

**COUNTY OF SAN MATEO
PLANNING AND BUILDING DEPARTMENT**

DATE: January 13, 2025

TO: Agricultural Advisory Committee

FROM: Sonal Aggarwal, Project Planner, Saggarwal@smcgov.org

SUBJECT: After-the-Fact Planned Agricultural District (PAD) Permit to legalize an existing 2,299 sq. ft., three-story cargo container storage building that was built without permits along with legalization of a pond and a 5,000-gallon plastic water tank on a legal 25,253 sq. ft. parcel located at 350 Madera Lane in the unincorporated San Gregorio area of San Mateo County; no trees were removed and approximately 98 cu. yd. of grading was required for the pond. The property is located in the La Honda Road County Scenic Corridor.

County File Number: PLN2023-00112 (Markegard)

PROPOSAL

The proposed project is an after-the-fact Planned Agricultural District (PAD) Permit to legalize a 2,299 sq. ft., three-story cargo container structure that was built without permits and associated with VIO2022-00089. The basement of the building would be used for storing agricultural supplies, tools, and equipment (346.69 sq. ft.). The first floor is used for storing frozen packed and labeled beef, lamb, pork, and chicken associated with the property owner's offsite cattle ranch operation, hay storage, tool, and maintenance shop (1,312.32 sq. ft.), while the second floor will be used for packing, storing, and shipping of agricultural products (herbs, honey, meat rubs) (640 sq. ft.). The existing second-story of the building currently contains an illegally constructed bedroom, bathroom, and kitchen which is required to be removed prior to the building final inspection of this project. The proposal also includes the legalization of a 5,000-gallon plastic water tank, and an existing pond that was built by the owner without permits. This pond is proposed to be used for watering on-site herbs and vegetable gardens. A new bee yard is also proposed on the side and front. The project involved no tree removal and approximately 98 cu. yd of grading, which was required to build the pond. The site is located in La Honda Road County Scenic Corridor. The project qualifies for a Coastal Development Exemption for agriculturally related development.

DECISION MAKER

Planning Commission

QUESTIONS FOR THE AGRICULTURAL ADVISORY COMMITTEE

1. Will the proposal have a negative effect on surrounding agricultural uses? If yes, can any conditions of approval be recommended to minimize the impact?
2. Will the project have any negative view impacts from La Honda Road or Madera Lane?
3. What position do you recommend the Planning staff take with respect to this project application?

BACKGROUND

Report Prepared By: Sonal Aggarwal, Project Planner, Saggarwal@smcgov.org

Applicant/Owner: Erik Markegard

Location: 350 Madera Lane, San Gregorio, unincorporated San Mateo County

APN: 081-320-030

Parcel Size: 25,253 sq. ft. (0.58 acres)

Parcel Legality: The parcel's legality was established through a Certificate of Compliance (CoC) Type-A Application, COC 75-0001 HIST.

Existing Zoning: PAD/CD (Planned Agricultural District/Coastal Development)

General Plan Designation: Agriculture

Local Coastal Plan Designation: Agriculture

Williamson Act: Not contracted

Existing Land Use: Open space, Agriculture

Water Supply: There is one non-potable well present at the site. There is also one 10,000-gallon permitted plastic water tank and another 5,000-gallon water tank which is proposed to be legalized under this permit.

Sewage Disposal: There is no sewage disposal facility at the site.

Flood Zone: Flood Zone X (area of minimal flood hazard), FEMA Panel No. 06081C0380E; effective October 16, 2012.

Environmental Evaluation: An Initial Study and Mitigated Negative Declaration is required for this project due to its location in the La Honda Road County Scenic Corridor. Staff will prepare and circulate this report for public comments before taking the project to the Planning Commission for decision.

Setting: The project site is a triangular-shaped 25,253 sq. ft. lot at the northeast intersection of Madera Lane and La Honda Road. It is surrounded by other agricultural lots on the left and rear sides of the site. Aside from the improvements that are proposed for legalization and described above, the site contains an existing barn (PLN2004-00647), one non-potable well, two water tanks (PLN2004-00647), one pump house (PLN2011-00192) and a shed (PLN2010-00117). The parcel is relatively flat and is elevated above Madera Lane and La Honda Road.

Chronology:

<u>Date</u>	<u>Action</u>
June 22, 2022	- Complaint filed for ongoing construction without permits.
June 29, 2022	- Code Compliance Division conducted a site visit to verify on-site conditions.
July 11, 2022	- Notice of Violation, VIO2022-00089, sent to applicant and extension granted until September 21, 2022.
September 1, 2022	- The property owner requested an extension. Extension granted until October 21, 2022.
September 7, 2022	- Environmental Health conducted a site visit to verify noise level of freezer storage mechanical equipment and verified the noise levels between 42 dBA to 47 dBA (Noise Ordinance requirement is 55 dBA daytime, and 50 dBA nighttime). Staff also confirmed that no one was living onsite.
December 3, 2022	- Second complaint received for operational living quarter.
December 16, 2022	- Code Compliance staff conducted site visit to verify that no one was living onsite.
March 31, 2023	- Subject planning application filed to address violation, Planning case PLN2023-00112.

- May 23, 2023 - Application deemed incomplete by Planning; reviewing agencies still pending.
- June 9, 2023 - Coastside Fire approved the project with conditions.
- August 25, 2023 - Environmental Health completed its review and provided comments.
- February 1, 2024 - Planning staff met with the applicant to discuss incomplete items.
- October 2, 2024 - Resubmittal filed by applicant.
- November 22, 2024 - Planning staff conducted a site visit.
- December 5, 2024 - Application deemed incomplete, and comments on resubmittal sent to the applicant.
- January 13, 2025 - Agricultural Advisory Committee (AAC) meeting.

Will the project be visible from a public road?

Yes, the project is visible from La Honda Road and Madera Lane. The property is relatively flat and elevated above the La Honda Road and Madera Lane roadway elevations. The cargo container structure is approximately 31 feet-2 inches tall and is approximately 100 feet away from La Honda Road. To mitigate the visible impacts, the applicant will be required to plant more screening trees near the southern property line facing La Honda Road. The applicant agrees to comply with this condition.

Will any habitat or vegetation need to be removed for the project?

The applicant has confirmed that no trees were removed during the construction of the storage building. The site is mostly flat without much vegetation. Staff has asked the applicant to prepare and submit a Biological Report for any potential impacts to the habitat.

Is there prime soil on the project site?

The site doesn't contain prime soils.

DISCUSSION

A. KEY ISSUES

Planning staff has reviewed this proposal and has concluded the following:

1. Conformance with the General Plan:

Staff has reviewed the project and found it to be in conformance with the applicable General Plan policies as follows:

a. Visual Qualities

Policy 4.15 (*Appearance of New Development*) and Policy 4.22 (*Scenic Corridors*) seek to regulate development to promote good design, site relationships, and to protect and enhance the visual quality of development within designated scenic corridors.

The project site is within the La Honda Road County Scenic Corridor. The proposed container storage building is located on a narrow triangular lot of 25,253 square feet. There is only one existing barn, one pump house, one non-potable well, one shed, and a water tank present at the site. The existing barn is also visible from La Honda Road. However, staff would require mitigation measures such as tree plantings towards La Honda Road to minimize public view impacts. The container storage building will have gray siding with green roofing to match the existing barn.

b. Rural Lands

Policy 9.23 (*Land Use Compatibility in Rural Lands*) and Policy 9.30 (*Development Standards to Minimize Land Use Conflicts with Agriculture*) encourage compatibility of land uses in order to promote the health, safety, and economy of rural lands, seek to maintain the scenic and harmonious nature of rural lands, and seek to: (1) promote land use compatibility by encouraging the location of new residential development immediately adjacent to existing developed areas, and (2) cluster development so that large parcels can be retained for the protection and use of vegetative, visual, agricultural, and other resources.

The project parcel has a land use designation of “Agriculture” and is dominated by open rural land. There are no prime soils on this parcel, and no residence is proposed. The existing unpermitted unit on the second floor will be removed, and the applicant will be required to obtain all necessary permits before the issuance of the building permit. A condition of approval would be included for tree plantings towards La Honda Road to mitigate any view impacts. The pond and cargo container structure are clustered at the site. The pond will be used for agricultural purposes (i.e., watering on-site herbs and vegetable gardens).

2. Compliance with Local Coastal Program (LCP) Policies:

a. Locating and Planning New Development

Policy 1.8 (*Land Uses and Development Densities in Rural Areas*) states that new development in rural areas shall not: (1) have significant adverse impacts, either individually or cumulatively on coastal resources, or (2) diminish the ability to keep all prime agricultural land and other lands suitable for agriculture in agricultural production.

The project is not anticipated to have any adverse impact either individually or cumulatively on coastal resources. As the site does not contain any prime soil and all proposed farming will be conducted in raised garden beds, the proposed project will not diminish the ability of land for future agricultural production.

b. Agriculture

The County’s Zoning Ordinance is the adopted implementation plan for the Local Coastal Program. Therefore, see staff’s discussion in Section A.3.b. (Conformance with the Criteria for the Issuance of a PAD Permit) below for project compliance with applicable LCP Agricultural Policies.

3. Compliance with Planned Agricultural District (PAD) Regulations:

a. Conformity with the PAD Development Standards

As shown in the table below, the proposed storage building complies with Sections 6358 and 6359 of the San Mateo County Zoning Regulations, which regulates the height and required setbacks of structures.

	PAD Development Standards	Proposed
Minimum Lot Size	N/A	25,253 sq. ft. (0.58 Acres)
Minimum Front Setback	30 feet	44 feet-1 ¼ inches
Minimum Side Setbacks	20 feet	69 feet – 8 ½ inches (right) 27 feet-4 ½ inches (left)
Minimum Rear Setbacks	20 feet	163 feet- 5 ¼ inches
Maximum Building Height	36 feet	31 feet- 1 inches

b. Conformance with the Criteria for the Issuance of a PAD Permit

In order to approve and issue a PAD permit, the project must comply with the substantive criteria for the issuance of a PAD permit, as outlined in Section 6355 of the Zoning Regulations. As proposed, the project complies with the following applicable policies.

(1) General Criteria

- (a) *The encroachment of all development upon land which is suitable for agriculture shall be minimized.*

The project site has no prime soil. The applicant has also proposed raised garden beds, which would be supplied by non-potable water from the pond and run-off from the barn and container storage building. As the building will be used to store agricultural and farm produce, hay, and poultry, and stored meat products are distributed from this facility, the building is classified as supportive of Agriculture. However, a PAD Permit is required as the project falls under Section 6353.B.12 as “Facilities for the processing, storing, packaging, and shipping of agricultural products.”

- (b) *All development permitted on a site shall be clustered.*

The proposed pond, water tank and storage building are clustered at the site.

- (c) *Every project shall conform to the Development Review Criteria contained in Chapter 20A.2 of the San Mateo County Ordinance Code.*

The project has been reviewed under and found to comply with the Development Review Criteria in Chapter 20A.2 of the County Zoning Regulations. Specifically, the project complies with the Site Design, Primary Agricultural Resource Criteria, and Primary Natural Vegetative Area Criteria, as no significant trees were removed during construction, the development is clustered, and the proposed use is compatible with agriculture.

(2) Water Supply Criteria

- (a) *The existing availability of water shall be demonstrated for all non-agricultural uses. Each existing parcel developed with non-agricultural uses shall demonstrate a safe and adequate well water source located on that parcel.*

The project site contains one non-potable well that is used only for agricultural purposes. The applicant would be required to obtain all necessary permits from Environmental Health Services for this well and install signs at the site that the well water cannot be used for drinking water.

- (b) *Adequate and sufficient water supplies needed for agricultural production and sensitive habitat protection in the watershed are not diminished.*

The proposed approximately 885 sq. ft. pond will serve as an additional agricultural water supply for proposed onsite herb and vegetable gardening. The pond is supplied by water runoff from the container storage building and barn. Furthermore, staff does not anticipate that the project will have any potential impacts to sensitive habitats protection in the area.

(3) Criteria for the Conversion of Lands Suitable for Agriculture and Other Lands

Conversion of lands suitable for agriculture and other lands is permitted in the PAD when the following can be demonstrated:

- (a) *All agriculturally unsuitable lands on the parcel have been developed or determined to be undevelopable.*

While the proposed improvements are already built, they are located on the site in the most suitable location when considering scenic corridor policies and policies encouraging the clustering of development. Furthermore, the site maintains ample space in the front and side setbacks for agriculture. The project site has no prime soil; therefore, the site can still be used for small farming activities, such as proposed, or other compatible uses listed under Zoning Regulations Section 6352.B. (Permitted Uses on Land Suitable for Agriculture and Other Lands).

- (b) *Continued or renewed agricultural use of the soils is not capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, social, and technological factors.*

The subject parcel is not large enough to support a commercial grazing and/or cattle-raising operation. Though surrounding parcels do contain active agriculture (i.e., crops) and/or grasslands suitable for grazing they are held under separate ownership. There are no plans to combine and lease the land for either cattle rearing/grazing and/or for a commercial agriculture operation. Furthermore, the applicant intends to utilize undeveloped areas of the property for growing herbs and vegetables and keeping bees.

- (c) *Clearly defined buffer areas are developed between agricultural and non-agricultural uses.*

This site is relatively small in size as compared to other neighboring agricultural properties. The as-built setbacks comply with zoning standards and staff believes they are sufficient to provide clearly defined buffer between any agricultural and non-agricultural uses in the area.

- (d) *The productivity of any adjacent agricultural lands is not diminished, including the ability of the land to sustain dry farming or animal grazing.*

The project parcel is located between two parcels practicing active agriculture towards the west and east of the site. The parcel to the north and northeast is a larger 624.21-acre parcel known as “Redgate Ranch”, while the parcel to the west contains residential use associated with an onsite agricultural operation. La Honda Road runs at the south of the parcel and segregates the parcel from other agricultural parcels. The productivity of these adjacent agricultural lands is not expected to be impacted by the proposed project.

- (e) *Public service and facility expansions and permitted uses do not impair agricultural viability either through increased assessment costs or degraded air and water quality.*

There are two water tanks at this site, a 5,000-gallon tank (to be legalized) and an existing 10,000-gallon water tank that was legally added with the existing barn under PLN2004-00279. These tanks are currently filled by runoff from the barn and will be available to the Fire Department in case of any emergencies.

A septic tank is not proposed or required as no living units are being approved on the site. The existing well will be maintained as an agricultural use well only. The existing unpermitted bedroom, kitchen and bath on the second floor will be removed and converted into packing and shipping of agricultural products. All other utilities such as an emergency generator that supplies power to the ground floor meat freezer units in case of an emergency is required to meet the County’s Noise decibel limit, which is 55 dBA during daytime and 40 dBA during nighttime.

ATTACHMENTS

- A. Vicinity Map
- B. Project Plans
- C. Geotechnical Investigation Design Phase, prepared by Butano Geotechnical Engineering, Inc., dated September 2022
- D. Site visit pictures from November 22, 2024




COUNTY OF SAN MATEO - PLANNING AND BUILDING DEPARTMENT

ATTACHMENT A



0.28 0 0.14 0.28 Miles

WGS_1984_Web_Mercator_Auxiliary_Sphere
© Latitude Geographics Group Ltd.

1:9,028 

This map is a user generated static output from an Internet mapping site and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.

THIS MAP IS NOT TO BE USED FOR NAVIGATION



COUNTY OF SAN MATEO - PLANNING AND BUILDING DEPARTMENT

ATTACHMENT B

SITE DATA:

APN: 061-320-030
 LOT SIZE: 25,253 SF (0.580 AC)
 ZONING: PAD/CD
 OCCUPANCY GROUP:
 TYPE OF CONSTRUCTION: TYPE I

PRE:
 PLN:
 BLD:

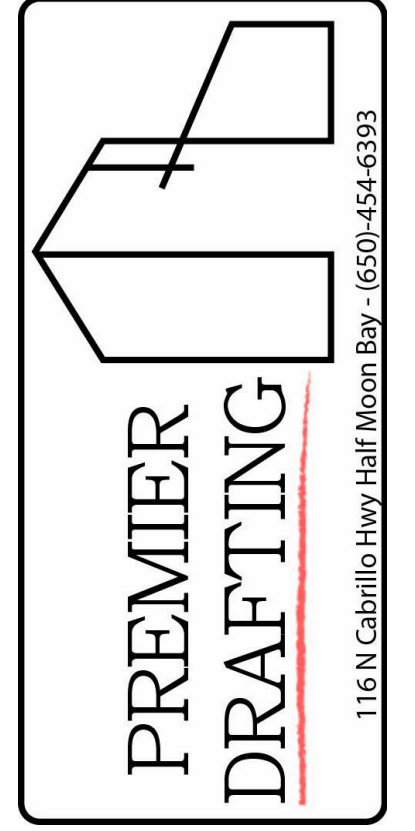
APPLICABLE CODES:

SAN MATEO COUNTY ZONING & BUILDING ORDINANCES
 2019 CALIFORNIA RESIDENTIAL CODE
 2019 CALIFORNIA BUILDING CODE
 2019 CALIFORNIA MECHANICAL CODE
 2019 CALIFORNIA PLUMBING CODE
 2019 CALIFORNIA ELECTRICAL CODE
 2019 CALIFORNIA ENERGY CODE
 2019 CALIFORNIA FIRE CODE
 2019 CALIFORNIA GREEN BUILDING STANDARDS CODE

Sheet List - CD

Sheet Number	Sheet Name	Rev
A100	Cover Sheet	
A101	BMP	
CE1	Survey	
A102	Site Plan	
C1	Drainage Plan	
A103	Floor & Roof Plan	
A104	Elevations	
A105	Electrical Plan	

REVISIONS



Owner Information
 Erik Markgard
 (650)245-4557
 erik@markgardfamily.com

350 Madera Ln
 San Gregorio

Cover Sheet

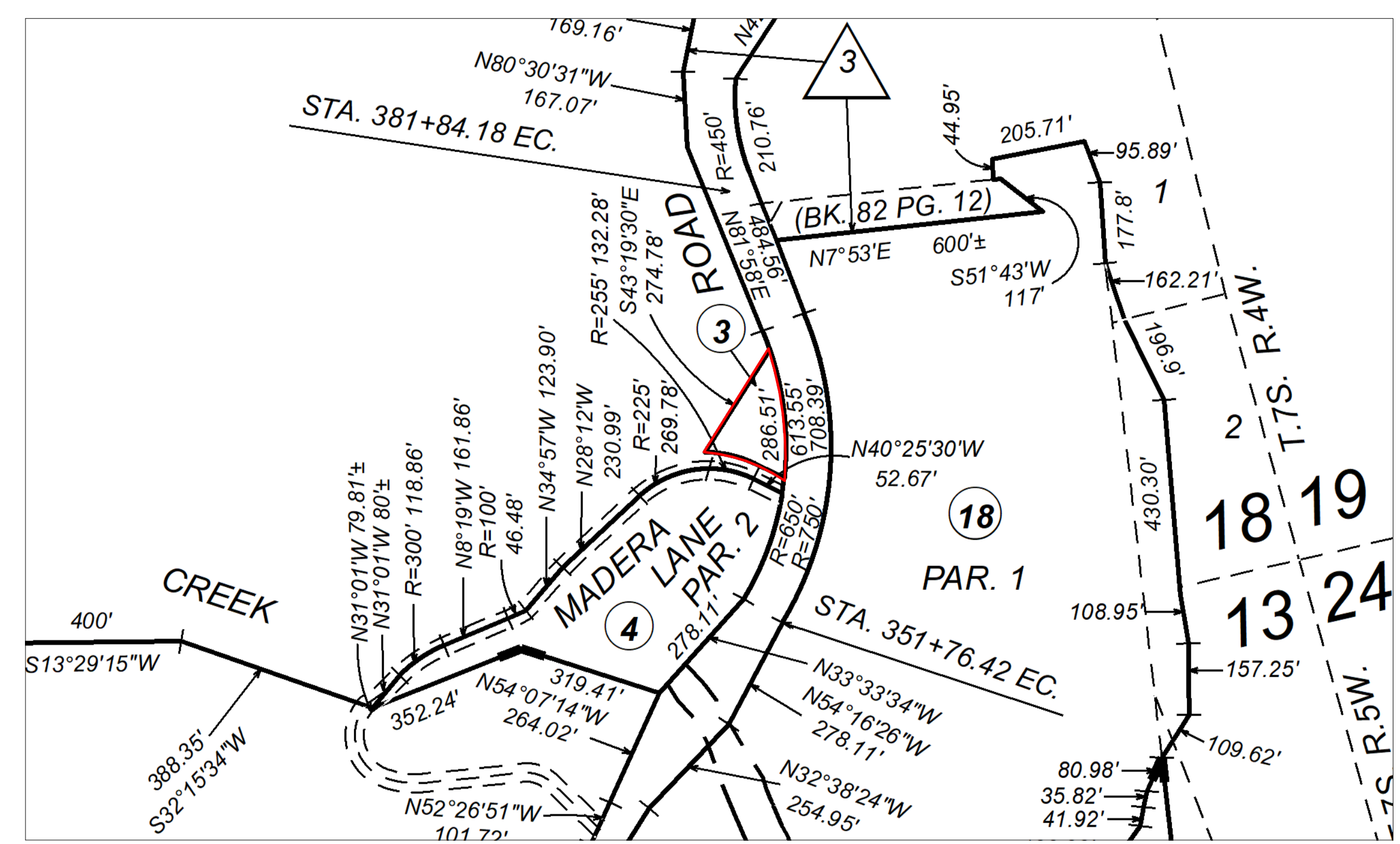
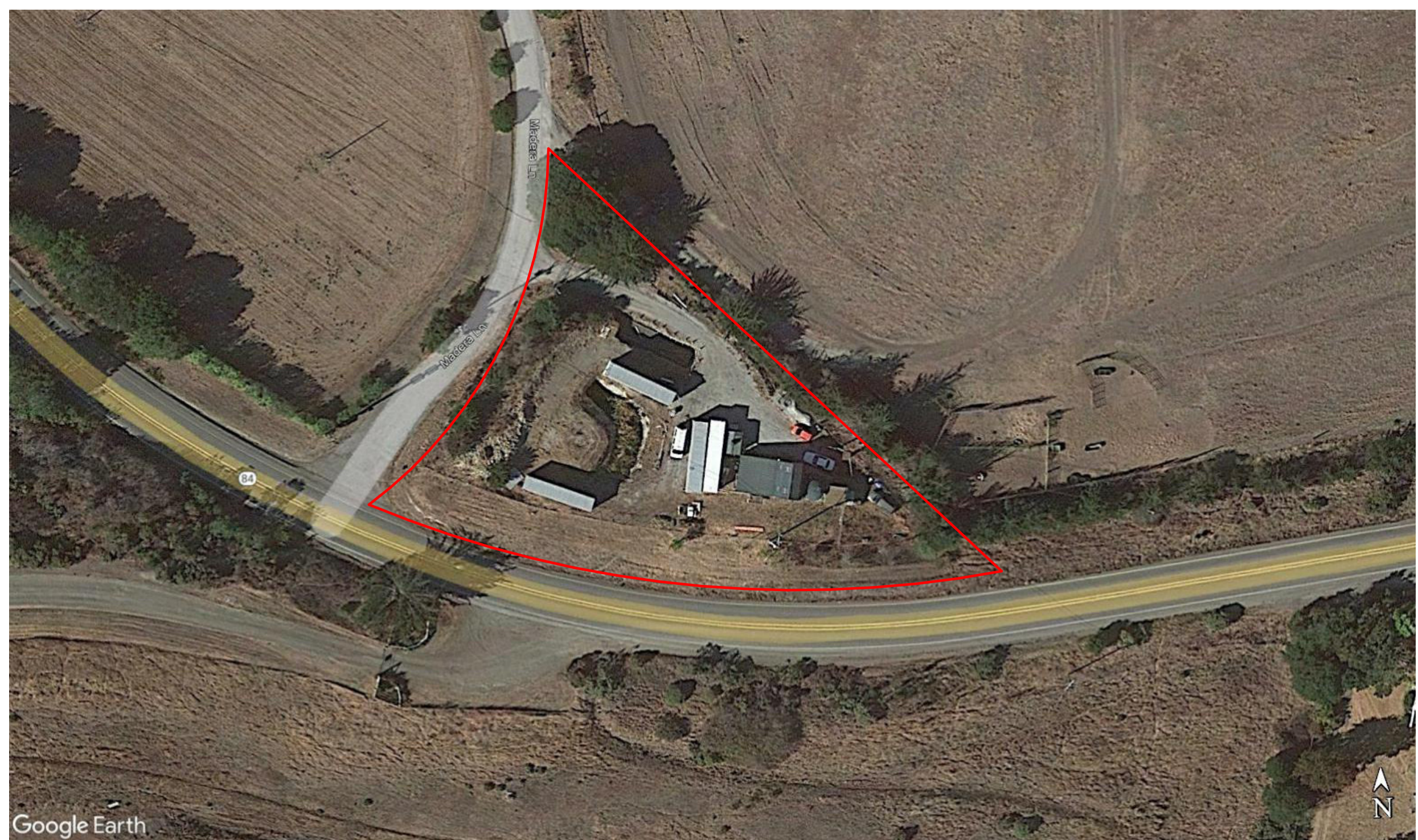
Drawn by JM

Designed By: Colton Palmer

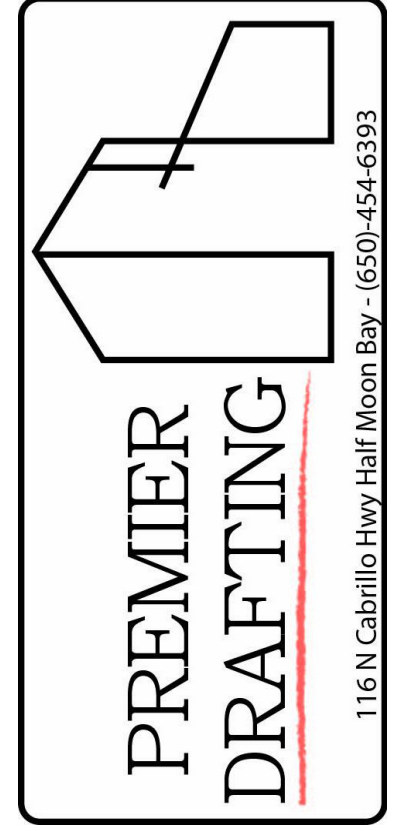
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REVISIONS



Owner Information
 Erik Markgard
 (650)245-4557
 erik@markgardfamily.com

**350 Madera Ln
 San Gregorio**

BMP

Drawn by **CJP**

Designed By: **Colton Palmer**

Date **9/30/24**

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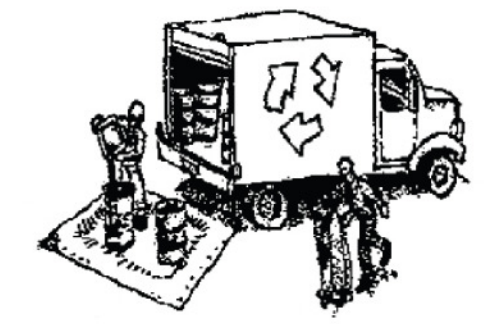
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Construction Best Management Practices (BMPs)

Construction projects are required to implement the stormwater best management practices (BMP) on this page, as they apply to your project, all year long.

Materials & Waste Management



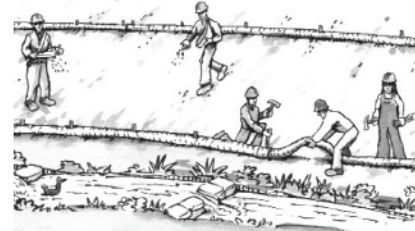
- Non-Hazardous Materials**
 - Beam and cover stockpiles of sand, dirt or other construction material with tarps when rain is forecast or if not actively being used within 14 days.
 - Use (but don't overuse) reclaimed water for dust control.
- Hazardous Materials**
 - Label all hazardous materials and hazardous wastes (such as pesticides, paints, thinners, solvents, fuel, oil, and antifreeze) in accordance with city, county, state and federal regulations.
 - Store hazardous materials and wastes in water tight containers, store in appropriate secondary containment, and cover them at the end of every work day or during wet weather or when rain is forecast.
 - Follow manufacturer's application instructions for hazardous materials and be careful not to use more than necessary. Do not apply chemicals outdoors when rain is forecast within 24 hours.
 - ✗ Arrange for appropriate disposal of all hazardous wastes.
- Waste Management**
 - ✗ Cover waste disposal containers securely with tarps at the end of every work day and during wet weather.
 - ✗ Check waste disposal containers frequently for leaks and to make sure they are not overfilled. Never hose down a dumpster on the construction site.
 - ✗ Clean or replace portable toilets, and inspect them frequently for leaks and spills.
 - ✗ Dispose of all wastes and debris properly. Recycle materials and wastes that can be recycled (such as asphalt, concrete, aggregate base materials, wood, plywood, pipe, etc.)
 - ✗ Dispose of liquid residues from paints, thinners, solvents, glues, and cleaning fluids as hazardous waste.
- Construction Entrances and Perimeter**
 - ✗ Establish and maintain effective perimeter controls and stabilize all construction entrances and exits to sufficiently control erosion and sediment discharges from site and tracking off site.
 - ✗ Sweep or vacuum any street tracking immediately and secure sediment sources to prevent further tracking. Never hose down streets to clean up tracking.

Equipment Management & Spill Control



- Maintenance and Parking**
 - Designate an area, lined with appropriate BMPs, for vehicle and equipment parking and storage.
 - Perform major maintenance, repair jobs, and vehicle and equipment washing off site.
 - If refueling or vehicle maintenance must be done onsite, work in a bermed area away from storm drains and over a drip pan or drop cloths big enough to collect fluids. Recycle or dispose of fluids as hazardous waste.
 - If vehicle or equipment cleaning must be done onsite, clean with water only in a bermed area that will not allow rinse water to run into gutters, streets, storm drains, or surface waters.
 - Do not clean vehicle or equipment onsite using soaps, solvents, degreasers, or steam cleaning equipment.
- Spill Prevention and Control**
 - ✗ Keep spill cleanup materials (e.g., rags, absorbents and cat litter) available at the construction site at all times.
 - Inspect vehicles and equipment frequently for and repair leaks promptly. Use drip pans to catch leaks until repairs are made.
 - ✗ Clean up spills or leaks immediately and dispose of cleanup materials properly.
 - ✗ Do not hose down surfaces where fluids have spilled. Use dry cleanup methods (absorbent materials, cat litter, and/or rags).
 - ✗ Sweep up spilled dry materials immediately. Do not try to wash them away with water, or bury them.
 - Clean up spills on dirt areas by digging up and properly disposing of contaminated soil.
 - Report significant spills immediately. You are required by law to report all significant releases of hazardous materials, including oil. To report a spill: 1) Dial 911 or your local emergency response number, 2) Call the Governor's Office of Emergency Services Warning Center, (800) 852-7550 (24 hours).

Earthmoving



- ✗ Schedule grading and excavation work during dry weather.
- ✗ Stabilize all denuded areas, install and maintain temporary erosion controls (such as erosion control fabric or bonded fiber matrix) until vegetation is established.
- ✗ Remove existing vegetation only when absolutely necessary, and seed or plant vegetation for erosion control on slopes or where construction is not immediately planned.
- ✗ Prevent sediment from migrating offsite and protect storm drain inlets, gutters, ditches, and drainage courses by installing and maintaining appropriate BMPs, such as fiber rolls, silt fences, sediment basins, gravel basins, berms, etc.
- Keep excavated soil on site and transfer it to dump trucks on site, not in the streets.

Paving/Asphalt Work



- ✗ Avoid paving and seal coating in wet weather or when rain is forecast, to prevent materials that have not cured from contacting stormwater runoff.
- Cover storm drain inlets and manholes when applying seal coat, tack coat, slurry seal, fog seal, etc.
- ✗ Collect and recycle or appropriately dispose of excess abrasive gravel or sand. Do NOT sweep or wash it into gutters.
- ✗ Do not use water to wash down fresh asphalt concrete pavement.

Concrete, Grout & Mortar Application



- Store concrete, grout, and mortar away from storm drains or waterways, and on pallets under cover to protect them from rain, runoff, and wind.
- ✗ Wash out concrete equipment/trucks offsite or in a designated washout area, where the water will flow into a temporary waste pit, and in a manner that will prevent leaching into the underlying soil or onto surrounding areas. Let concrete harden and dispose of as garbage.
- When washing exposed aggregate, prevent washwater from entering storm drains. Block any inlets and vacuum gutters, hose washwater onto dirt areas, or drain onto a bermed surface to be pumped and disposed of properly.

Sawcutting & Asphalt/Concrete Removal

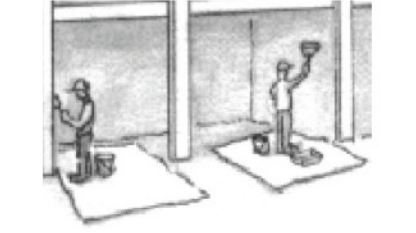
- Protect nearby storm drain inlets when saw cutting. Use filter fabric, catch basin inlet filters, or gravel bags to keep slurry out of the storm drain system.
- Shovel, absorb, or vacuum saw-cut slurry and dispose of all waste as soon as you are finished in one location or at the end of each work day (whichever is sooner).
- If sawcut slurry enters a catch basin, clean it up immediately.

Landscaping



- Protect stockpiled landscaping materials from wind and rain by storing them under tarps all year-round.
- Stack bagged material on pallets and under cover.
- ✗ Discourage application of any erodible landscape material within 2 days before a forecast rain event or during wet weather.

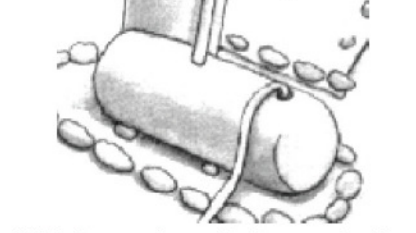
Painting & Paint Removal



Painting Cleanup and Removal

- ✗ Never clean brushes or rinse paint containers into a street, gutter, storm drain, or stream.
- ✗ For water-based paints, paint out brushes to the extent possible, and rinse into a drain that goes to the sanitary sewer. Never pour paint down a storm drain.
- For oil-based paints, paint out brushes to the extent possible and clean with thinner or solvent in a proper container. Filter and reuse thinners and solvents. Dispose of excess liquids as hazardous waste.
- Paint chips and dust from non-hazardous dry stripping and sand blasting may be swept up or collected in plastic drop cloths and disposed of as trash.
- Chemical paint stripping residue and chips and dust from marine paints or paints containing lead, mercury, or tributyltin must be disposed of as hazardous waste. Lead based paint removal requires a state-certified contractor.

Dewatering



- Discharges of groundwater or captured runoff from dewatering operations must be properly managed and disposed. When possible send dewatering discharge to landscaped area or sanitary sewer. If discharging to the sanitary sewer call your local wastewater treatment plant.
- Divert run-on water from offsite away from all disturbed areas.
- When dewatering, notify and obtain approval from the local municipality before discharging water to a street gutter or storm drain. Filtration or diversion through a basin, tank, or sediment trap may be required.
- In areas of known or suspected contamination, call your local agency to determine whether the ground water must be tested. Pumped groundwater may need to be collected and landfilled off-site for treatment and proper disposal.



Requirements for Architectural Copper

Protect water quality during installation, cleaning, treating, and washing!

Copper from Buildings May Harm Aquatic Life

Copper can harm aquatic life in San Francisco Bay. Water that comes into contact with architectural copper may contribute to impacts, especially during installation, cleaning, treating, or washing. Patination solutions that are used to obtain the desired shade of green or brown typically contain acids. After treatment, when the copper is rinsed to remove these acids, the rinse water is a source of pollutants. Municipalities prohibit discharges to the storm drain of water used in the installation, cleaning, treating and washing of architectural copper.



Building with copper flashing, gutter and drainpipe.

Use Best Management Practices (BMPs)

The following Best Management Practices (BMPs) must be implemented to prevent prohibited discharges to storm drains.

During Installation

- If possible, purchase copper materials that have been pre-patinated at the factory.
- If patination is done on-site, implement one or more of the following BMPs:
 - Discharge the rinse water to landscaping. Ensure that the rinse water does not flow to the street or storm drain. Block off storm drain inlet if needed.
 - Collect rinse water in a tank and pump to the sanitary sewer. Contact your local sanitary sewer agency before discharging to the sanitary sewer.
 - Collect the rinse water in a tank and haul off-site for proper disposal.
- Consider coating the copper materials with an impervious coating that prevents further corrosion and runoff. This will also maintain the desired color for a longer time, requiring less maintenance.



Storm drain inlet is blocked to prevent prohibited discharge. The water must be pumped and disposed of properly.

During Maintenance

- Implement the following BMPs during routine maintenance activities, such as power washing the roof, re-patinating or re-application of impervious coating:
 - Block storm drain inlets as needed to prevent runoff from entering storm drains.
 - Discharge the wash water to landscaping or to the sanitary sewer (with permission from the local sanitary sewer agency). If this is not an option, haul the wash water off-site for proper disposal.

Protect the Bay/Ocean and yourself!

If you are responsible for a discharge to the storm drain of non-stormwater generated by installing, cleaning, treating or washing copper architectural features, you are in violation of the municipal stormwater ordinance and may be subject to a fine.



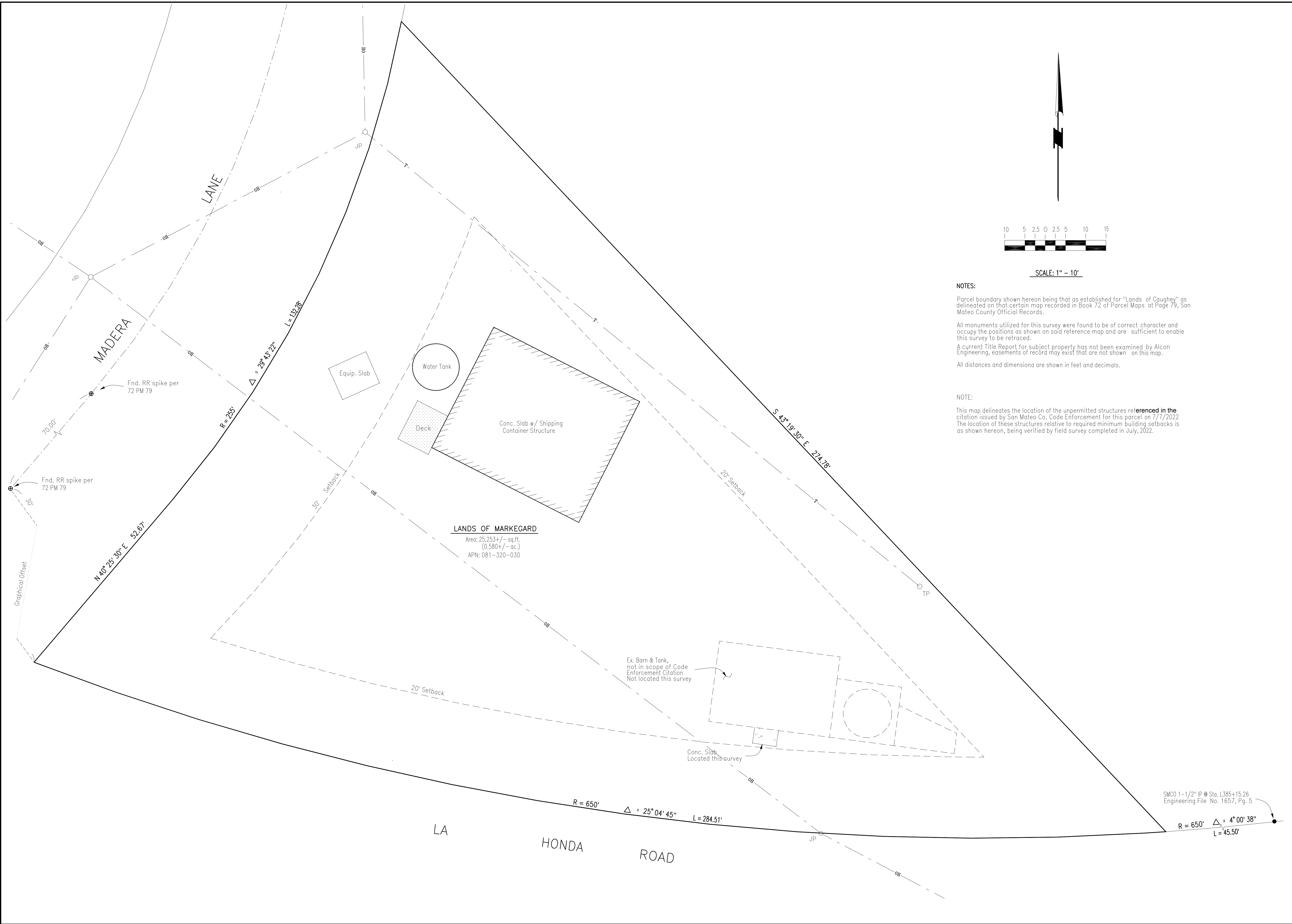
Photo credit: Don Edwards National Wildlife Sanctuary

Contact Information

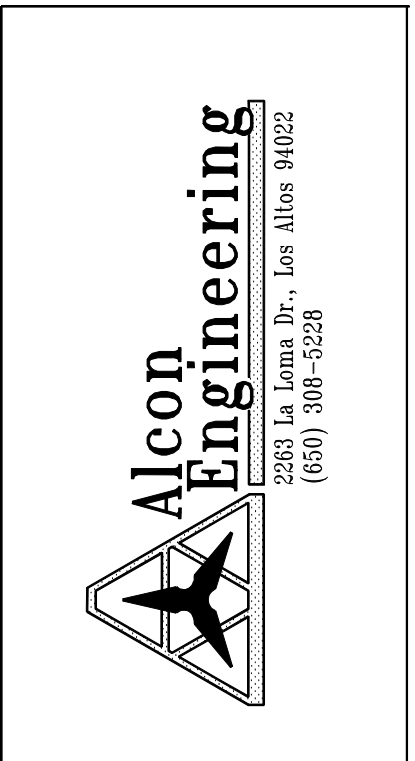
The San Mateo Countywide Water Pollution Prevention Program lists municipal stormwater contacts at www.flowsdebay.org (click on "Business", then "New Development", then "local permitting agency").

FINAL February 29, 2012

Storm drain polluters may be liable for fines of up to \$10,000 per day!

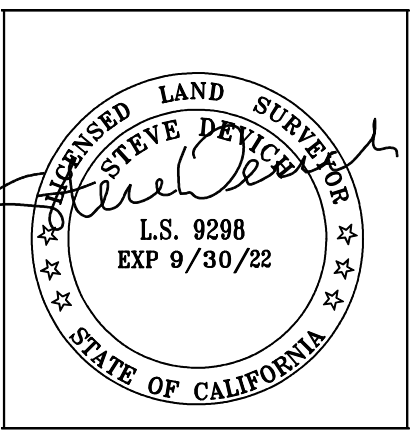


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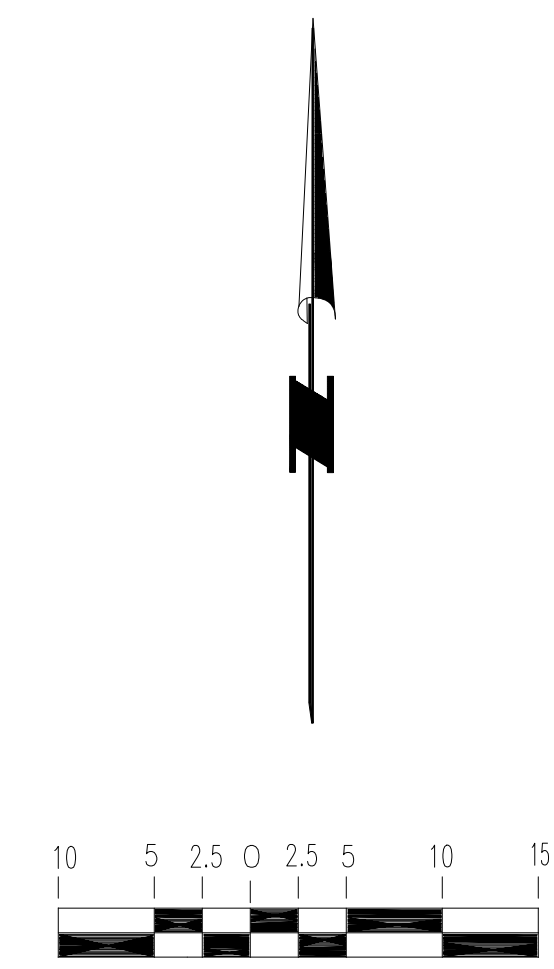


LAND OF MARKEGARD
 350 MADERA LANE
 SAN GREGORIO, CALIFORNIA
 APN: 081-320-030

STRUCTURE LOCATION SURVEY
 CODE ENFORCEMENT CITATION



DATE	8/12/22
SCALE	AS NOTED
JOB #	2999.122
FILE	
DRAWN BY :	SD
SHEET	CE1
OF	1 SHEETS



SCALE: 1" = 10'

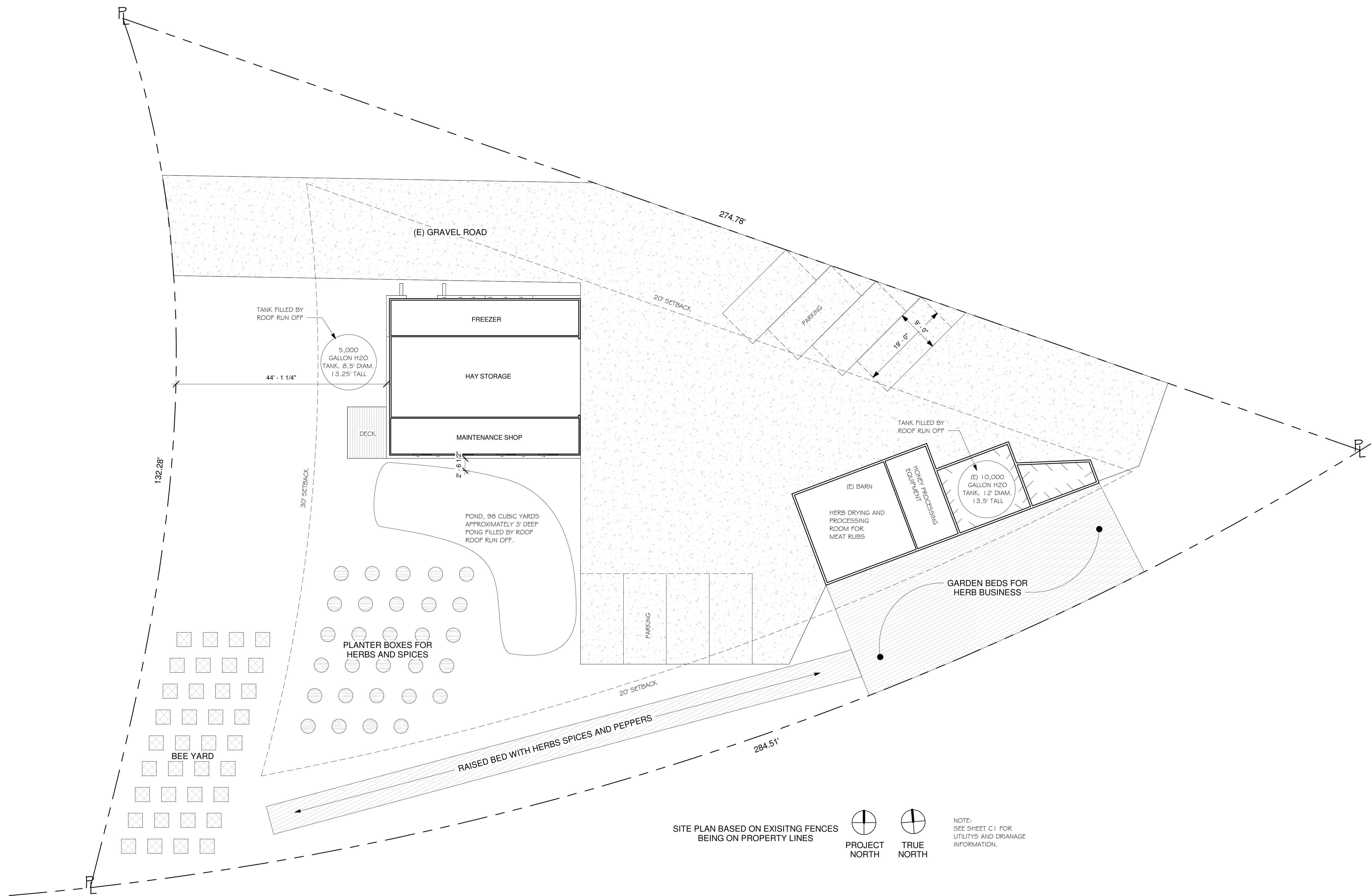
NOTES:
 Parcel boundary shown herein being that as established for "Lands of Caughey" as delineated on that certain map recorded in Book 72 of Parcel Maps at Page 79, San Mateo County Official Records.
 All monuments utilized for this survey were found to be of correct character and occupy the positions as shown on said reference map and are sufficient to enable this survey to be retraced.
 A current Title Report for subject property has not been examined by Alcon Engineering, easements of record may exist that are not shown on this map.
 All distances and dimensions are shown in feet and decimals.

NOTE:
 This map delineates the location of the unpermitted structures referenced in the citation issued by San Mateo Co. Code Enforcement for this parcel on 7/7/2022. The location of these structures relative to required minimum building setbacks is as shown herein, being verified by field survey completed in July, 2022.

LANDS OF MARKEGARD
 Area: 25,253 +/- sq.ft.
 (0.580 +/- ac.)
 APN: 081-320-030

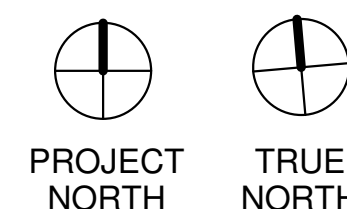
SMCO 1-1/2" IP @ Sta. L385+15.26
 Engineering File No. 1657, Pg. 5

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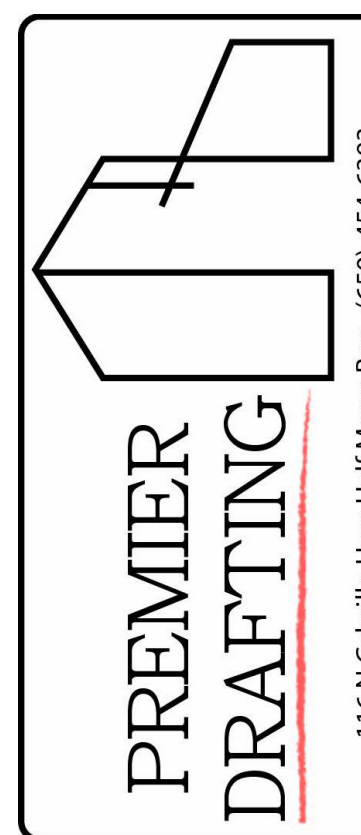
1 Site
1" = 10'-0"

SITE PLAN BASED ON EXISTING FENCES
BEING ON PROPERTY LINES



NOTE:
SEE SHEET C1 FOR
UTILITIES AND DRAINAGE
INFORMATION.

REVISIONS



Owner Information
 Erik Markgard
 (650) 245-4557
 erik@markgardfamily.com

350 Madera Ln
 San Gregorio

Site Plan

Drawn by JM

Designed By: Colton Palmer
Colton Palmer

Date 9/30/24

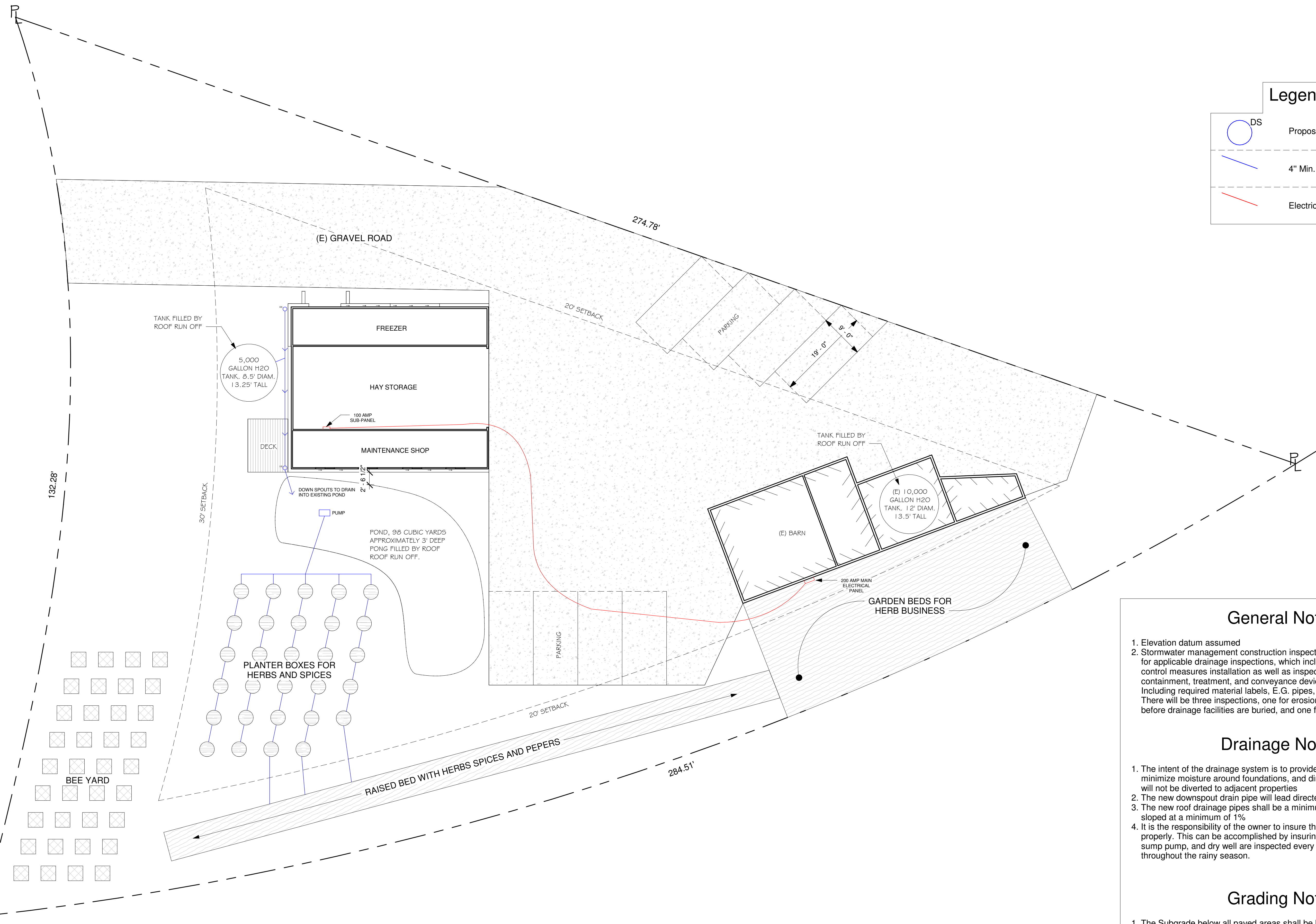
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A102




Scale 1" = 10'-0"

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Legend

-  DS Proposed Downspouts
-  4" Min. Solid Drain Pipe
-  Electrical

③ Drainage
1" = 10'-0"

REVISIONS

PREMIER DRAFTING
116 N. Cabrito Hwy. Half Moon Bay - (650)-454-6393

Owner Information
Erik Markgard
(650)245-4557
erik@markgardfamily.com

350 Madera Ln
San Gregorio

Drainage Plan

Drawn by **JM**

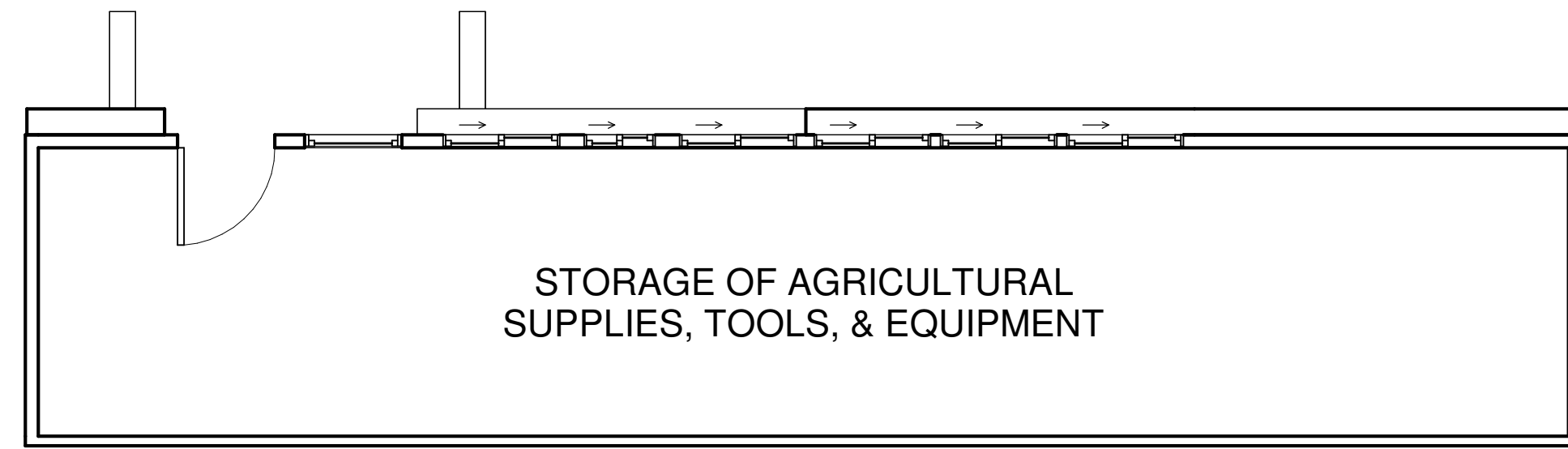
Designed By: **Colton Palmer**
Colton Palmer

Date **9/30/24**

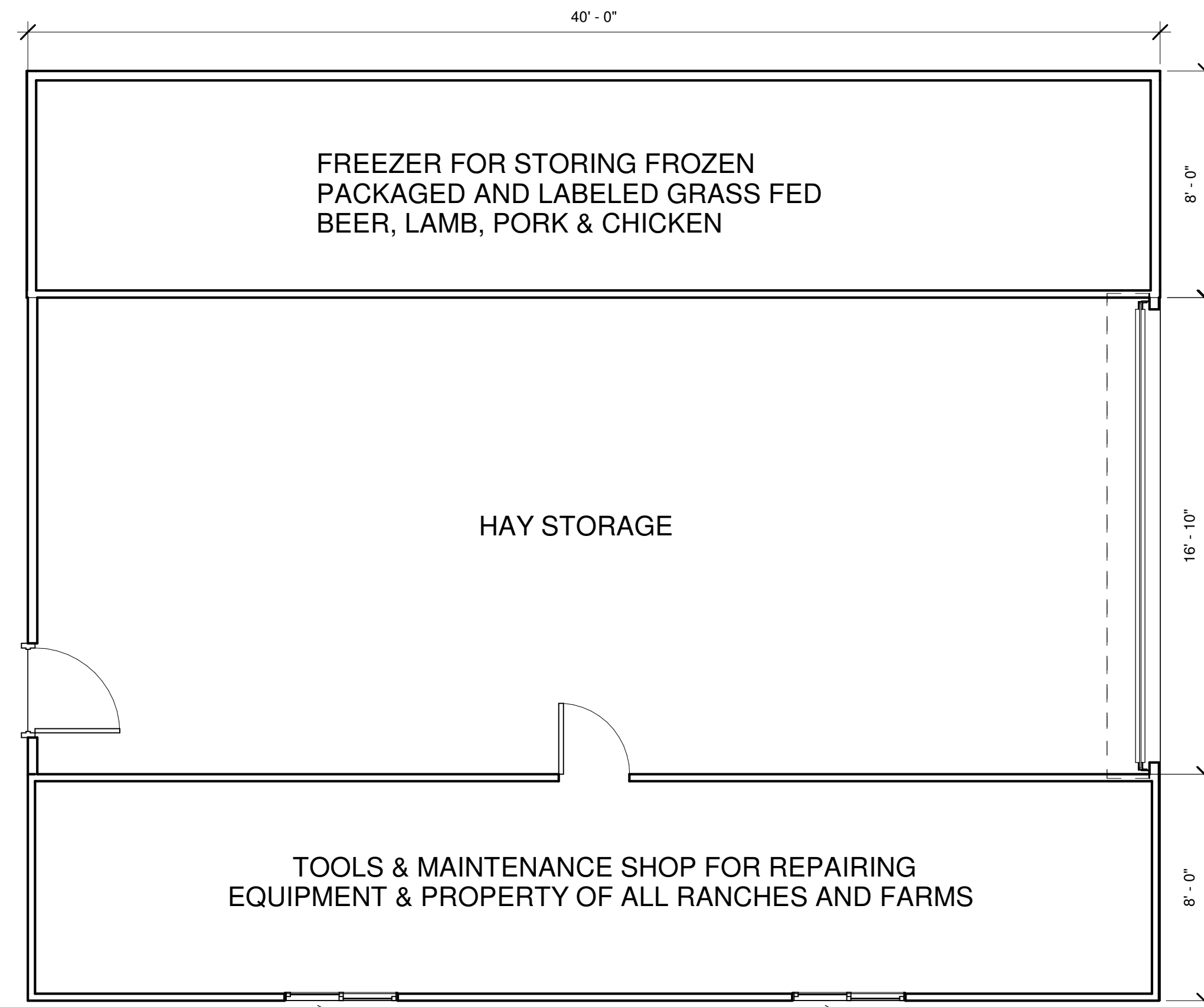
Sheet:
C1

Scale **As indicated**
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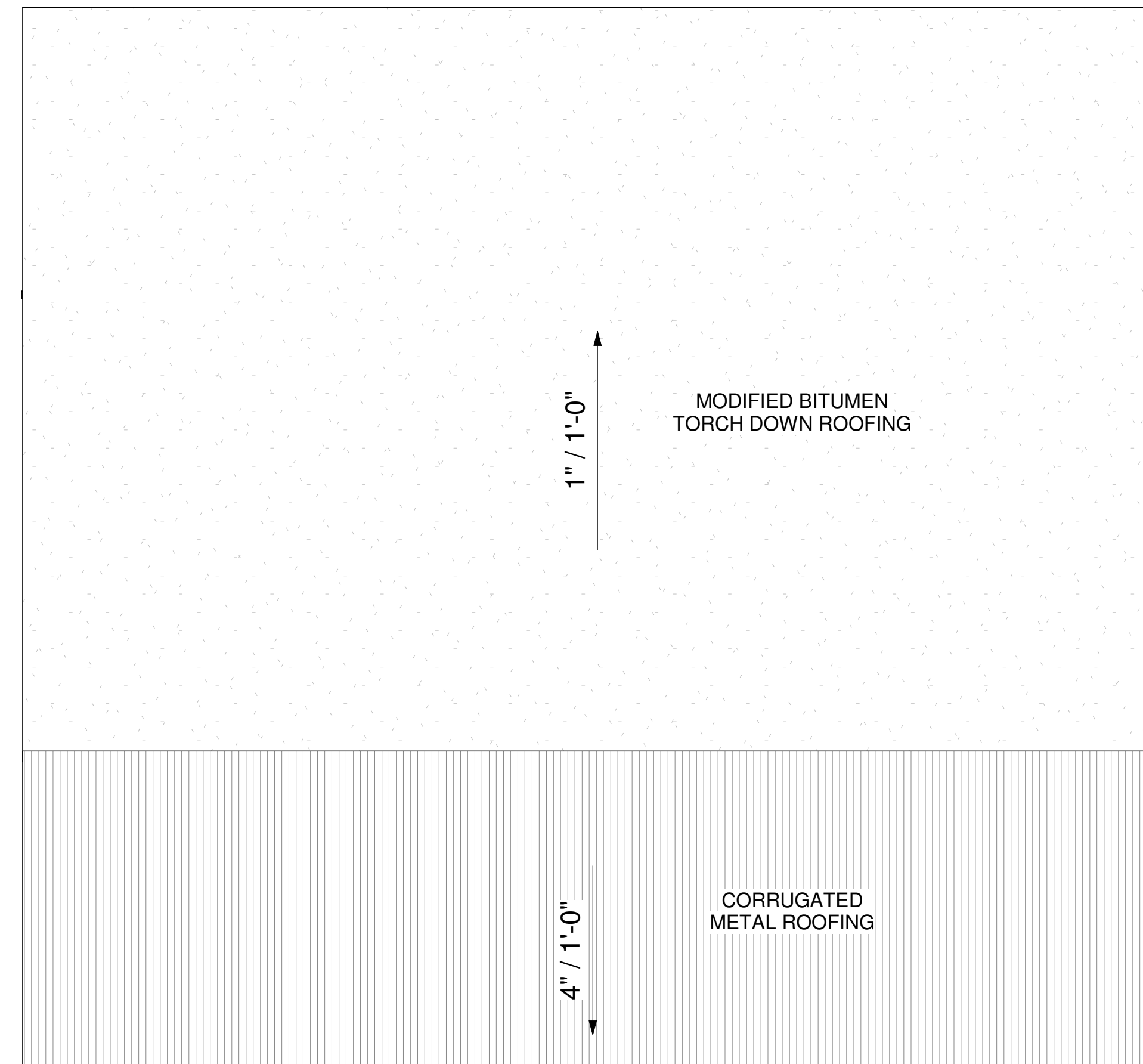
- General Notes:**
- Elevation datum assumed
 - Stormwater management construction inspections shall be scheduled for applicable drainage inspections, which include site clearance and erosion control measures installation as well as inspection of major drainage containment, treatment, and conveyance devices before being buried. Including required material labels, E.G. pipes, sub-grade materials, ETC. There will be three inspections, one for erosion control installation, one before drainage facilities are buried, and one for final walk around
- Drainage Notes:**
- The intent of the drainage system is to provide a safe location for roof runoff, minimize moisture around foundations, and direct slopes so that Stormwater will not be diverted to adjacent properties
 - The new downspout drain pipe will lead directed to the existing pond.
 - The new roof drainage pipes shall be a minimum of 4" in diameter, solid pipes sloped at a minimum of 1%
 - It is the responsibility of the owner to insure the drainage system is working properly. This can be accomplished by insuring all gutters, down spout lines, sump pump, and dry well are inspected every fall and periodically throughout the rainy season.
- Grading Notes:**
- The Subgrade below all paved areas shall be baserock compacted to 95%
 - All grading shall conform to all local codes and ordinances
 - All trenches under proposed paved or concrete areas shall be backfilled to Subgrade elevation with compacted approved granular materials. Trenches in proposed landscape areas shall be within one foot of finished grade, then filled with hand tamped soils.



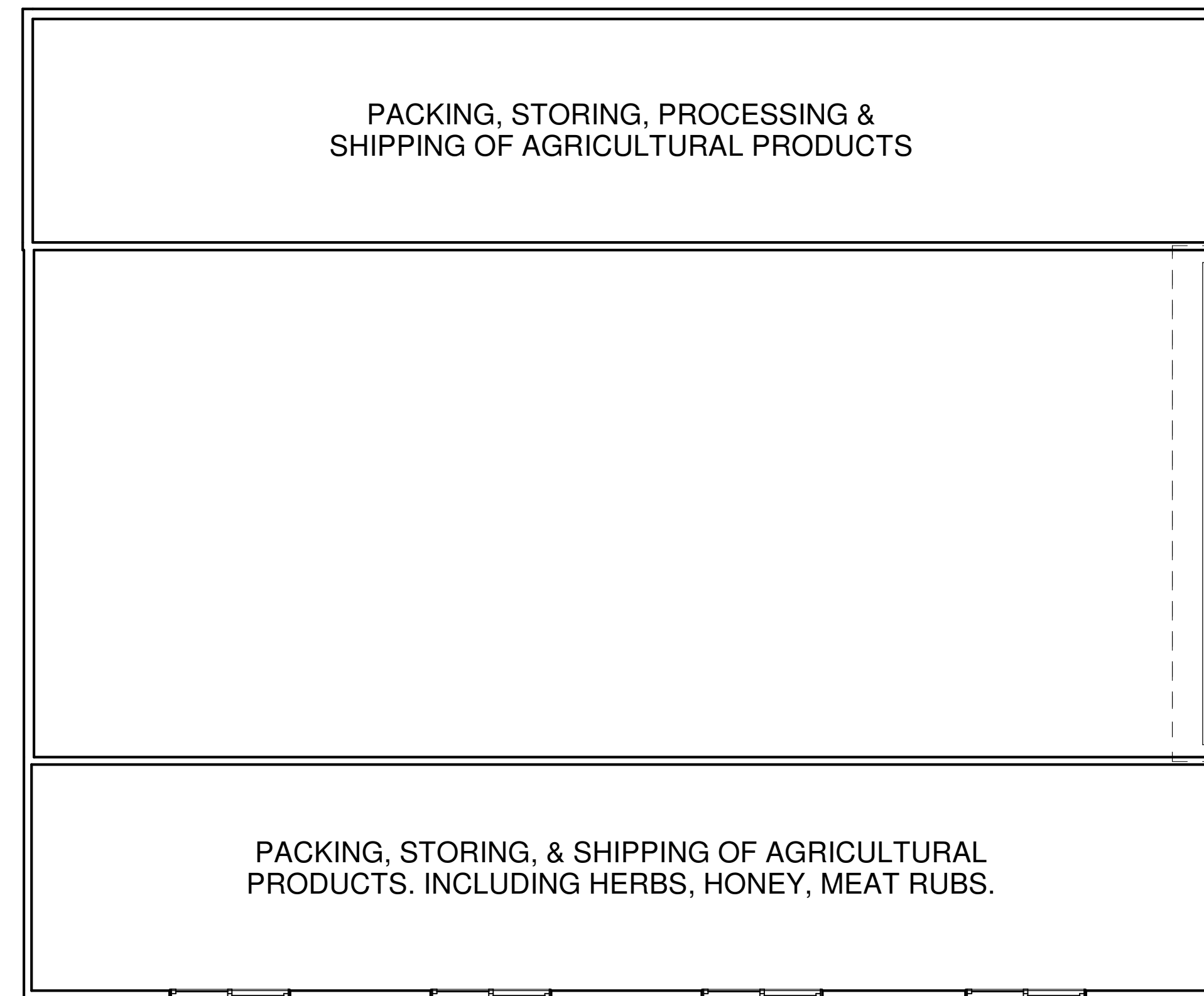
3 Basement
1/4" = 1'-0"



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

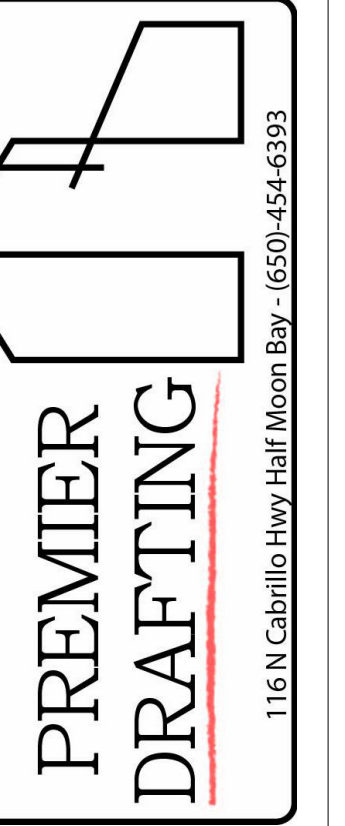


4 Roof
1/4" = 1'-0"



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

REVISIONS



Owner Information
Erik Markgard
(650) 245-4557
erik@markgardfamily.com

350 Madera Ln
San Gregorio

Floor & Roof Plan

Drawn by JM

Designed By: Colton Palmer

Date 9/30/24

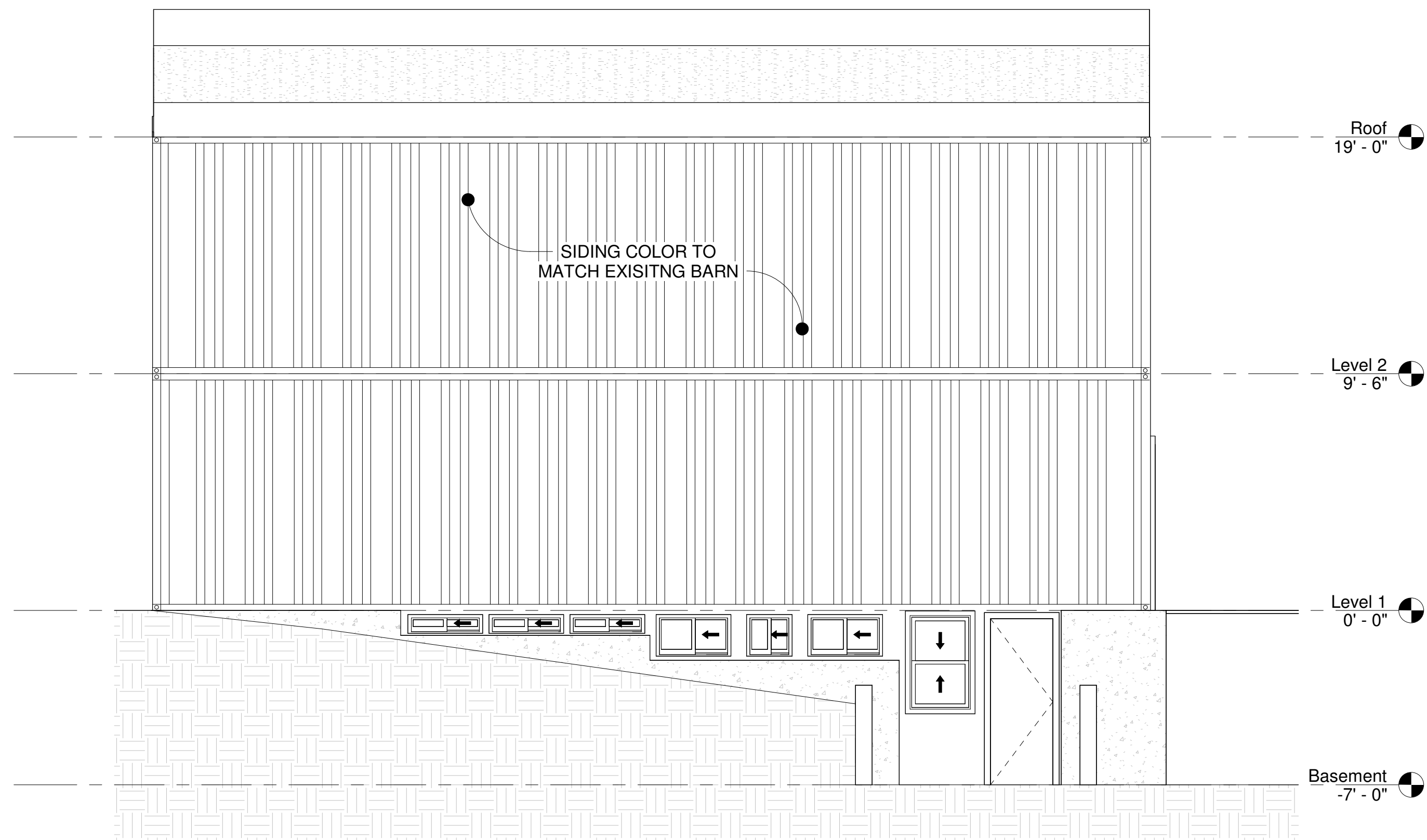
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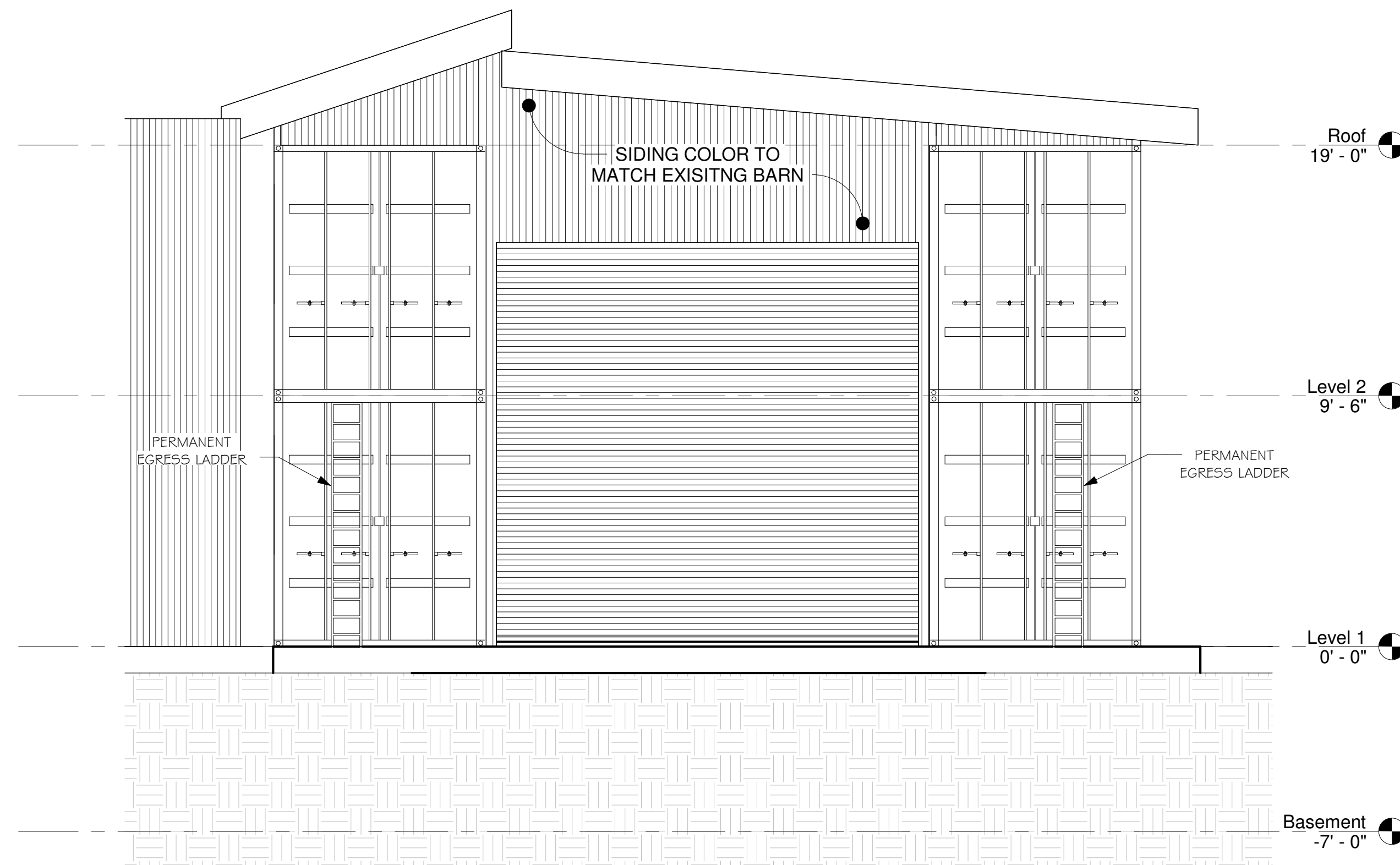
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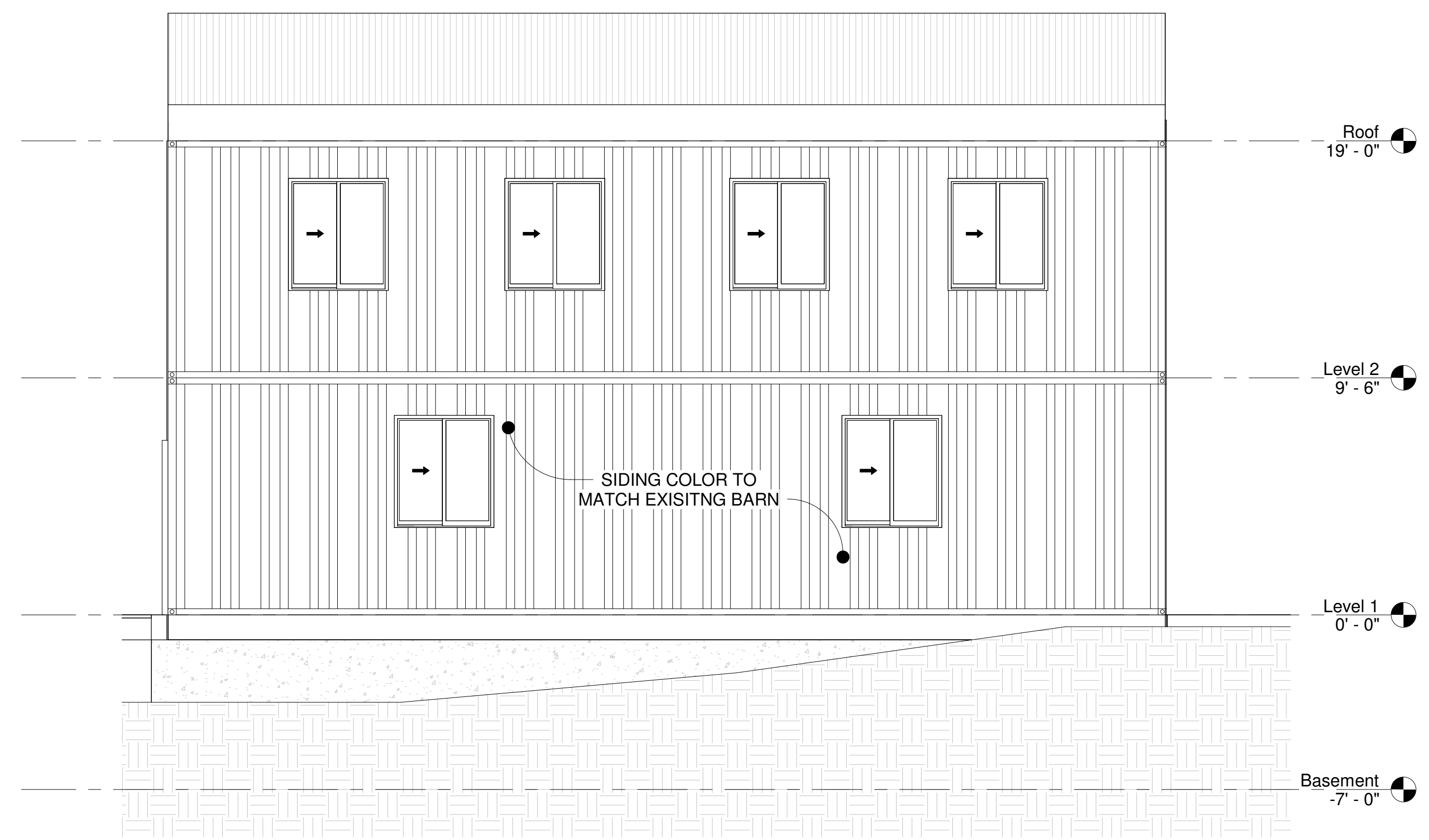
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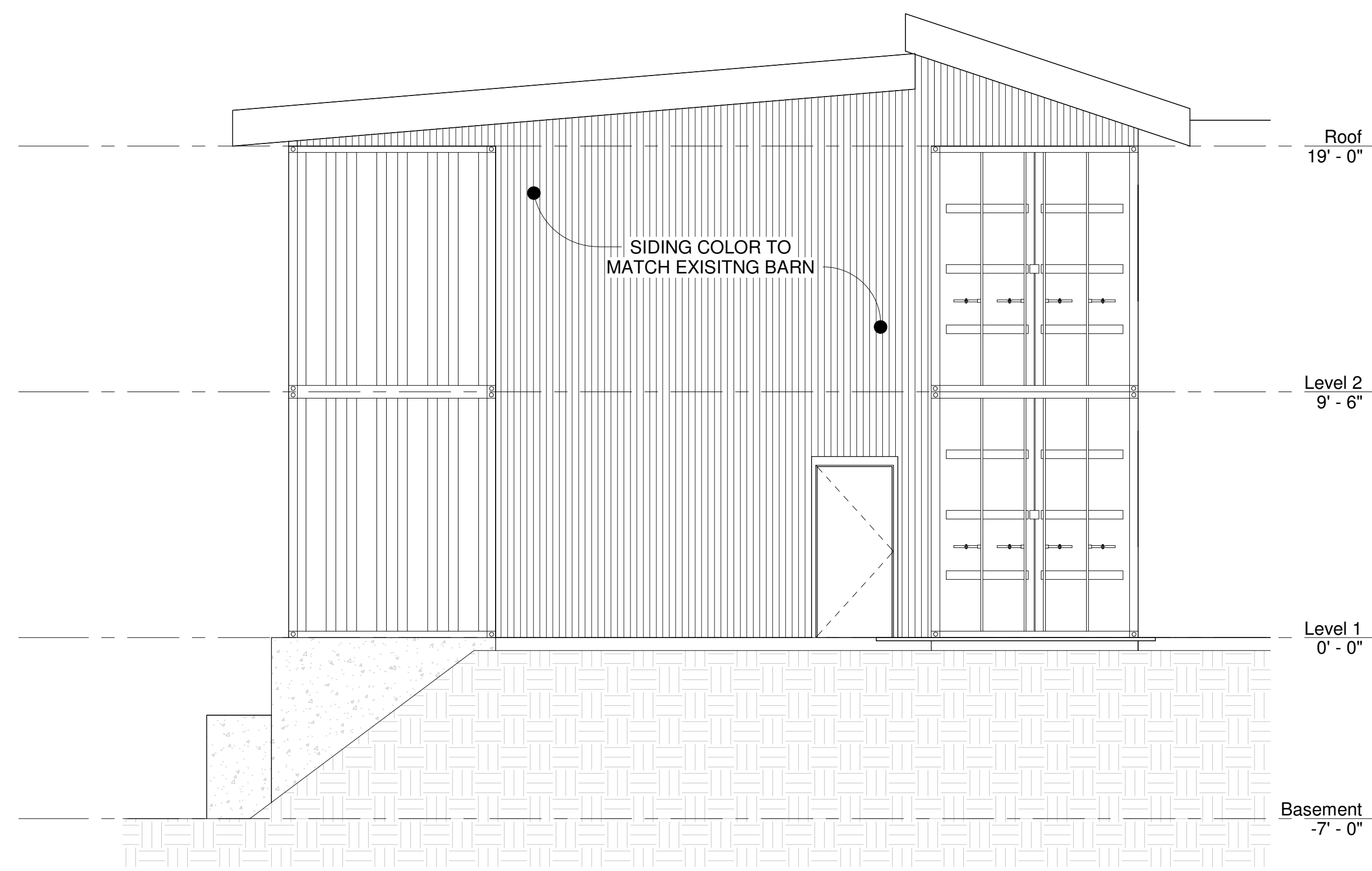
1 North
1/4" = 1'-0"



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

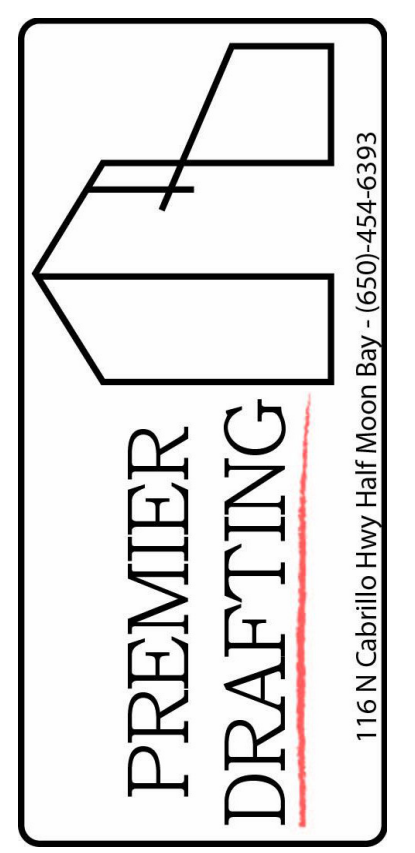


2 South
1/4" = 1'-0"



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

REVISIONS



Owner Information
 Erik Markgard
 (650)245-4557
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350 Madera Ln
 San Gregorio

Elevations

Drawn by JM

Designed By: Colton Palmer

Date 9/30/24

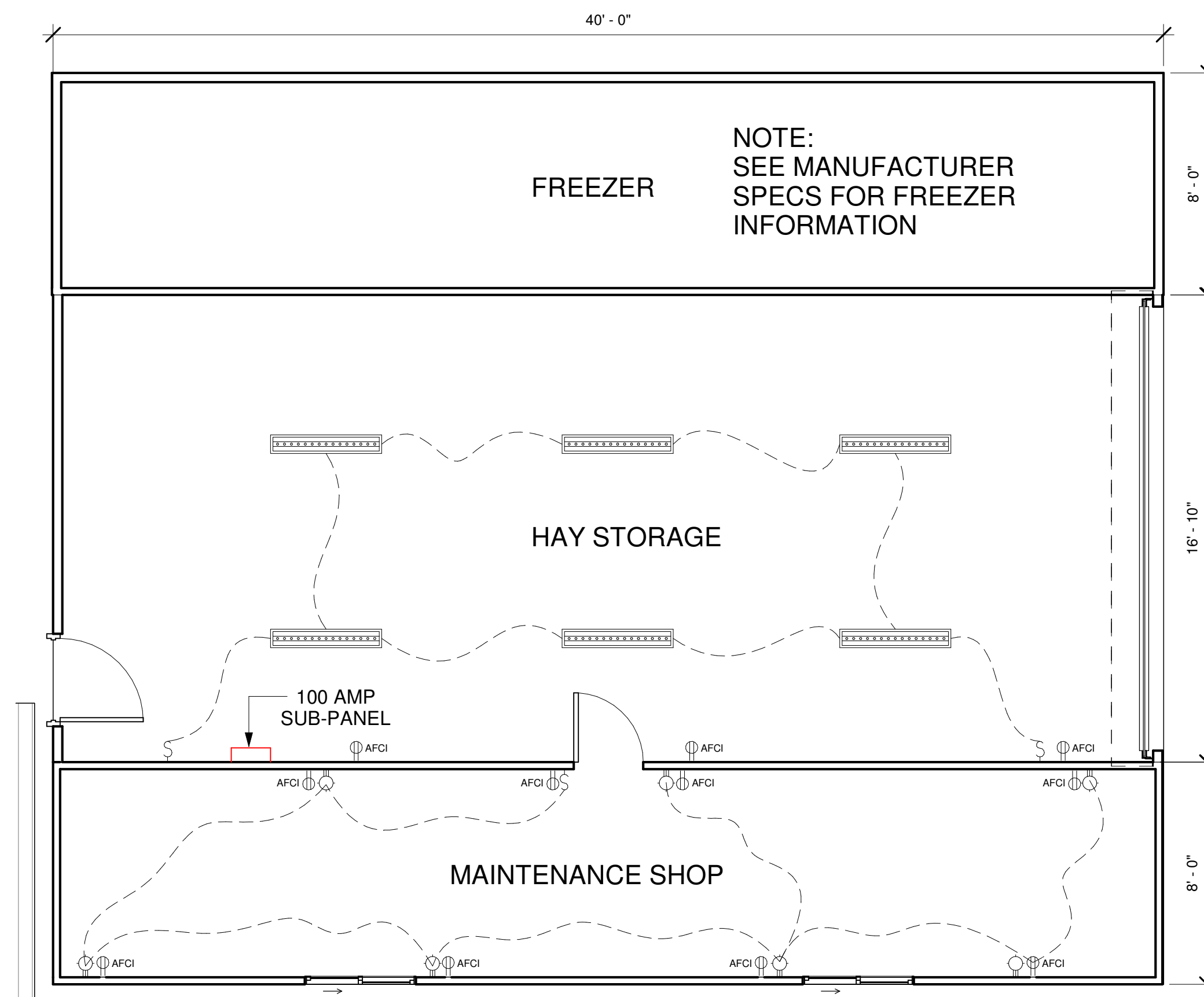
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A104

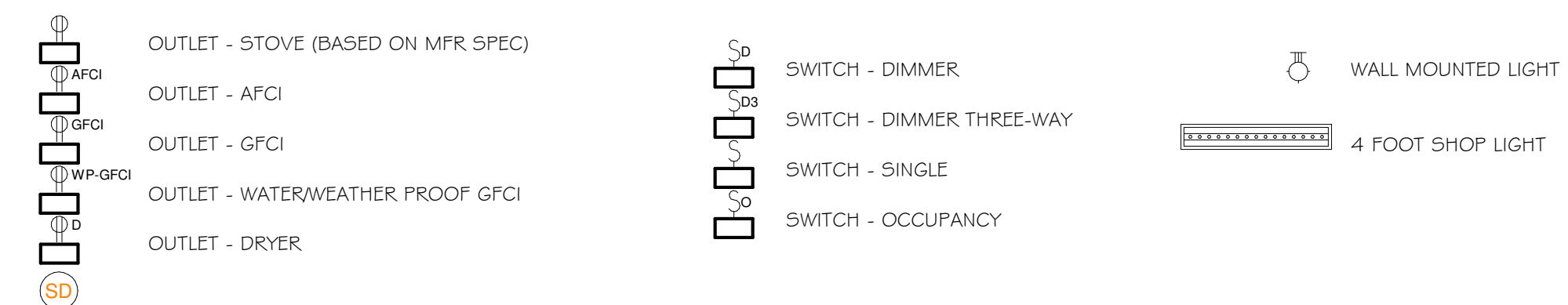
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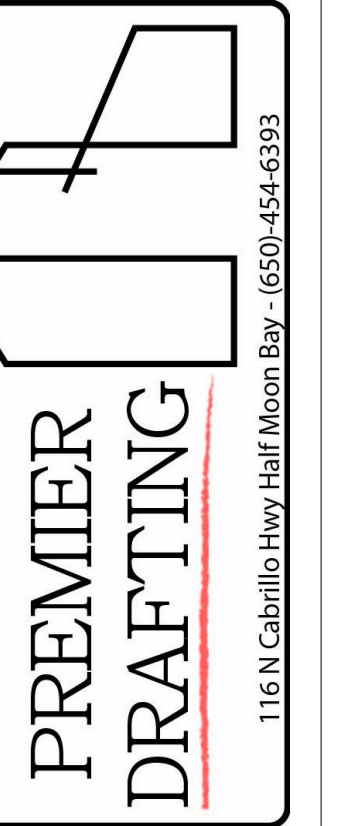
1 Level 1 Electrical Plan
1/4" = 1'-0"



ELECTRICAL NOTES:

1. ALL LIGHTING SHALL BE HIGH-EFFICACY (CEC 150(k)1)
2. ALL OUTDOOR LIGHTING SHALL BE HIGH-EFFICACY AND CONTROLLED BY MOTION SENSOR & PHOTOCONTROL OR OTHER APPROVED METHODS (CEC 150(k)3)
3. IN BATHROOMS, AT LEAST ONE LIGHT SHALL BE CONTROLLED BY A VACANCY SENSOR (CEC 150.0(k)2J)
4. 125-VOLT, 15 & 20 AMP RECEPTACLE OUTLETS SHALL BE LISTED TAMPER-RESISTANT (CEC 406.11)
5. ALL BRANCH CIRCUITS THAT SUPPLY 120-VOLT, SINGLE PHASE, 15 & 20 AMP OUTLETS IN DWELLING UNIT KITCHENS, FAMILY ROOMS, DINING ROOMS, LIVING ROOMS, PARLORS, LIBRARIES, DENS, BEDROOMS, SUNROOMS, RECREATION ROOMS, CLOSETS, HALLWAYS, LAUNDRY AREAS, OR SIMILAR ROOMS OR AREAS SHALL BE ARC-FAULT CIRCUIT INTERRUPTOR (AFCI) PROTECTED (CEC 210.12(A))
6. A DEDICATED 20 AMP BRANCH CIRCUIT SHALL BE PROVIDED TO SUPPLY BATHROOM RECEPTACLE OUTLETS (CEC 210.11(C)(3))
7. A MINIMUM OF TWO 20 AMP SMALL APPLIANCE CIRCUITS FOR THE KITCHEN COUNTER TOPS SHALL BE PROVIDED. SUCH CIRCUIT SHALL HAVE NO OTHER OUTLETS. LOADS SHALL BE BALANCED (CEC 210.52(B)(2))
8. PROVIDE 220-VOLT, 30 AMP DEDICATED CIRCUIT FOR DRYER (CEC 220.54)
9. ALL BATHROOM EXHAUST FANS SHALL BE ENERGY STAR COMPLIANT, DUCTED TO TERMINATE OUTSIDE THE BUILDING, AND CONTROLLED BY A HUMIDISTAT CAPABLE OF BEING ADJUSTED BETWEEN THE RELATIVE HUMIDITY RANGE OF 50 TO 80 PERCENT. CGBC 4.506
10. KITCHEN EXHAUST SHALL BE A MINIMUM OF 100 CFM
11. KITCHEN HOOD EXHAUST FAN SHALL BE DUCTED OUTSIDE IN ACCORDANCE WITH ASHRAE STANDARD 62.2 TABLE 7.1
12. REFER GROUND OR OTHER APPROVED GROUND PER CEC 250
13. LISTED RACEWAY PROVIDED TO ACCOMMODATE A DEDICATED 208/240-VOLT BRANCH CIRCUIT. RACEWAY SHALL BE MINIMUM TRADE SIZE 1 AND SHALL ORIGINATE AT THE MAIN SERVICE OR SUBPANEL AND SHALL TERMINATE INTO A LISTED CABINET IN CLOSE PROXIMITY TO THE PROPOSED LOCATION OF THE PROPOSED EV CHARGER. CGBSC 4.106.4.1

REVISIONS



Owner Information
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350 Madera Ln
San Gregorio

Electrical Plan

Drawn by JM

Designed By: Colton Palmer

Date 9/30/24

Sheet:

A105

Scale 1/4" = 1'-0"

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TECHNICAL SPECIFICATIONS:

- GENERAL NOTES**
- ANY FEATURE OF CONSTRUCTION NOT FULLY SHOWN OR DETAILED SHALL BE OF THE SAME TYPE AS SHOWN ON THE PLANS FOR SIMILAR CONSTRUCTION.
 - ALL DIMENSIONS SHOWN ON THESE PLANS ARE FOR REFERENCE ONLY. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS WITH THE ARCHITECT'S PLANS AND NOTIFY THE ENGINEER IN THE EVENT OF A CONFLICT, PRIOR TO PROCEEDING WITH CONSTRUCTION.
 - ANY REQUEST FOR ALTERATIONS OR SUBSTITUTIONS MUST BE PRESENTED TO THE ENGINEER IN THE FORM OF A DETAILED SKETCH FOR REVIEW BEFORE AN APPROVAL WILL BE GIVEN, AND BEFORE PROCEEDING WITH THE WORK.
 - ALL CONSTRUCTION SHALL CONFORM TO THE APPLICABLE PROVISIONS OF THE CALIFORNIA BUILDING CODE, 2019 EDITION.
 - IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE LOCATION AND DEPTH OF ALL UTILITIES PRIOR TO CONSTRUCTION, AND TO NOTIFY THE ENGINEER IN THE EVENT OF A CONFLICT.
 - THE CONTRACTOR SHALL SECURE ALL REQUIRED CONSTRUCTION PERMITS FROM THE COUNTY OF SAN MATEO BUILDING DEPARTMENT PRIOR TO THE START OF WORK.
 - THE CONTRACTOR SHALL NOTIFY THE COUNTY BUILDING INSPECTOR AT LEAST 48 HOURS PRIOR TO POURING ANY CONCRETE.

- CONCRETE**
- ALL CONCRETE WORK SHALL BE DONE IN CONFORMANCE WITH THE LATEST EDITION OF THE ACI BUILDING CODE AND THE LATEST EDITION OF THE MANUALS OF CONCRETE PRACTICE.
 - THE CONCRETE FOR THE BUILDING FOUNDATIONS SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 2500 PSI. THE USE OF ANY ADMIXTURE SHALL BE APPROVED BY THE ENGINEER.
 - THE MAXIMUM AGGREGATE SIZE SHALL BE 3/4" INCH FOR PUMP DELIVERED CONCRETE.
 - REINFORCEMENT, ANCHOR BOLTS, SLEEVES, AND OTHER SUCH ITEMS TO BE CAST MONOLITHICALLY IN CONCRETE SHALL BE SECURELY FASTENED AND IN PLACE PRIOR TO CALLING FOR INSPECTION.
 - RECYCLED FLY ASH MAY BE SUBSTITUTED FOR THE REQUIRED CEMENT CONTENT AT THE RATE OF 25% MAXIMUM.
 - CONCRETE FORM BOARDS SHALL BE REUSED OR RECYCLED.
 - SUBMIT MIX DESIGN AND CURING METHOD TO THE ENGINEER FOR REVIEW PRIOR TO PLACING CONCRETE.
 - VAPOR BARRIER UNDER BUILDING SLABS SHALL BE STEGOWRAP 15 MIL VAPOR BARRIER, OR APPROVED EQUIVALENT.

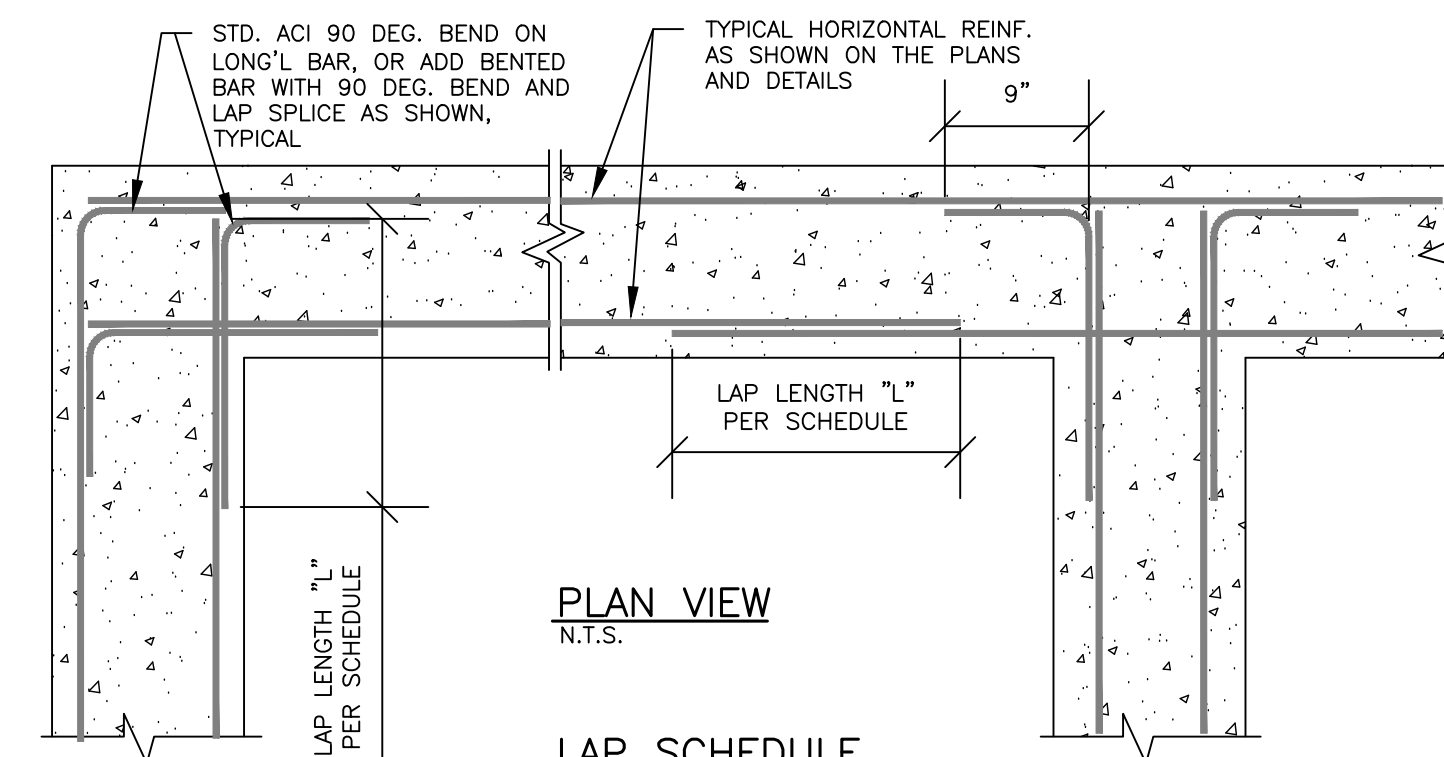
- REINFORCING STEEL**
- REINFORCING STEEL SHALL COMPLY WITH ASTM A615, GRADE 40 FOR #4 AND SMALLER BARS, GRADE 60 FOR #5 AND LARGER BARS. SPLICES SHALL BE STAGGERED WHERE POSSIBLE. SPLICE BARS 40 BAR DIAMETERS, MINIMUM.
 - SUPPORTING DEVICES FOR THE REINFORCEMENT SHALL BE SPACED SUFFICIENTLY TO PROPERLY SUPPORT THE REINFORCEMENT AND PREVENT EXCESSIVE DEFLECTION THAT MAY RESULT IN IMPROPER BAR PLACEMENT.
 - THE FOLLOWING MINIMUM BAR COVERS SHALL BE MAINTAINED:
CONCRETE EXPOSED TO EARTH OR WEATHER: 1 1/2 INCHES
CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH: 3 INCHES
 - ALL ANCHOR BOLTS SHALL BE 5/8" DIAMETER BY 12" LONG HOT DIPPED GALVANIZED "J" BOLTS WITH 3" SQUARE X 1/4" PLATE WASHERS. USE TWO BOLTS MINIMUM PER SILL PLATE MEMBER, 6" MINIMUM AND 12" MAXIMUM FROM EACH END.

- FOUNDATION EXCAVATION NOTES**
- THE FOUNDATION ELEMENTS SHOWN HEREON WERE DESIGNED BASED ON ASSUMED VALUES BASED ON SITE OBSERVATIONS. VALUES SHALL BE VERIFIED BY A GEOTECHNICAL ENGINEER. THE CONTRACTOR SHALL FOLLOW THE RECOMMENDATIONS BY GEOTECHNICAL ENGINEER.
 - THE FOUNDATION DIMENSIONS SHOWN ON THESE PLANS SHOULD BE CONSIDERED MINIMUMS. ALL FOOTINGS SHALL BE EXCAVATED INTO AND BEAR ON NATIVE BEDROCK SHOWN HEREON. LOOSE NEAR SURFACE SOILS MAY REQUIRE FOOTINGS TO HAVE ADDITIONAL DEPTH.
 - NOTIFY THE GEOTECHNICAL ENGINEER PRIOR TO PROCEEDING IN THE EVENT THAT UNUSUAL SOIL CONDITIONS ARE ENCOUNTERED.
 - ALL EXCAVATED MATERIAL SHALL BE DEPOSITED OFF SITE IN A LEGAL MANNER, OR INCORPORATED INTO OTHER ON-SITE GRADING PROVIDED IT IS DONE SO BASED ON ACCEPTED STANDARDS TO PREVENT EROSION. CONTRACTOR IS RESPONSIBLE FOR SHORING DESIGN AND INSTALLATION TO SUPPORT EXISTING STRUCTURE IN AREAS WHERE NEW FOOTING OR UTILITY EXCAVATIONS ARE ADJACENT TO EXISTING FOUNDATION ELEMENTS.

- STRUCTURAL STEEL**
- ALL WORK DONE UNDER THIS SECTION SHALL CONFORM TO THE REQUIREMENTS OF THE AISC SPECIFICATIONS AND THE CODE OF STANDARD PRACTICE, OR THE PWS SPECIFICATIONS FOR WELDING (AWS D11.1-75).
 - STRUCTURAL STEEL PLATES AND BARS SHALL CONFORM TO ASTM A36.
 - STRUCTURAL STEEL WIDE FLANGES SHAPES SHALL HAVE A MINIMUM YIELD OF 50 KSI.
 - STRUCTURAL STEEL PIPE SHALL CONFORM TO ASTM A53, GRADE B.
 - STRUCTURAL STEEL TUBING SHALL CONFORM TO ASTM A500, GRADE B.
 - ALL BOLTS SHALL BE ASTM A325 OR BETTER, UNLESS NOTED OTHERWISE.
 - ALL STEEL FASTENERS EXPOSED TO THE WEATHER SHALL BE HOT DIPPED GALVANIZED.
 - ALL STRUCTURAL STEEL MEMBERS SHALL BE PAINTED WITH A SHOP PRIMER SUCH AS THAT BY TNEVEC BRAND OR EQUAL.
 - THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND FIELD CONDITIONS PRIOR TO FABRICATING THE STRUCTURAL STEEL MEMBERS. IN THE EVENT OF A DISCREPANCY OR CONFLICT, NOTIFY THE ENGINEER PRIOR TO PROCEEDING.
 - ALL STRUCTURAL STEEL WELDING AND HIGH STRENGTH BOLTING SHALL BE DONE SO WITH SPECIAL INSPECTION AS REQUIRED PER SECTION 1704 OF THE 2019 UBC.

CONTAINER SPECIFICATION BY OTHERS

TYPE	FG-40H-0003B
DATE MANUFACTURED	01/2020
MAX. OPERATING GROSS MASS	67,200 LBS
ALLOWABLE STACKING LOAD FOR 1.8G	423,280 LBS
TRANSVERSE RACKING TEST FORCE	150,000 NEWTONS



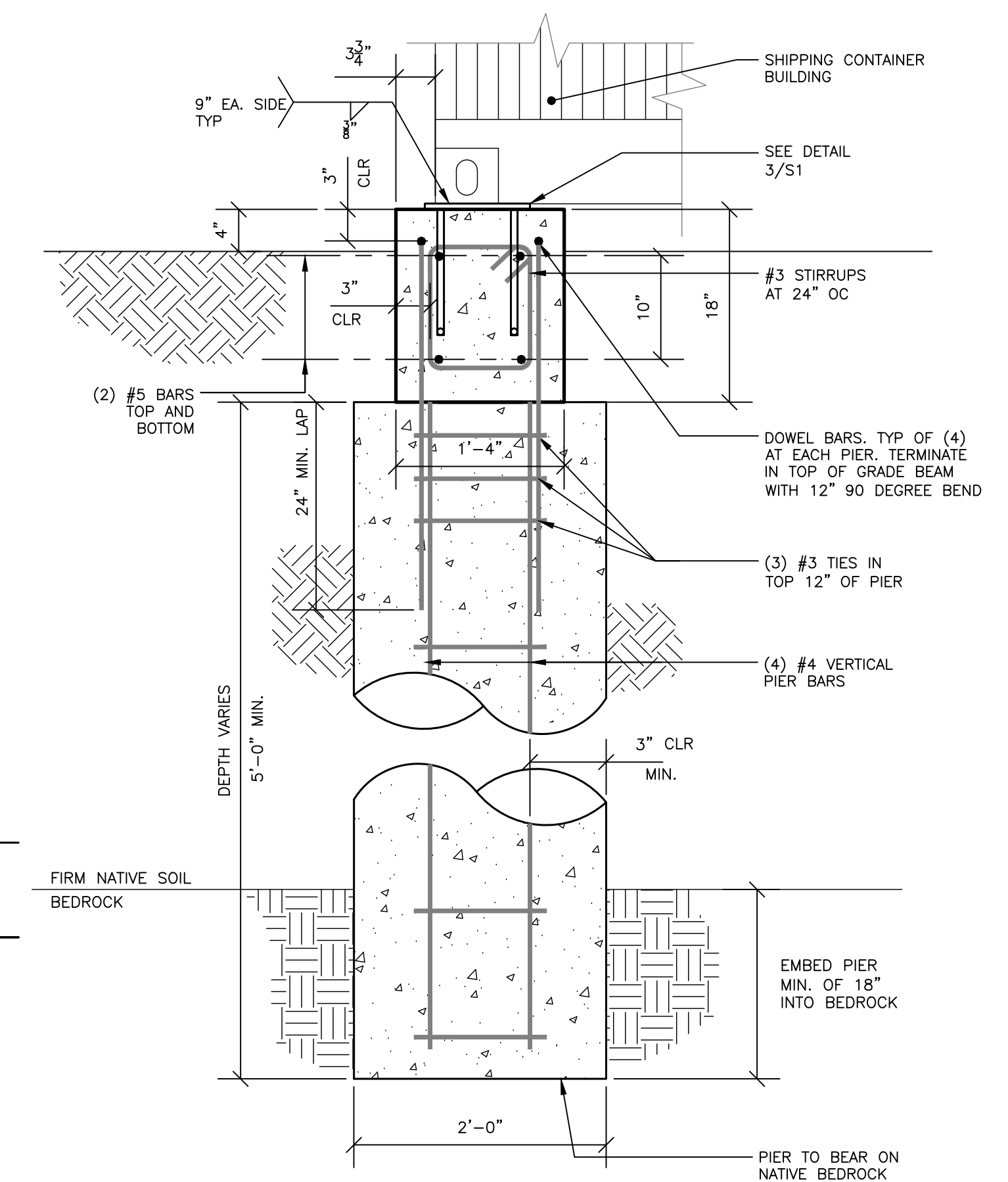
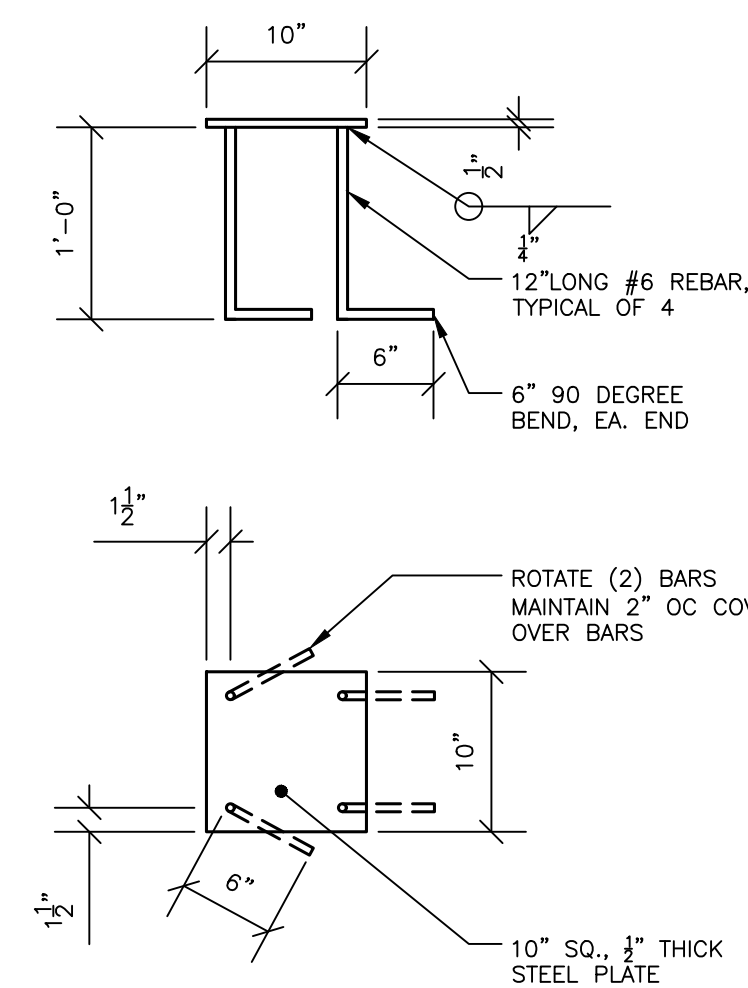
LAP SCHEDULE

BAR SIZE:	LAP LENGTH "L"	
	TOP BARS	OTHER BARS
#4	24"	16"
#5	30"	20"
#6	40"	28"

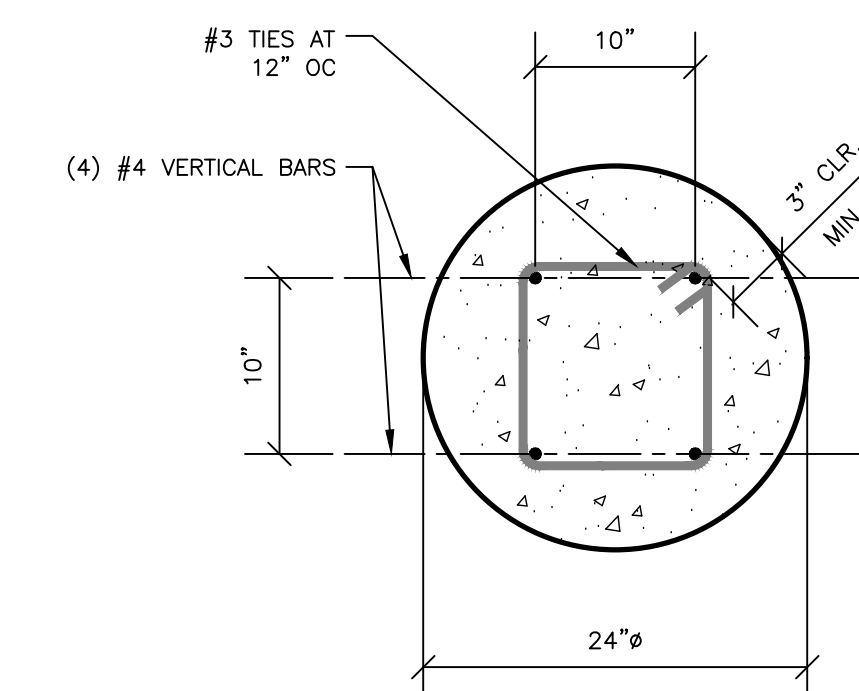
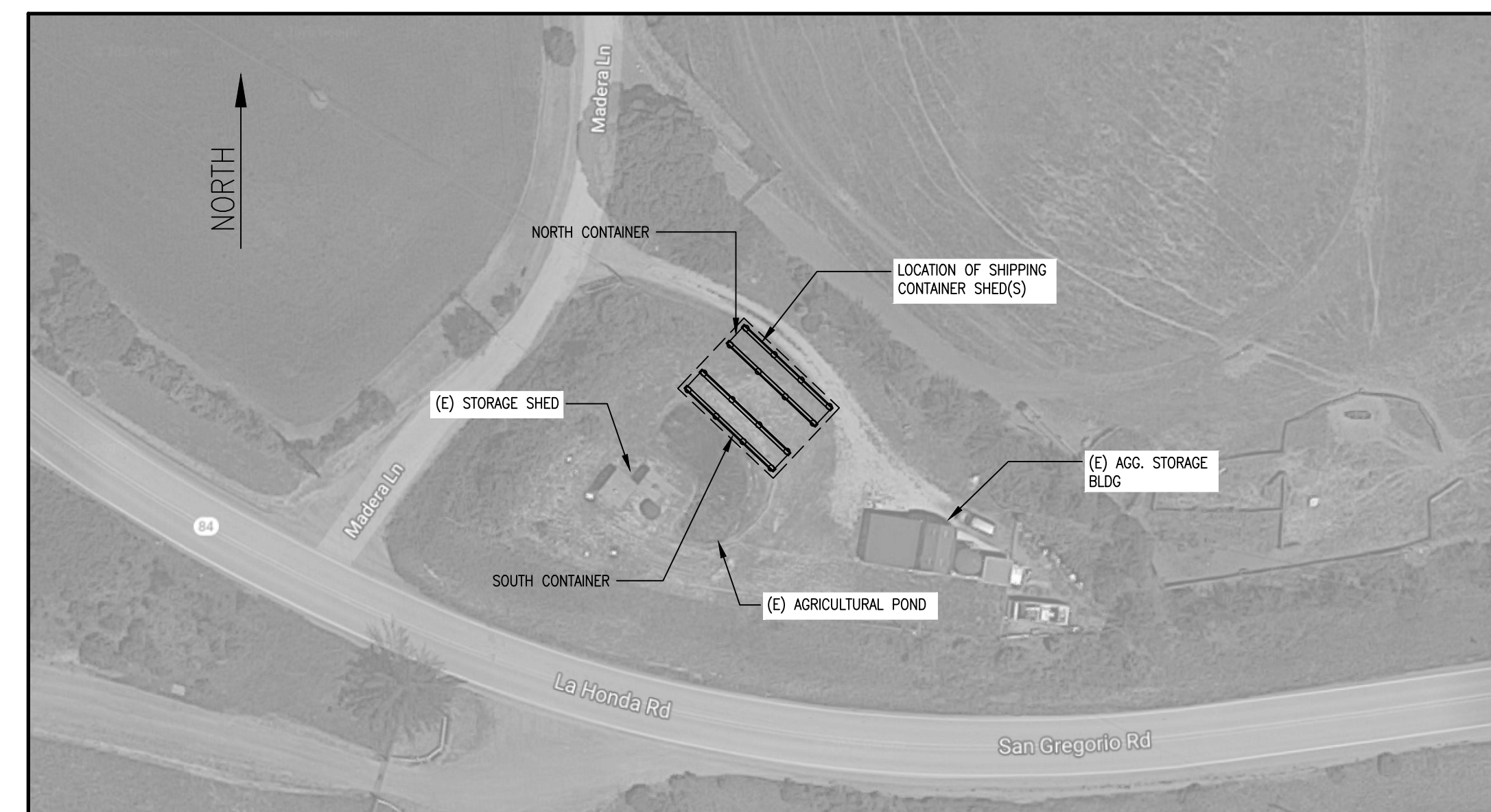
NOTE: LAP LENGTHS SHOWN ASSUME CLASS B SUICE CONDITIONS AND CAN BE USED AT ANY POINT ALONG A MEMBER.

NOTES:
"TOP BARS" OCCUR WHERE AT LEAST 12" OF CONCRETE IS TO BE PLACED BELOW THE REBAR IN QUESTION. OTHERWISE THE BARS ARE "OTHER BARS."
SPLICE ALL SLAB REINFORCING AS SHOWN ON THE "OTHER BAR" COLUMN.

4 S1	TYPICAL REINFORCEMENT DETAILS
---------	-------------------------------



1 S1	TYPICAL GRADE BEAM REINFORCEMENT DETAILS SOUTH CONTAINER
---------	---



2 S1	TYPICAL PIER REINFORCEMENT DETAILS
---------	------------------------------------

REVISION	DESCRIPTION	DATE
1	RELEASED FOR CONCEPTUAL DESIGN ONLY.	8/5/20
2	RELEASED FOR PERMIT APPLICATION ONLY.	7/13/22

SITE PLAN DETAILS AND SPECIFICATIONS

MARKEGARD
350 MADERA LANE
SAN GREGORIO, CA 94074

Professional Engineer CS138

Phone: (831) 469-7296
Email: andrew@aradovan.com

Andrew Radovan
Civil Engineering Inc.

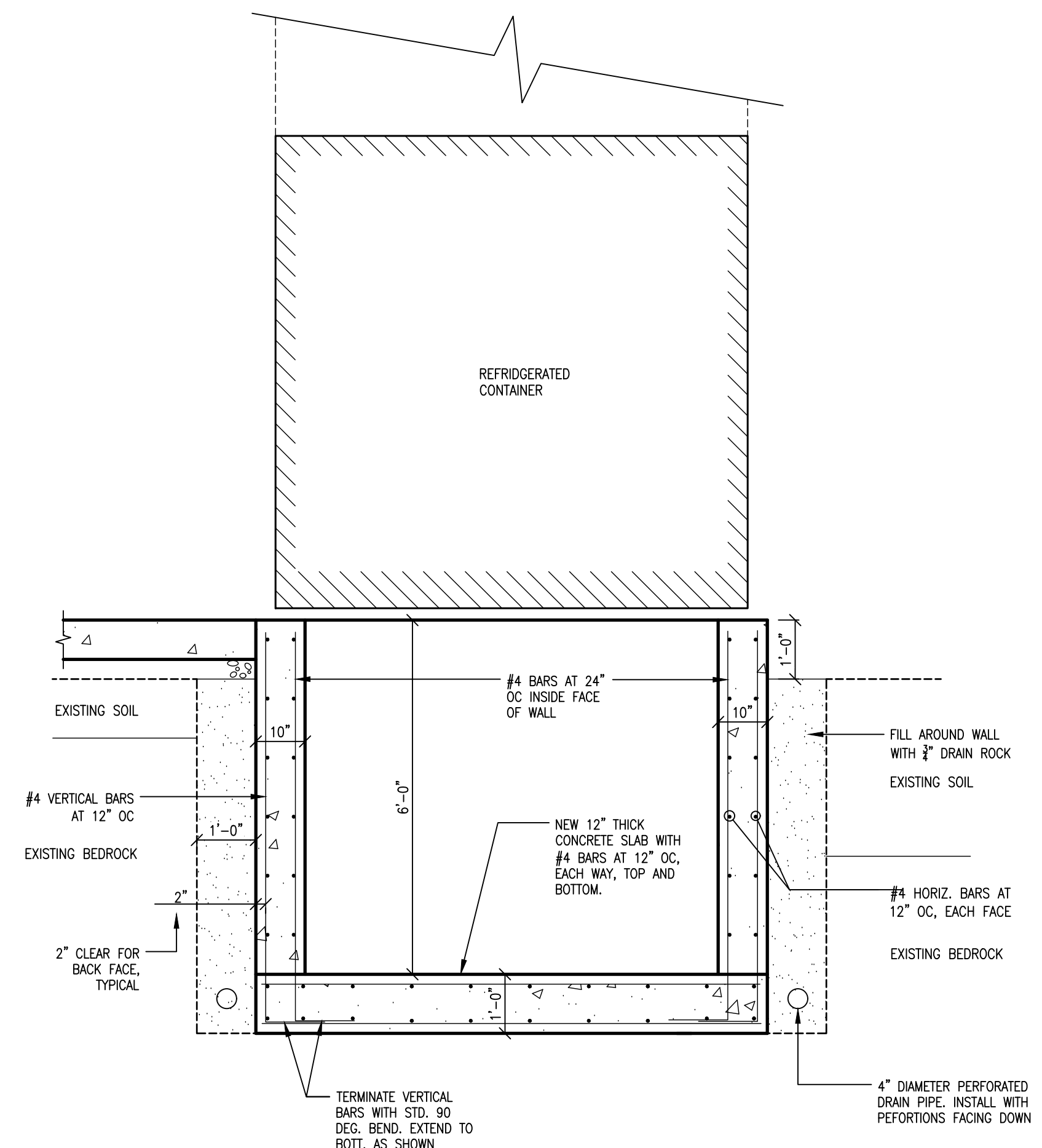
2815 Mission St. Santa Cruz, CA 95060



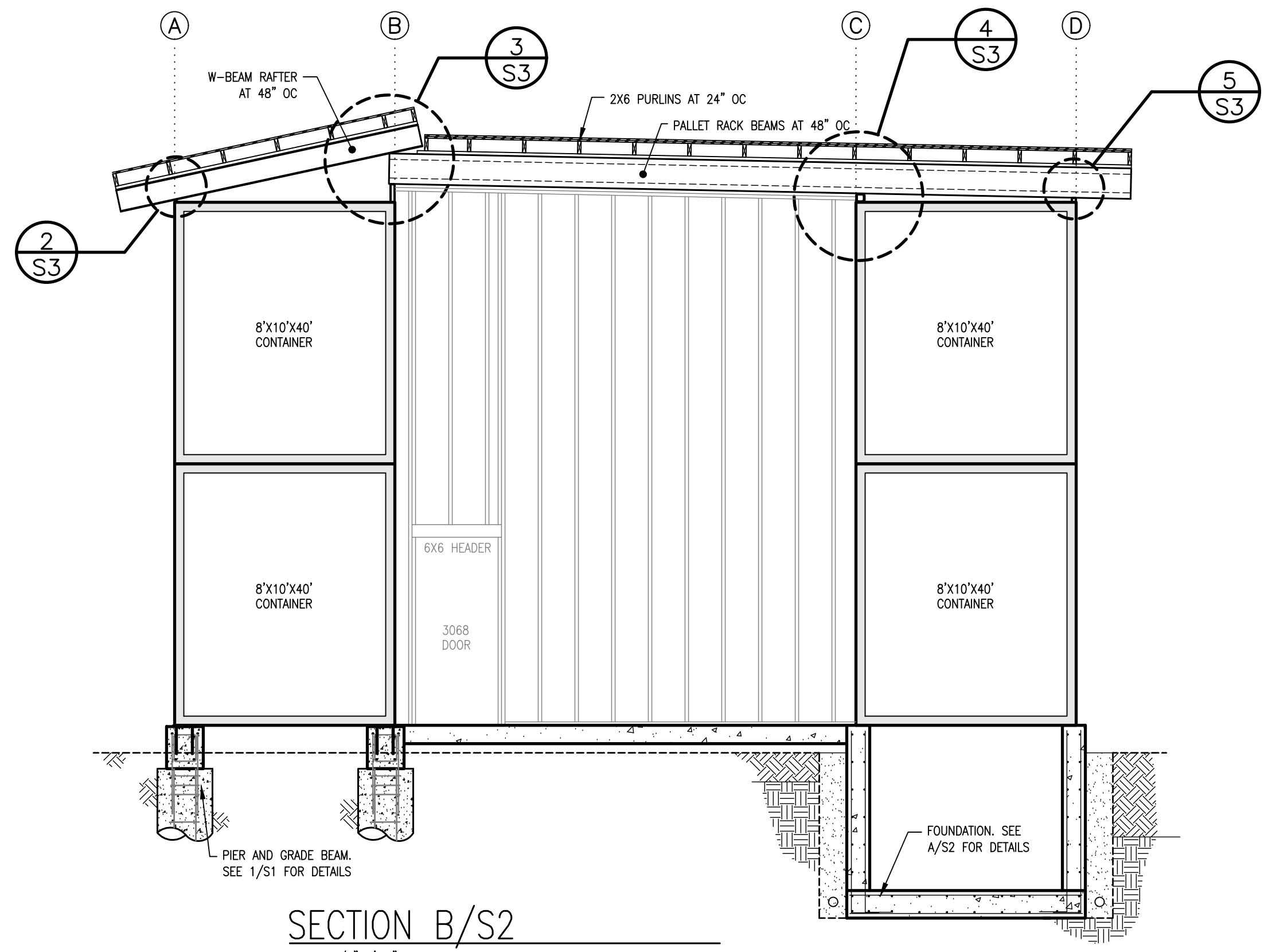
JOB NO.: 20-78
DATE: 7/13/22
DRAWN BY: ACR/JT
SCALE: AS NOTED

SHEET

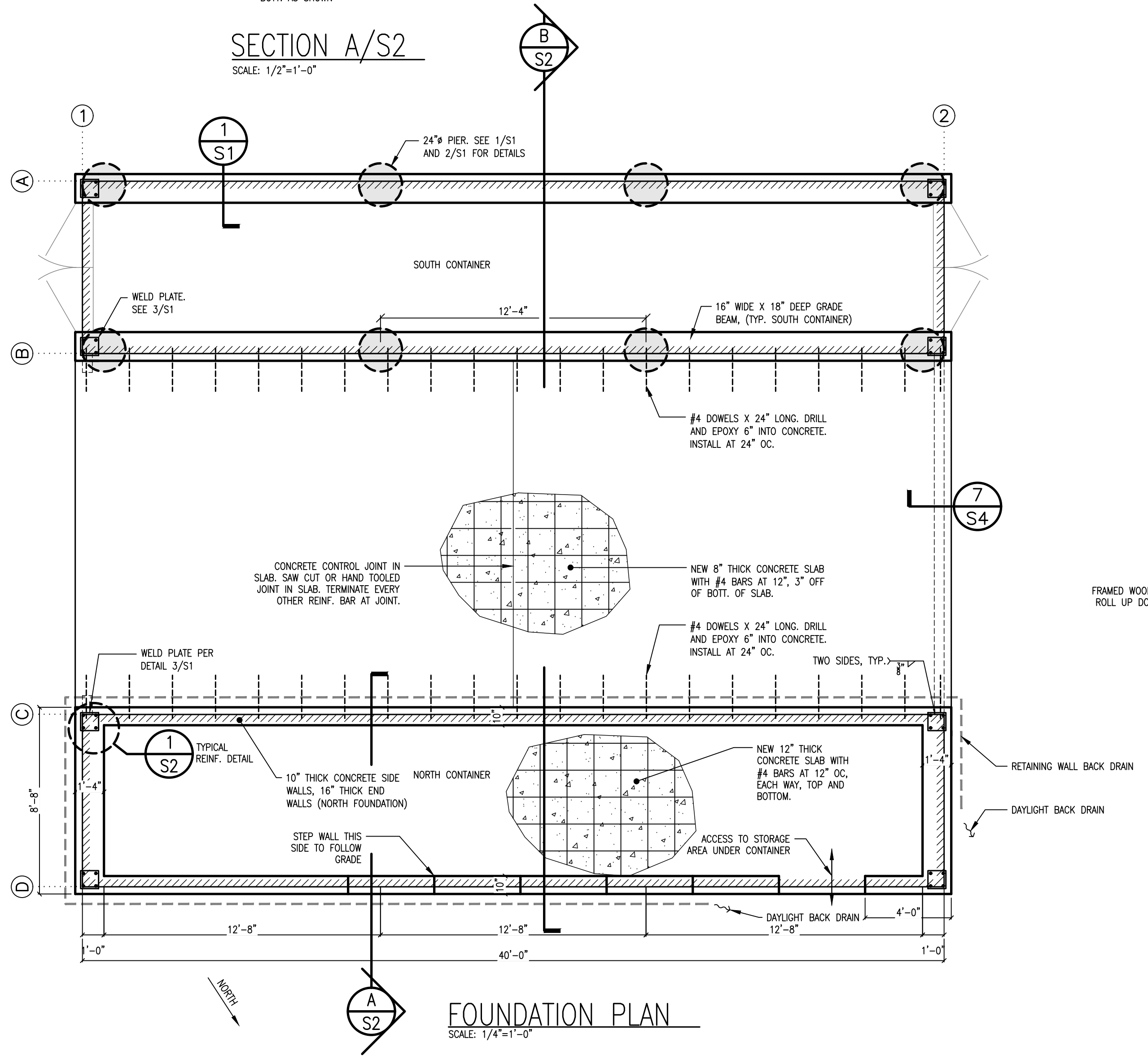
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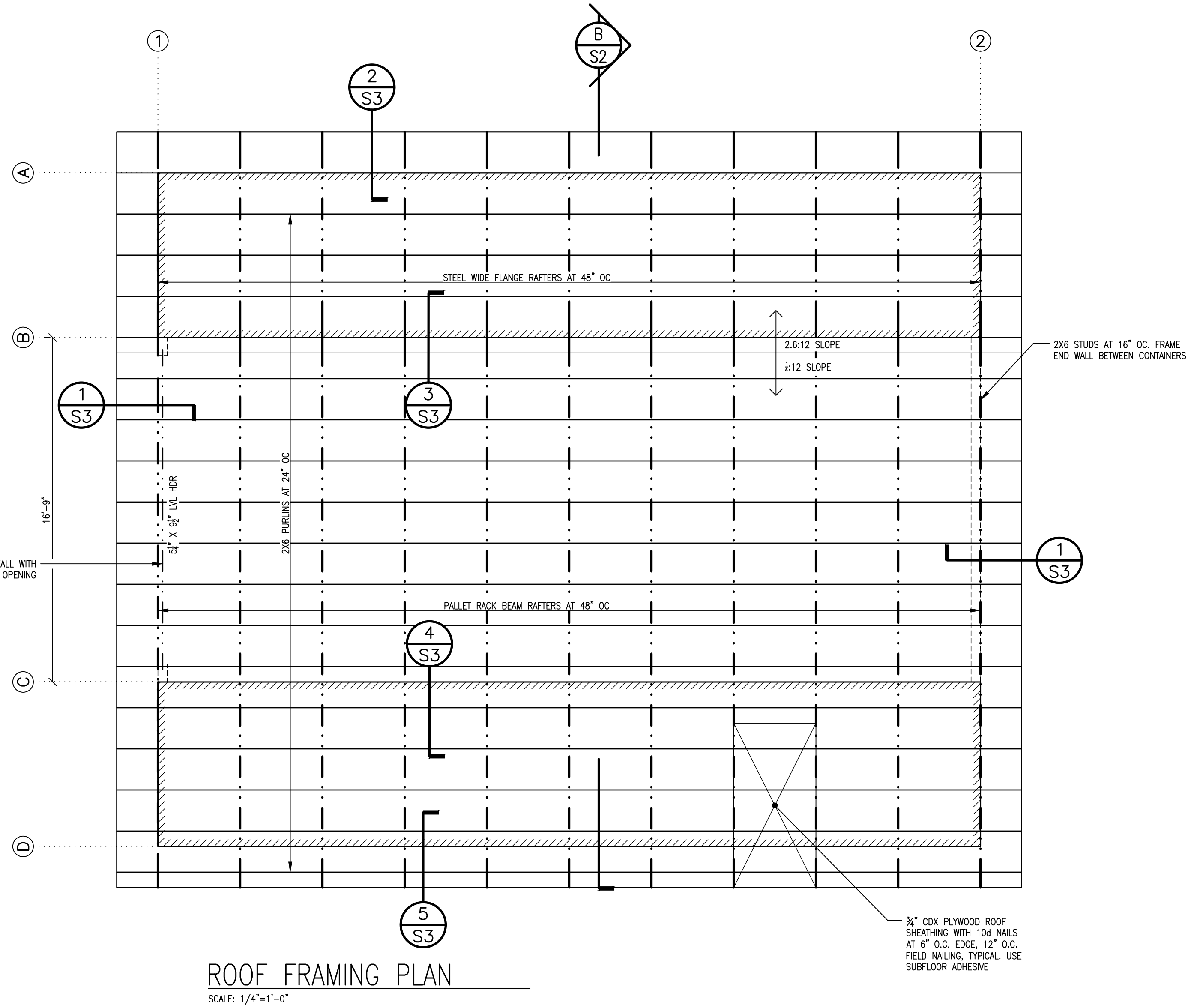
SECTION A/S2
SCALE: 1/2"=1'-0"



SECTION B/S2
SCALE: 1/4"=1'-0"



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



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

REVISION	DESCRIPTION	DATE
1	RELEASED FOR CONCEPTUAL DESIGN ONLY	2/8/21
2	RELEASED FOR PERMIT SUBMITTAL ONLY	7/13/22

FOUNDATION PLAN, ROOF FRAMING PLAN, AND SECTIONS

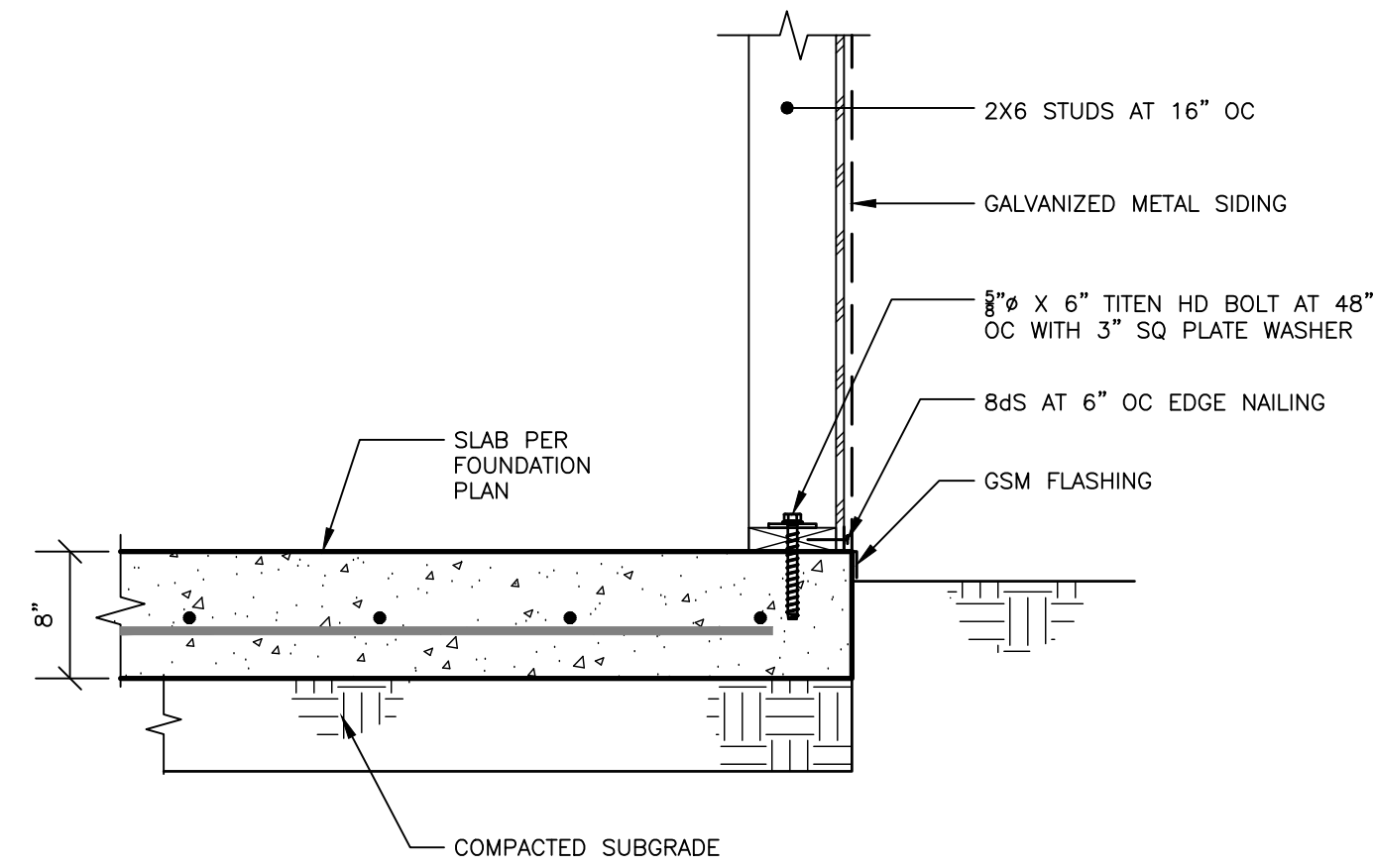
MARKEGARD
350 MADERA LANE
SAN GREGORIA, CA 94074

Professional Engineer CS138
Andrew Radovan
Civil Engineering Inc.
2815 Mission St. Santa Cruz, CA 95060

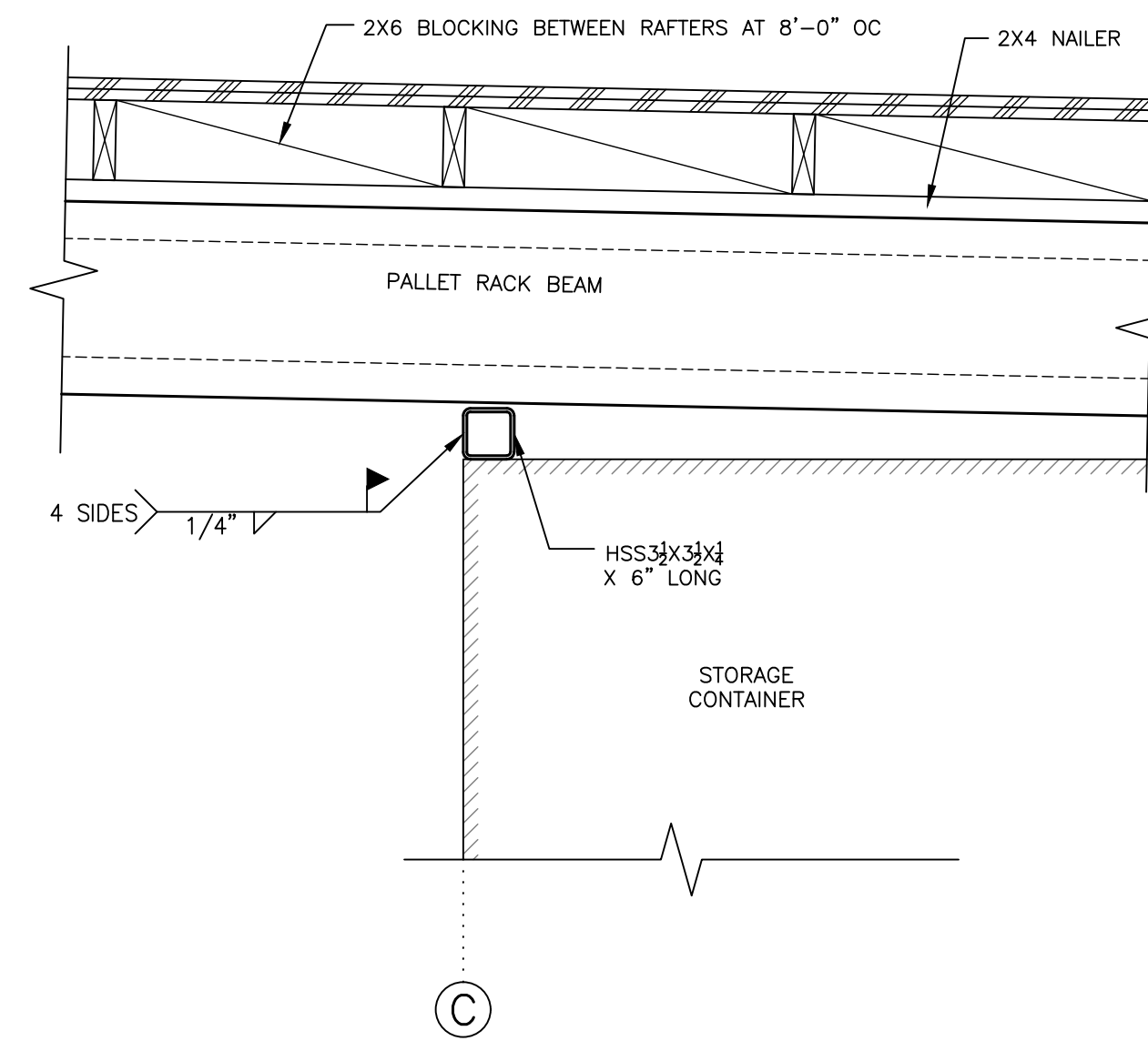


JOB NO.: 20-78
DATE: 7/13/22
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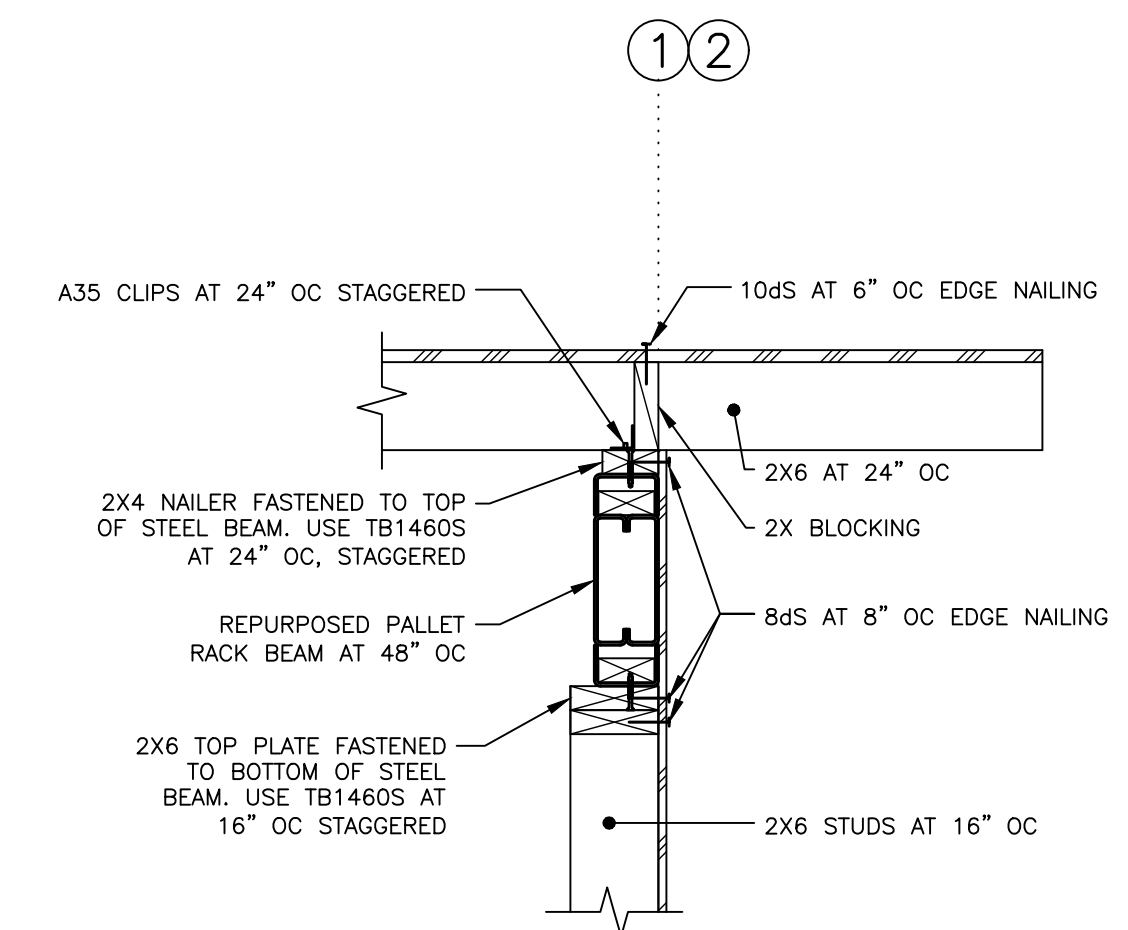
SHEET
S2



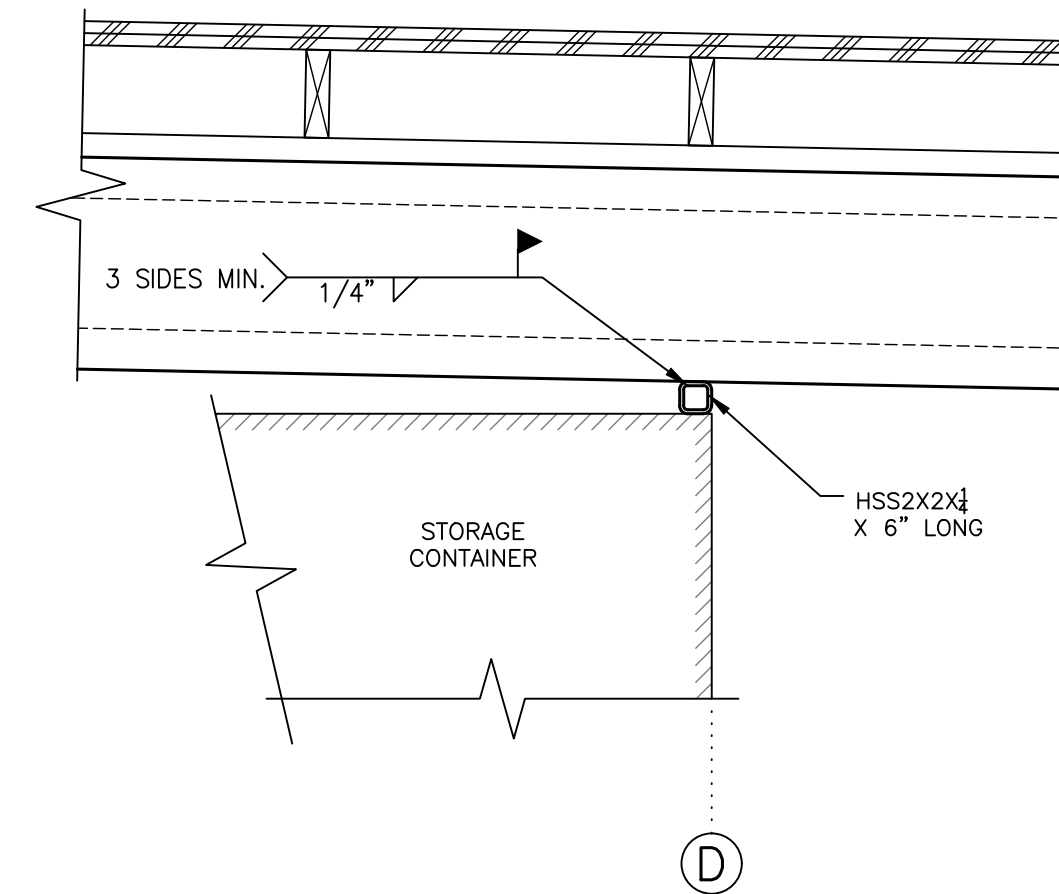
7
S3 TYP. END WALL FRAMING



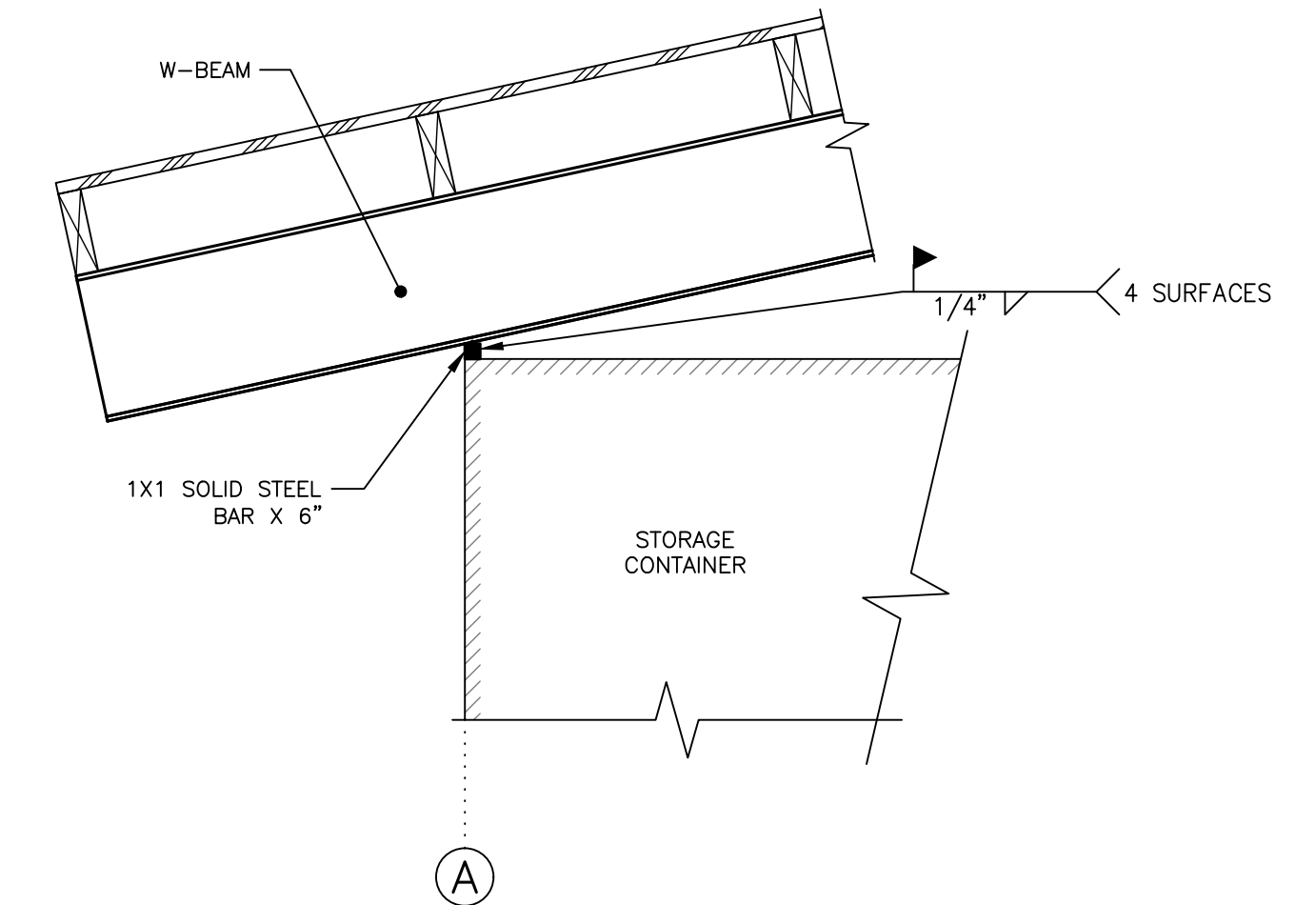
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S3 PALLET BEAM CONNECTION AT NORTH INTERIOR



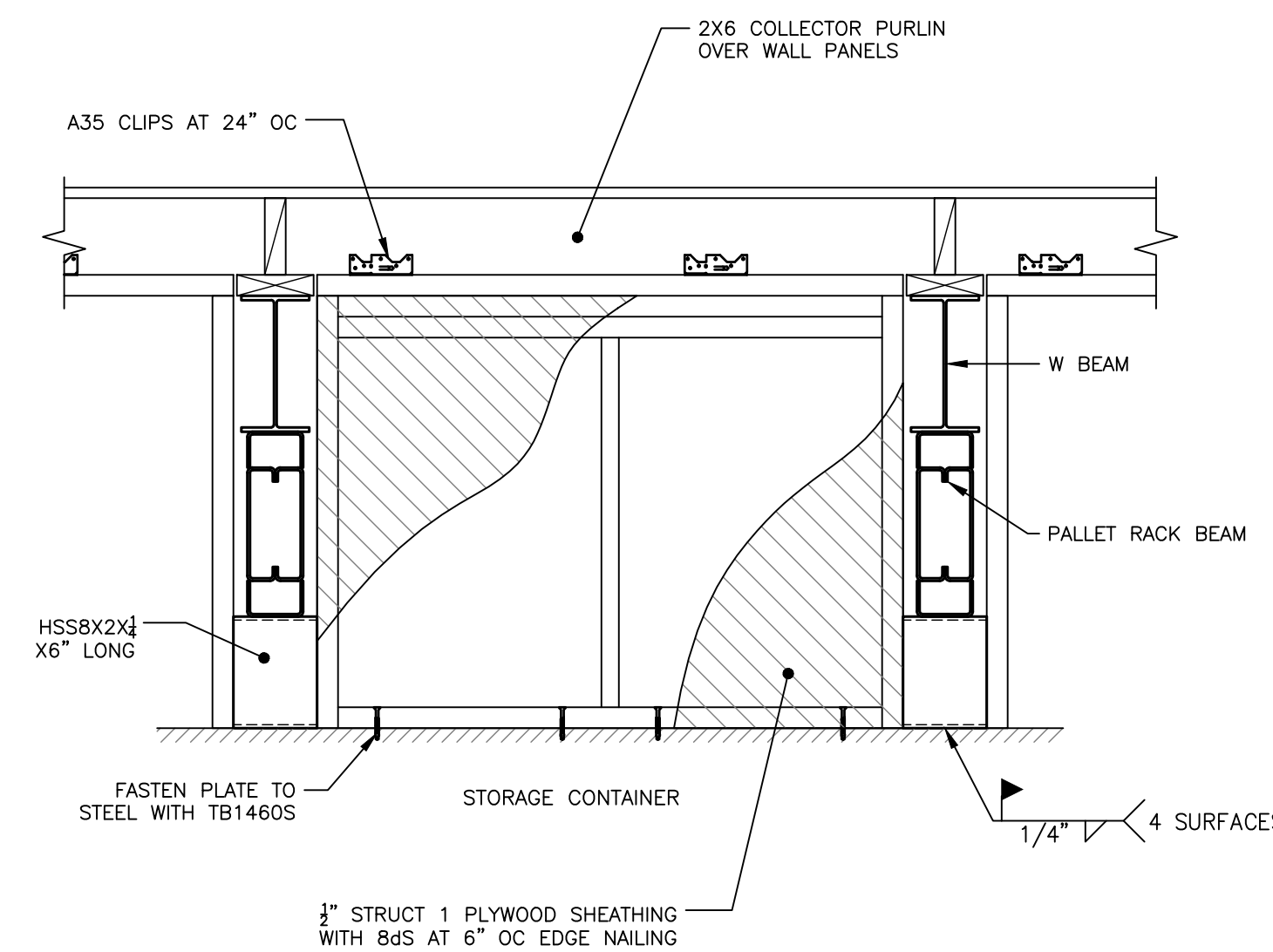
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S3 WOOD FRAMED WALL LINES ① & ②



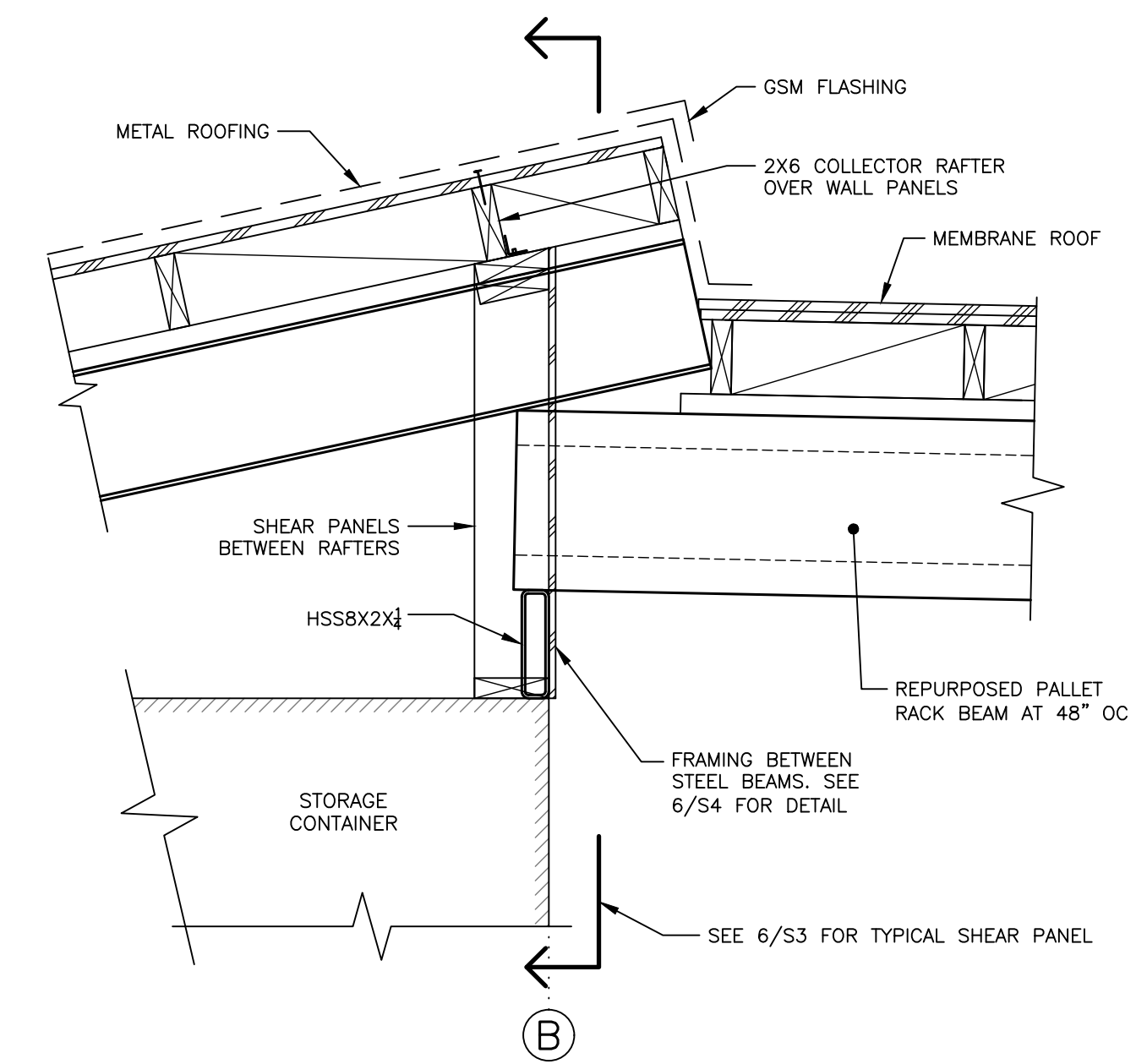
5
S3 PALLET BEAM CONNECTION AT NORTH END



2
S3 STEEL BEAM CONNECTION AT SOUTH END



6
S3 PANELING AT BEAM CONNECTION



3
S3 STEEL BEAM & PALLET RACK CONNECTION

DATE	DESCRIPTION
2/8/21	RELEASED FOR CONCEPTUAL DESIGN ONLY.
7/13/22	RELEASED FOR PERMIT APPLICATION ONLY.

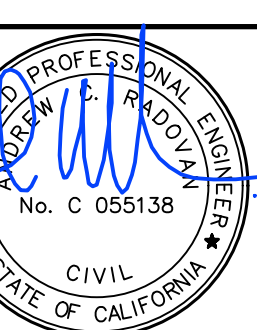
DETAILS

MARKEGARD
350 MADERA LANE
SAN GREGORIA, CA 94074

Professional Engineer CS138

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Andrew Radovan
Civil Engineering Inc.



JOB NO.: 20-78
DATE: 7/13/22
DRAWN BY: ACR/JT
SCALE: AS NOTED

SHEET

S3



COUNTY OF SAN MATEO - PLANNING AND BUILDING DEPARTMENT

ATTACHMENT C

GEOTECHNICAL INVESTIGATION DESIGN PHASE

FOR
AGRICULTURAL CONSTRUCTION
350 MADERA LANE
SAN GREGORIO, SAN MATEO COUNTY, CALIFORNIA

PREPARED FOR
ERIK MARKEGARD
PROJECT NO. 22-228-SM



PREPARED BY

BUTANO GEOTECHNICAL ENGINEERING, INC.
SEPTEMBER 2022



BUTANO GEOTECHNICAL ENGINEERING, INC.

231 GREEN VALLEY ROAD, SUITE E, FREEDOM, CALIFORNIA 95019

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September 23, 2022
Project No. 22-228-SM

Erik Markegard
350 Madera Lane
San Gregorio, CA 94074

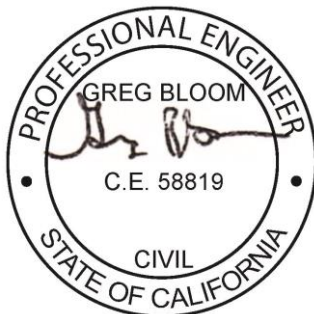
SUBJECT: GEOTECHNICAL INVESTIGATION - DESIGN PHASE
Agricultural Construction
350 Madera Lane
San Gregorio, San Mateo, California

Dear Mr. Markegard:

In accordance with your authorization, we have completed a geotechnical investigation for the subject project. This report summarizes the findings, conclusions, and recommendations from our field exploration and engineering analysis. It is a pleasure being associated with you on this project. If you have any questions, or if we may be of further assistance, please do not hesitate to contact our office.

Sincerely,

BUTANO GEOTECHNICAL ENGINEERING, INC.



Greg Bloom, PE, GE
Principal Engineer

Appendices: 1. Appendix A Figures and Standard Details
2. Appendix B Field Exploration Program

Distribution: (4) Addressee

1.0 INTRODUCTION

This report presents the results of our geotechnical investigation for the agricultural construction at 350 Madera Lane in San Gregorio, San Mateo County, California.

The purpose of our investigation is to provide preliminary geotechnical design parameters and recommendations for the proposed construction. Conclusions and recommendations related to site grading, drainage, slab-on-grades, retaining walls (basement) and foundations are presented herein.

This work includes site reconnaissance, subsurface exploration, soil sampling, laboratory testing, engineering analysis, and preparation of this report. The scope of services for this investigation is outlined in our agreement as revised dated September 6, 2022.

The recommendations contained in this report are subject to the limitations presented in Section 8.0 of this report. The Association of Engineering Firms Practicing the Geosciences has produced a pamphlet for your information titled *Important Information About Your Geotechnical Report*. This pamphlet has been included with the copies of your report.

2.0 PROJECT DESCRIPTION

Based on our discussions with the client, the project consists of evaluating the newly constructed shipping container structure. The system consists of an at-grade two-story section adjacent to the pond and a basement with two above grade stories on the northeast side. The two structures are tied together with a roof and slab-on-grade between them.

3.0 FIELD EXPLORATION AND LABORATORY TESTING PROGRAMS

Our field exploration program included advancing a test pit to a depth of 3 feet with a mini excavator on September 16, 2022. Details of the field exploration program, including the Test Pit Logs and the Key to the Logs, are presented in Appendix B, Figures B-3 and B-4. Our firm also observed the sidewalls of the pond adjacent to the southwest side of the building.

4.0 SITE DESCRIPTION

4.1 Location

The project site is located north of Highway 84 at 350 Madera Lane in San Gregorio, San Mateo County, California. The site location is shown on the Site Location Plan, Appendix B, Figure B-1.

4.2 Surface Conditions

The shipping container structure is located north of La Honda Road (Highway 84) and west of Madera Lane on a relatively level knoll upslope of Highway 84. This area has been improved with agricultural storage sheds, buildings and a pond.

Recently a shipping container structure has been constructed between the pond and the driveway. There are moderate slopes to the north and west of the shipping container. The pond is located close to the south side of the structure and has near vertical side slopes. The area to the east of the structure is relatively flat.

The vegetation at the site is minimal and consists of bushes and grass.

4.3 Subsurface Conditions

The parcel is geologically mapped as being underlain by older flood plain deposits. Our geotechnical exploration did not encounter any flood plain deposits.

The test pit encountered approximately 1 foot of dark brown silty sand with some gravel (soil development) overlying a yellowish brown fine grained sandstone. The sandstone is cemented and dense. We interpret this material to be part of the Tunitas sandstone member.

The sandstone can also be seen on the sidewalls of the pond.

Groundwater was not encountered within the test pit. The pond (which is filled with runoff collected from the adjacent structures impervious surfaces) likely influences the depth to groundwater.

Complete soil profiles are presented in the Test Pit Log, Appendix B, Figure B-4. The test pit location is shown on the Test Pit Site Plan, Figure B-2.

5.0 GEOTECHNICAL HAZARDS

5.1 General

In our opinion the geotechnical hazards that could potentially affect the proposed project are:

- Intense seismic shaking
- Collateral seismic hazards

5.1.1 Intense Seismic Shaking

The hazard of intense seismic shaking is present throughout central California. Intense seismic shaking may occur at the site during the design lifetime of the proposed structure from an earthquake along one of the regions many faults. Generally, the intensity of shaking will increase the closer the site is to the epicenter of an earthquake; however, seismic shaking is a complex phenomenon and may be modified by local topography and soil conditions. The transmission of earthquake vibrations from the ground into the structure may cause structural damage.

The County of San Mateo has adopted the seismic provisions set forth in the 2019 California Building Code to address seismic shaking. The seismic provisions in the 2019 CBC are minimum load requirements for the seismic design for the proposed structure. The provisions set forth in the 2019 CBC will not prevent structural and nonstructural damage from direct fault ground surface rupture, coseismic ground cracking, liquefaction and lateral spreading, seismically induced differential compaction, seismically induced landsliding, or seismically induced inundation.

Table 1 has been constructed based on the 2019 CBC requirements for the seismic design of the proposed structure. The Site Class has been determined based on our field investigation and laboratory testing.

Table 1. Seismic Design Parameters

S _s	S ₁	Site Class	F _a	F _v	S _{DS}	S _{D1}	F _{PGA}	PGAM	Risk Category	Seismic Design Category
2.074	0.814	C	1.2	1.4	1.659	0.76	1.2	1.1	II	E

Design Coordinates - (Lat: 37.3188622, Lng: -122.3358945)

5.1.2 Collateral Seismic Hazards

In addition to intense seismic shaking, other seismic hazards that may have an adverse effect to the site and/or the structure are fault ground surface rupture, coseismic ground cracking, seismically induced liquefaction and lateral spreading, seismically induced differential compaction, seismically induced landsliding, and seismically induced inundation (tsunami and seiche). It is our opinion that the potential for collateral seismic hazards to affect the site and to damage the proposed structure is low.

6.0 DISCUSSIONS AND CONCLUSIONS

The existing structure is founded on in-situ sandstone which has a very low potential for expansion.

We have been presented the following plan set as part of our analysis:

Andrew Radovan, 350 Madera Lane, Sheets S1, S2 and S3, dated 7-13-22, Job No. 20-78

The plans show that the southern container is supported by drilled piers that are to be a minimum of 5 feet deep below the grade beam and embedded into the underlying bedrock a minimum of 18 inches.

The northern container includes a below grade basement with the foundation embedded into the sandstone and supported by a mat slab foundation. The basement walls are to be fully drained.

7.0 RECOMMENDATIONS

7.1 General

Based on the results of our field investigation and engineering analysis it is our opinion that from the geotechnical standpoint, the subject site is suitable for the existing construction.

7.2 Site Grading

7.2.1 Site Clearing

The site should be cleared of non-engineered fill, remaining root masses, loose soil, organics, and debris within the project limits.

7.2.2 Preparation of On-Site Soils

Areas to receive fill (subgrade) should be scarified, cleared of organics, moisture conditioned to 0 to 2 percent over optimum moisture, and compacted to a minimum of 90 percent relative compaction. The compacted subgrade should extend 2 feet laterally of any proposed improvements.

All fill should be compacted to a minimum of 90 percent relative compaction based on the optimum moisture and density in accordance with ASTM D1557. See Paved Areas for additional requirements.

Engineered fill should be well mixed and homogenous, moisture conditioned to 0 to 2 percent over optimum moisture, placed in relatively thin lifts, and compacted using heavy vibratory equipment.

Site Grading-General

The on-site soil may be re-used as engineered once the sandstone is broken down to clasts smaller than 2 ½ inches in diameter.

Imported fill material should be approved by a representative of Butano Geotechnical Engineering, Inc. prior to importing.

Imported fill should be primarily granular with **no material greater than 2½ inches in diameter** and no more than 20 percent of the material passing the #200 sieve. The fines fraction of fill should not consist of expansive

material. The Geotechnical Engineer should be notified not less than 5 working days in advance of placing any fill or base course material proposed for import. Each proposed source of import material should be sampled, tested, and approved by the Geotechnical Engineer prior to delivery of any soils imported for use on the site.

Any surface or subsurface obstruction, or questionable material encountered during grading, should be brought immediately to the attention of the Geotechnical Engineer for proper processing as required.

Paved Areas

The paved areas should be prepared as above and the upper 6 inches of subgrade and all aggregate baserock in paved areas should be compacted to a minimum of **95 percent** relative compaction. The subgrade compaction should extend a minimum of 2 feet laterally of all paved areas.

7.2.3 Cut and Fill Slopes

No significant unretained cuts or fills are anticipated for this project. The basement will require temporary cuts which should be shored.

7.2.4 Excavating Conditions

The on-site soil may be excavated with standard earthwork equipment. The underlying sandstone may require rock teeth and/or jacking to excavate and drill.

7.2.5 Surface Drainage

Positive drainage should be maintained away from the structures at a minimum gradient of 2 percent for 10 feet. If this is not feasible swales may be constructed to control drainage. Collected drainage should be released at approved locations as indicated by the project civil engineer or designer.

7.2.6 Utility Trenches

Utility trenches should be backfilled based on the County of San Mateo standard details. At a minimum this should consist of 4 inches of bedding sand below the utility and 8 inches of bedding sand above the utility.

Backfill of all exterior and interior trenches should be placed in thin lifts not to exceed 8 inches and mechanically compacted to achieve a relative compaction of not less than 95 percent in paved areas and 90 percent in other areas per ASTM D1557. Care should be taken not to damage utility lines.

The on-site native soils may be utilized for trench backfill above the bedding sand. If sand or granular material is used for trench backfill, a 3 feet concrete plug should be placed in each trench where it passes under the exterior footings.

Utility trenches that are parallel to the sides of a building should be placed so that they do not extend below a line sloping down and away at an inclination of 2:1 (V:H) from the bottom outside edge of all footings.

Trenches should be capped with 1 1/2 feet of relatively impermeable material. Import material must be approved by the Geotechnical Engineer prior to its use.

Trenches must be shored as required by the local regulatory agency, the State of California Division of Industrial Safety Construction Safety Orders, and Federal OSHA requirements.

7.3 Foundations

7.3.1 Conventional Shallow Foundations

General

Conventional shallow foundations may be used bearing on in-situ sandstone (basement foundation) per section 7.2.2.

Footing excavations must be checked by the Geotechnical Engineer before steel is placed and concrete is poured.

Footing Dimensions

Footing widths should be based on the allowable bearing value but not less than 15 inches. The minimum recommended depth of embedment is 12 inches into in-situ sandstone. Embedment depths should not be allowed to be affected adversely, such as through erosion, softening, digging, etc.

Should local building codes require deeper embedment of the footings or wider footings, the local codes must apply.

Bearing Capacity

The allowable bearing capacity used should not exceed 8,000 psf for footings bearing in-situ sandstone at the basement grade. The allowable bearing capacity may be increased by one-third in the case of short duration loads, such as those induced by wind or seismic forces. In the event that footings are founded in structural fill consisting of imported materials, the allowable bearing capacities will depend on the type of these materials and should be re-evaluated.

Lateral Resistance

Friction coefficient - 0.40, between the sandstone and rough concrete. A passive resistance of 450 pcf may be assumed. Where both friction and the passive resistance are utilized for sliding resistance, either of the values indicated should be reduced by one-third.

7.3.2 Drilled Pier Foundations (southern container)

Drilled piers may be used to support the container adjacent to the pond

The drilled, cast-in-place concrete shafts, should have a minimum embedment depth of 5 feet below the bottom of the grade beam and be embedded a minimum of 12 inches into the underlying sandstone. The minimum recommended shaft diameter is 18 inches. Shafts should be spaced no closer than 2 ½ diameters, with a minimum of 3 diameters, center to center.

An allowable bearing capacity of 10,000 psf may be assumed for shafts that bear on sandstone with a 1/3 increase for short term loading. An allowable passive resistance of 400 psf over 2 pier diameters may be assumed within the sandstone bedrock. **Passive resistance should be ignored until there is a minimum of 6 feet of cover measured horizontally to daylight.**

The drilled excavations for the cast-in-place concrete shafts should be clean, dry and free of debris of loose soil. The drilled excavations should not deviate more than 1 percent from vertical.

For drilled, cast-in-place concrete shafts, with depths in excess of 8 feet, concrete should be placed via a tremie. The end of the tube must remain embedded a minimum of 4 feet into the concrete at all times.

All shaft construction must be observed and approved by the Geotechnical Engineer. Any shafts constructed without the full knowledge and continuous observation of Butano Geotechnical Engineering, Inc. will render the recommendations of this report invalid.

7.3.3 Concrete Slabs-on-Grade

General

We recommend that first floor concrete slabs-on-grade be founded on the in-situ sandstone or engineered fill per section 7.2.2. Basement grade slabs-on-grade may be founded on in-situ sandstone.

The subgrade for slab-on-grades should be kept moist prior to pouring concrete.

The subgrade should be proof-rolled just prior to construction to provide a firm, relatively unyielding surface, especially if the surface has been loosened by the passage of construction traffic.

Capillary Break and Vapor Barrier (ground floor)

The following paragraph outlines the minimum capillary break and vapor barrier that shall be utilized for interior slab-on-grades, or slab-on-grades where moisture sensitive floor coverings are anticipated.

The vapor barrier shall consist of a waterproof membrane (Stegowrap 15 Mil or equivalent) placed directly below the floor slab and in direct contact with the concrete. Sheet overlap for the vapor barrier shall be a minimum of 6 inches. A 4-inch minimum layer of $\frac{3}{4}$ inch drainrock shall be placed below the waterproof membrane to act as a capillary break. Care must be taken to not rip the vapor barrier. A 6-inch layer of compacted Class II Baserock may be employed to prevent rips or tears in the vapor barrier if desired, and to keep the subgrade from becoming saturated prior to pouring concrete.

If the manufacturer's recommendations or the project requirements for the capillary break and vapor barrier are more stringent than the minimums outlined above, the designer should follow those recommendations and requirements. Recommendations by the manufacturer may include but is not limited to specifications for; concrete mix design, puncture resistance of vapor barrier, permeance of vapor barrier, soil flatness, capillary break section, structural section, and testing recommendations.

7.3.3 Settlements

Total and differential settlements beneath the new foundation elements are expected to be within tolerable limits. Vertical movements are not expected to exceed 1 inch. Differential movements are expected to be within the normal range ($\frac{1}{2}$ inch) for the anticipated loads.

7.4 Retaining Structures (basement)

The basement retaining walls may be supported by conventional shallow foundations or mat slabs per section 7.3.1.

7.4.1 Lateral Earth Pressures

The lateral earth pressures presented in Table 2 are recommended for the design of retaining structures retaining the on-site sandstone. Should the slope behind the retaining walls be other than level, supplemental design criteria will be provided for the active earth or at-rest pressures for the particular slope angle.

Table 2. Lateral Earth Pressures

Soil Profile	Soil Pressure (psf/ft)	
	Active	At-rest
Level	20	30

Pressure due to any surcharge loads from adjacent footings, traffic, etc., should be analyzed separately. Pressures due to these loading can be supplied upon receipt of the appropriate plans and loads. Refer to Appendix A, Figure A-1-Surcharge Pressure Diagram.

An earthquake load (ultimate) may be considered for retaining walls as follows:

For unrestrained walls over 6 feet, as measured from the base of the footing, a seismic load of $10H^2$ may be applied at a height of $0.6H$ from the base of the wall.

No evaluation of seismic earth pressure is needed for restrained walls under 12 feet in height, as measured from the base of the footing, provided a minimum static factor of safety of 1.5 is achieved. For rigidly restrained walls over 12 feet a seismic load of $15H^2$ should be added to the active earth pressure and applied at a height of $0.3H$ from the base of the wall. The greater of the seismic loading and at rest loading conditions should be used for design. The recommendations for restrained retaining walls are based on the SEAOC 2010 Conventions Proceedings: *Seismic Earth Pressures on Deep Building Basements*, Lew, Sitar.

A factor of safety of 1.1 is considered appropriate with respect to earthquake loading.

7.4.2 Backfill

Backfill should be placed under engineering control. Backfill should be compacted per Subsection 7.2.2, however, precautions should be taken to ensure that heavy compaction equipment is not used immediately adjacent to walls, so as to prevent undue pressures against, and movement of, the walls. Refer to Appendix A, Figure A-2.

The backfill should be capped with at least 12 inches of relatively impermeable material.

7.4.3 Backfill Drainage

As previously stated, the basement should be designed for a static groundwater table of 5 feet from existing grade and therefore no drainage system is anticipated for the walls. Instead, the basement should be waterproofed.

7.5 Plan Review

The recommendations presented in this report are based on preliminary design information for the proposed project and on the findings of our geotechnical investigation. When completed, the Grading Plans, Foundation Plans and design loads should be reviewed by Butano Geotechnical Engineering, Inc. prior to submitting the plans and contract bidding. Additional field exploration and laboratory testing may be required upon review of the final project design plans.

7.6 Observation and Testing

Field observation and testing should be provided by a representative of Butano Geotechnical Engineering, Inc. to enable them to form an opinion regarding the adequacy of the site preparation, the adequacy of fill materials, and the extent to which the earthwork is performed in accordance with the geotechnical conditions present, the requirements of the regulating agencies, the project specifications, and the recommendations presented in this report.

Butano Geotechnical Engineering, Inc. should be notified **at least 5 working days** prior to any site clearing or other earthwork operations on the subject project in order to observe the stripping and disposal of unsuitable materials and to ensure coordination with the grading contractor. During this period, a preconstruction meeting should be held on the site to discuss project specifications, observation and testing requirements and responsibilities, and scheduling.

8.0 LIMITATIONS

The recommendations contained in this report are based on our field explorations, laboratory testing, and our understanding of the proposed construction. The subsurface data used in the preparation of this report was obtained from the borings drilled during our field investigation. Variation in soil, geologic, and groundwater conditions can vary significantly between sample locations. As in most projects, conditions revealed during construction excavation may be at variance with preliminary findings. If this occurs, the changed conditions must be evaluated by the Project Geotechnical Engineer, and revised recommendations be provided as required. In addition, if the scope of the proposed construction changes from the described in this report, our firm should also be notified.

Our investigation was performed in accordance with the usual and current standards of the profession, as they relate to this and similar localities. No other warranty, expressed or implied, is provided as to the conclusions and professional advice presented in this report.

This report is issued with the understanding that it is the responsibility of the Owner, or of his Representative, to ensure that the information and recommendations contained herein are brought to the attention of the Engineer for the project and incorporated into the plans, and that it is ensured that the Contractor and Subcontractors implement such recommendations in the field. The use of information contained in this report for bidding purposes should be done at the Contractor's option and risk.

This firm does not practice or consult in the field of safety engineering. We do not direct the Contractor's operations, and we are not responsible for other than our own personnel on the site; therefore, the safety of others is the responsibility of the Contractor. The Contractor should notify the Owner if he considers any of the recommended actions presented herein to be unsafe.

The findings of this report are considered valid as of the present date. However, changes in the conditions of a site can occur with the passage of time, whether they are due to natural events or to human activities on this or adjacent sites. In addition, changes in applicable or appropriate codes and standards may occur, whether they result from legislation or the broadening of knowledge. Accordingly, this report may become invalidated wholly or partially by changes outside our control. Therefore, this report is subject to review and revision as changed conditions are identified.

The scope of our services mutually agreed upon did not include any environmental assessment or study for the presence of hazardous to toxic materials in the soil, surface water, or air, on or below or around the site. Butano Geotechnical Engineering, Inc. is not a mold prevention consultant; none of our services performed in connection with the proposed project are for the purpose of mold prevention. Proper implementation of the recommendations conveyed in our reports will not itself be sufficient to prevent mold from growing in or on the structures involved.

REFERENCES

ASTM International (2015). *Annual Book of ASTM Standards, Section Four, Construction*. Volume 4.08, Soil and Rock (I): D 430 - D 5611.

ASTM International (2016). *Annual Book of ASTM Standards, Section Four, Construction*. Volume 4.09, Soil and Rock (II): D 5714 - Latest.

Geotechnical Investigation - Design Phase
350 Madera Lane
San Mateo County, California

September 23, 2022
Project No. 22-228-SM
Page 16

Brabb, E.E., 1980, Preliminary geologic map of the La Honda and San Gregorio quadrangles, San Mateo County, California, U.S. Geological Survey, Open-File Report OF-80-245, 1:24,000.

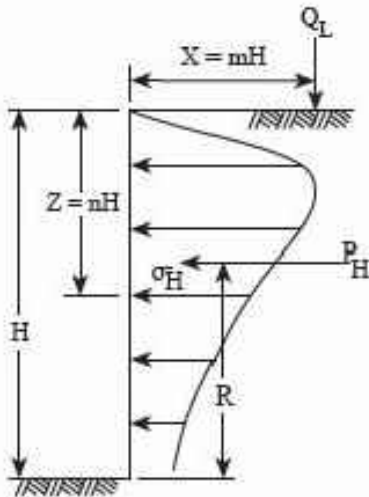
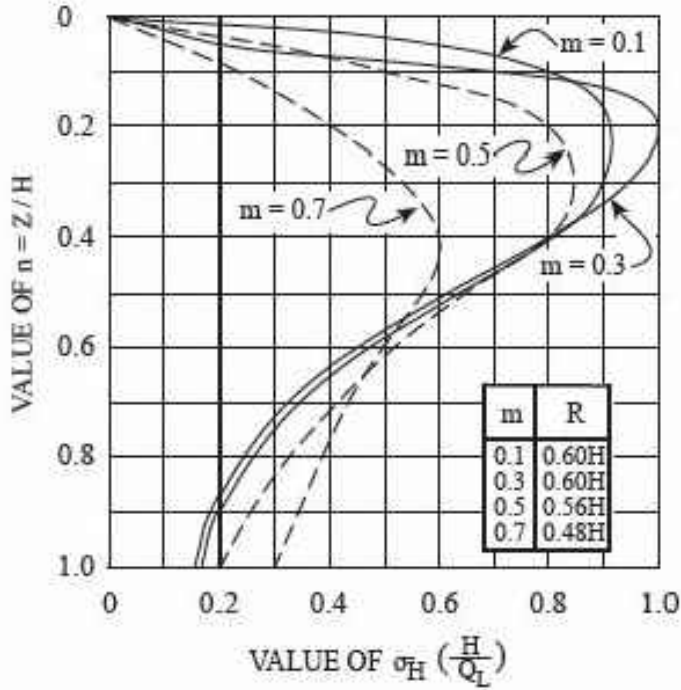
California Building Code (2019).

APPENDIX A

FIGURES AND STANDARD DETAILS

Surcharge Pressure Diagram	Figure A-1
Backdrain Detail Typical	Figure A-2

LINE LOAD



FOR $m \leq 0.4$:

$$\sigma_H \left(\frac{H}{Q_L} \right) = \frac{0.20 n}{(0.16 + n^2)^2}$$

$$P_H = 0.55 Q_L$$

FOR $m > 0.4$:

$$\sigma_H \left(\frac{H}{Q_L} \right) = \frac{1.28 m^3 n}{(m^2 + n^2)^2}$$

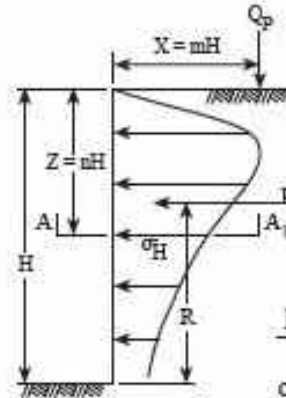
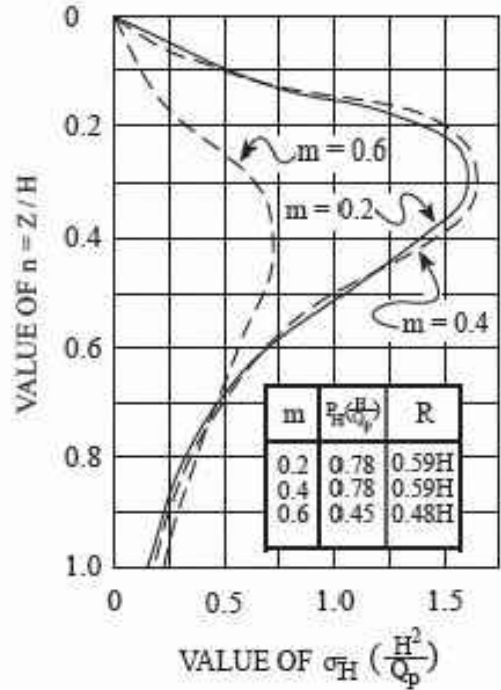
$$\text{RESULTANT } P_H = \frac{0.64 Q_L}{(m^2 + 1)}$$

PRESSURES FROM LINE LOAD Q_L

(BOISSINESQ EQUATION MODIFIED BY EXPERIMENT)

REFERENCE: Design Manual
NAVFAC DM-7.02
Figure 11
Page 7.2-74

POINT LOAD



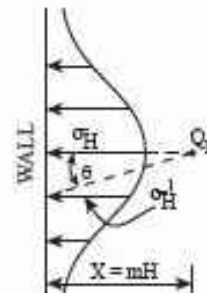
FOR $m \leq 0.4$:

$$\sigma_H \left(\frac{H^2}{Q_p} \right) = \frac{0.28 n^2}{(0.16 + n^2)^3}$$

FOR $m > 0.4$:

$$\sigma_H \left(\frac{H^2}{Q_p} \right) = \frac{1.77 m^3 n^2}{(m^2 + n^2)^3}$$

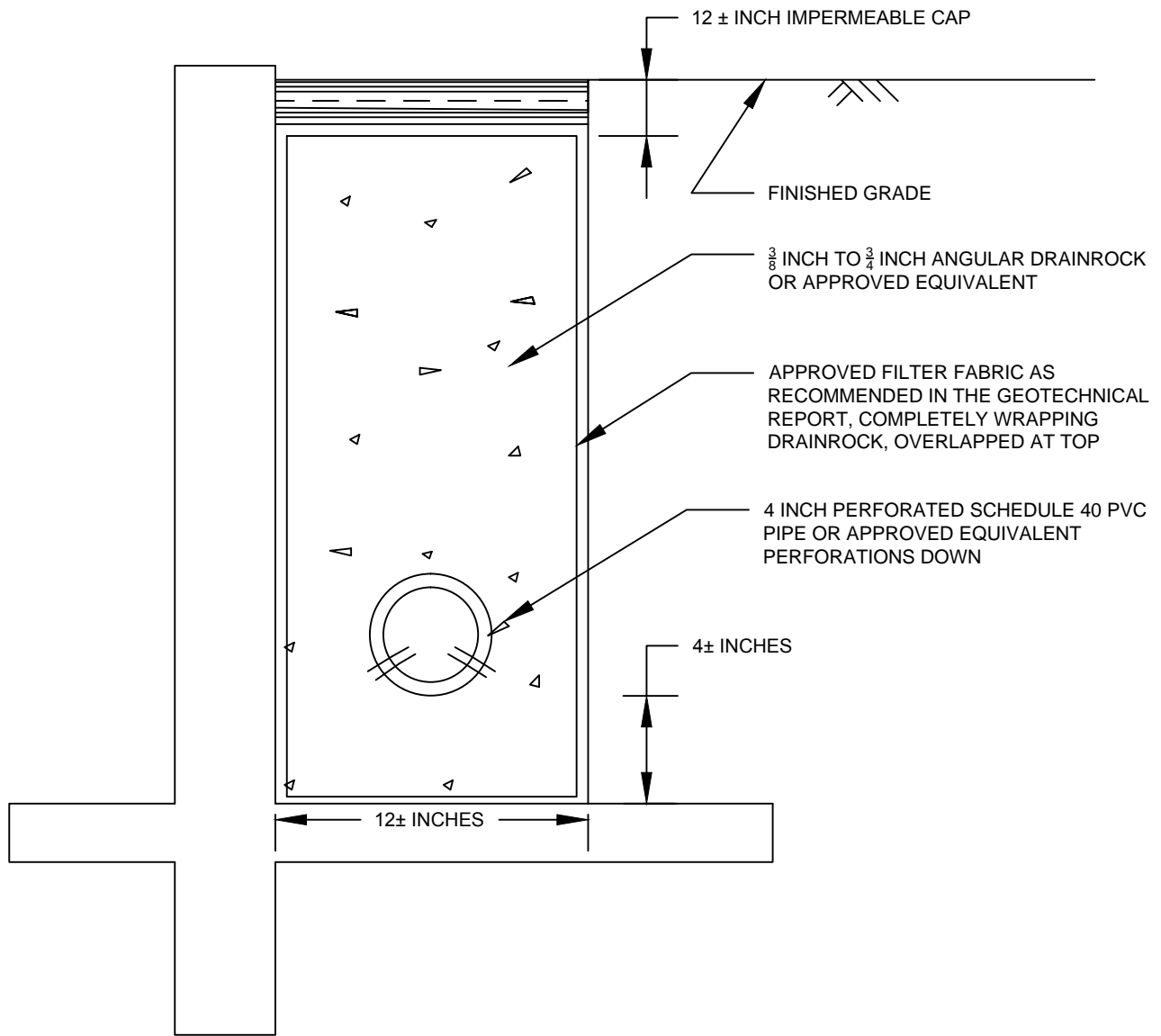
$$\sigma_H^1 = \sigma_H \cos^2(1.1 \theta)$$



SECTION A-A1

PRESSURES FROM POINT LOAD Q_p

(BOISSINESQ EQUATION MODIFIED BY EXPERIMENT)



NOTES:

1. DRAWING IS NOT TO SCALE.
2. 2±% GRADIENT TO PIPE AND TRENCH BOTTOM CONNECTED TO A CLOSED CONDUIT THAT DISCHARGES TO AN APPROVED LOCATION.

N.T.S.

<p style="text-align: center;">BUTANO GEOTECHNICAL ENGINEERING, INC.</p>	<p style="text-align: center;">TYPICAL RETAINING WALL BACKDRAIN DETAIL</p>	<p style="text-align: center;">FIGURE A-2</p>
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APPENDIX B

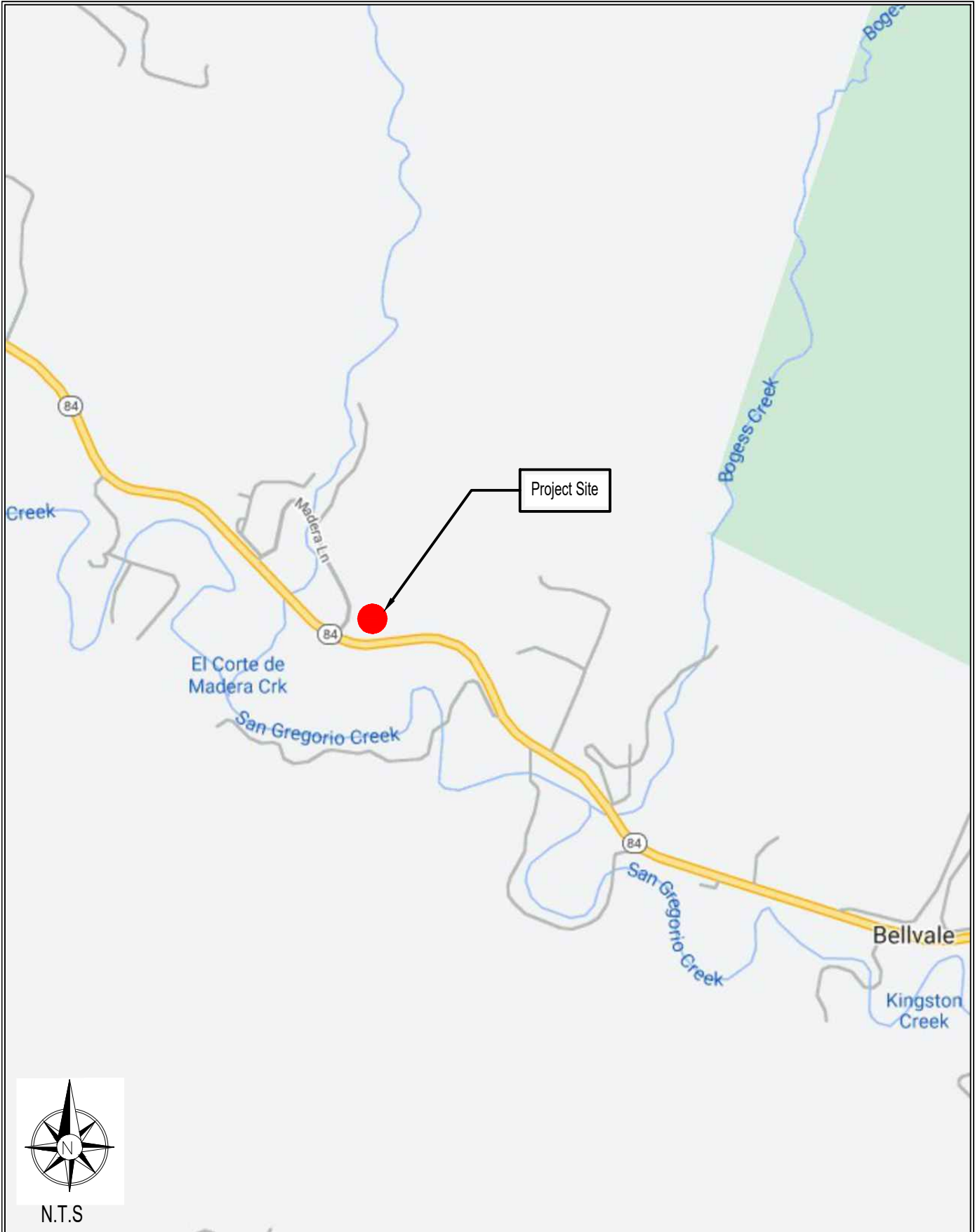
FIELD EXPLORATION PROGRAM

Field Exploration Procedures	Page B-1
Site Location Plan	Figure B-1
Test Pit Plan	Figure B-2
Key to the Logs	Figure B-3
Test Pit Log	Figure B-4

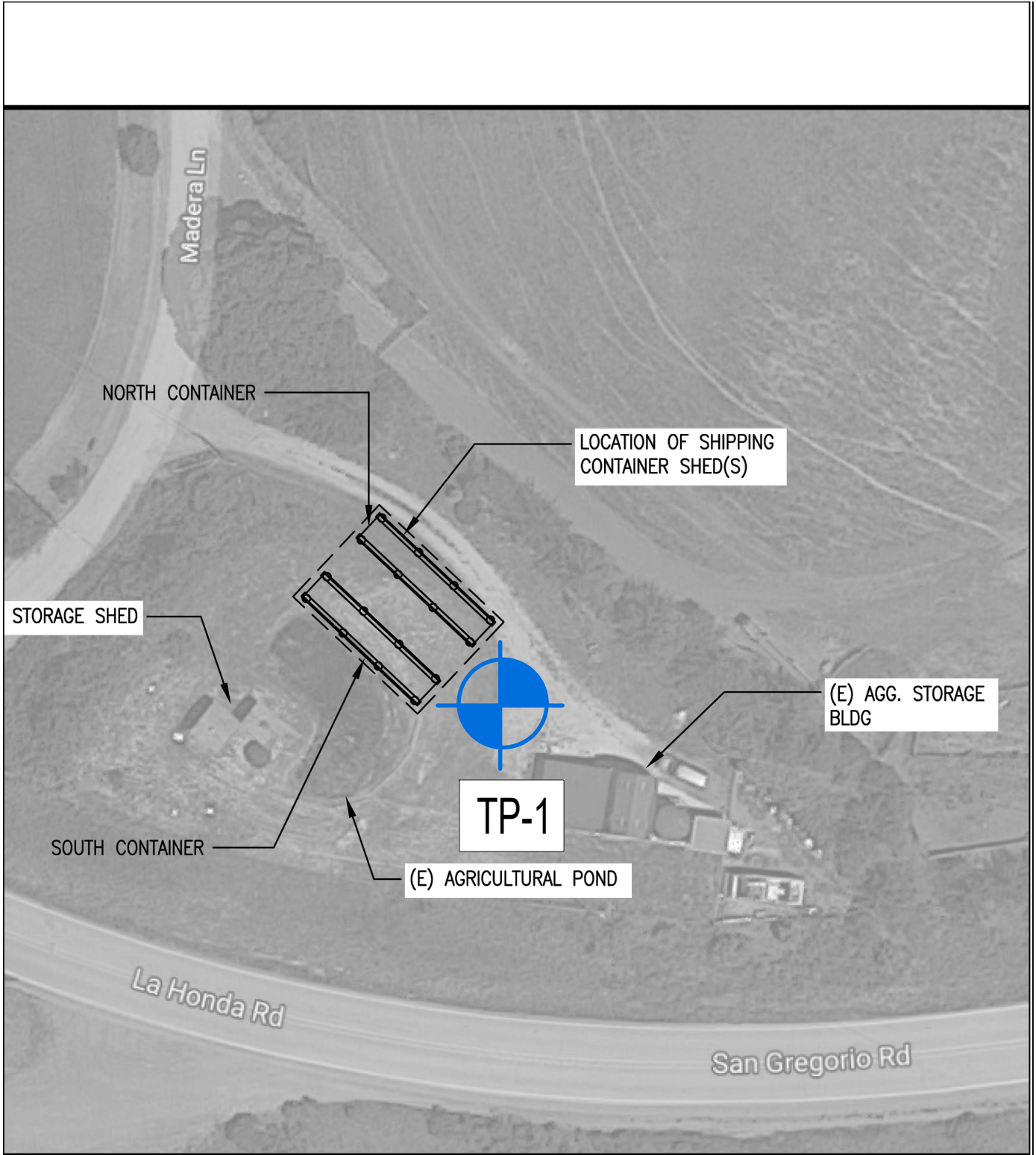
FIELD EXPLORATION PROCEDURES


Subsurface conditions were explored by advancing one test pit with a mini excavator. The Key to The Logs and the Test Pit Log are included in Appendix B, Figures B-3 and B-4. The approximate location of the test pit is shown on the Boring Site Plan, Figure B-2. The test pit was located in the field by tape measurements from known landmarks. Their locations as shown are therefore within the accuracy of such measurement.

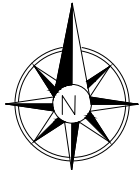
The soils encountered in the borings were continuously logged in the field by a representative of Butano Geotechnical Engineering, Inc. Bulk and relatively undisturbed soil samples for identification and laboratory testing were obtained in the field. These soils were classified based on field observations and laboratory tests. The classifications are accordance with the Unified Soil Classification System (USCS: Figure 3).



<p>BUTANO</p>	<p>SITE LOCATION PLAN</p>	<p>FIGURE</p>
<p>GEOTECHNICAL ENGINEERING, INC.</p>	<p>350 Madera Lane</p>	<p>B-1</p>



 B-X Exploratory boring
 Scale: 1" = 10'



Plan by Andrew Radovan
 Civil Engineering Inc.

BUTANO	TEST PIT SITE PLAN	FIGURE
GEOTECHNICAL ENGINEERING, INC.	350 Madera Lane	B-2

Important Information about Your Geotechnical Engineering Report

Subsurface problems are a principal cause of construction delays, cost overruns, claims, and disputes.

While you cannot eliminate all such risks, you can manage them. The following information is provided to help.

Geotechnical Services Are Performed for Specific Purposes, Persons, and Projects

Geotechnical engineers structure their services to meet the specific needs of their clients. A geotechnical engineering study conducted for a civil engineer may not fulfill the needs of a construction contractor or even another civil engineer. Because each geotechnical engineering study is unique, each geotechnical engineering report is unique, prepared *solely* for the client. No one except you should rely on your geotechnical engineering report without first conferring with the geotechnical engineer who prepared it. *And no one — not even you — should apply the report for any purpose or project except the one originally contemplated.*

Read the Full Report

Serious problems have occurred because those relying on a geotechnical engineering report did not read it all. Do not rely on an executive summary. Do not read selected elements only.

A Geotechnical Engineering Report Is Based on A Unique Set of Project-Specific Factors

Geotechnical engineers consider a number of unique, project-specific factors when establishing the scope of a study. Typical factors include: the client's goals, objectives, and risk management preferences; the general nature of the structure involved, its size, and configuration; the location of the structure on the site; and other planned or existing site improvements, such as access roads, parking lots, and underground utilities. Unless the geotechnical engineer who conducted the study specifically indicates otherwise, do not rely on a geotechnical engineering report that was:

- not prepared for you,
- not prepared for your project,
- not prepared for the specific site explored, or
- completed before important project changes were made.

Typical changes that can erode the reliability of an existing geotechnical engineering report include those that affect:

- the function of the proposed structure, as when it's changed from a parking garage to an office building, or from a light industrial plant to a refrigerated warehouse,

- elevation, configuration, location, orientation, or weight of the proposed structure,
- composition of the design team, or
- project ownership.

As a general rule, *always* inform your geotechnical engineer of project changes—even minor ones—and request an assessment of their impact. *Geotechnical engineers cannot accept responsibility or liability for problems that occur because their reports do not consider developments of which they were not informed.*

Subsurface Conditions Can Change

A geotechnical engineering report is based on conditions that existed at the time the study was performed. *Do not rely on a geotechnical engineering report* whose adequacy may have been affected by: the passage of time; by man-made events, such as construction on or adjacent to the site; or by natural events, such as floods, earthquakes, or groundwater fluctuations. *Always* contact the geotechnical engineer before applying the report to determine if it is still reliable. A minor amount of additional testing or analysis could prevent major problems.

Most Geotechnical Findings Are Professional Opinions

Site exploration identifies subsurface conditions only at those points where subsurface tests are conducted or samples are taken. Geotechnical engineers review field and laboratory data and then apply their professional judgment to render an opinion about subsurface conditions throughout the site. Actual subsurface conditions may differ—sometimes significantly—from those indicated in your report. Retaining the geotechnical engineer who developed your report to provide construction observation is the most effective method of managing the risks associated with unanticipated conditions.

A Report's Recommendations Are *Not* Final

Do not overrely on the construction recommendations included in your report. *Those recommendations are not final*, because geotechnical engineers develop them principally from judgment and opinion. Geotechnical engineers can finalize their recommendations only by observing actual

subsurface conditions revealed during construction. *The geotechnical engineer who developed your report cannot assume responsibility or liability for the report's recommendations if that engineer does not perform construction observation.*

A Geotechnical Engineering Report Is Subject to Misinterpretation

Other design team members' misinterpretation of geotechnical engineering reports has resulted in costly problems. Lower that risk by having your geotechnical engineer confer with appropriate members of the design team after submitting the report. Also retain your geotechnical engineer to review pertinent elements of the design team's plans and specifications. Contractors can also misinterpret a geotechnical engineering report. Reduce that risk by having your geotechnical engineer participate in prebid and preconstruction conferences, and by providing construction observation.

Do Not Redraw the Engineer's Logs

Geotechnical engineers prepare final boring and testing logs based upon their interpretation of field logs and laboratory data. To prevent errors or omissions, the logs included in a geotechnical engineering report should *never* be redrawn for inclusion in architectural or other design drawings. Only photographic or electronic reproduction is acceptable, *but recognize that separating logs from the report can elevate risk.*

Give Contractors a Complete Report and Guidance

Some owners and design professionals mistakenly believe they can make contractors liable for unanticipated subsurface conditions by limiting what they provide for bid preparation. To help prevent costly problems, give contractors the complete geotechnical engineering report, *but* preface it with a clearly written letter of transmittal. In that letter, advise contractors that the report was not prepared for purposes of bid development and that the report's accuracy is limited; encourage them to confer with the geotechnical engineer who prepared the report (a modest fee may be required) and/or to conduct additional study to obtain the specific types of information they need or prefer. A prebid conference can also be valuable. *Be sure contractors have sufficient time* to perform additional study. Only then might you be in a position to give contractors the best information available to you, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions.

Read Responsibility Provisions Closely

Some clients, design professionals, and contractors do not recognize that geotechnical engineering is far less exact than other engineering disciplines. This lack of understanding has created unrealistic expectations that

have led to disappointments, claims, and disputes. To help reduce the risk of such outcomes, geotechnical engineers commonly include a variety of explanatory provisions in their reports. Sometimes labeled "limitations" many of these provisions indicate where geotechnical engineers' responsibilities begin and end, to help others recognize their own responsibilities and risks. *Read these provisions closely.* Ask questions. Your geotechnical engineer should respond fully and frankly.

Geoenvironmental Concerns Are Not Covered

The equipment, techniques, and personnel used to perform a *geoenvironmental* study differ significantly from those used to perform a *geotechnical* study. For that reason, a geotechnical engineering report does not usually relate any geoenvironmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. *Unanticipated environmental problems have led to numerous project failures.* If you have not yet obtained your own geoenvironmental information, ask your geotechnical consultant for risk management guidance. *Do not rely on an environmental report prepared for someone else.*

Obtain Professional Assistance To Deal with Mold

Diverse strategies can be applied during building design, construction, operation, and maintenance to prevent significant amounts of mold from growing on indoor surfaces. To be effective, all such strategies should be devised for the *express purpose* of mold prevention, integrated into a comprehensive plan, and executed with diligent oversight by a professional mold prevention consultant. Because just a small amount of water or moisture can lead to the development of severe mold infestations, a number of mold prevention strategies focus on keeping building surfaces dry. While groundwater, water infiltration, and similar issues may have been addressed as part of the geotechnical engineering study whose findings are conveyed in this report, the geotechnical engineer in charge of this project is not a mold prevention consultant; ***none of the services performed in connection with the geotechnical engineer's study were designed or conducted for the purpose of mold prevention. Proper implementation of the recommendations conveyed in this report will not of itself be sufficient to prevent mold from growing in or on the structure involved.***

Rely, on Your ASFE-Member Geotechnical Engineer for Additional Assistance

Membership in ASFE/THE BEST PEOPLE ON EARTH exposes geotechnical engineers to a wide array of risk management techniques that can be of genuine benefit for everyone involved with a construction project. Confer with your ASFE-member geotechnical engineer for more information.



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COUNTY OF SAN MATEO - PLANNING AND BUILDING DEPARTMENT

ATTACHMENT D



MAX GR 24000 KG
TARE 8000 KG
PAYLOAD 16000 KG
CU CAP 147.7 CBM



















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