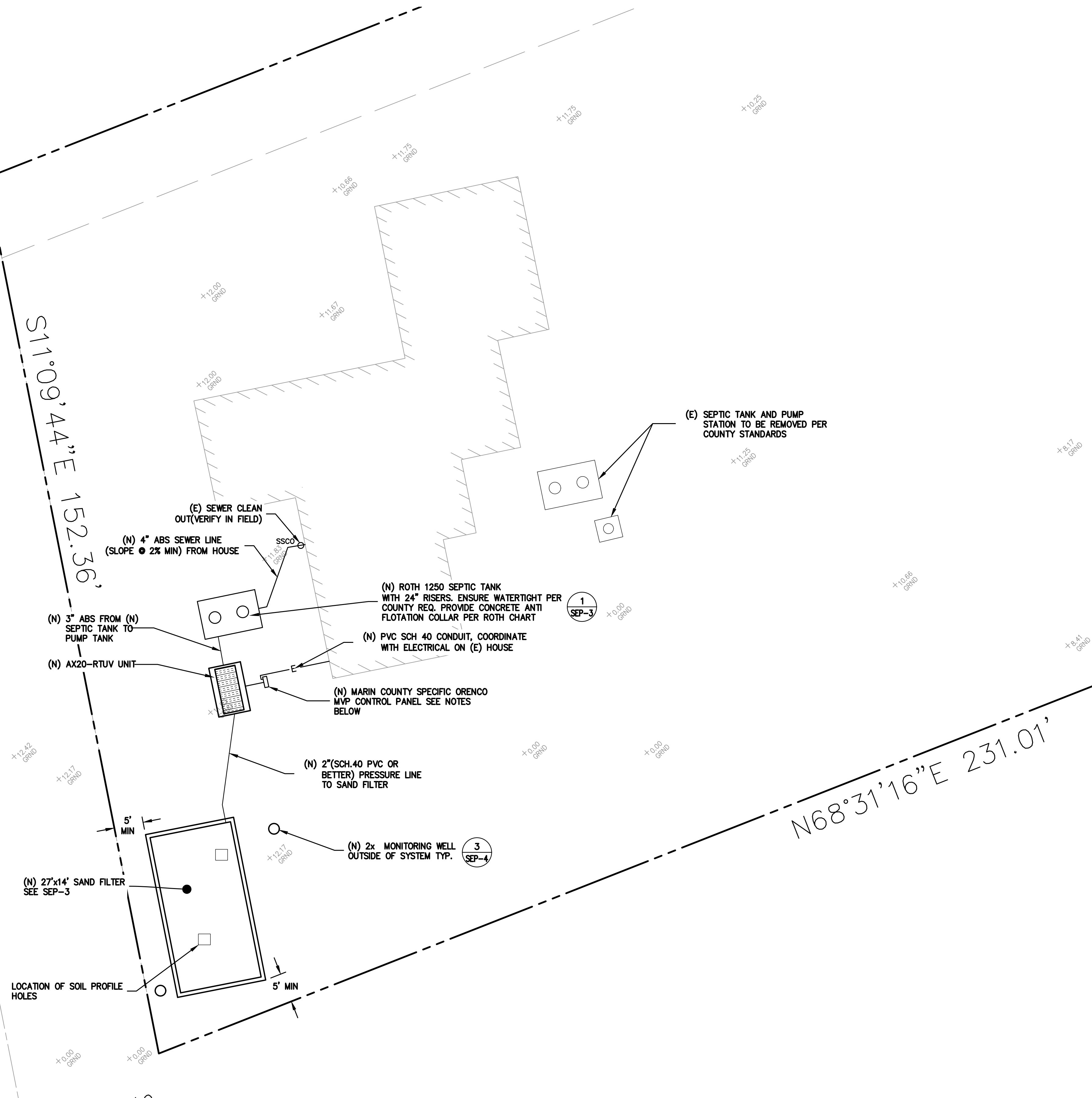
SHEET INDEX

SEP-1 SEPTIC PLAN

SEP-2 NOTES

SEP-3 SAND FILTER DETAILS

SEP-4 DETAILS



NOTE.
PROVIDE 10' SEPARATION FROM SEPTIC
SYSTEM TO ANY WATER LINE AS
REQUIRED BY MARIN COUNTY EHS. IF
THIS SETBACK CANNOT BE MAINTAINED,
THE WATER LINE SHALL BE SLEEVED
AND INSTALLED A MINIMUM OF ONE
FOOT ABOVE THE SEWER LINE.

NOTE.
ELECTRICAL CONDUIT SHALL BE PVC.
SEPERATE CONDUITS SHALL BE
PROVIDED FOR CONTROL WIRE AND
POWER SUPPLY. SEPERATE CIRCUITS
WITH INDIVIDUAL BREAKERS AT THE
MAIN PANEL SHAL BE PROVIDED FOR
THE CONTROL PANEL AND PUMP.

NOTE.
PROVIDE A SEPERATE
GROUNDWATER MONITORING FLOAT
ALARM INDEPENDENT OF CONTROL
PANEL.

315.51' BASIS OF
N11°09'44"W R20&M
N11°09'44"W 114.55' CR20&M
R21)

SEPTIC SYSTEM OWNER/USER NOTES

REASONABLE WATER CONSERVATION SHOULD BE PRACTICED WITHIN THE HOME TO FORESTALL PREMATURE FAILURE OF THE SYSTEM

THE SEPTIC TANK SHOULD BE PUMPED AND INSPECTED BY A LICENSED CONTRACTOR ON AN ANNUAL BASIS TO START. THE INSPECTION PERIOD MAY AND SHOULD BE VARIED DEPENDING ON THE ACCUMULATION OF SLUDGE FOUND. SLUDGE FORMING IN THE FIRST COMPARTMENT OF THE SEPTIC TANK MUST NOT BE ALLOWED TO ENTER THE SECOND COMPARTMENT WHERE IT COULD THEN FLOW TO THE SUMP AND BE PUMPED TO THE DISSIPATION TRENCHES. THIS COULD CAUSE PREMATURE FAILURE.

PERIODIC INSPECTION OF THE PUMP AND THE ELECTRICAL SYSTEM BY QUALIFIED PERSONNEL, IS STRONGLY RECOMMENDED.

IN THE EVENT OF SEEPAGE AROUND THE BASE OF THE SYSTEM, OR ANY OTHER SIGNS OF DISTRESS, THE CONTRACTOR, THE ENGINEER AND ENVIRONMENTAL HEALTH SERVICES SHOULD BE NOTIFIED, SUCH THAT THE PROBLEM MAY BE EVALUATED AND RECOMMENDATIONS MADE,

SEPTIC TANK AND DOSING SYSTEM INSPECTED ANNUALLY FOR SLUDGE BUILDUP AND LEAKAGE, LATERALS SHOULD BE PURGED AND BALANCED BI-ANNUALLY.

IF SLUDGE BUILDUP IN SEPTIC TANK IS 6 INCHES OR GREATER, HAVE TANK PUMPED.

MINIMIZE THE USE OF GARBAGE DISPOSAL UNIT BY COMPOSTING OR PACKAGING SCRAP TO TRASH.

DO NOT POUR GREASE DOWN DRAIN.

DO NOT DISCHARGE PAPER PRODUCTS; I.E. CIGARETTE BUTTS, DISPOSABLE DIAPERS, SANITARY NAPKINS, AND TISSUES.

DO NOT DISPOSE OF OILS, PAINT, AND THINNER DOWN WASTE LINES.

MINIMIZE LIQUID LOAD BY REPAIRING LEAKING FIXTURE. WASH CLOTHES WITH FULL LOAD.

DRAIN SURFACE WATER AWAY FROM SAND FILTER AREA.

IT IS NOT RECOMMENDED TO INSTALL A SPRINKLER SYSTEM OVER A SEPTIC SYSTEM. HOWEVER, IF A SPRINKLER SYSTEM IS INSTALLED WITHIN THE FLOW PATH OF THE SEPTIC SYSTEM, REGULAR OBSERVATION OF THE IRRIGATION SYSTEM SHOULD BE PERFORMED OTHERWISE FAILING SPRINKLER HEADS, VALVES, ETC. CAN CAUSE SIGNIFICANT PROBLEMS WITHIN THE SEPTIC SYSTEM

WATER SYSTEM REQUIREMENTS

LOW FLOW TOILETS USING A MAX. OF 1.6 GALLONS PER FLUSH SHALL BE INSTALLED IN ALL DWELLING ATTACHED TO SEPTIC SYSTEM.

LOW FLOW SHOWER HEADS USING A MAX. OF 2.0 GALLONS PER MINUTE SHALL BE INSTALLED IN ALL SHOWERS ATTACHED TO SEPTIC SYSTEM.

SYSTEM MONITORING REQUIREMENTS

SYSTEM MONITORING, BY THE ENGINEER, IS REQUIRED FOR 5 YEARS FOLLOWING THE START OF OPERATION AS FOLLOWS:

- YEAR 1: QUARTERLY
- YEAR 2: QUARTERLY
- YEAR 3: SEMI-ANNUALLY
- YEAR 4: SEMI-ANNUALLY
- YEAR 5: ANNUALLY

MONITORING REPORT WILL BE SUBMITTED TO ENVIRONMENTAL HEALTH SERVICES ANNUALLY. (DUE BY DECEMBER 30 EACH YEAR) CONTINUED MONITORING MAY BE REQUIRED ON EVALUATION OF SYSTEM PERFORMANCE.

PERMIT REQUIREMENTS

SUBSEQUENT TO CONSTRUCTION A PERMIT TO OPERATE THE SYSTEM IS REQUIRED. THIS OPERATING PERMIT IS VALID FOR A PERIOD OF 1 YEAR AND MUST BE RENEWED ANNUALLY. AND WILL BE ONGOING FOR THE LIFE OF THE SYSTEM. MONITORING & MAINTENANCE TO BE DONE BY A QUALIFIED PROFESSIONAL. ADDITIONALLY AN ELECTRICAL PERMIT FOR THE PUMP INSTALLATIONS WILL BE NECESSARY.

SITE SUITABILITY CRITERIA

Site Feature	Setback to Edge of	
	Tanks	Drainfield
Building	5 feet	10 feet
Adjoining Property Line (1)	5 feet	5 feet
Downslope Property Line (1)	10 feet	25 Feet
Wells (domestic or non-domestic)	100 feet	100 feet
Perennial Watercourse(2)	50 feet	100 feet
Ephemeral Watercourse (2)	50 feet	50 feet
Intermittent Watercourse (2)		
or Seasonal Wetland	50 feet	75 feet
Natural Lake, Wetlands or (3)		
Water Supply Reservoir	100 feet	200 feet
Ocean, Bay or Tidal Estuary (4)	50 feet	100 feet
Edge of Drainfield	5 feet	---
Downslope or Adjacent Cut,		
Embarkment or Natural Bluff (6)	10 feet	4h
Unstable Land Form	50 feet	50 feet
Swimming Pool	10 feet	25 feet
Domestic Water Line (7)	10 feet	10 feet
Driveway or Paved Surface	5 feet*	5 feet
Roadside Ditch (8)	15 feet	25 feet
Culvert	10 feet	15 feet

CONTRACTOR NOTES

ALL WORK SHALL BE DONE IN A WORKMANLIKE MANNER BY A LICENSED SANITATION SYSTEM CONTRACTOR (C-42), EXPERIENCED IN ALTERNATE SEPTIC SYSTEM CONSTRUCTION IN THE COUNTY OF MARIN, IN ACCORDANCE WITH THESE PLANS, UNIFORM PLUMBING CODE, UNIFORM BUILDING CODE, AND COUNTY OF MARIN STANDARD AND SPECIFICATIONS.

ANY AND ALL CONDITIONS OF APPROVAL OR ADDITIONAL WORK REQUIRED AS PART OF THE CONSTRUCTION PERMIT SHALL BECOME AND ARE HEREBY MADE PART OF THESE PLANS.

CONTRACTOR SHALL FURNISH ALL EQUIPMENT, LABOR, AND MATERIALS TO COMPLETE THE WORK WITHIN THESE PLANS TO THE SATISFACTION OF THE ENGINEER, ENVIRONMENTAL HEALTH SERVICES, AND THE OWNER.

CONTRACTOR SHALL BE RESPONSIBLE TO NOTIFY THE ENGINEER, ENVIRONMENTAL HEALTH SERVICES AND/OR OTHER APPROPRIATE AGENCIES 72 HOURS PRIOR TO CONSTRUCTION AND OBSERVATION OF THE SYSTEM. THE ENGINEER SHALL OBSERVE THE SYSTEM AT CRITICAL CONSTRUCTION PHASES AS FOLLOWS AND SHALL BE USED AS STEPS FOR THE CONTRACTOR TO INSTALL THE SYSTEM:

CUT GRASS IN SAND FILTER AREA AS LOW AS POSSIBLE. EXCAVATE 18" FOR SAND FILTER SUCH THAT THE BOTTOM AREA IS LEVEL WITH NO DROP.ANY SMEARED SIDEWALLS SHALL BE SCARIFIED AND THE LOOSE MATERIAL REMOVED FROM THE BOTTOM.

INSTALL RETAINING WALL PER PLAN. INSTALL 30 MIL LINER AND MARK SAND, GRAVEL, AND TOPSOIL LEVELS.

INSTALL 24" SAND AND 6" PEAGRAVEL TO PROPER DEPTH AND PLACE PERFORATED PIPE WITH HOLES FACING UPWARD. (PIPE MAY BE GLUED AT THIS STAGE.)

LOAD SUMP WITH WATER AND OBSERVE PUMP OPERATION. CHECK LATERALS TO SEE IF UNIFORM DISTRIBUTION IS OCCURRING THROUGHOUT LATERALS.

UPON COMPLETION OF OBSERVATION, INSTALL LATERAL PERFORATION SHIELDS AND ALL JOINTS SEALED OR GLUED.

PLACE ANOTHER 3" OF PEAGRAVEL OVER LATERALS, INSTALL SILT BARRIER AND BACKFILL REMAINING TRENCH WITH NATIVE SOIL.

CONTRACTOR SHALL BE RESPONSIBLE TO ASCERTAIN THE LOCATION AND DEPTH OF ALL EXISTING UTILITIES WITHIN THE WORK AREA. ANY DISRUPTED SERVICE SHALL BE RESTORED IN A TIMELY MANNER.

TANKS SHALL BE CERTIFIED WATERPROOF, VIA TESTING. EXISTING RISERS SHALL BE REPLACED WITH WATERPROOF RISERS AND COVERS, "ORENCO" O.A.E., SHALL BE PROVIDED TO 2" ABOVE THE GROUND SURFACE FOR ACCESS.

CONTROL PANEL FOR THE PUMP SHALL BE CONTROLLED BY A ORENCO VERICOMM OR MVP CONTROL PANEL, THE PANEL SHALL PROVIDE FOR FLOAT SWITCHES, AND AN AUDIOVISUAL ALARM. THE CONTROL PANEL SHALL BE WATERPROOF AND SHALL CONTAIN: A HAND-OFF-AUTO SWITCH, AN ALARM, A FUSE DISCONNECT, A MOTOR PROTECTION SWITCH, AN EVENT COUNTER AND RUN TIMER. AUDIO, VISUAL ALARMS SHALL BE PROVIDE AND MEANS OF SILENCING THE ALARM SHALL BE PROVIDED. THE PANEL SHALL BE MOUNTED ON THE BUILDING SERVED IF LOCATED WITHIN 20 FEET OF THE SUMP, OTHERWISE THE CONTROL PANEL SHALL BE MOUNTED ON A PIPE STAND OR WOODEN POST. THE ALARM SHALL BE WITHIN THE BUILDING SERVED AS DIRECTED BY THE OWNER AND AS APPROVED BY THE ENVIRONMENTAL HEALTH SERVICES, INSTALLED AND CONNECTED BY THE BUILDING ELECTRICIAN. SEPARATE DEDICATED CIRCUITS SHALL BE PROVIDED FOR THE ALARMS AND FOR THE FLOAT ASSEMBLIES.

ELECTRICAL CONDUITS SHALL BE PVC. SEPARATE CONDUITS SHALL BE PROVIDED FOR CONTROL WIRE AND POWER SUPPLY.

PRESSURE PIPING, VALVES, AND FITTINGS SHALL BE PVC, SCHEDULE 40 MIN., OF THE SIZE NOTED IN THE PLANS. JOINTS SHALL BE GLUED WITH SOLVENT CEMENT UNLESS OTHERWISE APPROPRIATE. CONCRETE THRUST BLOCKS WEIGHING 25 POUNDS SHALL BE PROVIDED AT ALL ABRUPT TURNS IN PIPING.

A UNION, SWING CHECK VALVE, AND DOUBLE WEDGE GATE VALVE MOUNTED IN THIS ORDER (AWAY FROM THE PUMP) IS REQUIRED EITHER IN THE SUMP OR ADJACENT TO THE SUMP IN A CONCRETE BOX.

VALVE BOXES SHALL BE PRECAST CONCRETE WITH LIDS MARKED "SEWER". BOXES SHALL BE SET PLUMB, CENTERED OVER THE VALVE OR BLOW-OFF, AND MORE OR LESS FLUSH WITH SURFACE..

SAND SPECIFICATIONS: THE SAND MEDIA SHALL BE A MEDIUM TO COURSE SAND WHICH MEETS THE FOLLOWING GRADATION SPECIFICATIONS:	
SIEVE SIZE	PERCENT PASSING:
3/8"	100%
#4	90-100%
#10	62-100%
#16	45-82%
#30	25-55%
#50	5-20%
#60	0-10%
#100	0-4%
#200	0-2%

A CERTIFICATION OF GRADATION SHALL BE PROVIDED BY THE SUPPLIER ON DELIVERY TO SITE. A COPY SHALL BE FORWARDED TO THE ENGINEER AND COUNTY. CONTRACTOR SHALL NOT ACCEPT DELIVERY WITHOUT A CERTIFICATE.

LATERALS SHALL BE 1 1/4" DIAMETER PVC PIPE WITH 1/8" ORIFICES DRILLED ALONG THE CROWN AT 24" ON CENTER BEGINNING AND ENDING 12" FROM THE ENDS OF THE TRENCH. ORIFICE CAPS SHALL BE PROVIDED TO PROTECT EACH ORIFICE.

WHERE WATER LINES CROSS SEWER LINES THE WATER LINE SHALL CROSS 1 FOOT MINIMUM ABOVE THE SEWER LINE. THE SEWER LINE SHALL BE SLEEVED 10 FEET IN EACH DIRECTION.

A SEPARATION OF 10 FEET SHALL BE MAINTAINED BETWEEN WATER LINES AND THE EDGE OF THE LEACH FIELD. WATER LINES SHALL NOT BE PLACED DOWN SLOPE FROM THE LEACH FIELD.

ALL WORK SHALL BE IN CONFORMANCE WITH THE COUNTY OF MARIN'S MOST RECENT REGULATIONS FOR DESIGN AND CONSTRUCTION OF INDIVIDUAL SEWAGE DISPOSAL SYSTEM.

ALL SEWER CONNECTIONS SHALL BE IN ACCORDANCE WITH THE MOST RECENT EDITION OF THE UNIFORM PLUMBING CODE.

SEWER LINE FROM BUILDING TO SEPTIC TANK SHALL BE 4" MINIMUM ABS OR AN APPROVED EQUIVALENT. MINIMUM SLOPE FROM FROM BUILDING TO TANK SHALL BE 2% CLEANOUTS TO BE INSTALLED AT LEAST 5 FEET FROM BUILDING. ALL OTHER PIPING FROM THE SEPTIC TANK TO SAND FILTER SHALL BE SCHEDULE 40 PVC PIPING.

NO WORK SHALL BE PERFORMED DURING THE WET SEASON AND ALL EXCAVATION SHALL BE PERFORMED WHEN SOIL CONDITIONS ARE DRY OR UPON APPROVAL OF THE ENGINEER.

THE SEPTIC TANK SHALL BE WATERTIGHT AND TESTED FOR ANY LEAKAGE AS DESCRIBED BELOW. IF THERE ARE LEAKS, INTERIOR SEAMS SHALL BE SEALED WITH THEROSEAL. FIBERGLASS TANKS MUST BE APPROVED BY THE COUNTY SANITARIAN PRIOR TO THE INSTALLATION.

EROSION PROTECTION IN THE SAND FILTER AREA SHALL BE REQUIRED UPON COMPLETION OF INSTALLATION AND OBSERVED BY THE ENGINEER. USE STRAW COVER OR HYDROSEED.

INSPECTION WELLS SHALL BE INSTALLED IN SAND FILTER AS SHOWN ON PLAN SEP-1 AND DETAIL SEP-2

CONTRACTOR NOT TO OVER-EXCAVATE THE DELIVERY LINE TRENCH. MAXIMUM DEPTH FOR DELIVERY LINE SHALL BE 24 INCHES.

ALL DRAINAGE (I.E. DOWNSPOUTS, AREA DRAINS, ETC.) TO DRAIN AWAY FROM THE SEPTIC SYSTEM.

SEPTIC AND SUMP TANK WATERTIGHTNESS TEST

FILL SEPTIC AND SUMP TANK 2" INTO THE RISERS.

MEASURE AND MARK WATER LEVEL.

AFTER 24 HOURS IF THE ELEVATION DROPS, TANKS HAVE FAILED AND SHALL BE REPLACED OR PROPER SEALANTS TO BE APPLIED TO CORRECT ANY LEAKS.

STEPS 1 THROUGH 3 SHALL BE REPEATED AFTER CORRECTIONS HAVE BEEN MADE.

TEST SHALL BE CONDUCTED UNDER SUPERVISION OF SANITARIAN OR DESIGN ENGINEER.

CALCULATIONS

Pump size SEE BELOW

Q= 31 GPM

H= 29 FEET

Bottomless Sand filter calculations

Soil Texture	sandy loam	
Application rate	1.2 Gal/sqft/day	
Slope	1%	

Loading	3 bedrooms	150 Gal/day=	450 Gallons
		30% reduction for lowflow fixtures=	315 Gallons
		LOW FLOW USED? NO	

Application rate	1.2 Gal/sqft/day		
required sand filter area	450 /	1.2 =	375 sqft
Proposed Sand filter area	27 x	14 =	378 sqft
			OK

Discharge rate to sand filter

6 laterals @	24	" Spacing
1.25 inch dia. Pipe		
1/8 perforations at 24" oc		
5 ft operating head		
18" Max spacing from end		
12 perforations per lat.		
6 laterals		
Qperfl = 12.4*perf dia*head^2=		0.433

Qtotal/No. laterals			
Qper latera	= Qperfl * No. of laterals * perf per lat		5.2 gpm per lat
Qtotal			31.2 gpm
	use		31.2 gpm

Friction loss

2 inch	
Main transfer line	20 feet
Length	1.88 foot/100 ft
loss per 100 foot	0.38 foot
Loss	0.0752
Lateral loss	1.25 inch
Diamenter lateral	2.8125 feet
Length	0.44
loss per 100 feet	0.01 Foot
loss	2.00475
Pump Loss	31.19314829 gpm
Q	2 inch
Outlet	(0.015* Q^2)/outlet dia^4
Pump loss	1.30 Ft

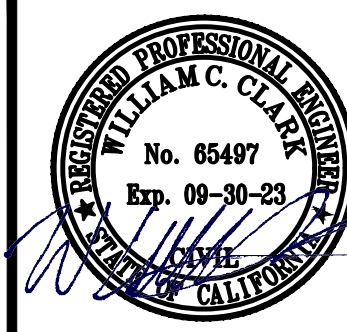
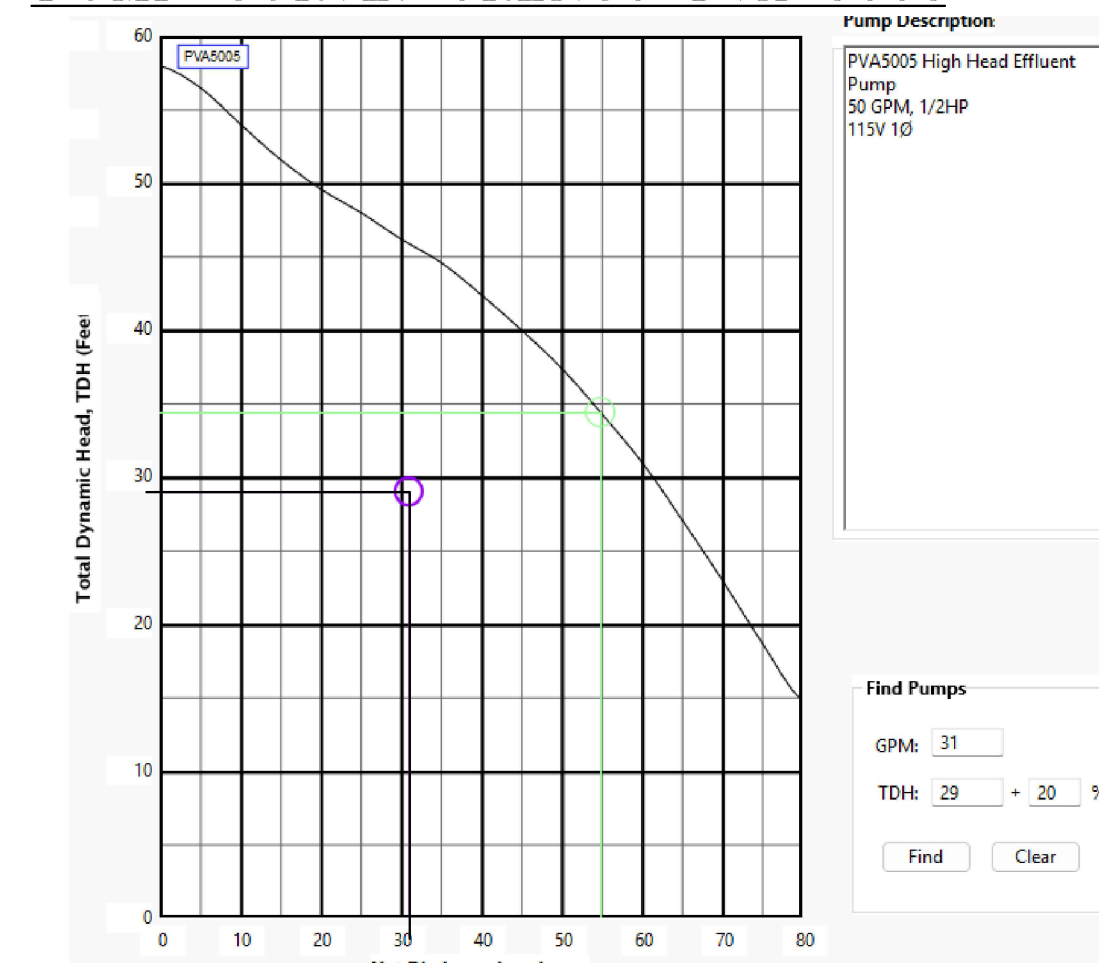
2" Gate valve full open		
5 equivl and pipe length	57 =	
1.25" Gate valves (assume 1/2 open)		285
7 equivl and pipe length	37 =	
2" Elbows		259
10 equivl and pipe length	5.5 =	
2" tees		55
6 equivl and pipe length	12 =	
2" to 1.25 reducers		72
7 equivl and pipe length	3 =	
2" check valve		21
1 equivl and pipe length	17 =	
		17
Total 2" equivl length		
Total 1.25" equivl length		429
		280

Loss for 2" at	31.2 gpm	8.07 feet
Loss for 1.25" at	31.2 gpm	1.23 feet
		9.30 feet

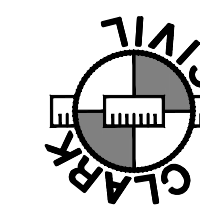
Summary of loss

Pump loss	1.30 feet
transmission line	0.38 feet
lateral loss	0.01 feet
Fitting loss	9.30 feet
Elevation	8 feet
Residual pressur	5 feet
Total	24.0 feet
w/ 20% effecncy	29 feet
Q REQ	31 GPM

PUMP CURVE: ORENCO PVA 5005



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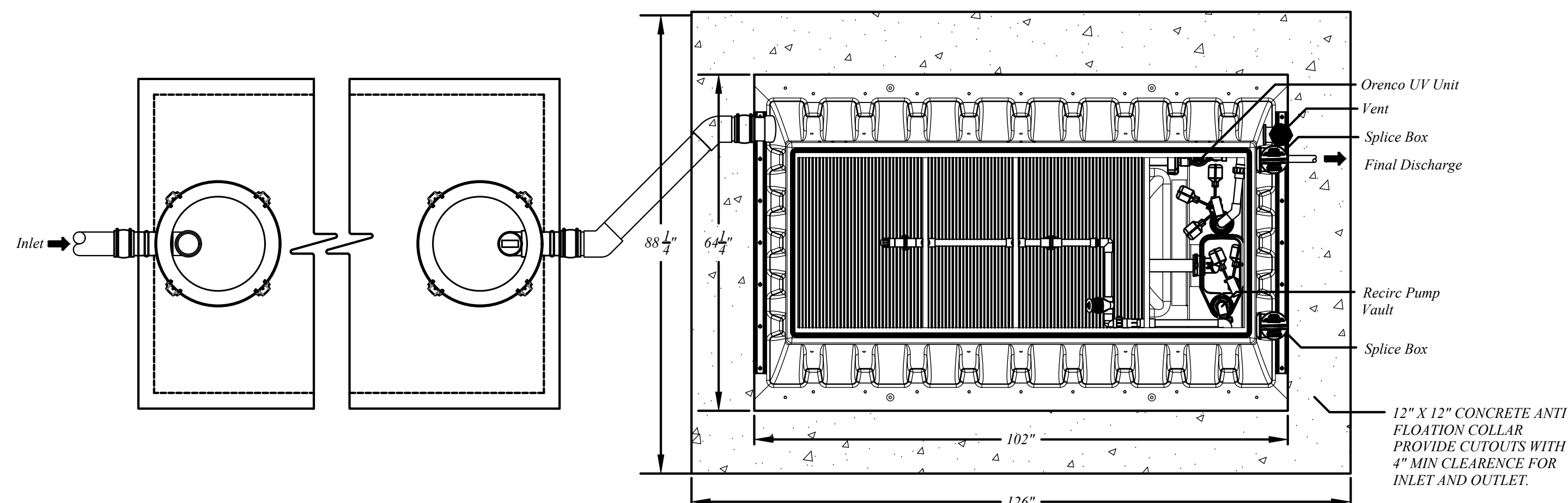
APN: 195-290-14

MARIN COUNTY

SEPTIC SYSTEM REPAIR
NOTES & DETAILS

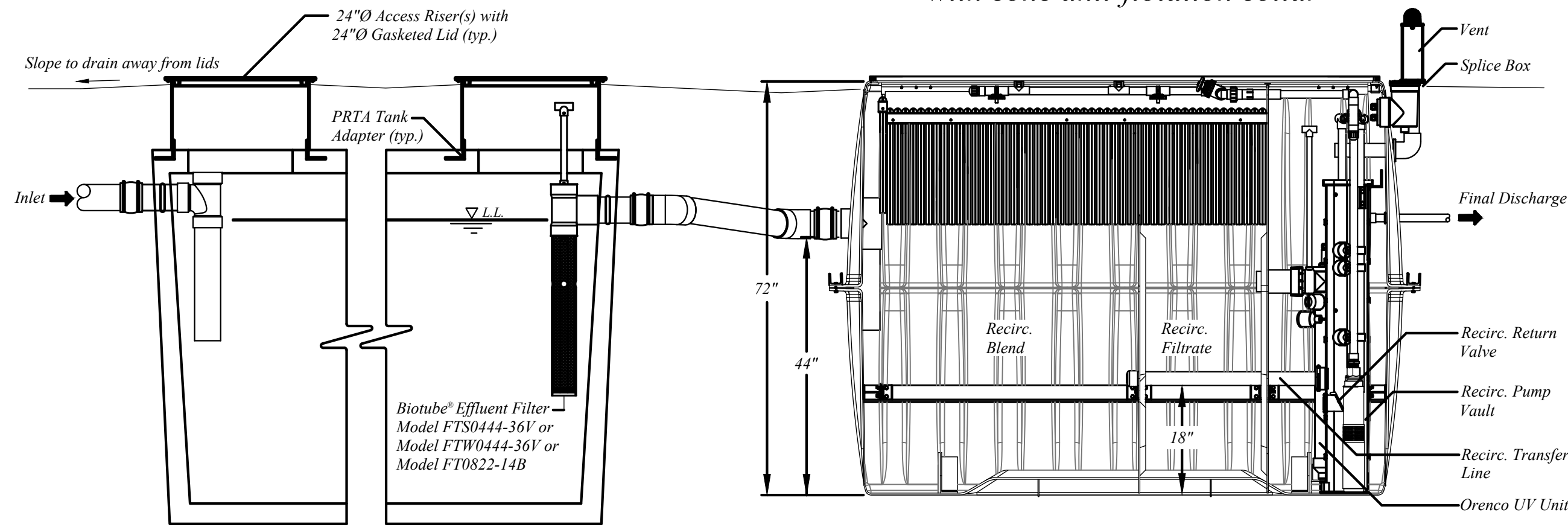
4-22-22	RG
-	-
-	-
REVISIONS	BY
JOB NO:	225013
DATE:	03-28-22
SCALE:	AS NOTED
DESIGN BY:	WCC
DRAWN BY:	RG
SHEET NO:	





Primary Tank - Top View

AX20 Recirc. Tank - Top View with conc anti-flotation collar



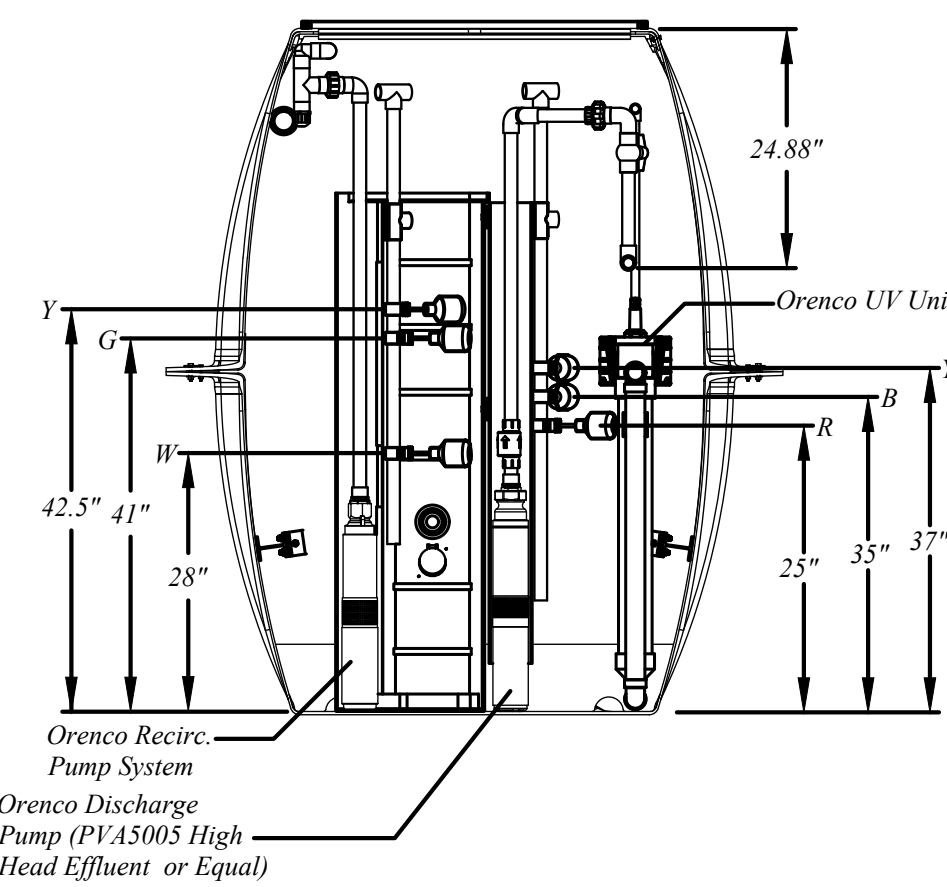
1200 gal. Primary Tank - Side View

AX20 Recirc. Tank - Side View



Control Panel Detail
Not To Scale

Float Functions	
Y	High Level Alarm
B	Pump On
G	Override Timer ON/OFF
R	Pump Off
W	LL/RO

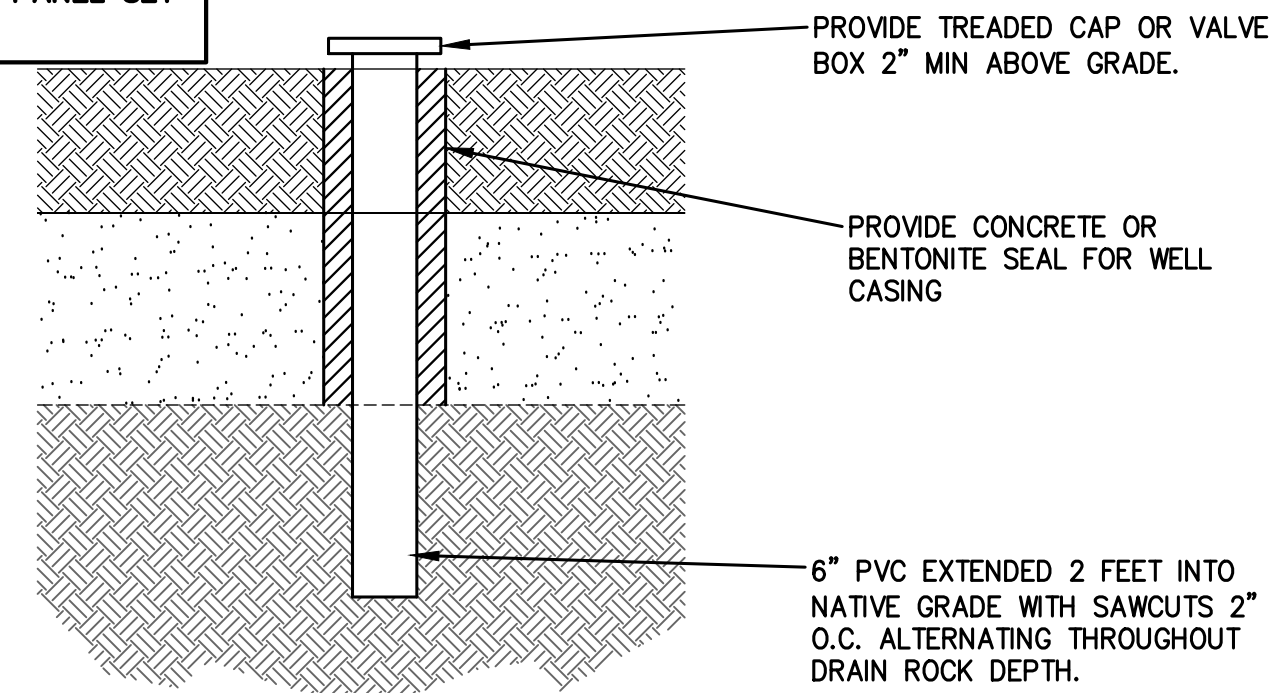


Discharge Chamber - End View

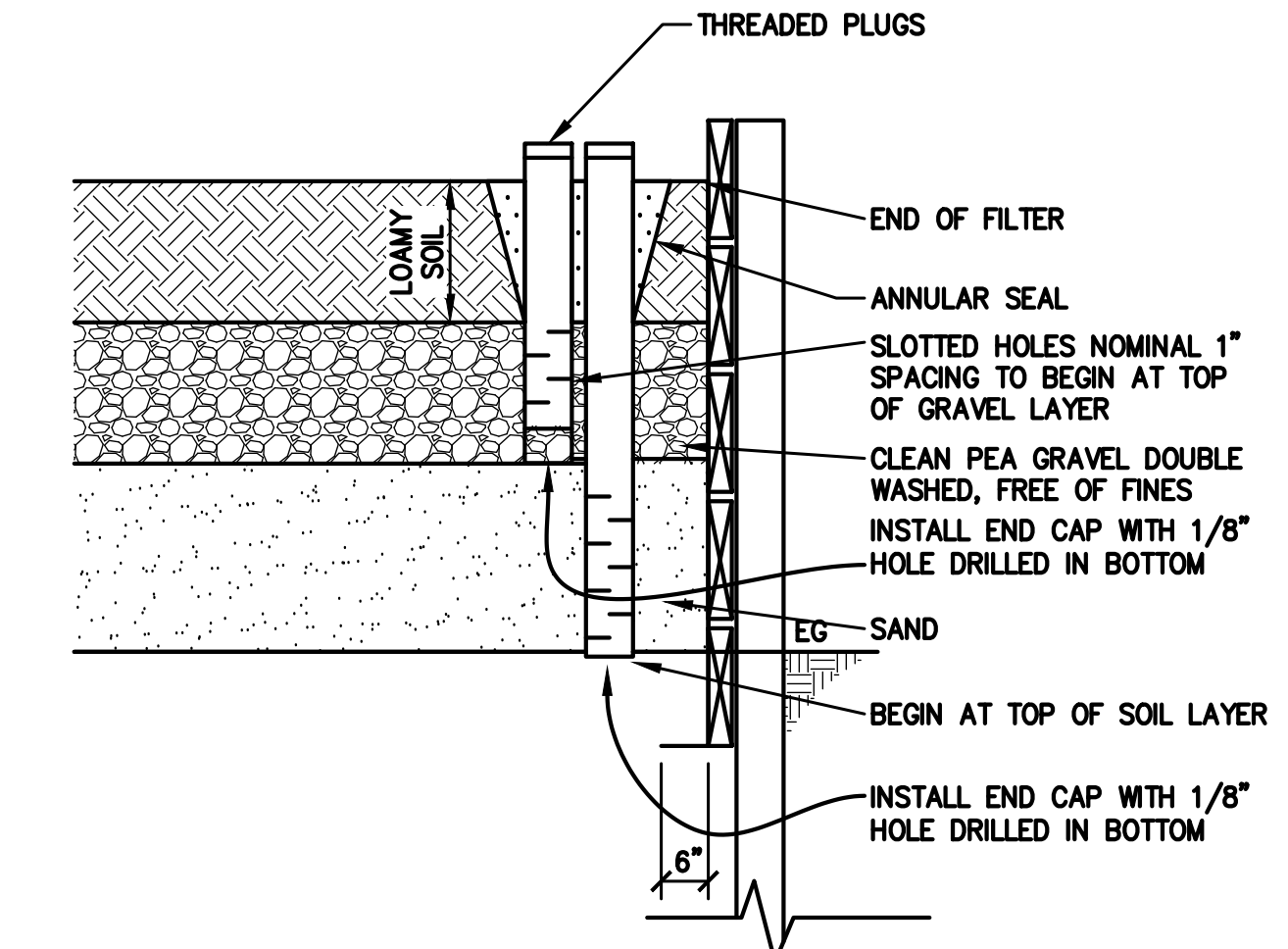
EMERGENCY STORAGE:
PER ORENCO SHEET NDA-AXR-2
THE EMERGENCY SERVICE VOLUME
OF THE AX-20RT IS 500 GALLONS

**PROVIDE 12" X 12" CONCRETE ANTI
FLOTATION RING ON RT UNIT. MAINTAIN
4" CLEARANCE ON OUTLET AND INLET
TO ALLOW FOR MAINTENANCE.**

NOTE:
PROVIDE A SEPARATE GROUNDWATER
MONITORING FLOAT ALARM
INDEPENDENT OF CONTROL PANEL SET
AT 18" BELOW (E) GRADE

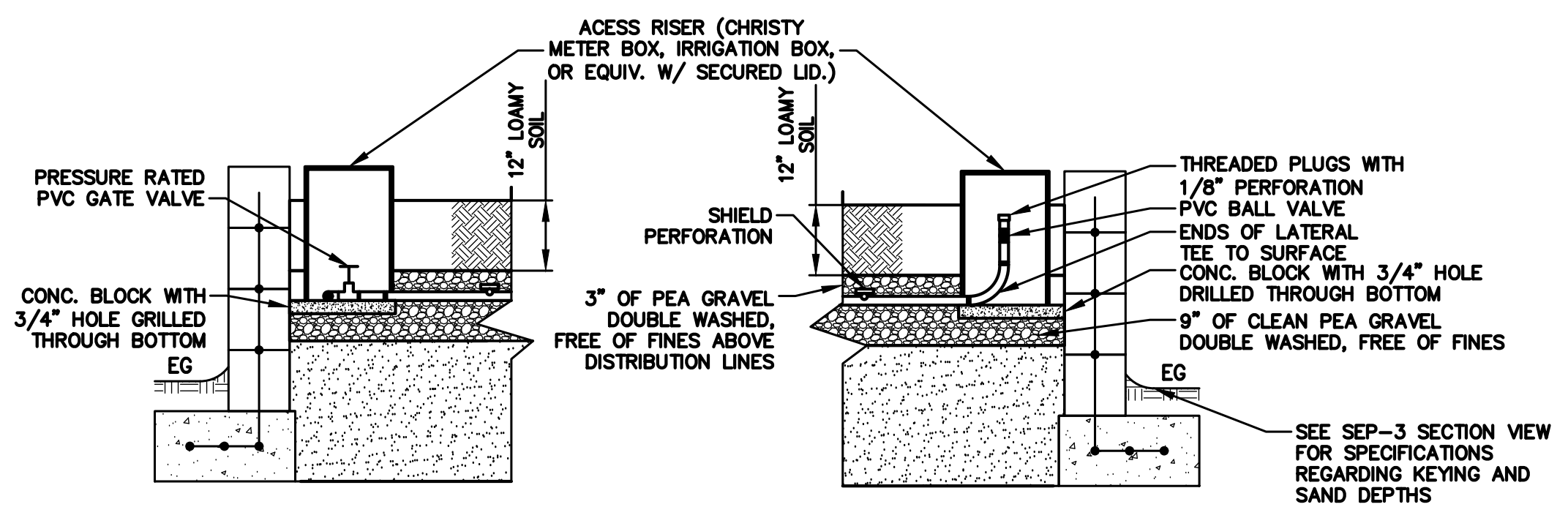


3 MONITORING WELL DETAIL
SEP-4 NTS

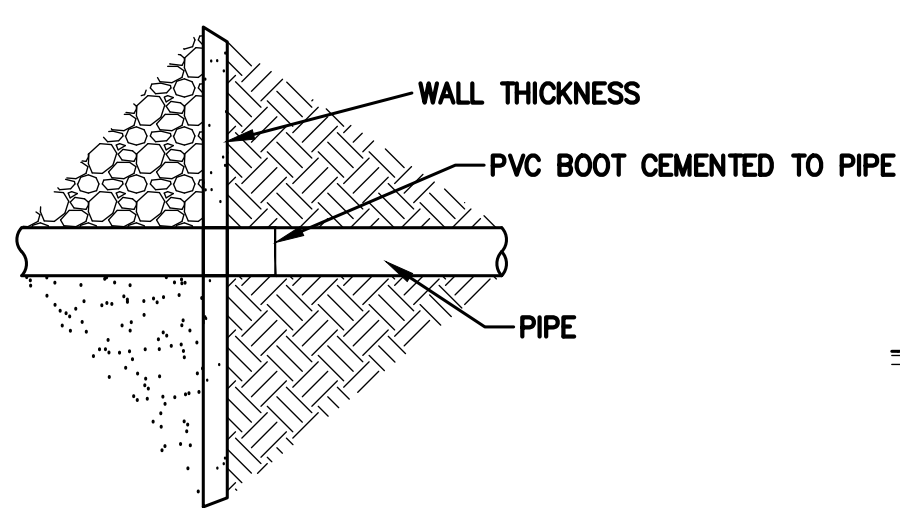


4 SAND FILTER MONITORING WELL DETAIL
SEP-4 NTS

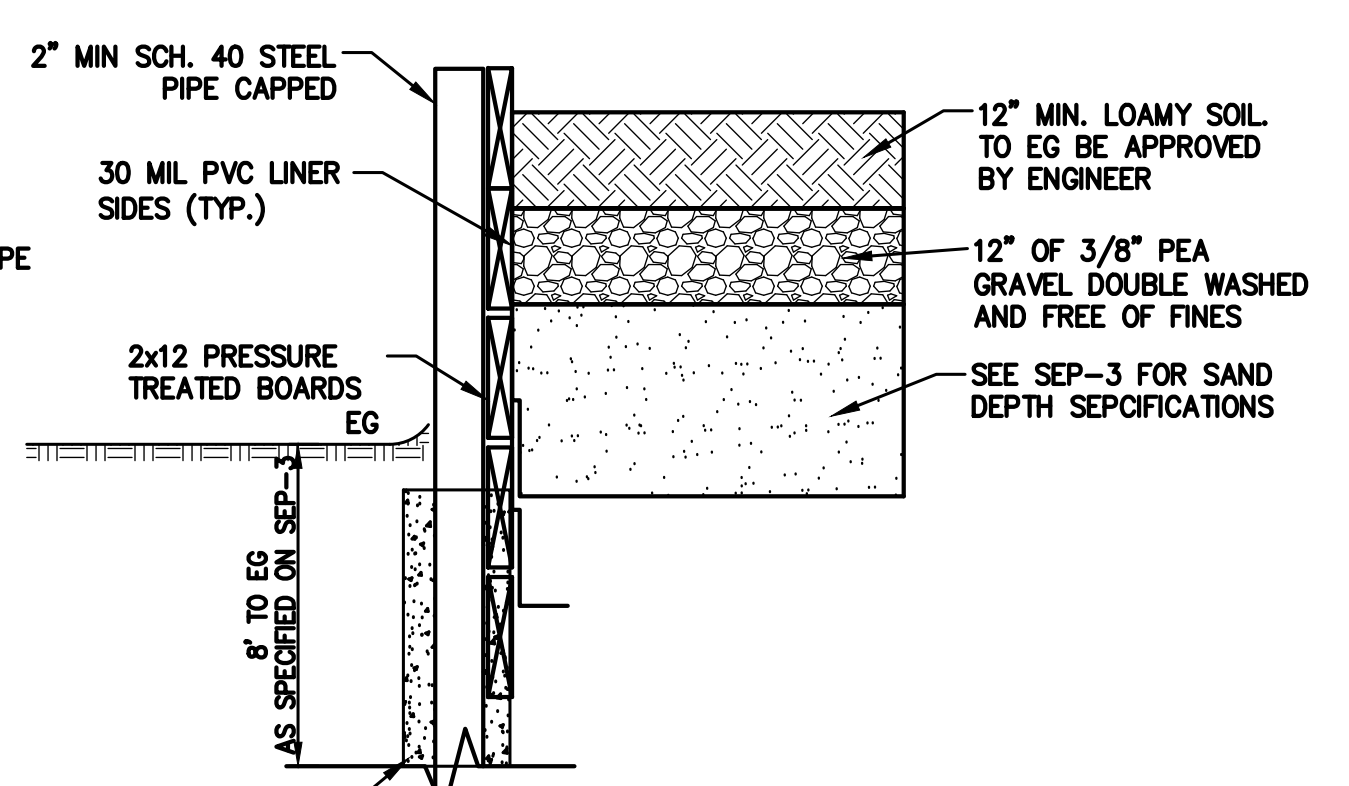
2 ADVANTEX AX-20 RT-UV UNIT
SEP-4 NTS



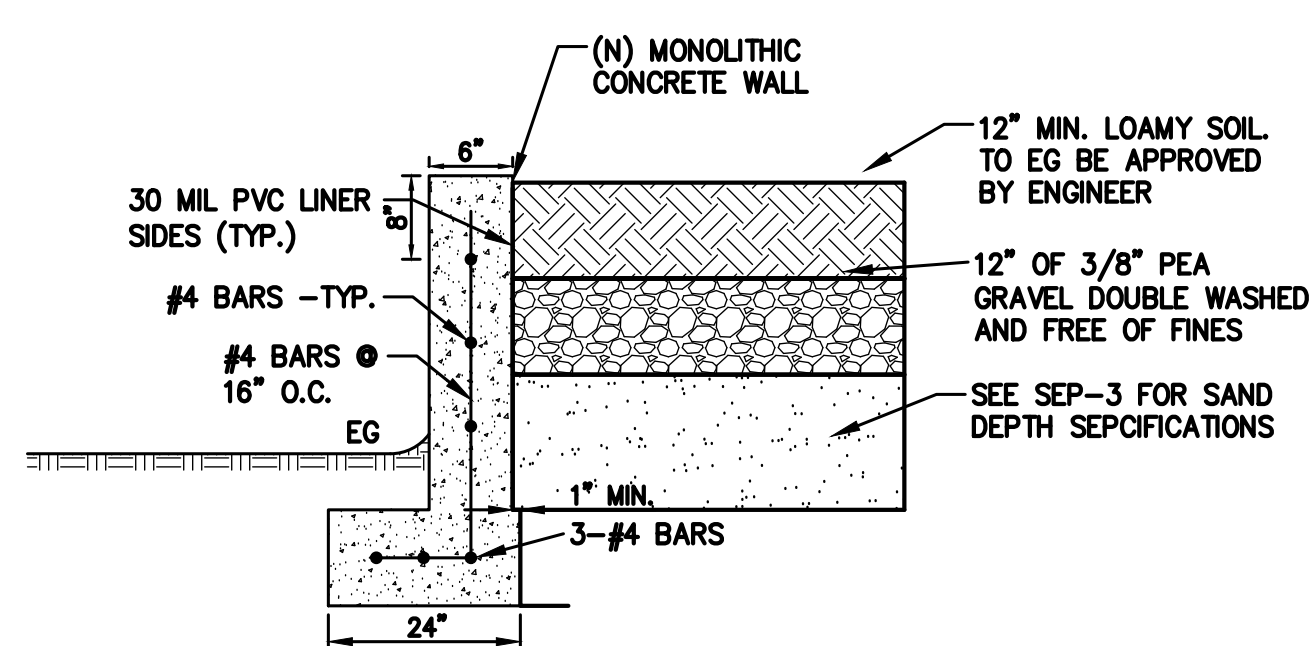
5 LATERAL END DETAIL
SEP-4 NTS



6 BOOT DETAIL
SEP-4 NTS



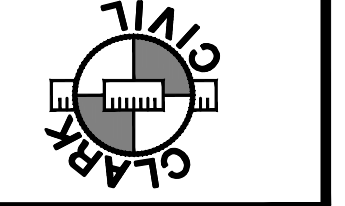
7 WOOD RETAINING WALL DETAIL
SEP-4 NTS



8 MONOLITHIC RETAINING WALL DETAIL
SEP-4 NTS



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SEP-4