



# City of Fort Bragg

416 N Franklin Street  
Fort Bragg, CA 95437  
Phone: (707) 961-2823  
Fax: (707) 961-2802

## Meeting Agenda Planning Commission

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Wednesday, April 16, 2025

6:00 PM

Town Hall, 363 N.Main Street and Via Video  
Conference

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### Special Meeting

#### MEETING CALLED TO ORDER

#### PLEDGE OF ALLEGIANCE

#### ROLL CALL

#### PLANNING COMMISSIONERS PLEASE TAKE NOTICE

*Planning Commissioners are reminded that pursuant to the Council policy regarding use of electronic devices during public meetings adopted on November 28, 2022, all cell phones are to be turned off and there shall be no electronic communications during the meeting. All e-communications such as texts or emails from members of the public received during a meeting are to be forwarded to the City Clerk after the meeting is adjourned.*

#### ZOOM WEBINAR INVITATION

*This meeting is being presented in a hybrid format, both in person at Town Hall and via Zoom.*

*Join from PC, Mac, iPad, or Android:*  
<https://us06web.zoom.us/j/85809312855>

*Phone one-tap:*  
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+12532050468,,85809312855# US

*Join via audio:*  
+1 669 444 9171 US

*Webinar ID: 858 0931 2855*  
*International numbers available: <https://us06web.zoom.us/j/85809312855>*

*To speak during public comment portions of the agenda via zoom, please join the meeting and use the raise hand feature when the Chair or Acting Chair calls for public comment on the item you wish to address.*

## **1. PUBLIC COMMENTS ON: (1) NON-AGENDA & (2) CONSENT CALENDAR ITEMS**

*MANNER OF ADDRESSING THE COMMISSION: All remarks and questions shall be addressed to the Planning Commission; no discussion or action will be taken pursuant to the Brown Act. No person shall speak without being recognized by the Chair or Acting Chair. Public comments are restricted to three (3) minutes per speaker.*

*TIME ALLOTMENT FOR PUBLIC COMMENT ON NON-AGENDA ITEMS: Thirty (30) minutes shall be allotted to receiving public comments. If necessary, the Chair or Acting Chair may allot an additional 30 minutes to public comments after Conduct of Business to allow those who have not yet spoken to do so. Any citizen, after being recognized by the Chair or Acting Chair, may speak on any topic that may be a proper subject for discussion before the Planning Commission for such period of time as the Chair or Acting Chair may determine is appropriate under the circumstances of the particular meeting, including number of persons wishing to speak or the complexity of a particular topic. Time limitations shall be set without regard to a speaker's point of view or the content of the speech, as long as the speaker's comments are not disruptive of the meeting.*

*BROWN ACT REQUIREMENTS: The Brown Act does not allow action or discussion on items not on the agenda (subject to narrow exceptions). This will limit the Commissioners' response to questions and requests made during this comment period.*

*WRITTEN PUBLIC COMMENTS: Written public comments received after agenda publication are forwarded to the Commissioners as soon as possible after receipt and are available for inspection at City Hall, 416 N. Franklin Street, Fort Bragg, during normal business hours. All comments will become a permanent part of the agenda packet on the day after the meeting or as soon thereafter as possible, except comments that are in an unrecognized file type or too large to be uploaded to the City's agenda software application. Public comments may be emailed to [CDD@fortbragg.com](mailto:CDD@fortbragg.com).*

## **2. STAFF COMMENTS**

## **3. MATTERS FROM COMMISSIONERS**

## **4. CONSENT CALENDAR**

*All items under the Consent Calendar will be acted upon in one motion unless a Commissioner requests that an individual item be taken up under Conduct of Business.*

**4A. [25-85](#)** Approve Minutes of the March 12, 2025 Planning Commission Meeting

**Attachments:** [03122025 PC Minutes](#)

## **5. DISCLOSURE OF EX PARTE COMMUNICATIONS ON AGENDA ITEMS**

## **6. PUBLIC HEARINGS**



- 6A. [25-95](#)** Memorandum Regarding a Coastal Development Permit 1-25 (CDP 1-25), Design Review 1-25 (DR 1-25), Use Permit 1-25 (UP 1-25) and Sign Permit 2-25 (SP 2-25) for a Proposed 49-Unit Senior Housing Project Located at 860 Hazelwood (APN 018-210-29). Statutorily exempt from CEQA pursuant to section 15332 - Class 32 In-Fill Development Projects and 15192 Infill Housing Development.

**Attachments:** [Public Hearing Postponement Memo](#)

[Att. 1 - Hazelwood Housing Incentives Staff Report 2-24-2025](#)

[Att. 2 - Site Plan, Sign Plan](#)

[Att. 3 - Floor Plans](#)

[Att. 4 - Community Center Plan](#)

[Att. 5 - Project Elevations](#)

[Att. 6 - Project Renderings](#)

[Att. 7 - Colors and Materials](#)

[Att. 8 - Preliminary Landscape Plan](#)

[Att. 9 - Lighting Plan](#)

[Att. 10 - Civil Plans](#)

[Att. 11 - Stormwater Management Plan](#)

[Att. 12 - Geotechnical Report](#)

[Att. 13 - Public Hearing Notice 860 Hazelwood 4-16-25 PC](#)

- 6B. [25-96](#)** Receive a Report, Hold a Public Hearing, and Consider Approval of a Request to Subdivide an Existing 12,000 SF Undeveloped Parcel Into Two Parcels of 6,000 SF Each. Categorically Exempt From CEQA Under Section 15315 Minor Land Divisions

**Attachments:** [Staff Report for 104 Dana St. Minor Subdivision](#)

[Att. 1 - Parcel Map Division #1-10](#)

[Att. 2 - Grading Permit](#)

[Att. 3 - Tentative Map](#)

[Att. 4 - Public Works Comment Memo](#)

[Att. 5 - Pryor Development Permit and Conditions](#)

[Att. 6 - Resolution for DIV 1-24, 104 Dana St.](#)

[Att. 7 - Notice of Exemption](#)

[Att. 8 - Public Hearing Notice DIV 1-24](#)

[Att. 9 - Public Comment](#)

## **7. CONDUCT OF BUSINESS**

### **ADJOURNMENT**

*The adjournment time for all Planning Commission meetings is no later than 9:00 p.m. If the Commission is still in session at 9:00 p.m., the Commission may continue the meeting upon majority vote.*

STATE OF CALIFORNIA       )  
  )ss.  
COUNTY OF MENDOCINO    )

I declare, under penalty of perjury, that I am employed by the City of Fort Bragg and that I caused this agenda to be posted in the City Hall notice case on Friday, April 11 , 2025.

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Maria Flynn  
Administrative Assistant, Community Development Department

### **NOTICE TO THE PUBLIC**

Materials related to an item on this agenda submitted to the Commission after distribution of the agenda packet are available for public inspection in the Community Development Department at 416 North Franklin Street, Fort Bragg, California, during normal business hours. Such documents are also available on the City's website at [www.fortbragg.com](http://www.fortbragg.com) subject to staff's ability to post the documents before the meeting.

### **ADA NOTICE AND HEARING IMPAIRED PROVISIONS:**

It is the policy of the City of Fort Bragg to offer its public programs, services and meetings in a manner that is readily accessible to everyone, including those with disabilities. Upon request, this agenda will be made available in appropriate alternative formats to persons with disabilities.

If you need assistance to ensure your full participation, please contact the City Clerk at (707) 961-2823. Notification 48 hours in advance of any need for assistance will enable the City to make reasonable arrangements to ensure accessibility.

This notice is in compliance with the Americans with Disabilities Act (28 CFR, 35.102-35.104 ADA Title II).



# City of Fort Bragg

416 N Franklin Street  
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## Text File

File Number: 25-85

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**Agenda Date:** 4/16/2025

**Version:** 1

**Status:** Business

**In Control:** Planning Commission

**File Type:** Staff Report

**Agenda Number:** 4A.

Approve Minutes of the March 12, 2025 Planning Commission Meeting



# City of Fort Bragg

416 N Franklin Street  
Fort Bragg, CA 95437  
Phone: (707) 961-2823  
Fax: (707) 961-2802

## Meeting Minutes Planning Commission

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Wednesday, March 12, 2025

6:00 PM Town Hall, 363 N. Main Street and Via Video Conference

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### MEETING CALLED TO ORDER

Chair Jensen called the meeting to order at 6:00 PM

### PLEDGE OF ALLEGIANCE

### ROLL CALL

**Present** 5 - Commissioner Jary Stavely, Chair David Jensen, Commissioner Katie Turner, Vice Chair Richard Neils, and Commissioner Ryan Bushnell

### 1. PUBLIC COMMENTS ON: (1) NON-AGENDA & (2) CONSENT CALENDAR ITEMS

- (1) Jacob Patterson
- (2) None

### 2. STAFF COMMENTS

Assistant Director of Engineering O'Neal gave an update on upcoming community events and Administrative Assistant Flynn gave an update on 4Leaf.

### 3. MATTERS FROM COMMISSIONERS

Commissioners gave a debrief on their experience the previous week at the CalCities Planning Commissioners Academy.

### 4. CONSENT CALENDAR

#### Approval of the Consent Calendar

A motion was made by Commissioner Stavely, seconded by Commissioner Bushnell, to approve the Consent Calendar. The motion carried by the following vote:

**Aye:** 5 - Commissioner Stavely, Chair Jensen, Commissioner Turner, Vice Chair Neils and Commissioner Bushnell

**4A. [25-41](#)** Approve Minutes of the February 26, 2025 Planning Commission Meeting

These Minutes were approved on the Consent Calendar.

### 5. DISCLOSURE OF EX PARTE COMMUNICATIONS ON AGENDA ITEMS

Commissioner Bushnell disclosed that he had a conversation about the public hearing item with

a member of the media.

## **6. PUBLIC HEARINGS**

- 6A.** [25-42](#) Receive a Report, Hold a Public Hearing, and Consider Approval of a Coastal Development Permit (CDP 8-24), Design Review (DR 11-24), Use Permit (UP 9-24), and Sign Permit (SP 20-24) for a proposed eighty-seven unit, three story multi-family project at 1151 S. Main St. (APN 018-440-58). Statutorily exempt from CEQA pursuant to section 15332 - Class 32 In-Fill Development Projects and 15192 - Infill Housing Development.

Chair Jensen opened the Public Hearing at 6:06 PM

Consultant Jones presented the report.

Commissioners asked clarifying questions regarding Harbor Avenue, special conditions, EV charging, frontage improvements, lighting, building facade and height, traffic and pedestrian flow, parking, access to public transportation, Floor Area Ratio (FAR), fencing and soundwall.

Public Comment: Taryn Oakes, Mary Chamberlain, Guy Burnett, Carolyn Morgan, Teresa Skarr, Cynthia Sharon, Kathleen Zarrabi, Hamim Zarrabi, Dave Skarr, Mark Kendra, Andrew Jordan, Paul Clark, Jacob Patterson, Johanna Jensen, Jay McMartin, Anne Marie Weibel.

Chair Jensen called a recess at 8:06 PM

Chair Jensen reconvened the meeting at 8:13 PM

The applicant, Assistant Director of Engineering O'Neal, and Consultant Jones addressed Commissioners' clarifying questions regarding fire safety (ingress/egress), storm water, neighboring wells, ADA requirements, public transportation, deed restrictions of project.

Chair Jensen closed the Public Hearing at 8:34 PM

Discussion: Under deliberation, Commissioners discussed the need for housing, special conditions, density bonus, location and scale of the project, parking, Coastal Commission comments, and California State Law. Commissioners added a special condition regarding a transit stop. Commissioners directed staff to include discussion in the City Council staff report regarding neighboring wells and paving Harbor Ave.

**A motion was made by Commissioner Stavely, seconded by Commissioner Turner, that the Planning resolution be adopted as amended. The motion carried by the following vote:**

**Aye:** 5 - Commissioner Stavely, Chair Jensen, Commissioner Turner, Vice Chair Neils and Commissioner Bushnell

Enactment No: RES PC06-2025

Commissioners unanimously agreed to continue the meeting past 9:00 PM

## **7. CONDUCT OF BUSINESS**

- 7A.** [25-44](#) Receive Report and Provide a Recommendation to City Council to Accept the Annual 2024 General Plan Report and Annual 2024 Housing Element Progress Report.

Assistant Planner Peters and Administrative Assistant Flynn reviewed the report and noted updates that would be made prior to reporting to the City Council

Commissioners did not have any clarifying questions

Public Comment: Paul Clark

Commissioners directed staff to bring the report forward to City Council as amended.

## **ADJOURNMENT**

Chair Jensen adjourned the meeting at 9:17 PM



# City of Fort Bragg

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## Text File

**File Number: 25-95**

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**Agenda Date:** 4/16/2025

**Version:** 1

**Status:** Public Hearing

**In Control:** Planning Commission

**File Type:** Planning Staff Report

**Agenda Number:** 6A.

Memorandum Regarding a Coastal Development Permit 1-25 (CDP 1-25), Design Review 1-25 (DR 1-25), Use Permit 1-25 (UP 1-25) and Sign Permit 2-25 (SP 2-25) for a Proposed 49-Unit Senior Housing Project Located at 860 Hazelwood (APN 018-210-29). Statutorily exempt from CEQA pursuant to section 15332 - Class 32 In-Fill Development Projects and 15192 Infill Housing Development.



**CITY OF FORT BRAGG  
COMMUNITY DEVELOPMENT DEPARTMENT**

416 N. FRANKLIN, FORT BRAGG, CA 95437  
PHONE 707/961-2827 FAX 707/961-2802

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**MEMORANDUM**

**Date:** April 16, 2025  
**To:** Planning Commission  
**From:** Community Development Department  
**Subject:** 860 Hazelwood Public Hearing

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The public hearing for this item has been moved to Wednesday, April 30, 2025 at 6:00 PM, to ensure all noticing requirements are satisfied.

**ATTACHMENTS:**

1. Hazelwood Housing Incentives Staff Report 2-24-2025
2. Site Plan, Sign Plan
3. Floor Plans
4. Community Center Plan
5. Project Elevations
6. Project Renderings
7. Colors and Materials
8. Preliminary Landscape Plan
9. Lighting Plan
10. Civil Plans
11. Stormwater Management Plan
12. Geotechnical Report
13. Public Hearing Notice 860 Hazelwood 4-16-25 PC





## CITY COUNCIL STAFF REPORT

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**TO:** City Council **DATE:** February 24, 2025

**DEPARTMENT:** Community Development Department

**PREPARED BY:** Marie Jones, Marie Jones Consulting

**PRESENTER:** Marie Jones, Marie Jones Consulting

**AGENDA TITLE:** Hold a Hearing Receive Report and Consider Adopting a Resolution of the Fort Bragg City Council Providing Preliminary Preapproval of Inclusionary Housing Incentives for Proposed Affordable Senior Apartment Project at 860 Hazelwood.

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### RECOMMENDATION

Adopt a Resolution of the Fort Bragg City Council Providing Preliminary Preapproval of Inclusionary Housing Incentives for Affordable Senior Apartment Project Proposed for 860 Hazelwood.

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### BACKGROUND

On January 3, 2025 the City received an application for a 49-unit affordable senior housing project proposed for 860 Hazelwood for which the applicant has requested two incentives and a small density bonus in compliance with state law.

### DISCUSSION AND ANALYSIS

The inclusionary housing ordinance implements the Housing Element of the General Plan, by offering incentives for the development of housing that is affordable to low- and moderate-income households. Per the Coastal Land Use and Development Code (CLUDC), section 17.32.040 developments of greater than 7 units "must construct 15 percent of all new dwelling units in a residential development as affordable units."

Additionally, in recognition that the inclusionary housing requirement reduces the profitability and therefore the feasibility of a project the ordinance includes a mechanism by which the City Council can "pre-approve" planning incentives prior to submittal of the final permit application and consideration of the project by the Planning Commission and City Council, see CLUDC section 17.32.070 below:

AGENDA ITEM NO. \_\_\_\_\_

### 17.32.070 - Inclusionary Housing Incentives

A. Process for describing incentives. A residential development that complies with the inclusionary housing requirements in Subsection 17.32.040.A. (Number of units required), through the actual construction of inclusionary units, shall be entitled to the following procedures and incentives.

1. Voluntary conceptual preliminary approval of incentives.
  - a. Before the submittal of any formal application for a General Plan amendment, rezoning, Coastal Development Permit, Use Permit, Tentative Map, or other permit or entitlement describing and specifying the location, number, size, and type of the housing development, the developer may submit a letter of request for incentives identifying any requests for density bonus, incentives, modifications, or waivers of development or zoning standards necessary to make construction feasible for the proposed development, including the inclusionary units. The Council shall review the preliminary development proposal and the letter of request for incentives within 90 days of submittal at a public hearing and indicate conceptual preliminary approval or disapproval of the proposed development and request for incentives, modifications, or waivers of development or zoning standards.
  - b. Preliminary approval or disapproval shall not bind the Council, but rather shall be subject to the discretion of the Council to modify its preliminary recommendations based upon a full review of all pertinent project information, including any CEQA analysis, presented at the public hearing on the subject application.
  - c. The provisions of this Section do not replace, supersede or modify the independent requirement for a CDP approved pursuant to the otherwise applicable policies and standards of the certified LCP.

State law requires the City to grant at least three incentives per Government Code section 659159(d)(2)(c) as the project is proposed at 100% affordable to low-income seniors.

(C) Three incentives or concessions for projects that include at least 24 percent of the total units for lower income households, at least 15 percent for very low income households, or at least 30 percent for persons and families of moderate income in a development in which the units are for sale.

The applicant has requested the following two incentives (Attachment 1):

1. *“Height: Pursuant to Table 2-5 in the Code, the Project may have a maximum height of 35 feet, which it currently exceeds by 7’8”. The entire 3rd story of the development would need to be removed in order for the Project to abide by this development standard, therefore making its removal necessary for the Project’s financial feasibility.*
2. *Parking: Pursuant to Table 3-7 in the Code, the Project must provide 2 parking stalls per unit plus guest parking at a rate of 1 stall per 3 units. This would place the mandatory minimum parking count at 114 stalls. As designed, the Project can only accommodate 75 parking spaces. This is above the minimum parking count as outlined in California Government Code (p)(l)(A) and (p)(l)(B).”*

Additionally, according to State Law, the applicant may request a density bonus of 80% based on the level of affordability (100%) of the project. However, the applicant has requested a 9% density bonus to construct the project at 16.39 units/acre instead of the 15 units/acre required in the zoning district.

## **FISCAL IMPACT**

This approval will not have a significant fiscal impact.

## **ENVIRONMENTAL ANALYSIS**

The addition of affordable apartments in Fort Bragg will reduce overall emissions as the City is small and compact and locating residence within the City will result in fewer vehicle miles traveled than new development within the county. Moreover, the consideration and approval of preliminary incentives has been reviewed with respect to the applicability of the California Environmental Quality Act (Public Resources Code Section 21000 *et seq.*) ("CEQA"). City staff has determined that the proposed approval of preliminary incentives amendments does not have the potential for creating a significant effect on the environment and is therefore exempt from further review under CEQA pursuant to State CEQA Guidelines Section 15060(c)(3) because it is not a project as defined by the CEQA Guidelines Section 15378. Adoption of the Resolution does not bind the Council which under the Inclusionary housing ordinance, retains the authority to modify the pre-approval when upon a full review of the pertinent information. These incentives will be subject to review under CEQA and the specific impacts of such projects will be analyzed under CEQA at time of project review and approval of the development project before the Planning Commission and when the Planning Commission recommendation is presented to the Council.

## **STRATEGIC PLAN/COUNCIL PRIORITIES/GENERAL PLAN CONSISTENCY**

The granting of planning incentives and a density bonus for affordable housing is consistent with state law, Program H-2.4.1 of the City's Housing Element and Chapter 17.32 of the Coastal Land Use and Development Code. If approved the project would help implement the City's Strategic Plan housing goal of 200 new housing units by 2026.

## **COMMUNITY OUTREACH**

This project has not been the subject of community outreach. Community outreach is not feasible prior to a fully noticed public hearing for current planning projects.

## **COMMITTEE REVIEW AND RECOMMENDATIONS**

The Planning Commission will hold a Public Hearing on this project in March and forward a recommendation for the project permits to the City Council soon thereafter.

## **ALTERNATIVES**

The City, under the State's density bonus law, can only deny the requested incentives if the City can prove with substantial evidence that the incentives are not required for a financially and physically feasible project. The following facts of the project don't seem to allow for this flexibility.

- This site requires a large stormwater infiltration basin, and it is not feasible to both accommodate the infiltration basin and the minimum density of the site with existing height limits.
- The applicant must at least achieve minimum density at the site to be eligible for Tax

Credit financing. Without the requested height change the project is not financially feasible as it would not achieve minimum densities and would not be eligible for tax credit financing.

- Likewise, the site is not large enough to accommodate all the required parking, the units and the stormwater infiltration basin, nor is the required parking consistent with parking usage for senior apartments.
- Finally, as noted in the applicant's letter, the small addition in height is required to accommodate the elevator shaft which is required by law for senior ADA access.

## **IMPLEMENTATION/TIMEFRAMES**

The applicant has submitted final project designs, and their application will be brought forward to the Planning Commission and City Council for consideration in March 2025.

## **ATTACHMENTS**

1. Letter Request for Incentives
2. Resolution of the Fort Bragg City Council Providing Preliminary Preapproval of Affordable Housing Incentives and Density Bonus for a Proposed Senior Apartments Project at 860 Hazelwood.
3. Public Hearing Notice

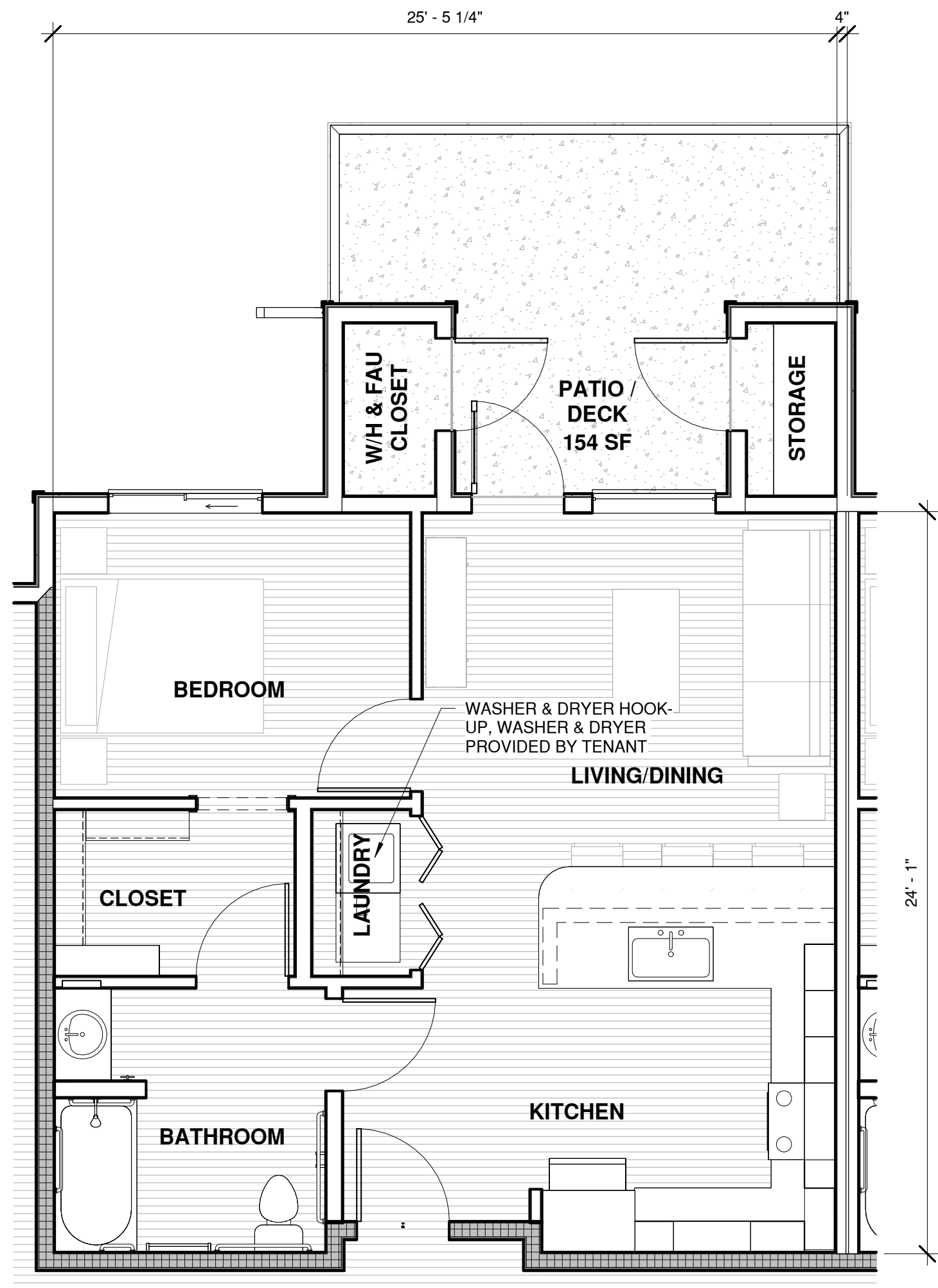
## **NOTIFICATION**

'Notify Me' Housing List  
Applicant- AMG & Associates, LLC  
Agent- Jacob Soroudi  
Property Owner- Angelina F. Moura

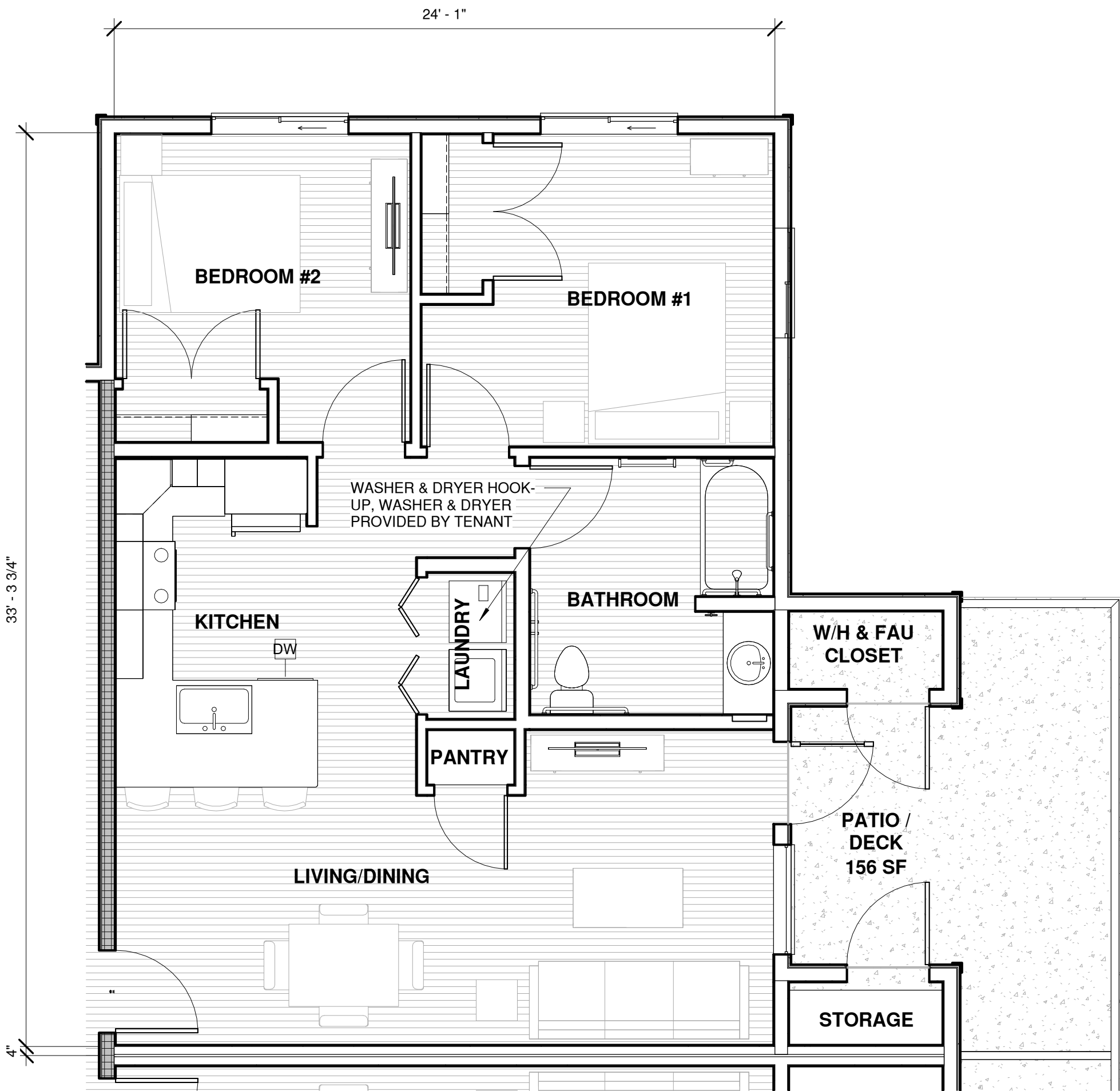








① 1-BEDROOM UNIT PLAN, TYP. - 613 S.F.  
1/4" = 1'-0"



② 2-BEDROOM UNIT PLAN, TYP. - 802 S.F.  
1/4" = 1'-0"

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PROJECT

FORT BRAGG SENIOR  
APARTMENTS

FORT BRAGG, CA

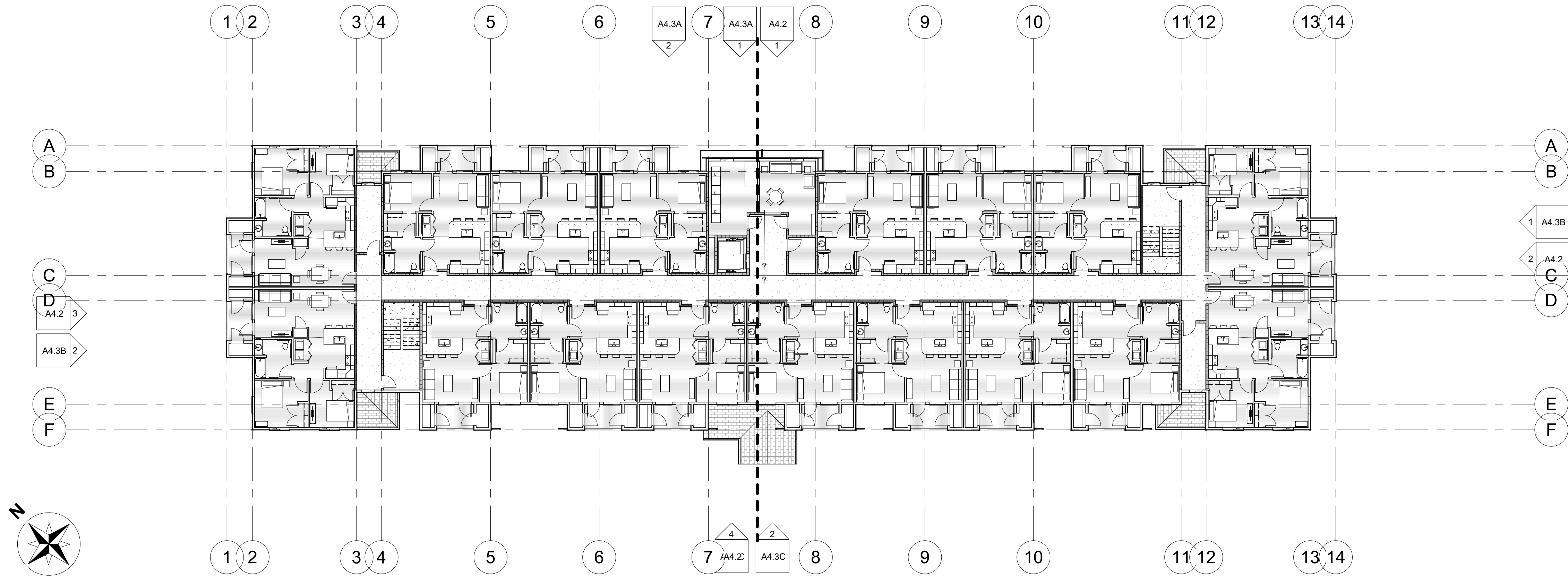
HAZELWOOD STREET

A2.1

TYPICAL UNIT PLANS

SCHEMATIC SET / NOT FOR CONSTRUCTION





1 OVERALL 2ND FLOOR PLAN  
1/16" = 1'-0"

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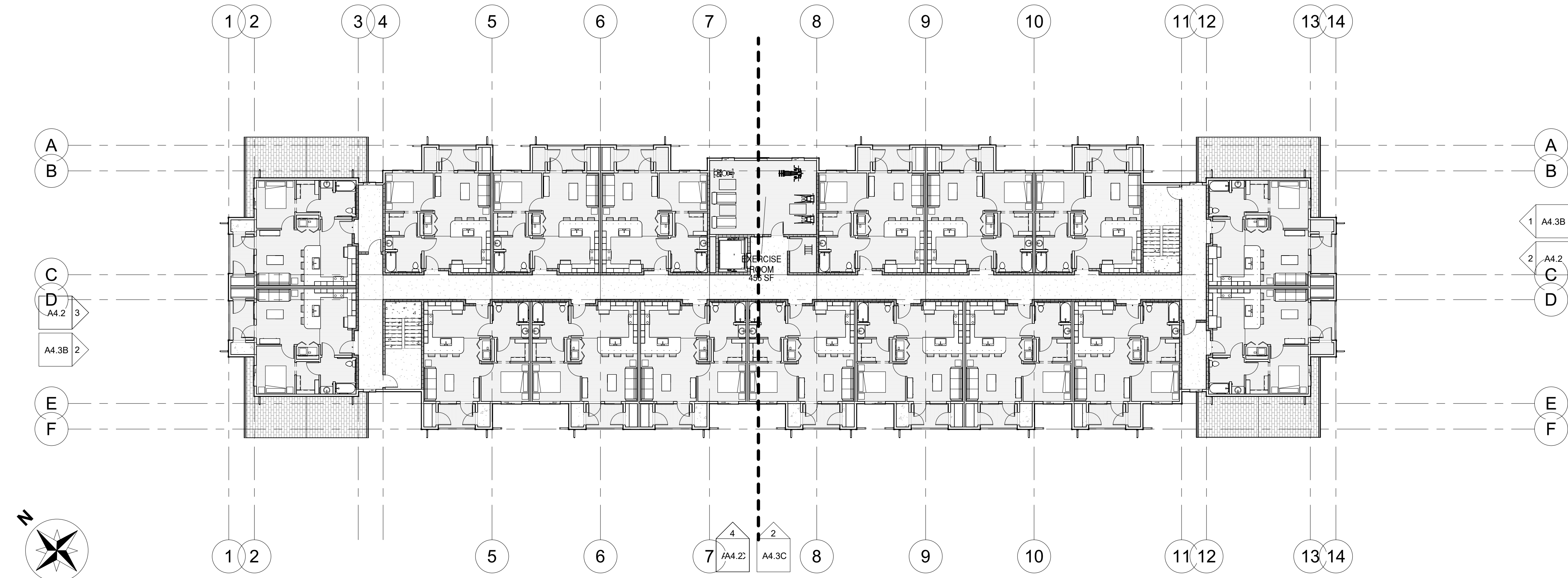
FORT BRAGG SENIOR  
APARTMENTS

HAZELWOOD STREET  
PENN VALLEY, CA

A4.0B

SCHEMATIC SET / NOT FOR CONSTRUCTION





1 OVERALL 3RD FLOOR PLAN  
1/16" = 1'-0"

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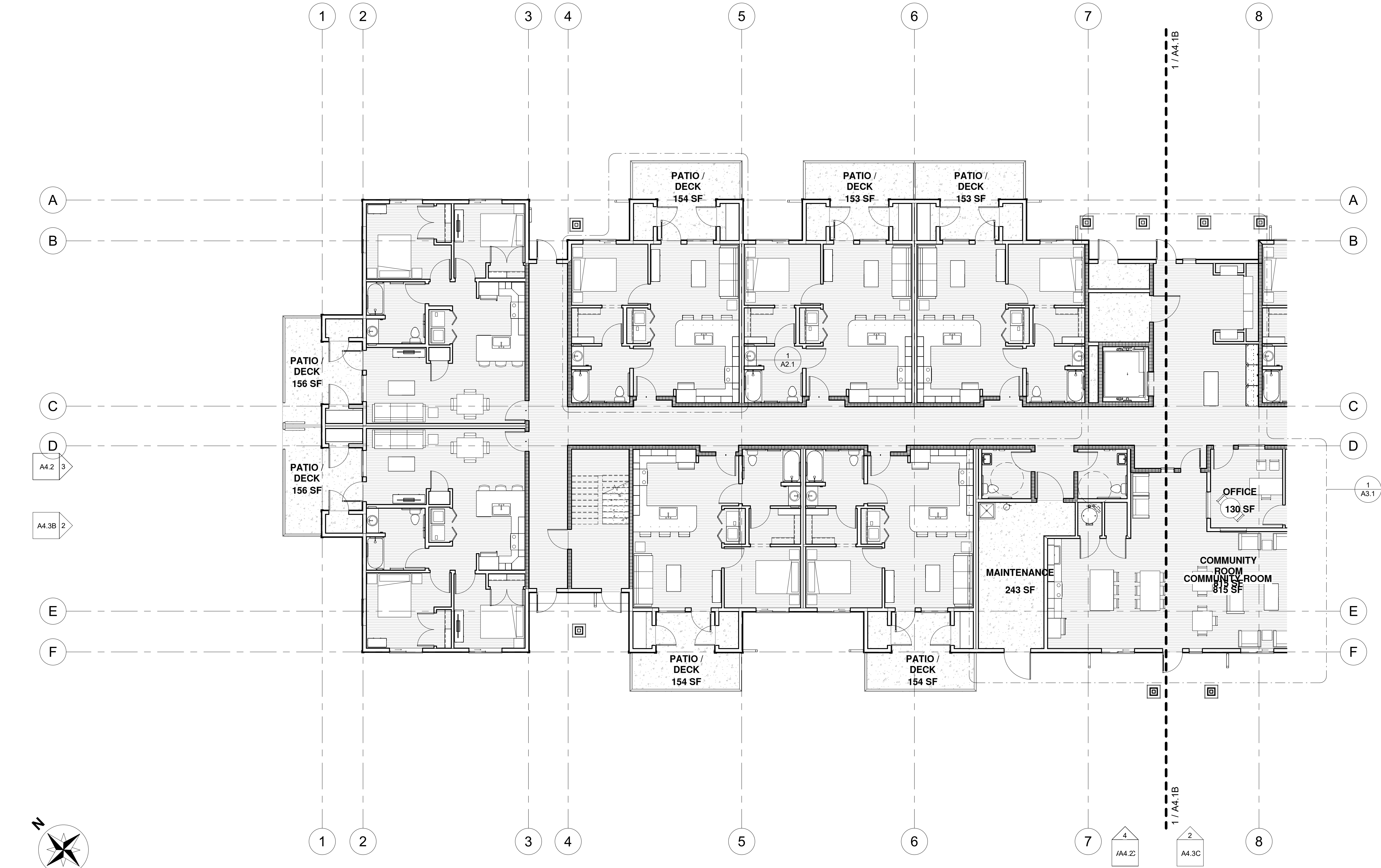
PROJECT

**FORT BRAGG SENIOR APARTMENTS**

HAZELWOOD STREET  
PENN VALLEY, CA

**A4.0C**

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1 ENLARGED 1ST FLOOR PLAN - A  
1/8" = 1'-0"

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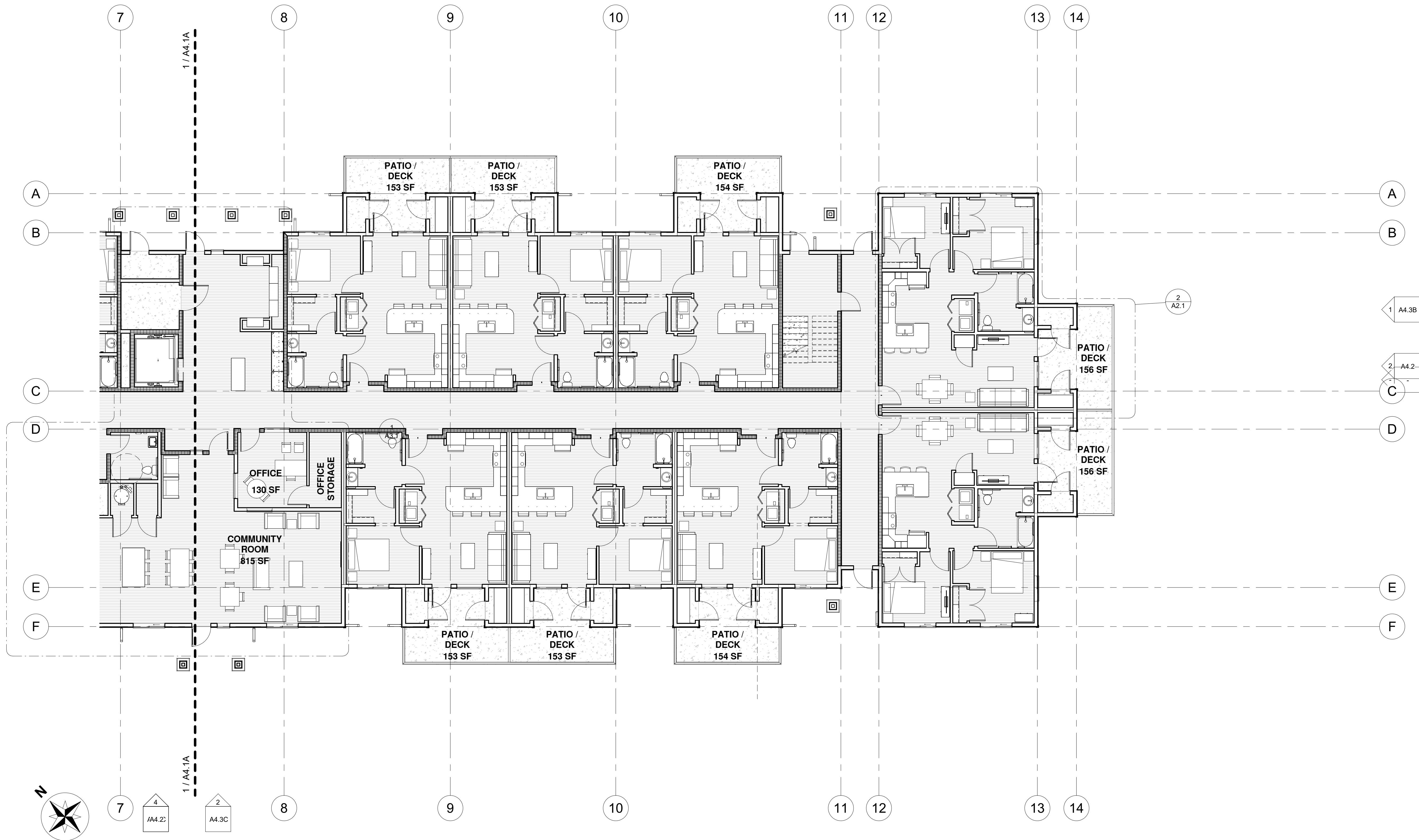
PROJECT

FORT BRAGG SENIOR APARTMENTS

HAZELWOOD STREET  
PENN VALLEY, CA

A4.1A

SCHEMATIC SET / NOT FOR CONSTRUCTION



1 ENLARGED 1ST FLOOR PLAN - B  
1/8" = 1'-0"

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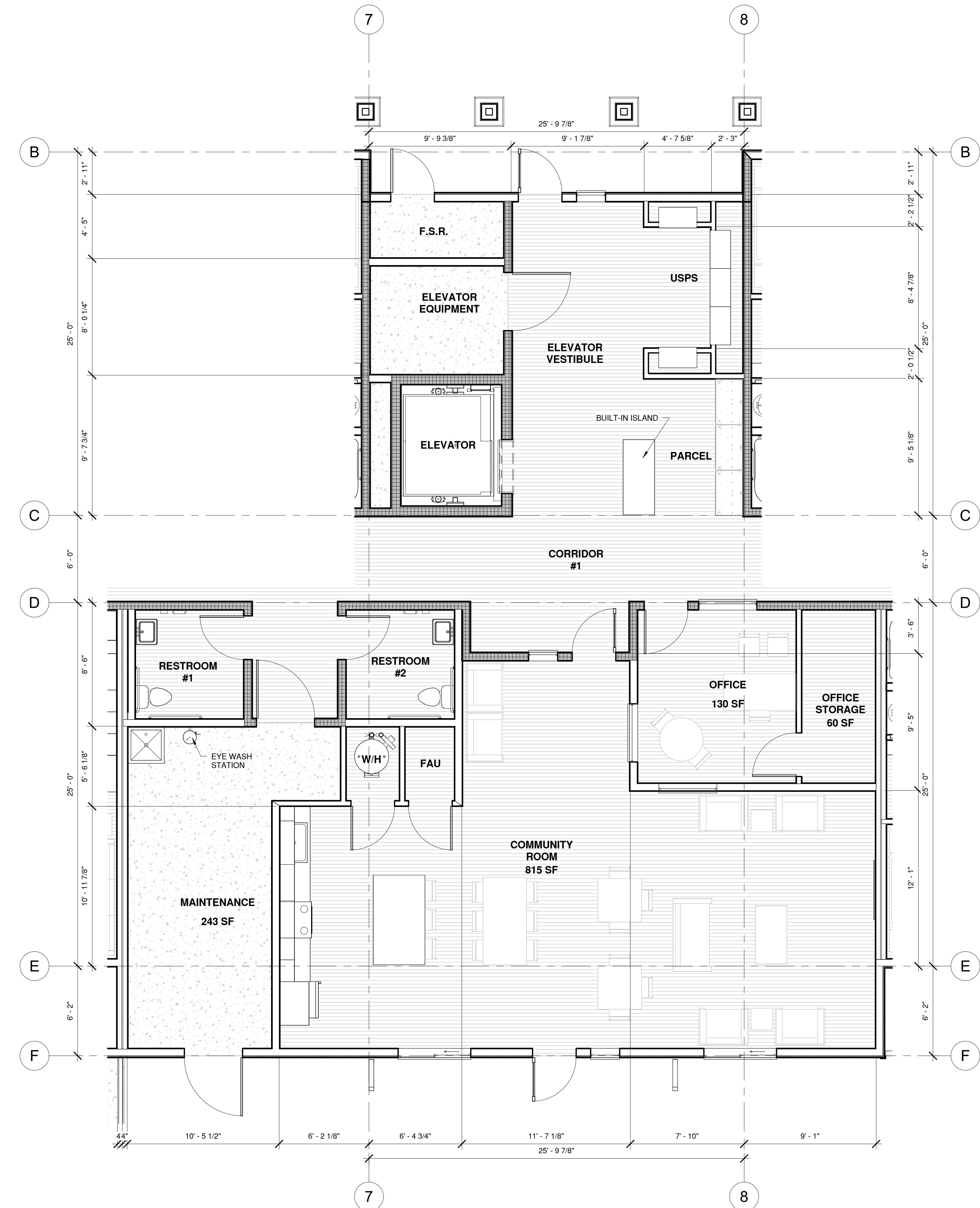
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#### FORT BRAGG SENIOR APARTMENTS

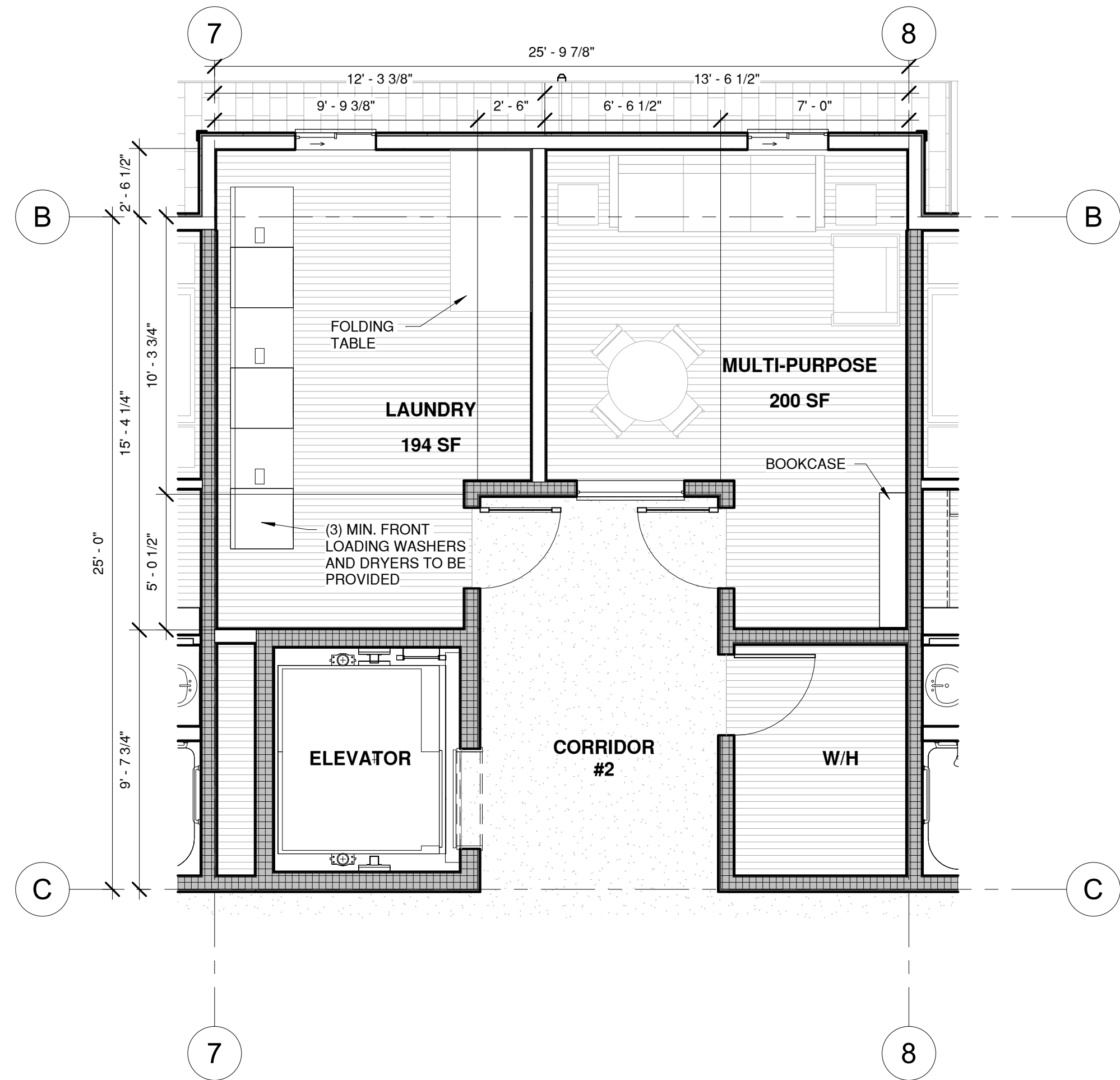
HAZELWOOD STREET  
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SCHEMATIC SET / NOT FOR CONSTRUCTION

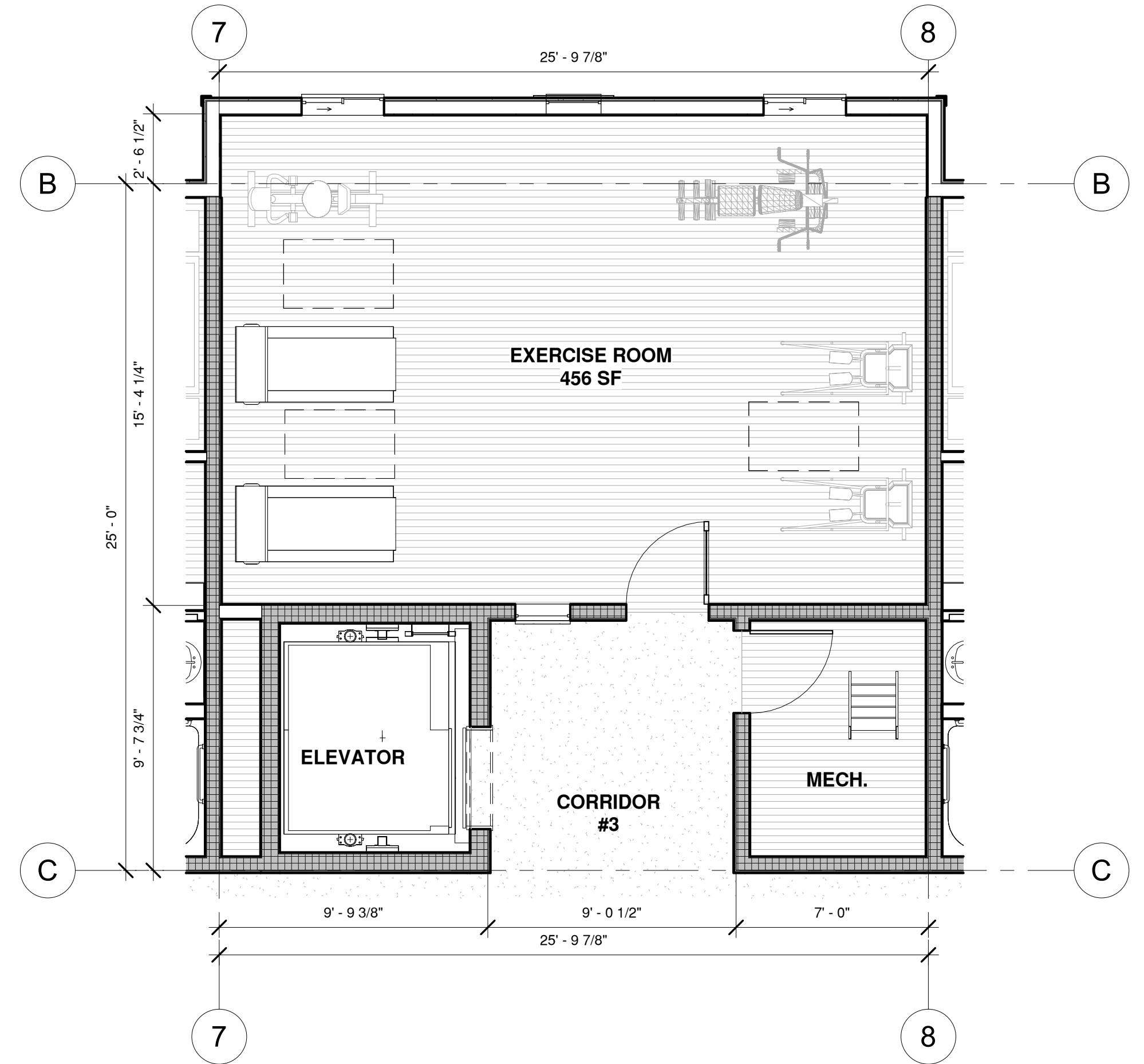
A4.1B



1 COMMUNITY CENTER & MAIN ENTRANCE PLAN  
1/4" = 1'-0"



2 LAUNDRY ROOM PLAN  
1/4" = 1'-0"



3 EXERCISE ROOM PLAN  
1/4" = 1'-0"

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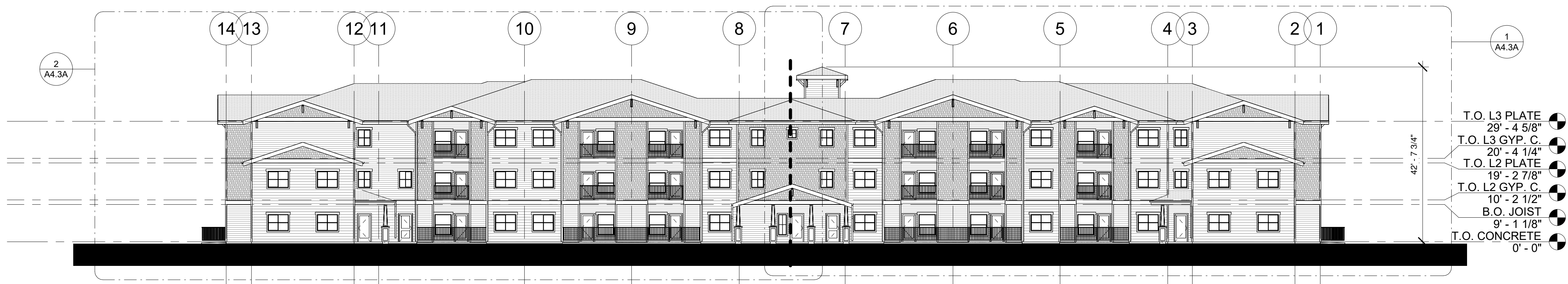
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HAZELWOOD STREET

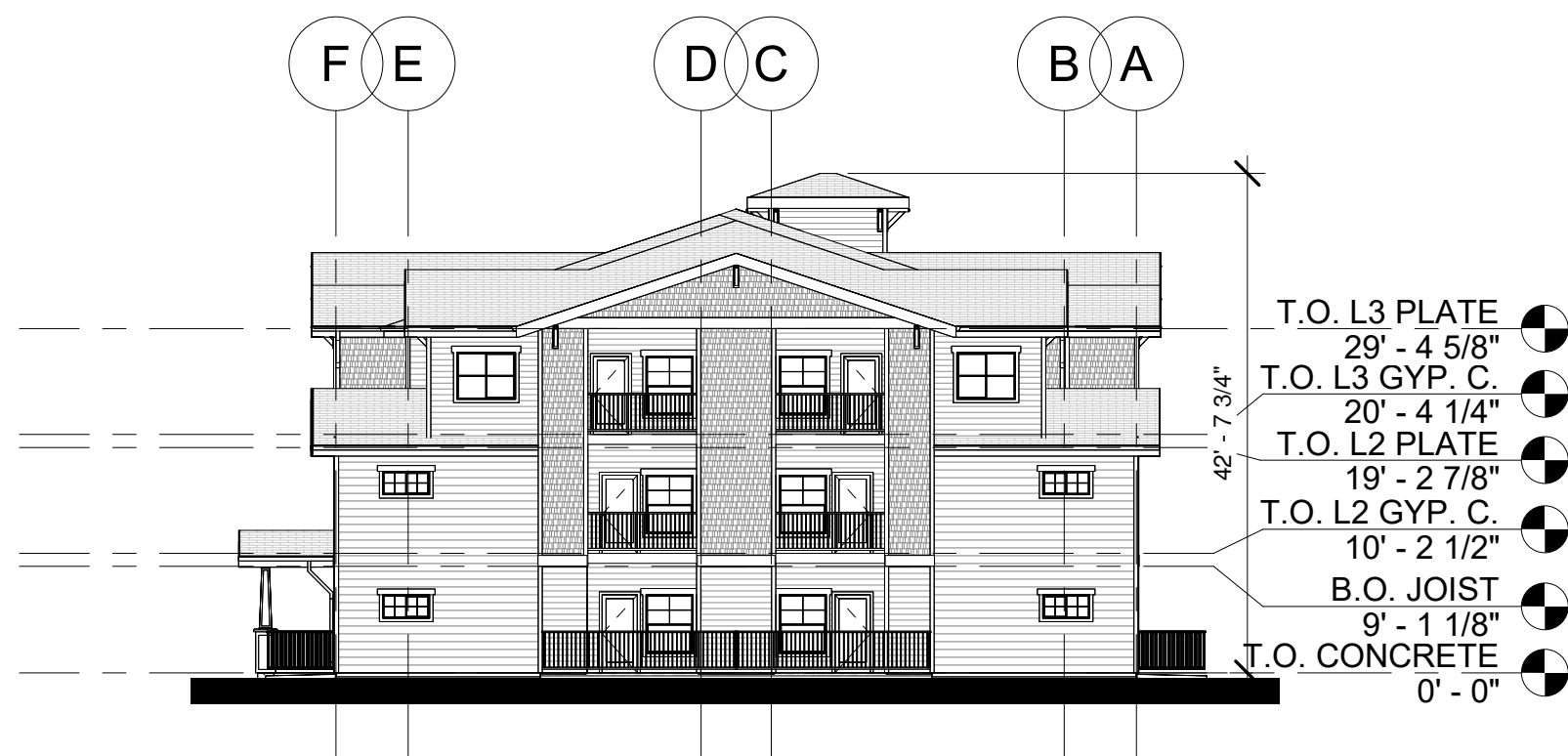
A3.1

COMMUNITY CENTER PLAN

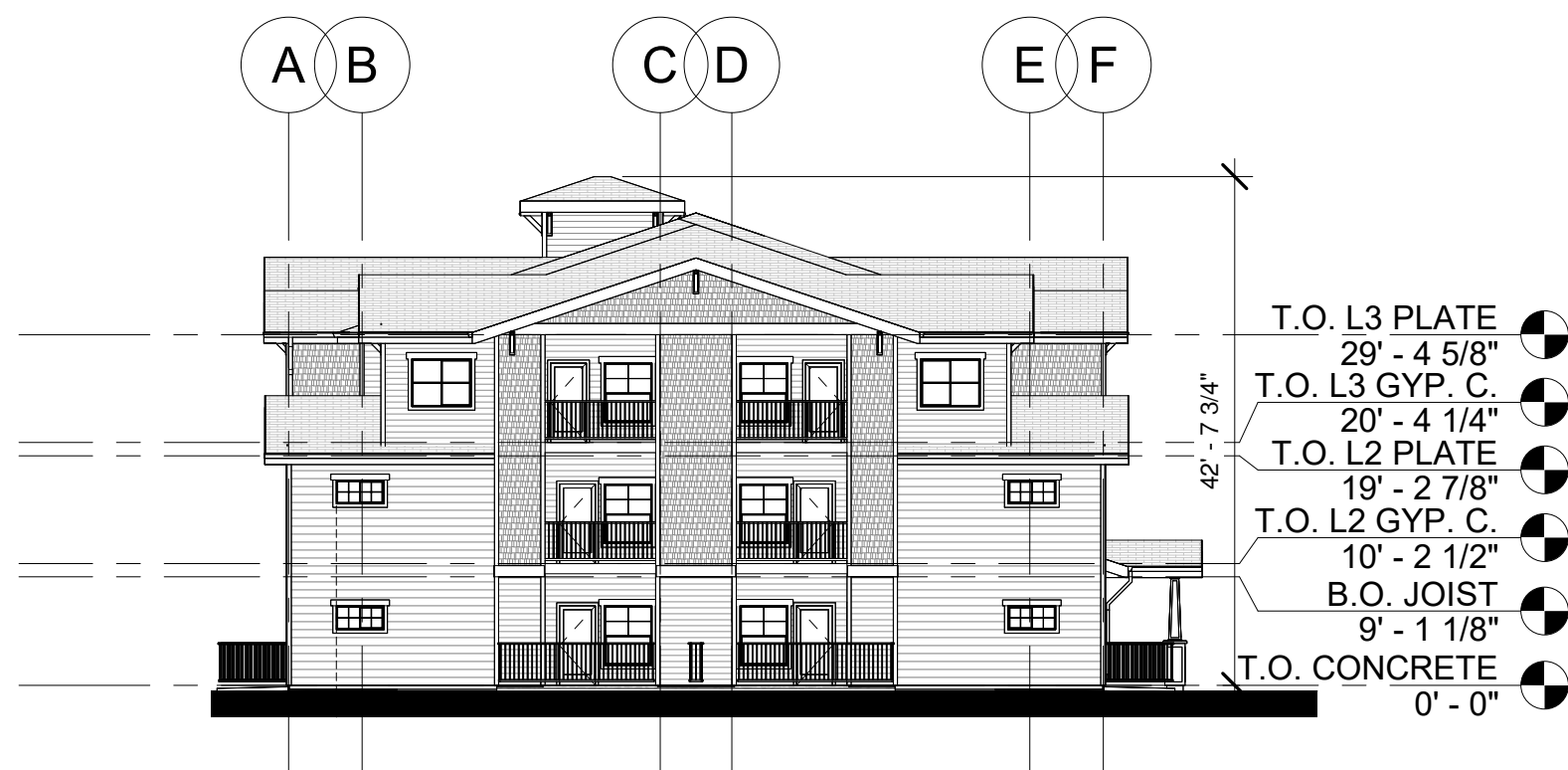
SCHEMATIC SET / NOT FOR CONSTRUCTION



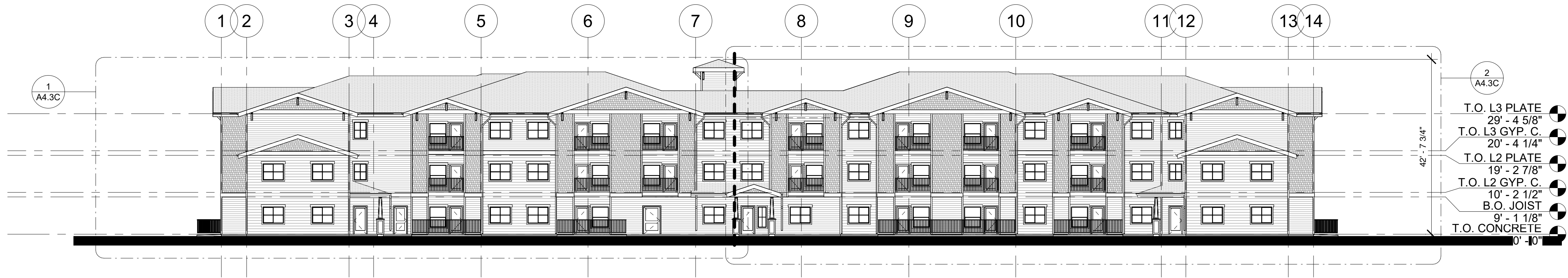
1 FRONT ELEVATION - OVERALL  
1/16" = 1'-0"



2 LEFT ELEVATION - OVERALL  
1/16" = 1'-0"



3 RIGHT ELEVATION - OVERALL  
1/16" = 1'-0"



4 REAR ELEVATION - OVERALL  
1/16" = 1'-0"

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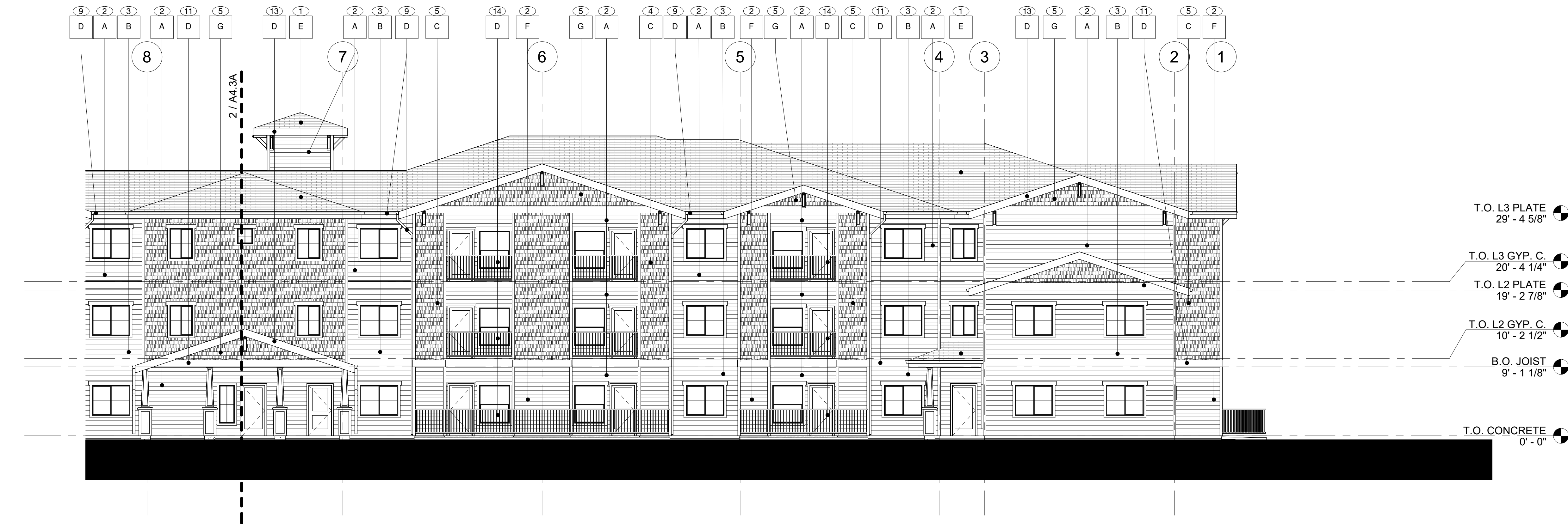
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APARTMENTS

HAZELWOOD STREET  
PENN VALLEY, CA

A4.2

SCHEMATIC SET / NOT FOR CONSTRUCTION





1 ENLARGED FRONT ELEVATION - A  
1/8" = 1'-0"



2 ENLARGED FRONT ELEVATION - B  
1/8" = 1'-0"

#### KEY NOTES

- 20 YEAR TYPE 'A' COMPOSITE SHINGLE, TYP.
- PAINTED HORIZONTAL CEMENTITIOUS SIDING WITH 6" REVEAL OR APPROVED EQUAL.
- PAINTED HORIZONTAL CEMENTITIOUS SIDING WITH 8" REVEAL OR APPROVED EQUAL.
- NOT USED.
- PAINTED CEMENTITIOUS SHAKE SIDING OR APPROVED EQUAL.
- WHITE VINYL WINDOWS. SEE FLOOR PLANS, WINDOW SCHEDULE, AND SPECIFICATIONS.
- EXTERIOR DOOR, SEE FLOOR PLANS, DOOR SCHEDULE, AND SPECIFICATIONS, PAINT AS NOTED.
- DOOR/WINDOW TRIM, PAINT AS NOTED.
- PRE-FINISHED METAL GUTTER. SEE ROOF PLAN FOR EXTENT. COLOR AS NOTED, DOWNSPOUT TO MATCH.
- NOT USED.
- 2x HORIZONTAL TRIM PAINTED, ALIGN TRIM AS SHOWN. SEE DETAIL 11/A8.1.
- 4" VERTICAL TRIM, TYP.
- 1x FINISH FASCIA, MDF OR EQUAL. SEE DETAILS.
- METAL RAILING SYSTEM. COLOR AS NOTED. SEE BUILDING CROSS SECTIONS, DETAIL 1/A8.3, AND DETAIL 2/A8.3.
- ARCHITECTURAL GABLE END VENT, PAINT AS NOTED. SEE ROOF PLANS.
- NOT USED.
- COLUMN, POST, AND BEAM, REFER TO BUILDING CROSSSECTIONS & DETAILS.
- WOOD TRIM OR ARCHITECTURAL FEATURE. SEE BUILDING SECTIONS.
- PAINTED METAL HANDRAIL.
- 42" TALL CONDENSOR UNIT SCREEN WALL.
- EXTERIOR MEP EQUIPMENT, SEE MEP PLANS FOR MORE INFORMATION.
- SEMI-RECESSED FIRE EXTINGUISHER CABINET PER SPECIFICATIONS.
- NOT USED.
- PRE-FINISHED ROOF TO WALL FLASHING PER DETAIL 12/A8.1.

#### MATERIAL FINISHES:

- A SHERWIN WILLIAMS SW 7569 "STUCCO" OR EQUAL.
- B SHERWIN WILLIAMS SW 7702 "SPICED CIDER" OR EQUAL.
- C SHERWIN WILLIAMS SW 6385 "DOVER WHITE" OR EQUAL.
- D GUTTERS, DOWN SPOUTS, EXTERIOR DOORS, TRIM BOARDS, BELLY BANDS, OUTRIGGERS, CORBELS, METAL FASCIA WRAP, RAILINGS: COLOR TO MATCH SHERWIN WILLIAMS SW 6107 "NOMADIC DESERT" OR EQUAL.
- E PABCO ARCHITECTURAL SHINGLES "COLONIAL SLATE" OR EQUAL.
- F SHERWIN WILLIAMS SW 2849 "WESTCHESTER GRAY" OR EQUAL.
- G SHERWIN WILLIAMS SW 2849 "WESTCHESTER GRAY" OR EQUAL.

#### NOTES:

- SOFFIT (NOT SHOWN) COLOR TO MATCH SHERWIN WILLIAMS SW 7006 "EXTRA WHITE" OR EQUAL..
- ALL VENT TERMINATIONS AND OTHER EXTERNAL UTILITY EQUIPMENT TO BE PAINTED TO MATCH THE ADJACENT WALL SURFACE.

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FORT BRAGG SENIOR  
APARTMENTS

HAZELWOOD STREET  
PENN VALLEY, CA

A4.3A

SCHEMATIC SET / NOT FOR CONSTRUCTION



① ENLARGED LEFT ELEVATION  
1/8" = 1'-0"



② ENLARGED RIGHT ELEVATION  
1/8" = 1'-0"

KEY NOTES

- 20 YEAR TYPE 'A' COMPOSITE SHINGLE, TYP.
- PAINTED HORIZONTAL CEMENTITIOUS SIDING WITH 6" REVEAL OR APPROVED EQUAL.
- PAINTED HORIZONTAL CEMENTITIOUS SIDING WITH 8" REVEAL OR APPROVED EQUAL.
- NOT USED.
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- EXTERIOR DOOR, SEE FLOOR PLANS, DOOR SCHEDULE,AND SPECIFICATIONS, PAINT AS NOTED.
- DOOR/WINDOW TRIM, PAINT AS NOTED.
- PRE-FINISHED METAL GUTTER. SEE ROOF PLAN FOR EXTENT. COLOR AS NOTED, DOWNSPOUT TO MATCH.
- NOT USED.
- 2x HORIZONTAL TRIM PAINTED, ALIGN TRIM AS SHOWN. SEE DETAIL 11/A8.1.
- 4" VERTICAL TRIM, TYP.
- 1x FINISH FASCIA, MDF OR EQUAL, SEE DETAILS.
- METAL RAILING SYSTEM. COLOR AS NOTED. SEE BUILDING CROSS SECTIONS, DETAIL 1/A8.3, AND DETAIL 2/A8.3.
- ARCHITECTURAL GABLE END VENT, PAINT AS NOTED.SEE ROOF PLANS.
- NOT USED.
- COLUMN, POST, AND BEAM, REFER TO BUILDING CROSSSECTIONS & DETAILS.
- WOOD TRIM OR ARCHITECTURAL FEATURE. SEE BUILDING SECTIONS.
- PAINTED METAL HANDRAIL.
- 42" TALL CONDENSOR UNIT SCREEN WALL.
- EXTERIOR MEP EQUIPMENT, SEE MEP PLANS FOR MORE INFORMATION.
- SEMI-RECESSED FIRE EXTINGUISHER CABINET PER SPECIFICATIONS.
- NOT USED.
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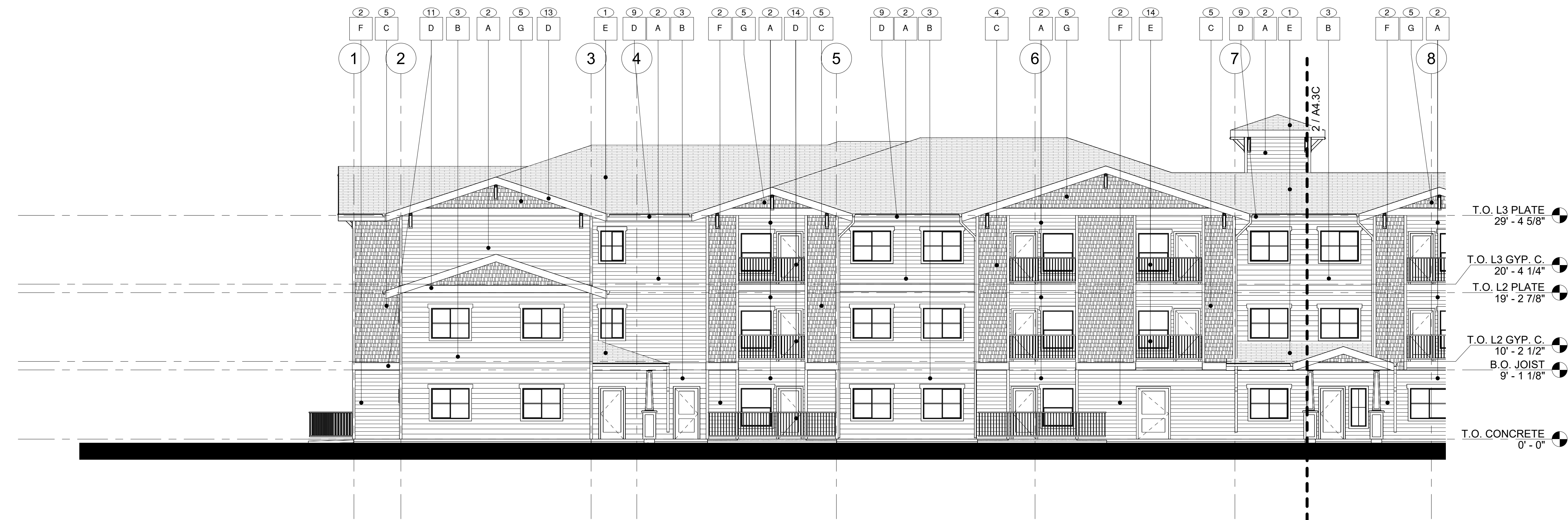
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APARTMENTS

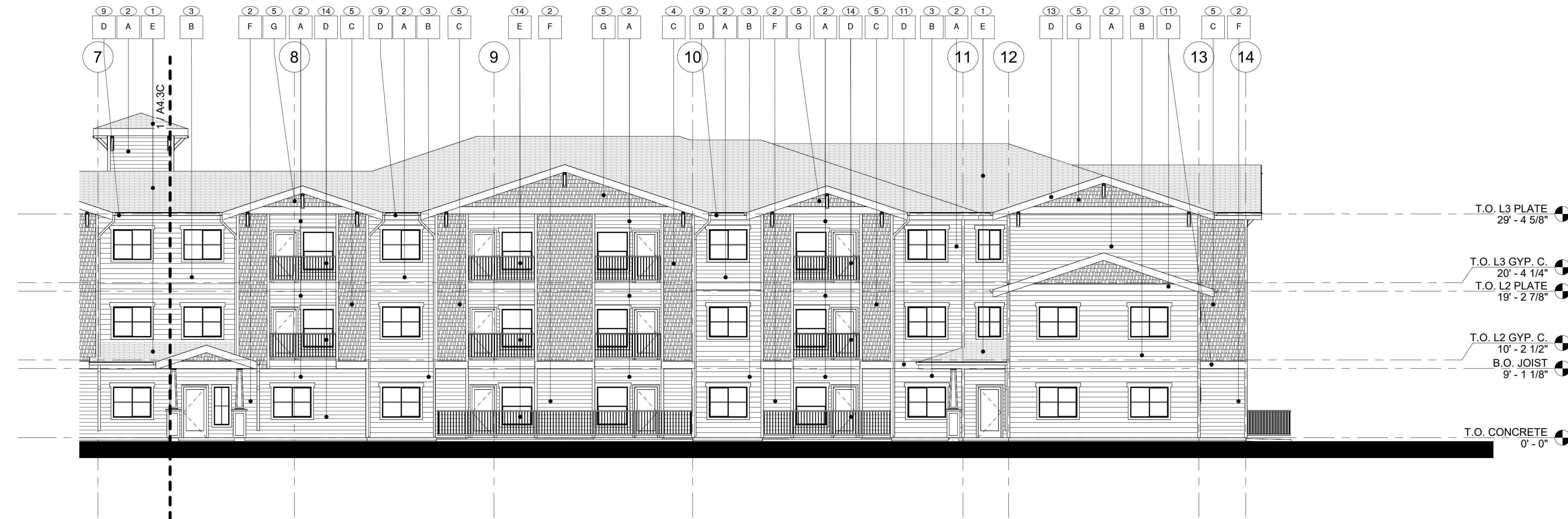
HAZELWOOD STREET  
PENN VALLEY, CA

A4.3B

SCHEMATIC SET / NOT FOR CONSTRUCTION



1 ENLARGED REAR ELEVATION - A  
1/8" = 1'-0"



2 ENLARGED REAR ELEVATION - B  
1/8" = 1'-0"

KEY NOTES

- 20 YEAR TYPE 'A' COMPOSITE SHINGLE, TYP.
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- DOOR/WINDOW TRIM, PAINT AS NOTED.
- PRE-FINISHED METAL GUTTER. SEE ROOF PLAN FOR EXTENT. COLOR AS NOTED, DOWNSPOUT TO MATCH.
- NOT USED.
- 2x HORIZONTAL TRIM PAINTED, ALIGN TRIM AS SHOWN. SEE DETAIL 11/A8.1.
- 4" VERTICAL TRIM, TYP.
- 1x FINISH FASCIA, MDF OR EQUAL, SEE DETAILS.
- METAL RAILING SYSTEM. COLOR AS NOTED. SEE BUILDING CROSS SECTIONS, DETAIL 1/A8.3, AND DETAIL 2/A8.3.
- ARCHITECTURAL GABLE END VENT, PAINT AS NOTED. SEE ROOF PLANS.
- NOT USED.
- COLUMN, POST, AND BEAM, REFER TO BUILDING CROSSSECTIONS & DETAILS.
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- G SHERWIN WILLIAMS SW 2849 "WESTCHESTER GRAY" OR EQUAL.

NOTES:

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FORT BRAGG SENIOR  
APARTMENTS

HAZELWOOD STREET  
PENN VALLEY, CA

A4.3C

SCHEMATIC SET / NOT FOR CONSTRUCTION









① NORTH BUILDING ELEVATION AT MAIN ENTRY  
N.T.S.



② NORTHEAST BUILDING ELEVATION  
N.T.S.

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APARTMENTS

HAZELWOOD STREET  
FORT BRAGG, CA

A5.1A  
COLOR RENDERINGS





① SOUTHEAST BUILDING ELEVATION  
N.T.S.



② SOUTH BUILDING ELEVATION AT COMMON AMENITIES  
N.T.S.

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FORT BRAGG, CA

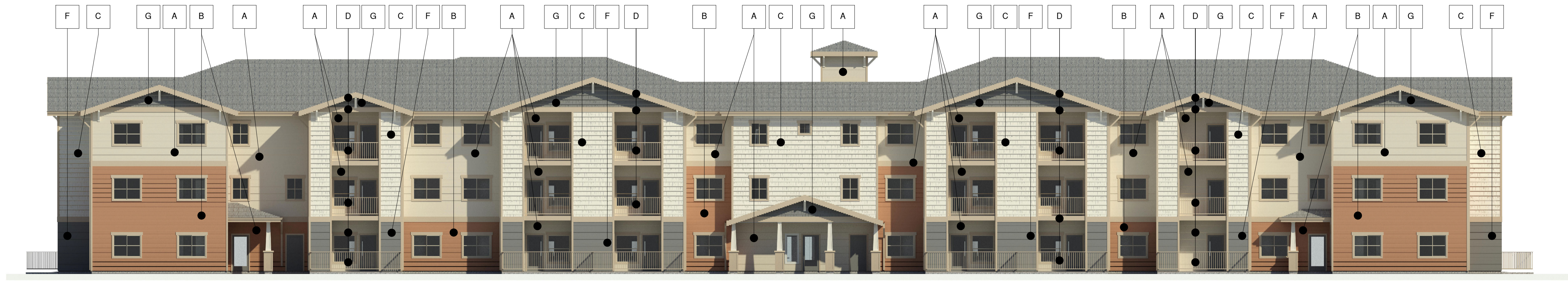
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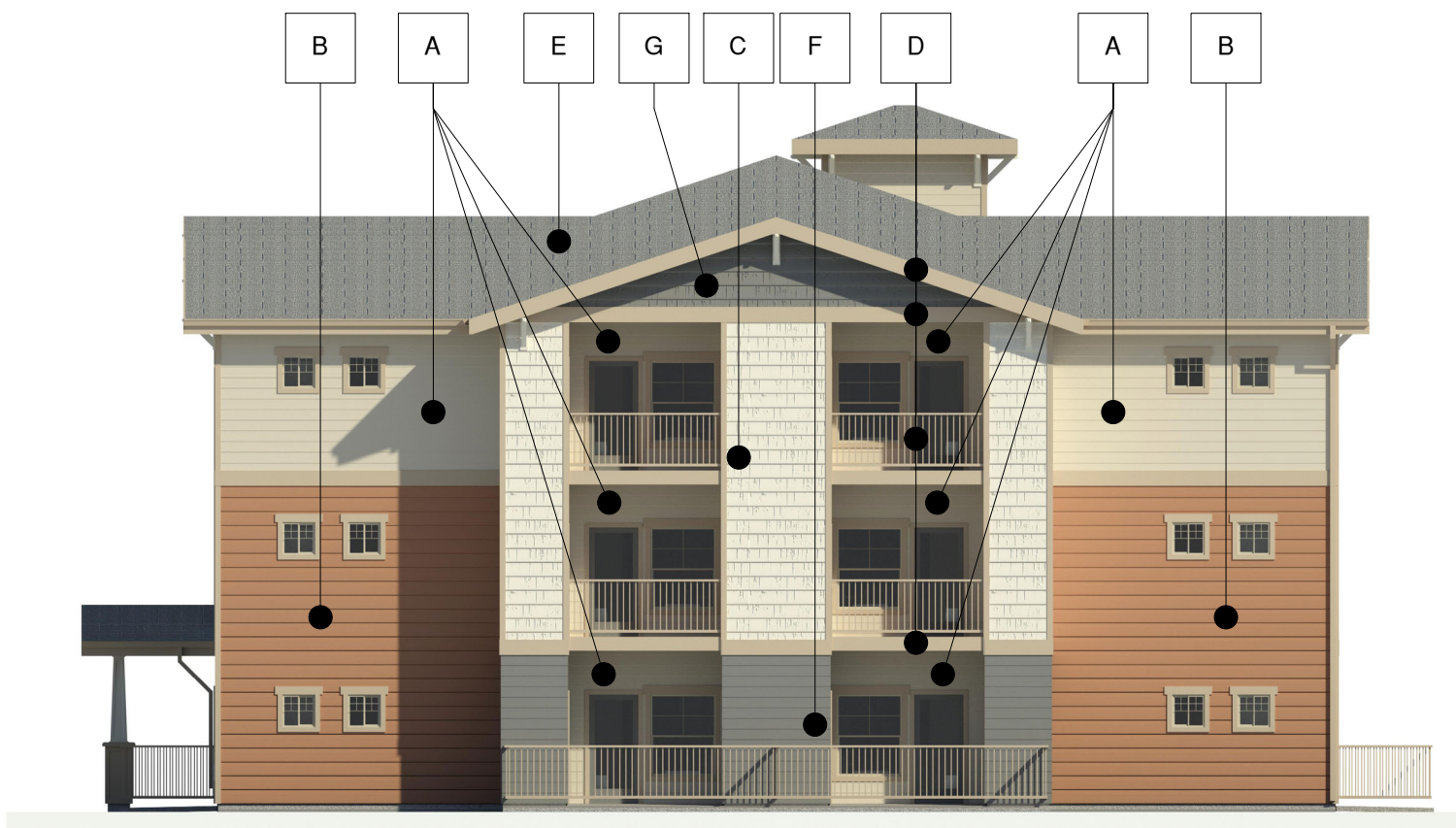
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COLOR RENDERINGS

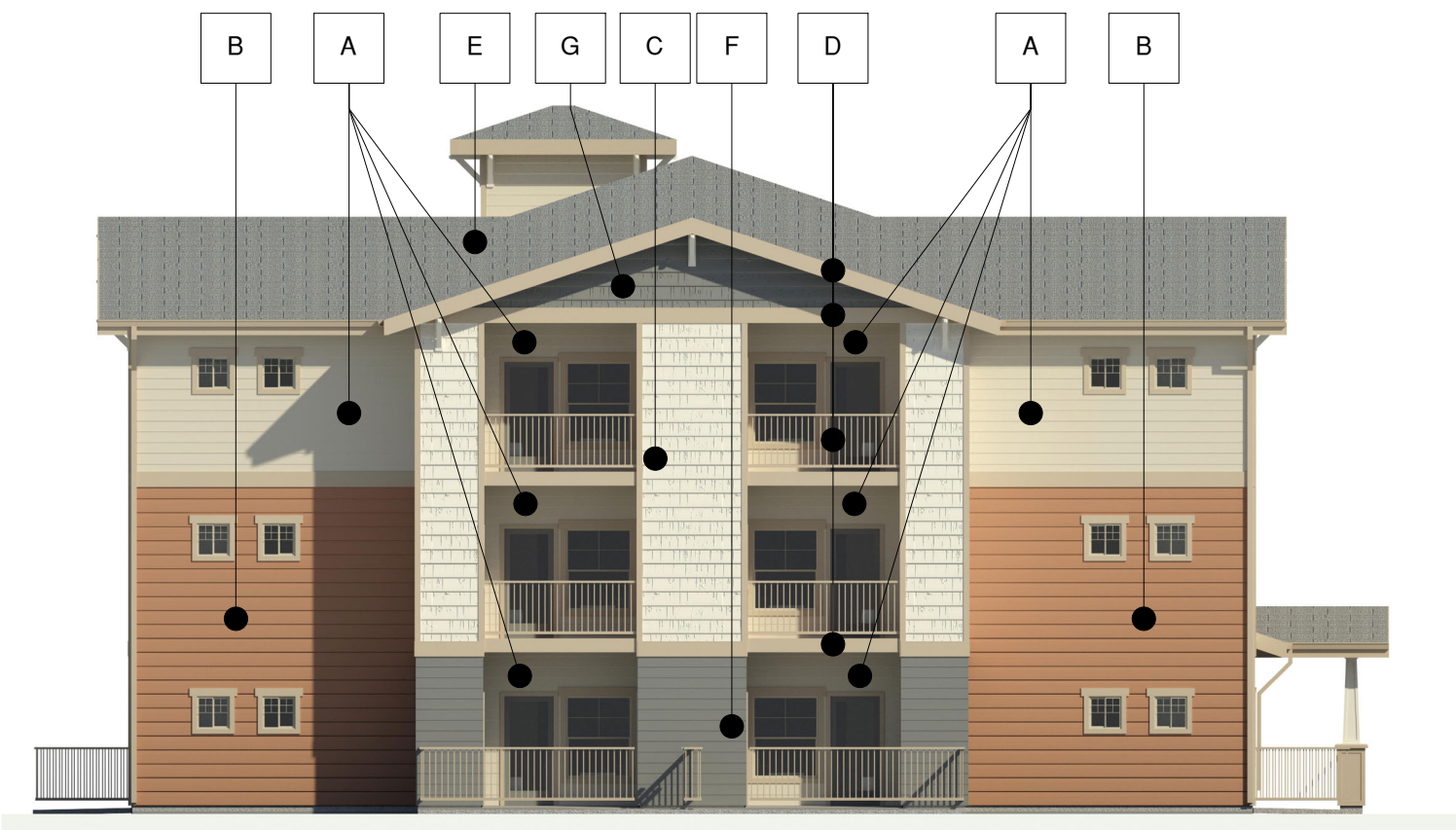




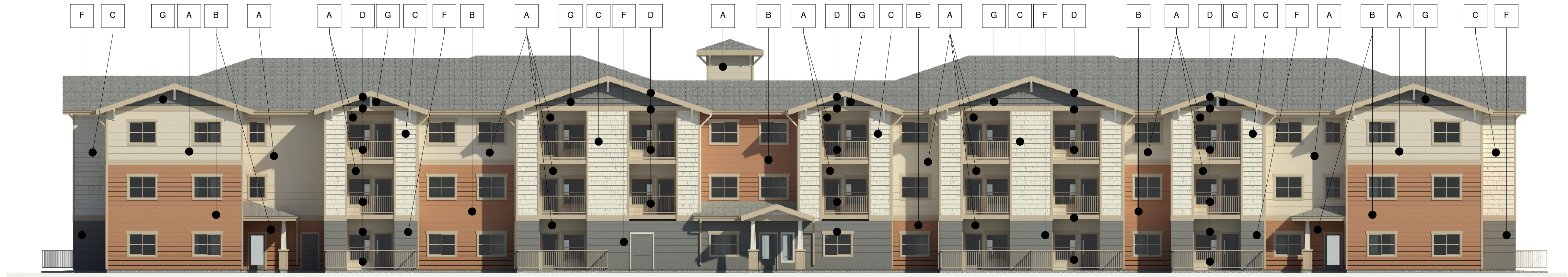
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N.T.S.



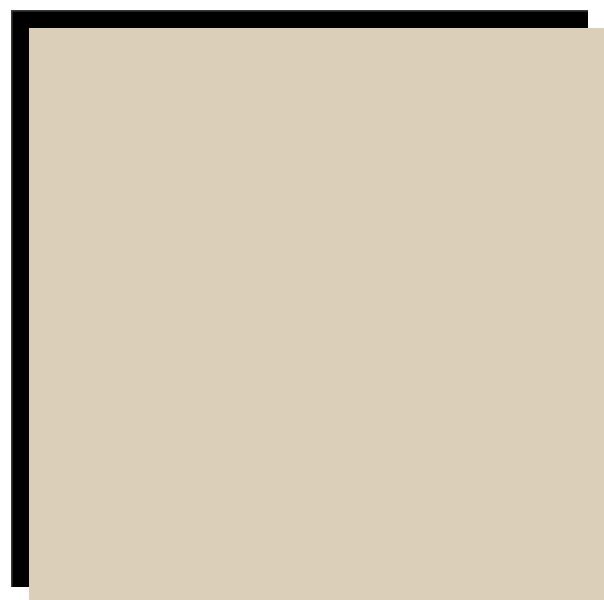
2 WEST ELEVATION  
N.T.S.



3 EAST ELEVATION  
N.T.S.



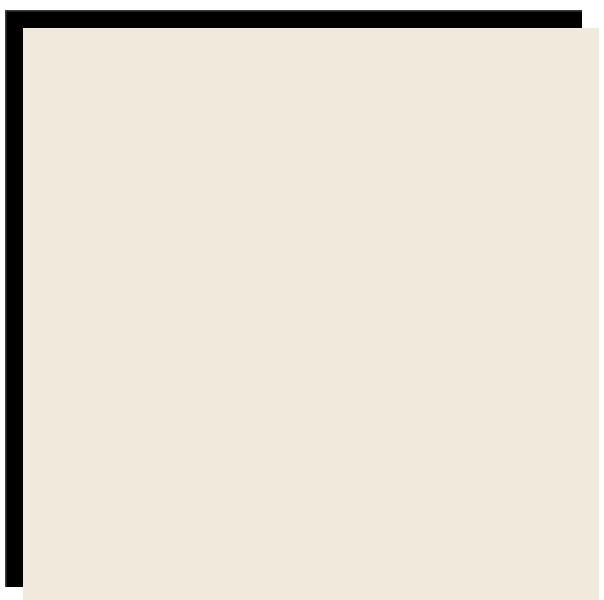
4 SOUTH ELEVATION  
N.T.S.



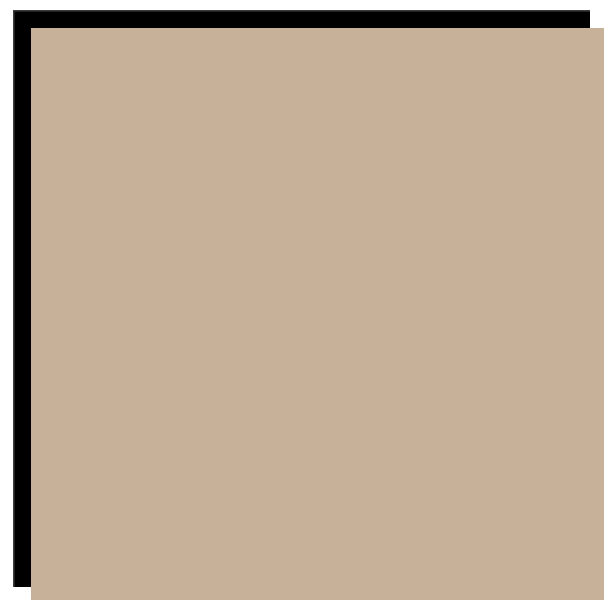
[A] CEMENTITIOUS SIDING -  
6" REVEAL  
COLOR TO MATCH "STUCCO"  
SHERWIN WILLIAMS SW 7569  
OR EQUAL



[B] CEMENTITIOUS SIDING -  
8" REVEAL  
COLOR TO MATCH "SPICED CIDER"  
SHERWIN WILLIAMS SW 7702  
OR EQUAL



[C] CEMENTITIOUS SHAKE  
SIDING  
COLOR TO MATCH "DOVER WHITE"  
SHERWIN WILLIAMS SW 6385  
OR EQUAL



[D] FASCIA, TRIM, RAILINGS, GUTTERS,  
& DOWNSPOUTS  
COLOR TO MATCH "NOMADIC DESERT"  
SHERWIN WILLIAMS SW 6107  
OR EQUAL



[E] ROOFING  
"COLONIAL SLATE"  
PABCO ARCHITECTURAL SHINGLES  
OR EQUAL



[F] CEMENTITIOUS SIDING -  
6" REVEAL  
COLOR TO MATCH "WESTCHESTER GRAY"  
SHERWIN WILLIAMS SW 2849  
OR EQUAL



[G] CEMENTITIOUS SHAKE  
SIDING  
COLOR TO MATCH "WESTCHESTER GRAY"  
SHERWIN WILLIAMS SW 2849  
OR EQUAL

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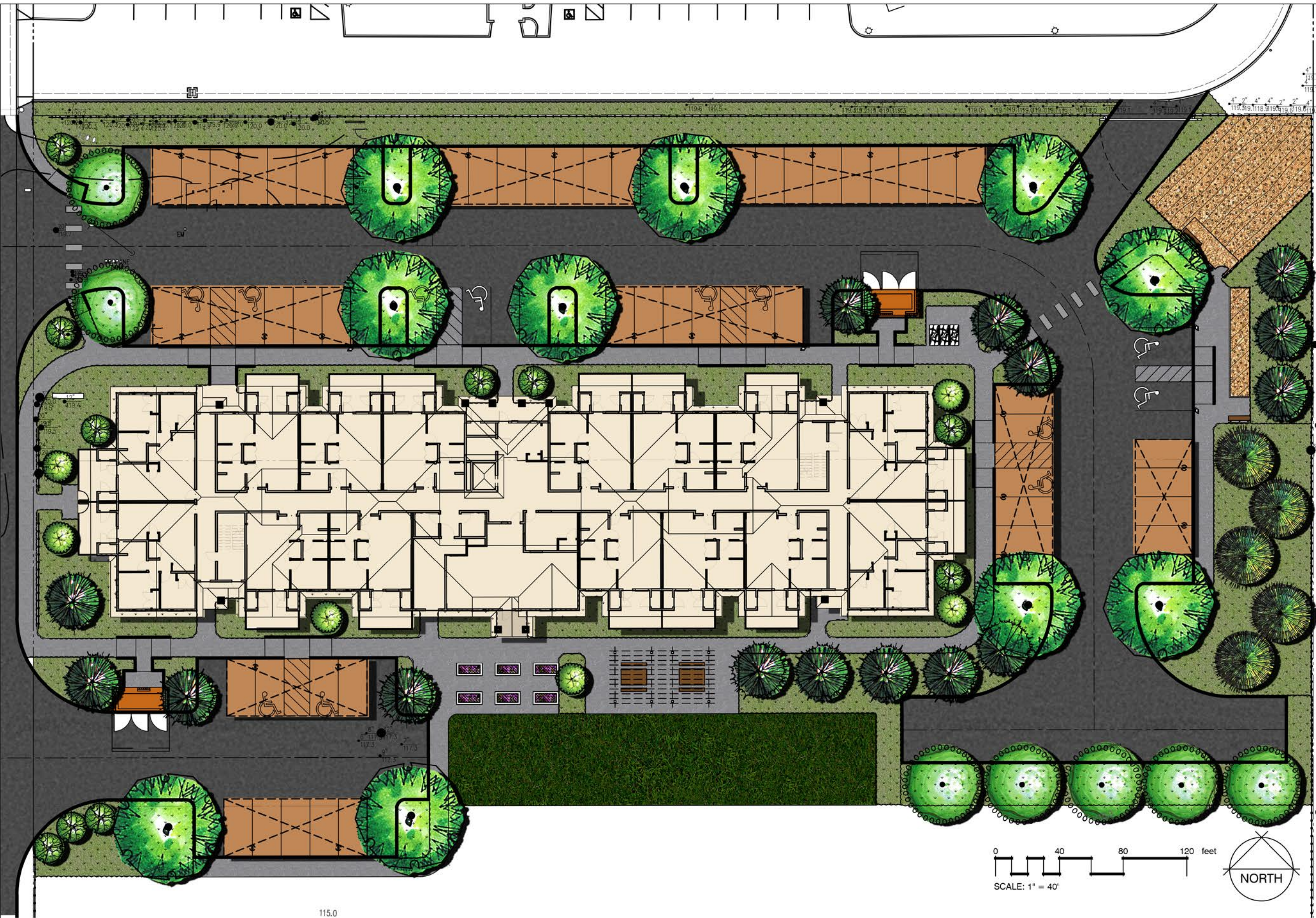
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PROJECT  
FORT BRAGG SENIOR  
APARTMENTS  
HAZELWOOD STREET  
FORT BRAGG, CA

A4.4  
COLOR / MATERIAL BOARD





PLANT SCHEDULE

PHOTO	SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE	QTY
TREES					
		CERCIS OCCIDENTALIS	WESTERN REDBUD MULTI-TRUNK	15 GAL	10
		LAVATERA ASSURGENTIFLORA	MALLOW	15 GAL	6
		PINUS CONTORTA	SHORE PINE	15 GAL	5
		PLATANUS RACEMOSA	CALIFORNIA SYCAMORE	15 GAL	10
		SEQUOIA SEMPERVIRENS 'APTOS BLUE'	COAST REDWOOD	15 GAL	15
		UMBELLULARIA CALIFORNICA	CALIFORNIA LAUREL	15 GAL	7

SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	QTY
	DECOMPOSED GRANITE	4" DEPTH	---	---	1,104 SF
	SHRUB & GROUND COVER	PLANTING AREA	---	---	23,911 SF
	TURF SOD	DROUGHT TOLERANT FESCUE BLEND	---	---	3,892 SF
	VEGETABLE GARDEN	---	---	---	100 SF

PLANTING NOTES:

- A. PLACE 2" DEPTH 3/4" 'SONOMA GOLD' CRUSHED ROCK OVER LANDSCAPE FABRIC UNDER STAIRWAYS AND UTILITY ACCESS AREAS. INSTALL 'PERMALOC' CLEAN LINE 3/4" X 4" ALUMINUM EDGING WITH MILL FINISH (MP), BETWEEN CRUSHED ROCK AND ADJACENT SHRUB BED.
- B. PLACE 2-3" SIZE RIVER WASHED COBBLE OVER LANDSCAPE FABRIC WHERE INDICATED.
- C. PLACE A 12" WIDE BAND OF 2-3" SIZE COBBLE OVER LANDSCAPE FABRIC AROUND THE PERIMETER OF BIO-RETENTION AREAS AND VEGETATED SWALES TO INTERCEPT DEBRIS PRIOR TO ENTERING INTO THE FILTRATION AREA. NO EDGING REQUIRED. NOT SHOWN.
- D. SOIL PREPARATION AND AMENDING:
- 1) AFTER ROUGH GRADING OPERATIONS, THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING A SOILS REPORT THAT PROVIDES AN ANALYSIS OF THE EXISTING SOIL THAT STATES WHAT SOIL AMENDMENTS ARE REQUIRED FOR OPTIMUM PLANTING GROWTH. THE CONTRACTOR SHALL INCORPORATE THE RECOMMENDED QUANTITIES BY THOROUGHLY CULTIVATING ALL PLANTING AREAS TO A DEPTH OF EIGHT (8) INCHES. ROUGH FINISH GRADE ALL AREAS.
- 2) BROADCAST THE FOLLOWING SOIL AMENDMENTS. QUANTITIES GIVEN ARE PER 1,000 SQUARE FEET OF AREA.
- NITROGEN STABILIZED AND IRON FORTIFIED COMPOST/PER SOIL ANALYSIS RECOMMENDATIONS, OR 4 CY FOR BID PURPOSES
  - PELLETIZED FERTILIZER (21-0-0) 10 LBS., OR AS PER SOIL ANALYSIS RECOMMENDATIONS
  - SOIL SULFUR: PER SOIL ANALYSIS RECOMMENDATIONS
  - GYP/SUM: 100 LBS
- 3) CULTIVATE AND THOROUGHLY INCORPORATE THE AMENDMENTS INTO THE TOP EIGHT (8) INCHES OF SOIL.
- 4) DE-ROCK AREA TO BE PLANTED BY USING A MECHANICAL ROCK PICKER. ALL ROCKS AND DEBRIS LARGER THAN 1 INCH IN DIAMETER ARE TO BE REMOVED.

- A. INSTALL WEED BARRIER FILTER FABRIC OVER DRIP IRRIGATION COMPONENTS. MANUFACTURED OF POLYPROPYLENE, 30 MIL THICKNESS, AND 2.6 OUNCES PER SQUARE YARD. DEWITT PRO-3, OR EQUAL. SECURE FABRIC SEGMENTS, TO SOIL, WITH 6"x1"x6" STEEL 'U' SHAPE PINS. OVERLAP ADJACENT FABRIC SEGMENTS A MINIMUM OF SIX (6) INCHES AND SECURE WITH PINS AT TWENTY FOUR (24) INCHES ON CENTER.
- B. INSTALL 3" DEPTH FIR BARK MULCH OVER THE FILTER FABRIC ON ALL SHRUB AND GROUND COVER PLANTING AREAS. BARK MULCH SHALL BE WOOD RESIDUAL DERIVED AND MANUFACTURED FROM PINE, WHITE AND/OR RED FIR TREE BARK. THE MATERIAL SHALL BE EQUAL TO THAT REFERRED TO AS 'WALK ON BARK' IN THE TRADE.

GENERAL NOTES:

- A. THE LANDSCAPE PLANS WILL COMPLY WITH THE REQUIREMENTS OF THE MODEL WATER EFFICIENT LANDSCAPE ORDINANCE (MUELDO).
- B. ELEMENTS OF THE LANDSCAPE DOCUMENTATION PACKAGE:
- (A) THE LANDSCAPE DOCUMENTATION PACKAGE SHALL INCLUDE THE FOLLOWING SEVEN (7) ELEMENTS:
- (1) PROJECT INFORMATION TABLE:
- (A) DATE
- (B) PROJECT APPLICANT
- (C) PROJECT ADDRESS (IF AVAILABLE, A.P.N., PARCEL AND/OR LOT NUMBER(S))
- (D) TOTAL LANDSCAPE AREA (SQUARE FEET)
- (E) PROJECT TYPE (E.G., NEW, REHABILITATED, PUBLIC, PRIVATE, CEMETERY, HOMEOWNER INSTALLED)
- (F) WATER SUPPLY TYPE, RECYCLED, WELL) AND IDENTIFY THE LOCAL RETAIL WATER PURVEYOR
- (G) CHECKLIST OF ALL DOCUMENTS IN LANDSCAPE DOCUMENTATION PACKAGE
- (H) PROJECT CONTACTS TO INCLUDE CONTACT INFORMATION FOR THE PROJECT APPLICANT, PROPERTY OWNER, PREPARER OF PLANNING APPLICATION
- (I) APPLICANT SIGNATURE AND DATE WITH STATEMENT, 'I AGREE TO COMPLY WITH THE REQUIREMENTS OF THE WATER EFFICIENT LANDSCAPE ORDINANCE AND SUBMIT A COMPLETE LANDSCAPE DOCUMENTATION PACKAGE
- (J) WATER EFFICIENT LANDSCAPE WORKSHEET:
- (A) HYDRO ZONE INFORMATION TABLE
- (B) WATER BUDGET CALCULATIONS
1. MAXIMUM APPLIED WATER ALLOWANCE (MAWA)
2. ESTIMATED TOTAL WATER USE (ETWU)
- (K) SOIL MANAGEMENT REPORT:
- (1) LANDSCAPE DESIGN PLAN TO INCLUDE FENCING, UTILITY SCREENING AND TREE MANAGEMENT PLAN
- (2) IRRIGATION DESIGN PLAN
- (3) LANDSCAPE GRADING DESIGN PLAN; AND
- (4) CERTIFICATES OF COMPLETION AND INSTALLATION.

THOMAS H. PHELPS  
LANDSCAPE ARCHITECTURE  
IDLA, INC.  
California Landscape Architect #4122  
ID #LA-16771 \* HI #LA-16112  
AZ #76633

P.O. BOX 170129  
Boise, Idaho 83717  
thp@idlainc.net  
(208) 906-1300

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PROJECT

FORT BRAGG SENIOR APARTMENTS

LANDSCAPE MASTER PLAN

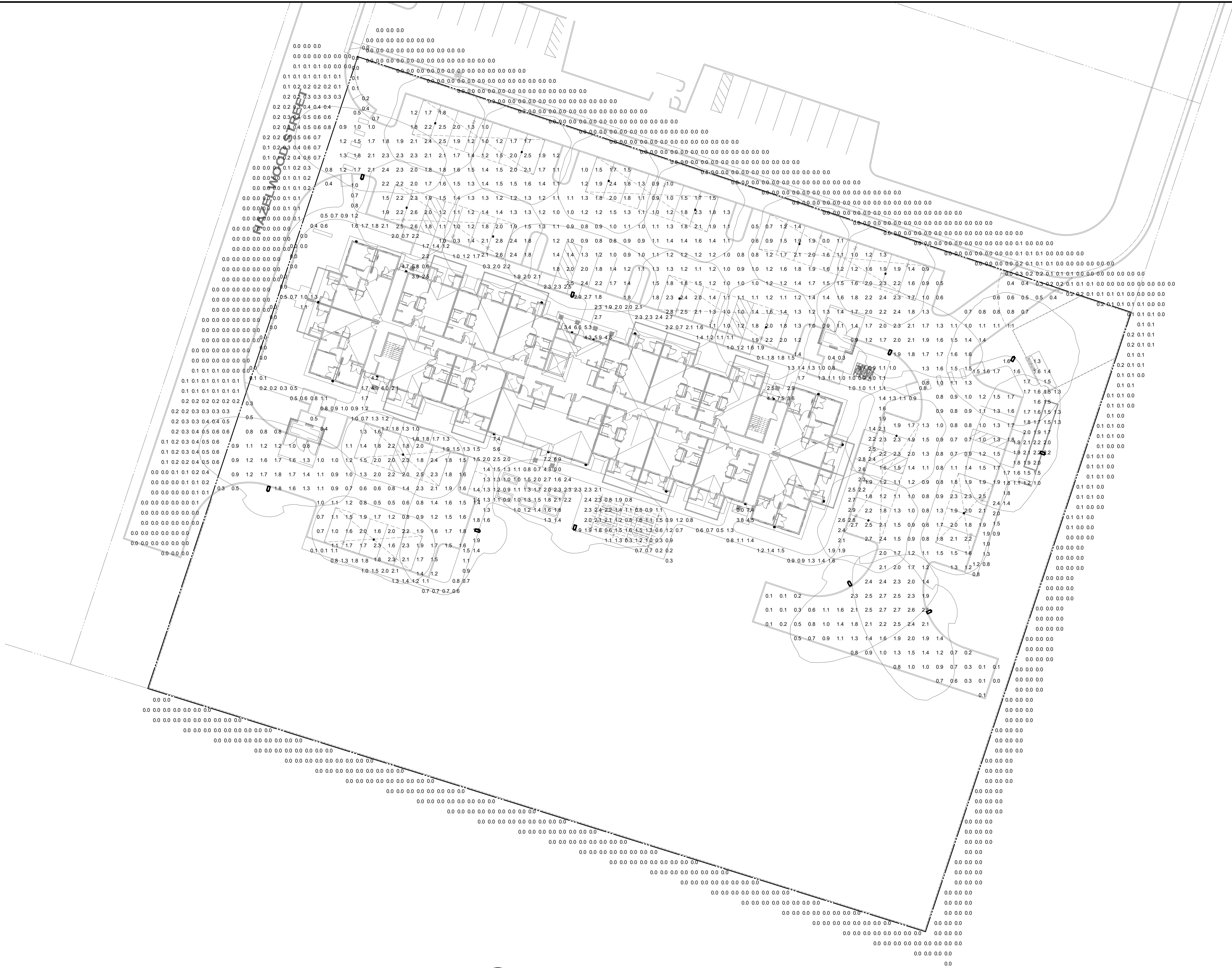
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 **SITE PHOTOMETRIC PLAN**  
SCALE: 1" = 30'-0"

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PROJECT

FORT BRAGG SENIOR  
APARTMENTS

HAZELWOOD STREET  
FORT BRAGG, CA

E1.01

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33



[illegible]





Catalog Number	WPX0 LED ALO-3 30K MVOLT
Notes	
Type	WS1

Contractor Select™

# WPX LED

Wall packs

The WPX LED wall packs are energy efficient, cost effective, and aesthetically appealing full cut off solution for both new construction and HID wall pack replacement/renovation opportunities. Reliable IP66 construction and excellent LED lumen maintenance ensure a long service life.

FEATURES:

- Architectural design at very economical prices
- Energy efficient - payback in less than two years
- Wide range of configuration options available

Note: WPX3 lumen package and all the WPX configuration options are not included in the Contractor Select program. For more information, please visit [WPX LED](#).










Luminaire	CCT	Lumens	Input Watts	Photocell	Finish	Voltage	Catalog Number	CI Code	IUPC	Pallet qty.	Replaces Up To
WPX0	50W/2 3000K / 4000K / 5000K	850 - 1,600	6.4-13W	Switchable On/Off	DARK BRONZE	120-277V	WPX0 LED ALO 50W/2 MVOLT PE 00BXD M2	*278U40	193618251806	280	70W Metal Halide
WPX1	4000K	2,900	24W	N/A	DARK BRONZE	120-277V	WPX1 LED P2 40K MVOLT D0BXD M4	*26SS3W	193648870589	160	150W Metal Halide
WPX2	4000K	6,000	47W	N/A	DARK BRONZE	120-277V	WPX2 LED 40K MVOLT D0BXD M2	*26SS3K	193648870756	120	250W Metal Halide
	5000K	6,000	47W	N/A	DARK BRONZE	120-277V	WPX2 LED 50K MVOLT D0BXD M2	*26SS36	193648870770	120	250W Metal Halide

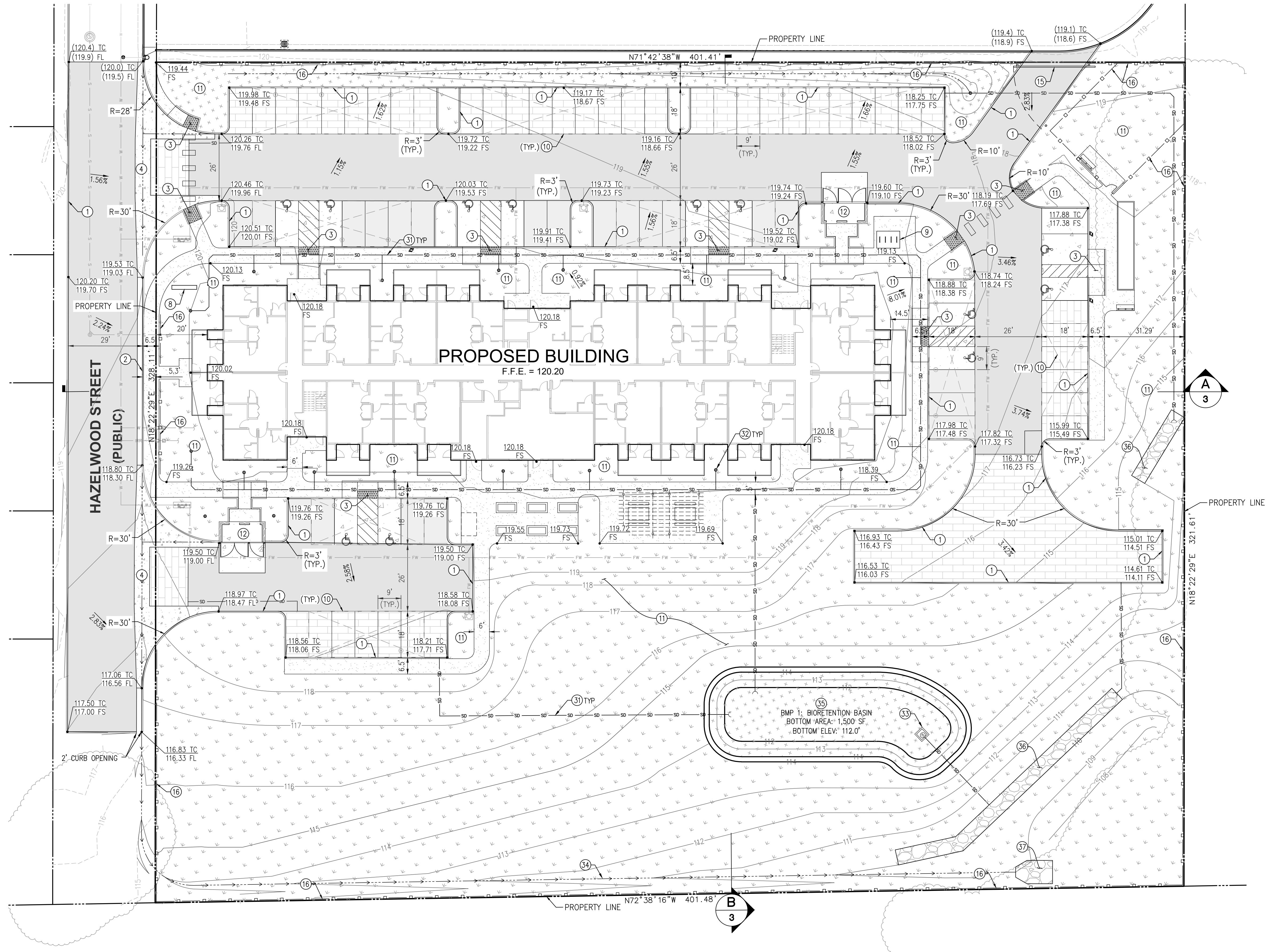
More configurations are available. [Click here](#) or visit [www.aacuitybrands.com](#) and search for [WPX LED](#)

CONTRACTOR SELECT WPX SERIES LED

Page 1 of 6



S:\SHARED\2024\24-043 HAZELWOOD FORT BRAGG CIVIL\DWG\PRELIMINARY IMPROVEMENT PLANS\24-043 PRELIM GRADING PLANNING - PLOT DATE: December 20, 2024

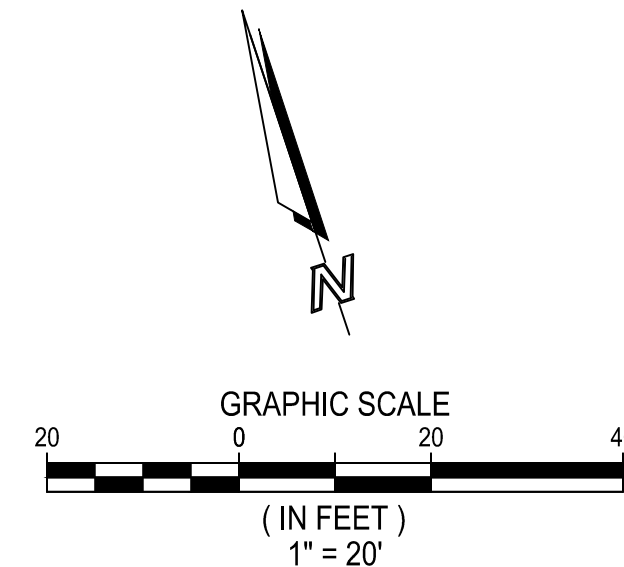


**LEGEND**

- PROPERTY BOUNDARY LINE
- CENTERLINE
- EASEMENT LINE
- BUILDING SETBACK LINE
- EXISTING CONTOUR
- 200
- 200
- PROPOSED CONTOUR
- BLOCK WALL
- STORM DRAIN
- STORM DRAIN CATCH BASIN
- STORM DRAIN MANHOLE
- PROPOSED CONCRETE
- PROPOSED AC LIGHT PAVEMENT
- PROPOSED AC HEAVY PAVEMENT
- PROPOSED PERMEABLE PAVERS
- PROPOSED LANDSCAPE
- PROPOSED BIORETENTION

- CONSTRUCTION NOTES**
- PROPOSED 6" CURB PER STD. NO. 205.
  - PROPOSED 6" CURB & GUTTER PER STD. NO. 205.
  - PROPOSED ACCESSIBLE RAMP WITH TRUNCATED DOMES. TRUNCATED DOMES SHALL BE CAST IN PLACE, YELLOW AND APPROXIMATE FS 33538 OF SAE AMS-STD-595A. (CBC 118-703.1.1.3.1)
  - PROPOSED STANDARD P.C.C. CROSS GUTTER PER STD. NO. 218.
  - PROPOSED PROPERTY SIGNAGE.
  - PROPOSED BIKE RACKS PER ARCHITECTURAL PLANS.
  - PROPOSED CARPORT PER ARCHITECTURAL PLANS.
  - PROPOSED LANDSCAPE PER LANDSCAPE PLAN.
  - PROPOSED TRASH ENCLOSURE WITH GATE AND BLOCK WALL PER ARCHITECTURAL PLANS.
  - PROPOSED EMERGENCY EXIT ONLY GATE PER ARCHITECTURAL PLANS.
  - PROPOSED FENCE PER LANDSCAPE PLANS.

- DRAINAGE CONSTRUCTION NOTES**
- PROPOSED PVC STORM DRAIN PIPE.
  - PROPOSED AREA DRAIN.
  - PROPOSED STORM DRAIN OVERTFLOW STRUCTURE.
  - GRADE VEGETATED SWALE SLOPED @ 1.0% MIN.
  - PROPOSED BIO-RETENTION PER DETAIL 1, SHEET 3.
  - PROPOSED STORM RUNOFF LEVEL SPREADER.
  - PROPOSED NON-GROUTED RIP RAP DISSIPATOR.



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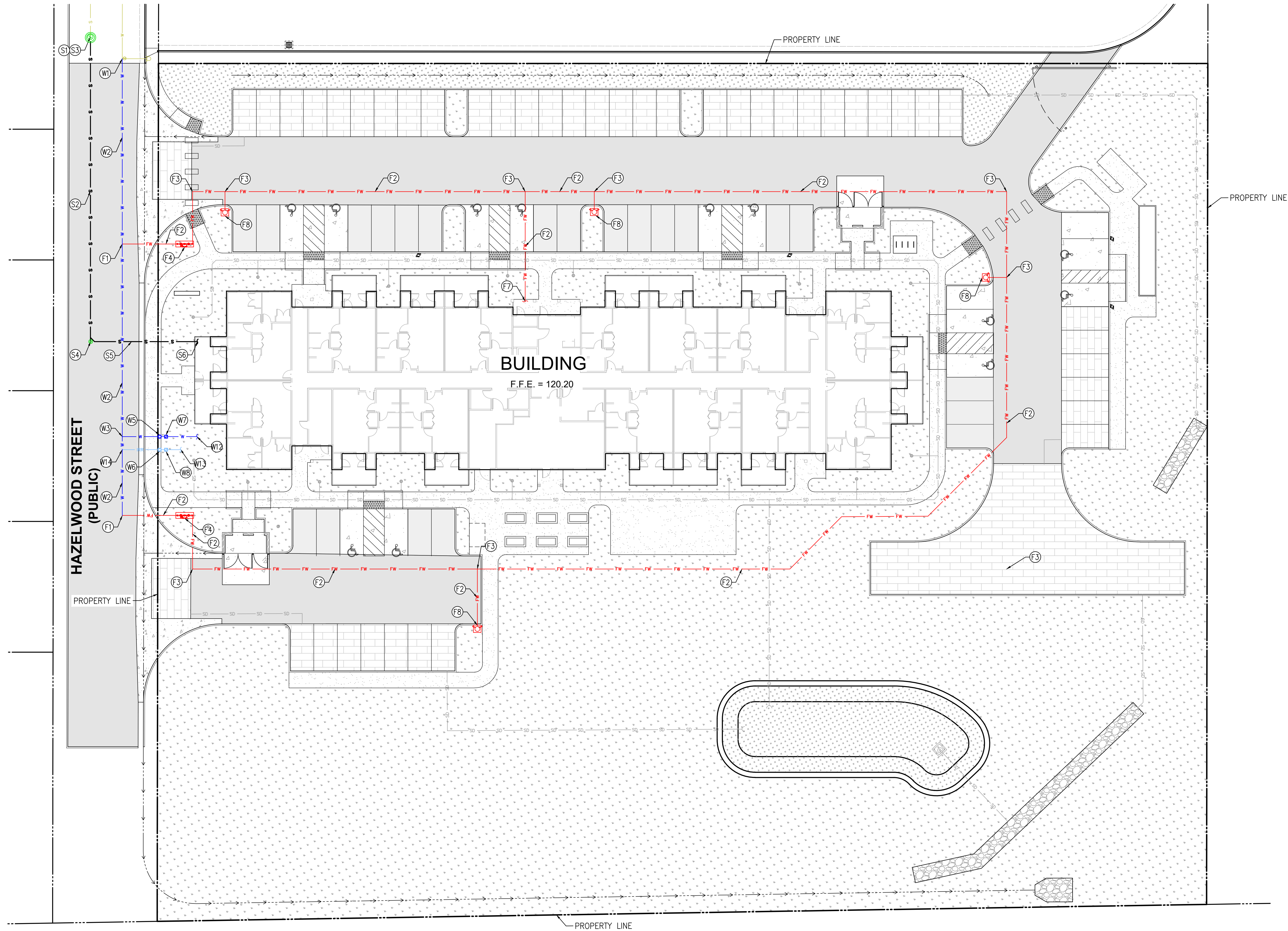
DATE	BY	REVISIONS

**FORT BRAGG**  
**HAZELWOOD STREET**  
**FORT BRAGG, CA**  
**PRELIMINARY GRADING PLAN**

PROJECT NUMBER: 24-043  
PREPARED ON: 12/20/24  
REVISED ON:  
PREPARED BY: C.Rogers  
CHECKED BY: SDD  
SHEET  
1 OF 3



S:\SHARED\2024\24-043 HAZELWOOD FORT BRAGG\CIVIL\DWG\PRELIMINARY IMPROVEMENT PLANS\24-043 PRP02 UTILITY PLAN.DWG - PLOT DATE: December 20, 2024



- LEGEND**
- PROPERTY BOUNDARY LINE
  - CENTERLINE
  - EASEMENT LINE
  - BUILDING SETBACK LINE
  - EXISTING CONTOUR
  - 200
  - 200
  - PROPOSED CONTOUR
  - BLOCK WALL
  - SANITARY SEWER (EXISTING)
  - SANITARY SEWER
  - WATER MAIN (EXISTING)
  - WATER MAIN
  - FS
  - WATER IRRIGATION MAIN
  - SD
  - AREA DRAIN
  - STORM DRAIN OVERFLOW STRUCTURE
  - PROPOSED CONCRETE
  - PROPOSED AC LIGHT PAVEMENT
  - PROPOSED AC HEAVY PAVEMENT
  - PROPOSED PERMEABLE PAVERS
  - PROPOSED LANDSCAPE
  - PROPOSED BIORETENTION

**WATER CONSTRUCTION NOTES**

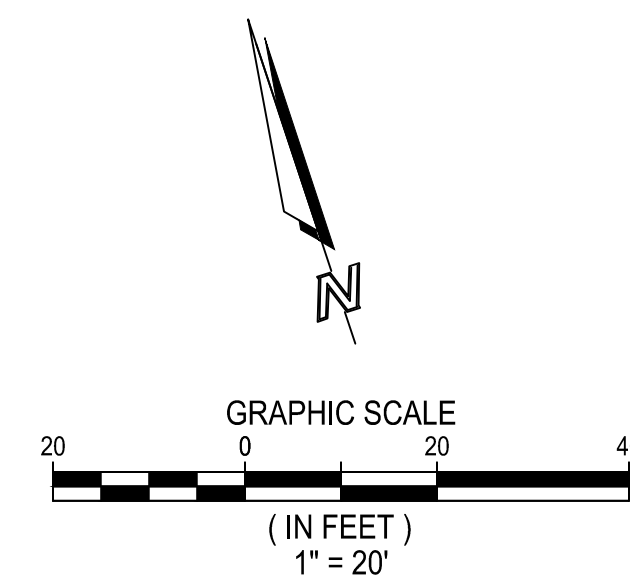
- (W1) CONNECT TO EXISTING WATER MAIN.
- (W2) INSTALL 12" DIP WATER MAIN.
- (W3) INSTALL 2" DOMESTIC WATER SERVICE CONNECTION.
- (W5) INSTALL 1.5" WATER METER FOR DOMESTIC SERVICE PER STD. PLAN.
- (W6) INSTALL 1" WATER METER FOR IRRIGATION SERVICE PER STD. PLAN.
- (W7) INSTALL 2" REDUCED PRESSURE BACKFLOW ASSEMBLY FOR DOMESTIC SERVICE (MAKE MODEL X).
- (W8) INSTALL 1" REDUCED PRESSURE BACKFLOW ASSEMBLY FOR IRRIGATION SERVICE (MAKE MODEL X).
- (W12) CONTINUATION PER PLUMBING PLAN.
- (W13) CONTINUATION PER LANDSCAPE AND IRRIGATION PLANS.
- (F7) CONTINUE TO FIRE RISER ROOM PER FIRE PROTECTION SPRINKLER AND MECHANICAL PLANS.
- (F8) INSTALL FIRE HYDRANT ASSEMBLY WITH CONCRETE BLOCKING.

**FIRE CONSTRUCTION NOTES**

- (F1) INSTALL MAIN SIZE TEE WITH CONCRETE THRUST BLOCKING.
- (F2) INSTALL 6" CL200 C900 AWWA PVC PIPE.
- (F3) INSTALL MAIN SIZE BEND/TEE AND CONCRETE THRUST BLOCK.
- (F4) INSTALL 6" DOUBLE DETECTOR CHECK ASSEMBLY.

**SEWER CONSTRUCTION NOTES**

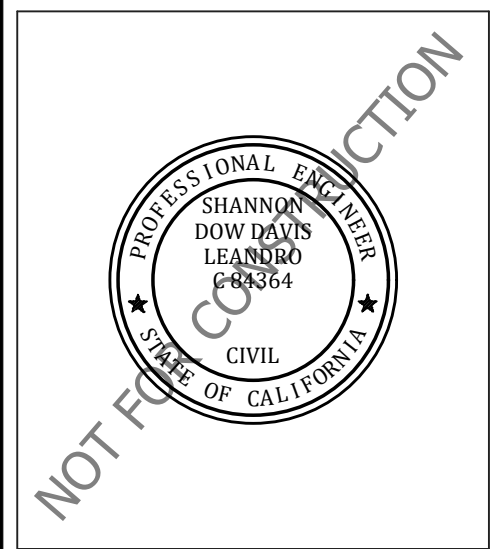
- (S1) CONNECT TO EXISTING SEWER MAIN.
- (S2) INSTALL 6" SDR-35 PVC SEWER PIPE.
- (S3) INSTALL SEWER MANHOLE PER CITY STD. 301.
- (S4) INSTALL SEWER CLEANOUT PER CITY STD. 307.
- (S5) INSTALL SEWER SERVICE LATERAL PER CITY STD. 309.
- (S6) CONTINUATION PER PLUMBING PLAN.



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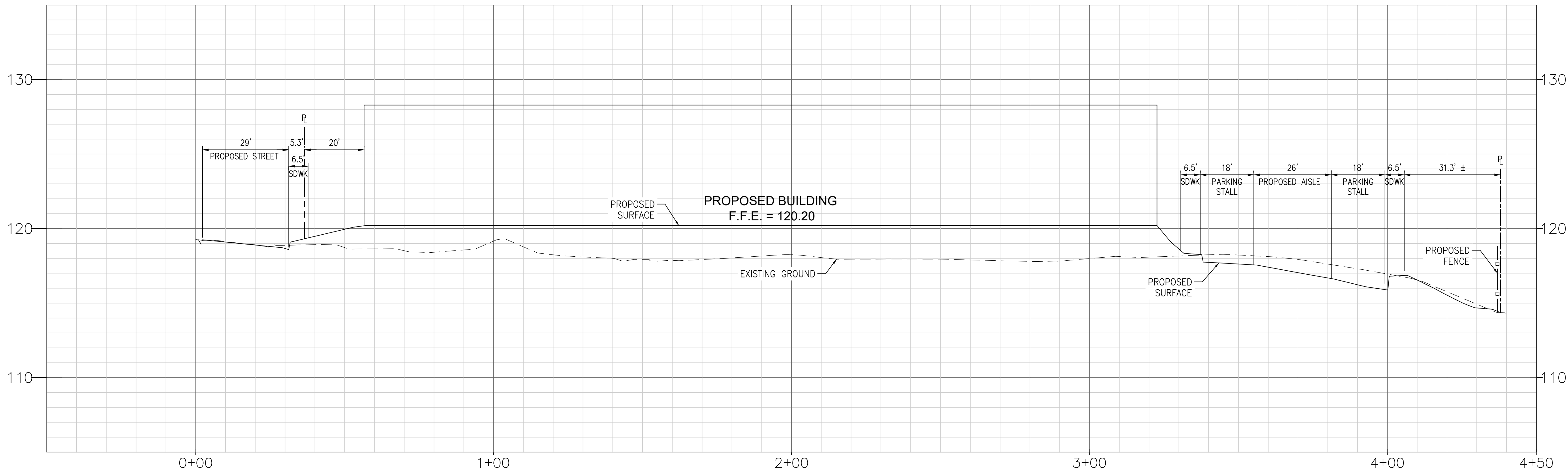
DATE	REVISIONS		BY
	DATE	DESCRIPTION	

**FORT BRAGG**  
**HAZELWOOD STREET**  
**FORT BRAGG, CA**  
**PRELIMINARY UTILITY PLAN**

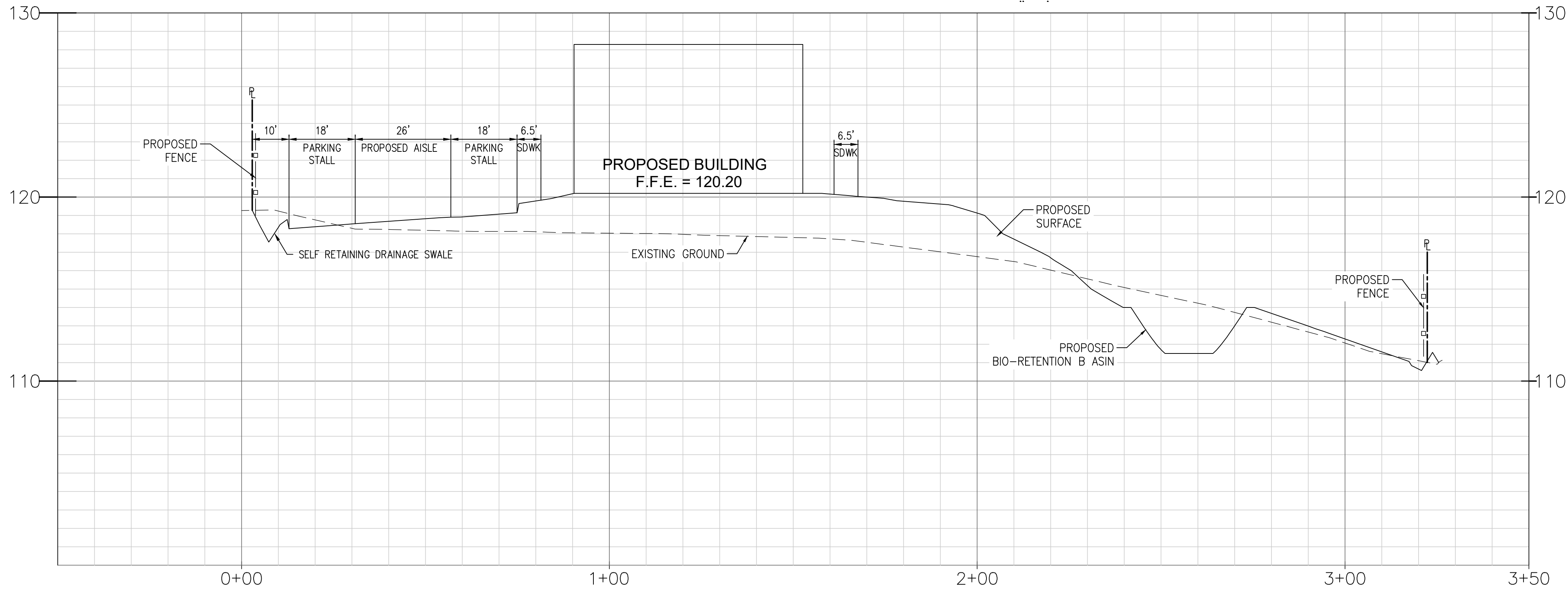
PROJECT NUMBER: 24-043
PREPARED ON: 12/20/24
REVISED ON:
PREPARED BY: C.Rogers
CHECKED BY: SDD
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2 OF 3



S:\SHARED\2024\24-043 HAZELWOOD FORT BRAGG\CIVIL\DWG\PRELIMINARY IMPROVEMENT PLANS\24-043 PIP01 GRADING PLANNING - PLOT DATE: December 20, 2024



PROFILE: A  
HOR SCALE: 1"=20'

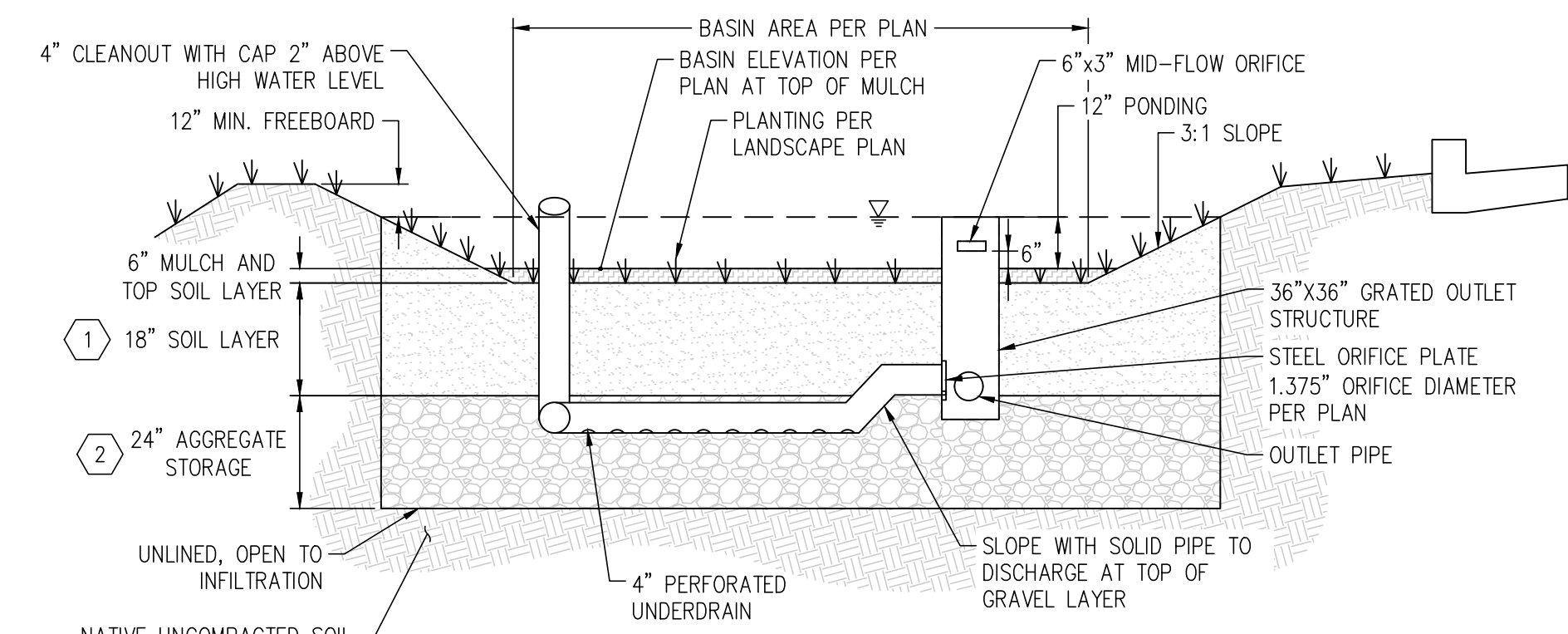


PROFILE: B  
HOR SCALE: 1"=20'  
VERT SCALE: 1"=4'

#### BIORETENTION BASIN NOTES:

BIORETENTION BASIN SHALL COMPLY WITH COUNTY OF MENDOCINO LOW IMPACT DEVELOPMENT STANDARDS MANUAL DATED MAY 2021, APPENDIX 5 SPECIFICATIONS, INCLUDING BUT NOT LIMITED TO:

- SOIL LAYER SHALL COMPLY WITH THE SPECIFICATIONS OF APPENDIX 5 OF THE COUNTY OF MENDOCINO LOW IMPACT DESIGN STANDARDS MANUAL AND SHALL SUPPORT MINIMUM 5 IN/HR INFILTRATION WHEN INSTALLED.
- GRAVEL LAYER SHALL CONSIST OF CALTRANS CLASS 2 PERMEABLE MATERIAL.



DETAIL 1  
BMP 1 - BIORETENTION BASIN (PVT.)  
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DATE	BY	REVISIONS

FORT BRAGG  
HAZELWOOD STREET  
FORT BRAGG, CA  
CROSS SECTIONS

PROJECT NUMBER: 24-043  
PREPARED ON: 12/20/24  
REVISED ON:  
PREPARED BY: C.Rogers  
CHECKED BY: SDD

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3 OF 3

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# **Preliminary Water Quality Management Plan Supplemental Narrative**

**For**

## **FORT BRAGG SENIOR APARTMENTS**

**860 HAZELWOOD STREET  
FORT BRAGG, CA  
APN: 018-210-29-00**

Prepared for:

**The Pacific Companies**  
430 E. State Street, Suite 100  
Eagle, ID 83616

Prepared by:



**Atlas Civil Design, Inc.**  
872 Higuera Street,  
San Luis Obispo, CA 93401  
(619) 307-2749

Prepared: December 2024

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S:\SHARED\2024\24-043 HAZELWOOD FORT BRAGG\CIVIL\REPORTS\HYDROLOGY\APPENDIX A - PROJECT SITE MAP\24-043 PSM - PROPOSED CONDITION.DWG - PLOT DATE: December 20, 2024

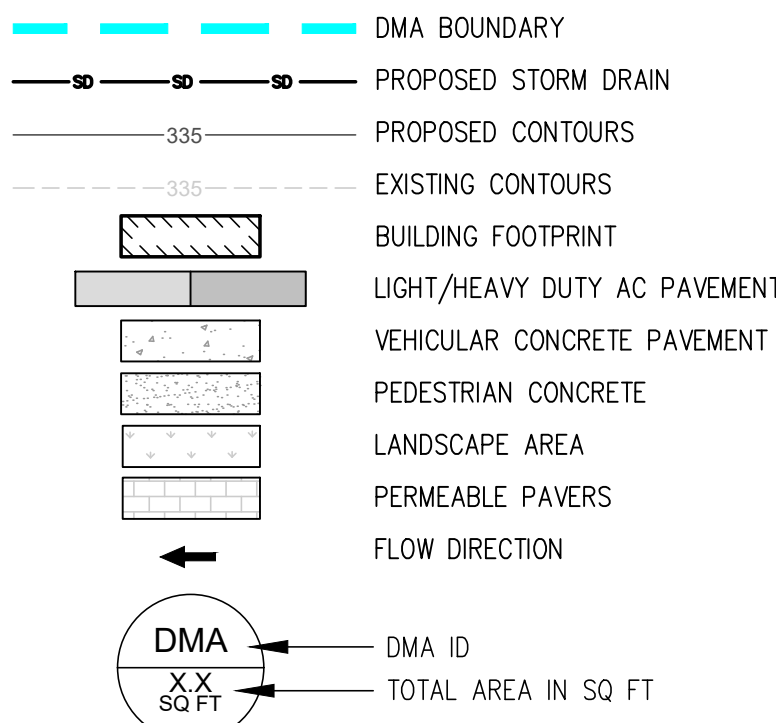
## SITE INFORMATION

HYDROLOGIC SOIL GROUP: UNCLASSIFIED

DEPTH TO GROUNDWATER: APPROXIMATELY 10'-13'

FLOOD ZONE DESIGNATION: X - AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOOD PLAIN PER FEMA

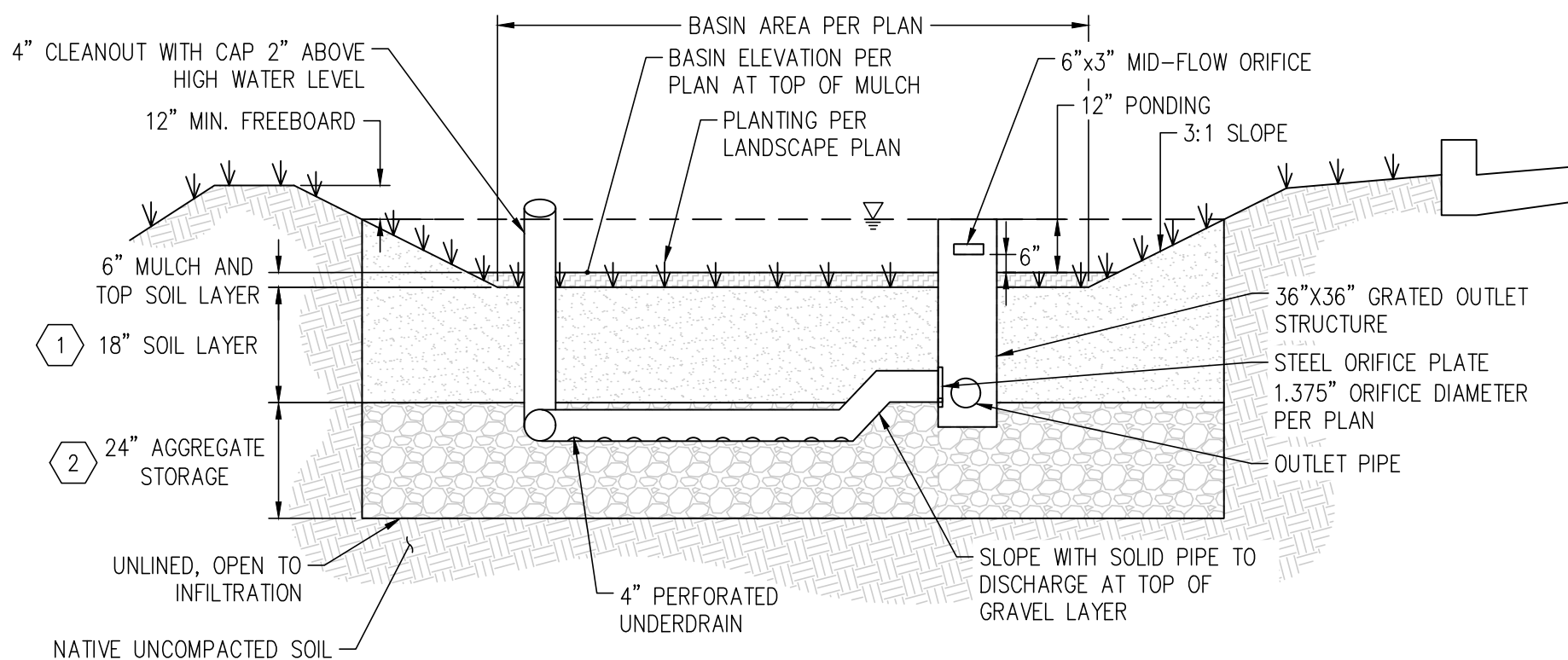
## LEGEND



## BIORETENTION BASIN NOTES:

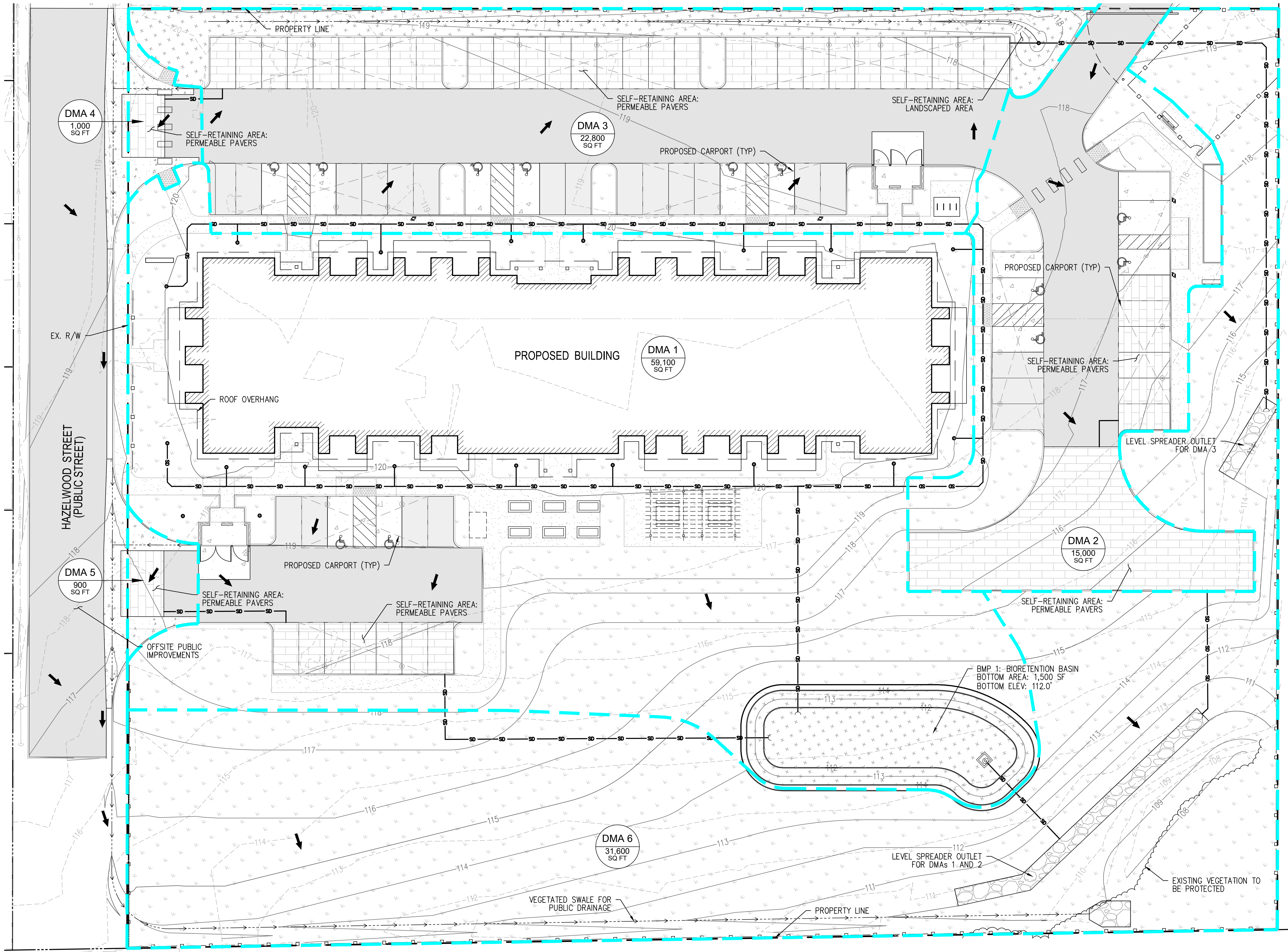
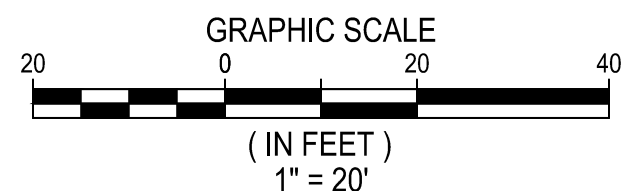
BIORETENTION BASIN SHALL COMPLY WITH COUNTY OF MENDOCINO LOW IMPACT DEVELOPMENT STANDARDS MANUAL DATED MAY 2021, APPENDIX 5 SPECIFICATIONS, INCLUDING BUT NOT LIMITED TO:

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- GRAVEL LAYER SHALL CONSIST OF CALTRANS CLASS 2 PERMEABLE MATERIAL.



BMP 1 - BIORETENTION BASIN (PVT.)

NOT TO SCALE



## PROJECT SITE MAP PROPOSED CONDITION

860 HAZELWOOD STREET, CITY OF  
FORT BRAGG, COUNTY OF MENDOCINO  
STATE OF CALIFORNIA

PROJECT NUMBER: 24-043  
PREPARED ON: 12/20/24  
REVISED ON:  
PREPARED BY: AM  
CHECKED BY: LZ

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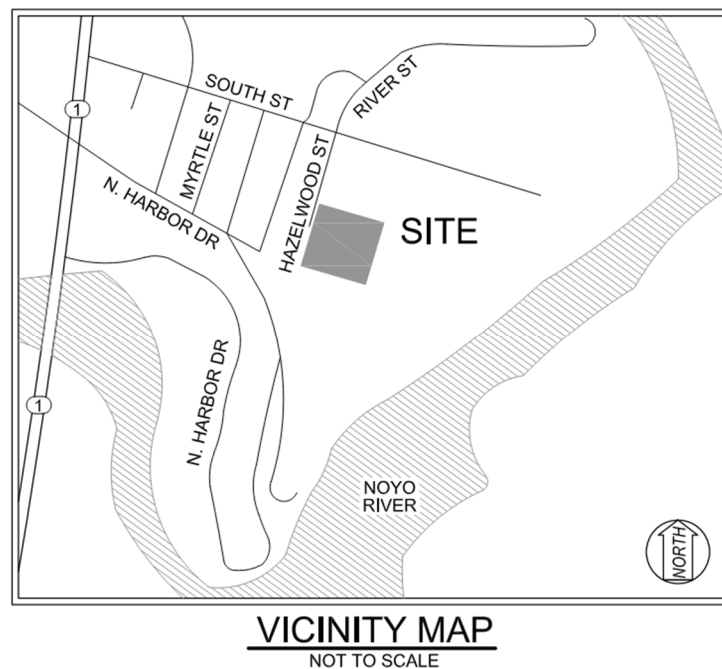
## I. PROJECT SUMMARY

### Purpose

This narrative accompanies the Stormwater Control Plan for the Fort Bragg Senior Apartments project, prepared on the template per the County of Mendocino Low Impact Development Standards Manual, dated May 2021. The purpose is to provide additional information to demonstrate compliance with applicable stormwater requirements as set forth in the Phase II Small MS4 General Permit, WQ Order No. 2013-0001-DWQ, NPDES No. CAS000004, and its subsequent amendments. The City of Fort Bragg utilizes the County of Mendocino Low Impact Development Standards Manual to ensure compliance with MS4 requirements.

### Project Description

The project is located at 860 Hazelwood Street in the City of Fort Bragg within Mendocino County in the State of California. The 2.99-acre site is bounded by an undeveloped public road to the west, a multifamily housing complex to the north, and vacant lots to the east and south. See the Vicinity Map below.



The project proposes an affordable, senior housing development, consisting of one multifamily housing building with associated parking, hardscape, and landscape improvements.

## II. EXISTING CONDITIONS

### Existing Condition Overview

The existing project site consists of one single-family structure at the northwest corner with primarily vegetated groundcover on the remainder of the property. The northwest corner of the site, adjacent to the structure, drains toward Hazelwood Street, which is unpaved fronting the site. The northern portion of the site east and south of the structure slopes at approximately 2% southeast. The southern and eastern portions of the site drain at 5% to 10% toward the southern and eastern property lines.

The site receives no significant offsite run-on from the properties to the north, east, and south. Hazelwood Street, a public street to the west of the property, is unpaved and contains no drainage infrastructure. In the existing condition, drainage from the right-of-way flows onto the subject property, draining southeast across the property.

Site soils are considered silty fine sand according to the geotechnical report. Groundwater was encountered approximately 10 to 13 feet below existing grade. See the Project Site Map in Attachment 1 for a depiction of the existing conditions and Attachment 6 for the project-specific geotechnical report.

### Opportunities

The area of the site is relatively large compared with the footprint needed to support the proposed development. This allows the proposed design to maintain a large area of pervious landscaping. It also provides the space needed for self-retaining areas and bioretention.

The tested infiltration rates onsite appear to support a moderate level of infiltration, allowing retention of some drainage onsite.

### Constraints

No public storm drain infrastructure exists in the near vicinity of the site. Existing drainage runs toward private properties. In order to not exacerbate the cross-lot drainage and because there is no public storm drain to tie into, water must be retained onsite to the extent feasible. Infiltration rates are moderate, but not high, so a large infiltration footprint must be maintained in order to retain drainage within appropriate drawdown times.

Groundwater was encountered 10 to 13 feet below existing grade in the geotechnical investigation borings; however, the borings were not taken in the location of the bioretention basin. Further investigation will be required to determine the groundwater level at the location of the bioretention basin and to ensure adequate separation between the infiltrating surface and water table can be met.

The site receives runoff of public drainage from Hazelwood Street, which must continue to pass through the site in the proposed design.



### III. Proposed Conditions

Proposed site improvements shall consist of one multifamily housing building, surface parking and associated drive aisles, landscaping, pedestrian hardscape, and outdoor recreation areas.

#### **Project Layout Optimization**

The project layout has been optimized per the following low impact design principles.

##### *Minimize Impervious Surfaces*

The proposed design utilizes a hammerhead turnaround in lieu of a looped drive aisle around the building in order to reduce impervious surface area. Perimeter parking bays and the turnaround are proposed as permeable pavement. Permeable pavement is also proposed at the driveway entrances. Proposed parking counts have been reduced to the extent feasible in order to minimize paving areas.

##### *Preserve Vegetation*

The project borders private lots to the south and east, both of which contain dense areas of trees. The trees within the subject property at the southeast corner of the site will be protected.

##### *Utilize and Conform to Site-Specific Topography*

The northern portion of the site is relatively flat with grades at the south and east sloping more steeply toward the southerly and easterly property lines. The proposed site has been laid out consistently with the existing topography. The main development footprint is proposed on the northern portion of the site. The southern portion and eastern edge of the site will consist of pervious slopes drainage toward to southerly and easterly property lines as in the existing condition.

##### *Replicate the Site's Natural Drainage Patterns*

The site maintains the existing drainage patterns to the extent feasible. Site grading will match existing drainage direction with relatively flat slopes on the northern portion of the site and perimeter slope grading to the south and east. Detention and infiltration features are provided to mitigate increases in peak flow per the project Runoff Mitigation Plan.

##### *Detain and Retain Runoff Throughout the Site*

The overall site limits the ratio of impervious to pervious area to less than 2:1. The project will implement self-retaining landscaped areas and self-retaining permeable pavement throughout the site to maximize infiltration of runoff. Self-retaining planter areas will allow for three inches of ponding below area drains. Permeable pavement will include nine inches of gravel storage below the subdrain. Drainage below the area drains and pavement subdrain will infiltrate.

Impermeable parking stalls, drive aisles and sidewalks will be directed toward the permeable pavement and self-retaining planter areas.

The site will include an unlined bioretention basin, designed to biofilter, detain, and infiltrate runoff. The basin includes 24-inches of gravel storage below the subdrain. Storage below the subdrain will infiltrate.

Roof drains will outlet at grade in landscaped areas where feasible. These areas are not designed as self-retaining areas, as ponding against the building is not advisable. The planter areas will allow for some infiltration of the roof drainage before drainage reaches the area drains.

The public drainage from Hazelwood Street will continue to flow onto the property as it does in the existing condition. It will flow through a gently graded vegetated swale to encourage infiltration of the public drainage.

### **Site Design Measures**

The Phase II MS4 Permit and the Mendocino LID prioritize site design measures with the goal of retaining the 85<sup>th</sup> percentile, 24-hour storm event to the extent feasible. The manual prioritizes the creation of self-retaining areas, designed to retain a minimum of 3-inches of water with a maximum ratio of tributary impervious area to pervious self-retaining area of 2:1. According to the manual:

*"In Mendocino County the 85th percentile, 24-hour storm event is equivalent to approximately one inch. When using a 2:1 impervious to pervious ratio for the calculation of the self-retaining area, the area must be able to retain the first 2-inches of stormwater runoff from the impervious areas and the first inch that falls on the self-retaining area itself. This is why the self-retaining area should be depressed in order to achieve this 3-inch retention requirement."*

The manual requires that projects reduce runoff by draining impervious areas to pervious self-retaining areas. If the 2:1 maximum ratio of impervious to pervious area cannot be met, a treatment control BMP must be implemented, with bioretention being the priority.

The proposed project implements site design measures throughout the site. Permeable pavement has been proposed within the perimeter parking bays and the hammerhead turnaround. The permeable pavement is considered to be self-retaining as it will have greater than 3-inches of gravel storage below the subdrain. Self-retaining landscaped areas throughout the site have been proposed.

Where self-retaining areas cannot completely retain the runoff based on the exceedance of the 2:1 impervious to self-retaining area ratio, bioretention has been implemented. The bioretention facility was sized as 4-percent of the tributary area after the application of runoff factors based on surface type.

Self-retaining and bioretention areas are depicted on the Project Site Map in Attachment 1. Calculations are provided in Attachment 3.

### **Drainage Management Areas**

The site has been delineated into six drainage management areas (DMAs) as described below. DMAs were delineated based on the area flowing to each site design feature.

DMA 1 – Area Draining to a Bioretention Facility

DMA 1 encompasses the multifamily building with surrounding landscaped areas, as well as the drive aisle and parking area south of the building. Roof drainage outlets at grade where possible and is captured in landscape swales surrounding the building. Runoff will enter the private storm drain system through area drains. Runoff from the drive aisles, parking stalls, and carport roofs will surface flow onto the permeable pavement in the south parking bay. Runoff below the paver subdrain will infiltrate. When the paver section is full, runoff will enter the subdrain.

As the DMA exceeds the 2:1 ratio of impervious to self-retaining area, bioretention has been provided. Runoff from the paver subdrain and area drains will be piped to a bioretention basin referred to as BMP 1. BMP 1 serves to treat, infiltrate, and detain runoff. Drainage within the bioretention basin will infiltrate below the subdrain. As the water level reaches the subdrain, runoff will exit through an orifice at the subdrain connection to the outlet structure. As the water level rises above the graded bottom of basin, runoff will enter a mid-flow orifice in the outlet structure. In an overflow condition, runoff would enter the grated inlet at the top of the outlet structure. From the outlet structure, drainage is piped to a level spreader outlet at the southeastern corner of the site. The level spreader will dissipate energy, and drainage will spill over evenly toward the property line at the southeastern corner of the site. Drainage leaving the level spreader will travel through existing vegetation to be preserved onsite before leaving the site in the same direction as drainage in the existing condition.

DMA 2 – Area Draining to Self-Retaining Area / Self-Retaining Area

DMA 2 includes the sidewalk, drive aisle, carports and parking east of the building. Drainage surface flows onto the permeable pavement in the parking and hammerhead turnaround. Drainage below the paver subdrain infiltrates. When the paver section is full, runoff will exit through the subdrain. The subdrain will be piped to the level spreader at the southeast corner of the property. DMA 2 has been designed with an impervious to pervious self-retaining area ratio of less than 2:1; therefore, site design requirements have been met.

DMA 3 – Area Draining to Self-Retaining Area / Self-Retaining Area

DMA 3 includes the sidewalk, drive aisle, carports and parking north of the building. Drainage surface flows onto the permeable pavement in the parking as well as into a self-retaining landscaped area designed to allow minimum 3-inches of ponding. Drainage below the subdrain of the pavers and below the raised area drains of the self-retaining area will infiltrate. When the water level reaches the subdrain of the pavers and the area drains in the self-retaining area, drainage will enter the private storm drain, from where it will be piped to a level spreader along the eastern edge of the property. This mimics existing conditions, in which the northeast corner of the site drains toward the eastern property line. DMA 3 has been designed with an impervious to pervious self-retaining area ratio of less than 2:1; therefore, site design requirements have been met.

DMA 4 and 5 – Area Draining to Self-Retaining Area / Self-Retaining Area

DMA 4 and 5 consist of the two driveway entrances to the site that will flow offsite into Hazelwood Street. Permeable pavement will be installed within the driveway entrances in order to intercept the drainage to the extent feasible. Drainage below the subdrain will infiltrate. When the water level reaches the subdrain, drainage will be piped toward the eastern property line for DMA 4 and toward BMP 1 for DMA 5. DMA 4 and 5 have been designed with an impervious to pervious self-retaining area ratio of less than 2:1; therefore, site design requirements have been met.

DMA 6 – Self-Treating Area

DMA 6 includes the pervious graded area surrounding the site that is not tributary to the proposed drainage infrastructure. This area will be planted and does not require treatment or detention as it contains no impervious area and will match the existing conditions. Runoff that is not intercepted in the soil and vegetation will flow toward the south and eastern property lines as in the existing condition.

Offsite

The project proposes the development of a portion of public Hazelwood Street with asphalt pavement, curb, gutter, and sidewalk. The street will be sloped east as in the existing condition. It will be intercepted in the gutter and directed to a proposed vegetated swale. The swale will flow from the public right-of-way onto the subject property and flow along the southerly property line. The swale will allow for the interception of drainage in the soil as infiltration and vegetation as evapotranspiration. Drainage that is not intercepted will flow toward the southeast corner of the site and exit the property as in the existing condition. Treatment of public, offsite drainage has not been tabulated in this analysis.

## IV. HYDROMODIFICATION MITIGATION

### Overview

According to Section E.12.f of the Phase II MS4 Permit, regulated projects within the California Coastal Ranges shall implement hydromodification management measures, by demonstrating that post-project runoff shall not exceed estimated pre-project runoff for the 2-year, 24-hour storm. The LID Manual notes that if a project has been designed with the 2:1 impervious to self-retaining area ratio for the entire site and that the site supports infiltration of greater than 1 inch per hour, the hydromodification mitigation requirement has been met.

The LID Manual does not provide guidance for how to meet the requirement if the project infiltrates at less than 1 inch per hour or does not meet the required ratio of impervious to self-retaining area for the entire site. The proposed project does not support infiltration of 1 inch per hour with a factor of safety applied to the tested rate and does not comply with the 2:1 ratio for the entire site; therefore, the project has performed hydrology and hydraulic routing calculations for the 2-year, 24-hour storm event to demonstrate compliance.

### **Hydromodification Mitigation Calculations**

In order to demonstrate that the proposed 2-year, 24-hour peak runoff does not exceed that of the existing condition, detention in the permeable pavement and bioretention must be taken into account. Detention analysis requires time distribution of rainfall over a particular storm duration; therefore, the National Resources Conservation Services (NRCS), formerly Soil Conservation Service (SCS), hydrologic procedure was followed.

Calculations described below were performed in Autodesk's Storm Sanitary Analysis program (SSA). SSA input and output can be found in Attachment 4.

NRCS Type IA, 24-hour storm distribution was selected based on the geographic region. Distribution IA is appropriate for the northern California coast per NRCS Technical Release 55, Figure B-2. The storm distribution was applied to the 2-year, 24-hour precipitation depth per NOAA Atlas 14. See reference material in Attachment 5.

Each DMA was modeled as a subbasin in SSA based on area, time of concentration, and curve number. Time of concentration was based on NRCS TR-55 method with calculations occurring directly in SSA. Time of concentration was calculated for the existing condition and for proposed DMA 6, which contains only pervious area. The remaining DMAs were modeled with the minimum time of concentration of five minutes, as they are relatively small with relatively high impervious area.

Composite curve numbers were calculated directly in SSA based on the input impervious and pervious areas for each DMA. Impervious areas were modeled with a curve number of 98, and pervious areas with a curve number of 58. The pervious curve number is from TR-55, Table 2-2c, from the value for meadow with soil type B. This ground cover matches the existing state. Although the NRCS does not list a hydrologic soil group, type B is the most consistent with the soil description and tested infiltration rates.

The existing condition was modeled by running the 2-year, 24-hour storm through the existing subbasin with the above parameters. The model results in a peak flow at the overall discharge point.

For the proposed condition, detention in the permeable pavement and bioretention basin needed to be modeled. The bioretention basin was modeled for DMA 1, and the permeable pavement was modeled for DMAs 2 through 5. The bioretention parameters are per the detail shown on the Project Site Map in Attachment 1. The pavement sections were assumed to have 9-inches of gravel below the subdrain.

The bioretention basin and each paver area were added as a storage node in SSA. A staged storage curve was added representing the depth to volume values for each storage node. Staged storage calculations considered 0.4 porosity for the gravel layers and 0.2 porosity for the basin soil layer.

Infiltration from the basin and paver sections was modeled. The design infiltration rate was calculated by applying a factor of safety of 3 to the tested infiltration rate per the geotechnical report. The design infiltration rate was multiplied by the bottom area of the basin and pavers to obtain an infiltration flow rate for each area. The infiltration flow rate was applied to each storage node based on its bottom area.

Subdrains for the basin and pavers were modeled as orifices in SSA. The paver sections were each modeled with a 4-inch subdrain. The orifice size of the bioretention basin was iterated until the peak 2-year, 24-hour flow rate did not exceed that of the existing condition. The result was an orifice of 1.375-



inches in diameter. A mid-flow orifice was added on the outlet structure above the graded basin bottom for detention of larger storm events per the project Runoff Mitigation Plan. The water level remains below the mid-flow orifice in the 2-year, 24-hour storm event.

The basin and pavers were modeled with overflow structures; however, the sizing resulted in water levels that never reached the overflow for any storage node. For the basin, the grated overflow was modeled as a weir at the grate elevation. For the pavers, the overflow was modeled as a long weir to reflect surface flow leaving the paver area in an overflow condition.

The 2-year, 24-hour storm event was run through the proposed subbasins with runoff then being routed through the storage nodes, orifices, and to the overall outfall. The model results in a peak flow and total at the overall discharge point after considering detention and infiltration in the basin and pavers.

The table below summarizes the results of the hydrologic and hydraulic analysis:

<b>2-Year, 24-Hour Runoff</b>	
<b>DMA</b>	<b>Peak Flow (CFS)</b>
Existing	0.09
1	0.06
2	0
3	0
4	0
5	0
6	0.02
Total Proposed	0.08

The analysis shows that the project detention features are sufficient to reduce the proposed peak flow leaving the site in the 2-year, 24-hour storm event to less than that of the existing condition. Therefore, hydromodification mitigation requirements have been met.

## V. CONCLUSION

The proposed project has been designed to address site design requirements of the Phase II MS4 Permit as enforced within the Mendocino County LID Manual through the use of self-retaining landscaped areas, permeable pavement, and a bioretention basin. Hydrologic and hydraulic analysis shows that these features are sufficient for compliance with the hydromodification mitigation requirement with the inclusion of a 1.375-inch orifice on the bioretention basin subdrain.

## ATTACHMENT 3

### Water Quality Calculations



Fort Bragg Senior Apartments - DMA Summary

DMA Area Summary							Site Design Measures								
DMA	Impervious Area (SF)	Impervious Area (AC)	Pervious Area (SF)	Pervious Area (AC)	Total Area (SF)	Total Area (AC)	Paver Area (SF)	Paver Area (AC)	SRA Landscape (SF)	SRA Landscape (AC)	Total SRA (SF)	Total SRA (AC)	Ratio Impervious to SRA	LID Req. met?	Bioretention Area (SF)
1	28200	0.65	30900	0.71	59100	1.36	1100	0.03	0	0.00	1100	0.03	25.6	No	1500
2	8100	0.19	6900	0.16	15000	0.34	4600	0.11	0	0.00	4600	0.11	1.8	Yes	0
3	13100	0.30	9700	0.22	22800	0.52	4700	0.11	4100	0.09	8800	0.20	1.5	Yes	0
4	650	0.01	350	0.01	1000	0.02	350	0.01	0	0.00	350	0.01	1.9	Yes	0
5	550	0.01	350	0.01	900	0.02	350	0.01	0	0.00	350	0.01	1.6	Yes	0
6	0	0.00	31600	0.73	31600	0.73	0	0.00	0	0.00	0	0.00	N/A	Yes	0
Total	50600	1.16	79800	1.83	130400	2.99	11100	0.25	4100	0.09	15200	0.35			
Existing	2300	0.05	0	0.00	130400	2.99									



# Stormwater Control Plan for Regulated Projects

**Table 2. Area Calculations of Self-retaining Areas Used to Treat Impervious Areas**

1 DMA Name	2 Area (sq. ft.)
1 (Self-retaining)	1,100
2 (Self-retaining)	4,600
3 (Self-retaining)	8,800
4 (Self-retaining)	350
5 (Self-retaining)	350

**Table 3. Runoff Factor (surface type)**

Roofs and Paving	1.0
Landscaped Area	0.1
Bricks or solid pavers- grouted	1.0
Bricks or solid Pavers-on sand base	0.5
Pervious Concrete Asphalt	0.1
Turfblock or gravel	0.1
Open or Porous pavers	0.1

Tables 4-6 below should be used to quantify the amount of runoff that is reduced by using site design measures. Using the tables in chronological order will calculate the minimum size for your bioretention facility in order to meet the MS4 permit requirements. Several iterations may be need to size facilities according to the site design.

**Table 4. Area draining to self-retaining areas**

1 DMA Name  (must correspond to area on the site map and on Table 1)	2 DMA Area (sq. ft.)  (Table 1)	3 Type of Surface  (Runoff Factor Table 3)	4 Surface with Runoff Factor  Column 2 X Column 3	5 Area of Self-retaining Area Receiving the Runoff (sq. ft.)  (Table 2, Col. 2)	6 Ratio  Col. 4 : Col. 5 Not to exceed 2:1 ratio (if number exceeds 2:1 use table 5 - 6 to reduce tributary area and recalculate or go directly to Table 7)
Example	700	Roof (1.0)	700	100	7:1 (must use site design measures, bioretention or both)
1 (Impervious)	28,200	Roof, paving (1.0)	28,200	1,100	25.6:1
2 (Impervious)	8,100	Paving (1.0)	8,100	4,600	1.8:1
3 (Impervious)	13,100	Paving (1.0)	13,100	8,800	1.5:1
4 (Impervious)	650	Paving (1.0)	650	350	1.9:1
5 (Impervious)	550	Paving (1.0)	550	350	1.6:1



# Stormwater Control Plan for Regulated Projects

**Table 5. Tree Planting and Preservation (if not planting trees, go to Table 6)**

1	2	3	4	5	6
DMA Name (must correspond to area on the site map)	DMA sq. ft.  (from Table 4, Col. 6)	Deciduous  (Input 100 for each deciduous tree)	Evergreen  (Input 200 for each evergreen tree)	Total Tree Credit  (Col. 3 + Col. 4)  (DMA runoff reduction)	New DMA Area  Col. 2 – Col. 5  (for use in Table 6 - 8)
Example	700	-----	200	200	500 (new DMA size that must be treated with methods below Table 6-7)

**Table 6. Rain Barrels and Cisterns (if not using site design measures, go to Table 8)**

1	2	3	4	5	6
DMA Name  (must correspond to area on the site map)	New DMA sq. ft.  (Table 5, Col. 7 or, if no trees used, value from Table 4, Col. 2)	Number of Rain Barrels	Runoff Reduction from using a standard 55 gallon Rain Barrel = 88 sq. ft.  Use the following if size is other than the standard  (for every gallon of storage, approx. 1.6 sq. ft. of reduction is achieved)	Col. 3 X Col. 4  (DMA runoff reduction)	New DMA Area  Col. 2 - Col. 5
Example	500	1	88	88	412 (go to Table 7 to recalculate Ratio)





# Stormwater Control Plan for Regulated Projects

**Table 7. New Tabulation of areas draining to self-retaining area after use of site design measures** (must achieve a 2:1 ratio; if not achievable, use table 8 to calculate the size of bioretention required)

1	2	3	4
DMA Name  (must correspond to area on the site map)	New Square footage of DMA  (Col 6, Table 4,5,6)	Area of Self-retaining Area Receiving the Runoff  (Table 2, Col. 2)	Ratio  Column <b>2</b> : Column <b>3</b> Not to exceed 2:1
Example	412 (Table 6)	100	4.12:1 (still exceeds 2:1 go back, add more trees, rain barrels, or use bioretention – example uses bioretention, Table 8)
1 (Impervious)	28,200	1,100	25.6:1

**Table 8. Tabulation of areas draining to Bioretention Facility**

1	2	3	5	6	Minimum facility size	
DMA Name  (must correspond to area on the site map)	DMA sq. ft.  (Table 1, Col 2 or new DMA sq. ft. Table 7, Col. 2)	Runoff Factor  Table 6 (skip if coming from Table 1)	DMA Area  Col. <b>2</b> x Col. <b>3</b>	Standard Sizing Factor	Col. <b>5</b> X Col. <b>6</b>	If site does not allow for the minimum size, recalculate DMA using additional Site Design Measures to further reduce the tributary size
Example	300	<b>1</b> (already calculated in steps above,	300	0.04	12 sq. ft.	(proposed facility size on site plans)



# Stormwater Control Plan for Regulated Projects

		for this example)				
1	28,200 Impervious 30,900 Pervious	1 0.1	28,200 SF 3,090 SF	0.04	1,128 SF 124 SF → 1,252 SF Total	1,500 SF provided. Minimum size achieved.
				0.04		
				0.04		
				0.04		

**Table 9. Runoff Factors**

Roofs and Paving	1.0
Landscaped Area	0.1
Bricks or solid pavers- grouted	1.0
Bricks or solid Pavers-on sand base	0.5
Pervious Concrete Asphalt	0.1
Turfblock or gravel	0.1
Open or Porous pavers	0.1

## G. Operation and Maintenance in Perpetuity

Indicate whether an *Operation and Maintenance Plan* is accompanying this document (Appendix 9).

☐ Yes      ☐ No

## H. Stormwater Control Plan

A Stormwater Control Plan is required for all Regulated Projects. This worksheet is designed to be the SCP if all requested descriptions and site plans have been attached. This document will be used by the plan checker to confirm that adequate stormwater control measures are being implemented on the project.

Indicate whether all supporting descriptions and worksheets are accompanying this document, Stormwater Control Plan

☐ Yes      ☐ No

## ATTACHMENT 4

# Hydromodification Mitigation Calculations



# Fort Bragg Senior Apartments - Hydromodification Mitigation Summary

DMA Area Summary							Detention Features		2-year, 24 hour Results
DMA	Impervious Area (SF)	Impervious Area (AC)	Pervious Area (SF)	Pervious Area (AC)	Total Area (SF)	Total Area (AC)	Paver Area (SF)	Bioretention Area (SF)	Peak Flow (CFS)
1	28200	0.65	30900	0.71	59100	1.36	1100	1500	0.06
2	8100	0.19	6900	0.16	15000	0.34	4600	0	0
3	13100	0.30	9700	0.22	22800	0.52	4700	0	0
4	650	0.01	350	0.01	1000	0.02	350	0	0
5	550	0.01	350	0.01	900	0.02	350	0	0
6	0	0.00	31600	0.73	31600	0.73	0	0	0.02
Total	50600	1.16	79800	1.83	130400	2.99			0.08
Existing	2300	0.05	0	0.00	130400	2.99			0.09

Note: Pavement detention not modeled for DMA 1. Self-retaining landscaped area not modeled for DMA 3.

## Fort Bragg Senior Apartments - Design Infiltration Rate

Test <sup>1</sup>	Infiltration Rate (in/hr)
P-1	1.03
P-2	0.94
Average	0.985

<sup>1</sup> Per geotechnical infiltration testing results.

Average Infiltration Rate (in/hr)	0.985	in/hr
FS	3	
Design infiltration rate	0.33	in/hr

Project Description

File Name ..... 24-043 Hazelwood Fort Bragg - Existing TR20.SPF

Project Options

Flow Units ..... CFS  
Elevation Type ..... Elevation  
Hydrology Method ..... SCS TR-20  
Time of Concentration (TOC) Method ..... SCS TR-55  
Link Routing Method ..... Kinematic Wave  
Enable Overflow Ponding at Nodes ..... YES  
Skip Steady State Analysis Time Periods ..... YES

Analysis Options

Start Analysis On ..... 00:00:00      0:00:00  
End Analysis On ..... 00:00:00      0:00:00  
Start Reporting On ..... 00:00:00      0:00:00  
Antecedent Dry Days ..... 0      days  
Runoff (Dry Weather) Time Step ..... 0 01:00:00      days hh:mm:ss  
Runoff (Wet Weather) Time Step ..... 0 00:05:00      days hh:mm:ss  
Reporting Time Step ..... 0 00:05:00      days hh:mm:ss  
Routing Time Step ..... 15      seconds

Number of Elements

	Qty
Rain Gages .....	4
Subbasins.....	1
Nodes.....	1
<i>Junctions</i> .....	0
<i>Outfalls</i> .....	1
<i>Flow Diversions</i> .....	0
<i>Inlets</i> .....	0
<i>Storage Nodes</i> .....	0
Links.....	0
<i>Channels</i> .....	0
<i>Pipes</i> .....	0
<i>Pumps</i> .....	0
<i>Orifices</i> .....	0
<i>Weirs</i> .....	0
<i>Outlets</i> .....	0
Pollutants .....	0
Land Uses .....	0

Rainfall Details

SN	Rain Gage ID	Data Source	Data Source ID	Rainfall Type	Rain Units	State	County	Return Period (years)	Rainfall Depth (inches)	Rainfall Distribution
1	Rain Gage-01	Time Series	TS-04	Intensity	inches					User Defined
2	Rain Gage-03	Time Series	TS-02	Cumulative	inches				0.00	
3	Rain Gage-04	Time Series	TS-03	Cumulative	inches				0.00	
4	Rain Gage-05	Time Series	TS-04	Intensity	inches					User Defined



Subbasin Summary

SN	Subbasin ID	Area (ac)	Peak Rate Factor	Weighted Curve Number	Total Rainfall (in)	Total Runoff (in)	Total Runoff Volume (ac-in)	Peak Runoff (cfs)	Time of Concentration (days hh:mm:ss)
1	E1	2.99	484.00	58.67	3.29	0.40	1.18	0.09	0 00:20:02

## Subbasin Hydrology

### Subbasin : E1

#### Input Data

Area (ac) ..... 2.99  
 Peak Rate Factor ..... 484  
 Weighted Curve Number ..... 58.67  
 Rain Gage ID ..... Rain Gage-01

#### Composite Curve Number

32	Area	Soil	Curve
Soil/Surface Description	(acres)	Group	Number
Meadow, non-grazed	2.94	B	58
Paved parking & roofs	0.05	B	98
Composite Area & Weighted CN	2.99		58.67

#### Time of Concentration

TOC Method : SCS TR-55

Sheet Flow Equation :

$$T_c = (0.007 * ((n * L_f^{0.8})) / ((P^{0.5}) * (S_f^{0.4})))$$

Where :

Tc = Time of Concentration (hr)  
 n = Manning's roughness  
 Lf = Flow Length (ft)  
 P = 2 yr, 24 hr Rainfall (inches)  
 Sf = Slope (ft/ft)

Shallow Concentrated Flow Equation :

V = 16.1345 \* (Sf<sup>0.5</sup>) (unpaved surface)  
 V = 20.3282 \* (Sf<sup>0.5</sup>) (paved surface)  
 V = 15.0 \* (Sf<sup>0.5</sup>) (grassed waterway surface)  
 V = 10.0 \* (Sf<sup>0.5</sup>) (nearly bare & untilled surface)  
 V = 9.0 \* (Sf<sup>0.5</sup>) (cultivated straight rows surface)  
 V = 7.0 \* (Sf<sup>0.5</sup>) (short grass pasture surface)  
 V = 5.0 \* (Sf<sup>0.5</sup>) (woodland surface)  
 V = 2.5 \* (Sf<sup>0.5</sup>) (forest w/heavy litter surface)  
 Tc = (Lf / V) / (3600 sec/hr)

Where:

Tc = Time of Concentration (hr)  
 Lf = Flow Length (ft)  
 V = Velocity (ft/sec)  
 Sf = Slope (ft/ft)

Channel Flow Equation :

V = (1.49 \* (R<sup>(2/3)</sup>) \* (Sf<sup>0.5</sup>)) / n  
 R = Aq / Wp  
 Tc = (Lf / V) / (3600 sec/hr)

Where :

Tc = Time of Concentration (hr)  
 Lf = Flow Length (ft)  
 R = Hydraulic Radius (ft)  
 Aq = Flow Area (ft<sup>2</sup>)  
 Wp = Wetted Perimeter (ft)  
 V = Velocity (ft/sec)  
 Sf = Slope (ft/ft)  
 n = Manning's roughness

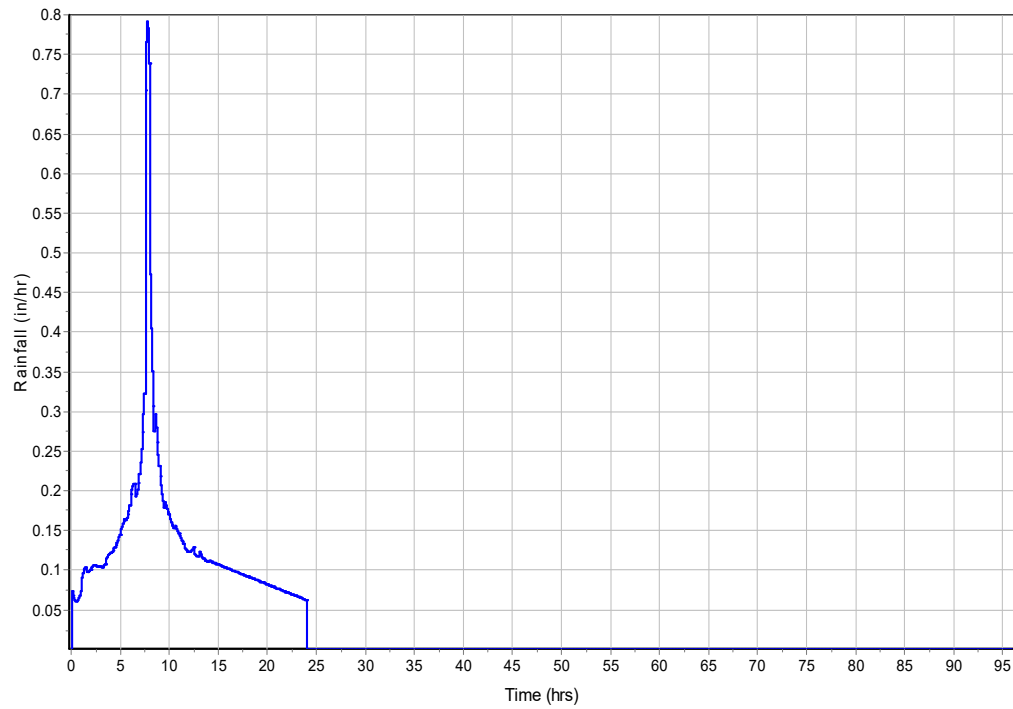
	Subarea	Subarea	Subarea
	A	B	C
Sheet Flow Computations			
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	100	0	0
Slope (%) :	2	0	0
2 yr, 24 hr Rainfall (in) :	3.4	0	0
Velocity (ft/sec) :	0.1	0	0
Computed Flow Time (min) :	16.55	0	0
	Subarea	Subarea	Subarea
	A	B	C
Shallow Concentrated Flow Computations			
Flow Length (ft) :	100	130	0
Slope (%) :	1.5	4	0
Surface Type :	Grass pasture	Grass pasture	Unpaved
Velocity (ft/sec) :	0.86	1.4	0
Computed Flow Time (min) :	1.94	1.55	0
Total TOC (min) .....20.04			

**Subbasin Runoff Results**

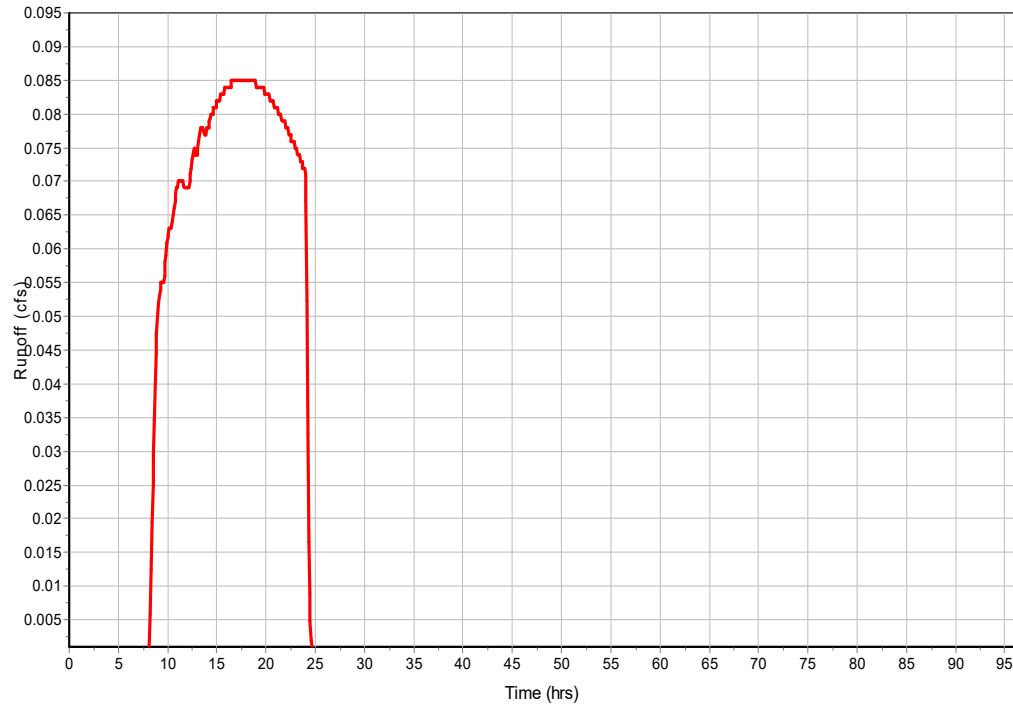
Total Rainfall (in) .....	3.29
Total Runoff (in) .....	0.4
Peak Runoff (cfs) .....	0.09
Weighted Curve Number .....	58.67
Time of Concentration (days hh:mm:ss) .....	0 00:20:02

Subbasin : E1

Rainfall Intensity Graph



Runoff Hydrograph



Project Description

File Name ..... 24-043 Hazelwood Fort Bragg - Proposed TR-20 Mitigated.SPF

Project Options

Flow Units ..... CFS  
Elevation Type ..... Elevation  
Hydrology Method ..... SCS TR-20  
Time of Concentration (TOC) Method ..... SCS TR-55  
Link Routing Method ..... Kinematic Wave  
Enable Overflow Ponding at Nodes ..... YES  
Skip Steady State Analysis Time Periods ..... YES

Analysis Options

Start Analysis On ..... 00:00:00 0:00:00  
End Analysis On ..... 00:00:00 0:00:00  
Start Reporting On ..... 00:00:00 0:00:00  
Antecedent Dry Days ..... 0 days  
Runoff (Dry Weather) Time Step ..... 0 01:00:00 days hh:mm:ss  
Runoff (Wet Weather) Time Step ..... 0 00:05:00 days hh:mm:ss  
Reporting Time Step ..... 0 00:05:00 days hh:mm:ss  
Routing Time Step ..... 15 seconds

Number of Elements

Qty  
Rain Gages ..... 2  
Subbasins..... 6  
Nodes..... 6  
    *Junctions* ..... 0  
    *Outfalls* ..... 1  
    *Flow Diversions* ..... 0  
    *Inlets* ..... 0  
    *Storage Nodes* ..... 5  
Links..... 11  
    *Channels* ..... 0  
    *Pipes* ..... 0  
    *Pumps* ..... 0  
    *Orifices* ..... 6  
    *Weirs* ..... 5  
    *Outlets* ..... 0  
Pollutants ..... 0  
Land Uses ..... 0

Rainfall Details


SN	Rain Gage ID	Data Source	Data Source ID	Rainfall Type	Rain Units	State	County	Return Period (years)	Rainfall Depth (inches)	Rainfall Distribution
1	Rain Gage-01	Time Series	TS-03	Intensity	inches					User Defined
2	Rain Gage-02	Time Series	TS-02	Cumulative	inches				0.00	



**Subbasin Summary**

SN	Subbasin ID	Area (ac)	Peak Rate Factor	Weighted Curve Number	Total Rainfall (in)	Total Runoff (in)	Total Runoff Volume (ac-in)	Peak Runoff (cfs)	Time of Concentration (days hh:mm:ss)
1	P1	1.36	484.00	77.12	3.29	1.28	1.75	0.37	0 00:05:00
2	P2	0.34	484.00	80.35	3.29	1.50	0.51	0.12	0 00:05:00
3	P3	0.52	484.00	81.08	3.29	1.55	0.80	0.19	0 00:05:00
4	P4	0.02	484.00	84.00	3.29	1.71	0.03	0.01	0 00:05:00
5	P5	0.02	484.00	82.00	3.29	1.54	0.03	0.01	0 00:05:00
6	P6	0.73	484.00	58.00	3.29	0.37	0.27	0.02	0 00:12:06

Runoff from subbasins  
before storage nodes



**Node Summary**

SN	Element ID	Element Type	Invert Elevation (ft)	Ground/Rim (Max) Elevation (ft)	Initial Water Elevation (ft)	Surcharge Elevation (ft)	Ponded Area (ft <sup>2</sup> )	Peak Inflow (cfs)	Max HGL Elevation (ft)	Max Surcharge Depth (ft)	Min Time of Freeboard Peak Occurrence (ft) (days hh:mm)	Total Flooded Volume (ac-in)	Total Time Flooded (min)
1	Out-01	Outfall	108.00					0.08	108.00				
2	Stor-01	Storage Node	108.00	114.00	108.00		0.00	0.37	111.57			0.00	0.00
3	Stor-02	Storage Node	116.00	119.00	116.00		0.00	0.12	116.29			0.00	0.00
4	Stor-03	Storage Node	116.00	119.00	116.00		0.00	0.18	116.53			0.00	0.00
5	Stor-04	Storage Node	116.00	119.00	116.00		0.00	0.01	116.26			0.00	0.00
6	Stor-05	Storage Node	116.00	119.00	116.00		0.00	0.01	116.22			0.00	0.00

Peak flow from total site  
after detention

Link Summary

SN	Element ID	Element Type	From (Inlet) Node	To (Outlet) Node	Length (ft)	Inlet Invert Elevation (ft)	Outlet Invert Elevation (ft)	Average Slope (%)	Diameter or Height (in)	Manning's Roughness	Peak Flow (cfs)	Design Flow Capacity (cfs)	Peak Flow/ Design Flow Ratio	Peak Flow Velocity (ft/sec)	Peak Flow Depth (ft)	Peak Flow Depth/ Total Depth Ratio	Total Time Reported Surcharged Condition (min)
1	Orifice-01a	Orifice	Stor-01	Out-01		108.00	108.00		1.375		0.06						
2	Orifice-01b	Orifice	Stor-01	Out-01		108.00	108.00		3.000		0.00						
3	Orifice-02	Orifice	Stor-02	Out-01		116.00	108.00		4.000		0.00						
4	Orifice-03	Orifice	Stor-03	Out-01		116.00	108.00		4.000		0.00						
5	Orifice-04	Orifice	Stor-04	Out-01		116.00	108.00		4.000		0.00						
6	Orifice-05	Orifice	Stor-05	Out-01		116.00	108.00		4.000		0.00						
7	Weir-01	Weir	Stor-01	Out-01		108.00	108.00				0.00						
8	Weir-02	Weir	Stor-02	Out-01		116.00	108.00				0.00						
9	Weir-03	Weir	Stor-03	Out-01		116.00	108.00				0.00						
10	Weir-04	Weir	Stor-04	Out-01		116.00	108.00				0.00						
11	Weir-05	Weir	Stor-05	Out-01		116.00	108.00				0.00						

Peak flow leaving storage nodes from orifices and weirs

Subbasin Hydrology

Subbasin : P1

Input Data

Area (ac) .....	1.36
Peak Rate Factor .....	484
Weighted Curve Number .....	77.12
Rain Gage ID .....	Rain Gage-01

Composite Curve Number

32	Area	Soil	Curve
Soil/Surface Description	(acres)	Group	Number
Paved parking & roofs	0.65	B	98
Meadow, non-grazed	0.71	B	58
Composite Area & Weighted CN	1.36		77.12

Time of Concentration

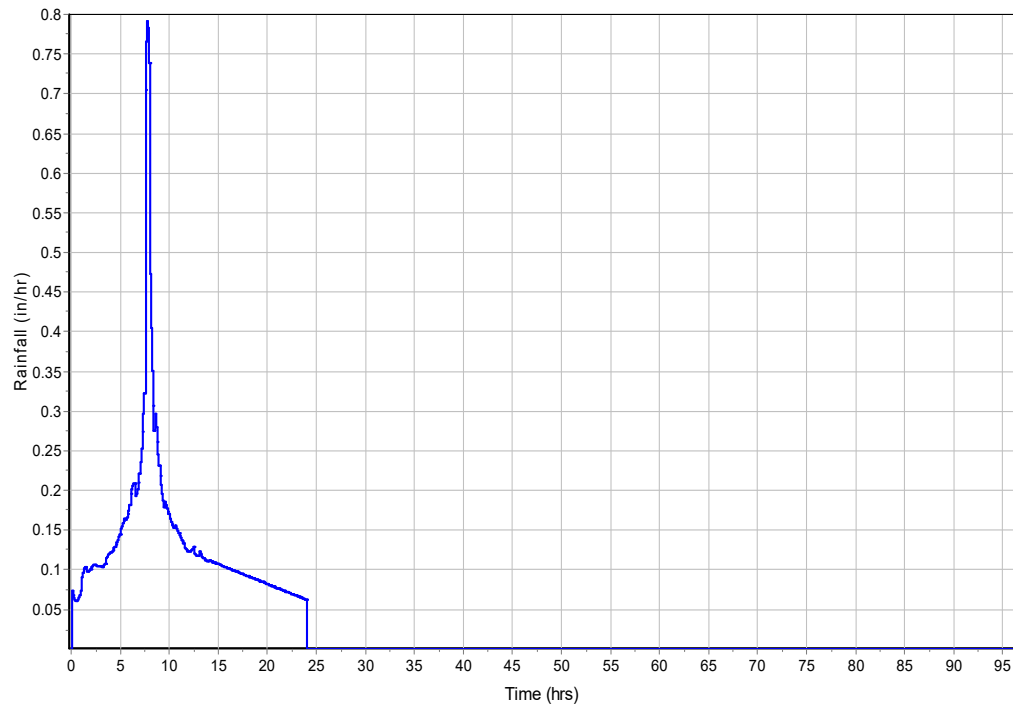
User-Defined TOC override (minutes): 5

Subbasin Runoff Results

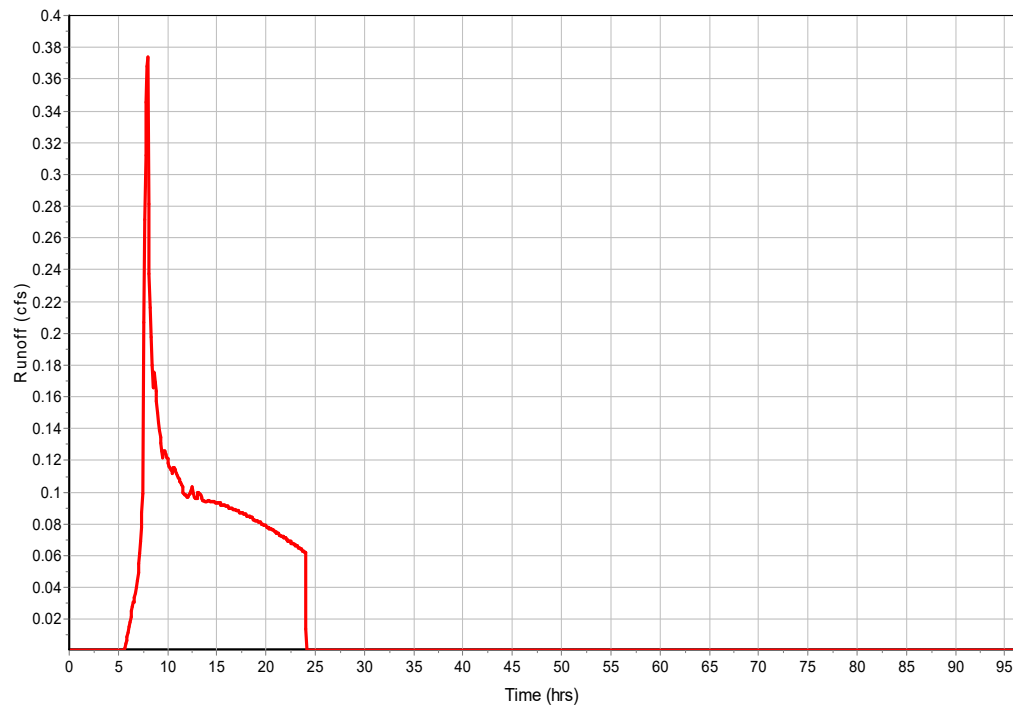
Total Rainfall (in) .....	3.29
Total Runoff (in) .....	1.28
Peak Runoff (cfs) .....	0.37
Weighted Curve Number .....	77.12
Time of Concentration (days hh:mm:ss) .....	0 00:05:00

Subbasin : P1

Rainfall Intensity Graph



Runoff Hydrograph





Subbasin : P2

Input Data

Area (ac) ..... 0.34  
Peak Rate Factor ..... 484  
Weighted Curve Number ..... 80.35  
Rain Gage ID ..... Rain Gage-01

Composite Curve Number

32	Area	Soil	Curve
Soil/Surface Description	(acres)	Group	Number
Paved roads with curbs & sewers	0.19	B	98
Meadow, non-grazed	0.15	B	58
Composite Area & Weighted CN	0.34		80.35

Time of Concentration

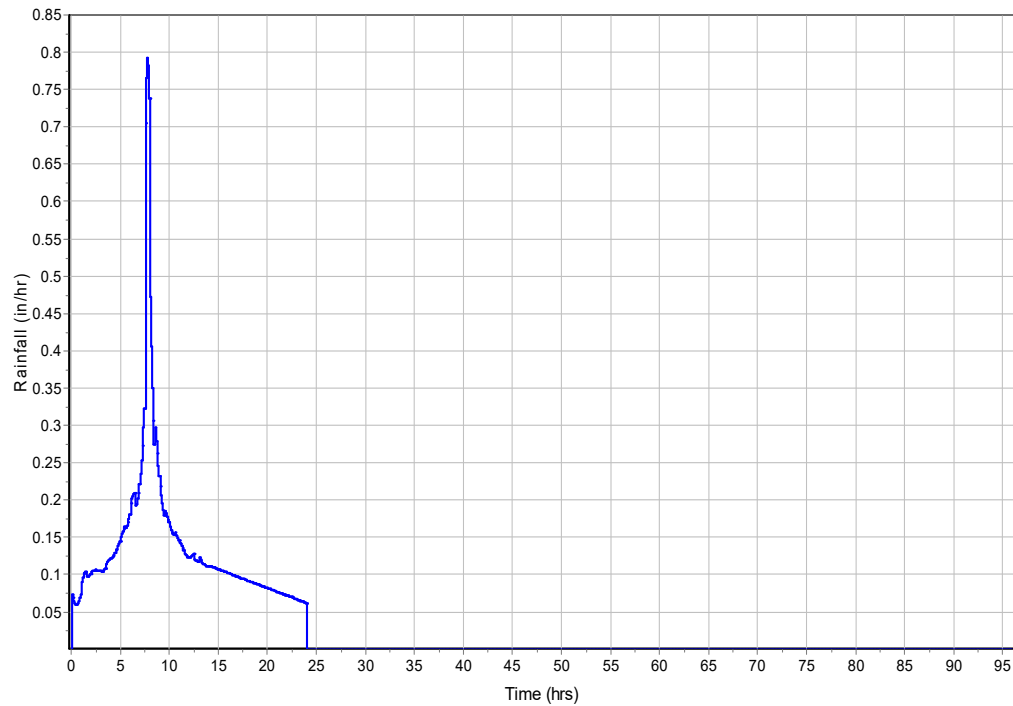
User-Defined TOC override (minutes): 5

Subbasin Runoff Results

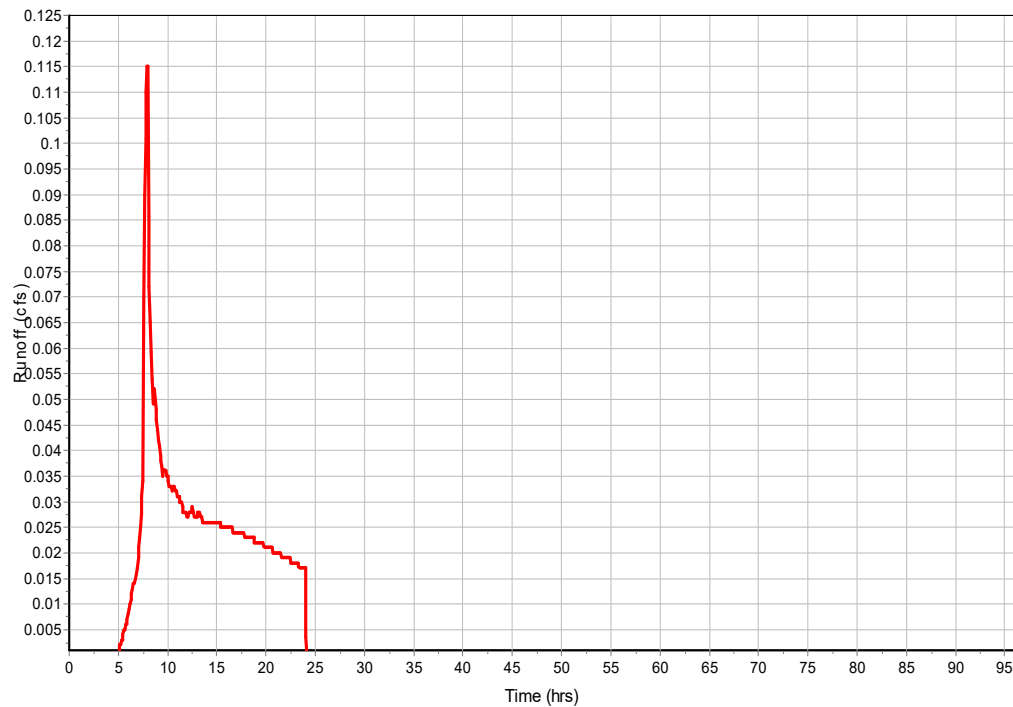
Total Rainfall (in) ..... 3.29  
Total Runoff (in) ..... 1.5  
Peak Runoff (cfs) ..... 0.12  
Weighted Curve Number ..... 80.35  
Time of Concentration (days hh:mm:ss) ..... 0 00:05:00

Subbasin : P2

Rainfall Intensity Graph



Runoff Hydrograph



Subbasin : P3

Input Data

Area (ac) ..... 0.52  
Peak Rate Factor ..... 484  
Weighted Curve Number ..... 81.08  
Rain Gage ID ..... Rain Gage-01

Composite Curve Number

32	Area	Soil	Curve
Soil/Surface Description	(acres)	Group	Number
Paved parking & roofs	0.3	B	98
Meadow, non-grazed	0.22	B	58
Composite Area & Weighted CN	0.52		81.08

Time of Concentration

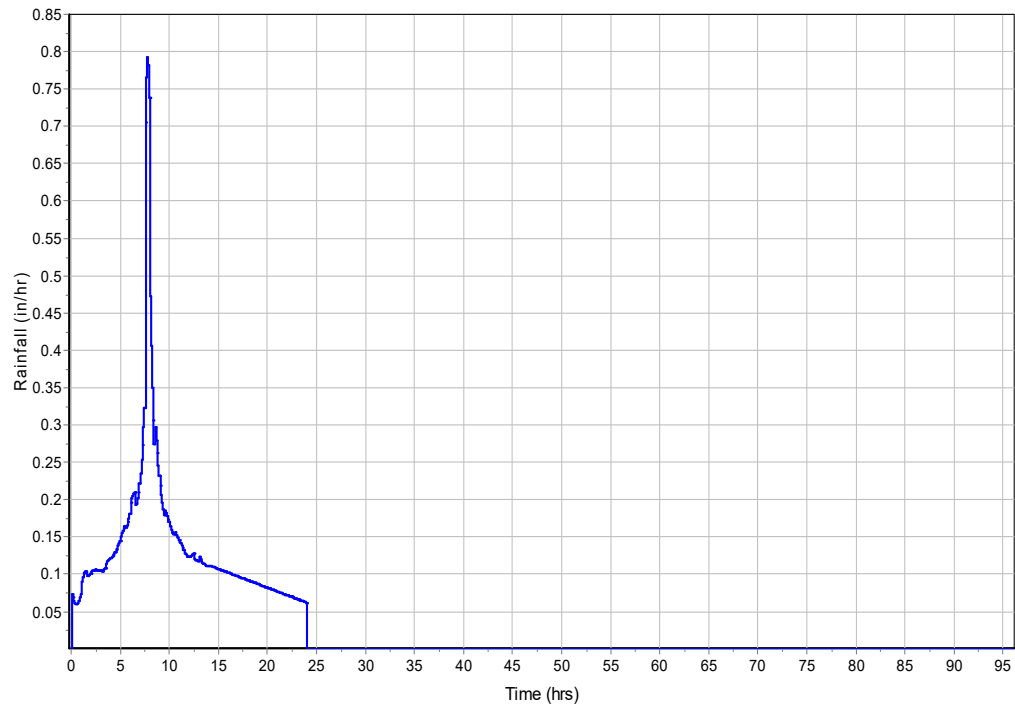
User-Defined TOC override (minutes): 5

Subbasin Runoff Results

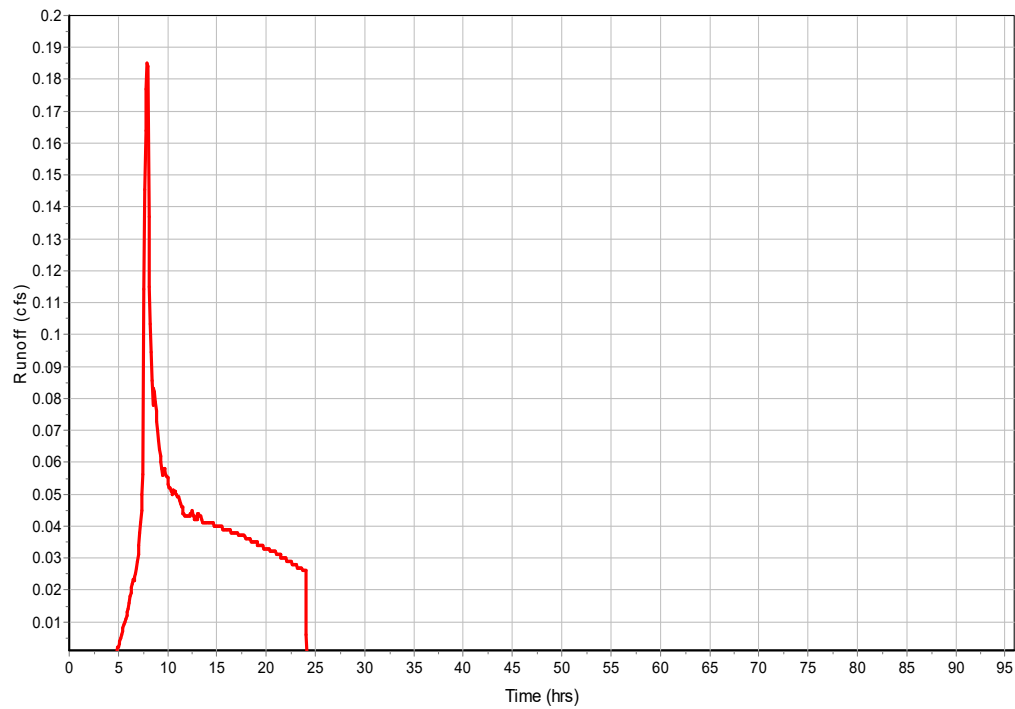
Total Rainfall (in) ..... 3.29  
Total Runoff (in) ..... 1.55  
Peak Runoff (cfs) ..... 0.19  
Weighted Curve Number ..... 81.08  
Time of Concentration (days hh:mm:ss) ..... 0 00:05:00

Subbasin : P3

Rainfall Intensity Graph



Runoff Hydrograph



Subbasin : P4

Input Data

Area (ac) ..... 0.02  
Peak Rate Factor ..... 484  
Weighted Curve Number ..... 84  
Rain Gage ID ..... Rain Gage-01

Composite Curve Number

32	Area	Soil	Curve
Soil/Surface Description	(acres)	Group	Number
Paved parking & roofs	0.01	B	98
Meadow, non-grazed	0.01	B	58
Composite Area & Weighted CN	0.02		84

Time of Concentration

User-Defined TOC override (minutes): 5.00

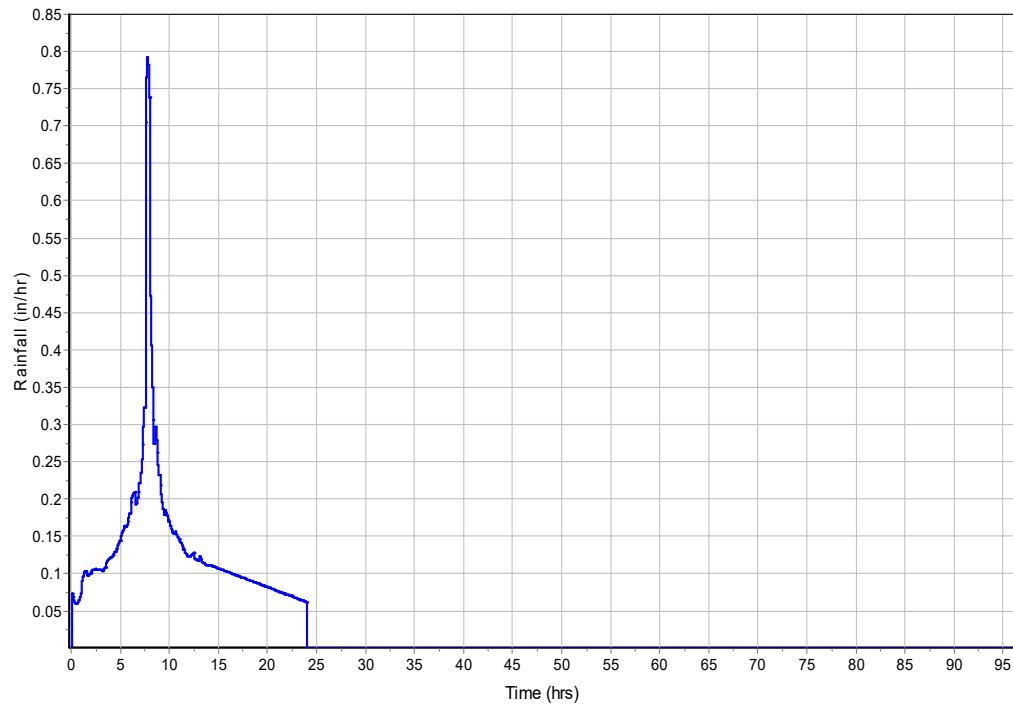
Subbasin Runoff Results

Total Rainfall (in) ..... 3.29  
Total Runoff (in) ..... 1.71  
Peak Runoff (cfs) ..... 0.01  
Weighted Curve Number ..... 84  
Time of Concentration (days hh:mm:ss) ..... 0 00:05:00

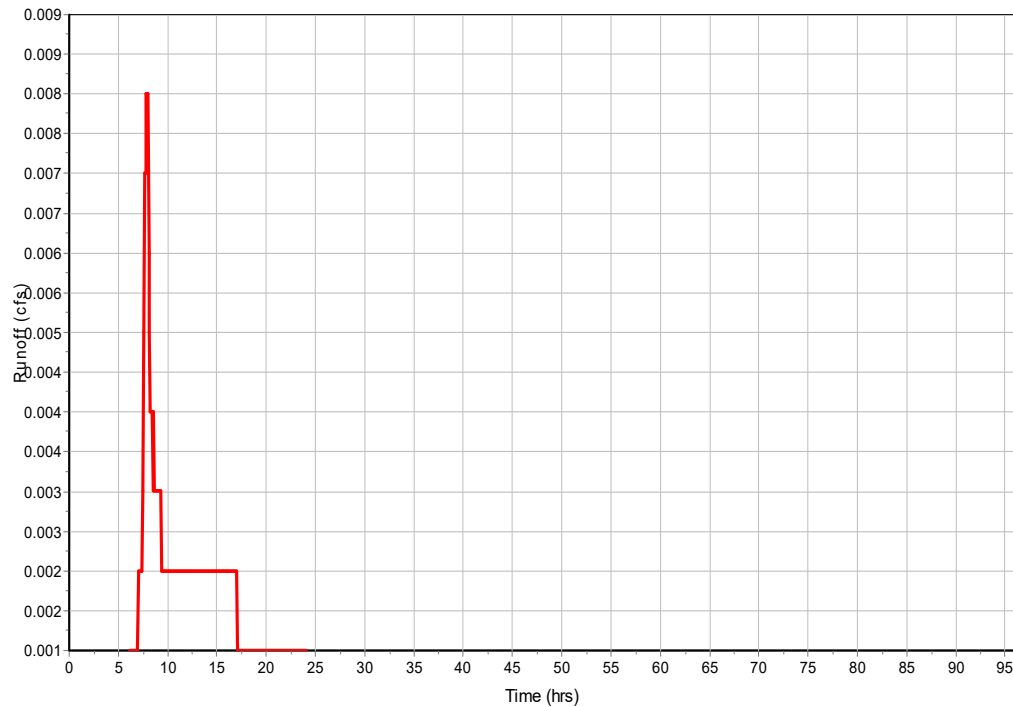


Subbasin : P4

Rainfall Intensity Graph



Runoff Hydrograph



Subbasin : P5

Input Data

Area (ac) ..... 0.02  
Peak Rate Factor ..... 484  
Weighted Curve Number ..... 82  
Rain Gage ID ..... Rain Gage-01

Composite Curve Number

32	Area	Soil	Curve
Soil/Surface Description	(acres)	Group	Number
Paved parking & roofs	0.01	B	98
Meadow, non-grazed	0.01	B	58
Composite Area & Weighted CN	0.02		82

Time of Concentration

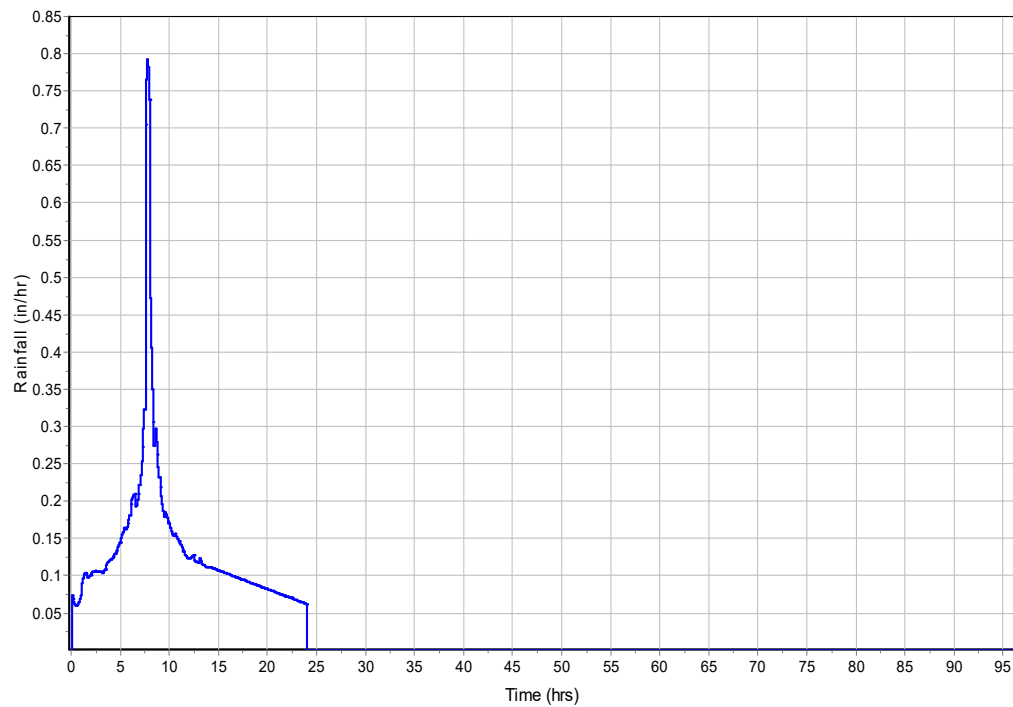
User-Defined TOC override (minutes): 5

Subbasin Runoff Results

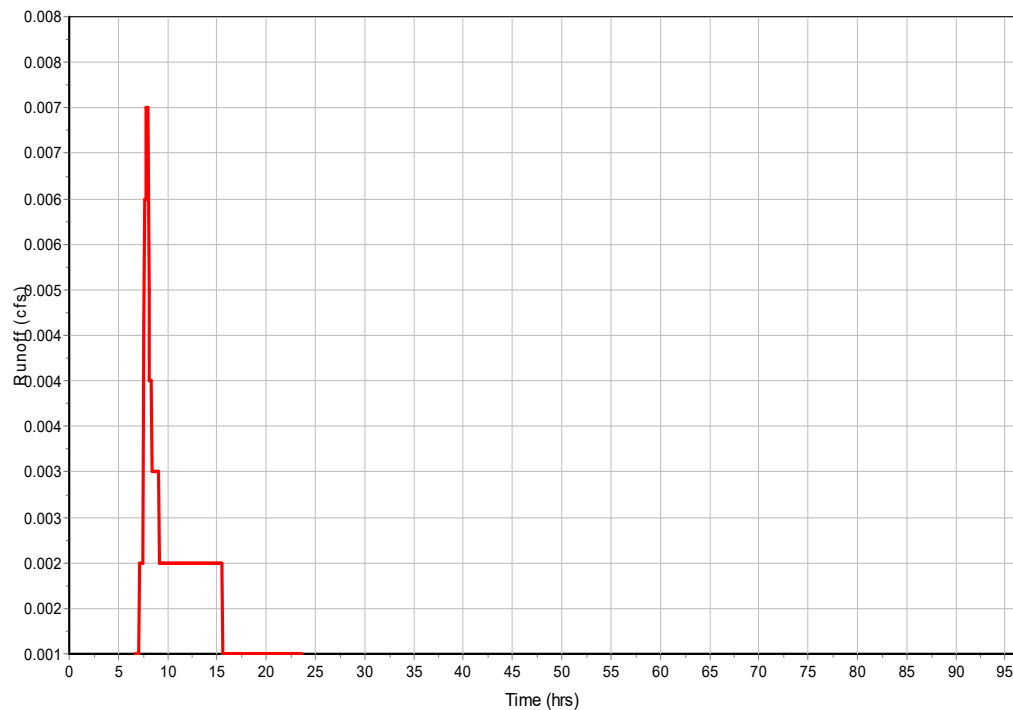
Total Rainfall (in) ..... 3.29  
Total Runoff (in) ..... 1.54  
Peak Runoff (cfs) ..... 0.01  
Weighted Curve Number ..... 82  
Time of Concentration (days hh:mm:ss) ..... 0 00:05:00

Subbasin : P5

Rainfall Intensity Graph



Runoff Hydrograph



**Subbasin : P6****Input Data**

Area (ac) ..... 0.73  
 Peak Rate Factor ..... 484  
 Weighted Curve Number ..... 58  
 Rain Gage ID ..... Rain Gage-01

**Composite Curve Number**

32	Area	Soil	Curve
Soil/Surface Description	(acres)	Group	Number
Meadow, non-grazed	0.73	B	58
Composite Area & Weighted CN	0.73		58

**Time of Concentration**

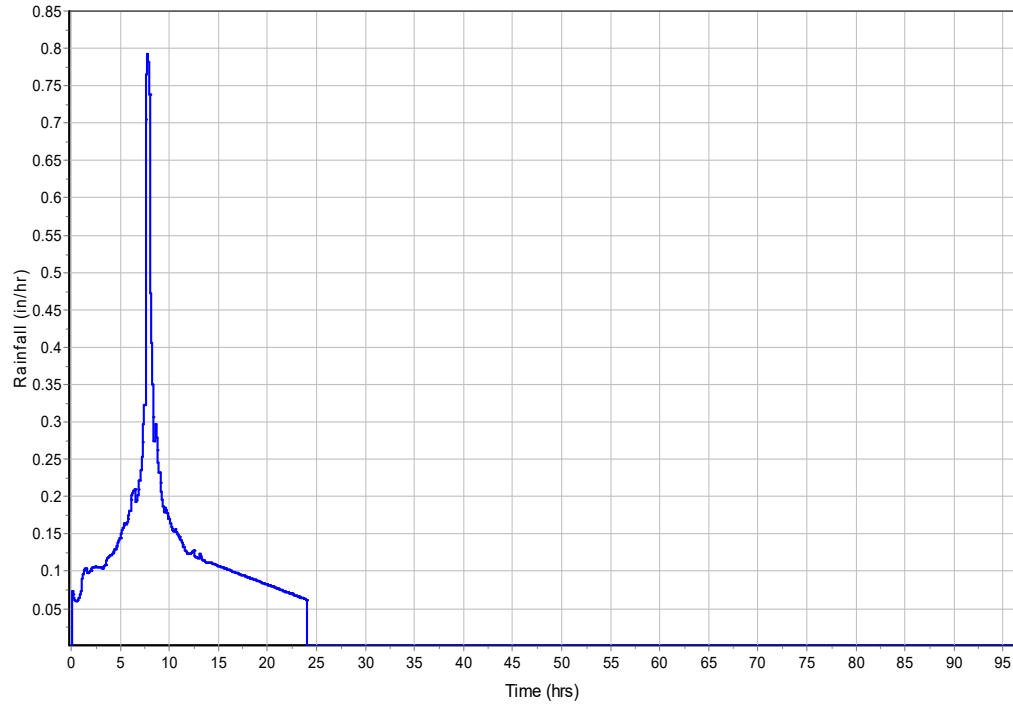
	Subarea	Subarea	Subarea
	A	B	C
Sheet Flow Computations			
Manning's Roughness :	0.3	0	0
Flow Length (ft) :	80	0	0
Slope (%) :	3.5	0	0
2 yr, 24 hr Rainfall (in) :	3.4	0	0
Velocity (ft/sec) :	0.12	0	0
Computed Flow Time (min) :	11.07	0	0
	Subarea	Subarea	Subarea
	A	B	C
Shallow Concentrated Flow Computations			
Flow Length (ft) :	50	0	0
Slope (%) :	1.3	0	0
Surface Type :	Grass pasture	Grass pasture	Unpaved
Velocity (ft/sec) :	0.8	0	0
Computed Flow Time (min) :	1.04	0	0
Total TOC (min) .....	12.11		

**Subbasin Runoff Results**

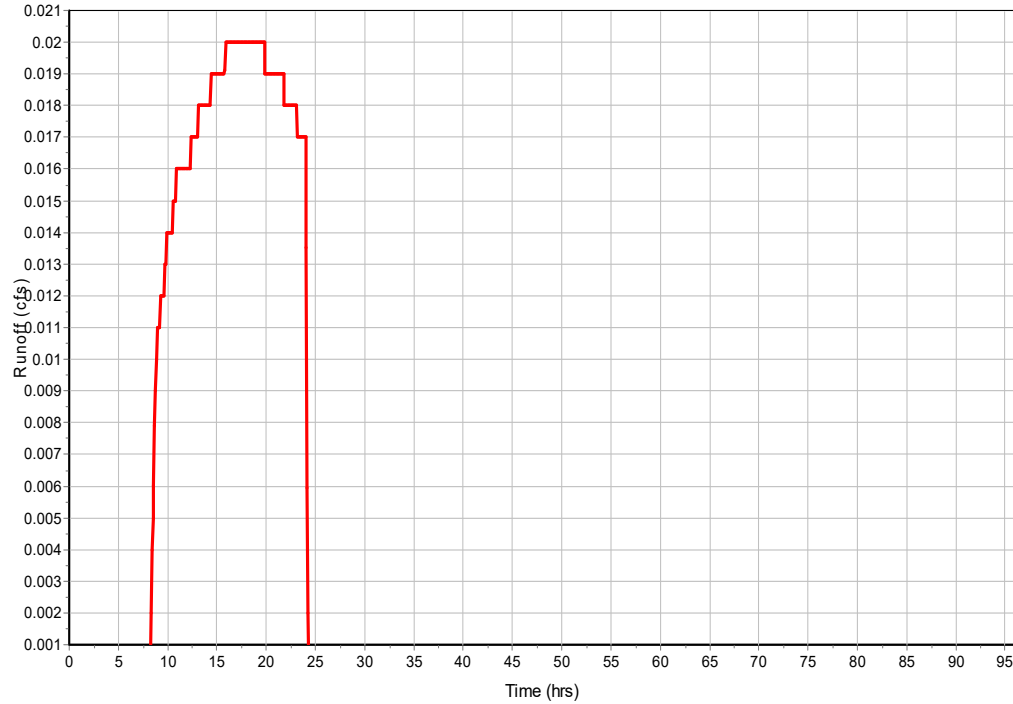
Total Rainfall (in) ..... 3.29  
 Total Runoff (in) ..... 0.37  
 Peak Runoff (cfs) ..... 0.02  
 Weighted Curve Number ..... 58  
 Time of Concentration (days hh:mm:ss) ..... 0 00:12:07

Subbasin : P6

Rainfall Intensity Graph



Runoff Hydrograph



Storage Nodes

Storage Node : Stor-01

Input Data

Invert Elevation (ft) .....	108.00
Max (Rim) Elevation (ft) .....	114.00
Max (Rim) Offset (ft) .....	6.00
Initial Water Elevation (ft) .....	108.00
Initial Water Depth (ft) .....	0.00
Ponded Area (ft²) .....	0.00
Evaporation Loss .....	0.00

Infiltration/Exfiltration

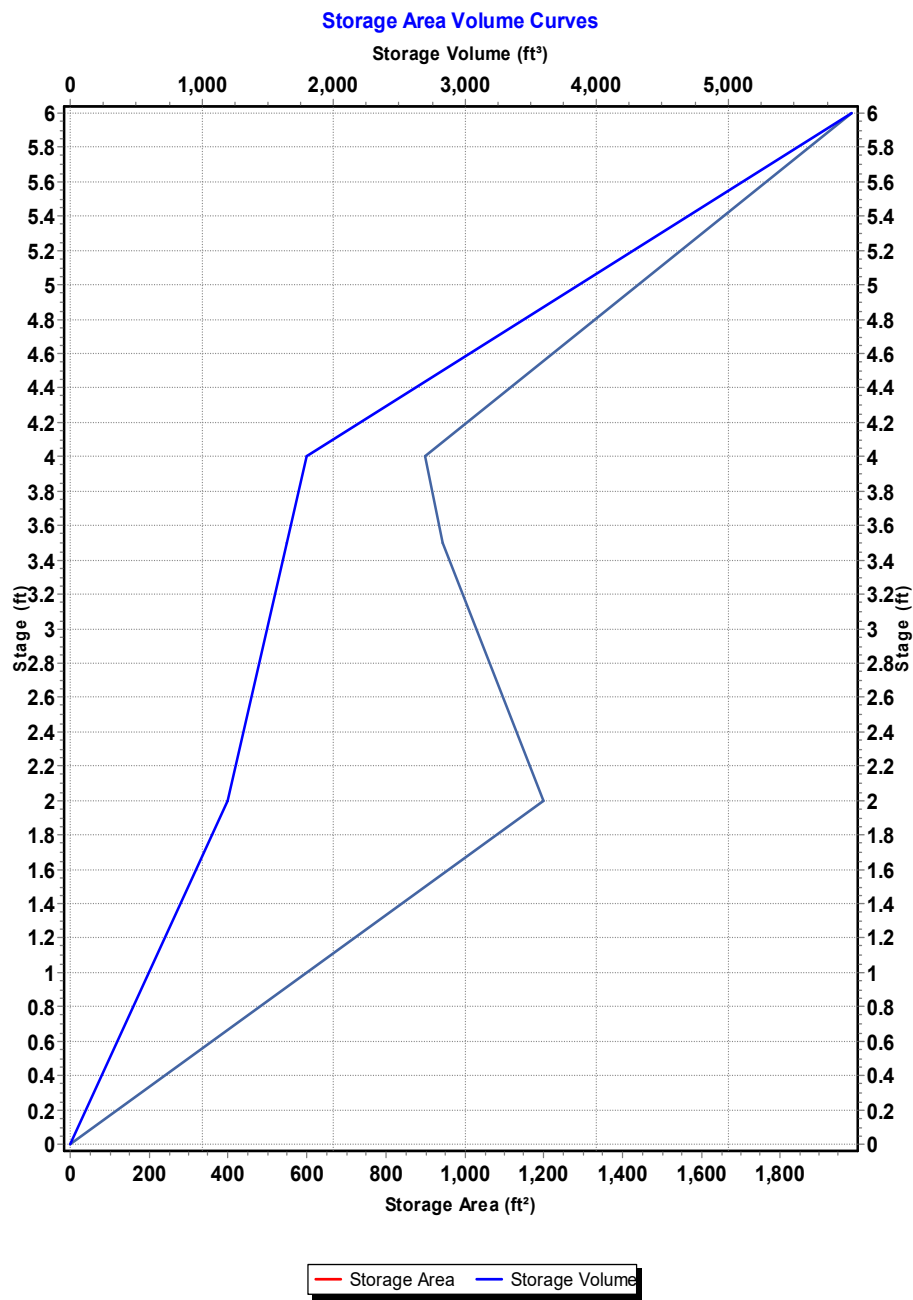
Constant Flow Rate (cfs) .....	0.011
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Storage Area Volume Curves

Storage Curve : Storage-01

Stage	Storage Area	Storage Volume
(ft)	(ft²)	(ft³)
0	0	0
2	1200	1200
3.5	942.86	1650
4	900	1800
6	1980.67	5942





**Storage Node : Stor-01 (continued)****Outflow Weirs**

SN ID	Element Type	Weir Gate	Flap Shape	Crest Elevation (ft)	Crest Offset (ft)	Length (ft)	Weir Total Height (ft)	Discharge Coefficient
1	Weir-01	Trapezoidal	No	113.00	5.00	6.00	1.00	3.33

**Outflow Orifices**

SN ID	Element Type	Orifice Shape	Flap Gate	Circular Orifice Diameter (in)	Rectangular Orifice Height (in)	Rectangular Orifice Width (in)	Orifice Invert Elevation (ft)	Orifice Coefficient
1	Orifice-01a	Side	CIRCULAR	No	1.38		110.00	0.61
2	Orifice-01b	Side	Rectangular	No		3.00	112.50	0.63

**Output Summary Results**

Peak Inflow (cfs) .....	0.37
Peak Lateral Inflow (cfs) .....	0.37
Peak Outflow (cfs) .....	0.06
Peak Exfiltration Flow Rate (cfm) .....	0.66
Max HGL Elevation Attained (ft) .....	111.57
Max HGL Depth Attained (ft) .....	3.57
Average HGL Elevation Attained (ft) .....	109.24
Average HGL Depth Attained (ft) .....	1.24
Time of Max HGL Occurrence (days hh:mm) .....	0 21:23
Total Exfiltration Volume (1000-ft <sup>3</sup> ) .....	2.359
Total Flooded Volume (ac-in) .....	0
Total Time Flooded (min) .....	0
Total Retention Time (sec) .....	0

Storage Node : Stor-02

Input Data

Invert Elevation (ft) .....	116.00
Max (Rim) Elevation (ft) .....	119.00
Max (Rim) Offset (ft) .....	3.00
Initial Water Elevation (ft) .....	116.00
Initial Water Depth (ft) .....	0.00
Ponded Area (ft²) .....	0.00
Evaporation Loss .....	0.00

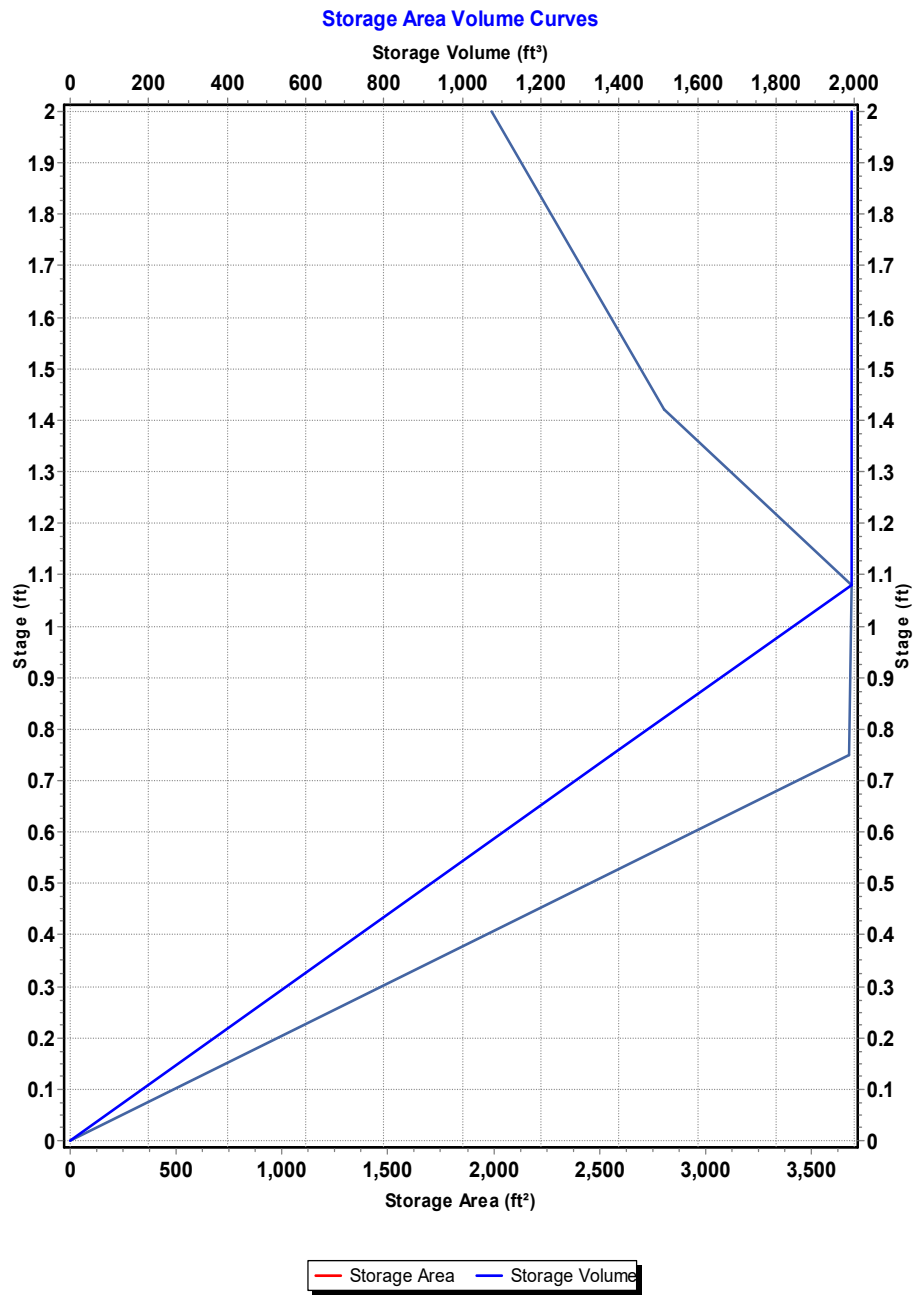
Infiltration/Exfiltration

Constant Flow Rate (cfs) .....	0.035
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Storage Area Volume Curves

Storage Curve : Storage-02-03

Stage	Storage	Storage
(ft)	Area	Volume
	(ft²)	(ft³)
0	0	0
0.75	3680	1380
1.08	3690.74	1993
1.42	2807.04	1993
2	1993	1993



**Storage Node : Stor-02 (continued)****Outflow Weirs**

SN ID	Element Type	Weir Gate	Flap Gate	Crest Elevation (ft)	Crest Offset (ft)	Length (ft)	Weir Total Height (ft)	Discharge Coefficient
1	Weir-02	Trapezoidal	No	118.00	2.00	100.00	1.00	3.33

**Outflow Orifices**

SN ID	Element Type	Orifice Shape	Flap Gate	Circular Orifice Diameter (in)	Rectangular Orifice Height (in)	Rectangular Orifice Width (in)	Orifice Invert Elevation (ft)	Orifice Coefficient
1	Orifice-02	Side	CIRCULAR	No	4.00		116.75	0.61

**Output Summary Results**

Peak Inflow (cfs) .....	0.12
Peak Lateral Inflow (cfs) .....	0.12
Peak Outflow (cfs) .....	0
Peak Exfiltration Flow Rate (cfm) .....	2.1
Max HGL Elevation Attained (ft) .....	116.29
Max HGL Depth Attained (ft) .....	0.29
Average HGL Elevation Attained (ft) .....	116.02
Average HGL Depth Attained (ft) .....	0.02
Time of Max HGL Occurrence (days hh:mm) .....	0 10:05
Total Exfiltration Volume (1000-ft <sup>3</sup> ) .....	1.229
Total Flooded Volume (ac-in) .....	0
Total Time Flooded (min) .....	0
Total Retention Time (sec) .....	0

Storage Node : Stor-03

Input Data

Invert Elevation (ft) .....	116.00
Max (Rim) Elevation (ft) .....	119.00
Max (Rim) Offset (ft) .....	3.00
Initial Water Elevation (ft) .....	116.00
Initial Water Depth (ft) .....	0.00
Ponded Area (ft²) .....	0.00
Evaporation Loss .....	0.00

Infiltration/Exfiltration

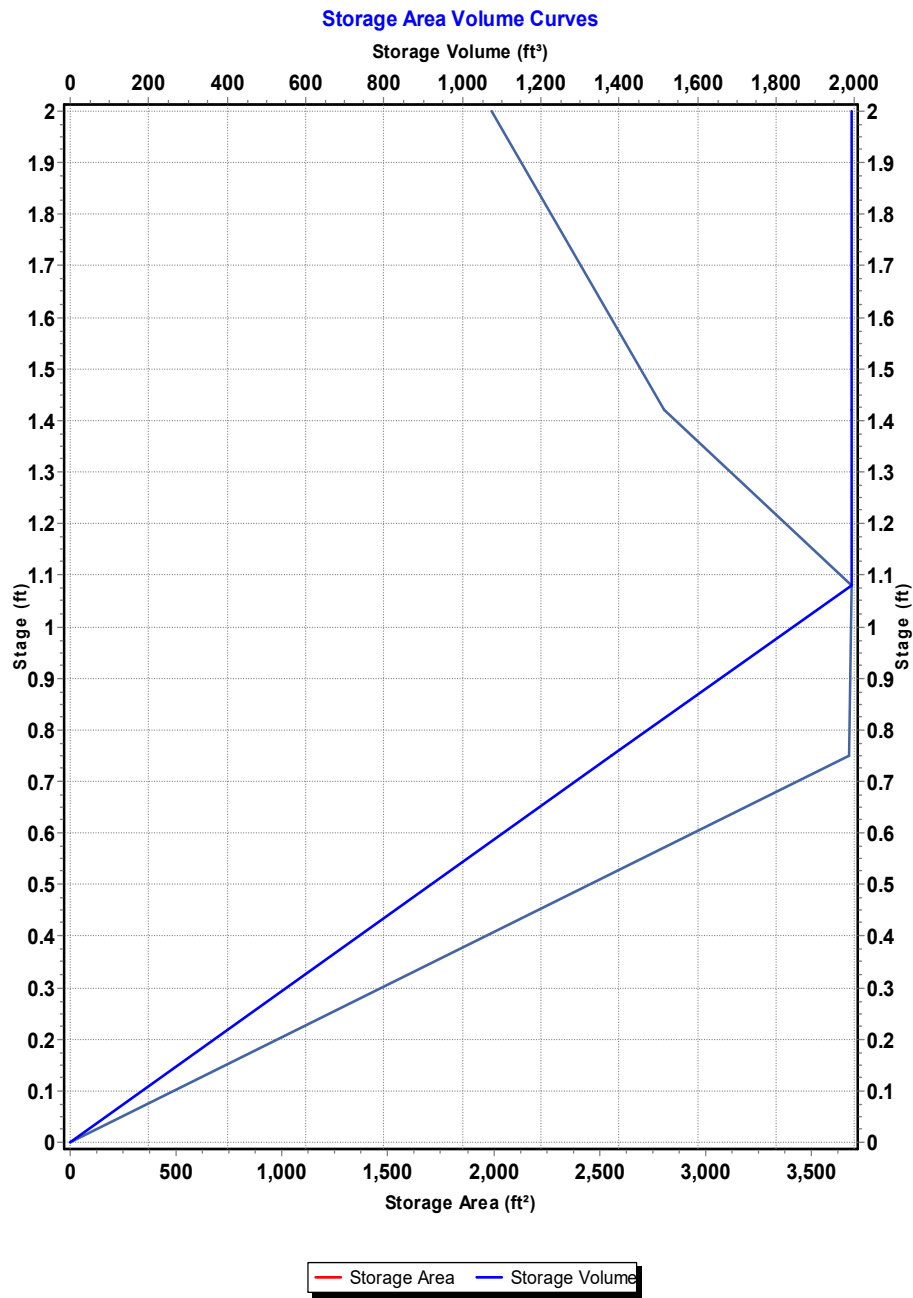
Constant Flow Rate (cfs) .....	0.036
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Storage Area Volume Curves

Storage Curve : Storage-02-03

Stage	Storage	Storage
(ft)	Area	Volume
	(ft²)	(ft³)
0	0	0
0.75	3680	1380
1.08	3690.74	1993
1.42	2807.04	1993
2	1993	1993





**Storage Node : Stor-03 (continued)****Outflow Weirs**

SN ID	Element Type	Weir Gate	Crest Elevation (ft)	Crest Offset (ft)	Length (ft)	Weir Total Height (ft)	Discharge Coefficient
1	Weir-03	Trapezoidal	No	118.00	2.00	100.00	1.00 3.33

**Outflow Orifices**

SN ID	Element Type	Orifice Shape	Flap Gate	Circular Orifice Diameter (in)	Rectangular Orifice Height (in)	Rectangular Orifice Width (in)	Orifice Invert Elevation (ft)	Orifice Coefficient
1	Orifice-03	Side	CIRCULAR	No	4.00		116.75	0.61

**Output Summary Results**

Peak Inflow (cfs) .....	0.18
Peak Lateral Inflow (cfs) .....	0.18
Peak Outflow (cfs) .....	0
Peak Exfiltration Flow Rate (cfm) .....	2.16
Max HGL Elevation Attained (ft) .....	116.53
Max HGL Depth Attained (ft) .....	0.53
Average HGL Elevation Attained (ft) .....	116.1
Average HGL Depth Attained (ft) .....	0.1
Time of Max HGL Occurrence (days hh:mm) .....	0 18:06
Total Exfiltration Volume (1000-ft <sup>3</sup> ) .....	2.786
Total Flooded Volume (ac-in) .....	0
Total Time Flooded (min) .....	0
Total Retention Time (sec) .....	0

Storage Node : Stor-04

Input Data

Invert Elevation (ft) .....	116.00
Max (Rim) Elevation (ft) .....	119.00
Max (Rim) Offset (ft) .....	3.00
Initial Water Elevation (ft) .....	116.00
Initial Water Depth (ft) .....	0.00
Ponded Area (ft²) .....	0.00
Evaporation Loss .....	0.00

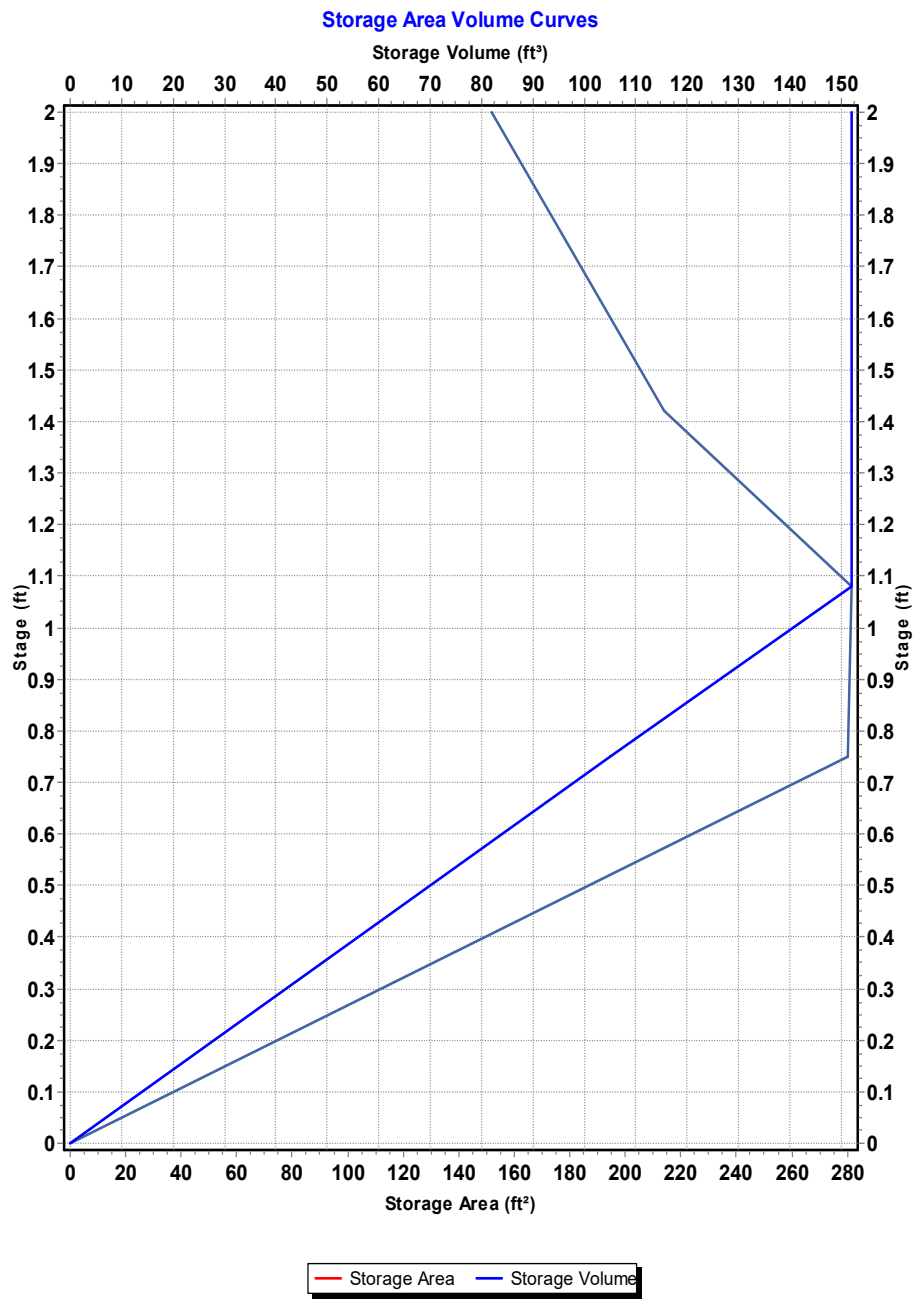
Infiltration/Exfiltration

Constant Flow Rate (cfs) .....	0.0027
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Storage Area Volume Curves

Storage Curve : Storage-04-06

Stage	Storage Area	Storage Volume
(ft)	(ft²)	(ft³)
0	0	0
0.75	280	105
1.08	281.48	152
1.42	214.08	152
2	152	152



**Storage Node : Stor-04 (continued)****Outflow Weirs**

SN ID	Element Type	Weir Gate	Flap Gate	Crest Elevation (ft)	Crest Offset (ft)	Length (ft)	Weir Total Height (ft)	Discharge Coefficient
1	Weir-04	Trapezoidal	No	118.00	2.00	15.00	1.00	3.33

**Outflow Orifices**

SN ID	Element Type	Orifice Shape	Flap Gate	Circular Orifice Diameter (in)	Rectangular Orifice Height (in)	Rectangular Orifice Width (in)	Orifice Invert Elevation (ft)	Orifice Coefficient
1	Orifice-04	Side	CIRCULAR	No	4.00		116.75	0.61

**Output Summary Results**

Peak Inflow (cfs) .....	0.01
Peak Lateral Inflow (cfs) .....	0.01
Peak Outflow (cfs) .....	0
Peak Exfiltration Flow Rate (cfm) .....	0.16
Max HGL Elevation Attained (ft) .....	116.26
Max HGL Depth Attained (ft) .....	0.26
Average HGL Elevation Attained (ft) .....	116.01
Average HGL Depth Attained (ft) .....	0.01
Time of Max HGL Occurrence (days hh:mm) .....	0 09:26
Total Exfiltration Volume (1000-ft <sup>3</sup> ) .....	0.066
Total Flooded Volume (ac-in) .....	0
Total Time Flooded (min) .....	0
Total Retention Time (sec) .....	0

Storage Node : Stor-05

Input Data

Invert Elevation (ft) .....	116.00
Max (Rim) Elevation (ft) .....	119.00
Max (Rim) Offset (ft) .....	3.00
Initial Water Elevation (ft) .....	116.00
Initial Water Depth (ft) .....	0.00
Ponded Area (ft²) .....	0.00
Evaporation Loss .....	0.00

Infiltration/Exfiltration

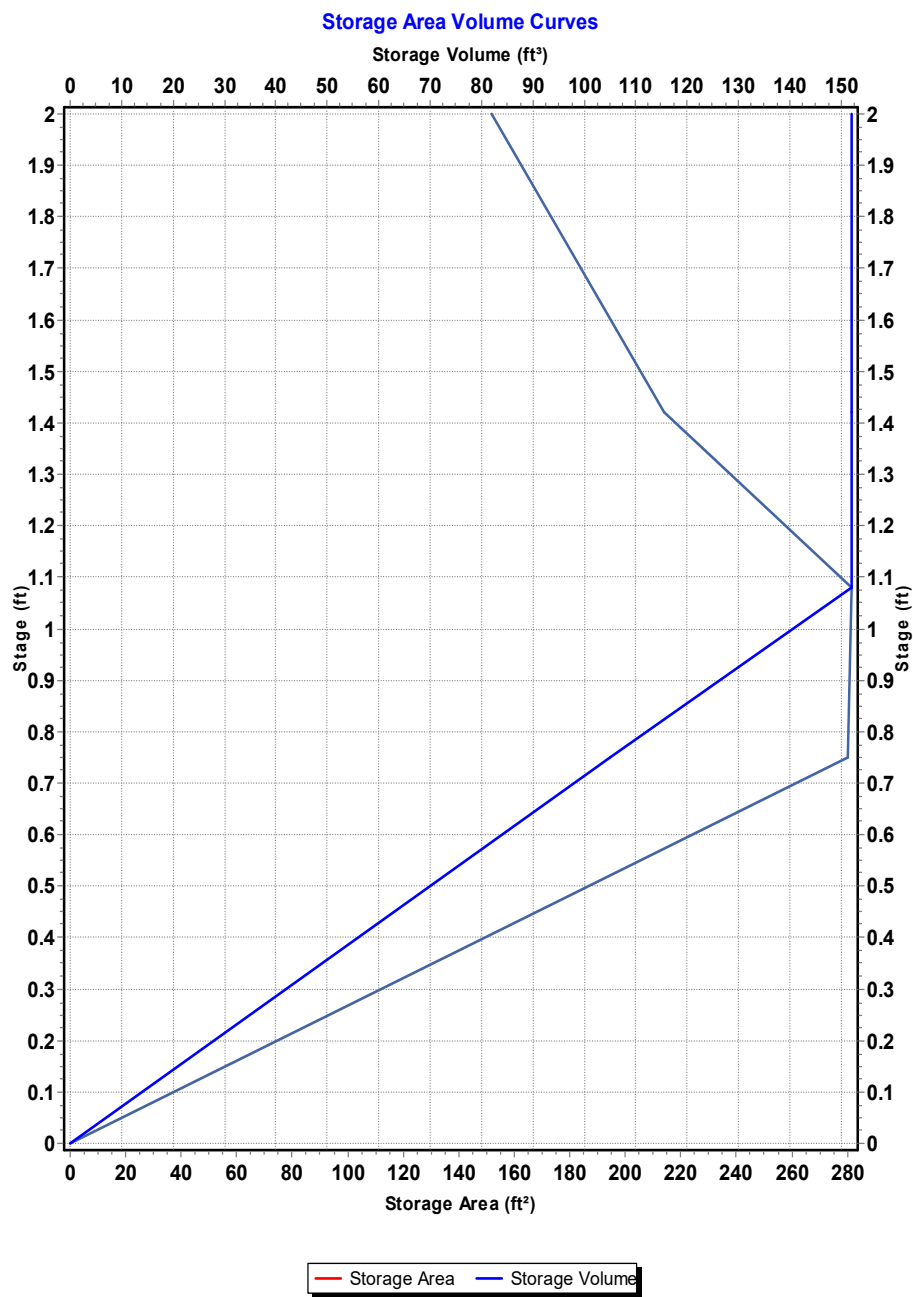
Constant Flow Rate (cfs) .....	0.0027
--------------------------------	--------

Storage Area Volume Curves

Storage Curve : Storage-04-06

Stage	Storage	Storage
(ft)	Area	Volume
	(ft²)	(ft³)
0	0	0
0.75	280	105
1.08	281.48	152
1.42	214.08	152
2	152	152





**Storage Node : Stor-05 (continued)****Outflow Weirs**

SN ID	Element Type	Weir Gate	Flap Gate	Crest Elevation (ft)	Crest Offset (ft)	Length (ft)	Weir Total Height (ft)	Discharge Coefficient
1	Weir-05	Trapezoidal	No	118.00	2.00	15.00	1.00	3.33

**Outflow Orifices**

SN ID	Element Type	Orifice Shape	Flap Gate	Circular Orifice Diameter (in)	Rectangular Orifice Height (in)	Rectangular Orifice Width (in)	Orifice Invert Elevation (ft)	Orifice Coefficient
1	Orifice-05	Side	CIRCULAR	No	4.00		116.75	0.61

**Output Summary Results**

Peak Inflow (cfs) .....	0.01
Peak Lateral Inflow (cfs) .....	0.01
Peak Outflow (cfs) .....	0
Peak Exfiltration Flow Rate (cfm) .....	0.16
Max HGL Elevation Attained (ft) .....	116.22
Max HGL Depth Attained (ft) .....	0.22
Average HGL Elevation Attained (ft) .....	116.01
Average HGL Depth Attained (ft) .....	0.01
Time of Max HGL Occurrence (days hh:mm) .....	0 09:11
Total Exfiltration Volume (1000-ft <sup>3</sup> ) .....	0.05
Total Flooded Volume (ac-in) .....	0
Total Time Flooded (min) .....	0
Total Retention Time (sec) .....	0

## ATTACHMENT 5

### References



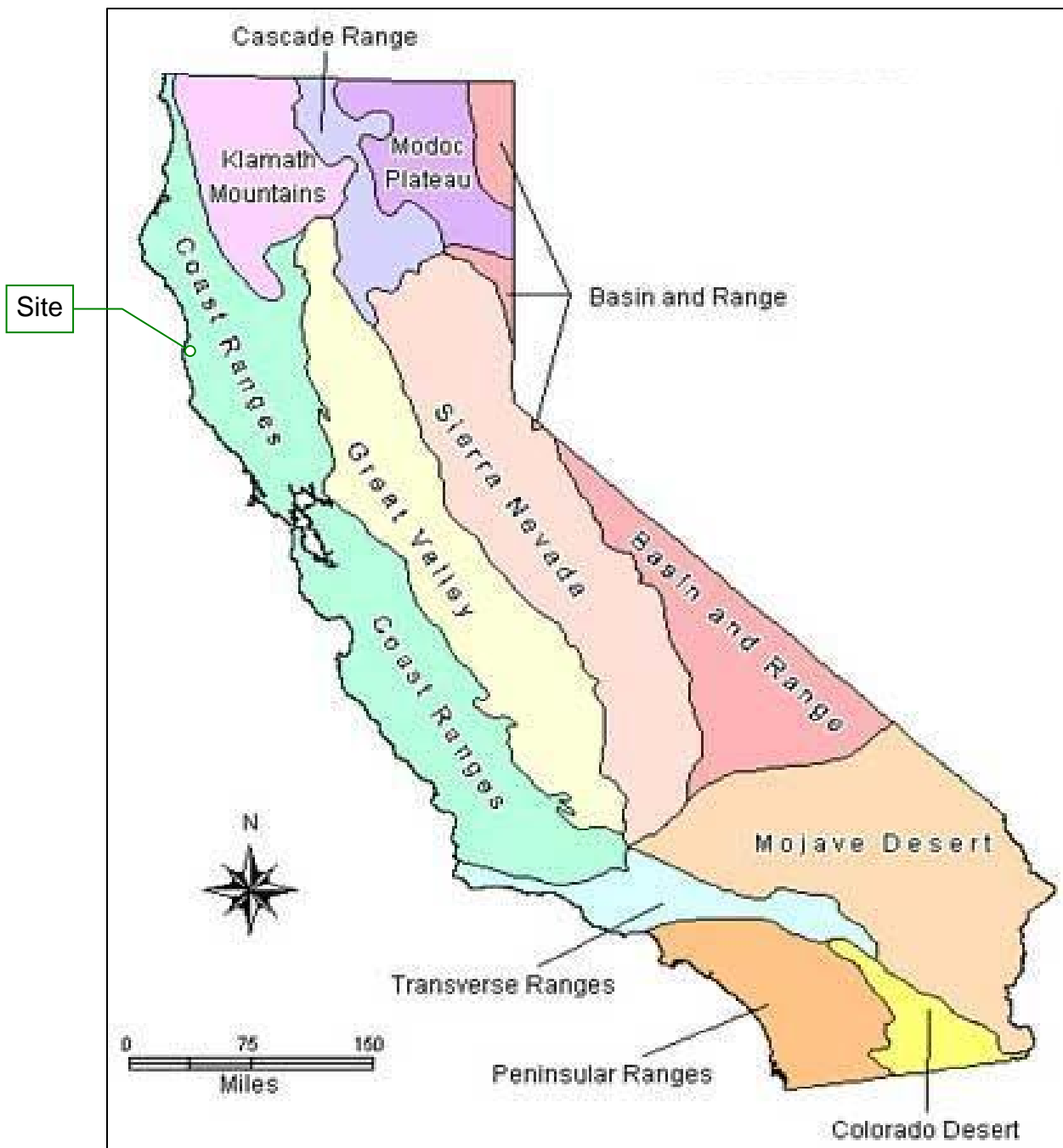
- 3) Historic sites, structures or landscapes that cannot alter their original configuration in order to maintain their historic integrity.

By the second year of the effective date of the permit, each Permittee shall adopt or reference appropriate performance criteria for such biotreatment and media filters.

- (iii) **Reporting** – The Permittee shall use State Water Board SMARTS to submit a summary of the past year activities and certify compliance with all requirements of this program element. The summary shall also address the relationship between the program element activities and the Permittee's Program Effectiveness Assessment and Improvement Plan that tracks annual and long-term effectiveness of the storm water program. If a Permittee is unable to certify compliance with a requirement in this program element see Section E.16.a. for compliance directions.

#### **E.12.f. Hydromodification Management**

- (i) **Task Description** – Within the third year of the effective date of the permit, the Permittee shall develop and implement Hydromodification Management procedures. Hydromodification management projects are Regulated Projects that create and/or replace one acre or more of impervious surface. A project that does not increase impervious surface area over the pre-project condition is not a hydromodification management project.
- (ii) **Implementation Level** - The Permittee shall implement the following Hydromodification Standard:
- (a) Post-project runoff shall not exceed estimated pre-project flow rate for the 2-year, 24-hour storm in the following geomorphic provinces (Figure 1):
- Coast Ranges
  - Klamath Mountains
  - Cascade Range
  - Modoc Plateau
  - Basin and Range
  - Sierra Nevada
  - Great Valley
- (b) Post-project runoff shall not exceed estimated pre-project flow rate for the 10-year, 24-hour storm in the following geomorphic provinces (Figure 1):
- Transverse Ranges
  - Peninsular Ranges
  - Mojave Desert
  - Colorado Desert



**Figure 1 — California Geomorphic Provinces**

Alternatively, the Permittee may use a geomorphically based hydromodification standard or set of standards and analysis procedures designed to ensure that Regulated Projects do not cause a decrease in lateral (bank) and vertical (channel bed) stability in receiving stream channels. The alternative hydromodification standard or set of standards and analysis procedures must be reviewed and approved by the Regional Board Executive Officer.

- (iii) **Reporting** –The Permittee shall use State Water Board SMARTS to submit a summary of the past year activities and certify compliance with all requirements of this program element. The summary shall also address the relationship between the program element activities and the Permittee's Program Effectiveness Assessment and Improvement Plan that tracks annual and long- term effectiveness of the storm water program. If a Permittee is unable to certify compliance with a requirement in this program element see Section E.16.a.for compliance directions.

**E.12.g. Enforceable Mechanisms**

- (i) **Task Description** - Within the third year of the effective date of the permit, the Permittee shall develop and/or modify enforceable mechanisms that will effectively implement the requirements in Section E.12.b through f (if necessary).
- (ii) **Implementation Level** - The Permittee shall develop and/or modify enforceable mechanisms that will effectively implement the requirements in Section E.12.b through E.12.f and may include municipal codes, regulations, standards, and specifications. The Permittee shall:
  - (a) Conduct an analysis of all applicable codes, regulations, standards, and/or specifications to identify modifications and/or additions necessary to fill gaps and remove impediments to effective implementation of project-scale development requirements.
  - (b) Approve new and/or modified enforceable mechanisms that effectively resolve regulatory conflicts and implement the requirements in Sections E.12.b through E.12.f (if necessary)
  - (c) Apply new and/or modified enforceable mechanisms to all applicable new and redevelopment projects. Develop and make available specific guidance for LID BMP design
  - (d) Complete a Tracking Report indicating the Permittee's accomplishments in education and outreach supporting implementation of LID requirements for new and redevelopment projects.

**E.12.h. Operation and Maintenance of Post-Construction Storm Water Management Measures**

- (i) **Task Description** –Within the second year of the effective date of the permit, the Permittee shall implement an O&M Verification Program for storm water treatment and baseline hydromodification management structural control measures defined in Section E.12.e(ii)(f). Storm Water Treatment Measures and Baseline Hydromodification Management Measures on all Regulated Projects.
- (ii) **Implementation Level** – At a minimum, the O&M Verification Program shall include the following elements:
  - (a) All Regulated Projects shall at a minimum, require at least one of the following from all project proponents and their successors in control of the Project or successors in fee title:
    - 1) The project proponent's signed statement accepting responsibility for the O&M of structural control measure(s) until such responsibility is legally transferred to another entity;



**NOAA Atlas 14, Volume 6, Version 2**  
**Location name: Fort Bragg, California, USA\***  
**Latitude: 39.4283°, Longitude: -123.8017°**  
**Elevation: 118 ft\*\***

\* source: ESRI Maps

\*\* source: USGS



**POINT PRECIPITATION FREQUENCY ESTIMATES**

Sanja Perica, Sarah Dietz, Sarah Heim, Lillian Hiner, Kazungu Maitaria, Deborah Martin, Sandra Pavlovic, Ishani Roy, Carl Trypaluk, Dale Unruh, Fenglin Yan, Michael Yekta, Tan Zhao, Geoffrey Bonnin, Daniel Brewer, Li-Chuan Chen, Tye Parzybok, John Yarchoan

NOAA, National Weather Service, Silver Spring, Maryland

[PF tabular](#) | [PF graphical](#) | [Maps & aerals](#)

**PF tabular**

<b>PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)<sup>1</sup></b>										
<b>Duration</b>	<b>Average recurrence interval (years)</b>									
	<b>1</b>	<b>2</b>	<b>5</b>	<b>10</b>	<b>25</b>	<b>50</b>	<b>100</b>	<b>200</b>	<b>500</b>	<b>1000</b>
<b>5-min</b>	<b>0.131</b> (0.116-0.150)	<b>0.193</b> (0.171-0.220)	<b>0.269</b> (0.237-0.309)	<b>0.328</b> (0.287-0.380)	<b>0.405</b> (0.339-0.488)	<b>0.460</b> (0.376-0.569)	<b>0.515</b> (0.408-0.655)	<b>0.568</b> (0.436-0.748)	<b>0.637</b> (0.465-0.881)	<b>0.688</b> (0.482-0.991)
<b>10-min</b>	<b>0.188</b> (0.167-0.215)	<b>0.277</b> (0.245-0.316)	<b>0.386</b> (0.340-0.442)	<b>0.471</b> (0.411-0.545)	<b>0.580</b> (0.486-0.699)	<b>0.660</b> (0.539-0.816)	<b>0.738</b> (0.585-0.939)	<b>0.814</b> (0.625-1.07)	<b>0.913</b> (0.667-1.26)	<b>0.986</b> (0.691-1.42)
<b>15-min</b>	<b>0.228</b> (0.202-0.260)	<b>0.335</b> (0.296-0.382)	<b>0.467</b> (0.412-0.535)	<b>0.569</b> (0.497-0.659)	<b>0.702</b> (0.588-0.846)	<b>0.798</b> (0.652-0.987)	<b>0.892</b> (0.708-1.14)	<b>0.985</b> (0.755-1.30)	<b>1.10</b> (0.806-1.53)	<b>1.19</b> (0.835-1.72)
<b>30-min</b>	<b>0.312</b> (0.277-0.356)	<b>0.459</b> (0.406-0.524)	<b>0.640</b> (0.564-0.733)	<b>0.781</b> (0.681-0.904)	<b>0.962</b> (0.806-1.16)	<b>1.09</b> (0.894-1.35)	<b>1.22</b> (0.970-1.56)	<b>1.35</b> (1.04-1.78)	<b>1.51</b> (1.10-2.10)	<b>1.63</b> (1.14-2.36)
<b>60-min</b>	<b>0.440</b> (0.390-0.502)	<b>0.646</b> (0.571-0.738)	<b>0.901</b> (0.795-1.03)	<b>1.10</b> (0.959-1.27)	<b>1.36</b> (1.14-1.63)	<b>1.54</b> (1.26-1.90)	<b>1.72</b> (1.37-2.19)	<b>1.90</b> (1.46-2.50)	<b>2.13</b> (1.56-2.95)	<b>2.30</b> (1.61-3.32)
<b>2-hr</b>	<b>0.668</b> (0.591-0.761)	<b>0.893</b> (0.790-1.02)	<b>1.18</b> (1.04-1.36)	<b>1.42</b> (1.24-1.64)	<b>1.72</b> (1.44-2.08)	<b>1.96</b> (1.60-2.42)	<b>2.19</b> (1.74-2.79)	<b>2.43</b> (1.86-3.20)	<b>2.74</b> (2.00-3.79)	<b>2.98</b> (2.09-4.29)
<b>3-hr</b>	<b>0.861</b> (0.763-0.982)	<b>1.12</b> (0.987-1.27)	<b>1.45</b> (1.27-1.66)	<b>1.71</b> (1.49-1.98)	<b>2.07</b> (1.74-2.50)	<b>2.34</b> (1.92-2.90)	<b>2.62</b> (2.08-3.34)	<b>2.90</b> (2.23-3.82)	<b>3.28</b> (2.39-4.54)	<b>3.57</b> (2.50-5.14)
<b>6-hr</b>	<b>1.27</b> (1.12-1.45)	<b>1.59</b> (1.41-1.82)	<b>2.01</b> (1.78-2.31)	<b>2.35</b> (2.05-2.72)	<b>2.81</b> (2.36-3.39)	<b>3.16</b> (2.58-3.90)	<b>3.51</b> (2.78-4.47)	<b>3.87</b> (2.97-5.09)	<b>4.35</b> (3.17-6.01)	<b>4.71</b> (3.30-6.79)
<b>12-hr</b>	<b>1.80</b> (1.60-2.06)	<b>2.32</b> (2.05-2.65)	<b>2.96</b> (2.61-3.39)	<b>3.45</b> (3.02-4.00)	<b>4.10</b> (3.43-4.94)	<b>4.57</b> (3.73-5.64)	<b>5.02</b> (3.98-6.40)	<b>5.47</b> (4.20-7.21)	<b>6.05</b> (4.42-8.38)	<b>6.48</b> (4.54-9.34)
<b>24-hr</b>	<b>2.49</b> (2.24-2.83)	<b>3.29</b> (2.95-3.74)	<b>4.26</b> (3.81-4.85)	<b>4.99</b> (4.43-5.73)	<b>5.90</b> (5.08-7.00)	<b>6.56</b> (5.53-7.94)	<b>7.18</b> (5.91-8.90)	<b>7.78</b> (6.23-9.90)	<b>8.53</b> (6.57-11.3)	<b>9.07</b> (6.76-12.4)
<b>2-day</b>	<b>3.28</b> (2.95-3.73)	<b>4.21</b> (3.78-4.78)	<b>5.34</b> (4.78-6.09)	<b>6.22</b> (5.52-7.14)	<b>7.33</b> (6.31-8.70)	<b>8.13</b> (6.86-9.84)	<b>8.91</b> (7.34-11.0)	<b>9.66</b> (7.75-12.3)	<b>10.6</b> (8.18-14.1)	<b>11.3</b> (8.43-15.5)
<b>3-day</b>	<b>3.87</b> (3.48-4.39)	<b>4.87</b> (4.37-5.54)	<b>6.13</b> (5.48-6.98)	<b>7.10</b> (6.31-8.16)	<b>8.36</b> (7.19-9.91)	<b>9.28</b> (7.82-11.2)	<b>10.2</b> (8.37-12.6)	<b>11.0</b> (8.86-14.1)	<b>12.2</b> (9.38-16.1)	<b>13.0</b> (9.69-17.8)
<b>4-day</b>	<b>4.38</b> (3.93-4.97)	<b>5.47</b> (4.91-6.22)	<b>6.84</b> (6.13-7.80)	<b>7.92</b> (7.03-9.09)	<b>9.30</b> (8.00-11.0)	<b>10.3</b> (8.70-12.5)	<b>11.3</b> (9.32-14.0)	<b>12.3</b> (9.87-15.7)	<b>13.6</b> (10.5-18.0)	<b>14.5</b> (10.8-19.9)
<b>7-day</b>	<b>5.54</b> (4.98-6.29)	<b>6.90</b> (6.19-7.84)	<b>8.60</b> (7.70-9.81)	<b>9.94</b> (8.83-11.4)	<b>11.7</b> (10.0-13.8)	<b>12.9</b> (10.9-15.6)	<b>14.2</b> (11.7-17.5)	<b>15.4</b> (12.3-19.6)	<b>16.9</b> (13.1-22.5)	<b>18.1</b> (13.5-24.8)
<b>10-day</b>	<b>6.41</b> (5.76-7.28)	<b>8.00</b> (7.18-9.10)	<b>10.0</b> (8.95-11.4)	<b>11.5</b> (10.3-13.3)	<b>13.5</b> (11.7-16.1)	<b>15.0</b> (12.6-18.2)	<b>16.4</b> (13.5-20.3)	<b>17.8</b> (14.3-22.7)	<b>19.6</b> (15.1-26.0)	<b>20.9</b> (15.6-28.6)
<b>20-day</b>	<b>8.75</b> (7.86-9.93)	<b>11.0</b> (9.90-12.5)	<b>13.8</b> (12.4-15.8)	<b>16.0</b> (14.2-18.4)	<b>18.8</b> (16.1-22.3)	<b>20.8</b> (17.5-25.1)	<b>22.7</b> (18.7-28.1)	<b>24.5</b> (19.7-31.2)	<b>26.9</b> (20.7-35.6)	<b>28.6</b> (21.3-39.2)
<b>30-day</b>	<b>10.8</b> (9.67-12.2)	<b>13.7</b> (12.3-15.5)	<b>17.2</b> (15.4-19.6)	<b>19.9</b> (17.7-22.8)	<b>23.3</b> (20.0-27.6)	<b>25.7</b> (21.7-31.1)	<b>28.0</b> (23.1-34.7)	<b>30.3</b> (24.3-38.5)	<b>33.1</b> (25.5-43.8)	<b>35.1</b> (26.1-48.1)
<b>45-day</b>	<b>13.5</b> (12.1-15.3)	<b>17.2</b> (15.4-19.6)	<b>21.7</b> (19.4-24.8)	<b>25.1</b> (22.3-28.9)	<b>29.4</b> (25.3-34.8)	<b>32.4</b> (27.3-39.2)	<b>35.2</b> (29.0-43.6)	<b>37.9</b> (30.4-48.3)	<b>41.3</b> (31.8-54.7)	<b>43.6</b> (32.5-59.8)
<b>60-day</b>	<b>16.0</b> (14.3-18.1)	<b>20.4</b> (18.4-23.2)	<b>25.8</b> (23.1-29.4)	<b>29.8</b> (26.5-34.3)	<b>34.8</b> (29.9-41.3)	<b>38.3</b> (32.3-46.3)	<b>41.6</b> (34.2-51.5)	<b>44.7</b> (35.8-56.9)	<b>48.5</b> (37.3-64.2)	<b>51.1</b> (38.1-70.1)

<sup>1</sup> Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).  
 Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.  
 Please refer to NOAA Atlas 14 document for more information.

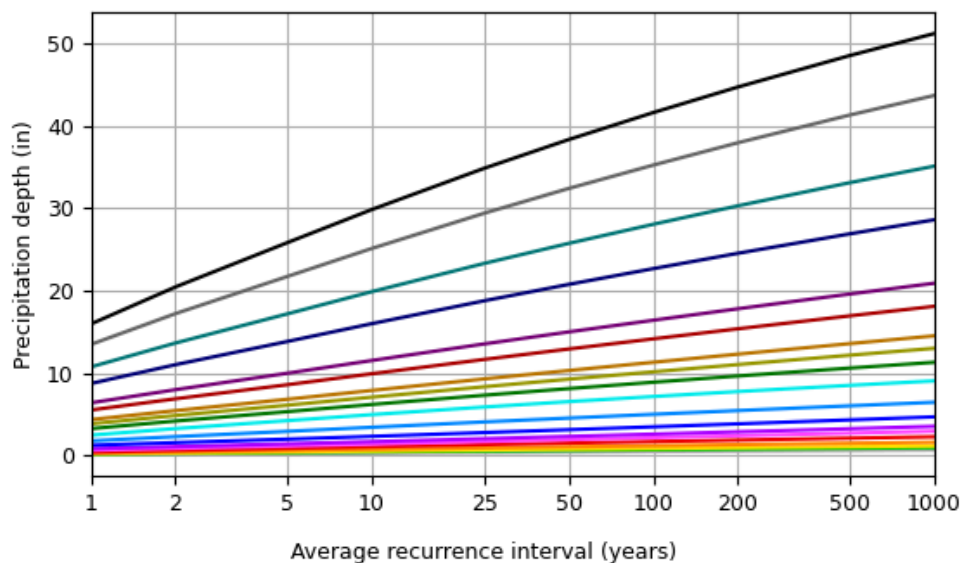
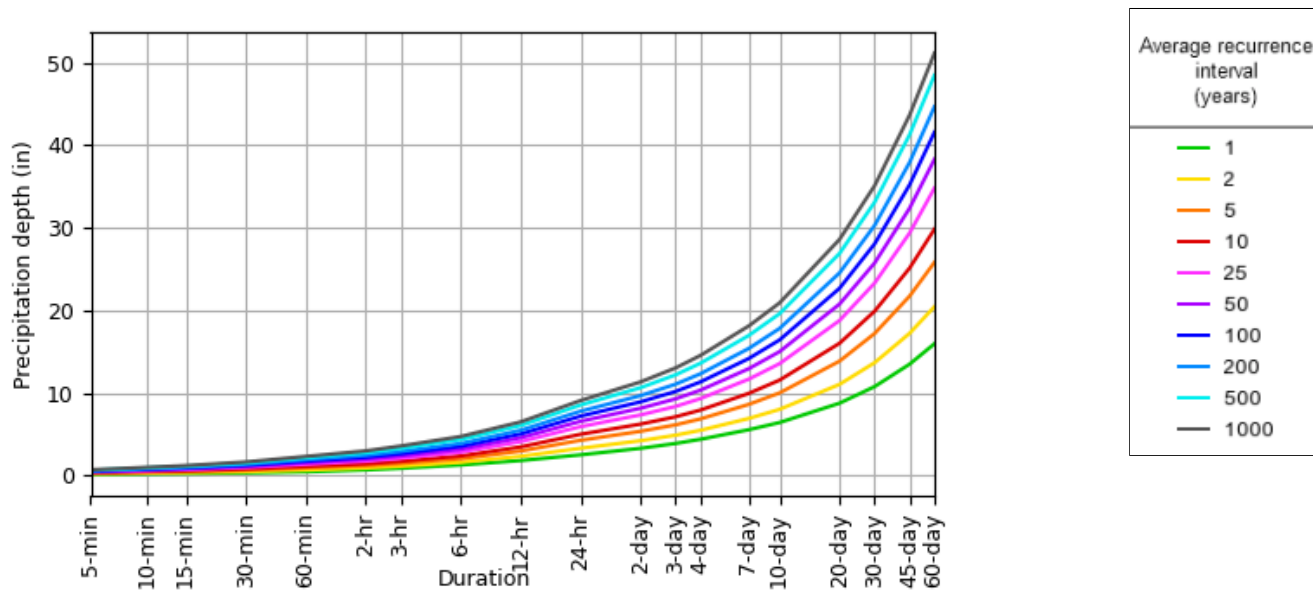
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**PF graphical**



## PDS-based depth-duration-frequency (DDF) curves

Latitude: 39.4283°, Longitude: -123.8017°



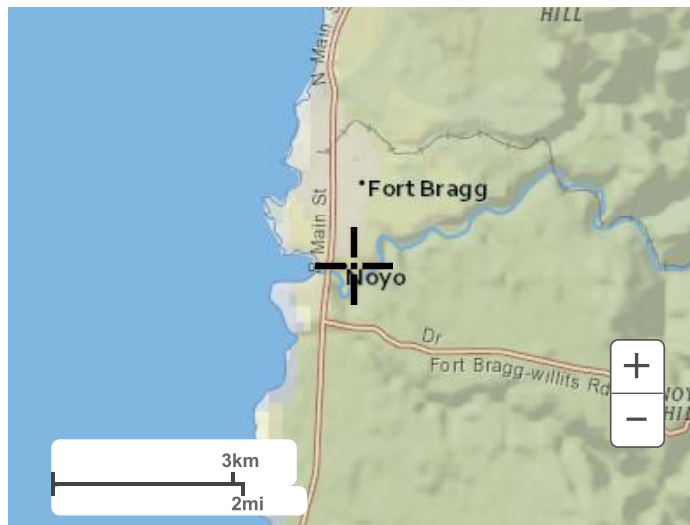
NOAA Atlas 14, Volume 6, Version 2

Created (GMT): Tue Dec 17 00:16:46 2024

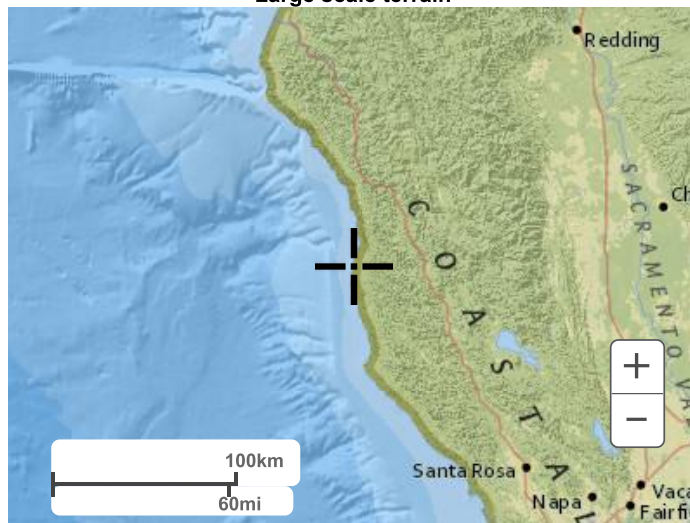
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## Maps &amp; aerials

Small scale terrain



Large scale terrain

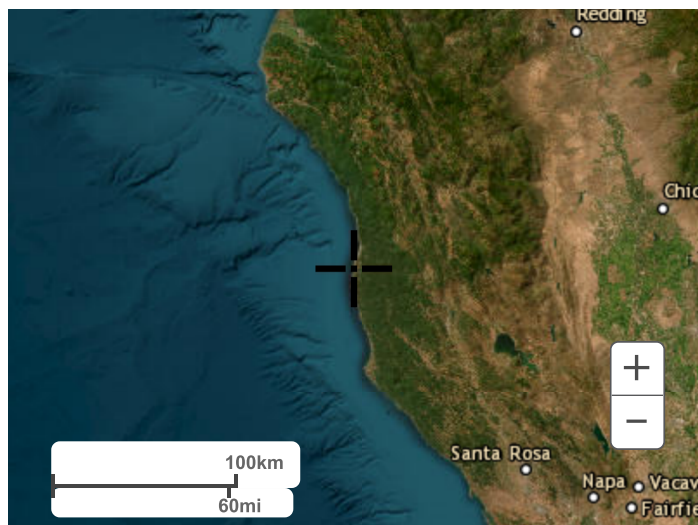


Large scale map



Large scale aerial





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[US Department of Commerce](#)  
[National Oceanic and Atmospheric Administration](#)  
[National Weather Service](#)  
[National Water Center](#)  
1325 East West Highway  
Silver Spring, MD 20910  
Questions?: [HDSC.Questions@noaa.gov](mailto:HDSC.Questions@noaa.gov)

[Disclaimer](#)

**Table 2-2a** Runoff curve numbers for urban areas <sup>1/</sup>

Cover description		Curve numbers for hydrologic soil group			
Cover type and hydrologic condition	Average percent impervious area <sup>2/</sup>	A	B	C	D
<b>Fully developed urban areas (vegetation established)</b>					
Open space (lawns, parks, golf courses, cemeteries, etc.) <sup>3/</sup> :					
Poor condition (grass cover < 50%) .....		68	79	86	89
Fair condition (grass cover 50% to 75%) .....		49	69	79	84
Good condition (grass cover > 75%) .....		39	61	74	80
Impervious areas:					
Paved parking lots, roofs, driveways, etc. (excluding right-of-way) .....		98	98	98	98
Streets and roads:					
Paved; curbs and storm sewers (excluding right-of-way) .....		98	98	98	98
Paved; open ditches (including right-of-way) .....		83	89	92	93
Gravel (including right-of-way) .....		76	85	89	91
Dirt (including right-of-way) .....		72	82	87	89
Western desert urban areas:					
Natural desert landscaping (pervious areas only) <sup>4/</sup> .....		63	77	85	88
Artificial desert landscaping (impervious weed barrier, desert shrub with 1- to 2-inch sand or gravel mulch and basin borders) .....		96	96	96	96
Urban districts:					
Commercial and business .....	85	89	92	94	95
Industrial .....	72	81	88	91	93
Residential districts by average lot size:					
1/8 acre or less (town houses) .....	65	77	85	90	92
1/4 acre .....	38	61	75	83	87
1/3 acre .....	30	57	72	81	86
1/2 acre .....	25	54	70	80	85
1 acre .....	20	51	68	79	84
2 acres .....	12	46	65	77	82
<b>Developing urban areas</b>					
Newly graded areas					
(pervious areas only, no vegetation) <sup>5/</sup> .....		77	86	91	94
Idle lands (CN's are determined using cover types similar to those in table 2-2c).					

<sup>1</sup> Average runoff condition, and  $I_a = 0.2S$ .<sup>2</sup> The average percent impervious area shown was used to develop the composite CN's. Other assumptions are as follows: impervious areas are directly connected to the drainage system, impervious areas have a CN of 98, and pervious areas are considered equivalent to open space in good hydrologic condition. CN's for other combinations of conditions may be computed using figure 2-3 or 2-4.<sup>3</sup> CN's shown are equivalent to those of pasture. Composite CN's may be computed for other combinations of open space cover type.<sup>4</sup> Composite CN's for natural desert landscaping should be computed using figures 2-3 or 2-4 based on the impervious area percentage (CN = 98) and the pervious area CN. The pervious area CN's are assumed equivalent to desert shrub in poor hydrologic condition.<sup>5</sup> Composite CN's to use for the design of temporary measures during grading and construction should be computed using figure 2-3 or 2-4 based on the degree of development (impervious area percentage) and the CN's for the newly graded pervious areas.



**Table 2-2b** Runoff curve numbers for cultivated agricultural lands <sup>1/</sup>

Cover description			Curve numbers for hydrologic soil group			
Cover type	Treatment <sup>2/</sup>	Hydrologic condition <sup>3/</sup>	A	B	C	D
Fallow	Bare soil	—	77	86	91	94
	Crop residue cover (CR)	Poor	76	85	90	93
		Good	74	83	88	90
Row crops	Straight row (SR)	Poor	72	81	88	91
		Good	67	78	85	89
	SR + CR	Poor	71	80	87	90
		Good	64	75	82	85
	Contoured (C)	Poor	70	79	84	88
		Good	65	75	82	86
	C + CR	Poor	69	78	83	87
		Good	64	74	81	85
	Contoured & terraced (C&T)	Poor	66	74	80	82
		Good	62	71	78	81
Small grain	SR	Poor	65	76	84	88
		Good	63	75	83	87
	SR + CR	Poor	64	75	83	86
		Good	60	72	80	84
	C	Poor	63	74	82	85
		Good	61	73	81	84
	C + CR	Poor	62	73	81	84
		Good	60	72	80	83
	C&T	Poor	61	72	79	82
		Good	59	70	78	81
Close-seeded or broadcast legumes or rotation meadow	SR	Poor	66	77	85	89
		Good	58	72	81	85
	C	Poor	64	75	83	85
		Good	55	69	78	83
	C&T	Poor	63	73	80	83
		Good	51	67	76	80

<sup>1</sup> Average runoff condition, and  $I_a=0.2S$ <sup>2</sup> Crop residue cover applies only if residue is on at least 5% of the surface throughout the year.<sup>3</sup> Hydraulic condition is based on combination factors that affect infiltration and runoff, including (a) density and canopy of vegetative areas, (b) amount of year-round cover, (c) amount of grass or close-seeded legumes, (d) percent of residue cover on the land surface (good  $\geq 20\%$ ), and (e) degree of surface roughness.

Poor: Factors impair infiltration and tend to increase runoff.

Good: Factors encourage average and better than average infiltration and tend to decrease runoff.

**Table 2-2c** Runoff curve numbers for other agricultural lands <sup>1/</sup>

Cover description		Curve numbers for hydrologic soil group			
Cover type	Hydrologic condition	A	B	C	D
Pasture, grassland, or range—continuous forage for grazing. <sup>2/</sup>	Poor	68	79	86	89
	Fair	49	69	79	84
	Good	39	61	74	80
Meadow—continuous grass, protected from grazing and generally mowed for hay.	—	30	58	71	78
Brush—brush-weed-grass mixture with brush the major element. <sup>3/</sup>	Poor	48	67	77	83
	Fair	35	56	70	77
	Good	30 <sup>4/</sup>	48	65	73
Woods—grass combination (orchard or tree farm). <sup>5/</sup>	Poor	57	73	82	86
	Fair	43	65	76	82
	Good	32	58	72	79
Woods. <sup>6/</sup>	Poor	45	66	77	83
	Fair	36	60	73	79
	Good	30 <sup>4/</sup>	55	70	77
Farmsteads—buildings, lanes, driveways, and surrounding lots.	—	59	74	82	86

<sup>1</sup> Average runoff condition, and  $I_a = 0.2S$ .<sup>2</sup> **Poor:** <50% ground cover or heavily grazed with no mulch.**Fair:** 50 to 75% ground cover and not heavily grazed.**Good:** > 75% ground cover and lightly or only occasionally grazed.<sup>3</sup> **Poor:** <50% ground cover.**Fair:** 50 to 75% ground cover.**Good:** >75% ground cover.<sup>4</sup> Actual curve number is less than 30; use CN = 30 for runoff computations.<sup>5</sup> CN's shown were computed for areas with 50% woods and 50% grass (pasture) cover. Other combinations of conditions may be computed from the CN's for woods and pasture.<sup>6</sup> **Poor:** Forest litter, small trees, and brush are destroyed by heavy grazing or regular burning.**Fair:** Woods are grazed but not burned, and some forest litter covers the soil.**Good:** Woods are protected from grazing, and litter and brush adequately cover the soil.



The highest peak discharges from small watersheds in the United States are usually caused by intense, brief rainfalls that may occur as distinct events or as part of a longer storm. These intense rainstorms do not usually extended over a large area and intensities vary greatly. One common practice in rainfall-runoff analysis is to develop a synthetic rainfall distribution to use in lieu of actual storm events. This distribution includes maximum rainfall intensities for the selected design frequency arranged in a sequence that is critical for producing peak runoff.

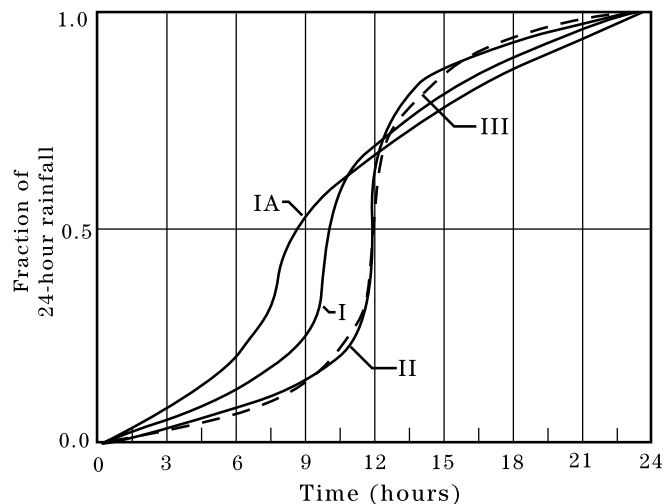
### Synthetic rainfall distributions

The length of the most intense rainfall period contributing to the peak runoff rate is related to the time of concentration ( $T_c$ ) for the watershed. In a hydrograph created with NRCS procedures, the duration of rainfall that directly contributes to the peak is about 170 percent of the  $T_c$ . For example, the most intense 8.5-minute rainfall period would contribute to the peak discharge for a watershed with a  $T_c$  of 5 minutes. The most intense 8.5-hour period would contribute to the peak for a watershed with a 5-hour  $T_c$ .

Different rainfall distributions can be developed for each of these watersheds to emphasize the critical rainfall duration for the peak discharges. However, to avoid the use of a different set of rainfall intensities for each drainage area size, a set of synthetic rainfall distributions having “nested” rainfall intensities was developed. The set “maximizes” the rainfall intensities by incorporating selected short duration intensities within those needed for longer durations at the same probability level.

For the size of the drainage areas for which NRCS usually provides assistance, a storm period of 24 hours was chosen the synthetic rainfall distributions. The 24-hour storm, while longer than that needed to determine peaks for these drainage areas, is appropriate for determining runoff volumes. Therefore, a single storm duration and associated synthetic rainfall distribution can be used to represent not only the peak discharges but also the runoff volumes for a range of drainage area sizes.

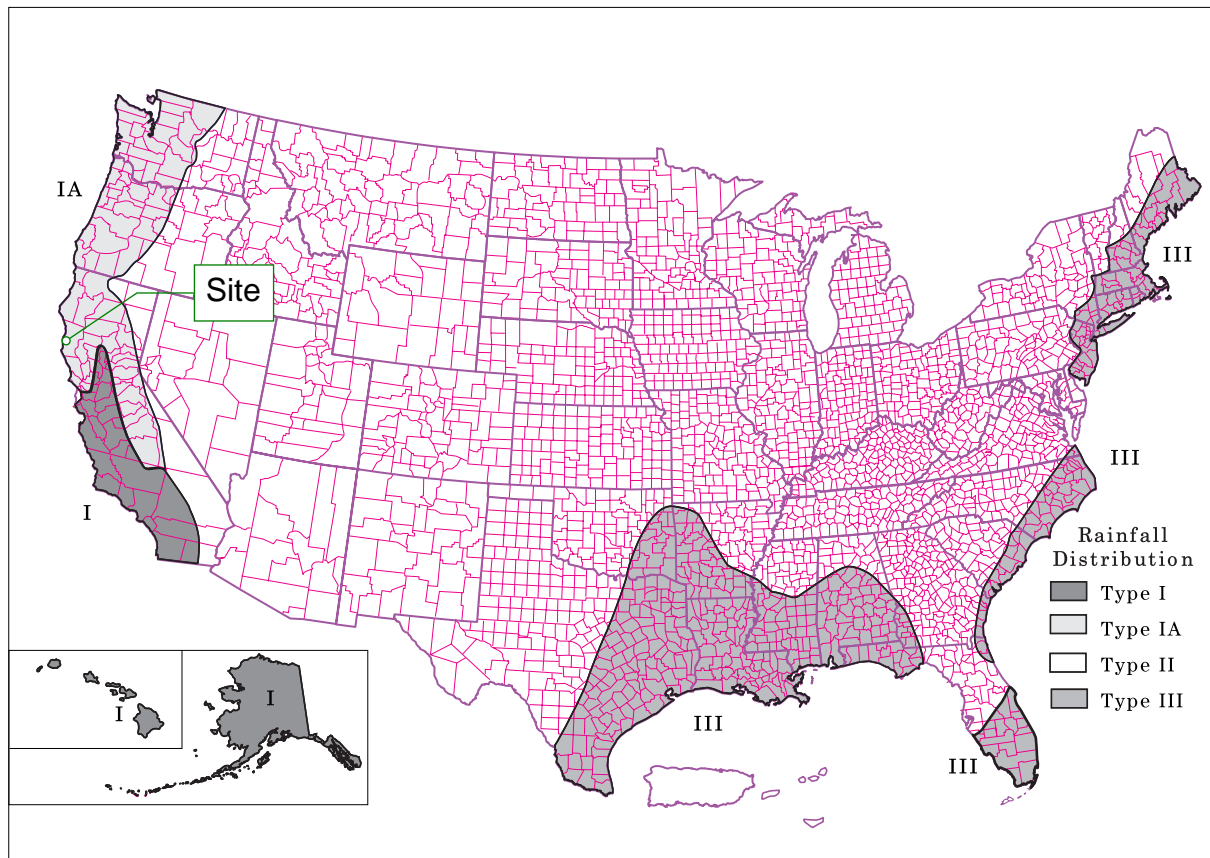
Figure B-1 SCS 24-hour rainfall distributions



The intensity of rainfall varies considerably during a storm as well as geographic regions. To represent various regions of the United States, NRCS developed four synthetic 24-hour rainfall distributions (I, IA, II, and III) from available National Weather Service (NWS) duration-frequency data (Hershfield 1061; Frederick et al., 1977) or local storm data. Type IA is the least intense and type II the most intense short duration rainfall. The four distributions are shown in figure B-1, and figure B-2 shows their approximate geographic boundaries.

Types I and IA represent the Pacific maritime climate with wet winters and dry summers. Type III represents Gulf of Mexico and Atlantic coastal areas where tropical storms bring large 24-hour rainfall amounts. Type II represents the rest of the country. For more precise distribution boundaries in a state having more than one type, contact the NRCS State Conservation Engineer.

**Figure B-2** Approximate geographic boundaries for NRCS (SCS) rainfall distributions



## Rainfall data sources

This section lists the most current 24-hour rainfall data published by the National Weather Service (NWS) for various parts of the country. Because NWS Technical Paper 40 (TP-40) is out of print, the 24-hour rainfall maps for areas east of the 105th meridian are included here as figures B-3 through B-8. For the area generally west of the 105th meridian, TP-40 has been superseded by NOAA Atlas 2, the Precipitation-Frequency Atlas of the Western United States, published by the National Ocean and Atmospheric Administration.

### East of 105th meridian

Hershfield, D.M. 1961. Rainfall frequency atlas of the United States for durations from 30 minutes to 24 hours and return periods from 1 to 100 years. U.S. Dept. Commerce, Weather Bur. Tech. Pap. No. 40. Washington, DC. 155 p.

### West of 105th meridian

Miller, J.F., R.H. Frederick, and R.J. Tracey. 1973. Precipitation-frequency atlas of the Western United States. Vol. I Montana; Vol. II, Wyoming; Vol. III, Colorado; Vol. IV, New Mexico; Vol. V, Idaho; Vol. VI, Utah; Vol. VII, Nevada; Vol. VIII, Arizona; Vol. IX, Washington; Vol. X, Oregon; Vol. XI, California. U.S. Dept. of

Commerce, National Weather Service, NOAA Atlas 2. Silver Spring, MD.

### Alaska

Miller, John F. 1963. Probable maximum precipitation and rainfall-frequency data for Alaska for areas to 400 square miles, durations to 24 hours and return periods from 1 to 100 years. U.S. Dept. of Commerce, Weather Bur. Tech. Pap. No. 47. Washington, DC. 69 p.

### Hawaii

Weather Bureau. 1962. Rainfall-frequency atlas of the Hawaiian Islands for areas to 200 square miles, durations to 24 hours and return periods from 1 to 100 years. U.S. Dept. Commerce, Weather Bur. Tech. Pap. No. 43. Washington, DC. 60 p.

### Puerto Rico and Virgin Islands

Weather Bureau. 1961. Generalized estimates of probable maximum precipitation and rainfall-frequency data for Puerto Rico and Virgin Islands for areas to 400 square miles, durations to 24 hours, and return periods from 1 to 100 years. U.S. Dept. Commerce, Weather Bur. Tech. Pap. No. 42. Washington, DC. 94 P.

## ATTACHMENT 6

# Geotechnical Report







<b>Services</b>	Geotechnical Engineering Study
<b>Project</b>	Proposed 3-Story Apartment Building
<b>Location</b>	Fort Bragg, California
<b>Client</b>	Pacific West Communities, Inc.
<b>Project No.</b>	05-24059G
<b>Date</b>	September 19, 2024





A Report Prepared for:

**PACIFIC WEST COMMUNITIES, INC.**

**ATTN: MR. DON SLATTERY**

430 EAST STATE STREET, SUITE 100

EAGLE, IDAHO 83616

**GEOTECHNICAL ENGINEERING STUDY  
PROPOSED 3-STORY APARTMENT BUILDING  
860 HAZELWOOD STREET  
FORT BRAGG, CALIFORNIA**

Prepared by:

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September 19, 2024

Allerion Project No. 05-24059G



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## **INTRODUCTION**

### **PURPOSE AND SCOPE OF STUDY**

Allerion Consulting Group, Inc. (ACG) prepared this Geotechnical Engineering Study for the proposed improvements to be designed and constructed on the above referenced subject site (refer to the Location Plan, Figure 1, Appendix A). The purpose of the study is to evaluate the general conditions of the earth materials at the site to provide conclusions and recommendations related to the geotechnical and geological aspects of the project as discussed in ACG's proposal/agreement of August 7, 2024, and client's acceptance agreement of August 20, 2024, executed August 20, 2024.

The scope of our work included a site reconnaissance, review of client provided documents and readily available published documents (including aerial images, topographic maps, and nearby groundwater levels), obtaining drilling permit, exploring and sampling the general subsurface earth and groundwater conditions, performing percolation testing, performing soil mechanics laboratory tests, assessing potential for geological and seismic hazards (including liquefaction and expansive soil conditions), performing geotechnical analysis, and making recommendations for earthworks, foundation design criteria, lateral resistance, floor slab-on-grade support, exterior flatwork, and on-site asphaltic-concrete and concrete pavements.

The attached Appendices contain further information including graphic presentations (Site Vicinity Map and Map of Explorations - Appendix A); field exploration procedures and logs of subsurface explorations (Appendix B); laboratory testing, and procedures used (Appendix C); Guide Specifications for Earthwork (Appendix D); and SEAOC/OSHPD U.S. Seismic Design Maps (Appendix E).

### **PROJECT LOCATION**

ACG understands the project is proposed on an approximately 2.83 acres and consists of one parcel identified as Mendocino County Assessor's Parcel Number 018-210-29-00. The subject site is located at 860 Hazelwood Street in Fort Bragg, California. The site is bounded by Hazelwood Street to the west, beyond which are residential properties; residential development to the north; Mendocino Coast

Recreation and Park District to the south, beyond which are residential properties; and residential property with mostly vacant land to the east, beyond which is Noyo River to the southeast.

### **PROPOSED PROJECT INFORMATION**

In preparing this report we reviewed a preliminary site plan provided by the client (untitled and undated) and historic Google Earth aerial images related to the subject site. Based on the referenced preliminary site plan and information provided by the client, the proposed project consists of design/construction of one (1) 3-story apartment building. Additional improvements include paved driveways and parking spaces, a dog park, a community garden, a bocce ball court, an open space, and covered trash enclosures.

The site grading is anticipated to be in order of about 2 to 4 feet of fill based on the topography of the site, but the grading plans were not available for review at the time of this report preparation.

## **FINDINGS**

### **SITE HISTORICAL BACKGROUND**

The Google Earth aerial images dated back to June 1998 indicate the site was generally similar to that described below in the Site Description section.

### **SITE DESCRIPTION**

During ACG's exploration on September 3, 2024, the subject site in the northwestern portion of the property was occupied by an abandoned house and a nearby storage container. The northwestern portion was fenced with a gravel driveway providing access to the residence. The remainder of the site was vacant and covered with grasses and weeds, with some trees near the boundaries of the site and one tree near the center of the site.

The northern portion of the site at the proposed building location was relatively flat-lying with elevations that varied from approximately +117 to +120 feet above mean sea level (MSL) per Google Earth elevation profiles. The southern portion of the site was gently sloped down towards Noyo River to the southeast with elevations that varied from approximately +105 to +117 feet above MSL per Google Earth elevation profiles.



## **SITE GEOLOGY**

Based on our review of readily available published geologic literature/maps (California Geological Survey “Geologic map of California: Ukiah sheet”, 1960; 1:250,000) the site is mapped to be underlain by Quaternary Pleistocene marine and marine terrace deposits (Map Symbol: Qm). The total thickness of the formation was not determined and is beyond the scope of this study. ACG considers the native earth materials discovered in the explorations are consistent with the mapped earth materials.

## **EARTH MATERIAL CONDITIONS**

As shown on the Exploratory Logs (Appendix B), the subsurface earth material conditions exhibited variability. Generally, the uppermost soils consisted of loose to medium dense, moist, brown, Silty SAND (Unified Soil Classification: SM) to depths varying between approximately 5½ to 6 feet below existing ground surface (begs). Below the uppermost soils to depths varying between 25 to 26 feet begs, the earth materials consisted of interbedded layers of medium dense, moist, light brown to brown with rust staining, Silty SAND (SM)/ SAND with Silt (SP-SM)/ SAND (SP); and stiff, light gray with rust staining, Lean CLAY (CL). Below these layers was encountered dense to very dense, moist to wet, gray and light brown to red-brown with rust staining, Silty SAND (SM) to the maximum explored depth of about 30½ feet begs. Since the earth material profile is generalized, the reader is advised to consult the Boring and CPT Logs contained in Appendix B, if the earth material conditions at a specific depth and location are desired. The logs contain a more detailed earth material description regarding color, earth material type, and Unified Soil Classification System (USCS) symbol.

Earth material conditions cannot be fully determined by surface and subsurface explorations and earth material sampling. Hence, unexpected earth material conditions might be encountered during construction. If earth material conditions are encountered during construction which vary from earth materials encountered during the investigation, then appropriate recommendations will be needed during construction. Therefore, we suggest a contingency fund for additional expenditures that might have to be made due to unforeseen conditions.

## SOIL CORROSION SCREENING

A representative sample of the near surface soil was selected and transported to Sunland Analytical in Rancho Cordova, California, for testing soil corrosivity potential. The test methods for pH, minimum resistivity (CA DOT Test #643), sulfate content (CA DOT Test #417), and chloride content (CA DOT Test #422m) are shown in the following table.

TABLE 1. CORROSIVITY TEST RESULTS	
Sample ID / Depth: B-4/1 @ 2' – 3.5' begs	
Constituent	Test Result
Soil pH	5.43
Minimum Resistivity (ohm-cm)	11.26
Chloride Content (ppm)	6.2
Sulfate Content (ppm)	3.6

Notes: ohm-cm = Ohm centimeters  
 ppm = Parts per million

The California Department of Transportation Corrosion and Structural Concrete Field Investigation Branch, May 2021 Corrosion Guidelines (Version 3.2), considers a site to be corrosive to foundation elements if one or more of the following conditions exists for the representative soil and/or water samples taken: has a chloride concentration greater than or equal to 500 ppm, sulfate concentration greater than or equal to 2000 ppm, or the pH is 5.5 or less. Based on this criterion, the on-site soils tested are considered corrosive to reinforced concrete. The presence of high acidity (pH values less than 5.5) indicates the soil (or water) can react with the lime in concrete to form soluble reaction products that can leach out of the concrete, resulting in a more porous and weaker concrete.

Table 4.2.1 – *Exposure Categories and Classes*, American Concrete Institute (ACI) 318, Section 4.2, as referenced in Section 1904.1 of the 2022 CBC, indicates the severity of sulfate exposure for the sample tested is *Not Applicable*. The low pH (acidic) soil conditions suggest that Type II modified or Type V cement along with higher cement contents and a specific water-cement ratio (around 4.5) likely will be required for this project.

Allerion is not a corrosion engineering firm. We recommend a licensed Corrosion Engineer be consulted to evaluate the above test results, assess the soil corrosion potential, and design resistant materials. We can provide references to a licensed Corrosion Engineer, upon request.

### **GROUNDWATER CONDITIONS**

Observations of groundwater conditions were made during and just after drilling the exploratory borings. Groundwater was encountered after drilling at depths varying between approximately 11 and 13 feet below existing ground surface. It is possible that some borings may not have been left open long enough for groundwater to reach equilibrium.

Groundwater levels at the site should be expected to fluctuate throughout the year due to seasonal precipitation, local pumping, and other factors.

### **PERCOLATION TEST RESULTS**

Two (2) percolation test borings (P-1 and P-2) were drilled using 4-inch outer-diameter continuous flight helical solid stem augers (SSA), to approximate depths as indicated in the table below. The percolation test locations and depths were provided by project's Civil Engineer. Please refer to the Appendix A – Figure 2 "Explorations Location Map" for approximate locations of the percolation test holes.

The soils encountered in the percolation test borings are consistent with the conditions found in the exploratory borings. The sidewalls of each boring were scored along the outer walls to reduce the effects of smearing. Approximately six (6)-inches of clean pea gravel was added to the bottom of each test hole. In each test hole a 2-inch inner diameter (ID) slotted PVC pipe was installed on top of the gravel. Pea gravel was placed in the annular space between the boring wall and pipe. Each hole was filled with water to let the soils presoak before performing the tests. Following the presoak time each test boring was filled with water to at least 12 inches above the bottom of the boring. The drop in water level was measured at specific time intervals until a steady rate of drop in water level was obtained when at least three consecutive readings were within 10 percent from each other. Pre-adjusted percolation rates were determined by dividing the drop in water level over the time required for the drop in water level. The infiltration rates were estimated using the percolation rate divided by a Conversion Factor to convert the percolation rate to infiltration rate. The test results are shown on Table 2, below.



TABLE 2. RESULTS OF PERCOLATION TESTS			
PERCOLATION TEST NO.	APPROXIMATE DEPTH – from Top of AC (ft)	CALCULATED INFILTRATION RATE (in/hr)	TESTED SOIL DESCRIPTION
P-1	5	1.03	Silty Fine SAND (SM)
P-2	5	0.94	Silty Fine SAND (SM)

The infiltration rates of water into the soils (per the test method referenced and results on Table 2, above) could be used by the project Civil Engineer as a preliminary infiltration rate at the locations indicated. A safety factor was not applied to these values. During construction of the stormwater infiltration systems, ACG recommends confirmation infiltration testing be performed with a double ring infiltrometer, if feasible, within the area of the proposed stormwater infiltration system.

## CONCLUSIONS AND DISCUSSIONS

### SITE SUITABILITY AND GEOTECHNICAL CONSIDERATIONS

From a geotechnical standpoint, the site is considered suitable for the proposed construction provided the conclusions and recommendations presented in this report are incorporated into the design and construction of the project. Geotechnical considerations that were evaluated by our office include undocumented fill, loose/soft native soils, and soils disturbed by removal of the existing structures and pavements. Mitigation measures for these items are discussed in the following sections of this report.

### BEARING CAPABILITY

Field and laboratory tests show that the affirmed undisturbed, native earth materials encountered at the exploration locations are considered competent for support of the proposed construction. The upper loose / soft soils and any disturbed soils (includes undocumented fill) that are present at the time of construction are not considered stable and should not be utilized to directly support new structural elements. Mitigation measures for unsuitable soil conditions are discussed in the Recommendations section of this report. Mitigation measures considered include removal and replacing the disturbed

and/or loose soils with engineered fill; or, foundation elements designed to extend through the unsuitable soils.

Engineered fill, composed of approved materials placed and compacted according to the following recommendations, is considered competent for support of low to moderate loading increases.

### **COMPRESSIBLE AND EXPANSIVE SOILS**

Compressible materials consisting of surficial disturbed material (e.g., from razing structures, demolition of other features/pavements, etc.), loose/soft soils, undocumented fills, debris, rubble, rubbish, etc., are considered unsuitable materials for support of the proposed structure and pavements. Such materials can differentially settle. We consider that any undocumented fill encountered and disturbed and / or loose/soft soil materials in the construction areas should be removed and replaced with engineered fill. Overexcavated earth materials deemed suitable for re-use as engineered fill could be stockpiled. If the unsuitable materials are not removed, then ground improvement systems should be designed to account for the potential settlements. In areas where unsuitable or loose/soft, wet soils are encountered, remedial grading should be undertaken to remove the loose / soft soils and ensure the removal of the entire disturbed soils.

Engineered fill, composed of approved granular materials placed and compacted according to those discussed in the recommendations section, below, are considered competent for support of moderate loading increases anticipated for this project.

Based on visual observation and on laboratory test results performed on representative uppermost soil samples, we consider the expansion potential of uppermost subsurface soils to be low.

### **GROUNDWATER AND SEASONAL MOISTURE**

The groundwater levels could be seasonal – varying between the winter and summer months. It is our opinion that perched groundwater could have an impact on the proposed design or construction depending on the foundation system selected by designers and depths of underground structures. If groundwater is encountered in excavations (especially if wet-season construction is undertaken), then groundwater seepage into the excavations is expected to be generally controllable by

pumping/diversion; likewise, inflow from surface waters (dependent on quantity and duration of storm intensity/rainfall) is expected to be similarly controllable as temporarily necessary. **If the uppermost soils should become saturated, then this condition would likely impede or delay grading operations.**

Groundwater levels can fluctuate on a seasonal basis due to changes in precipitation, irrigation, pumping, tides, etc. We consider groundwater levels might change based on site topography and the time our investigation was performed. Excavations below perched groundwater (if encountered) might be impacted by seepage; therefore, we recommend grading and utility excavations be performed during dry season when groundwater levels are lowest.

## **SEISMIC HAZARDS**

Seismic ground shaking of the earth materials underlying the site can cause ground failures, including fault rupture, liquefaction and densification, lateral spreading, landsliding, and tsunamis / seiches. The following sections discuss our conclusions / opinions regarding these conditions based on our findings and literature review.

### **Fault Rupture**

Fault rupture hazards are important near active faults and tend to reoccur along the surface traces of previous fault movements. The site is not located within an Alquist-Priolo Special Studies Zone. We consider the potential for fault rupture, damage from fault displacement, or fault movement directly below the site to be low. However, the site is located within an area where shaking from earthquake generated ground motion waves should be considered likely.

### **Seismic Ground Shaking**

The mapped and design spectral response accelerations (refer to Appendix E) presents seismic design criteria for the subject project site obtained from the SEAOC/OSHPD Seismic Design Maps (<https://seismicmaps.org>) that are based on data provided by ASCE 7-16 and are for use with the 2022 California Building Code (CBC). The values for spectral response accelerations with a Risk Category of II are summarized on the following table.



**Table 3. Mapped and Design Spectral Accelerations**

Description	Value
Site Soil Classification <sup>1</sup>	D
Site Latitude, Longitude	39.4286097, -123.8020746
S <sub>s</sub> – Spectral Acceleration for a Short Period	1.505 g
S <sub>1</sub> – Spectral Acceleration for a 1-Second Period	0.607 g
S <sub>MS</sub> – MCE <sub>R</sub> , 5% damped Spectral Acceleration for a Short Period	1.505 g
S <sub>M1</sub> – MCE <sub>R</sub> , Spectral Acceleration for a 1-Second Period <sup>1</sup>	1.032 g
S <sub>DS</sub> – design, 5% damped, Spectral Acceleration for a Short Period	1.003 g
S <sub>D1</sub> – design, 5% damped, Spectral Accel. For a 1-Second Period <sup>1</sup>	0.688 g
Seismic Design Category <sup>2</sup>	D
T <sub>L</sub>	12
PGA	0.654 g
PGA <sub>M</sub>	0.719 g
F <sub>PGA</sub>	1.1

<sup>1</sup> The 2022 CBC requires an earth material profile determination extending to a depth of 100 feet for site soil classification. ACG's explorations extended to depth of about 30.5 feet bgs, and Site Class D was selected based on soils conditions encountered in our explorations. Exception 2 of ASCE 7-16 Section 11.4.8 for Site Class D is used to calculate S<sub>MS</sub>, S<sub>M1</sub>, S<sub>DS</sub> and S<sub>D1</sub>. <sup>2</sup> In general accordance with the 2022 CBC (refers to ASCE 7-16) Seismic Design Category is based on spectral acceleration for a 1-sec Period, short & 1-sec period response acceleration parameters (S<sub>1</sub>, S<sub>DS</sub> & S<sub>D1</sub>, respectively) and corresponding Risk Category. Please refer to ASCE/SEI 7-16 Section 11.4.8 for base shear (V) calculations. Please refer to Appendix E for the U.S. Seismic Design Maps.

### **Liquefaction and Seismic Settlement Evaluation**

Liquefaction occurs when saturated fine-grained sands and/or silts lose their physical strength temporarily during earthquake induced shaking and behave as a liquid. This is due to loss of point-to-point grain contact and transfer of normal stress to the pore water. Liquefaction potential varies with water level, soil type, material gradation, relative density, and probable intensity and duration of ground shaking. Dynamic settlement of the soils that experience liquefaction may occur after earthquake shaking has ceased.

The California Geological Survey (CGS) has designated certain areas within California as potential liquefaction hazard zones. These are areas considered at risk of liquefaction-related ground failure during a seismic event based upon mapped surficial deposits and the depth to the areal groundwater table. The project site is not currently mapped for potential liquefaction hazard by the CGS (refer to CGS website: <https://www.conservation.ca.gov/cgs/earthquakes>).

Based on the information for this study, it is our opinion that dynamic settlement due to an earthquake event might affect the proposed improvements. Total vertical settlements due to

earthquake shaking (i.e., seismic induced settlements) were estimated as part of ACG's investigation and analysis in general accordance with the Recommended Procedures for Implementation of DMG Special Publication 117A, "Guidelines for Analyzing and Mitigating Liquefaction in California.". The seismic settlement evaluation was performed using the software program NovoLiq 4.0.2021.311 (Novo Tech Software Ltd. ©2009 - 2021). The analysis conducted estimated total seismic induced settlements at the highest anticipated groundwater depth of 10 feet bgs, which should be considered in design and construction. USGS Unified Hazard Tool was used to estimate seismic parameters used in the analysis (<https://earthquake.usgs.gov/hazards/interactive/>). The analysis is based on return period of 975 years (5% occurrence in 50 years) and peak ground acceleration (PGA) of 0.6435 g. Based on the summary statistics analysis per USGS Unified Hazard Tool for the highest seismic contribution, the earthquake magnitude of 7.71 at an approximate fault distance of 9.6 kilometers from the subject site were used in the analysis.

The analysis results indicate that the subsurface soils at the site are variably susceptible to liquefaction under the criteria indicated above. The loose to medium silty sand and sand with silt soils encountered at depths between 10 and 25 feet bgs are considered the most susceptible to liquefaction. The estimated vertical liquefaction induced settlement is estimated at about 3 inches and relatively small lateral displacement. Provided the foundations are designed and constructed with seismic ties, the risk of structural collapse because of soil liquefaction is considered low and not a life safety concern.

The consequences of one-dimensional seismic induced settlement may be largely mitigated by the presence of a relatively thick non-liquefied layer above the potentially liquefiable soils (Ishihara 1985, Naesgaard et al. 1998, Bouckovalas and Dakoulas 2007). **It is our opinion that the presence of the 5 feet engineered fill layer (per the Earthwork recommendations section of this report) may act as a bridging layer that redistributes stresses and therefore results in more uniform ground surface settlement beneath the proposed structures, as well as decreasing the amount of potential seismic induced settlement.**

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### **Ground Lurching**

Ground lurching is a result of the rolling motion imparted to the ground surface due to seismic waves released by an earthquake that can cause cracks in weaker soils. The potential for cracking at this site is considered low due to the generally stiff soil consistencies and medium dense to very dense relative densities.

### **Earthquake Induced Landsliding**

Based on information available on the California Geological Survey (CGS) website the subject site is not currently within a State of California Seismic Hazard Zone for seismically induced landsliding. In addition, there are no steep slopes on or adjacent to the subject site. Therefore, seismically induced and/or other landslides are not considered a significant hazard at the site.

### **ON-SITE EARTH MATERIALS SUITABILITY**

On-site soils like those encountered in the test borings are considered suitable for re-use as engineered fill. Rubble, rubbish, oversize materials, significant organic matter, highly plastic soil, or any other substance deemed unsuitable should not be used as engineered fill.

### **POTENTIAL SLOPE STABILITY**

No landslides, slumps, or other indications of slope instabilities were observed on the site area during our field investigation. We consider the potential for slope instability to be negligible.

### **EXCAVATION CONDITIONS**

The on-site soils are considered to be readily excavatable with conventional construction equipment to at least the maximum depth explored of approximately 30.5 feet bgs. In our opinion, shallow excavations into native soils less than four feet in depth should stand at a near-vertical inclination for the short periods of time required for foundation and shallow utility construction. However, sloughing and "running" conditions could occur if the soils are saturated, where loose fills are encountered, or where zones of clean (cohesionless) sands are encountered, especially when subjected to construction vibrations or allowed to dry significantly.



Excavations deeper than four feet that will be entered by workers should be sloped, braced, or shored in accordance with current Occupational Safety and Health Administration (OSHA) and Cal/OSHA regulations. The contractor must provide an adequately constructed and braced shoring system in accordance with federal, state, and local safety regulations for individuals working in an excavation that may expose them to the danger of moving ground.

Temporarily sloped excavations less than 20 feet deep should be constructed no steeper than a one and one-half horizontal to one vertical ( $1\frac{1}{2}H:1V$ ) inclination. Temporary slopes might stand at this inclination for the short-term duration of construction, provided loose sands/sandy silts, soft clays, and/or saturated granular soils are not encountered. Flatter slopes would be required if these conditions are encountered.

Excavated materials should not be stockpiled directly adjacent to an open trench to prevent surcharge loading of the trench sidewalls. Excessive truck and equipment traffic also should be avoided near open trenches. If material is stored or heavy equipment is operated near an excavation, stronger shoring would be needed to resist the extra pressure due to the superimposed loads.

## RECOMMENDATIONS

Recommendations for earthworks and the design and construction of the proposed structure(s) and associated improvements follow. All recommendations could require modifications based on conditions encountered during earthworks and general construction. In addition, changes in the locations of the proposed structures and pavements could also necessitate modifications to the recommendations provided herein.

### EARTHWORK

Earthwork specifications which may be used as a guide in the preparation of contract documents for site preparation / grading are included in Appendix D. However, recommendations in the text of this report supersede those presented in Appendix D. **The conclusions and recommendations contained in this report should be incorporated into the guide specifications.**

We consider it essential that our office review grading and structural foundation plans to verify the applicability of the following recommendations, and to provide supplemental recommendations, if necessary.

The recommendations presented below are considered appropriate for proposed construction in the late spring through fall months. The on-site soils likely will be saturated by rainfall in the winter and early spring months and will not be compactable without drying by aeration or the addition of lime (or a similar product). Should the construction schedule require work to continue during the wet months, additional recommendations can be provided, as conditions dictate.

Site preparation should be accomplished in accordance with the recommendations of this report. A representative of the Geotechnical Engineer should be present during earthworks to evaluate compliance with the recommendations presented in this report and the approved project plans and specifications. The Geotechnical Engineer of Record referenced herein should be considered the Geotechnical Engineer that is retained to provide geotechnical engineering observations and testing services during construction.

#### **Site Clearing and Stripping**

The building pad is considered to extend laterally away from (outside of) all perimeter foundation/building edges at least five (5) feet in plan view, or to edges of any adjacent features restricting this width. We recommend the construction areas be cleared of all obstructions or unsuitable materials, including all loose, wet, or disturbed soil, undocumented fill, rubble, rubbish, vegetation, structural elements (includes foundations, pavements) to be razed, and any buried utility lines to be removed. Any foundations, pavements, cisterns, septic tanks, leach fields, water wells, etcetera that might be encountered and are to be abandoned should be removed. **Any undocumented fill and loose soils overlying the underlying firm earth materials should be overexcavated and, if deemed suitable, be re-processed as engineered fill or off-hauled.** The excavated soils could be evaluated for reuse as engineered fill. The resulting subgrades of excavation(s) should be prepared and filled to planned project subgrade level with engineered fill as discussed in the following sections.

Excavations resulting from the removal of unsuitable materials and/or loose soils should be cleared to expose firm, stable material. The surface of the resulting excavations should be scarified to a depth of 12 inches, moisture conditioned, and then compacted to the recommendations given below under subgrade preparation.

Existing utilities that extend into the construction area and are scheduled to be abandoned should be properly capped or plugged with grout at the perimeter of the construction zone or moved as directed in the plans. It may be feasible to abandon on-site utilities in-place by filling them with grout, provided they will not interfere with future utilities or affect building foundations. The utility lines should be addressed on a case-by-case basis.

In conjunction with clearing, the improvement areas should be stripped to sufficient depth to remove all organic laden topsoil. The actual stripping depth should be determined by our representative at the time of construction. The cleared and stripped materials should be removed from the site or stockpiled for possible use as landscape materials. In areas where trees and tree roots 2-inches or greater have been cleared, depressions resulting from site clearing operations, as well as any loose, soft, disturbed, saturated, or organically contaminated soils, as identified by the Geotechnical Engineer's representative, should be cleaned out to firm, undisturbed soils and backfilled with engineered fill placed and compacted in accordance with the recommendations of this report.

It is important that the Geotechnical Engineer's representative be present during clearing operations to verify adequate removal of the surface and subsurface items, as well as the proper backfilling of resulting excavations.

### **Over-excavation Recommendations**

**Due to differential movement considerations, we recommend building foundations, slabs-on-grade, concrete flatwork, and structural pavements bear on engineered fill. We recommend uppermost loose native earth materials be overexcavated to estimated depth of at least five (5) feet below existing ground surface (begs), or at least 3 feet below the bottom of the structure's foundation, whichever is deeper. Geogrids (e.g. Tensar InterAx NX750 or NX850)**



**should be placed at the exposed bottom of over-excavations, and the geogrids should be installed per the manufacture criteria. The resulting overexcavation should be backfilled with engineered fill comprised of low to non-expansive soil. The overexcavation limits should extend laterally to at least 5 feet beyond the proposed building footprint, or to where practical, as affirmed by ACG's representative.**

We recommend concrete slabs-on-ground, flatwork and structural pavements bear on at least 18-inches of engineered fill comprised of low to non-expansive soil.

Soils to be used for engineered fill should be per the criteria in the following recommendations *"Material for Fill"* section. All materials should be placed and compacted per the *"Fill Placement and Compaction"* section.

### **Subgrade Preparation**

Once the construction areas have been cleared, any unsuitable soils over-excavated, and any other excavations made, then subgrades that will receive engineered fill, that are to be left at existing grade, or that represent final subgrades in soil achieved by excavation should be scarified to at least 12 inches. Suitability of soils exposed in the bottom of all subgrades should be verified by an ACG special inspector during site grading. The scarified soils should be uniformly moisture conditioned as determined by ACG's field representative based upon the compaction characteristics of the earth material (typically 1 to 3 percent over optimum for granular soils and 2 to 4 percent over optimum for fine grained, silty/clayey soils) and compacted to at least 90 percent relative compaction per ASTM D 1557.

The geotechnical engineer's special inspector should observe the recompacted subgrades be proof-rolled with very heavy construction equipment (e.g., loaded water truck) in order to verify subgrade earth material stability. Inability to achieve the stated moisture content, compaction, or instability of the subgrade materials unsuitable conditions and would be used as criteria for the removal of loose, wet, or soft soils, or for the need of special stabilizing measures.

If unanticipated unsuitable materials are encountered at subgrade such that they are unstable and/or proper compaction cannot be obtained, then mitigation measures, such as over

excavations or use of a geotextile material, would be recommended. In addition, construction equipment on saturated soils could destabilize the earth materials, sometimes to several feet of depth, which might necessitate further over excavation and/or special stabilization.

An ACG special inspector should observe and approve the bottoms of all excavations and overexcavations to confirm adequate conditions have been reached and should observe and approve the scarification, moisture conditioning and recompaction of the exposed excavated surfaces.

### **Material for Fill**

All fill materials should be inorganic, granular soils free of vegetation, debris, and fragments larger than three inches in size. Pea gravel or other similar non-cementitious, poorly graded materials should not be used as fill or backfill without the prior approval of the geotechnical engineer. Imported earth materials and or earth materials from onsite borrow areas may be used as engineered fill material for general site grading, foundation backfill, foundation areas, trench backfill, slab areas, and pavement areas, provided the materials meet the criteria on the following table. All fill materials from any source (on-site or off-site) to be used for engineered fill should be meet the criteria on the following table, be pre-approved by this firm, and should be observed by our representative and samples obtained for laboratory testing (if needed) at least four days prior to any materials being used for engineered fill.

<b>Table 4. Material for Fill Criteria</b>	
3" (ASTM D 6913)	100 Percent Passing
Standard No. 4 Sieve (ASTM C136)	25 to 100 (% finer by weight)
Standard No. 200 Sieve (ASTM D 1140)	10 to 35 (% finer by weight)
Liquid Limit (ASTM D 4318)	Less than 30
Plasticity Index (ASTM D 4318)	Less than 15
Expansion Index (ASTM D 4829)	Less than 40

### **Fill Placement and Compaction**

Engineered fill should be placed and compacted in horizontal lifts, using equipment and procedures that will produce recommended moisture contents and densities throughout the lift. Materials for engineered fill should be spread and compacted in lifts not exceeding 8 inches in uncompacted thickness. Engineered fill placed at the site and subgrades requiring recompaction should be uniformly compacted to at least 90 percent relative compaction in building areas, and to at least 95 percent relative compaction in the upper 18-inches of pavement and flatwork areas, as determined by ASTM Test Designation D 1557, or to the method as might be determined by an ACG special inspector. The moisture content of engineered fill materials should be determined by ACG's field representative based upon the compaction characteristics of the earth material (typically 1 to 3 percent over optimum for granular soils and 2 to 4 percent over optimum for fine grained, silty/clayey soils). ACG should continuously observe and test the grading and earthwork operations. Such observations and tests are essential to identify field conditions that differ from those predicted by this investigation, to adjust these recommendations to actual field conditions encountered, and to verify that the grading is in overall accordance with the recommendations presented in this report and the 2022 CBC.

If construction proceeds during or shortly after the wet winter months, it may require time to dry the on-site soils since their moisture content will probably be appreciably above the optimum. In addition, if subgrade soils are wet at the time of construction, they could be rutted, loosened, or otherwise disturbed to several feet of depth by the construction equipment and may need additional over-excavation and/or stabilization.

Construction occurring in later summer or early fall (after on-site earth materials becoming dry) may require substantial amounts of water to be added during earthwork operations to enable the appropriate moisture content and compaction to be achieved.

Upon completion of filling and grading, care should be taken to maintain the subgrade moisture content prior to construction of foundations, exterior flatwork/slabs, and pavements. Construction traffic over the completed subgrade should be avoided in order to prevent disturbance of subgrade soils. The site should also be graded to prevent ponding of surface water



on the prepared subgrades or in excavations. If the subgrade consisting of engineered fill should become desiccated, saturated, or disturbed, the affected material should be removed, or these materials should be scarified, moisture conditioned, and recompacted prior to construction.

The geotechnical engineer should be retained during the earthwork construction phase of the project to continuously observe earthwork and to perform necessary tests and observations during subgrade preparation, backfilling of excavations to the completed subgrade, placement and compaction of engineered fills, proof-rolling, backfilling of utility trenches, etc.

### **Utility Trench Backfill**

Generally, utility trenches should be backfilled with mechanically compacted fill placed in lifts not exceeding 6 inches in uncompacted thickness. Water content of the fill material should be adjusted (typically 1 to 4 percent over optimum) during the trench backfilling operations to obtain compaction. If on-site soil or import fill material is used, then the material should be compacted to at least 90 percent relative compaction. Imported sand or gravel could also be used for bedding and shading backfill in trenches provided the granular material is compacted to at least 95 percent relative compaction. Public and private utility companies' standard plans and specifications should be adhered to when backfilling their utility trenches.

Utility trenches should be plugged with lean concrete wherever the utility line passes beneath the perimeters of the structures. The plug should be at least one foot on either side of the perimeter of the building perimeter foundation and extend from the bottom of the building foundation to the bottom of the trench.

### **Finish Grading and Site Drainage**

On-site soils are considered to be slightly susceptible to erosion where drainage concentrations occur. Concentrated flowing water should be either dissipated or channeled to appropriate discharge facilities. Appropriate erosion control measures should be provided, where applicable, by the general civil engineer on his grading and/or winterization plan.

Positive surface gradients should be provided adjacent to the building and pavement areas (includes flatwork) to direct surface water away from the buildings and pavements for at least ten feet and toward suitable discharge facilities. Ponding of surface water should not be allowed adjacent to the building or pavements or on top of pavement. Positive drainage should be provided during construction and maintained throughout the life of the project. Infiltration of water into utility trenches or foundation excavations should be prevented during construction. Backfill against foundations, exterior walls, and in utility and sprinkler line trenches should be well compacted as previously recommended and free of all construction debris to reduce the possibility of moisture infiltration. We recommend a horizontal setback distance of at least 10 feet from the perimeter of any building and the high-water elevation of the nearest storm-water retention.

Downspouts, roof drains or scuppers should discharge into splash blocks or extensions when the ground surface beneath such features is not protected by exterior slabs or paving. Sprinkler systems should not be installed within 5 feet of foundation walls. Landscaped irrigation adjacent to the foundation system should be minimized or eliminated.

All grades must provide effective drainage away from the building during and after construction. Water permitted to pond next to a building can result in greater soil movements than those discussed in this report. These greater movements can result in unacceptable differential floor slab movements, cracked slabs and walls, vapor transmission issues in interior slabs, and roof leaks. Estimated movements described in this report are based on effective drainage for the life of the structure and cannot be relied upon if effective drainage is not maintained.

Per 2022 CBC Section 1804.4, the soil ground surface should be sloped at least 5 percent (2 percent for pavement) down and away from the building for at least of 10 feet beyond the perimeter of the building or pavement. After building construction and landscaping, we recommend the Civil Engineer and/or surveyor verify final grades to document that effective drainage has been achieved. Grades around the structure should also be periodically inspected as part of the structure's maintenance program and adjusted, as may be necessary.

### **Cut and Fill Slopes**

Cut/fill slopes are not anticipated. If slopes should be needed, then permanent excavation and embankment slopes up to 10 feet of height in soil should be graded at an inclination of 2 horizontal to 1 vertical (2H: 1V) or flatter. The crowns of all slopes should be constructed so that surface run-off water is not allowed to flow over the faces of the slopes. All cut slopes should be observed during grading by the Geotechnical Engineer and/or Engineering Geologist to determine if any adverse defects are present. If defects are observed, then additional study and/or recommendations would be made at that time.

**For temporary excavations, the individual contractor(s) is/are responsible for designing and constructing stable, temporary excavations as required to maintain stability of both the excavation sides and bottom. Excavations should be sloped or shored in the interest of safety following local and federal regulations, including current OSHA excavation and trench safety standards.**

### **Earthwork Construction Considerations**

At the time of our study, moisture contents of the surface and near-surface native soils were moderate. Based on these moisture contents, some moisture conditioning might be needed for the project to make the soil compactible and suitable for use as engineered fill. The soils may need to be dried by aeration during wet weather conditions, or a chemical treatment, such as cement, lime, or kiln dust, may be needed to stabilize the soil. The soils may need more moisture and water during the dry season to make the soil compactible and suitable. Subgrade conditions may need a rock protective mat covering exposed subgrades in order to limit disturbance of site soils as well as provide a stable base for construction equipment.

Although the exposed subgrades are anticipated to be relatively stable upon initial exposure, on site soils may pump and unstable subgrade conditions could develop during general construction operations, particularly if the soils are wet and/or subjected to repetitive construction traffic. The use of light construction equipment would aid in reducing subgrade disturbance. The use of remotely operated equipment, such as a backhoe, would be beneficial to perform cuts and



reduce subgrade disturbance. If unstable subgrade conditions develop, then stabilization measures will need to be employed. Upon completion of filling and grading, care should be taken to maintain the subgrade moisture content just prior to construction of the floor slabs and pavements. Construction traffic over the completed subgrades should be avoided to the extent practical. The site should also be graded to prevent ponding of surface water on the prepared subgrades or in excavations. If the subgrade should become desiccated, saturated, or disturbed, the affected material should be removed, or these materials should be scarified, moisture conditioned, and recompact prior to floor slab and pavement construction. We anticipate that site grading for concrete foundations, slab construction, pavements and shallow utility trenches could be performed with conventional earthmoving equipment.

**We emphasize the contractor is responsible for designing and constructing stable, temporary excavations (including utility trenches) as required to maintain stability of both the excavation sides and bottom and should be in accordance with OSHA excavation and trench safety standards.**

We recommend that the earthwork portion of this project be completed during extended periods of dry weather if possible. If earthwork is completed during the wet season (typically November through May) it may be necessary to take extra precautionary measures to protect subgrade soils. Wet season earthwork may require additional mitigation measures beyond that which would be expected during the drier summer and fall months. This could include diversion of surface runoff around exposed soils and draining of ponded water on the site. Once subgrades are established, it may be necessary to protect the exposed subgrade soils from construction traffic.

#### **Geotechnical Engineering Earthwork Construction Observation**

As previously discussed, variations in subsurface conditions are possible and may be encountered during construction. In order to permit correlation between the preliminary subsurface data obtained during this investigation and the actual subsurface conditions encountered during construction, as well as affirm substantial conformance with the plans and specifications, a representative of this firm should be present during all phases of the site earthwork to make tests

and observations of the site preparation, selection of satisfactory fill materials, proof rolling, placement and compaction of controlled compacted fills, backfilling of excavations to the completed subgrade, etc. Additionally, if lime or cement treatment is needed to stabilize or dry the soil, then our representative should perform observations during mixing, remixing, and compaction.

Any site earthwork performed without the presence of our representative will be entirely at the grading contractor's and/or owner's risk and no responsibility for such operations will be accepted by our firm. Sufficient notification (**at least two working days**) is necessary so that our special inspections and testing will coincide with the construction schedule.

***We emphasize the importance of ACG's presence during the observation and testing of the grading operations. ACG's observation of the subsurface soil conditions, especially under the loads imposed by construction equipment, is considered an extension of our investigation, particularly within those areas away from the subsurface explorations.***

#### **Guide Specifications**

Earthwork guide specifications which may be used as a guide in the preparation of contract documents for site grading are included in Appendix D. **The conclusions and recommendations contained in this report should be incorporated into the guide specifications.**

#### **CRITERIA FOR FOUNDATION DESIGN**

Based on the field and laboratory information for this study, we recommend that the proposed 3-story building be supported upon isolated and/or continuous spread footings that penetrate below the lowest adjacent building pad soil grade into the approved engineered fill bearing earth materials at least 18-inches. Foundation dimensions and reinforcement should be based on allowable dead plus live soil bearing values of 2,000 pounds per square foot (psf) for continuous footings of at least 18 inches in width and isolated footings at least 30 inches wide (both directions). **The footings should be supported on at least 3 feet of engineered fill per Over-excavation Recommendations section of this report.** An increase in the bearing capacity of 200 psf per every 12 inches of additional footing depth to a maximum 2,600

psf is allowed. The allowable foundation bearing pressures apply to dead loads plus design live load conditions. The design bearing pressure may be increased by one-third when considering total loads that include short duration wind or seismic conditions. The weight of the foundation concrete below grade may be neglected in dead load computations.

Total settlement is estimated at about 1-inch for static and seismic compression and the static settlement is expected to occur as the structure is built. Foundations should be proportioned to reduce differential foundation movement estimated at ½-inch over 40 linear feet. We recommend that all footings be reinforced as designed by the structural engineer to accommodate potential differential movements. Proportioning based on equal total settlement is recommended; however, proportioning to relative constant dead-load pressure would reduce differential settlement between adjacent foundations.

### **Lateral Resistance**

Foundations placed in approved soil bearing materials could be designed using a coefficient of friction of 0.30 for granular soils. A design passive resistance value of 300 pounds per square foot per foot (psf/ft) of depth (with a maximum value of 3,000 pounds per square foot) is recommended for engineered fill per the Earthwork section, above. If both friction and passive pressures are combined, then the smaller value should be halved. The lateral sliding resistance for clay soils should not exceed one-half the dead load.

The sides of the excavations for the foundations should be nearly vertical and the concrete should be placed neat against these vertical faces for the passive earth pressure values to be valid. If the loaded side is sloped or benched in the soil, and then backfilled with engineered fill, then the nominal passive pressure should be reduced to the soil frictional or adhesive resistance.

### **General Foundation Considerations**

ACG's geotechnical engineer or ACG's representative should observe earth material conditions exposed in foundation excavations to confirm the adequacy for structural foundation bearing, confirm the appropriateness of these recommendations, and to allow for an opportunity to provide additional recommendations if deemed necessary. If the earth material conditions



encountered differ significantly from those presented in this report, then supplemental recommendations will be required.

An important factor in soils supporting structural improvements is a change in moisture content. The recommendations herein are predicated on the soil moisture beneath and within five feet of the building perimeters, slabs and pavements being maintained in a uniform condition during and after construction. Please be advised that over watering or under watering, types of plants (trees should be at least the distance away from the improvement equal to their maximum height), altering design site drainage, etc., might be detrimental to the foundation, slabs, and/or pavements. We suggest that automatic timing devices be utilized on irrigation systems; however, provision should be made to interrupt the normal watering cycle during and following periods of rainfall. Additional foundation movements could occur if water, from any source, saturates the foundation soils; therefore, proper drainage should be provided during in the final design, during construction, and maintained for the life of the development.

Static and seismic settlement could affect various aspects of the planned development, including utilities, building entrances, sidewalks, footings, and grade beams. Design of these elements should incorporate features to mitigate the effects of the predicted settlements. Because of the anticipated settlements during an earthquake, it may be necessary to replace esthetic features, sheetrock, glazing, exterior flatwork, etc., after a major earthquake.

The foundation excavations should be clean (i.e., free of all loose slough) and maintained in a moist condition between 2 to 4 percent over optimum moisture just prior to placing steel and concrete. The concrete for the foundation should not be placed against a dry excavation surface.

The base of all foundation excavations should be free of water, loose soil, and gravel prior to placing concrete. Concrete should be placed soon after excavating and placement of engineered fill (and lime treatment, if needed) to reduce bearing soil disturbance. Should the soils at bearing level become excessively dry, disturbed, or saturated, the affected soil should be removed prior to placing concrete. In addition, as previously described, unsuitable soils should be completely removed from any proposed construction areas prior to construction. Concrete should not be

chuted against the excavation sidewalls. Concrete should be pumped or placed by means of a tremie or elephant's trunk to avoid aggregate segregation and earth contamination. Rebar reinforcement should be properly supported with proper clearances maintained during concrete placement. The concrete should be properly vibrated to mitigate formation of voids and to promote bonding of the concrete to steel reinforcing. These recommendations are predicated upon ACG's representative observing the bearing materials as well as the manner of concrete placement.

### **Foundation Setback**

The bottoms of utility trenches placed along the perimeter of the foundation should be above an imaginary plane that projects at a 2H:1V angle projected down from 9-inches above the bottom edge of the lowest outermost edge of the foundation per 2022 CBC Section 1809.14. Where trenches pass through the plane, the trench should be installed perpendicular to the face of the foundation for at least the distance of the depth of the foundation. Alternatively, the foundation could be deepened to attain the recommended setback. Foundation details under the influence of this recommendation should be forwarded along with the structural load information to the geotechnical engineer for review.

### **INTERIOR FLOOR SLAB-ON-GROUND SUPPORT**

On most project sites, the site mass grading is generally accomplished early in the construction phase. However, as construction proceeds, the subgrade soils may be disturbed due to utility excavations, construction traffic, desiccation, rainfall, etc. As a result, the floor slab subgrade soils may not be suitable for placement of base rock and concrete and corrective action may be required.

We recommend the engineered fill underlying the floor slab be rough graded and then thoroughly proof rolled with a loaded tandem axle dump truck or water truck prior to final grading and placement of base rock. Particular attention should be paid to high traffic areas that were rutted and disturbed earlier and to areas where backfilled trenches are located. Areas where unsuitable conditions are located should be repaired by removing and replacing the affected material as engineered fill.

A building pad comprised of engineered fill (constructed in accordance with the criteria contained within the above “Earthwork” section) is considered suitable for support of the slabs-on-ground of the building. In all cases the floor slab should not be placed on a dry subgrade. The subgrade soils should be maintained at 1 to 4 percent above the compaction moisture content in the upper 12 inches as verified by ACG prior floor slab concrete placement. In all cases the floor slab should not be placed on a dry subgrade.

**The lightly loaded building floor slab-on-grade design, thickness and reinforcement should be designed by the structural designer for the anticipated loadings based on a modulus of subgrade soil reaction (k) estimated at 90 pounds per square inch per inch (psi/in) for engineered fill. The concrete slabs should be at least 4-inches thick for light duty use. The slabs should be supported on at least 4-inches thick ¾-inch crushed rock underlain by approved engineered fill subgrade soils prepared per the recommendations of this report.**

The exterior ground surface should be at least 6 inches below the top of the floor slab. We emphasize that all surfaces should slope to drain away from all sides of the building. Slabs subjected to heavier loads may require thicker slab sections and/or increased reinforcement per the structural engineer’s design.

Slabs-on-grade subject to low frequency, light to medium vehicle traffic should be at least five inches thick, or as per the project structural engineer, and have at least a six-inch-thick layer of Class 2 aggregate base (compacted to at least 95 percent relative compaction) placed beneath the slabs. If elastic design is utilized for designing slabs-on-grade founded on at least a six-inch thick layer of Class 2 aggregate base compacted to at least 95 percent relative compaction, then the design k value may be increased to 125 pci. The modulus was provided based on the slab being supported on 6 inches or more of compacted aggregate base and estimates obtained from NAVFAC 7.1 design charts. This value is for a small, loaded area (1 sq. foot or less) such as for small truck wheel loads or point loads. Slabs subjected to heavier loads (e.g., forklifts) would require thicker slab sections and/or increased reinforcement. The slabs could be separated from the foundations supporting the structure to allow for differential movements between the two elements unless the structural designer designs the slab - footing to be monolithic. We suggest the structural designer consider slab reinforcement consist of at least #4 reinforcing bars placed on maximum 18-inch centers at mid-slab height.



### **Moisture Penetration Resistance**

**We are not experts regarding measures for mitigating (or preventing) moisture intrusion into building's slab-on-grade. If such should be desired, then an expert regarding moisture intrusion should be consulted.**

We suggest the following measures for mitigating (not preventing) moisture intrusion into moisture sensitive interior floor slab(s). For slab-on-grade floor slab, we recommend the slab be underlain by a 4-inch-thick layer of crushed washed rock which is intended to serve as a capillary mitigating moisture break and to provide uniform slab support. Gradation of this material should be such that 100 percent will pass a 1-inch sieve and 0 to 5 percent passes the No. 4 sieve.

When conditions warrant the use of a vapor retarder, the slab designer should refer to ACI 302 and/or ACI 360 for procedures and cautions regarding the use and placement of a vapor retarder. At a minimum, we recommend in areas where it is desired to reduce floor dampness where moisture-sensitive coverings are anticipated, construction should have a suitable waterproof vapor retarder (at least 15 mils thick polyethylene vapor retarder sheeting, Raven Industries "VaporBlock 15, Stego Industries 15 mil "StegoWrap" or W.R. Meadows Sealtight 15 mil "Perminator") incorporated into the slab design. The water vapor retarder should be decay resistant material complying with ASTM E96 not exceeding 0.04 perms, ASTM E154 and ASTM E1745 Class A. The vapor barrier should be placed between the concrete slab and the compacted granular aggregate subbase material. The water vapor retarder (vapor barrier) should be installed in accordance with ASTM Specification E 1643-94 or the manufacturer's recommendations, whichever is more stringent. If maximum two-inches of clean sand should be placed above the vapor retarder (not recommended), then we recommend a moisture barrier be placed against the outer face of the perimeter foundation. Please note that the sand can be a conduit for water beneath the slab. In addition, the sand can form boils/pockets in the slab concrete. If proposed floor areas or coverings are considered especially sensitive to moisture emissions, additional recommendations from a specialty consultant should be obtained. If desired, further resistance to moisture vapor intrusion could be achieved with proper curing of the concrete, adding a sealant to the mix (e.g., Moxie), having a mix design with low slump (e.g., 2 to 4 inches), low

water/cement ratio (we suggest not greater than 0.48), and high strength (we suggest at least 3000 psi).

The structural engineer/architect and contractor should refer to ACI 302 and ACI 360 for procedures and cautions regarding the use and placement of a vapor barrier. In areas of exposed concrete, control joints should be saw-cut into the slab after concrete placement in accordance with ACI Design Manual, Section 302.1R-37 8.3.12 (tooled control joints are not recommended). To control the width of cracking, continuous slab reinforcement should be considered in exposed concrete slabs.

Positive separations and/or isolation joints should be provided between slabs and all foundations, columns, or utility lines to allow independent movement. Interior trench backfill placed beneath slabs should be compacted in accordance with recommendations outlined in the Earthwork section of this report and Appendix D. Other design and construction considerations, as outlined in the ACI Design Manual, Section 302.1R are recommended.

#### **RETAINING WALL DESIGN CRITERIA**

Retaining wall(s) (if proposed) should be designed to resist lateral pressures of soils having equivalent fluid weights given in the table below. Per 2022 California Building Code (CBC) Section 1803.5.12, for retaining walls supporting more than 6 feet backfill, lateral earth pressures due to earthquake loading should be considered for structures to be designed in Seismic Design Categories E or F.

Lateral pressures from surcharge loads in psf should be equal to lateral pressure coefficient (provided in the table below) multiply by vertical surcharge pressure in psf from surcharge loads located within ten lateral feet of the retaining wall.

**TABLE 5: Retaining Walls Soil Parameters**

WALL TYPE	EQUIVALENT FLUID UNIT WEIGHTS (pounds per cubic foot)		Lateral Pressure Coefficient	Earthquake Loading - Dynamic Thrust Increment (plf)*	Total Soil Unit Weight
	LEVEL BACKFILL	2H:1V BACKFILL			
CANTILEVER WALL (YIELDING)	40	62	0.33	$9H^2$	120 pcf
RESTRAINED WALL	60	86	0.50	$24H^2$	

\* Where H = height of retaining wall. Lateral pressures on cantilever retaining walls (yielding walls) are calculated based on work by Seed and Whitman (1970). Lateral pressures on non-yielding (or "restrained") retaining walls are calculated based on work by Wood (1973). The increment of dynamic thrust in both cases should be based on a trapezoidal distribution (essentially an inverted triangle), with a line of action located at 0.6H above the bottom of the wall.

Measures should be designed to prevent moisture buildup behind all retaining walls. We recommend drainage measures could include free draining backfill materials and sloped, perforated drains. These drains should discharge at least 10 feet away from the structure(s) to an appropriate discharge location. The wall permeable back drain could consist of either CalTrans Class 2 permeable materials or with ¾-inch up to 2-inch size drainage rock wrapped in geotextile filter fabric. The back drain should be placed behind the entire wall height to within 18 inches of ground surface at the top of the wall. The width of free draining permeable materials behind the wall should be at least two feet. Alternatively, a prefabricated drainage system (e.g., Mira-drain) could be considered behind the wall to collect the water. Water passing through the back drain system should be directed into perforated/slotted pipes that direct the collected water to an appropriate outlet for disposal away from the wall. The pipes should be placed behind and at the bottom of the wall.

Waterproofing of the wall, if needed, should be specified by the project architect/engineer. Adequate drainage should be provided behind the below-grade retaining walls to collect water from irrigation, landscaping, surface runoff, or other sources, to achieve a free-draining backfill condition.

### **PAVEMENT SECTION ALTERNATIVES**

**The R-value test result by exudation at 300 psi is 63 for Silty SAND (SM) subgrade soil obtained from R-1 shown in Figure 2 – Explorations Map.** Based on the maximum R-value of 50 per the CalTrans "Highway Design Manual" and the Traffic indices (T.I.'s) indicated below, pavement section alternatives for the on-site pavement were evaluated in general conformance with Chapters 600 to 670 per the



CalTrans "Highway Design Manual" (July 1, 2020). A factor of safety per CalTrans HDM was **not** applied for on-site pavements. The Traffic Index selected for the final pavement design should be based upon the CalTrans "Highway Design Manual" - latest revision and/or edition including consideration of the vehicular traffic anticipated, number of repetitions, etc., as determined by the project civil engineer or per regulatory agency requirements. Additional traffic index pavement design alternatives may be provided, upon request.

<b>Table 6. RECOMMENDED PAVEMENT SECTION ALTERNATIVES</b>				
Design Traffic Index	Non-treated Subgrade (12"+ Engineered Fill)		Non-treated Subgrade (12"+ Engineered Fill)	
	Asphalt Concrete (AC) (Type B)	Aggregate Base (AB) (Class 2 <sup>1</sup> )	Portland Cement Concrete <sup>2</sup>	Aggregate Base (AB) (Class 2 <sup>1</sup> )
5.0	2.5"	6"	4"	5"
6.0	2.5"	6"	5"	6"
7.0	3"	6"	6"	7"

(<sup>1</sup>Caltrans Class 2 aggregate base (AB). <sup>2</sup>Portland Cement Concrete (PCC) should have a modulus of rupture of at least 600 psi and the concrete reinforced per the pavement designer).

The above sections should be used for preliminary design and planning purposes only. We recommend representative subgrade sample(s) be obtained and "R" Value test(s) be performed on actual earth materials exposed once pavement areas have been pioneered. These additional test results may then be used to evaluate pavement sections for construction. It is possible that significant variations in pavement sections (vs. those listed above) could result if the resulting test(s) is/are different than that used for this study.

The preliminary sections above should be reviewed and approved by the owner, the civil engineer, and the governing authorities prior to construction. In addition, other recommendations for the stated traffic indices are available, if needed. The total thickness of most sections would closely approximate those given. Thinner sections than those recommended could result in increased maintenance and/or shorter pavement life. If desired, please contact this office for further analysis.

Asphaltic-concrete paved areas should be designed, constructed, and maintained in accordance with, for example, the recommendations of the Asphalt Institute, CalTrans Highway Design Manual, or other widely recognized authority. Concrete paved areas should be designed and constructed in accordance with the recommendations of the American Concrete Institute, CalTrans Highway Design Manual, or other widely recognized authority, particularly regarding thickened edges, joints, and drainage.

Materials and compaction requirements within the structural sections should conform to the applicable provisions of the CalTrans Standard Specifications (latest edition) including at least 95 percent relative compaction of at least the uppermost twelve inches of subgrade earth materials. Asphalt concrete pavement should conform to the specifications of Type A or B per section 39, and aggregate base should conform to the specifications of Class II per Section 26 of the referenced specifications.

Concrete pavements could be reinforced with nominal rebar, such as at least #4 bars spaced no greater than 24 inches, on center, both ways, placed at above mid-slab height, but with proper concrete cover, as designed by the pavement engineer or structural engineer. If concrete pavements are to be unreinforced, then we suggest the designer use expansion/contraction and/or construction joints spaced no greater than 24 times the pavement thickness, both ways, in nearly square patterns, and detailed in general accordance with ACI Guidelines. Doweling of concrete pavements at critical pathways is also recommended.

We recommend that reinforced concrete pads be provided for truck pad areas in front of and beneath trash receptacles as determined by the structural designer. The trash collection trucks should be parked on the rigid concrete pavement when the trash receptacles are lifted. The concrete pads should be at least 5 inches thick and properly reinforced. Thickened edges should be used along outside edges of concrete pavements. Edge thickness should be at least 2 inches thicker than concrete pavement thickness and taper to the actual concrete pavement thickness 36 inches inward from the edge. Integral curbs may be used in lieu of thickened edges.

The above pavement section alternatives were estimated on the basis that a comparable soil type with R-value indicated above would constitute the final subgrade of the pavement. ACG should be retained to observe and test final subgrade soil(s) exposed to affirm that the soil is comparable to that indicated

above. Where differing earth materials are encountered, they should be tested to affirm that they will also provide the same or better support for pavement sections like those recommended above for preliminary design.

We emphasize that the performance of the pavement is dependent upon uniform and adequate compaction of the soil subgrade, as well as all engineered fill and utility trench backfill within the limits of the pavements. Pavement subgrade preparation (i.e., scarification, moisture conditioning and compaction) be performed after underground utility construction is complete, and just prior to aggregate base placement.

The upper 12 inches of pavement subgrade soils should be compacted to at least 95 percent relative compaction at no less than the optimum moisture content for granular soils, maintained in a moist condition, and protected from disturbance. Aggregate base should also be compacted to at least 95 percent of the ASTM D1557 maximum dry density at the optimum moisture content or above.

Final pavement subgrades should be stable and unyielding under construction traffic prior to aggregate base placement and be protected from disturbance or desiccation until covered by aggregate base. To help identify unstable pavement subgrades within the pavement limits, a proof-roll should be performed with a fully loaded, 4000-gallon water truck (or equivalent) on the exposed subgrades prior to placement of aggregate base. The proof-roll should be observed by the Geotechnical Engineer's representative.

In the summer heat, high axle loads coupled with shear stresses induced by sharply turning tire movements can lead to failure in asphalt concrete pavements. Therefore, Portland cement concrete (PCC) pavements should be used in areas subjected to concentrated heavy wheel loading, such as entry driveways, and/or in storage/unloading areas. Alternate PCC pavement sections have been provided in the table above.

We recommend concrete slabs be constructed with thickened edges in accordance with American Concrete Institute (ACI) design standards, latest edition. Reinforcing for crack control, if desired, should be provided in accordance with ACI guidelines. Reinforcement must be located at mid-slab depth to be effective. Joint spacing and details should conform to the current PCA or ACI guidelines. PCC should achieve a minimum compressive strength of 3,500 pounds per square inch at 28 days.



All pavement materials and construction methods of structural pavement sections should conform to the applicable provisions of the Caltrans Standard Specifications, latest edition.

### **Pavement Drainage**

Base course or pavement materials should not be placed when the subgrade surface is wet. Surface drainage should be provided away from the edge of paved areas to minimize lateral moisture transmission into the subgrade.

Adequate drainage systems should be provided to prevent both surface and subsurface saturation of the subgrade soils. As a design option, a subdrain system beneath and along the edges of the pavements might be considered. The purpose of the system would be to mitigate saturation and loss of strength/stability of the subgrade soils. Subdrains should be especially considered beneath valley drains, if utilized for the project. As an alternate to edge drains (especially around landscape planters), barrier curbing that extends to at least four inches into the soil subgrade below the bottom of the aggregate base layer could be considered to limit infiltration of water beneath the adjacent pavement. Drainage inlets should be perforated (weep holes installed) at the level of the aggregate base layer. A layer of geotextile fabric should be placed on the outside of the drain inlet over the weep holes to reduce the potential for migration or piping of fines through the holes.

Base course or pavement materials should not be placed when the subgrade surface is wet. Surface drainage should be provided away from the edge of paved areas to minimize lateral moisture transmission into the subgrade.

### **Pavement Construction Considerations**

On most project sites, the site grading is generally accomplished early in the construction phase. However, as construction proceeds, the subgrades may become disturbed due to utility excavations, construction traffic, rainfall, etc. As a result, the pavement subgrade may not be suitable for placement of aggregate base and pavement. We recommend the area underlying the pavement be rough graded and proof-rolled prior to placement of aggregate base material. Particular attention should be paid to high traffic areas and utility trenches that were backfilled.

Areas where disturbance has occurred and materials are unsuitable, they should be removed and replaced with compacted structural fill.

The aggregate base should be uniformly moisture-conditioned and compacted to at least 95 percent relative compaction (modified proctor) in accordance with this report. Base course or pavement materials should not be placed when the surface is wet. Surface drainage should be provided away from the edge of paved areas to minimize lateral moisture transmission into the subgrade.

Minimizing subgrade saturation is an important factor in maintaining subgrade strength. Water allowed to pond on or adjacent to pavements could saturate the subgrade and cause premature pavement deterioration. The pavement should be sloped to provide rapid surface drainage, and positive surface drainage should be maintained away from the edge of the paved areas. Design alternatives which could reduce the risk of subgrade saturation and improve long-term pavement performance include crowning the pavement subgrades to drain toward the edges, rather than to the center of the pavement areas; and installing surface drains next to any areas where surface water could pond. Properly designed and constructed subsurface drainage will reduce the time subgrade soils are saturated and can also improve subgrade strength and performance. In areas where there will be irrigation adjacent to pavements, we recommend the owner consider installing perimeter drains for the pavements.

Preventative maintenance should be planned and provided for through an on-going pavement management program to enhance future pavement performance. Preventative maintenance activities are intended to slow the rate of pavement deterioration, and to preserve the pavement investment.

## **EXTERIOR FLATWORK**

Final subgrade areas for exterior concrete flatwork (i.e., sidewalks, patios, etc.) should be prepared in accordance with the recommendations of Earthwork sections included in this report. Proper moisture conditioning of the subgrade soils is considered essential to the performance of the exterior flatwork. At least 5-inch layer of aggregate base (AB) compacted to at least 95 percent relative compaction should

be used as a leveling course beneath the exterior flatwork. The AB should be supported on at least 12 inches of engineered fill subgrade compacted to at least 95 percent relative compaction per the Earthwork section of this report.

All exterior flatwork concrete should be at least four inches thick. Consideration should be given to thickening the edge of the slab to at least twice the slab thickness where wheel traffic is expected over the slabs. Expansion joints should be provided to allow for minor vertical movement of the flatwork. Exterior flatwork should be constructed independent of perimeter building foundations by the placement of a layer of felt material between the flatwork and the foundation. The slab designer should determine the final thickness, strength and joint spacing of exterior slab-on-grade concrete. The slab designer should also determine if slab reinforcement for crack control is required and determine final slab reinforcing requirements.

Practices recommended by the Portland Cement Association (PCA) for proper placement, curing, joint depth and spacing, construction, and placement of concrete should be followed during exterior concrete flatwork construction.

Areas adjacent to new exterior flatwork should be landscaped to maintain more uniform soil moisture conditions adjacent to and under flatwork. We recommend final landscaping plans not allow fallow ground adjacent to exterior concrete flatwork.

#### **SITE DRAINAGE**

Final site grading should be designed to provide positive drainage of surface water away from structures and prevent ponding of water adjacent to foundations, slabs and pavements. The grade adjacent to structures should be sloped away from foundations at least two percent slope for a distance of at least five feet, where possible. Roof gutter downspouts and surface drains should drain onto pavements or sidewalks, or be connected to rigid non-perforated piping directed to an appropriate drainage point away from the structure(s). Ponding of surface water should not be allowed adjacent to the building(s) or pavements. Landscape berms, if planned, should not be constructed in such a manner as to promote drainage toward structures.



## **SUBDRAINAGE**

Subdrains might be needed to control subsurface water that might become perched in top and/or fill soils. Each case should be evaluated by the Geotechnical Engineer so that he/she could make appropriate mitigation recommendations.

## **LIMITATIONS**

This report contains statements regarding opinions, conclusions, and recommendations, all of which involve certain risks and uncertainties. These statements are often, but are not always, made through the use of words or phrases such as “anticipates”, “intends”, “estimates”, “plans”, “expects”, “we believe”, “we consider”, “it is our opinion”, “mitigation or mitigate”, “suggest”, “may be”, “expected”, “predicated”, “advised”, and similar words or phrases, or future or conditional verbs such as “will”, “would”, “should”, “potential”, “can continue”, “could”, “may”, or similar expressions. Actual results may differ significantly from the expectations contained in the statements. Among the factors that may result in differences are the inherent uncertainties associated with earth material conditions, groundwater, project development activities, regulatory requirements, and changes in the planned development.

The analysis and recommendations submitted in this report are based in part upon the data from the exploratory borings at the indicated locations and in part on information provided by the client. The nature and extent of subsurface variations between the test borings across the site (or due to the modifying effects of weather and/or man) may not become evident until further exploration or during construction. If variations then appear evident, then the conclusions, opinions, and recommendations in this report shall be considered invalid, unless the variations are reviewed and the conclusions, opinions, and recommendations are modified or approved in writing.

This report was prepared to assist the client in the evaluation of the site and to assist the architect and/or engineer in the design of the improvements. ACG recommends that we be retained to review the project plans and specifications to assess that the recommendations of this report have been properly interpreted and implemented in the plans and specifications.

If there are any significant changes in the project as described herein, then the conclusions and recommendations contained in this report shall not be considered valid unless the changes are reviewed, and conclusions and recommendations modified or verified in writing.

This report is issued for the client’s use only. In addition, it is his responsibility to ensure that the information and recommendations contained herein are called to the attention of the designer for the project; and, that necessary steps are taken to implement the recommendations during construction.

The findings in this report were developed on the date(s) indicated. Changes in the conditions of the property can occur with the passage of time, whether they are due to natural processes or the works of man, on this or adjacent properties. In addition, changes in applicable or appropriate standards may occur, whether they result from legislation or from the broadening of knowledge. Accordingly, the findings in this report might be invalidated, wholly or partially, by changes outside of our control. Therefore, this report and the findings on which it is based are subject to our review at the onset of and during construction, or within two years, whichever first occurs.

We recommend having a pre-construction meeting, including the owner, design professionals, contractor(s), and ACG, to discuss the planned work and scheduling. In addition, we should be retained to observe the geotechnical construction, particularly site earthworks and foundation excavations, as well as to perform observations and testing. If, during construction, subsurface conditions are discovered to be different from those described herein, or appear to be present beneath excavations, then we should be advised at once so that those conditions may be observed and our recommendations reconsidered.

The scope of services of this project does not include either specifically or by implication any environmental or biological (e.g., mold, fungi, bacteria, etc.) assessment of the site and adjacent properties or identification or prevention of pollutants, hazardous materials, or any other adverse conditions. If the owner is concerned about the potential of such contamination or pollution, other studies should be undertaken. In addition, our work scope does not include an evaluation or investigation of the presence or absence of wetlands or flood zone considerations.

No warranties, either expressed or implied, are intended or made. Site safety, excavation support, and dewatering requirements are the responsibility of others. If any changes in the nature, design, or location of the project as outlined in this report are planned, the conclusion and recommendations contained in this report shall not be considered valid unless ACG reviews the changes, and either verifies or modifies the conclusions of this report in writing.

This report is applicable only for the project and site studied and should not be used for design and/or construction on any other site.

Our work scope does not include obtaining permits for any aspect of the subject project. The owner of the project or his representative is responsible for obtaining permits necessary for the project.

We appreciate this opportunity to be of service on this project. If you have any questions regarding this report, then please do not hesitate to contact us.

## REFERENCES

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11. Jennings, Charles W. and Bryant, William A., 2010, "Fault Activity Map of California" (scale 1: 750,000) published by CGS, Geologic Data Map No. 6.
12. SEAOC/OSHPD U.S. Seismic Hazard Maps (reference ASCE/SEI 7-16).
13. Pacific West Communities, Inc., undated, Preliminary Site Plan.
14. Google Earth Aerial Photography of the Subject Site.

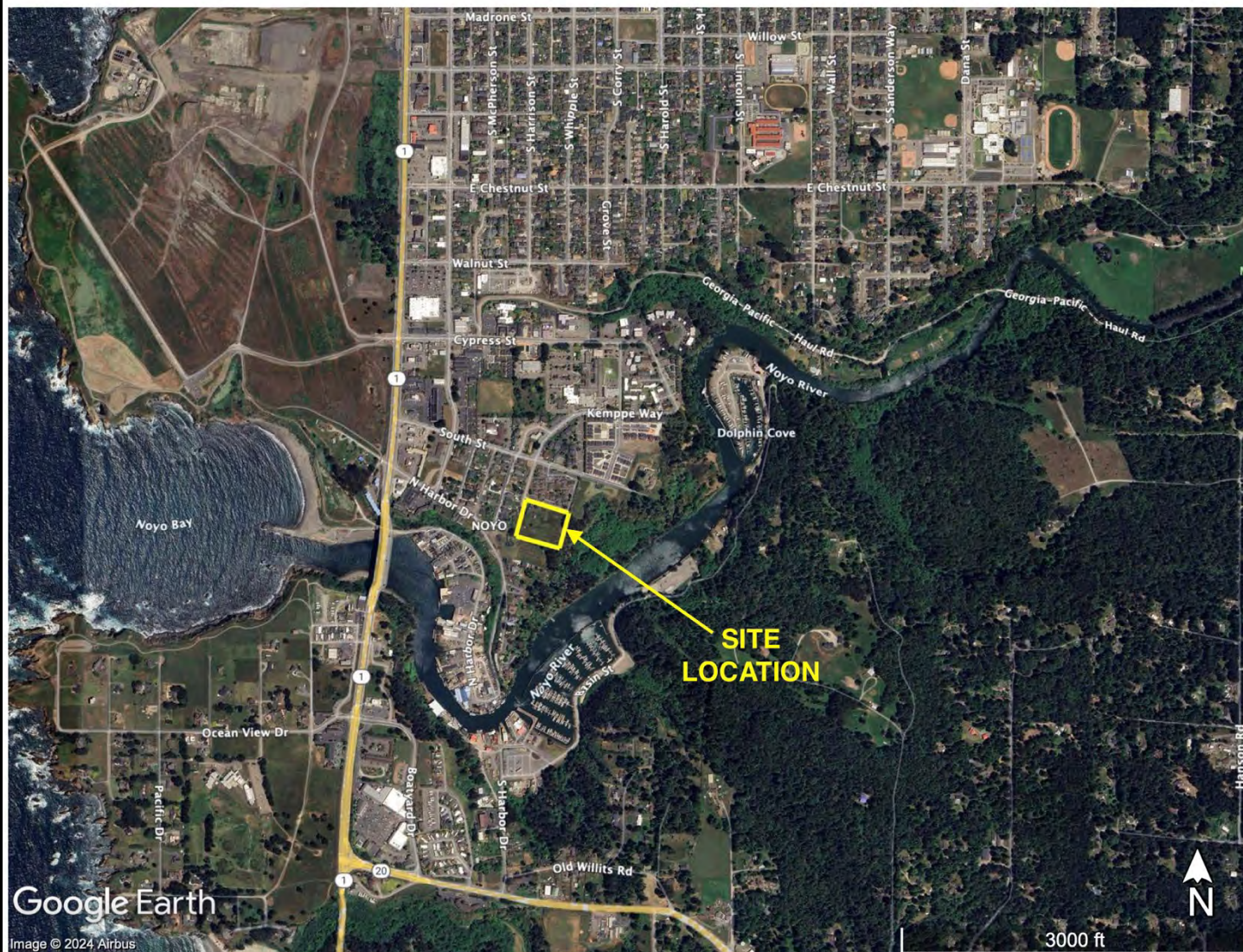




## **APPENDIX A**

### **VICINITY MAP**

### **EXPLORATIONS MAP**



#### NOTES:

- 1- Location of site (designated by yellow border) is approximate.
- 2- Source for base map: Imagery from Google Earth 2024®.



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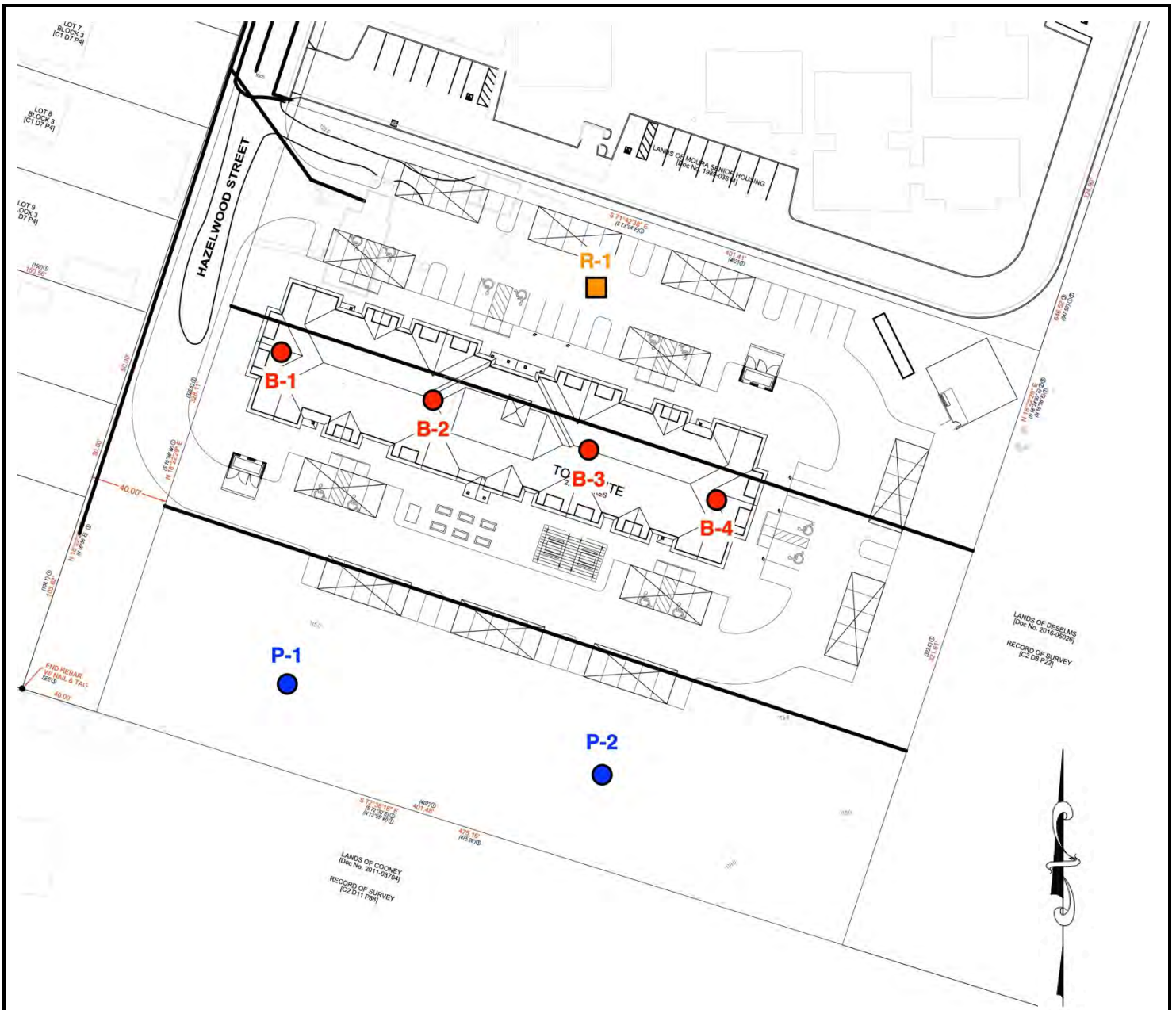
**VICINITY MAP**  
**Proposed 3-Story Apartment Building**  
**860 Hazelwood Street**  
**Fort Bragg, California**

**ACG JOB NO.**  
 05-24059G

**DATE**  
 September 2024

**FIGURE**  
 1





NORTH +/-  
N.T.S.

**LEGEND:**

- B-x Approximate Location - Number of Boring
- P-x Approximate Location - Number of Percolation Test
- R-1 Approximate Location of R-value Sample

**NOTE:**

Source for base map: Preliminary Site Plan provided by the client.



**ALLERION CONSULTING GROUP, INC.**  
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**EXPLORATIONS MAP**  
**Proposed 3-Story Apartment Building**  
**860 Hazelwood Street**  
**Fort Bragg, California**

**ACG JOB NO.**  
05-24059G

**DATE**  
September 2024

**FIGURE**  
2





## **APPENDIX B**

### **FIELD EXPLORATION METHODS**

#### **LOGS OF SUBSURFACE EXPLORATIONS**



## FIELD EXPLORATION METHODS

Field exploration included a general geotechnical engineering reconnaissance within the study area, as well as the excavation of subsurface explorations at approximate locations shown on the Explorations Map, Figure 2, Appendix A. Locations of explorations were determined in the field by estimating from the existing site features shown on an aerial photo. The exploration locations should only be considered accurate to the degree implied by the means and methods used to define them. The explorations were accomplished, and the soil logging and sampling performed by, a Staff Geologist and/or Engineer under the direct supervision of a California licensed Geotechnical Engineer. The explorations were conducted to determine the geometry and geotechnical characteristics of subsurface geologic deposits at the site.

The exploratory borings were advanced with 7-inch outer-diameter continuous flight helical hollow stem augers (HSA) powered by a truck mounted drill rig. Relatively undisturbed soil samples were recovered from the borings at selected intervals by either a 1.4-inch SPT (standard penetration) or 2-inch inner-diameter samplers (Modified California) advanced with an automatic hammer driving a 140 lb. hammer freely falling 30 inches (standard 350-foot/lb. striking force). The number of blows of the hammer required to drive the samplers each 6-inch to 18-inch interval of each drive is denoted as the penetration resistance or "blow count" and provides a field estimate of soil consistency/relative density. Blow counts shown on the logs have not been corrected/converted. Selected undisturbed samples were retained in moisture-proof containers for laboratory testing and reference. Bulk soil samples were recovered directly from excavation cuttings and placed in sealed plastic sample bag(s).

Soils were logged in the field by the Staff Geologist or Engineer and were field classified based on inspection of samples and auger cuttings per the Unified Soil Classification System (ASTM D2487) by color, gradation, texture, type, etc. Groundwater observations were made in the explorations during and after drilling. Exploration log prepared for the exploration provides soil descriptions and field estimated depths. The exploration logs are included in this Appendix B which also contains the Explorations Log Legend. This log includes visual classifications of the materials encountered during drilling as well as the field engineer's interpretation of the subsurface conditions. Final exploration logs included with this report represents the geotechnical engineer's interpretation of the field logs.

Samples of the subsurface soil earth materials were obtained from the exploratory borings for use in laboratory testing to further determine the soil's engineering properties and geotechnical design parameters to be used for future site improvements. The samples were tagged for identification, sealed to reduce moisture loss, and taken to our laboratory for further examination, testing, and classification. Bulk soil samples were recovered directly from excavation cuttings and placed in a plastic sample bag. Soil samples were then transported to ACG's soil mechanics laboratory for further testing. Field descriptions within the exploration logs have been modified, where appropriate, to reflect laboratory test results.

Upon completion of drilling the test borings the resulting holes were backfilled with cement grout from final test boring depth up to original ground surface.



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## Geotechnical Log - Borehole

B-1

Latitude : 39.428455  
Longitude : -123.802230  
Ground Elevation : 119 (ft)  
Total Depth : 26 ft BGL

Drill Rig : CME 55  
Driller Supplier : V&W Drilling, Inc.  
Logged By : JC  
Reviewed By : MK  
Date : 09/04/2024

Job Number : 05-24059G  
Client : Pacific West Communities  
Project : Proposed 3-Story Apartment Building  
Location : Fort Bragg, California  
Loc Comment : Refer to Explorations Map

Elevation (ft)	Depth (ft)	Drilling Method	Samples		Blows per 6 in				Classification Code	Graphic Log	Material Description	Groundwater	Testing			Remarks
			SPT Sample	Mod Cal Sample	COMMENT	TYPE	BLOWS per 6 in 140 lb hammer 30 Inch drop	N	REC				Water Content, %	Dry Unit Weight, pcf	% Fines	
119		7-inch Hollow Stem Auger									Loose, moist, brown, fine grained sand, SILTY SAND.					
118	1															
117	2															
116	3		X			SPT	3-3-5	8	18				9.7	93	24.8	
115	4		B1/1													
114	5			X		Mod Cal	9-7-10	17	12							
113	6			B1/2						SP-SM	Medium dense, moist, brown and light brown, fine grained sand, POORLY GRADED SAND WITH SILT, trace gravel.					
112	7															
111	8															
110	9															
109	10		X			SPT	6-7-10	17	18	SM	Medium dense, moist, brown, fine grained sand, SILTY SAND.					
108	11		B1/3													
107	12															
106	13															
105	14										- wet.					
104	15			X		Mod Cal	6-6-9	15	6							
103	16			B1/4												
102	17															
101	18															
100	19															
99	20		X			SPT	2-4-5	9	18	SP-SM	Loose to medium dense, moist, orange brown, POORLY GRADED SAND WITH SILT, fine grained sand.					
98	21		B1/5													
97	22										- dense to very dense, brown					
96	23															
95	24															
94	25			X		Mod Cal	17-50	50/6"	12							
93	26			B1/6							B-1 Terminated at 26ft (Groundwater was encountered at a depth of approximately 13 feet during drilling and 11 feet after drilling. Boring was backfilled with cement grout and topped with soil cuttings. )					
92	27															
91	28															
90	29															
89	30															
88	31															
87	32															
86	33															
85	34															





# Allerion Consulting Group

1050 Melody Lane, Suite 160. Roseville, CA 95678

Phone: 916.742.5096

## Geotechnical Log - Borehole

B-2

Latitude : 39.428372  
Longitude : -123.801972  
Ground Elevation : 119 (ft)  
Total Depth : 30.5 ft BGL

Drill Rig : CME 55  
Driller Supplier : V&W Drilling, Inc.  
Logged By : JC  
Reviewed By : MK  
Date : 09/04/2024

Job Number : 05-24059G  
Client : Pacific West Communities  
Project : Proposed 3-Story Apartment Building  
Location : Fort Bragg, California  
Loc Comment : Refer to Explorations Map

Elevation (ft)	Depth (ft)	Drilling Method	Samples		Blows per 6 in				Classification Code	Graphic Log	Material Description	Groundwater	Testing			Remarks
			SPT Sample	Mod Cal Sample	COMMENT	TYPE	BLOWS per 6 in 140 lb hammer 30 Inch drop	N	REC				Water Content, %	Dry Unit Weight, pcf	% Fines	
119		7-inch Hollow Stem Auger								SM	Loose, moist, brown, fine grained, SILTY SAND.				31	
118	1															
117	2															
116	3					Mod Cal	3-4-4	8	12							
115	4			B2/1												
114	5															
113	6					SPT	5-6-9	15	18	SP	Medium dense, moist, light brown with rust staining, fine grained, POORLY GRADED SAND.					
112	7			B2/2												
111	8															
110	9															
109	10															
108	11					Mod Cal	4-7-7	14	18.0	CL	Stiff, moist, grey and brown with orange, LEAN CLAY, with 6 inches Silty Sand lenses at 10.5 feet.					
107	12			B2/3												
106	13															
105	14															
104	15															
103	16					SPT	2-4-7	11	18	SM	Medium dense, moist, grey with rust staining, fine grained sand, SILTY SAND, trace fine sized gravel.	24.9	104	32		
102	17			B2/4												
101	18															
100	19															
99	20															
98	21					Mod Cal	3-5-10	15	18.0		- brown with rust staining.	27.1	99	16		
97	22			B2/5												
96	23															
95	24															
94	25															
93	26					SPT	7-15-50	65	16		- very dense.					
92	27			B2/6												
91	28															
90	29										- red-brown with rust staining.					
89	30															
88	31			B2/7		Mod Cal	50/6"	50/6"	6							
87	32										B-2 Terminated at 30.5ft (Groundwater was encountered at a depth of approximately 30 feet during drilling and 12 feet after drilling. Boring was backfilled with cement grout and topped with soil cuttings. )					
86	33															
85	34															



**Job Number** : 05-24059G  
**Client** : Pacific West Communities  
**Project** : Proposed 3-Story Apartment Building  
**Location** : Fort Bragg, California  
**Loc Comment** : Refer to Explorations Map

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# Allerion Consulting Group

1050 Melody Lane, Suite 160. Roseville, CA 95678

Phone: 916.742.5096

## Geotechnical Log - Borehole

B-4

Latitude : 39.428263  
Longitude : -123.801453  
Ground Elevation : 118 (ft)  
Total Depth : 21.5 ft BGL

Drill Rig : CME 55  
Driller Supplier : V&W Drilling, Inc.  
Logged By : JC  
Reviewed By : MK  
Date : 09/03/2024

Job Number : 05-24059G  
Client : Pacific West Communities  
Project : Proposed 3-Story Apartment Building  
Location : Fort Bragg, California  
Loc Comment : Refer to Explorations Map

Elevation (ft)	Depth (ft)	Drilling Method	Samples		Blows per 6 in				Classification Code	Graphic Log	Material Description	Groundwater	Testing		Remarks
			SPT Sample	Mod Cal Sample	COMMENT	TYPE	BLOWS per 6 in 140 lb hammer 30 Inch drop	N	REC				Water Content, %	Dry Unit Weight, pcf	
118		5-inch Solid Stem Auger								SM	Loose, moist, brown, fine grained, SILTY SAND.				
117	1														
116	2														
115	3					Mod Cal	2-3-3	6	18				11.3	90	
114	4			B4/1											
113	5														
112	6					SPT	2-3-5	8	12	SP	Loose, moist, light brown, fine grained, POORLY GRADED SAND.				
111	7			B4/2											
110	8														
109	9														
108	10														
107	11														
106	12			B4/3		Mod Cal	2-5-8	13	18	CL	Stiff, moist, light gray with rust staining, LEAN CLAY.				
105	13														
104	14														
103	15														
102	16					SPT	4-7-10	17	18	SP	Medium dense, moist to wet, gray with white, fine grained, POORLY GRADED SAND.				
101	17			B4/4											
100	18														
99	19														
98	20														
97	21					Mod Cal	8-9-17	26	18		- wet, brown with orange, medium to coarse grained.				
96	22			B4/5							B-4 Terminated at 21.5ft (Groundwater was encountered at a depth of approximately 13.5 feet during drilling and 13 feet after drilling. Boring was backfilled with cement grout and topped with soil cuttings. )				
95	23														
94	24														
93	25														
92	26														
91	27														
90	28														
89	29														
88	30														
87	31														
86	32														
85	33														
84	34														





## Allerion Consulting Group

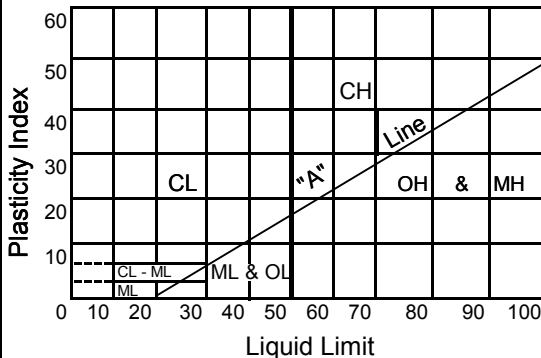
1050 Melody Lane, Suite 160. Roseville, CA 95678

Phone: 916.742.5096

### UNIFIED SOIL CLASSIFICATION

PT	OH	CH	MH	OL	CL	ML	SC	SM	SP	SW	GC	CM	GP	GW
Highly organic soils	Silts and Clays  (Liquid Limit > 50)			Silts and Clays  (Liquid Limit < 50)			Sands with fines > 12% fines	Clean sands < 5% fines	Gravels with fines > 12% Fines	Clean gravels < 5% fines				
							Sands - more than 50% of coarse fraction is smaller than No. 4 sieve.		Gravels - more than 50% of coarse fraction is larger than No. 4 sieve.					
Fine grained soils (more than 50% is smaller than No. 200 sieve)							Coarse grained soils (more than 50% is larger than No. 200 sieve)							

#### LABORATORY CLASSIFICATION CRITERIA



GW and SW- $C_u = \frac{D_{60}}{D_{10}}$  greater than 4 for GW & 6 for SW;  $C_c = \frac{(D_{30})^2}{D_{10} \times D_{60}}$  between 1 & 3

GP and SP - Clean gravel or sand not meeting requirements for GW and SW.

GM and SM - Atterberg limits below "A" line or P.I. less than 4.

GC and SC - Atterberg limits above "A" line with P.I. greater than 7.

Fines (silt or clay)	Fine Sand	Medium Sand	Coarse Sand	Fine Gravel	Coarse Gravel	Cobbles	Boulders
Sieve sizes	> # 200	> # 40	> # 10	> # 4	> 3/4"	> 3"	> 10"

Classification of earth materials shown on this sheet is based on field inspection and should not be construed to imply laboratory analysis so stated.

#### MATERIAL SYMBOLS

	WELL GRADED GRAVEL or GRAVEL WITH SAND (GW)
	POORLY GRADED GRAVEL or GRAVEL WITH SAND (GP)
	SILTY GRAVEL or SILTY GRAVEL WITH SAND (GM)
	CLAYEY GRAVEL or CLAYEY GRAVEL WITH SAND (GC)
	WELL-GRADED SAND or SAND WITH GRAVEL (SW)
	POORLY GRADED SAND or SAND WITH GRAVEL (SP)
	SILTY SAND or SILTY SAND WITH GRAVEL (SM)
	CLAYEY SAND or CLAYEY SAND WITH GRAVEL (SC)
	INORGANIC LOW PLASTIC CLAY, SANDY CLAY, or CLAY WITH SAND/GRAVEL (CL)
	INORGANIC LOW PLASTIC SILT, SANDY SILT, or SILT WITH SAND/GRAVEL (ML)
	INORGANIC HIGH PLASTIC CLAY, SANDY CLAY, or CLAY WITH SAND/GRAVEL (CH)
	INORGANIC HIGH PLASTIC SILT, SANDY SILT, or SILT WITH SAND/GRAVEL (MH)
	ORGANIC LOW/HIGH PLASTIC CLAY or SILT (OL or OH)
	PEAT (PT)

#### RELATIVE DENSITY / CONSISTENCY CLASSIFICATION FOR SOILS

According to the Standard Penetration Test and AASHTO 1988

No. of Blows	Granular	PP (tsf)	No. of Blows	Cohesive
0 - 4	Very Loose	< 0.25	< 2	Very Soft
5 - 10	Loose	0.25 - 0.5	3 - 4	Soft
11 - 30	Medium Dense	0.5 - 1	5 - 8	Medium Stiff
31 - 50	Dense	1 - 2	9 - 15	Stiff
> 50	Very Dense	2 - 4	16 - 30	Very Stiff
		> 4	> 30	Hard

Where the standard penetration test has not been performed, consistencies shown on the logs are estimated and given in parenthesis, e.g., (Very Stiff).

#### FIELD AND LABORATORY TEST ABBREVIATIONS

REC: Sample recovery in inches.  
PP: Field Pocket Penetrometer in tsf.  
LL: Liquid Limit, expressed as a water content.  
PI: Plasticity Index, expressed as a water content.  
%Fines: percent passing No. 200 Sieve)  
UC: Unconfined compressive strength test in tsf.  
Dry Unit Weight, pcf: Dry weight per unit volume of soil sample.

#### TYPICAL SAMPLER GRAPHIC SYMBOLS

	2-inch-OD split spoon (SPT)		2.5-inch-OD Modified California w/ 1.91-inch-ID stainless steel tube
	Bulk Sample		Grab Sample
	3-inch-OD California Modified w/ 2.38-inch-ID Stainless Steel Tube		

#### OTHER GRAPHIC SYMBOLS

	Groundwater level (during drilling)
	Groundwater level (after drilling)
	Inferred/gradational contact between strata
	Queried contact between strata

#### GENERAL NOTES

- Soil classifications are based on the Unified Soil Classification System (USCS). Descriptions and stratum lines are interpretive, and actual lithologic changes may be gradual. Field descriptions may have been modified to reflect results of lab tests.
- Descriptions on these logs apply only at the specific exploration locations and at the time the explorations were advanced. They are not warranted to be representative of subsurface conditions at other locations or times.

### LEGEND FOR EXPLORATIONS LOGS



## **APPENDIX C**

### **LABORATORY TESTING**



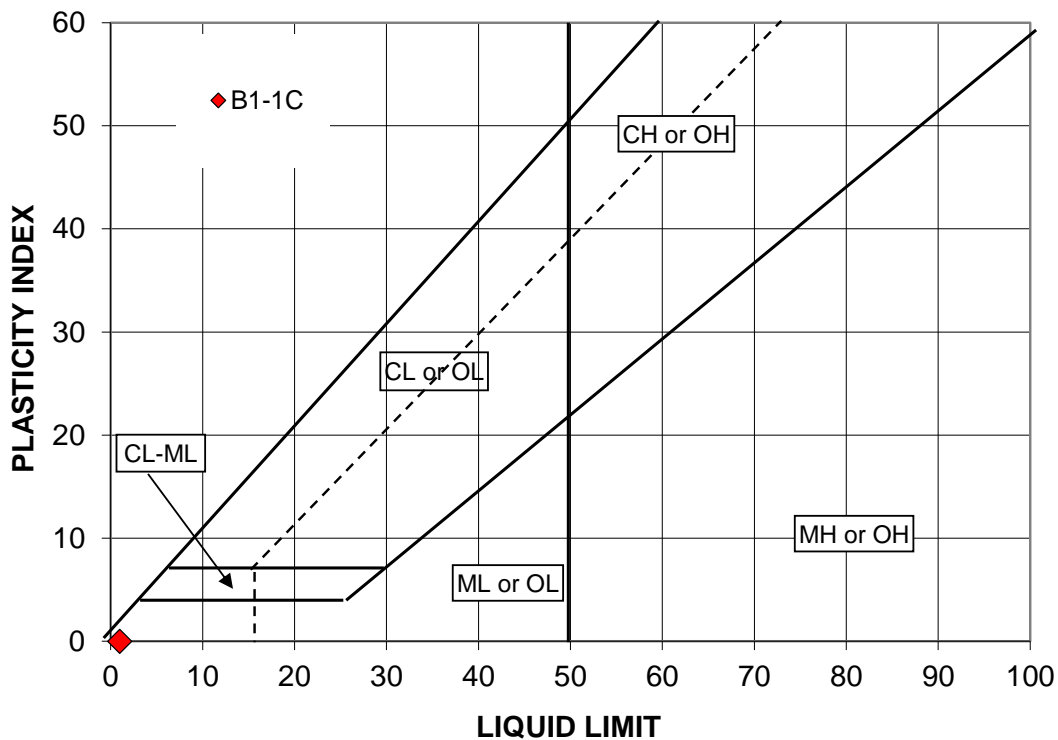
## **LABORATORY TESTING**

Samples retrieved during the field exploration were taken to the soil mechanics laboratory for further observation by the project geotechnical engineer and were classified in accordance with the Unified Soil Classification System (USCS) described in Appendix B. An applicable laboratory testing program was formulated for classification testing and to determine engineering properties of the subsurface earth materials. The field descriptions were confirmed or modified based on the test results.

Soil mechanics laboratory tests were performed on soil samples recovered from the explorations to further determine the physical and engineering properties of the soils. These tests included materials R-value test (CTM 301), sieve analysis (ASTM D6913), finer than no. 200 sieve (ASTM D 1140), dry density (ASTM D 2937), Atterberg limits (ASTM D4318), natural moisture content (ASTM D 2216) and evaluation for soil corrosion, including pH and minimum resistivity (CA DOT Test #643), sulfate content (CA DOT Test #417), and chloride content (CA DOT Test #422m). The results of these tests are shown on the Exploration Log at the depth that each sample was recovered. The Atterberg limits, sieve analysis, R-value, and soil corrosion test results are attached. The laboratory test results were used to assess the relative soil and geologic conditions of the site of the proposed construction and to provide geotechnical design criteria for foundations, slabs, grading and drainage.




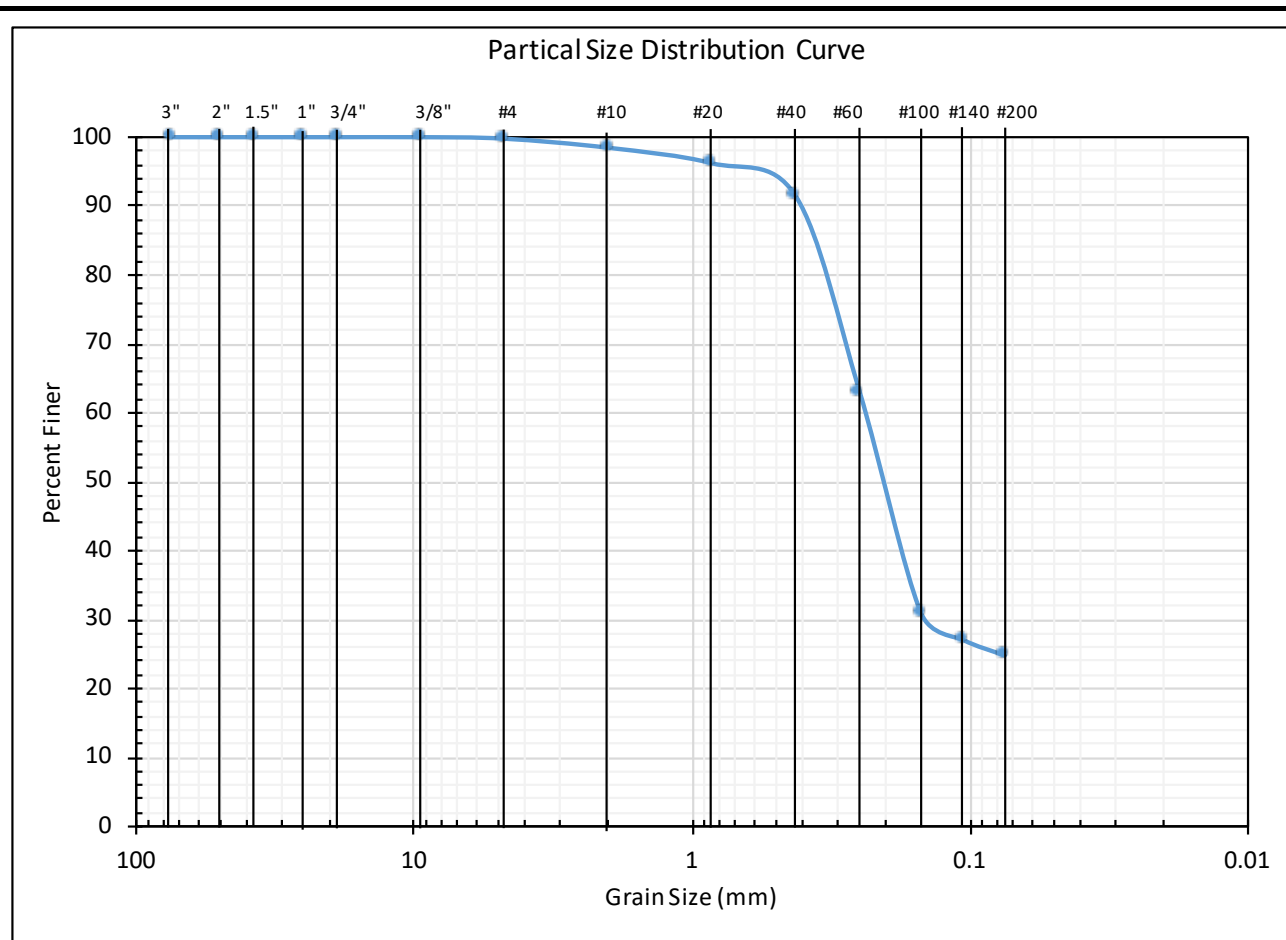
## ATTERBERG LIMITS TEST RESULTS



GROUP SYMBOL	UNIFIED SOIL CLASSIFICATION FINE-GRAINED SOIL
OL	Organic silts and organic silty clays of low plasticity
ML	Inorganic clayey silts to very fine sands of slight plasticity
CL	Inorganic clays of low to medium plasticity
OH	Organic silts and clays of medium to high plasticity
MH	Inorganic silts, clayey silts, and sandy silts
CH	Inorganic clays of high plasticity

SAMPLE ID	DEPTH (feet)	Content (%)	% Fines	LL	PL	PI
B1/1	2-3.5	9.7	25	Non-Plastic		

Lab No.:	118G	ATTERBERG LIMITS (ASTM - D4318)	
Project Name:	860 Hazelwood Avenue		
Project No.:	05-24059G	MATERIAL FINER THAN #200 SIEVE (ASTM D-1140)	
Tested By:	RP		
Reviewed By:	MK		Sheet 1
Sample Date:	9/4/24		
Test Date:	9/12/24		




% +3"	% Gravel		% Sand			% Fines
	Coarse	Fine	Coarse	Medium	Fine	Silt & Clay
0	0	0.2	1.3	6.9	66.7	24.8
0	0.2		75.0			24.8

SEIVE DESIGNATION	PERCENT FINER
3"	100.0
2"	100.0
1.5 inch	100.0
1 inch	100.0
3/4 inch	100.0
3/8 inch	100.0
#4	99.8
#10	98.5
#20	96.2
#40	91.5
#60	63.2
#100	30.9
#140	27.1
#200	24.8

**Soil Description:**

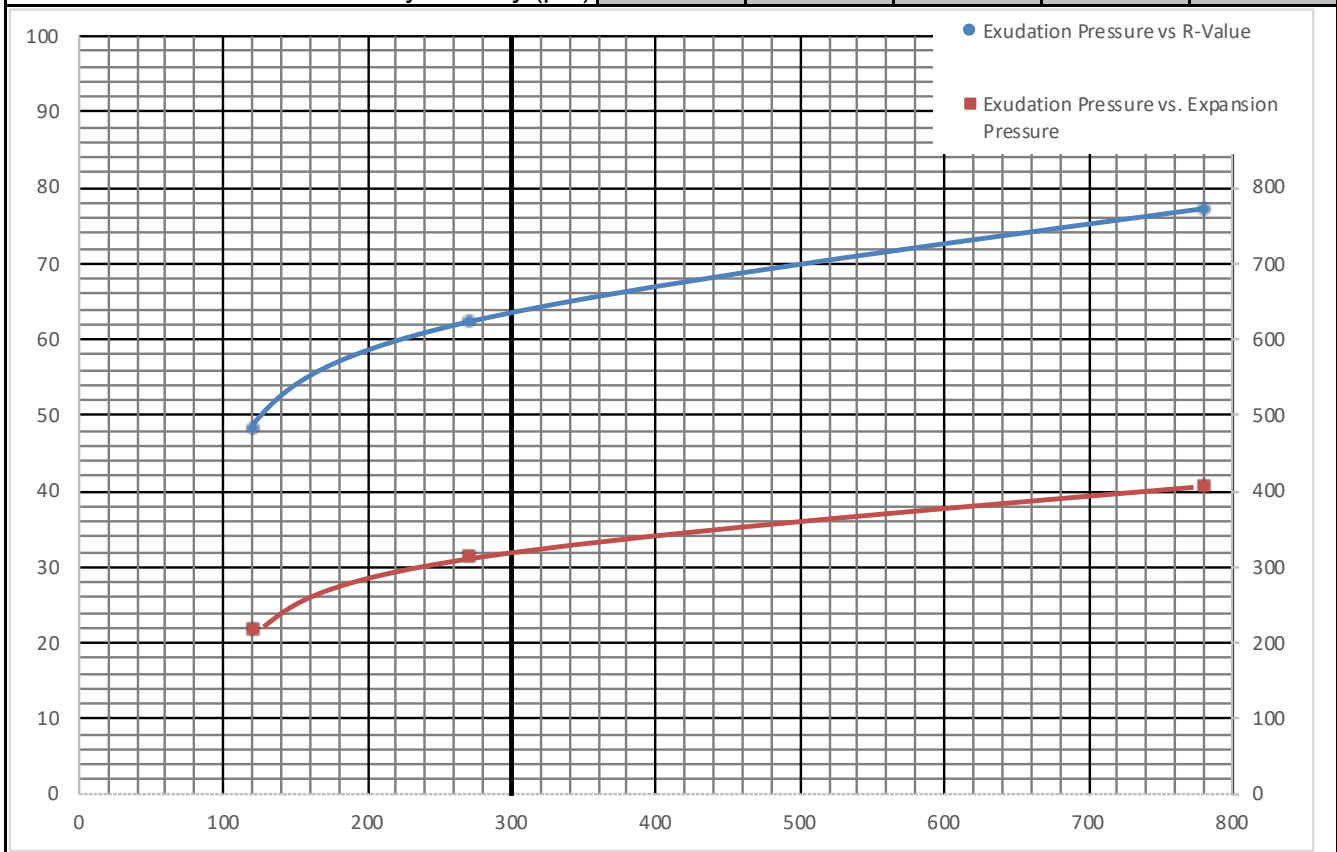
Silty Fine SAND (SM)

Lab No.:	118G	<b>Gradation of Soils Using Sieve Analysis (ASTM - D6913)</b>		
Project Location:	Fort Bragg, California			
Project No.:	05-24059G	Boring Number:	B-1	
Tested By:	RP	Sample Number:	B1/1	
Reviewed By:	MK	Sample Depth:	2 - 3.5'	Sheet 2
Sample Date:	9/4/24			
Test Date:	9/12/24			

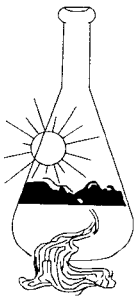


## R-Value CTM 301

CTL Job No.:	1191-054	Boring:	NA	Reduced By:	RU
Client:	Allerion Consulting Group	Sample:	R-1	Checked By:	PJ
Project Number:	05-24059G	Depth:	0-3'	Date:	9/16/24
Project Name:	860 Hazelwood Street	<b>R-Value</b>		<b>63</b>	
Soil Description:	Dark Reddish Brown Silty SAND				
Remarks:		<b>Expansion Pressure</b>		<b>320</b>	
Specimen Designation	A	B	C	D	E
Compactor Foot Pressure (psi)	150	180	280		
Exudation Pressure (psi)	122	272	782		
Exudation Load (lbf)	1533	3418	9827		
Height After Compaction (in)	2.52	2.44	2.40		
Expansion Pressure (psf)	215	310	404		
Stabilometer @ 2000	66	40	26		
Turns Displacement	3.82	4.40	3.56		
R-value	48	63	78		
Corrected R-Value	48	62	77		
Moisture Content (%)	20.0	18.1	16.3		
Wet Density (pcf)	122.6	122.5	123.6		
Dry Density (pcf)	102.1	103.7	106.2		








# Sunland Analytical

11419 Sunrise Gold Circle, #10  
Rancho Cordova, CA 95742  
(916) 852-8557

Date Reported 09/13/2024  
Date Submitted 09/10/2024

To: Mohammed Khalid  
Allerion Consulting Group, Inc.  
1050 Melody Lane Suite 160  
Roseville, CA 95678

From: Gene Oliphant, Ph.D. \ Ty Bui   
General Manager \ Lab Manager

The reported analysis was requested for the following location:  
Location : 05-24059G Site ID : B4-1B+A.  
Thank you for your business.

\* For future reference to this analysis please use SUN # 93059-192716.

---

## EVALUATION FOR SOIL CORROSION

Soil pH	5.43		
Minimum Resistivity	11.26	ohm-cm (x1000)	
Chloride	6.2 ppm	00.00062	%
Sulfate	3.6 ppm	00.00036	%

## METHODS

pH and Min. Resistivity CA DOT Test #643  
Sulfate CA DOT Test #417, Chloride CA DOT Test #422m



## **APPENDIX D**

### **GUIDE SPECIFICATIONS FOR EARTHWORK**



## GUIDE SPECIFICATIONS FOR EARTHWORK

### A. General Description

1. This item shall consist of all clearing and grubbing, removal of existing obstructions, preparation of the land to be filled, filling the land, spreading, compaction and control of the fill, and all subsidiary work necessary to complete the grading of the cut and fill areas to conform with the lines, grades and slopes as shown on the accepted plans.
2. The Geotechnical Engineer is not responsible for determining line, grade elevations or slope gradients. The property owner or his representative shall designate the party that will be responsible for those items of work.

### B. Geotechnical Report

1. The Geotechnical Report has been prepared for this project by Allerion Consulting Group (ACG), Roseville, California, (916-742-5096). This report was for design purposes only and may not be sufficient to prepare an accurate bid. A copy of the report is available for review at **ACG's** office.
2. Contents of these guide specifications shall be integrated with the Geotechnical Report of which they are a part and shall not be used as a self-contained document. Where a conflict occurs between these guide specifications and the conclusions and recommendations contained in the report, then the conclusions and recommendations shall take precedence and these guide specifications adjusted accordingly.

### C. Site Preparation

1. Clearing Area(s) to be Filled: All trees, brush, logs, rubbish, and other debris shall be removed and disposed of to leave the areas that have been disturbed with a neat appearance. Underground structures shall be removed or may be crushed in place upon approval by the Geotechnical Engineer. Excavations and depressions resulting from the removal of the above items shall be cleaned out to firm undisturbed soil and backfilled with suitable materials in accordance with the specifications contained herein. Stockpiles of clean soil may be reused as filled material provided the soil is free of significant vegetation, debris, rubble, and rubbish and is approved by the Geotechnical Engineer.
2. Surfaces upon which fill is to be placed, as well as subgrades of structure pad(s) left at existing grade, shall have all organic material removed; or, with permission of the Geotechnical Engineer, close cut and remove vegetation and thoroughly disc and blend the remaining nominal organics into the upper soil. Discing must be thorough enough so that no concentrations of organics remain, which may require re-discing or cross-discing several times.
3. Organic laden material removed per paragraph C.2. above, may be used as fill in landscaped areas provided that the material shall not extend closer than ten (10) feet to any structure, shall not exceed two (2) feet in thickness or be used where the material could, in the opinion of the Geotechnical Engineer, create a slope stability problem, and shall be compacted to at least eighty-two (82) percent relative compaction per ASTM Test Designation D 1557. Alternatively, the organic laden material may be hauled off-site and suitably disposed of.



4. Upon completion of the organic removal, exposed surface shall be plowed or scarified to a depth of at least six (6) inches, and until the surface is free from ruts, hummocks, or other uneven features which would tend to prevent uniform compaction by the equipment to be used. Where vegetation has been close cut and removed and remaining organics blended with the upper soil, further scarifying may not be necessary. Where fills are to be placed on hill slopes, scarifying shall be to depths adequate to provide bond between fill and fill foundation. Where considered necessary by the Geotechnical Engineer, (typically where the slope ratio of the original ground is steeper than five (5) horizontal to one (1) vertical), the ground surface shall be stepped or benched to achieve this bond. Vertical dimension of the required benches shall be as determined by the Geotechnical Engineer, based upon location, degree, and condition of the hill slope.
5. After the foundation for the fill has been cleared and scarified, it shall be disced or bladed until it is uniform and free from large clods, uniformly moisture conditioned to the range specified by the Geotechnical Engineer, and compacted to not less than [refer to report -- if not recommended, use 90] percent of maximum dry density as determined by ASTM D 1557, or to such other density as may be determined appropriate for the materials and conditions and acceptable to the Geotechnical Engineer and the owner or his representative.

D. Fill Materials

1. Materials for fill shall consist of material approved by the Geotechnical Engineer.
2. The materials used for fill shall be free from organic matter and other deleterious substances and shall not contain rocks, clods, lumps, or cobbles exceeding four (4) inches in greatest dimension with not more than fifteen (15) percent larger than two and one-half (2-1/2) inches.
3. Imported materials to be used for fill shall be non-expansive [typically, have a plasticity index not exceeding twelve (12)], shall be of maximum one (1) inch size, and shall be tested and approved by the Geotechnical Engineer prior to commencement of grading and before being imported to the site.
4. The Contractor shall notify the Geotechnical Engineer at least four (4) working days in advance of the Contractor's intention to import soil; shall designate the borrow area; and, shall permit the Geotechnical Engineer to sample the borrow area for the purposes of examining the material and performing the appropriate tests to evaluate the quality and compaction characteristics of the soil. Compaction requirements for the material shall be based upon the characteristics of the material as determined by the Geotechnical Engineer.

E. Placement of Fill

1. The selected fill material shall be placed in level, uniform layers (lifts) which, when compacted, shall not exceed six (6) inches in thickness. Water shall be added to the fill, or the fill allowed to dry as necessary to obtain fill moisture content at which compaction as specified can be achieved. Each layer shall be thoroughly mixed during the spreading to obtain uniformity of moisture in each layer.
2. The fill material shall be compacted within the appropriate moisture content range (typically optimum to slightly above the optimum) as determined by the Geotechnical Engineer for the soil(s) being used.

3. Each layer of fill shall be compacted to not less than [refer to report; if not recommended, use 90] percent of maximum dry density as determined by ASTM Test Designation D 1557. Compaction equipment shall be of such design that it will be able to compact the fill to the specified density. Compaction shall be accomplished while the fill material is within the specified moisture content range. Compaction of each layer shall be continuous over its entire area and the compaction equipment shall make sufficient trips to ensure that the required density has been obtained. No ponding or jetting is permitted.
4. If work has been interrupted for any reason, the Geotechnical Engineer shall be notified by the contractor at least two (2) working days prior to the intended resumption of grading.

F. Geotechnical Engineer

1. Owner is retaining Geotechnical Engineer to make observations and tests to determine general compliance with Plans and Specifications, to verify expected or unexpected variations in subsurface conditions, and to give assistance in appropriate decisions. Cost of Geotechnical Engineer will be borne by the Owner, except costs incurred for re-tests and/or re-observations caused by failure of the Contractor to meet specified requirements will be paid by the Owner and back charged to Contractor.

G. Observation and Testing

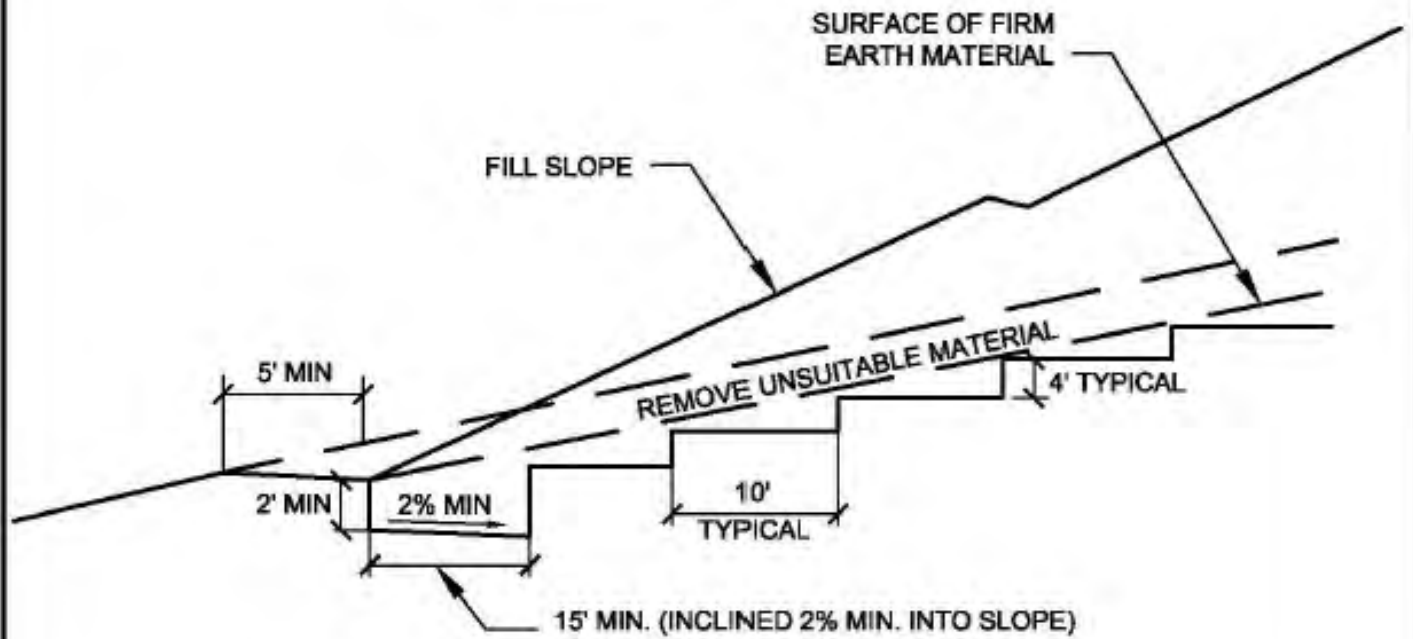
1. Field density tests shall be made by the Geotechnical Engineer or his representative of the compaction of each layer of fill. Density tests shall be taken in the compacted material below any surfaces disturbed by the construction equipment. When these tests indicate that the density of any layer of fill or portion thereof is below the required density or moisture content, the particular layer or portion shall be reworked until the required density or moisture content has been obtained.
2. All aspects of the site earthwork shall be observed and tested as deemed necessary by the Geotechnical Engineer or his representative so that he can render a professional opinion of the completed fill for substantial compliance with plans and specifications and design concepts. The grading contractor shall give the Geotechnical Engineer at least two (2) working days' notice prior to beginning any site earthwork to allow proper scheduling of the work.

H. Seasonal Limits

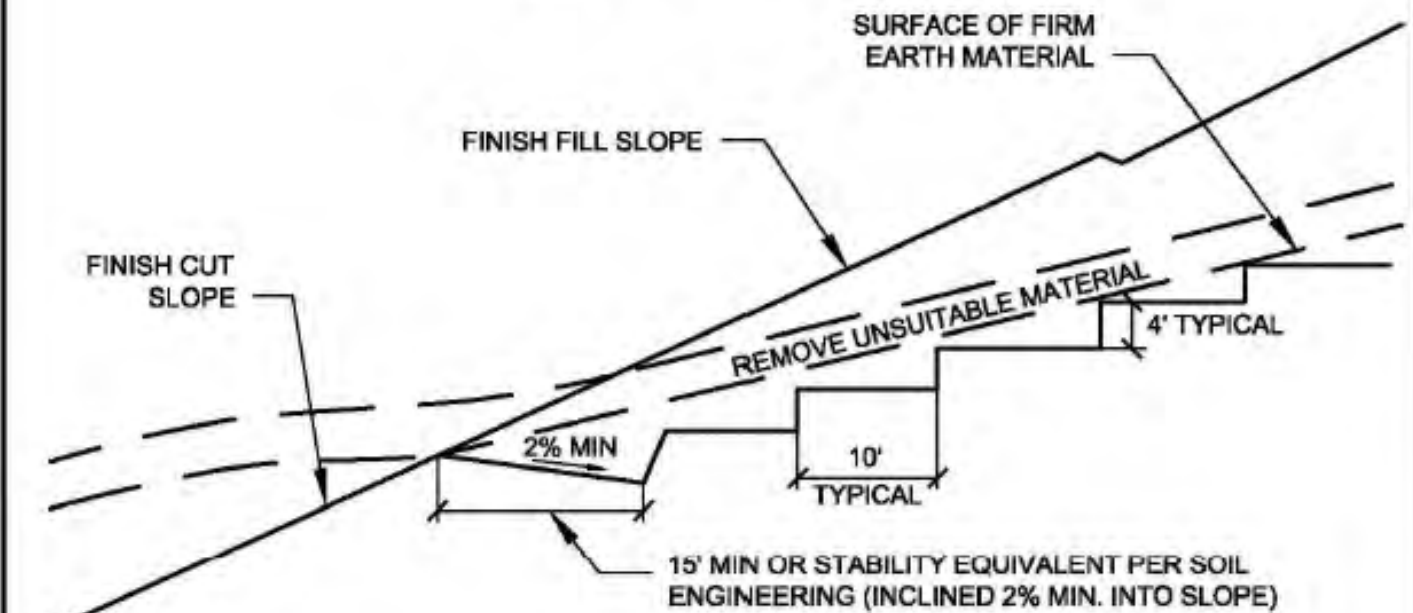
1. No fill material shall be placed, spread, or compacted during unfavorable weather conditions. When work is interrupted by heavy rain, fill operations shall not be resumed until the Geotechnical Engineer or his representative indicates that the moisture content and density of the previously placed fill are as specified.

GRADING DETAILS  
(On following pages)

### BENCHING FILL OVER NATURAL



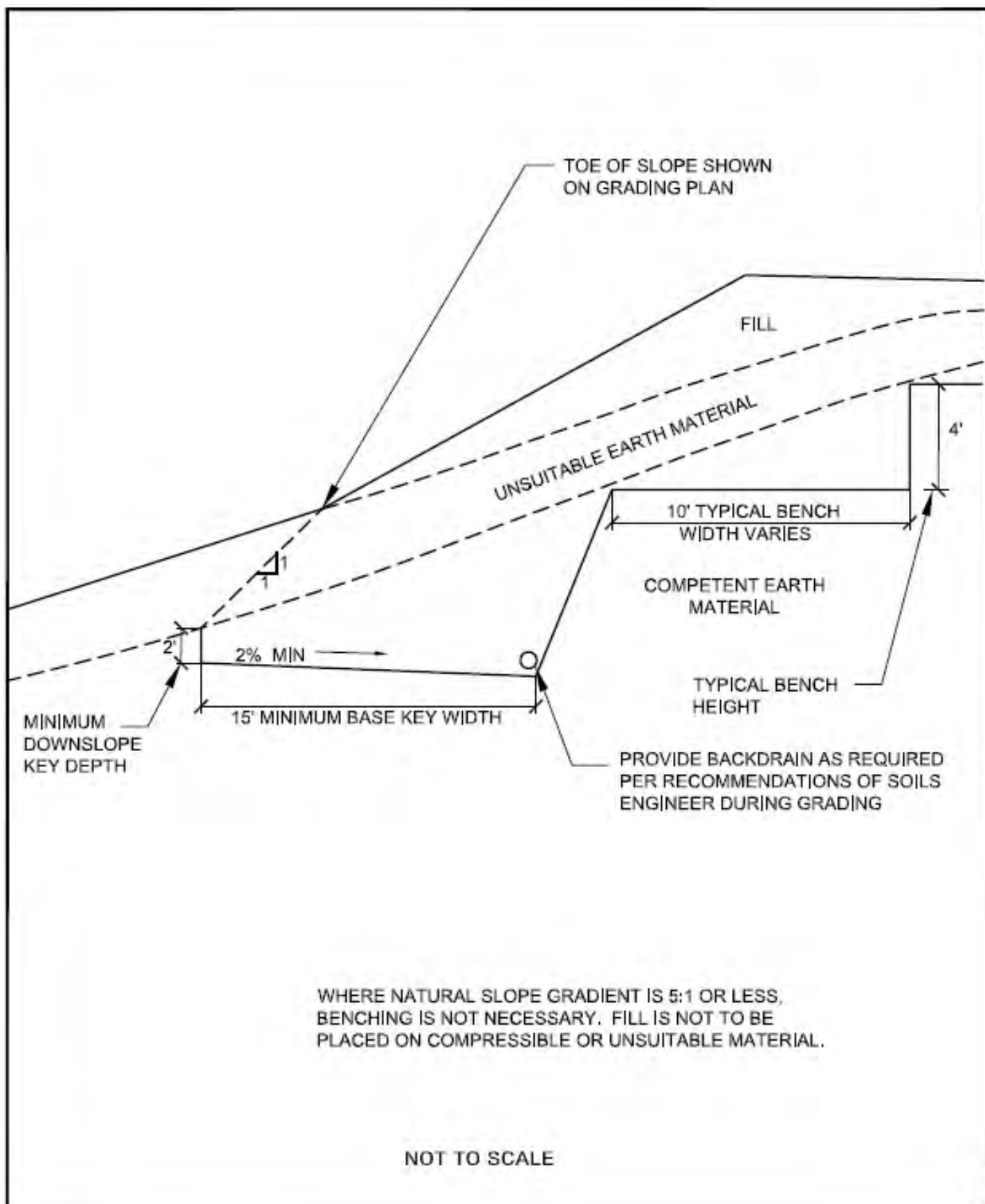
### BENCHING FILL OVER CUT



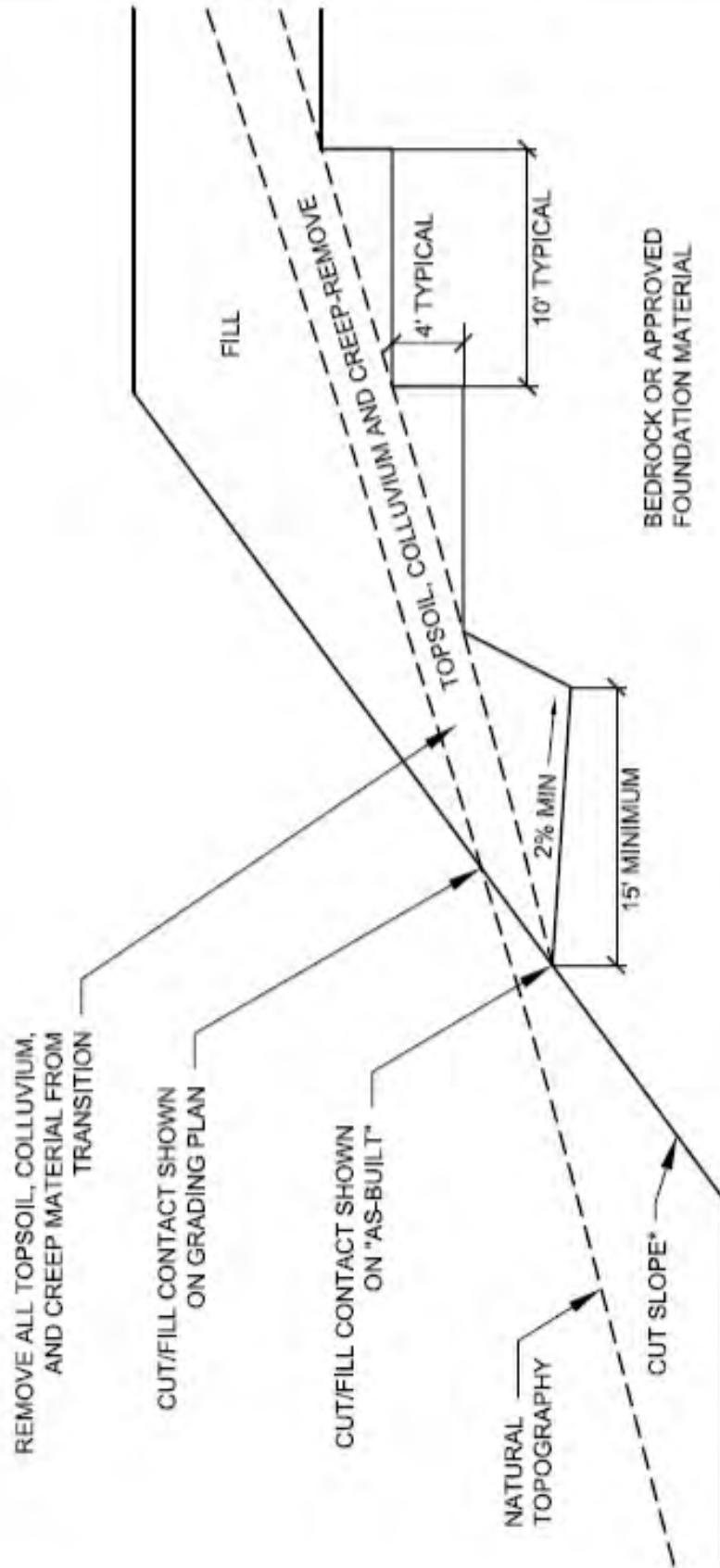
NOT TO SCALE

### BENCHING FOR COMPACTED FILL DETAIL





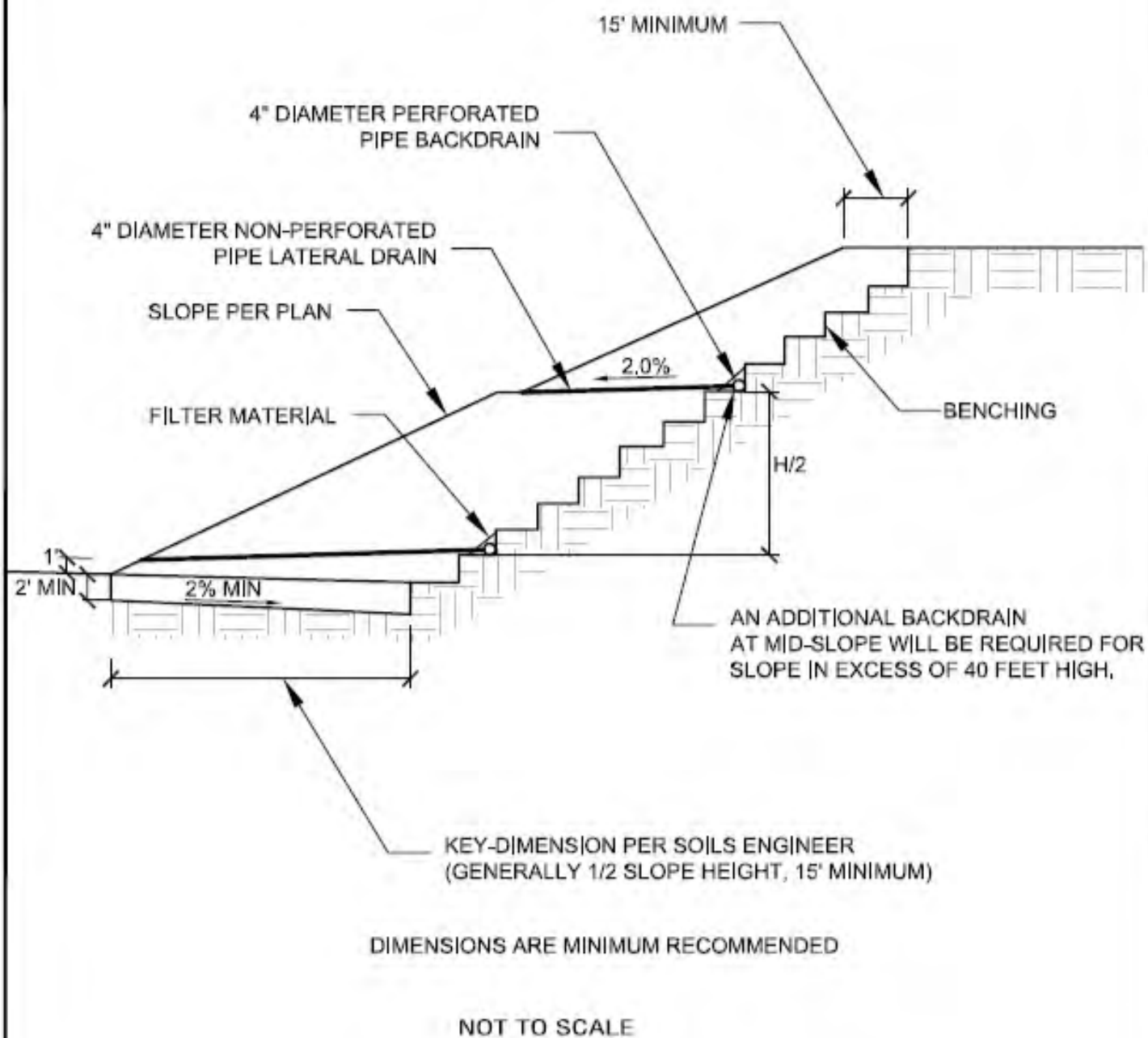
FILL SLOPE ABOVE NATURAL GROUND DETAIL



\*NOTE: CUT SLOPE PORTION SHOULD BE MADE PRIOR TO PLACEMENT OF FILL

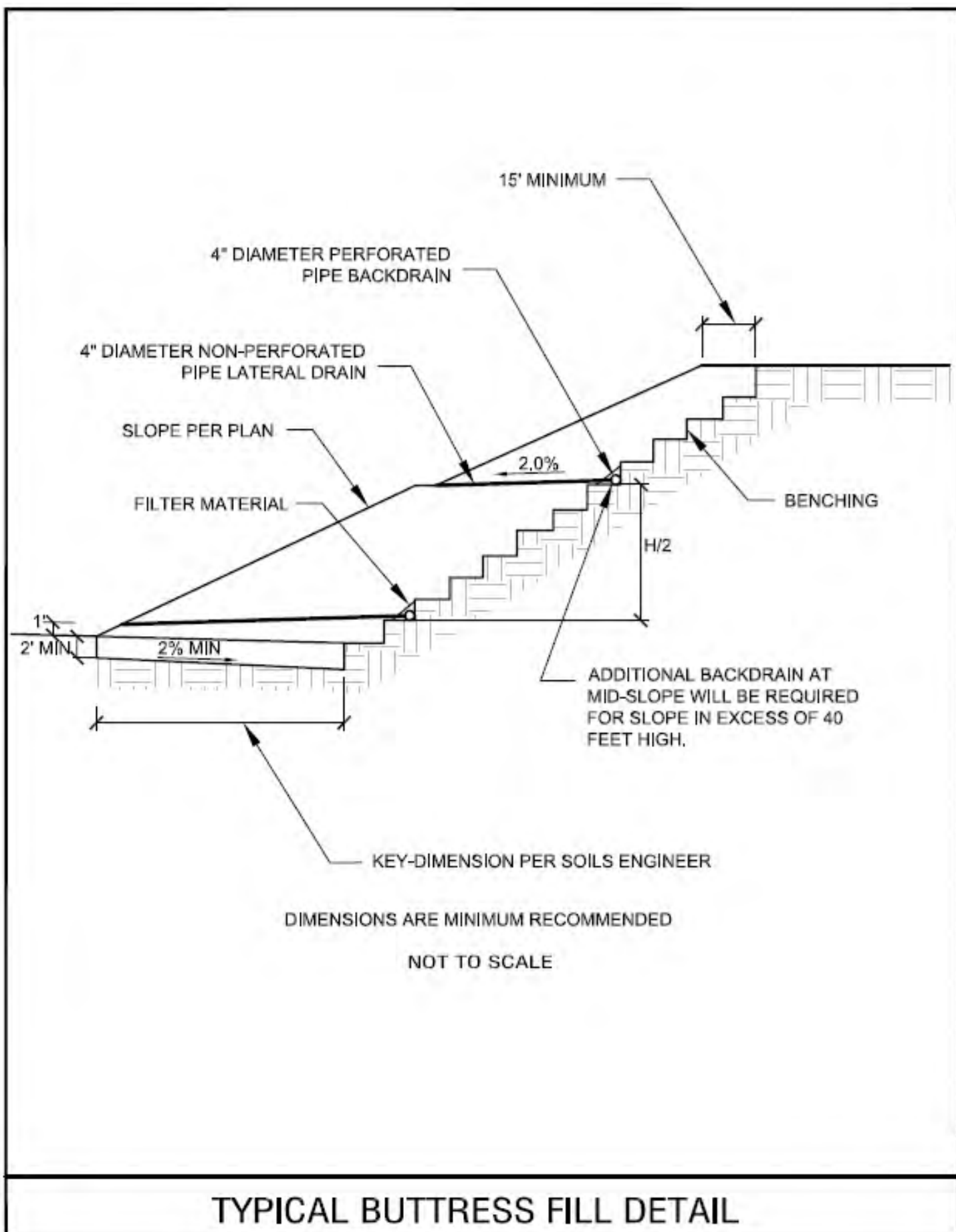
NOT TO SCALE

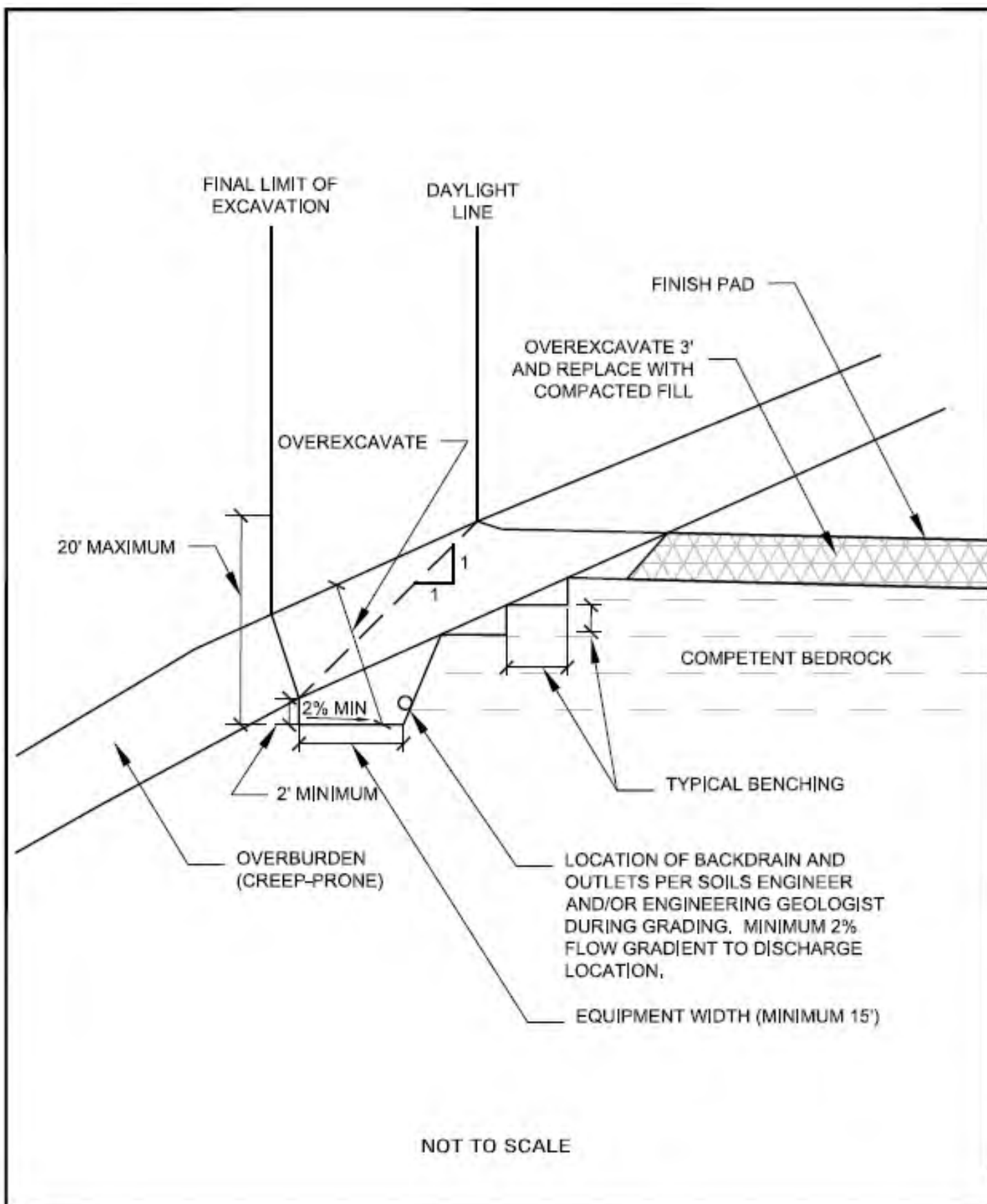
## FILL SLOPE ABOVE CUT SLOPE DETAIL



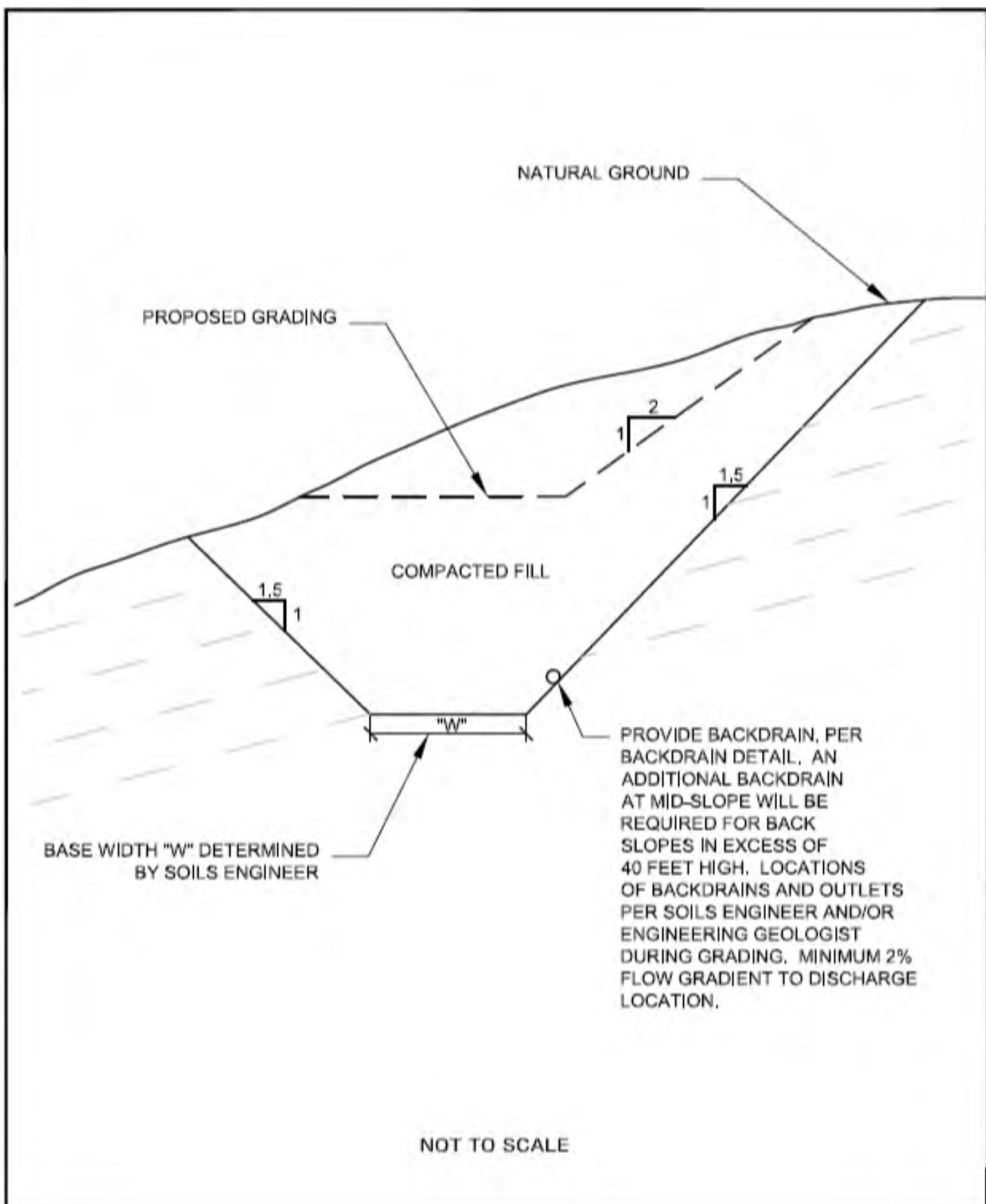
TYPICAL SLOPE STABILIZATION FILL DETAIL





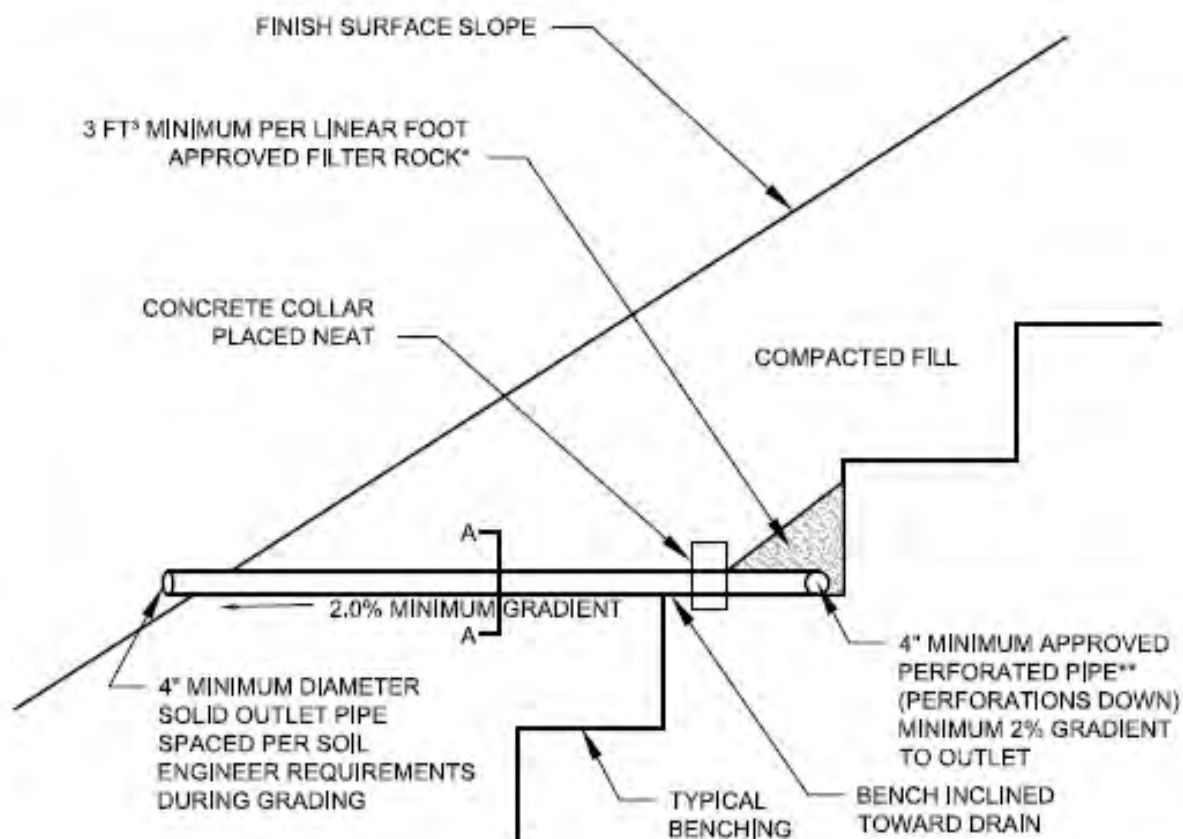


DAYLIGHT SHEAR KEY DETAIL

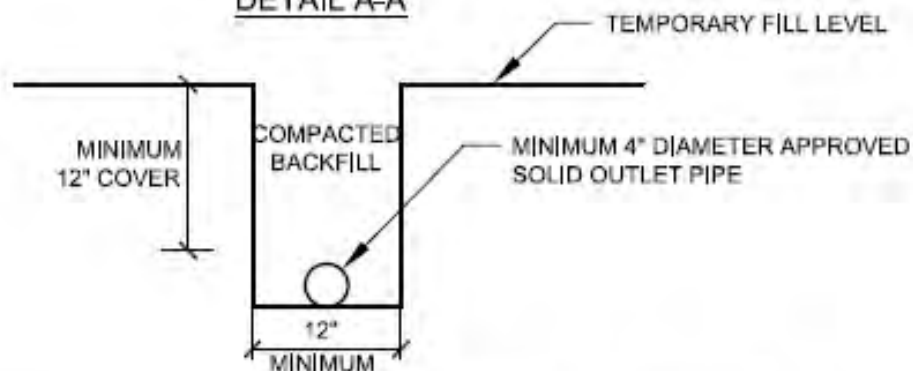


**TYPICAL SHEAR KEY DETAIL**





#### DETAIL A-A



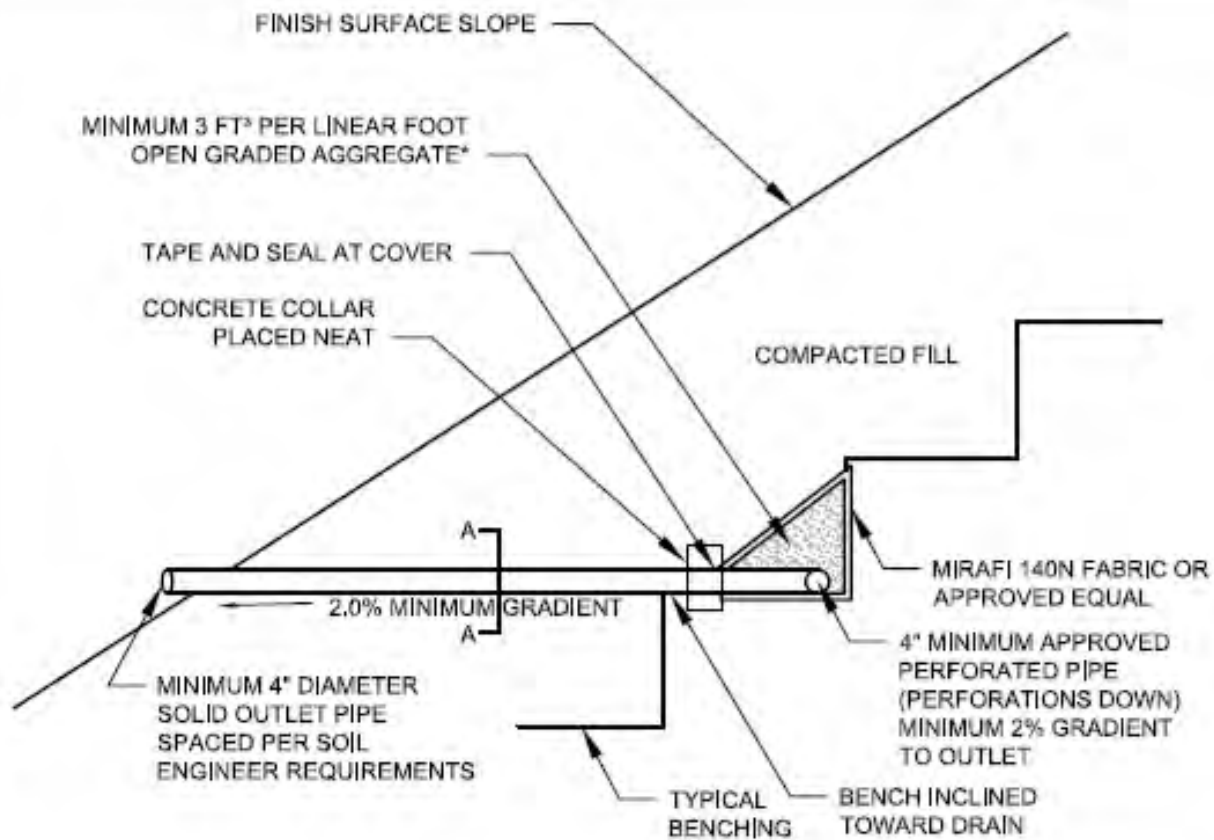
\*\*APPROVED PIPE TYPE:  
SCHEDULE 40 POLYVINYL CHLORIDE  
(P.V.C.) OR APPROVED EQUAL,  
MINIMUM CRUSH STRENGTH 1000 PSI

\*FILTER ROCK TO MEET FOLLOWING  
SPECIFICATIONS OR APPROVED EQUAL:

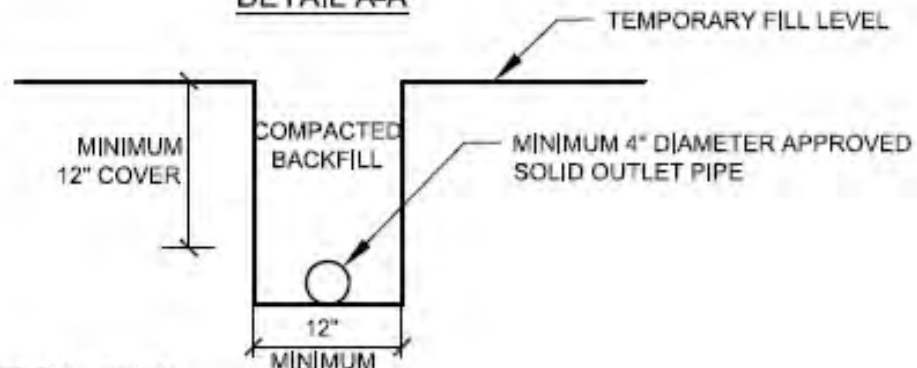
SIEVE SIZE	PERCENTAGE PASSING
1"	100
3/4"	90-100
3/8"	40-100
NO. 4	25-40
NO. 30	5-15
NO. 50	0-7
NO. 200	0-3

NOT TO SCALE

## TYPICAL BACKDRAIN DETAIL



#### DETAIL A-A



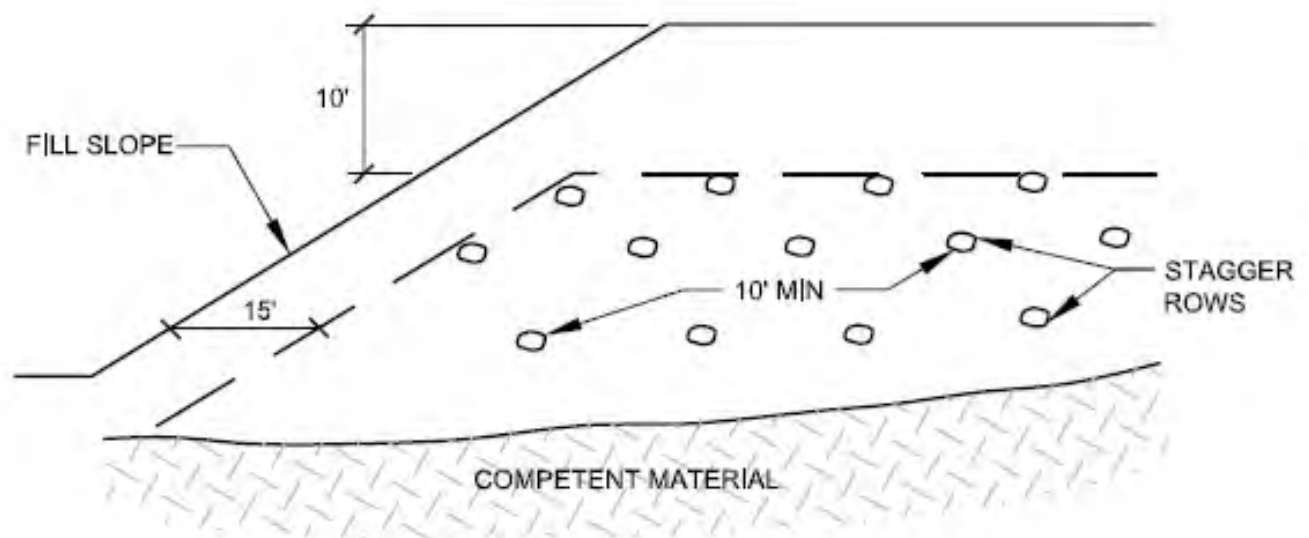
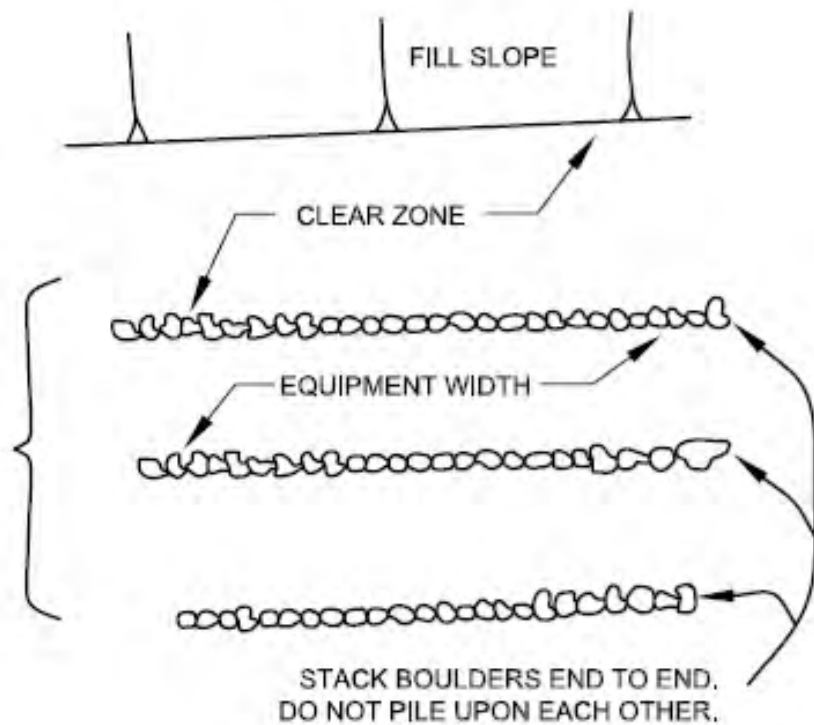
\*NOTE: AGGREGATE TO MEET FOLLOWING  
SPECIFICATIONS OR APPROVED EQUAL:

SIEVE SIZE	PERCENTAGE PASSING
1 1/2"	100
1"	5-40
3/4"	0-17
3/8"	0-7
NO. 200	0-3

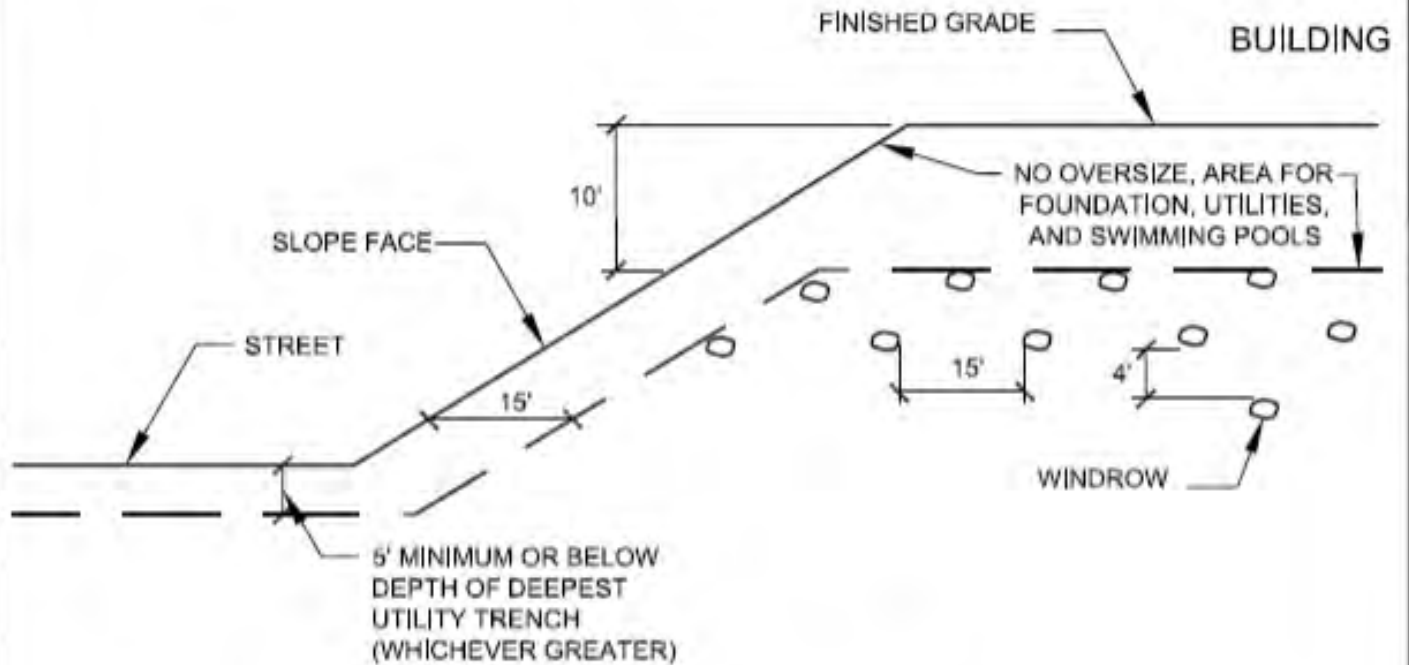
NOT TO SCALE

### BACKDRAIN DETAIL (GEOFRABIC)

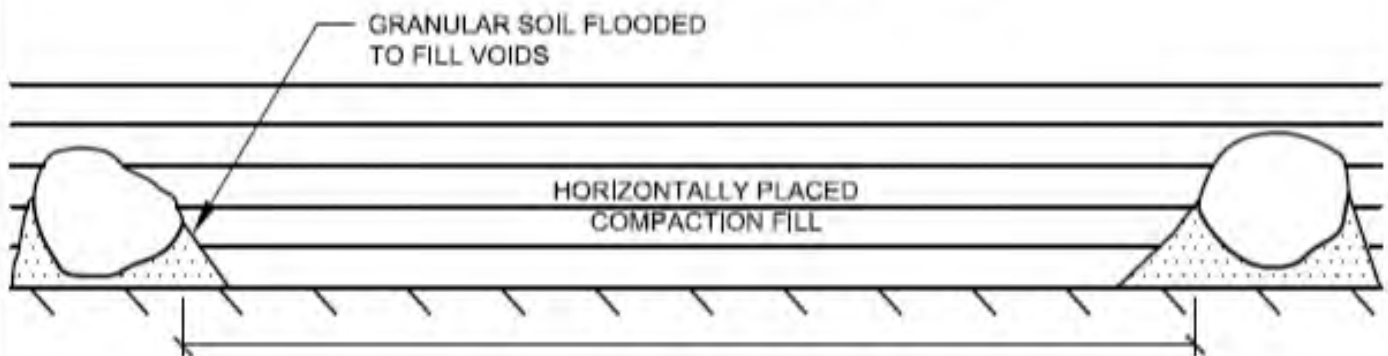
SOIL SHALL BE PUSHED OVER  
ROCKS AND FLOODED INTO  
VOIDS, COMPACT AROUND  
AND OVER EACH WINDROW.



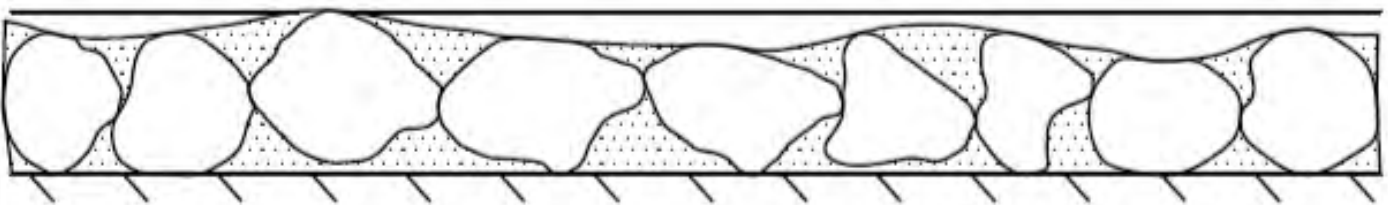
## ROCK DISPOSAL DETAIL



TYPICAL WINDROW DETAIL (EDGE VIEW)



PROFILE VIEW



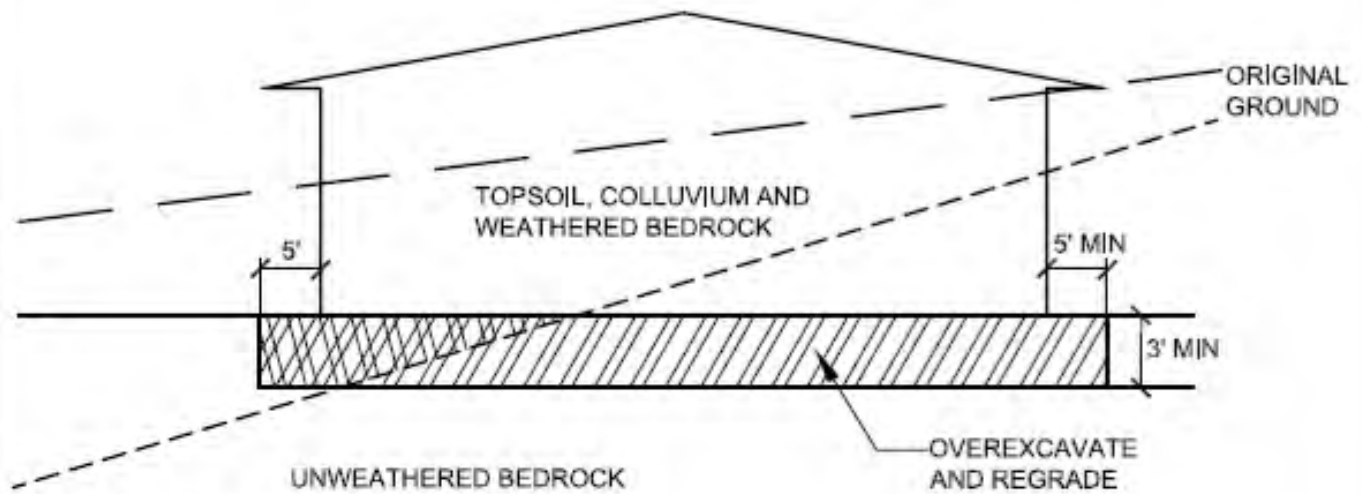
NOT TO SCALE

## ROCK DISPOSAL DETAIL

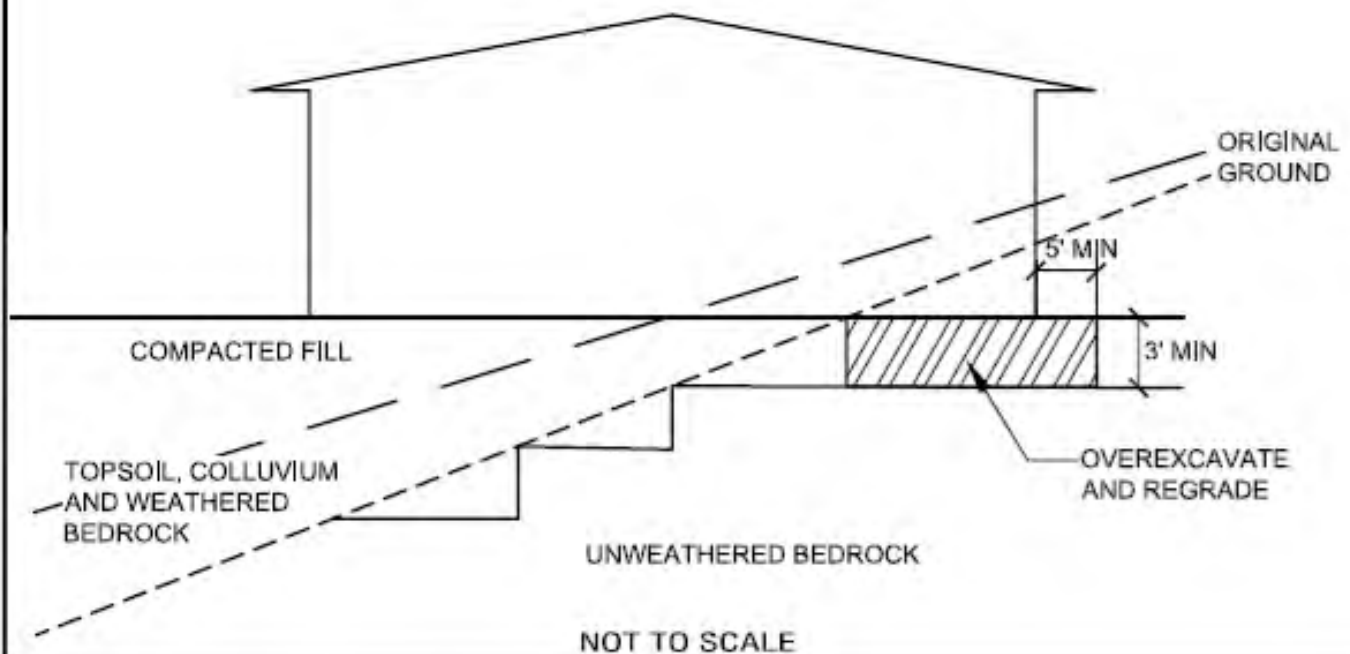


## GENERAL GRADING RECOMMENDATIONS

### CUT LOT

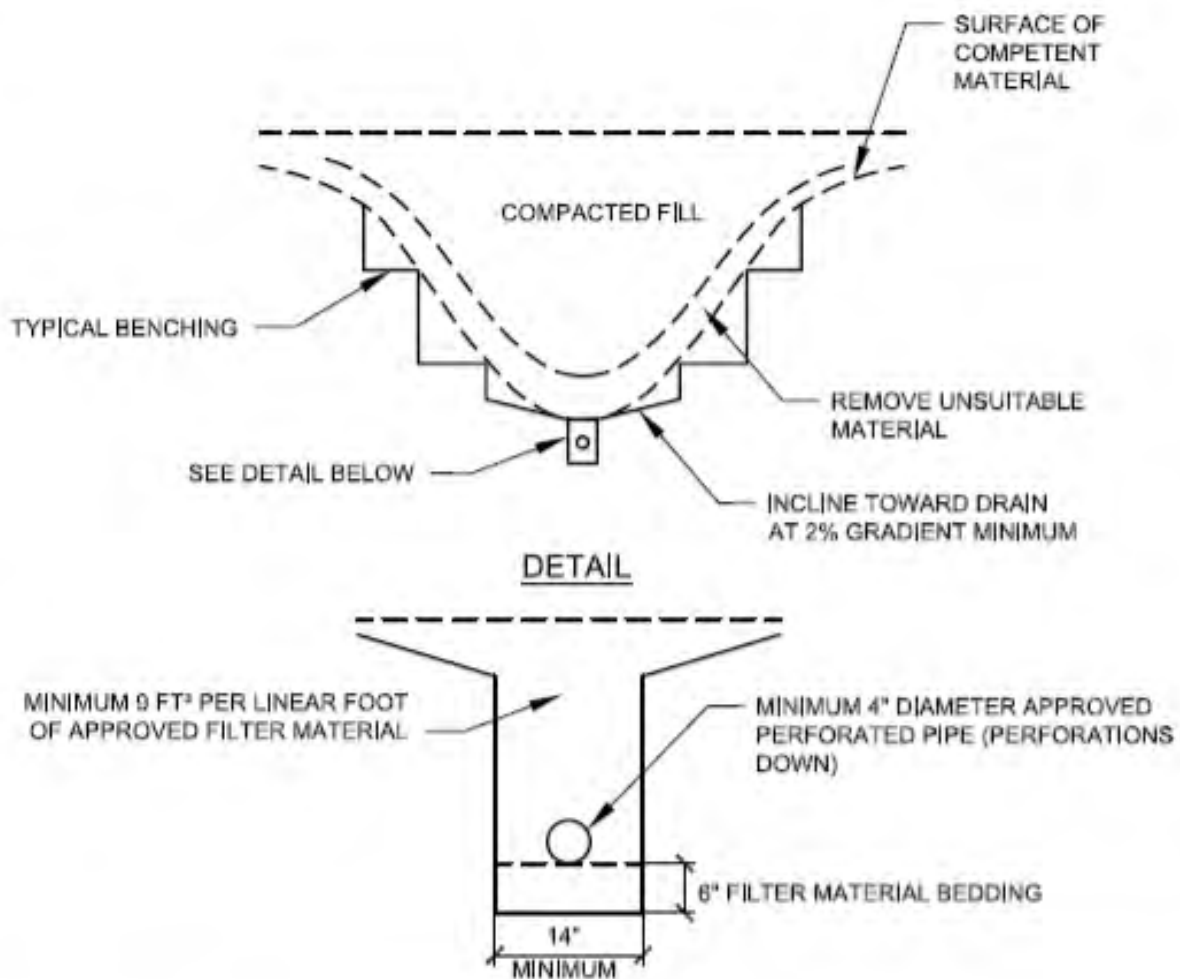


### CUT/FILL LOT (TRANSITION)



NOT TO SCALE

## TRANSITION LOT DETAIL



FILTER MATERIAL TO MEET FOLLOWING SPECIFICATION OR APPROVED EQUAL:

SIEVE SIZE	PERCENTAGE PASSING
1"	100
¾"	90-100
¾"	40-100
NO. 4	25-40
NO. 30	15-33
NO. 8	5-15
NO. 50	0-7
NO. 200	0-3

APPROVED PIPE TO BE SCHEDULE 40 POLY-VINYL-CHLORIDE (P.V.C.) OR APPROVED EQUAL. MINIMUM CRUSH STRENGTH 1000 psi

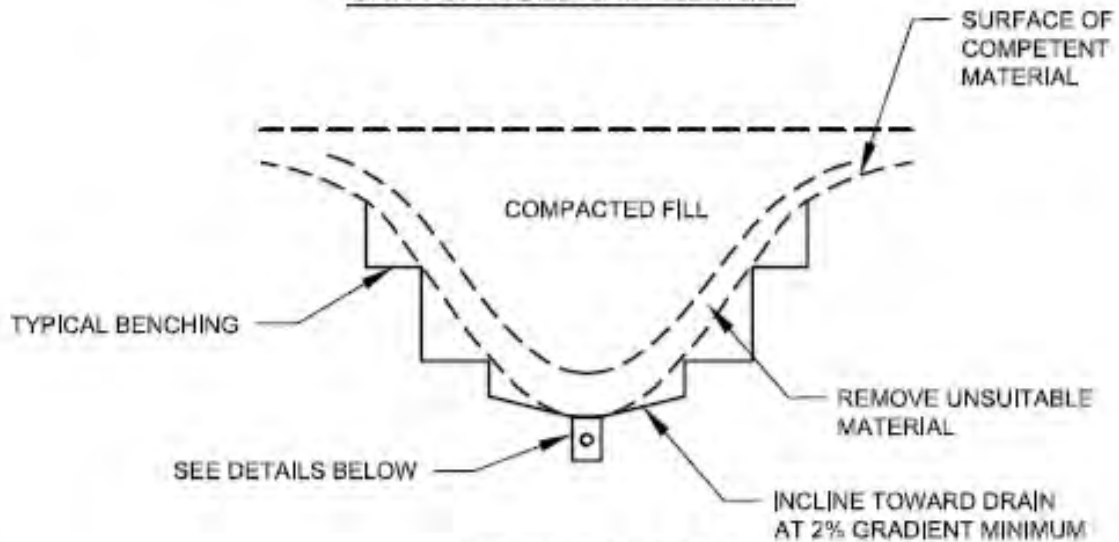
PIPE DIAMETER TO MEET THE FOLLOWING CRITERIA, SUBJECT TO FIELD REVIEW BASED ON ACTUAL GEOTECHNICAL CONDITIONS ENCOUNTERED DURING GRADING

LENGTH OF RUN	PIPE DIAMETER
INITIAL 500'	4"
500' TO 1500'	6"
> 1500'	8"

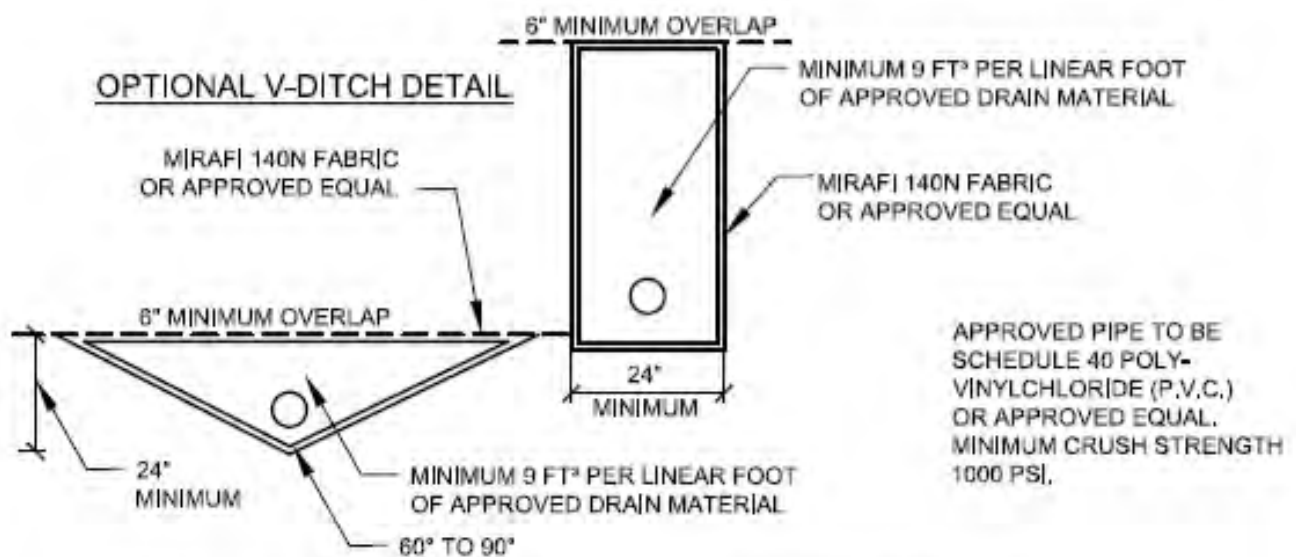
NOT TO SCALE

## TYPICAL CANYON SUBDRAIN DETAIL

## CANYON SUBDRAIN DETAILS



## TRENCH DETAILS



DRAIN MATERIAL TO MEET FOLLOWING SPECIFICATION OR APPROVED EQUAL:

SIEVE SIZE	PERCENTAGE PASSING
1 1/2"	88-100
1"	5-40
3/4"	0-17
3/8"	0-7
NO. 200	0-3

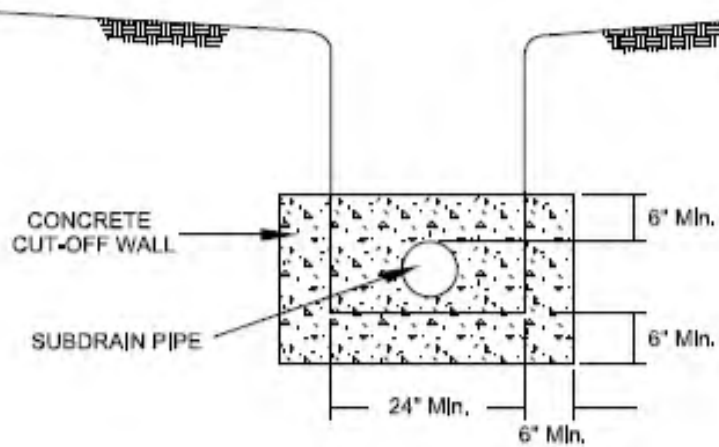
PIPE DIAMETER TO MEET THE FOLLOWING CRITERIA, SUBJECT TO FIELD REVIEW BASED ON ACTUAL GEOTECHNICAL CONDITIONS ENCOUNTERED DURING GRADING

LENGTH OF RUN	PIPE DIAMETER
INITIAL 500'	4"
500' TO 1500'	6"
> 1500'	8"

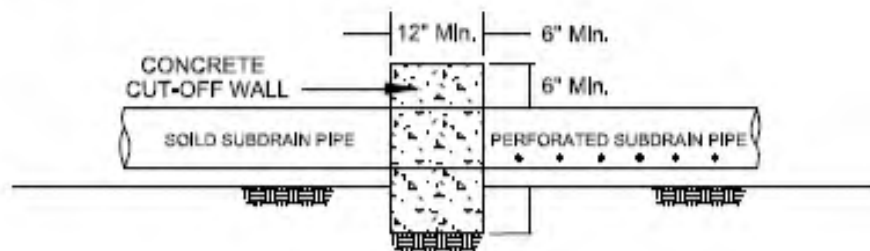
NOT TO SCALE

## GEOFABRIC SUBDRAIN

## FRONT VIEW



## SIDE VIEW

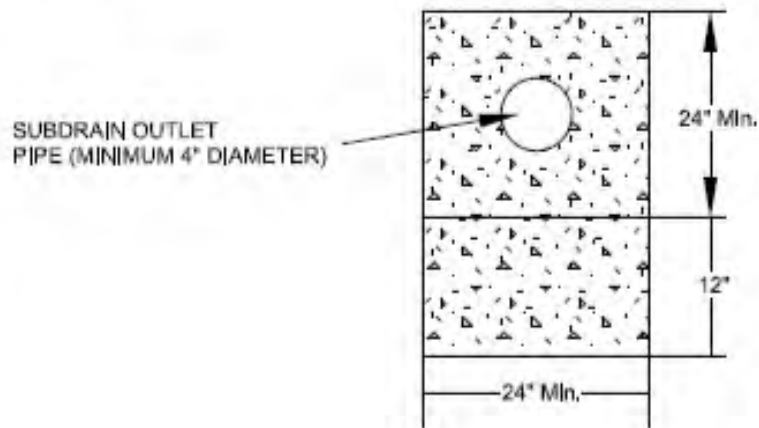


NOT TO SCALE

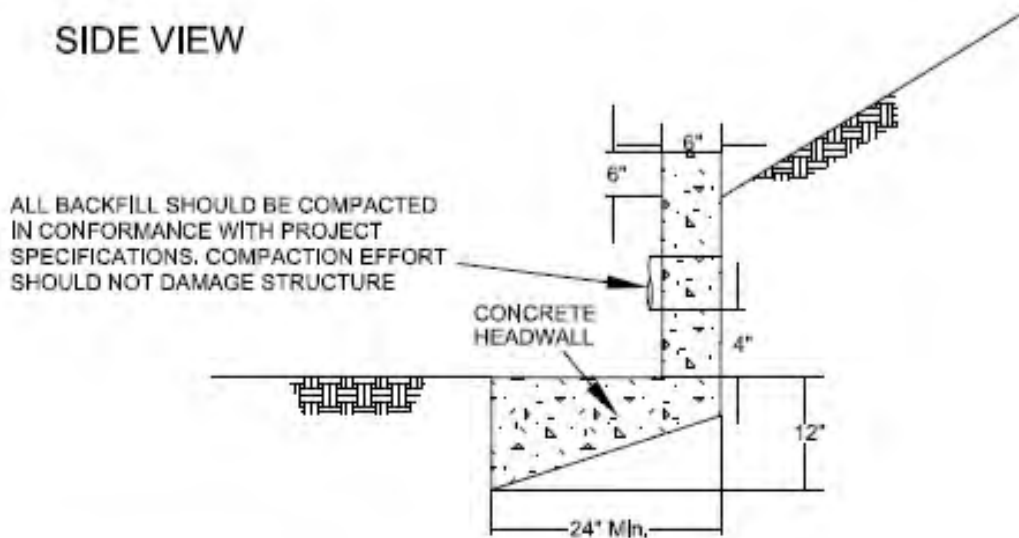
## RECOMMENDED SUBDRAIN CUT-OFF WALL



## FRONT VIEW



## SIDE VIEW



NOTE: HEADWALL SHOULD OUTLET AT TOE OF SLOPE  
OR INTO CONTROLLED SURFACE DRAINAGE DEVICE  
ALL DISCHARGE SHOULD BE CONTROLLED  
THIS DETAIL IS A MINIMUM DESIGN AND MAY BE  
MODIFIED DEPENDING UPON ENCOUNTERED  
CONDITIONS AND LOCAL REQUIREMENTS

NOT TO SCALE

## TYPICAL SUBDRAIN OUTLET HEADWALL DETAIL



## **APPENDIX E**

### **SEAOC/OSHPD U.S. Seismic Hazard Maps**



## 860 Hazelwood St, Fort Bragg, CA 95437, USA

Latitude, Longitude: 39.4286097, -123.8020746



Date	9/18/2024, 2:25:21 PM
Design Code Reference Document	ASCE7-16
Risk Category	II
Site Class	D - Stiff Soil

Type	Value	Description
$S_S$	1.505	$MCE_R$ ground motion. (for 0.2 second period)
$S_1$	0.607	$MCE_R$ ground motion. (for 1.0s period)
$S_{MS}$	1.505	Site-modified spectral acceleration value
$S_{M1}$	null -See Section 11.4.8	Site-modified spectral acceleration value
$S_{DS}$	1.003	Numeric seismic design value at 0.2 second SA
$S_{D1}$	null -See Section 11.4.8	Numeric seismic design value at 1.0 second SA

Type	Value	Description
SDC	null -See Section 11.4.8	Seismic design category
$F_a$	1	Site amplification factor at 0.2 second
$F_v$	null -See Section 11.4.8	Site amplification factor at 1.0 second
PGA	0.654	$MCE_G$ peak ground acceleration
$F_{PGA}$	1.1	Site amplification factor at PGA
$PGA_M$	0.719	Site modified peak ground acceleration
$T_L$	12	Long-period transition period in seconds
$S_{sRT}$	1.868	Probabilistic risk-targeted ground motion. (0.2 second)
$S_{sUH}$	2.075	Factored uniform-hazard (2% probability of exceedance in 50 years) spectral acceleration
$S_{sD}$	1.505	Factored deterministic acceleration value. (0.2 second)
$S_{1RT}$	0.777	Probabilistic risk-targeted ground motion. (1.0 second)
$S_{1UH}$	0.871	Factored uniform-hazard (2% probability of exceedance in 50 years) spectral acceleration.
$S_{1D}$	0.607	Factored deterministic acceleration value. (1.0 second)
$PGA_d$	0.654	Factored deterministic acceleration value. (Peak Ground Acceleration)
$PGA_{UH}$	0.821	Uniform-hazard (2% probability of exceedance in 50 years) Peak Ground Acceleration
$C_{RS}$	0.9	Mapped value of the risk coefficient at short periods
$C_{R1}$	0.892	Mapped value of the risk coefficient at a period of 1 s
$C_v$	1.401	Vertical coefficient

#### DISCLAIMER

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**Corporate Office:**

1050 Melody Lane, Suite 160

Roseville, California 95678

Ph: 916.742.5096

**[AllerionConsulting.com](http://AllerionConsulting.com)**

Building Envelope | Geotechnical | Environmental | Firestop Systems

Intellectual Property Allerion Consulting Group, Inc. ©2024 All Rights Reserved



## CITY OF FORT BRAGG

*Incorporated August 5, 1889*

416 N. Franklin Street, Fort Bragg, CA 95437  
Phone: (707) 961-2827 Fax: (707) 961-2802  
[www.FortBragg.com](http://www.FortBragg.com)

### **NOTICE OF PUBLIC HEARING**

**NOTICE IS HEREBY GIVEN** that the Fort Bragg Planning Commission will conduct a public hearing at a regular meeting to be held at 6:00 p.m., or as soon thereafter as the matter may be heard, on Wednesday, April 16, 2025 at Town Hall, southwest corner of Main and Laurel Streets (363 N. Main Street), Fort Bragg, California 95437. The public hearing will concern the following item:

**APPLICATION NO:** Coastal Development Permit 1-25 (CDP 1-25), Design Review 1-25 (DR 1-25), Use Permit 1-25 (UP 1-25) Sign Permit 2-25 (SP 2-25)

**FILING DATE:** January 7, 2025

**APPLICANT:** AMG & Associates, LLC

**PROJECT:** Coastal Development Permit, Design Review Permit, and Use Permit for 49 apartments including 41 one-bedroom and 8 two-bedroom units, with one reserved for an on-site manager. The remaining units will be income-restricted for seniors (62+) earning 30-60% of the Mendocino County area median income. Amenities to include a community center, exercise room, management office, laundry, business center, community garden, picnic tables, BBQs and a fenced dog park. The site will offer 75 parking spaces (38 EV adaptable), 18 bicycle spaces. The carport roofs will accommodate solar panels that will provide electricity to the project.

**LOCATION:** 860 Hazelwood

**APN:** 018-210-29-00 (2.998 acres)

**ZONING:** Coastal High Density Residential (RH)

#### **ENVIRONMENTAL**

**DETERMINATION:** Statutorily exempt from CEQA pursuant to Section 15061(b)(3) of the CEQA Guidelines the "common sense" exemption because preliminary approval of incentives does not qualify as a Project under CEQA

Public Comment regarding this Public Hearing may be made in any of the following ways: (1) Emailed to the Community Development Department, at [cdd@fortbragg.com](mailto:cdd@fortbragg.com) (2) Written comments delivered to City Hall, 416 N. Franklin Street before 2:00 PM on the day of the meeting; or (3) Verbal comments made during the meeting, either in person at Town Hall or virtually using Zoom if a Zoom link is provided at the time of agenda publication.

Staff reports and other documents that will be considered by Planning Commissioners will be made available for review on the City's website: <https://cityfortbragg.legistar.com/Calendar.aspx>, at least 72 hours prior to the Planning Commission meeting, and are also available for review and/or copying during normal office hours at Fort Bragg City Hall, 416 N. Franklin Street. To obtain application materials or for more information, please contact the Community Development Department, via email at [cdd@fortbragg.com](mailto:cdd@fortbragg.com). At the conclusion of the public hearing, the Planning Commission will consider a decision on the above matter.

John Smith, Acting Community Development Director

POSTING/MAILING ON OR BEFORE: April 1, 2025  
PUBLICATION DATE: April 1, 2025

[illegible]

I declare, under penalty of perjury, that I am employed by the City of Fort Bragg in the Community Development Department; and that I caused this notice to be posted in the City Hall Notice case on or before April 1, 2025.

Maria Flynn

D937F29E970F4EF...  
Maria Flynn, Administrative Assistant  
Community Development Department

cc: Planning Commission  
Coastal Commission  
Owner/Applicant/Agent  
Property Owners within 300'  
Residents within 100'  
'Notify Me' Subscriber Lists



## CIUDAD DE FORT BRAGG

*Incorporado August 5, 1889*

416 N. Franklin Street, Fort Bragg, CA 95437

Teléfono: (707) 961-2827 Fax: (707) 961-2802

[www.FortBragg.com](http://www.FortBragg.com)

### **AVISO DE AUDIENCIA PÚBLICA**

**SE NOTIFICA** que la Comisión de Planificación de Fort Bragg llevará a cabo una audiencia pública en una reunión ordinaria que se celebrará a las 18:00 h, o tan pronto como se trate el asunto, el miércoles 16 de abril de 2025 en el Ayuntamiento, esquina suroeste de las calles Main y Laurel (363 N. Main Street), Fort Bragg, California 95437. La audiencia pública tratará el siguiente tema:

**SOLICITUD NO:** Desarrollo costero Permiso 1-25 (CDP 1-25) , Diseño Revisar 1-25 (DR 1-25) , Permiso de uso 1-25 (UP 1-25) Permiso de firma 2-25 (SP 2-25)

**FECHA DE PRESENTACIÓN:** 7 de enero de 2025

**SOLICITANTE:** AMG & Associates, LLC

**PROYECTO:** Permiso de Desarrollo Costero, Permiso de Revisión de Diseño y Permiso de Uso para 49 apartamentos, incluyendo 41 unidades de una habitación y 8 de dos habitaciones, con una reservada para un administrador en el lugar. Las unidades restantes tendrán restricciones de ingresos para personas mayores de 62 años.

Entre el 30 % y el 60 % del ingreso medio del condado de Mendocino. Las comodidades incluirán un centro comunitario, gimnasio, oficina de administración, lavandería, centro de negocios, jardín comunitario, mesas de pícnic, barbacoas y un parque cercado para perros. El terreno ofrecerá 75 plazas de aparcamiento (38 adaptadas para vehículos eléctricos) y 18 plazas para bicicletas. Los techos de las cocheras albergarán paneles solares que suministrarán electricidad al proyecto.

**UBICACIÓN:** 860 Hazelwood

**APN:** 018-210-29-00 (2,998 acres )

**ZONIFICACIÓN:** Costero Residencial de alta densidad (RH)

#### **AMBIENTAL**

**DETERMINACIÓN:** Estatutaria eximir de CEQA de conformidad a Sección 15061(b)(3) de las Directrices de la CEQA, la exención de "sentido común" porque la aprobación preliminar de incentivos no califica como un Proyecto según la CEQA

Los comentarios públicos sobre esta Audiencia Pública se pueden realizar de cualquiera de las siguientes maneras: (1) Enviar por correo electrónico al Departamento de Desarrollo Comunitario, a [cdd@fortbragg.com](mailto:cdd@fortbragg.com) (2) Los comentarios escritos se entregan en el Ayuntamiento, 416 N. Franklin Street antes de las 2:00 p. m. del día de la reunión; o (3) Los comentarios verbales se realizan durante la reunión, ya sea en persona en el Ayuntamiento o virtualmente usando Zoom si se proporciona un enlace de Zoom en el momento de la publicación de la agenda.

Los informes del personal y demás documentos que serán considerados por los Comisionados de Planificación estarán disponibles para su revisión en el sitio web de la Ciudad: <https://cityfortbragg.legistar.com/Calendar.aspx>, al menos 72 horas antes de la reunión de la Comisión de Planificación. También están disponibles para su revisión y/o copia durante el



horario de oficina habitual en el Ayuntamiento de Fort Bragg, 416 N. Franklin Street. Para obtener los materiales de solicitud o más información, comuníquese con el Departamento de Desarrollo Comunitario por correo electrónico a [cdd@fortbragg.com](mailto:cdd@fortbragg.com). Al finalizar la audiencia pública, la Comisión de Planificación tomará una decisión sobre el asunto mencionado.

**Proceso de Permisos:** La Comisión de Planificación emitirá una recomendación mediante resolución al Ayuntamiento sobre el Permiso de Desarrollo Costero, el Permiso de Revisión de Diseño y el Permiso de Uso en esta audiencia. El Ayuntamiento tomará la decisión final en una reunión posterior. El proyecto es apelable ante la Comisión Costera . Si impugna el caso mencionado ante los tribunales, podrá limitarse a plantear únicamente las cuestiones que usted u otra persona hayan planteado en las audiencias públicas descritas en este aviso o en la correspondencia escrita entregada al Departamento de Desarrollo Comunitario durante la audiencia pública de la Comisión de Planificación o el Ayuntamiento, o antes de esta.

DocuSigned by:

*John Smith*

(95F134449FB4E1...)

John Smith, Director interino de Desarrollo Comunitario

ENVÍO POR CORREO EL 1 DE ABRIL DE 2025 O ANTES DE:  
FECHA DE PUBLICACIÓN: 1 de abril de 2025

ESTADO DE CALIFORNIA )  
) artículos.  
CONDADO DE MENDOCINO )

Declaro, bajo pena de perjurio, que soy empleado de la Ciudad de Fort Bragg en el Departamento de Desarrollo Comunitario; y que hice que este aviso se publicara en la caja de Avisos del Ayuntamiento el 1 de abril de 2025 o antes.

Signed by:

*Maria Flynn*

(D937F29E970F4FF...)

Maria Flynn, Asistente Administrativa  
Departamento de Desarrollo Comunitario

cc: Comisión de Planificación  
Comisión Costera  
Propietario/Solicitante/Agente  
Propietarios de propiedades dentro de 300'  
Residentes dentro de 100'  
Listas de suscriptores de 'Notificarme'



# City of Fort Bragg

416 N Franklin Street  
Fort Bragg, CA 95437  
Phone: (707) 961-2823  
Fax: (707) 961-2802

## Text File

**File Number: 25-96**

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**Agenda Date:** 4/16/2025

**Version:** 1

**Status:** Public Hearing

**In Control:** Planning Commission

**File Type:** Planning Staff Report

**Agenda Number:** 6B.

Receive a Report, Hold a Public Hearing, and Consider Approval of a Request to Subdivide an Existing 12,000 SF Undeveloped Parcel Into Two Parcels of 6,000 SF Each. Categorically Exempt From CEQA Under Section 15315 Minor Land Divisions



## PLANNING COMMISSION STAFF REPORT

---

**TO:** Planning Commission **DATE:** April 16, 2025

**DEPARTMENT:** Community Development Department

**PREPARED BY:** Sarah Peters, Assistant Planner  
Marie Jones, Marie Jones Consulting

**PRESENTER:** Sarah Peters, Assistant Planner

**AGENDA TITLE:** Receive a Report, Hold a Public Hearing, and Consider Approval of a Request to Subdivide an Existing 12,000 SF Undeveloped Parcel Into Two Parcels of 6,000 SF Each.

**OWNER / APPLICANT:** Linda Jo Stern and Shannon Underhill

**LOCATION:** 104 Dana Street

**ASSESSOR'S PARCEL NO.:** 020-490-53-00

**ZONING:** Low Density Residential (RL)

**SURROUNDING LAND USES:**

SOUTH:	Single-family residential
EAST:	Single-family residential
NORTH:	Single-family residential
WEST:	Single-family residential

**ENVIRONMENTAL DETERMINATION:** Staff recommends that the project be found exempt under CEQA Guidelines Section 15315 Minor Land Division.

**APPEALABLE PROJECT:** ☒ Can be appealed to City Council

---

### RECOMMENDATION

That the Planning Commission: 1) receive staff report; 2) open the public hearing; 3) take public comment; 4) close the public hearing and deliberate; and 5) adopt a resolution approving the Tentative Map for Minor Subdivision 1-24 (DIV 1-24); and find that the project is categorically exempt under CEQA Guidelines Section 15315, Minor Land Division.

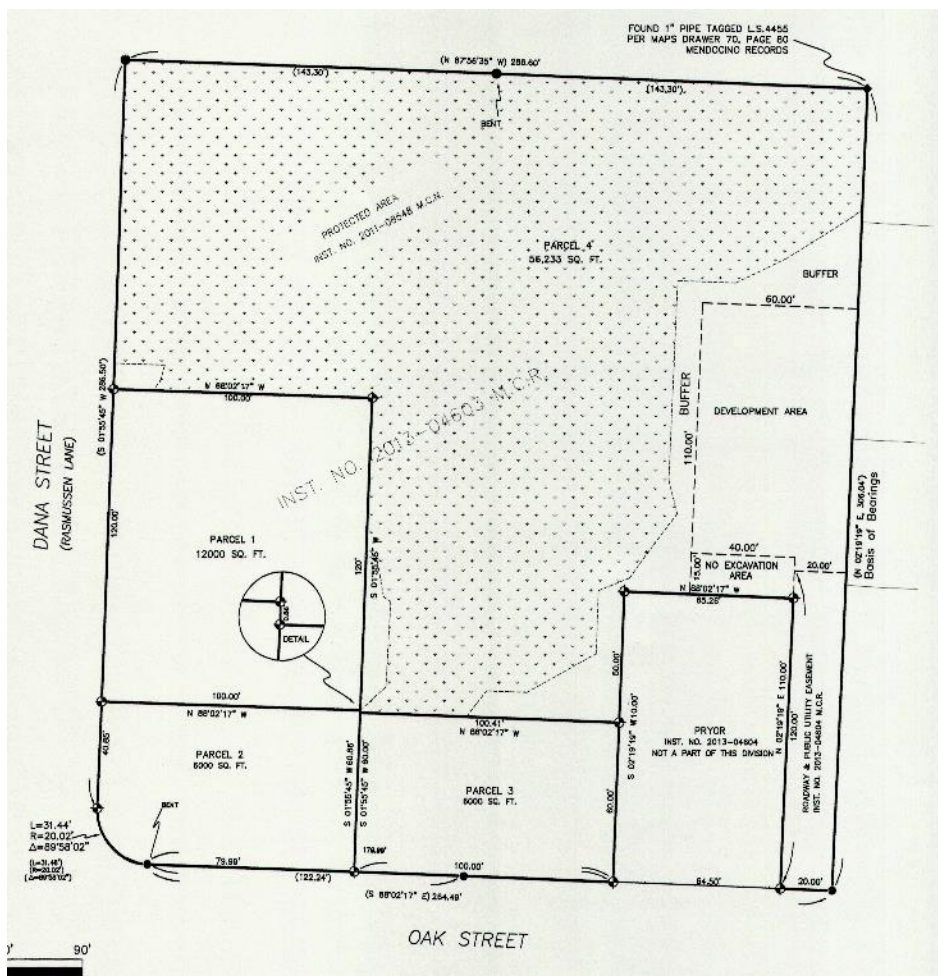
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AGENDA ITEM NO. XX

## BACKGROUND:

On April 26, 2011, a subdivision was approved to allow the division of 80,227 SF parcel, located at the corner of Oak Street and Dana Street, into four parcels of 12,000 SF, 6,000 SF, 6,000 SF, and 56,227 SF. The subdivision was feasible because the project included an extensive wetland mitigation and restoration project which allowed the applicant to fill a portion of the existing wetland to establish the new residential parcels. The wetland mitigation project was subsequently completed and established a new larger wetland (through a mix of creation, restoration and enhancement). The new wetland was protected through a deed restriction. See Figure 1 below and **Attachment 1 – Parcel Map Division #1-10.**

Figure 1- Parcel Map



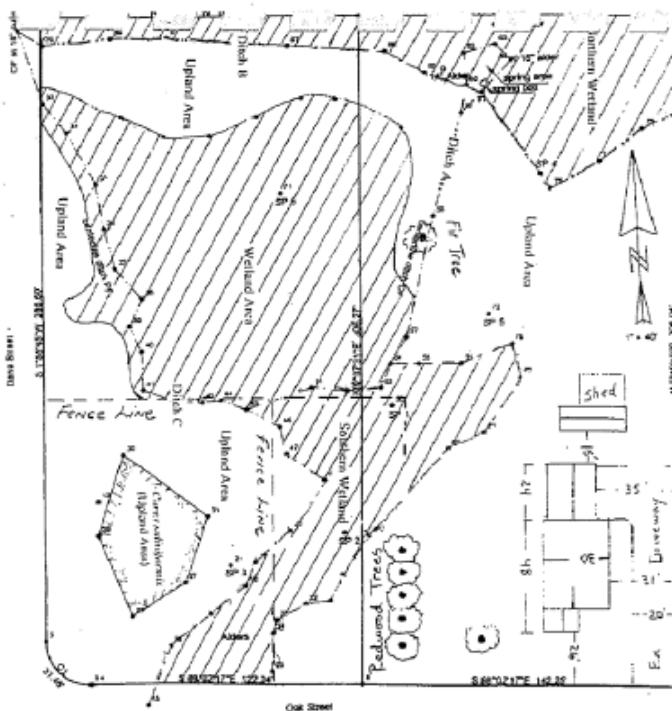
The 12,000 SF parcel in that subdivision, "Parcel 1" of the four resulting parcels (see Figure 2 below), became 104 Dana Street. By increasing, enhancing, and protecting a new larger wetland area in Parcel 4, the new mitigation wetland allowed for the development and fill of the small remnant wetland in Parcel 1 (and other parcels) of the subdivision. The wetland mitigation project was completed over a period of five years and was reviewed by both City



staff and CDFW staff to ensure that it functioned effectively and fully mitigated the removal of the wetland areas from the other parcels.

The images below illustrate the extent of the wetland prior to mitigation (cross hatch area of the left image) and the final wetland configuration (right). The project resulted in a 200% replacement of the 0.15 acres of wetland which were removed from parcels 1, 2 and 3 as they were replaced with 0.31 acres of new wetland on the remainder parcel. Prior to implementation of the wetland mitigation project the wetland on site was “fragmented, highly altered and degraded” due to “land alterations, degradation, ditching” and other activities on site. One primary goal of the wetland mitigation project was to link the fragmented wetlands and improve water quality of the water flowing through the wetland. The wetland mitigation project also created new wetland with higher biological value and function than the removed wetlands.

*Figure - Wetland prior to mitigation*



*Figure 3 - Final wetland configuration*

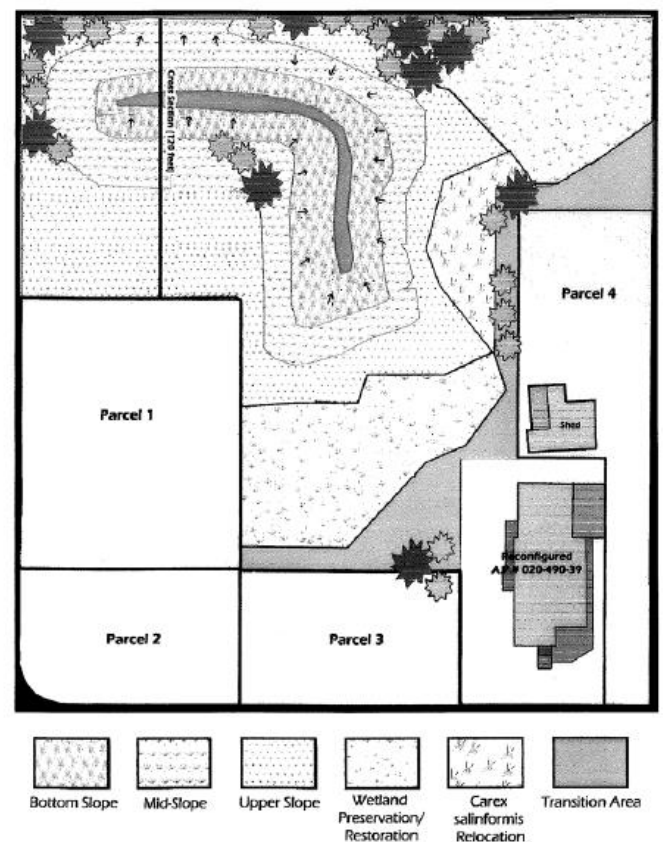


Fig. 3 – Site Conceptual Map from project Wetland Management and Mitigation Plan.

The subdivision and wetland mitigation project received permit approvals from the following agencies for the project:

- Section 404 Clean Water Act permit and Nationwide 29 permit from the Army Corps of Engineers (ACOE)

- Section 401 Clean Water Act permit from the Regional Water Quality Control Board (RWQCB)
- Section 1600 Lake and Streambed Alteration Agreement from the California Department of Fish and Game

**Pryor Subdivision MND.** Mitigation measures in the MND for the subdivision project and the wetland mitigation project were completed as required. The wetland mitigation project was monitored for five years by a wetland mitigation consulting firm to ensure that the new wetland became well established and productive. The consultant submitted annual reports to the City of Fort Bragg for review and approval. There are three mitigation measures from the MND that have relevance for the proposed new subdivision namely Mitigation Measure Bio-5, Mitigation Measure Geol – 1, and Mitigation Measure Hydro – 1:

Mitigation Measure Bio – 5. Throughout project implementation, during monitoring stages **and subsequent residential build out**, all mitigation measures contained within the project **Wetland Management and Mitigation Plan** shall be made a requirement of project approval, and diligently performed, including recordation of a protective deed restriction, and enhanced and additional mitigation measures as may be required by trustee agency representatives through comment on this draft document.

Mitigation Measure Geol – 1. All recommendations contained within the BACE Geotechnical Investigation (#12169.1, dated September 10, 2009), Section 6.0 Recommendations (6.1 through 6.5), shall be implemented during the development of the entire subdivision, whether that development occurs lot by lot over a period of time, or concurrently. Such mitigation measures will be incorporated in the special conditions of the subdivision approval, recorded on the subdivision map and added to building and other permit conditions as appropriate to ensure their implementation over time.

Mitigation Measure Hydro – 1. Prior to recordation of the tentative map, the applicant is to add restrictive covenants to the new residential parcels that prohibit hobbyist, home businesses and commercial uses, such as automobile storage, collecting and vehicle maintenance/repairing, and other activities involving potentially polluting chemicals and substances which could have a negative effect on water quality. Specific thresholds and performance standards will be developed in cooperation with the applicant and Community Development Department.

MM Geol-1 and MM Hydro-1 have been revised to apply to this project only and are included as special conditions 11 and 12 of this staff report under the stormwater analysis section. MM Bio-5 is analyzed and conditioned below:

**MM Bio-5.** The Wetland Management and Mitigation plan includes the following relevant requirements that are incorporated below into **Special Condition 1**:

**Special Condition 1:** The applicant shall comply with the following wetland mitigation measures contained in the **Wetland Management and Mitigation Plan**

(page numbers in parentheses) for the construction of all new development on the resulting parcels:

- **Stormwater Run-off** (page 19). All roof water for each house will be collected into gutters and downspouts and then directed into gravel/rock energy dissipaters. From the energy dissipaters, subsurface water would flow into the wetlands. The landscaped areas on the wetland side of future residential development would also be directed into the wetlands as subsurface water. The water directed into the wetlands will be subtle to prevent channelization and the creation of concentrated erosion.
- **Landscape Run-off** (page 20). Water from landscaped areas on the street sides of any future residential development on proposed Parcels 1 and 2 would be directed away from the wetlands and towards the street.
- **Permeable Pavers** (page 20): Although at this time, there is no specific driveway construction proposed, we recommend a permeable driveway system that reduces runoff and increases onsite infiltration for any potential future development.
- **Bioswales** (page 20) Bioswales or rain gardens on the property and adjacent to the driveway or the building pads could further collect water that otherwise may be directed off site.
- **Roof Leader-(Downspout)** (page 20). Disconnection and Energy Dissipaters: As discussed, stormwater that will be directed into the wetlands will be diffused to prevent a concentrated channel that would create an erosion point. From the downspouts of the roofs the water will hit a rocked energy dissipater. From the energy dissipater, water will be diffused to prevent a concentrated channel that would create an erosion point. Through subsurface water flow this water will recharge the water table.
- **Fencing** (page 21) Permanent fencing will be placed and maintained along the entire edge of the parcel abutting the wetland to contain the entire wetland management area. The purpose of the fencing is to prevent public access into the wetlands that may contribute to the degradation of the habitat. Along the wetland side of the fence dormant willow stakes will be placed and maintained. Willow stakes will help stabilize the slope and act as transitional plant along the edge of development.

The current owners purchased the property (Parcel 1) in October 2016.

The deed restriction protecting the new wetland did not extend to parcels 1 through 4, it was recorded for the remainder parcel only. The **Wetland Management and Mitigation Plan** indicated that the wetlands extend onto parcel 1, 2 and 3 at the top of slope only (edge of parcels). In 2017 the applicant requested a grading permit to fill areas of the parcel that had been filled as part of the initial wetland mitigation project and later settled and resulted in a constructed wetland. As the wetland areas of this parcel had already been mitigated through the subdivision process the City approved the grading permit in August 2017. The grading permit was not acted upon at the time due to personal circumstances. In June 2023 the City approved a second grading permit which allowed for up to 200 Cubic

Yards of fill material to grade the site to an average slope of 1.6%. **See Attachment 2 – Grading Permit.** This permit was finalized by the City on December 7, 2023. The applicant completed the grading and thereby vested the grading permit, and this action cannot be legally unwound.

Parcel 1 is now under review for division into two subsequent parcels of equal size. It should be noted that Tom Pryor (the owner of the original parcel and property owner who completed the original subdivision) sized Parcel 1 for later subdivision. He completed a minor subdivision (creating four new parcels) to avoid the infrastructure costs associated with a major subdivision (creating five or more parcels), which would have included installing sidewalk, curb and gutter, stormwater improvements, etc.

The Assessor Parcel Number for Parcel 1 is 020-490-53-00. The zone is Low Density Residential (RL) and the surrounding land uses are single-family residential.

*Figure 4 - Aerial View*



## **PROJECT DESCRIPTION, DISCUSSION AND ANALYSIS:**

The applicants propose a Tentative Map to subdivide a 12,000-square-foot parcel located in a Low-Density Residential District (RL). The parcel is located at 104 Dana Street. The parcel is vacant with no site improvements or connections to City water or sewer, and PG&E. The applicants request to split the 12,000-square-foot property into two parcels of 6,000 square feet each. Proposed Parcel 1 would be located on the northeast half of the existing parcel, and Parcel 2 on the southeast half of the existing parcel.

The allowable density range in the RL zone is 3 to 6 units per acre. In the future, the applicants may construct 1 dwelling unit or 1 duplex per parcel; or 1 dwelling unit and 1 ADU and 1 JADU where allowed by § [18.42.170](#); or 2 to 4 units, where allowed, by § [18.42.200](#).



On each proposed parcel, new driveway cuts and frontage improvements would be required at time of the residential development, including curb, gutter, sidewalk and street pave-out along Dana Street. The proposed driveway for Parcel 2 would be required to be at least 1—feet from the northern edge of the Oak Street travel lane as this was a condition of the Pryor Subdivision that created this parcel. See **Attachment 3 - Tentative Map**.

Surrounding land uses include single-family residential parcels on all sides of the existing lot. The parcel east of the lot contains a protected wetland, resulting from relocation of original wetland as part of the Pryor Subdivision.

*Figure 5 - Project Site and Surrounding Parcel Sizes*



## INLAND LAND USE & DEVELOPMENT CODE ANALYSIS:

The following analysis summarizes the proposed subdivision's consistency with the zoning designation and relevant development standards.

### Minimum Parcel Size Standards

Inland Land Use and Development Code (ILUDC) Section 18.21.040 prescribes standards for newly created parcels in the Low-Density Residential District. The proposed parcels are within the minimum and maximum parcel dimensions required by the ILUDC, as demonstrated in Table 1.

**Table 1: Residential District Subdivision Standards**

Low Density Res. Minimum Parcel Size Standards	Lot Size Area (sf)	Width (ft)	Depth (ft)	Compliance
	> 6,000	> 50	3 times width maximum	
<i>Proposed Parcel 1</i>	6,000	60.0	180.0	Complies
<i>Proposed Parcel 2</i>	6,000	60.0	180.0	Complies

*Figure 6- Proposed Tentative Map in the context of the neighboring parcels:*



## DEVELOPMENT STANDARDS COMPLIANCE ANALYSIS:

When a parcel is proposed for subdivision, all existing development must comply with all current development standards, such as setbacks, parking etc. However, as the applicant is not proposing to develop the two vacant single-family parcels at this time, zoning code compliance for any future development will be analyzed when building permits are submitted for those parcels (1&2). Potential development footprints for Parcel 1 and Parcel 2 are illustrative only and not under the purview/review of the Planning Commission for a minor subdivision.

### Public Utilities and Services

The Public Works Department has determined that the City has adequate potable water supply and capacity at its wastewater treatment facility to serve the proposed subdivision. See Public Works Memorandum that provides information on adequacy of sewer line in Dana Street. (March 24, 2025). If adequate fall is not achievable, then pumping would be required. Public Works staff would also require installation of backflow devices on all water service connections associated with fire sprinklers. The Public Works Memorandum includes fee estimates to add two new water and sewer connections. The applicant is required to pay capacity and connection fees; see recommended **Special Condition 2**.

**Special Condition 2:** Applicant shall comply with all requirements in the memo prepared by Public Works on March 24, 2025. See **Attachment 4: Public Works Memo**.

The Fort Bragg Fire Department (FBFD) has reviewed the proposal and did not require any special conditions. However, to ensure emergency personnel can easily locate the sites, **Special Condition 3** requires that the applicant apply for assignment of addresses.

**Special Condition 3:** Prior to occupancy of any future residential unit in this subdivision, address numbers shall be placed in such a manner as to be visible from Dana St. and shall be placed on each residential unit in such a manner as to be visible from the access driveway. The minimum height of numbers to be used shall be three inches and contrasting color from basic background visible from the access driveway. The minimum height of numbers to be used shall be three inches and contrasting color from basic background.

#### Site Improvements

The proposed subdivision will create two new lots on an existing City Street with where there is no existing sidewalk. Per Special Condition 2 of the original subdivision permit (DIV 1-10 & USP 2-10), frontage improvements are to be done at time of development of the parcels. No other improvements can be required for a minor subdivision. See **Attachment 5: Pryor Development Permit and Conditions**. See **Special Condition 4** below which carries these requirements forward into this subdivision.

**Special Condition 4:** Frontage improvements shall be completed at the time of development of parcels. The driveway shall be constructed at least 100 feet north of the northern edge of Oak Street's northern-most travel lane. Power and telecommunications utility lines shall run underground from existing power poles to each parcel. If a main line extension is necessary, then such extension shall be constructed underground.

#### Grading/Soils Report

A Geotechnical investigation report was conducted in 2009 for the Pryor subdivision. That report concluded that the site is geotechnically suitable for the proposed development. It provided an analysis of some geotechnical considerations affecting construction and their possible mitigation measures. Subsequently, fill was added to the site and permitted grading completed. As recommended by the county building official and the Public Works department, applicant shall submit a new soils report from a licensed engineer, indicating if the soil requires any specific measures to support structure(s). **Special Condition 5** requires that this report be submitted prior to approval of the parcel map.

**Special Condition 5:** Prior to approval of the final parcel map, the applicant shall submit a soils report from a licensed engineer, verifying that the soil is adequate to support structure(s) on both resulting parcels and indicating if the soil requires any specific measures to support such structures.

### Stormwater

All Stormwater controls and improvements are prescribed by Fort Bragg ILUDC Section 18.64 *Urban Runoff Pollution Control*, and Fort Bragg Municipal Code (FBMC) Section 12.14 *Drainage Facilities*. This subdivision would be subject to Municipal Code Section 12.14.02, requiring a site design that can accommodate 100 year-frequency storm events. A site assessment will be required for evaluation of site conditions, such as soils, vegetation, flow paths, and stormwater calculations. All storm water management and erosion control shall comply with Title 18 of the City of Fort Bragg ILUDC and the MND and Special Conditions for the original subdivision as recommended in **Special Conditions 6-12 below**:

**Special Condition 6:** This subdivision is subject to Municipal Code Section 12.14.02, requiring a site design that can accommodate 100 year-frequency storm events.

**Special Condition 7:** The applicant shall evaluate the site conditions, such as soils, vegetation, and flow paths and submit stormwater calculations to the City Engineering Department assuming full build out of the subdivision. *Refer to Mendocino County Low Impact Development (LID) Design Standards Manual v2.1 for guidance. It can be reviewed at:*

<https://www.mendocinocounty.org/home/showdocument?id=27635>

**Special Condition 8:** Storm water runoff shall be minimized by incorporation of LID strategies and site design measures that minimize impermeable areas, maximize permeable areas, and that slow, spread, and sink runoff so as to recharge groundwater and minimize runoff.

**Special Condition 9:** Low Impact development strategies are required and sized based on the area of impervious surface at the time of building permit submittal. LID design shall be submitted with building permits for construction.

- i. *The subdivider shall implement site design measures to reduce runoff as outlined in the Pryor Subdivision documents. The Site Assessment, layout and design measures shall be shown on a drainage site plan.*
- ii. *The drainage site plan shall divide each developed portion of the project site into discrete Drainage Management Areas (DMA's).*
- iii. *Any remaining runoff from DMA's expected shall be collected at treatment control BMP's (vegetated swales, permeable pavements, rain gardens, or other bio retention facilities).*
- iv. *Treatment Control BMPs shall be sized and designed to retain and infiltrate runoff produced by all storms up to and including the 85<sup>th</sup> percentile (0.83" in 24-hours).*
- v. *Treatment control BMPs require O&M plan; a maintenance and operation plan shall be submitted for the upkeep of this facility. The plan shall include provision(s) demonstrating adequate on-going operations and maintenance.*



- vi. Drainage fees shall be paid prior to the issuance of each parcels' respective building permit for dwelling units.

**Special Condition 10:** All proposed drainage features shall be reflected on a final utility, grading and storm drainage plan, which reflects all proposed easements and site improvements.

**Special Condition 11:** All recommendations contained within the BACE Geotechnical Investigation (#12169.1, dated September 10, 2009), Section 6.0 Recommendations (6.1 through 6.5), shall be implemented during the development of the parcels, recorded on the subdivision map, and added to building and other permit conditions as appropriate to ensure their implementation over time.

**Special Condition 12:** Prior to recordation of the tentative map, the applicant shall add restrictive covenants to the new residential parcels that prohibit hobbyist, home businesses and commercial uses, such as automobile storage, collecting and vehicle maintenance/repairing, and other activities involving potentially polluting chemicals and substances which could have a negative effect on water quality. Specific thresholds and performance standards will be developed in cooperation with the applicant and Community Development Department.

#### **FISCAL IMPACT/FUNDING SOURCE:**

No fiscal impact.

#### **ENVIRONMENTAL ANALYSIS:**

The project was reviewed for eligibility for exemption from California Environmental Quality Act, CEQA Guidelines Section 15315. Class 15 Categorical Exemption consists of the division of property in urbanized areas zoned for residential, commercial, or industrial use into four or fewer parcels when the division is in conformance with the General Plan and zoning, no variances or exceptions are required, all services and access to the proposed parcels to local standards are available, the parcel was not involved in a division of a larger parcel within the previous two years, and the parcel does not have an average slope greater than 20 percent.

The Class 15 guideline for *Minor Land Divisions* is correct for the proposed two-lot subdivision at 104 Dana Street. The proposed project would create two parcels on less than one acre of land within the City limits of Fort Bragg. Water and sewer access is available for two new connections. As analyzed, the project complies with the ILUDC and conforms to the General Plan. No variances or exceptions are required. The parcel has not been divided within the last two years and is not on a slope greater than 20 percent. The parcel was created through a subdivision permitted on April 26, 2011, for which a deed restricted wetland mitigation project was created on an adjoining parcel that fully mitigated the removal

of all wetlands from this parcel. Therefore, DIV 1-24 is eligible for a categorical exemption from CEQA under Section 15315 of the CEQA Guidelines for Minor Land Divisions. There are no applicable exceptions to the proposed CEQA Exemption Class 15 for Minor Divisions, as the project is not located on a scenic highway, is not a hazardous waste site, has no historic resources and development of these parcels will not have a significant effect on the environment. Therefore, it is recommended that the project is categorically exempt from the requirement for the preparation of environmental documents.

#### **GENERAL PLAN CONSISTENCY ANALYSIS:**

As proposed the project is consistent with the density and intensity of use proposed in the City's Inland General Plan. It does not conflict with any policies and is consistent with the following relevant policies:

##### Land Use Element

**Program LU-7.1.1** *Use the minimum density indicated by the Land Use Designations Map as a starting point when determining specific density for a residential project.*

CONSISTENT: The project site has a General Plan Land Use Designation of Low Density Residential (RL) with an allowable density of 3 to 6 dwelling units per acre. No dwelling units are proposed on the Tentative Map, however the minimum allowable density per parcel would be 1 dwelling unit on 0.137 acres of land which is within the allowable density, and thus complies with Program LU-7.1.1. Per State Law ADUs are excluded from the maximum density calculation for a zoning district

##### Conservation, Open Space, Energy, and Parks Element

**Policy OS-2.1 Native Landscaping:** *All development shall be conditioned to require that 50% of all plantings are native plants and shall prohibit the planting of any plant species that is (a) listed as problematic and/or invasive by the California Invasive Plant Council, and/or by the State of California, or (b) listed as a 'noxious weed' by the State of California or the U.S. Federal Government.*

CONSISTENT (with condition): To ensure consistency, **Special Condition 13** is recommended for compliance with policy OS-2.1.

**Special Condition 13:** Prior to issuance of a building permit for the vacant lots, the applicant shall submit a landscaping plan where 50% of all plantings are native plants and that does not contain any plant species that are (a) listed as problematic and/or invasive by the California Invasive Plant Council, and/or by the State of California, or (b) listed as a 'noxious weed' by the State of California or the U.S. Federal Government.

##### Safety Element

**Policy SF-1.1** *New development shall: (a) Minimize risks to life and property in areas of high geologic, flood, and fire hazard; and (b) Assure stability and structural integrity, and neither create nor contribute significantly to erosion, geologic instability, or destruction of the site or*

*surrounding area or in any way require the construction of protective devices that would substantially alter natural landforms along bluffs and cliffs.*

CONSISTENT: The new dwelling units will be subject to the California Building Code and California Fire Code. Through the implementation of the uniform standards in these codes, the project complies with this policy.

#### Housing Element

**Goal H-1** *Provide a range of housing, including single-family homes, townhouses, apartments, and other housing types to meet the housing needs of all economic segments of the community.*

**Policy H-1.6** *Infill Housing: Encourage housing development on existing infill sites in order to efficiently utilize existing infrastructure.*

CONSISTENT: The proposed project would divide an existing, undeveloped 12,000 SF parcel into two lots, allowing for the future construction of additional residential units. The property is surrounded on all sides by residential land uses, including single-family residences. Therefore, this project will efficiently utilize an existing lot by subdivision and establishment of two lots. The proposed subdivision satisfies Goal H-1 and policy H-1.6.

As analyzed and conditioned, the project is consistent with the applicable policies of the City's General Plan.

#### **ALTERNATIVES:**

Provide other direction to staff.

#### **ATTACHMENTS:**

1. Parcel Map Division #1-10
2. Grading Permit – 2023
3. Tentative Map
4. Public Works Comment Memo
5. Pryor Development Permit and Conditions
6. Draft PC Resolution DIV 1-24 104 Dana
7. Notice of Exemption
8. Public Hearing Notice 2-28-2024
9. Public Comment

#### **NOTIFICATION:**

1. Applicant
2. Notify Me List Subscribers



### Owner's Statement

The undersigned, being all parties having any record title interest in the land within this division, hereby consent to the preparation and recordation of this map.

Thomas D. Pryor  
Thomas D. Pryor

Patricia Pryor  
Patricia Pryor

### Acknowledgment

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California  
County of Mendocino

On this 1<sup>st</sup> day of May, 2015,

before me, Kathy Cervelli Orsi, a Notary Public,  
in and for said county and state, residing therein, duly sworn,  
personally appeared, Thomas D. Pryor and Patricia Pryor  
who proved to me on the basis of satisfactory evidence  
to be the persons whose names are subscribed to the  
within instrument and acknowledged to me that they executed  
the same in their authorized capacities, and that by their  
signatures on the instrument the persons or the entity upon behalf  
of which the persons acted, executed the instrument.

I certify under penalty of perjury under the laws of the  
State of California that the foregoing paragraph is true and correct.

WFTNBP my hand and official seal.

Signed Kathy Cervelli Orsi

Print Name Kathy Cervelli-Orsi  
#2000953 Exp. 1-10-2017

### Bond Statement

I, Carmel J. Angelo, Clerk of the Board of Supervisors of the  
County of Mendocino, State of California, hereby state that  
the bond or deposit as required by the "Subdivision Map Act",  
Section 66464 of Title 7 of the Government Code, Division 2,  
has been filed.

Dated this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.

Carmel J. Angelo, Clerk of the Board of Supervisors

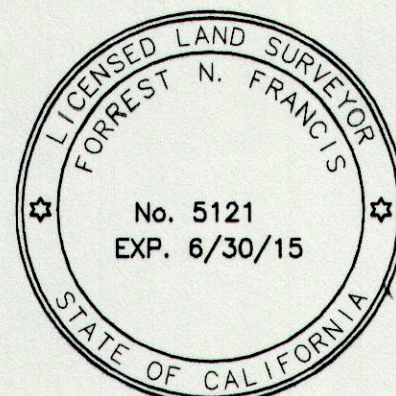
By: \_\_\_\_\_  
Deputy

### Surveyor's Statement

This map was prepared by me or under my direction and is  
based upon a field survey in conformance with the requirements  
of the Subdivision Map Act and local ordinance at the request  
of Tom Pryor in September of 2014. I hereby  
state that this Parcel Map substantially conforms to the  
approved, or conditionally approved, tentative map, if any. I  
further state that all monuments are of the character and  
occupy the positions indicated and that said monuments are  
sufficient to enable the survey to be retraced.

Forrest N. Francis

Forrest N. Francis, L. S. 5121  
Expiration Date, June 30, 2015



### Accuracy Statement

I, Forrest N. Francis, hereby state that all survey work required  
in the preparation of this map and related monumentation was  
performed to a minimum accuracy of 1/5000.

Forrest N. Francis

Forrest N. Francis, L. S. 5121  
Expiration Date, June 30, 2015

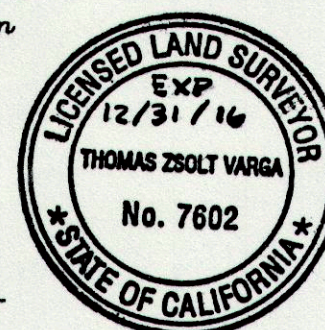
### City Surveyor's Engineer's Statement

I have examined this map; the subdivision as shown is  
substantially the same as it appeared on the tentative map  
and any approved alterations thereof; all provisions of  
Chapter 2, Division 2, of the Subdivision Map Act and  
any local ordinances applicable at the time of approval  
of the tentative map have been complied with; I am  
satisfied the map is technically correct.

Dated May 25, 2015

By: Tom J. Varga

Tom J. Varga, L. S. 7311  
City Surveyor, City of Fort Bragg  
Mendocino County, State of California  
License Expires 12/31/2016

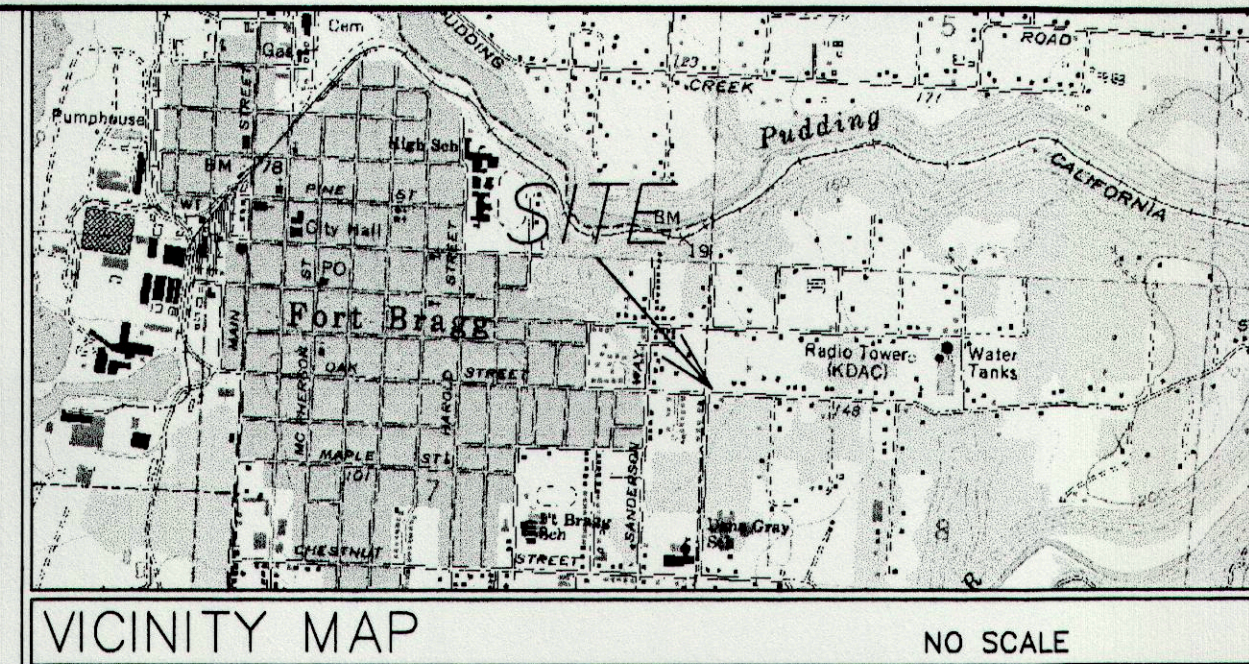


### City Clerk's Statement

I, Cynthia M. VanWormer, City Clerk of the City of Fort Bragg,  
hereby state that the City Council of the City of Fort Bragg by  
minute order on the 22<sup>nd</sup> day of June, 2015  
approved the within map.

Brenda Joudain

FOR Cynthia M. VanWormer, City Clerk  
City of Fort Bragg,



### Proof of Ownership Statement

I hereby state that the proof of ownership report made by  
First American Title on this 4<sup>th</sup>  
day of August, 2015, conforms to the provisions  
of the Subdivision Map Act.

Susan M. Ranochak  
County Recorder

By: Marianna Aluarez  
Deputy

### County Recorder's Statement

Filed this 4<sup>th</sup> day of August, 2015, at  
2:57 P.M. in Maps, Drawer 84,  
Page 79, 80, M. C. R., at the request of  
Ivan Lee Welty.

Susan M. Ranochak  
County Recorder

Fee \$ 11.00

By: Marianna Aluarez  
Deputy

## PARCEL MAP

Of Division #1-10  
being a portion of Section 8,  
Township 18 North, Range 17 West,  
Mount Diablo Base and Meridian

City of Fort Bragg, Mendocino County, California  
November, 2014  
Sheet one of two

Serial # 038

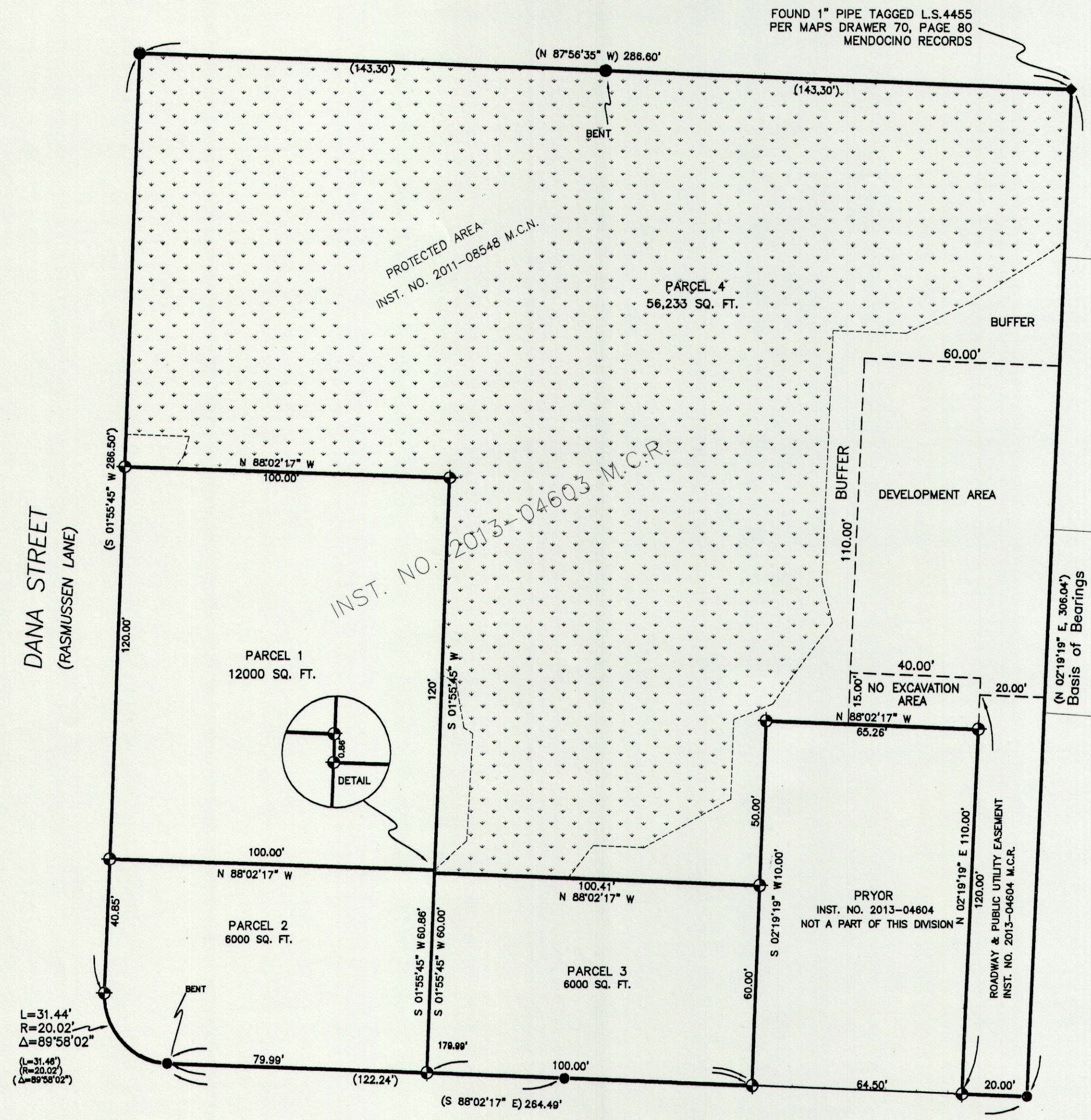
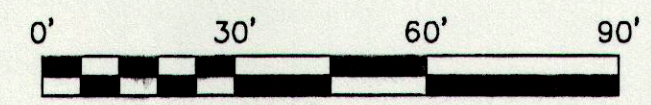
Prepared by: Forrest Francis, Land Surveyor  
P. O. Box 1162 / 10501 Ford Street  
Mendocino, Ca. 95460  
(707)937-9900 Job # 13092

Maps
Drawer <u>84</u>
Page <u>79</u>



DICK WILLIAMS WAY

DANA STREET  
(RASMUSSEN LANE)



Legend

- o ---- Dimensional point only
  - ⊕ ---- Set 5/8" rebar w/plastic cap, L.S. 5121
  - ---- Found 3/4" rebar tagged L.S.4455 per Inst. No. 2007-06891 M.C.R.
  - ◆ ---- Found monument as described
  - ( ) ---- Record Data per Inst. No. 2007-06891 M.C.R.
- Record data agrees with measured unless shown otherwise

BUILDING  
ENVELOPE

Basis of Bearings

The bearing North 02°19'19" East, between found monuments on the East line of Tract Two of the Lands of Pryor ad described in Instrument Number 2007-06891, Mendocino County Records, was used for the basis of bearings shown hereon.

M.S.D.V. NO. 2-03  
MAPS DR-70, PG.80, M.C.R.

PARCEL MAP

Of Division # 1-10  
being a portion of Section 8,  
Township 18 North, Range 17 West,  
Mount Diablo Base and Meridian  
City of Fort Bragg, Mendocino County, California  
Scale 1" = 30' November, 2014  
Sheet two of two

Prepared by: Forrest Francis, Land Surveyor  
Mendocino, Ca. 95460  
P. O. Box 1162 / 10501 Ford Street  
(707)937-9900

Job # 13092

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Drawn	84
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**CITY OF FORT BRAGG**

416 N. FRANKLIN, FORT BRAGG, CA 95437  
PHONE 707/961-2823 FAX 707/961-2802

---

**DATE:** June 8, 2023  
**TO:** Shannon Underhill  
**FROM:** Alfredo Huerta, Assistant City Engineer  
**SUBJECT:** Grading Permit Conditions: grade property (per development plans) and compact soil for future building foundations at 104 N Dana

---

Work under this permit includes fill up to 200 Cubic Yards of material to grade the site to an average slope of 1.6% per Welty Grading Plan. An approved site plan and a stormwater control plan checklist is attached to this approved grading permit application.

All work shall be done in compliance with all federal, state and local laws, including the approved plans and conducted in compliance with all conditions required by the City of Fort Bragg Grading Ordinance; Land Use Code Chapter 18.60 - Grading Permit Requirements and Procedures, the stormwater runoff control checklist, BACE Geotechnical Report section 6.0, all applicable reports associated with the approved Pryor subdivision (DIV 1-10, LLA 1-10, & USP 2-10) and the conditions described below.

No change to the extent, volume or type of work shall occur without the prior approval of the Public Works Director.

**Grading Permit Conditions:**

1. All ground disturbing activities shall be completed between June 15, 2023 and October 31, 2023. Stormwater protection measures shall be implemented prior to October 31, 2023.
2. Contact Underground Service Alert (USA), 1-800-227-2600, at least 48hrs prior to construction.
3. The applicant shall adhere to the Best Management Practices (BMP) indicated on the Small Construction Site Storm Water Erosion and Sedimentation Control Plan Submitted with this application (attached) including the following:

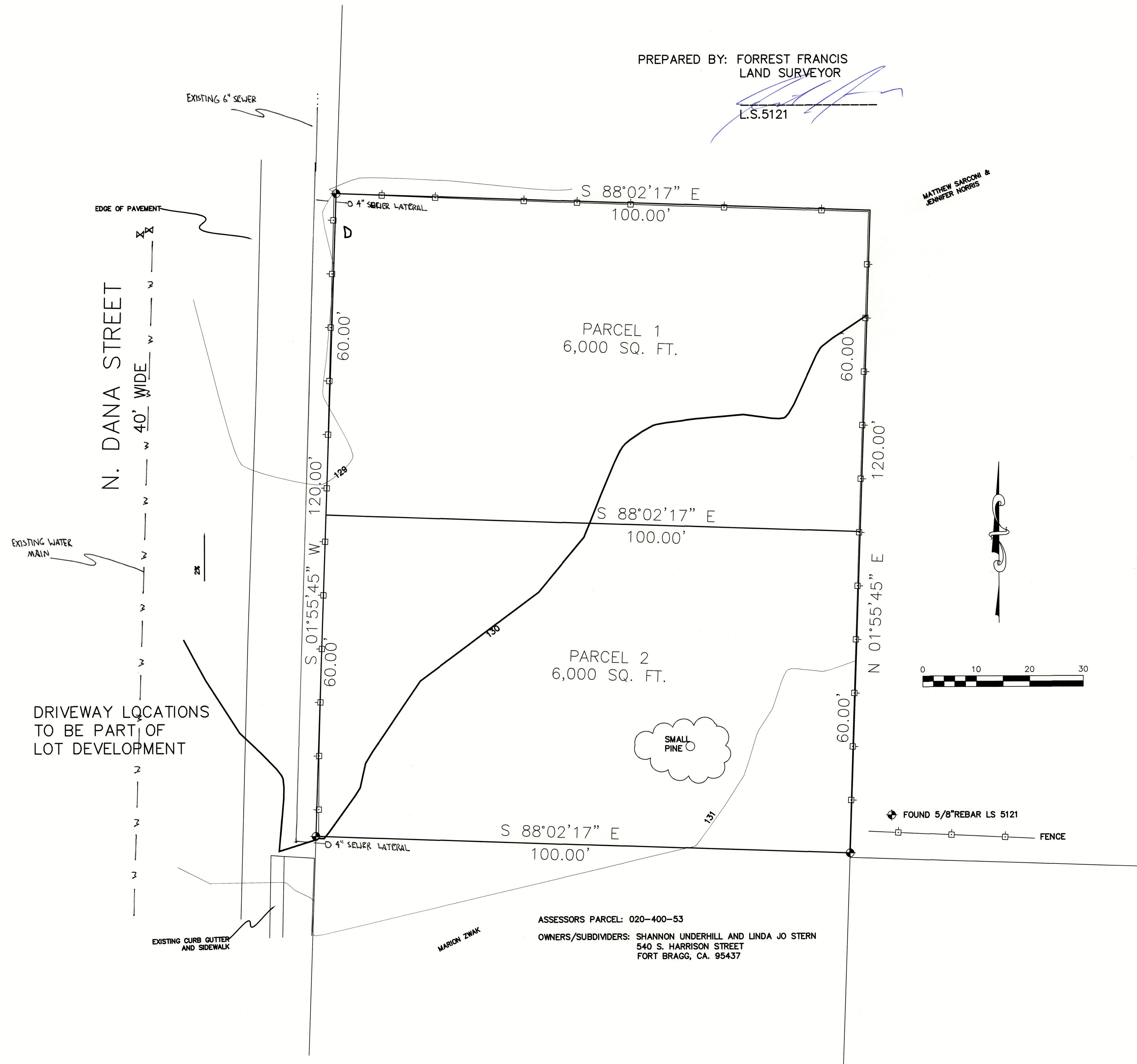
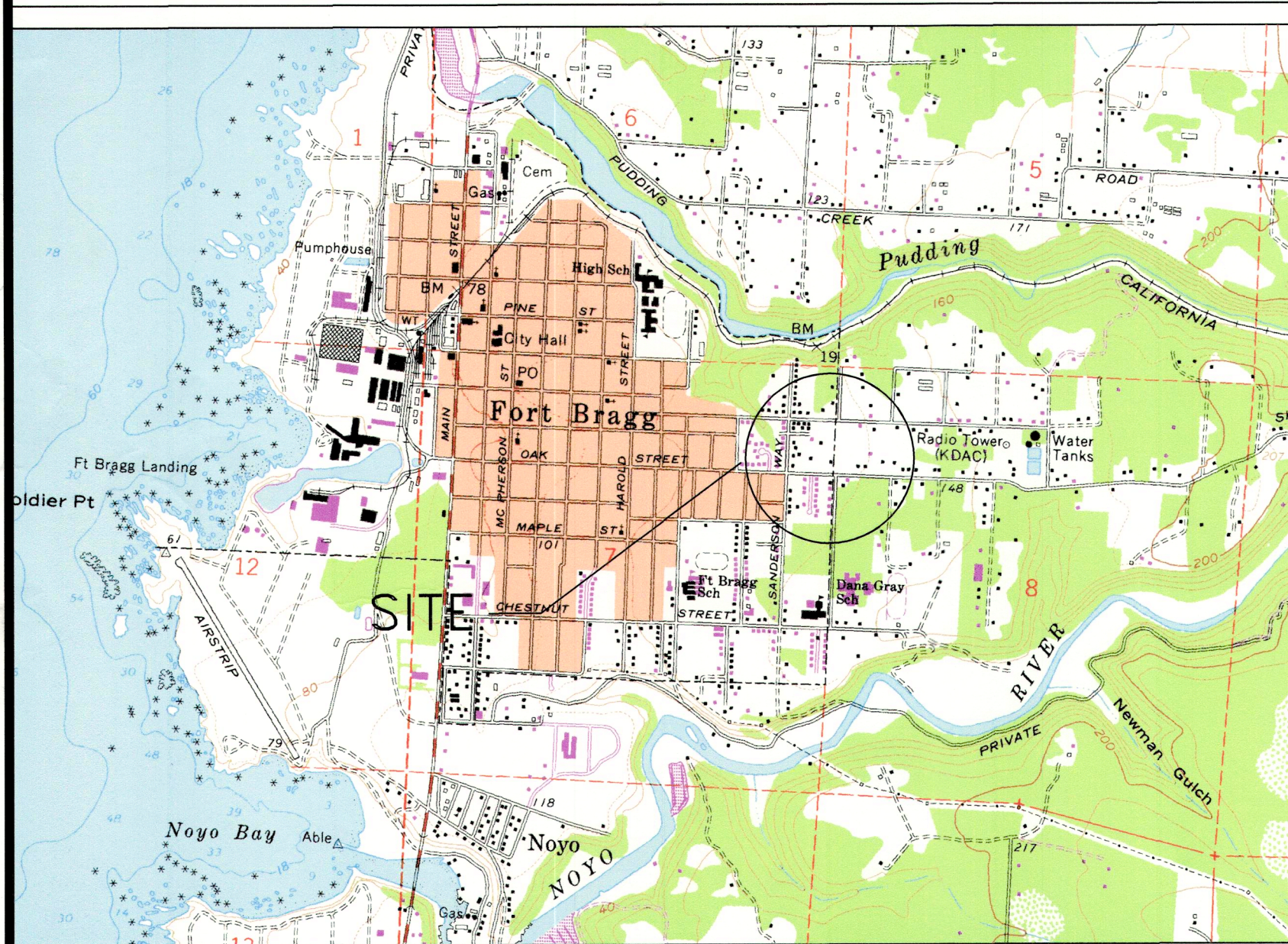
- a. If fill materials will be stockpiled on-site, non-active stockpiled soil shall be perimeter controlled by straw wattles or bales.
  - b. If excavated soil will remain on site after project completion, applicant shall complete final stabilization (for example, spreading and seeding) of the stockpiled soil.
  - c. Preserve existing vegetation (including grass/lawn as all vegetation is significant in preventing run-off and sedimentation) and stabilize exposed soil with ground-cover such as mulch, or straw and seed upon project completion.
  - d. Disposal of material in wetlands, in the 100-year flood plain, or Disposal of material without proper permission is prohibited.
  - e. All construction debris/soil shall be properly disposed.
  - f. Straw wattles or bales shall be placed along the north and east property boundaries before start of work and remain in place until soils are stabilized.
4. All public streets and right-of-ways in the City shall be maintained free of debris and soil originating from the construction site at all times.
5. The City shall be immediately notified of all spills, dust or sediment release, or release of potential hazardous materials.

**Building Permit Conditions (Pending):**

6. Frontage improvements for the subject parcel will be required at the time of development. Please submit plans for sidewalk, curb, gutter, and driveway with building permits for construction.
7. Low impact development strategies will be required and sized based on the area of impervious surface at the time of building permit submittal. Please submit LID design with building permits for construction.

Inspection scheduling and questions should be coordinated with Engineering Technician, Alfredo Huerta, 707-961-2823 x 138 or [ahuerta@fortbragg.com](mailto:ahuerta@fortbragg.com).




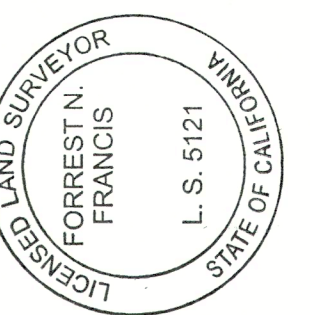


NOTES:  
- ASSUMED ELEVATION  
- THIS DOES NOT CONSIST  
OF A BOUNDARY SURVEY

TENTATIVE MAP  
PROPOSED MINOR SUBDIVISION  
104 NORTH DANA STREET  
FORT BRAGG, CA

**Mendocino Surveyors, Inc.**  
P. O. Box 1162, Mendocino, California 95460  
Phone: (707) 937-9900  
E-Mail: [info@mendocinosurveyor.com](mailto:info@mendocinosurveyor.com)  
[www.mendocinosurveyor.com](http://www.mendocinosurveyor.com)

JOB# 24831	DRAWN	FF
DATE 12/20/2021	SCALE	AS S
APPROVED		
L.S. 5121		



SHEET

1

OF 1 SHEETS





**CITY OF FORT BRAGG**

416 N. FRANKLIN, FORT BRAGG, CA 95437  
PHONE 707/961-2823 FAX 707/961-2802

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**DATE:** March 24, 2025  
**TO:** Shannon Underhill and Linda Jo Stern  
**FROM:** Alfredo Huerta, Assistant City Engineer  
**SUBJECT:** PW Comments for **Minor Subdivision at 104 Dana (DIV 1-24)**

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**1. Water/Sewer:**

- a. Applicant is responsible for determining appropriate connection sizes and assuring that the proposed service sizes are adequate.
- b. The depth of the sewer line in Dana should be adequate to serve the subdivision. If adequate fall is not achievable, then pumping will be required.
- c. Sewer cleanouts are required.
- d. Based on the Tentative Map, it is assumed that the existing sewer lateral (if present) will serve Parcel 1. If the existing lateral is not located or found to be in poor shape, a new sewer connection will be installed for Parcel 1. A new sewer connection will be installed for Parcel 2 and new water connections will be installed for both Parcel 1 and Parcel 2.
- e. Backflow devices will be required on all water service connections associated with fire sprinklers. Contact Heath Daniels at (707) 813-8031 for specific backflow information.
- f. All materials, workmanship, and construction of the utilities shall conform to the City of Fort Bragg Standard Specifications or an approved alternate.

**2. Estimated Public Works Fees** (fees are based on the 2023/2024 Fee Schedule):

**a. Estimated Capacity Fees:**

- i. **Water-** water impact fee for 2 single family residential (SFR) units is estimated to be **\$6,339**
- ii. **Sewer-** sewer impact fee for 2 SFR units is estimated to be **\$5,281**
  1. **Total Estimated Capacity Fee is \$11,620**

**b. Estimated Connection Fees:**

- i. **Sewer and water for 2 connections** - City assumes sewer is 4-6' deep and a 1" water service is desired – fees will increase if a larger water connection is desired or the sewer is deeper than 6'.

- ii. **Water connection fee for a 1" service is estimated at \$3,165 and a 4" sewer connection at 6' deep is estimated at \$2,714**, for an estimated total including inspection of **\$12,078** for 2 new SFR units.
- c. **Estimated Drainage Fee** - Calculated based on proposed area of impervious surface at a rate of \$0.7446 per SF. The individual parcels will be subject to drainage fees at the time of building permit application.
- d. **Estimated Police Facilities Fees** - Calculated based on development project area at a rate of \$324.99 per 1,000 SF. The individual parcels will be subject to a Police Facilities fee at the time of building permit application.
- e. **Estimated Fire Facilities Fee** - Calculated based on development project area at a rate of \$202.18 per 1,000 SF. The individual parcels will be subject to a Fire Facilities fee at the time of building permit application.

### 3. **Circulation, Access, & Frontage:**

- a. Frontage improvements for both parcels including Curb, gutter, sidewalk, and street pave out will be required along Dana Street at the time of development. Please submit frontage improvement plans for approval with building permit submittal.
- b. New driveway cuts shall be constructed per City Standards.
- c. Proposed driveway for Parcel 2 shall be placed a minimum of 100' from the northern edge of the Oak Street travel lane as noted in the Pryor Subdivision conditions.
- d. If the owners of Parcel 1 and Parcel 2 decided to construct a joint driveway, an easement and maintenance agreement must be recorded prior to final of any building permit on either of the parcels.

### 4. **Grading/Soils Report:**

- a. As recommended by the county building official, a soils report from a licensed engineer is required to verify soil is adequate to support structure(s).
- b. Submittal of such report will be required prior to approval of parcel map.

### 5. **Encroachment Permit** - will be required for any activity occurring in the public right of way. (Includes the placement of a dumpster, ladders used for painting, construction vehicles not parked in conformance with parking codes, and for installation of frontage improvements. **Please submit the relevant encroachment permit application 2 weeks prior to anticipated construction date(s) to allow adequate time for processing.**

### 6. **Storm Water Runoff Pollution Control and drainage** - All proposed development associated with this project shall be compliant with the Fort Bragg Municipal Code (FBMC) section 18.64 Urban Runoff Pollution Control, and Section 12.14 Drainage Facility Improvements.

- a. This subdivision is subject to Municipal Code Section 12.14.02, requiring a site design that can accommodate 100 year-frequency storm events.
- b. Site Assessment Required. The applicant shall evaluate the site conditions, such as soils, vegetation, and flow paths and submit stormwater calculations

to the City Engineering Department assuming full build out of the subdivision. Refer to Mendocino County Low Impact Development (LID) Design Standards Manual v2.1 for guidance. It can be reviewed online at: <https://www.mendocinocounty.org/home/showdocument?id=27635>.

- c. Storm water runoff shall be minimized by incorporation of LID strategies and site design measures that minimize impermeable areas, maximize permeable areas, and that slow, spread, and sink runoff so as to recharge groundwater and minimize runoff.
- d. Low Impact development strategies will be required and sized based on the area of impervious surface at the time of building permit submittal. Please submit LID design with building permits for construction.
  - i. The subdivider shall implement site design measures to reduce runoff as outlined in the Pryor Subdivision documents. The Site Assessment, layout and design measures should be shown on a drainage site plan.
  - ii. The drainage site plan should divide each developed portion of the project site into discrete Drainage Management Areas (DMA's).
  - iii. Any remaining runoff from DMA's shall be expected shall be collected at treatment control BMP's (vegetated swales, permeable pavements, rain gardens, or other bio retention facilities).
  - iv. *Treatment Control BMPs shall be sized and designed to retain and infiltrate runoff produced by all storms up to and including the 85<sup>th</sup> percentile (0.83" in 24-hours).*
  - v. *Treatment control BMPs require O&M plan; a maintenance and operation plan shall be submitted for the upkeep of this facility. The plan shall include provision(s) demonstrating adequate on-going operations and maintenance.*
- e. All proposed drainage features shall be reflected on a final utility, grading and storm drainage plan, which reflects all proposed easements and site improvements.

Call [Assistant City Engineer Alfredo Huerta](#) if you have any questions or to schedule inspections: 707-961-2823 x 138 or [ahuerta@fortbragg.com](mailto:ahuerta@fortbragg.com).



Hearing/decision date(s)  
April 13, 2011

- ☐ City appeal period ended
- ☐ Coastal Commission appeal period ended
- ☐ prior-to-issuance conditions met

## DEVELOPMENT PERMIT

**PERMIT TYPE & NO.:** Minor Subdivision 1-10 and Use Permit 2-10  
**OWNERS:** Thomas D. & Patricia Pryor  
**APPLICANT:** Tom Pryor  
**AGENT:** Amy Wynn Coastal Development Permits  
**ADDRESS:** 1411 E. Oak Street; APN 020-490-38/39  
**DESCRIPTION:** Adoption of Mitigated Negative Declaration, Minor Subdivision, and Use Permit to allow: 1) division of 80,227 SF parcel into four parcels of 12,000 SF, 6,000 SF, 6,000 SF, and 56,227 SF to accommodate residential development; 2) fill of a portion of an existing wetland; and 3) wetland mitigation through creation, restoration, enhancement and protection, through deed restriction, of a wetland. A Wetland Management and Mitigation Plan has been filed.

**PERMIT EFFECTIVE DATE:** Upon City's receipt of this signed development permit but no sooner than April 26, 2011 (conclusion of ten-day appeal period to City Council).

**PERMIT EXPIRATION DATE:** See attached Standard Condition #8.

**CONDITIONS OF APPROVAL:** See attached findings and conditions.

**Community Development Department Statement:** I hereby certify that all conditions which must be met prior to issuance of this permit have been met and that this permit is deemed by the City of Fort Bragg Community Development Department to be a valid permit subject to all conditions of approval.

\_\_\_\_\_  
Community Development Director

\_\_\_\_\_  
Date

**Owner's Statement:** I am the owner of the property subject to this permit (or his/her authorized agent) and I hereby certify that I have reviewed the conditions of approval and will establish and continue the use of the subject property in compliance with the specified conditions and applicable sections of the Fort Bragg Municipal Code. I further grant permission for City staff to enter upon the premises for which the permit is issued to verify compliance with the required conditions.

\_\_\_\_\_  
Owner

\_\_\_\_\_  
Date

Notice: This permit must be signed and returned to the Community Development Department.

Attachment: Findings and Conditions



### **GENERAL FINDINGS**

1. The proposed project is consistent with the purpose and intent of the zoning district, as well as all other provisions of the General Plan, Land Use and Development Code (LUDC) and the Fort Bragg Municipal Code;
2. The design, location, size, and operating characteristics of the proposed activity are compatible with the existing and future land uses in the vicinity;
3. The site is physically suitable in terms of design, location, shape, size, operating characteristics, and the provision of public and emergency vehicle (e.g., fire and medical) access and public services and utilities (e.g., fire protection, police protection, potable water, schools, solid waste collection and disposal, storm drainage, wastewater collection, treatment, and disposal, etc.), to ensure that the type, density, and intensity of use being proposed would not endanger, jeopardize, or otherwise constitute a hazard to the public interest, health, safety, convenience, or welfare, or be materially injurious to the improvements, persons, property, or uses in the vicinity and zoning district in which the property is located; and
4. As conditioned and with the adopted mitigation measures, the proposed project will not have any significant adverse impacts on the environment within the meaning of the California Environmental Quality Act.

### **USE PERMIT FINDINGS**

1. The proposed use is consistent with the General Plan;
2. The proposed use is allowed within the applicable zoning district and complies with all other applicable provisions of this Development Code and the Municipal Code;
3. The design, location, size, and operating characteristics of the proposed activity are compatible with the existing and future land uses in the vicinity; and
4. The site is physically suitable in terms of design, location, shape, size, operating characteristics, and the provision of public and emergency vehicle (e.g., fire and medical) access and public services and utilities (e.g., fire protection, police protection, potable water, schools, solid waste collection and disposal, storm drainage, wastewater collection, treatment, and disposal, etc.), to ensure that the type, density, and intensity of use being proposed would not endanger, jeopardize, or otherwise constitute a hazard to the public interest, health, safety, convenience, or welfare, or be materially injurious to the improvements, persons, property, or uses in the vicinity and zoning district in which the property is located.

### **SUBDIVISION FINDINGS**

1. The project is consistent with Chapter 18.80 (Subdivisions) of the Land Use and Development Code;
2. The following findings are made relative to the granting of an exception to subdivision standards for an decrease in minimum lot depth:
  - a) There are exceptional or extraordinary circumstances or conditions applicable to the proposed subdivision, including size, shape, topography, location, or surroundings;
  - b) The exceptional or extraordinary circumstances or conditions are not due to any action of the subdivider subsequent to the enactment of this Article;
  - c) The exception is necessary for the preservation and enjoyment of a substantial property right possessed by other property in the vicinity and zoning district which would otherwise be denied to the proposed subdivision;
  - d) Granting the exception will not be materially detrimental to the public welfare nor injurious to the property or improvements in the vicinity and zoning district in which the property is located; and
  - e) The exception will not affect the consistency of the proposed subdivision with the General Plan or any applicable specific plan; and
3. The project is consistent with the Parcel Map Act.

### **SPECIAL CONDITIONS**

1. The parcel map shall be reviewed and accepted by the City Engineer and the Community Development Department prior to its recordation by the County Recorder.
2. All frontage and utility improvements as described in report (ADA compliant driveway aprons, corner ramps, sidewalk, curb, gutter, conform paving, etc.) shall be implemented as follows:
  - Parcel 1:
    - Frontage to be improved at time of development of parcel.
    - Driveway shall be constructed at least 100 feet north of the northern edge of Oak Street's northern-most travel lane.
  - Parcel 2:
    - ADA compliant corner ramp with cross drain to be constructed at time of development of parcel.
    - Frontage on both Dana and Oak Streets to be improved at time of development of parcel.
    - Driveway access shall only be from Dana Street.
    - Driveway shall be constructed as far north as possible.
    - Developer shall cooperate with PG&E and Public Works Department to move power pole to standardized location within the public right of way at time of development of parcel. The pole shall be moved to a location 18" from the face of the curb with a minimum of 36" of clearance behind it.
  - Parcel 3:
    - Frontage to be improved at time of development.
  - Parcel 4:
    - Frontage to be improved prior to recordation of map.
    - Prior to recordation of the map, developer shall have 1<sup>st</sup> 20 feet of Parcel 4/existing residence driveway – this paving shall be per requirements for use of Low Impact Development techniques.
    - Prior to occupancy of the last primary dwelling unit constructed in this subdivision, the improvements of Parcel 4's frontage on Dana Street shall be completed.
3. Prior to recordation of the parcel map for the project, the developer shall submit to the City Engineer for review and approval improvement drawings for the frontages of Dana Street and Oak Street. The plans shall be drawn by, and bear the seal of, a licensed Civil Engineer. The plans should be adjustable to ensure that improvements comply with current City standards, as the standards are modified from time to time.
4. A new waste water line connecting the subdivision to the sewer main in Cedar Street shall be constructed by the developer prior to the issuance of the first building permit for construction on Parcels 1, 2 or 3:
  - a) The developer shall construct, to City standards, a new waste water line connecting Parcels 1, 2 or 3 of the subdivision to sewer main on Cedar Street.
  - b) Such waste water line shall be constructed under the authority of an encroachment permit in the City right of way on Dana Street and the bike and pedestrian path that runs between the end of Dana Street and Cedar Street.
  - c) The exact location of the waste water line in this City right of way will be determined by the City Engineer at the time of review of the encroachment permit application.
  - d) The waste water line shall be dedicated to the City.
  - e) Utility hookups to Parcel 3 will be worked out with the Public Works Director.
5. Power and telecommunications utility lines shall run underground from existing power poles to each parcel. If a main line extension is necessary, then such extension shall be constructed underground.
6. The site work plan and wetland management and mitigation plan shall comply with DFG and NCRWQCB comments that state:

- a) Low Impact Development (LID) post-construction storm water treatment techniques shall be required on any impervious areas that area added as a result of this subdivision.
  - b) LID features, including permeable driveways/walkways, vegetated swales and/or rain gardens shall be required for new construction on developed parcels.
  - c) Storm water runoff from the subdivision area, that is not infiltrated on-site shall be directed to the wetland, as opposed to the roadway gutters.
7. Storm drainage fees pursuant to Fort Bragg Municipal Code (FBMC) Section 12.14.030 shall be due as follows:
    - a) Parcels 1 through 3: these parcels' drainage fees shall be paid prior to the issuance of each parcels' respective building permit for dwelling units.
    - b) Parcel 4: this drainage fee shall be paid prior to the issuance of the grading permit for implementation of the wetland plan and general subdivision site preparation grading.
  8. A final utility, grading and storm drainage plan, which reflects all proposed easements and site improvements, drawn by and bearing the seal of a licensed Civil Engineer, shall be submitted to the City Engineer for review and approval prior to recordation of the parcel map so that the engineer and City Engineer can cooperate to ensure that all necessary items are show on such map. The Community Development Department shall review the utility plan, and ensure that all necessary agency permits are obtained and that the plan does not conflict with the Wetland Monitoring Plan prior to issuance of a grading permit.
  9. Prior to recordation of the parcel map, the developer shall provide for Community Development Department review; 1) a revised deed restriction with a letter from NCRWQCB indicating their satisfaction with the document. 2) The deed restriction shall be recorded against Parcel 4 at the time of the recordation of the parcel map; 3) a more robust mitigation monitoring plan per DFG request to accompany the Wetland Management and Mitigation Plan with a letter from DFG indication their satisfaction with the document; and, 4) shall implement the Wetland Management and Mitigation Plan prior to recordation of the parcel map. The applicant shall also obtain a letter from the Department of Fish and Game concurring that the wetland mitigation project has succeeded and is performing as designed and permitted and shall provide this letter to the Community Development Department prior to recordation of the parcel map.
  10. The parcel map shall indicate the conservation area subject to deed restriction and the no-excavation area within the Parcel 4 building envelope.
  11. Prior to recordation of the parcel map, the developer shall provide restrictive covenant language prohibiting hobby and commercial uses on Parcels 1, 2, 3 and 4 that could adversely impact water quality in the adjacent conserved wetland area to the Community Development Director for review and approval.
  12. All mitigation measures as outlined in the project Final Mitigated Negative Declaration and as detailed in the project's Wetland Management and Mitigation Plan, Geotechnical Study, Archaeological Study and final archaeologist's letter shall be implemented at the specified points in time as the project is developed.
  13. All necessary permits shall be obtained prior to commencement of any work that would be done on reliance of such permits.

#### **STANDARD CONDITIONS**

1. This action shall become final on the 11<sup>th</sup> day following the decision unless an appeal to the City Council is filed pursuant to Land Use & Development Code (LUDC) Chapter 18.92 - Appeals.
2. The use and occupancy of the premises shall be established and maintained in conformance with the requirements of this permit and all applicable provisions of the LUDC.
3. The application, along with supplemental exhibits and related material, shall be considered elements of this permit, and compliance therewith is mandatory, unless an amendment has been approved by the City.



4. This permit shall be subject to the securing of all necessary permits for the proposed development from City, County, State, and Federal agencies having jurisdiction. All plans submitted with the required permit applications shall be consistent with this approval. All construction shall be consistent with all Building, Fire, and Health code considerations as well as other applicable agency codes.
5. The developer shall secure all required building permits for the proposed project as required by the Mendocino County Building Department.
6. If any person excavating or otherwise disturbing the earth discovers any archaeological site during project construction, the following actions shall be taken: 1) cease and desist from all further excavation and disturbances within 100 feet of the discovery; and 2) notify the Director of Public Works within 24 hours of the discovery. Evidence of an archaeological site may include, but is not necessarily limited to shellfish, bones, flaked and ground stone tools, stone flakes produced during tool production, historic artifacts, and historic features such as trash-filled pits and buried foundations. A professional archaeologist on the list maintained by the Northwest Information Center of the California Historical Resources Information System or Listed by the Register of Professional Archaeologists shall be consulted to determine necessary actions.
7. This permit shall be subject to revocation or modification upon a finding of any one or more of the following:
  - a) That such permit was obtained or extended by fraud.
  - b) That one or more of the conditions upon which such permit was granted have been violated.
  - c) That the use for which the permit was granted is so conducted as to be detrimental to the public health, welfare, or safety or as to be a nuisance.
  - d) A final judgment of a court of competent jurisdiction has declared one or more conditions to be void or ineffective, or has enjoined or otherwise prohibited the enforcement or operation of one or more conditions.
8. Unless a condition of approval or other provision of the Land Use and Development Code establishes a different time limit, any permit or approval not exercised within 24 months of approval shall expire and become void, except where an extension of time is approved in compliance with LUDC Subsection 18.76.070 (B).

## RESOLUTION NO. PC XX-2025

### RESOLUTION OF THE FORT BRAGG PLANNING COMMISSION APPROVING THE TENTATIVE MAP FOR MINOR SUBDIVISION DIV 1-24 FOR THE DIVISION OF 104 DANA ST. (APN: 020-490-53)

**WHEREAS**, Shannon Underhill and Linda Jo Stern (“Applicant”) submitted an application on December 23, 2024 for a minor subdivision of a 0.275 acre parcel (APN: 020-490-53) located at 104 Dana St. (“Project”); and

**WHEREAS**, the Project is in the Low Density Residential District and subject to the Fort Bragg Inland General Plan and Inland Land Use and Development Code (ILUDC); and

**WHEREAS**, ILUDC §18.21.040 and §18.21.050 require subdivisions to comply with the subdivision standards and site planning and building standards; and

**WHEREAS**, ILUDC Article 8 provides the procedures and regulates Subdivisions; and

**WHEREAS**, ILUDC §18.81.070(A) requires that the Review Authority find that the proposed subdivision, together with the provisions for its design and improvement, is consistent with the General Plan, and any applicable Specific Plan, and that none of the findings for denial in ILUDC §18.81.070(C) can be made and shall apply to each proposed parcel as well as the entire subdivision; and

**WHEREAS**, the Planning Commission held a duly noticed public hearing on April 16, 2025 to consider the Project and take public testimony.

**NOW THEREFORE BE IT RESOLVED**, that based on the entirety of the record before it, which includes without limitation, the CEQA, Public Resources Code §21000, et seq. and the CEQA Guidelines, 14 California Code of Regulations §15301, et seq.; the Fort Bragg Inland General Plan; the Fort Bragg Inland Land Use and Development Code; the Project applications; all site plans, and all reports and public testimony submitted as part of the Planning Commission’s meeting of April 16, 2025, and Planning Commission deliberations; and any other evidence (within the meaning of Public Resources Code §21080(e) and §21082.2), the Planning Commission of the City of Fort Bragg hereby finds as follows:

1. The Recitals set forth above are true and correct and are incorporated herein as findings.
2. California Environmental Quality Act Findings
  - a. The proposed project would create two parcels on less than one acre of land within the City limits of Fort Bragg. There is access to the resulting parcels to City water and sewer. As analyzed, the project complies with the Inland Land Use and Development Code and conforms to the General Plan. No variances or exceptions are required. The parcel has not been divided within the last two years and is not on a slope greater than 20 percent. Therefore, DIV 1-24 is eligible for a categorical exemption from CEQA under Section 15315 of the CEQA Guidelines for Minor Land Divisions. There are no applicable exceptions to the proposed CEQA Exemption Class 15 for Minor Divisions as the project is not located on a scenic highway, is not a hazardous waste site, has no historic

resources and development of these parcels will not have a significant effect on the environment. The parcel was created through a subdivision permitted on April 26, 2011, for which a deed restricted wetland mitigation project was created on an adjoining parcel that fully mitigated the removal of all wetlands from this parcel. Therefore, it is recommended that the project is categorically exempt from the requirement for the preparation of environmental documents; and

### 3. Tentative Map Approval Findings

- a. *The proposed subdivision, together with the provisions for its design and improvement, is consistent with the General Plan, and any applicable Specific Plan, and that none of the findings for denial in ILUDC §18.81.070(C) can be made.*

The proposed project is consistent with the General Plan because:

- a. The project site has a General Plan Land Use Designation of Low Density Residential which has an allowable density of 3 to 6 dwelling units per acre. The Tentative Map does not propose any dwelling units at this time. Per State law the resulting parcels would be eligible for: 1) 1 dwelling unit or 1 duplex per parcel; or 2) 1 dwelling unit and 1 second unit and 1 JADU where allowed by ILUDC 18.42.170; or 3) 2 to 4 units, where allowed, by ILUDC 18.42.200, and as such complies with General Plan Program LU-7.1.1. Per State Law ADUs and Urban Unit Developments are not considered when calculating maximum density.
- b. New dwelling units will be subject to both capacity and connection fees in compliance with Policy PF-2.1.
- c. As conditioned, upon development, the project will be required to comply with Policy OS-2.1 and will plant 50% of all plantings using native landscaping and no plantings that include invasive species or noxious weeds.
- d. The project complies with Program OS-7.2.4 because it will not create any new unpaved roads or driveways.
- e. There are no applicable goals, policies, or programs in the Circulation Element, Community Design Element, nor Sustainability Element.
- f. Through the implementation of uniform standards in the California Building Code and the California Fire Code the project complies with Policy SF-1.1 *Minimize risks to life and property in areas of high geologic, flood, and fire hazard.*
- g. The Project is consistent with the City's 2019 Housing Element Goal H-1 and Policy H-1.6 because it will divide an existing 0.275 acre parcel that is substantially surrounded by existing development into two developable lots.

The Project does not conflict with any policies of the Inland General Plan or the City's 2019 Housing Element and complies with all applicable policies. Therefore, the project is consistent with the Inland General Plan.

### 4. Tentative Map Additional Supportive Findings



- a. *The site is physically suitable for the type or proposed density of development;*

The site is zoned Low Density Residential and will accommodate two lots that are similar in size to surrounding lots with similar uses. Therefore, the site is physically suitable and this finding can be made.

- b. *The design of the subdivision or the proposed improvements is not likely to cause substantial environmental damage or injure fish or wildlife or their habitat;*

The Project is on a site that is substantially surrounded by other development. There are no special status biological or botanical resources or habitat on the site. While there is a wetland on the adjacent parcel to the east, any future development project will comply with City zoning and environmental review requirements at the time of development to ensure the project will not damage the wetland. Therefore, the project will not cause environmental damage or injure fish or wildlife or their habitat, and this finding can be made.

- c. *The design of the subdivision or type of improvements is unlikely to cause serious public health or safety problems;*

The density and intensity of use is the same as existing surrounding uses. Future development will comply with the allowable density of the ILUDC. There are no activities planned that would cause serious public health or safety problems and this finding can be made.

- d. *The design of the subdivision or the type of improvements will not conflict with easements, acquired by the public at large for access through or use of, property within the proposed subdivision.*

The project has been reviewed by the City Engineering department and the Project will not conflict with any easements, therefore this finding can be made.

- e. *The discharge of sewage from the proposed subdivision into the community sewer system would not result in violation of existing requirements prescribed by the California Regional Water Quality Control Board;*

The Project will result in two new single-family residential parcels and will not result in an increase in intensity of use of the community sewer that would result in a violation of existing requirements, therefore this finding can be made.

- f. *A preliminary soils report or geological hazard report does not indicate adverse soil or geological conditions and the subdivider has not failed to provide sufficient information to the satisfaction of the Director of Public Works or other applicable Review Authority that the conditions can be corrected in the plan for the development;*

The site is not located in a geologically hazardous area. A Geotechnical investigation report was conducted in 2009 for the Pryor subdivision. That report concluded that the site is geotechnically suitable for the proposed development. It provided an analysis of some geotechnical considerations affecting construction and their possible mitigation measures. Additionally, Special Condition 3 requires that prior to approval of the final parcel map, applicant shall submit a new soils report from a licensed engineer,

indicating if the soil requires any specific measures to support structure(s). Thus, as conditioned, this finding can be made.

- g. *The proposed subdivision is consistent with all applicable provisions of this Development Code, any other applicable provisions of the Municipal Code, or with the Subdivision Map Act.*

As analyzed and conditioned in the Staff Report dated April 16, 2025, the subdivision complies with all applicable standards and provisions in the Inland Land Use and Development Code, Municipal Code, and complies with the Subdivision Map Act. Therefore, this finding can be made.

**BE IT FURTHER RESOLVED** that the Planning Commission of the City of Fort Bragg does hereby adopt the findings contained in this Resolution and approves the Tentative Map for Minor Subdivision 1-24 (DIV 1-24) subject to the following conditions of approval:

**STANDARD CONDITIONS:**

1. This action shall become final on the 11th calendar day following the decision unless an appeal to the City Council is filed pursuant to ILUDC Chapter 18.92 – Appeals.
2. The use and occupancy of the premises shall be established and maintained in conformance with the requirements of this permit and all applicable provisions of the ILUDC.
3. The application, along with supplemental exhibits and related material, shall be considered elements of this permit, and compliance therewith is mandatory, unless an amendment has been approved by the City.
4. This permit shall be subject to the securing of all necessary permits for the proposed development from City, County, State, and Federal agencies having jurisdiction. All plans submitted with the required permit applications shall be consistent with this approval. All construction shall be consistent with all Building, Fire, and Health code considerations as well as other applicable agency codes.
5. If any person excavating or otherwise disturbing the earth discovers any archaeological site during project construction, the following actions shall be taken: 1) cease and desist from all further excavation and disturbances within 100 feet of the discovery; and 2) notify the Director of Public Works within 24 hours of the discovery. Evidence of an archaeological site may include, but is not necessarily limited to shellfish, bones, flaked and ground stone tools, stone flakes produced during tool production, historic artifacts, and historic features such as trash-filled pits and buried foundations. A professional archaeologist on the list maintained by the Northwest Information Center of the California Historical Resources Information System or Listed by the Register of Professional Archaeologists shall be consulted to determine necessary actions.
6. This permit shall be subject to revocation or modification upon a finding of any one or more of the following:
  - a. That such permit was obtained or extended by fraud.

- b. That one or more of the conditions upon which such permit was granted have been violated.
  - c. That the use for which the permit was granted is so conducted as to be detrimental to the public health, welfare, or safety or as to be a nuisance.
  - d. A final judgment of a court of competent jurisdiction has declared one or more conditions to be void or ineffective, or has enjoined or otherwise prohibited the enforcement or operation of one or more conditions.
7. Unless a condition of approval or other provision of the Inland Land Use and Development Code establishes a different time limit, any permit or approval not exercised within 24 months of approval shall expire and become void, except where an extension of time is approved in compliance with ILUDC Subsection 18.76.070(B).

### **SPECIAL CONDITIONS:**

1. The applicant shall comply with the following wetland mitigation measures contained in the **Wetland Management and Mitigation Plan** (page numbers in parentheses) for the construction of all new development on the resulting parcels:
- a. **Stormwater Run-off** (page 19). All roof water for each house will be collected into gutters and downspouts and then directed into gravel/rock energy dissipaters. From the energy dissipaters, subsurface water would flow into the wetlands. The landscaped areas on the wetland side of future residential development would also be directed into the wetlands as subsurface water. The water directed into the wetlands will be subtle to prevent channelization and the creation of concentrated erosion.
  - b. **Landscape Run-off** (page 20). Water from landscaped areas on the street sides of any future residential development on proposed Parcels 1 and 2 would be directed away from the wetlands and towards the street.
  - c. **Permeable Pavers** (page 20): Although at this time, there is no specific driveway construction proposed, we recommend a permeable driveway system that reduces runoff and increase onsite infiltration for any potential future development.
  - d. **Bioswales** (page 20) Bioswales or rain gardens on the property and adjacent to the driveway or the building pads could further collect water that other wise may be directed off site.
  - e. **Roof Leader- (Downspout)** (page 20). Disconnection and Energy Dissipaters: As discussed, stormwater that will be directed into the wetlands will be diffused to prevent a concentrated channel that would create an erosion point. From the downspouts of the roofs the water will hit a rocked energy dissipater. From the energy dissipater, water will be diffused to prevent a concentrated channel that would create an erosion point. Through subsurface water flow this water will recharge the water table.
  - f. **Fencing** (page 21) Permanent fencing will be placed and maintained along the entire edge of the parcel abutting the wetland to contain the entire wetland management area. The purpose of the fencing is to prevent public access into the wetlands that may



contribute to the degradation of the habitat. Along the wetland side of the fence dormant willow stakes will be placed and maintained. Willow stakes will help stabilize the slope and act as transitional plant along the edge of development.

2. Applicant shall comply with all requirements in the memorandum prepared by Public Works on March 24, 2025.
3. Prior to occupancy of any residential unit in this subdivision, address numbers shall be placed in such a manner as to be visible from Dana St. and shall be placed on each residential unit in such a manner as to be visible from the access driveway. The minimum height of numbers to be used shall be three inches and contrasting color from basic background visible from the access driveway. The minimum height of numbers to be used shall be three inches and contrasting color from basic background.
4. Frontage improvements shall be completed at the time of development of parcels. The driveway shall be constructed at least 100 feet north of the northern edge of Oak Street's northern-most travel lane. Power and telecommunications utility lines shall run underground from existing power poles to each parcel. If a main line extension is necessary, then such extension shall be constructed underground.
5. Prior to approval of the final parcel map, the applicant shall submit a soils report from a licensed engineer, verifying that the soil is adequate to support structure(s) on both resulting parcels and indicating if the soil requires any specific measures to support such structures.
6. *This subdivision is subject to Municipal Code Section 12.14.02, requiring a site design that can accommodate 100 year-frequency storm events.*
7. *The applicant shall evaluate the site conditions, such as soils, vegetation, and flow paths and submit stormwater calculations to the City Engineering Department assuming full build out of the subdivision. Refer to Mendocino County Low Impact Development (LID) Design Standards Manual v2.1 for guidance. It can be reviewed at: <https://www.mendocinocounty.org/home/showdocument?id=27635>.*
8. Storm water runoff shall be minimized by incorporation of LID strategies and site design measures that minimize impermeable areas, maximize permeable areas, and that slow, spread, and sink runoff so as to recharge groundwater and minimize runoff.
9. Low Impact development strategies are required and sized based on the area of impervious surface at the time of building permit submittal. LID design shall be submitted with building permits for construction.
  - i. *The subdivider shall implement site design measures to reduce runoff as outlined in the Pryor Subdivision documents. The Site Assessment, layout and design measures shall be shown on a drainage site plan.*
  - ii. *The drainage site plan shall divide each developed portion of the project site into discrete Drainage Management Areas (DMA's).*
  - iii. *Any remaining runoff from DMA's expected shall be collected at treatment control BMP's (vegetated swales, permeable pavements, rain gardens, or other bio retention facilities).*

- iv. *Treatment Control BMPs shall be sized and designed to retain and infiltrate runoff produced by all storms up to and including the 85<sup>th</sup> percentile (0.83" in 24-hours).*
- v. *Treatment control BMPs require O&M plan; a maintenance and operation plan shall be submitted for the upkeep of this facility. The plan shall include provision(s) demonstrating adequate on-going operations and maintenance.*
- vi. Drainage fees shall be paid prior to the issuance of each parcels' respective building permit for dwelling units.

- 10. All proposed drainage features shall be reflected on a final utility, grading and storm drainage plan, which reflects all proposed easements and site improvements.
- 11. All recommendations contained within the BACE Geotechnical Investigation (#12169.1, dated September 10, 2009), Section 6.0 Recommendations (6.1 through 6.5), shall be implemented during the development of the parcels, recorded on the subdivision map, and added to building and other permit conditions as appropriate to ensure their implementation over time.
- 12. Prior to recordation of the tentative map, the applicant to add restrictive covenants to the new residential parcels that prohibit hobbyist, home businesses and commercial uses, such as automobile storage, collecting and vehicle maintenance/repairing, and other activities involving potentially polluting chemicals and substances which could have a negative effect on water quality. Specific thresholds and performance standards will be developed in cooperation with the applicant and Community Development Department.

**NOW, THEREFORE, BE IT FURTHER RESOLVED** that the Fort Bragg Planning Commission approves the Tentative Map for Minor Subdivision (DIV 1-24).

**The above and foregoing Resolution was introduced by Commissioner \_\_\_\_\_, seconded by Commissioner \_\_\_\_\_ and passed and adopted at a special meeting of the Planning Commission of the City of Fort Bragg held on the 16<sup>th</sup> day of April 2025, by the following vote:**

**AYES:**

**NOES:**

**ABSENT:**

**ABSTAIN:**

**RECUSED:**

---

**David Jensen, Chair**

**ATTEST:**

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**Maria Flynn, Administrative Assistant  
Community Development Department**

**Notice of Exemption****Appendix E**

**To:** Office of Planning and Research  
P.O. Box 3044, Room 113  
Sacramento, CA 95812-3044

County Clerk

County of: Mendocino

501 Low Gap Rd room 1020

Ukiah, CA 95482

**From:** (Public Agency): City of Fort Bragg  
416 N. Franklin St.  
Fort Bragg, CA 95437

(Address)

Project Title: Minor Subdivision 1-24 (DIV 1-24)

Project Applicant: Linda Jo Stern and Shannon Underhill

Project Location - Specific:

104 Dana St. APN 020-490-53-00

Project Location - City: Fort Bragg Project Location - County: Mendocino

Description of Nature, Purpose and Beneficiaries of Project:

Request to Subdivide an Existing 12,000 SF Undeveloped Parcel Into Two Parcels of 6,000 SF Each at 104 Dana St.

Name of Public Agency Approving Project: City of Fort Bragg

Name of Person or Agency Carrying Out Project: Linda Jo Stern and Shannon Underhill

Exempt Status: **(check one):**

- ☐ Ministerial (Sec. 21080(b)(1); 15268);
- ☐ Declared Emergency (Sec. 21080(b)(3); 15269(a));
- ☐ Emergency Project (Sec. 21080(b)(4); 15269(b)(c));
- ☒ Categorical Exemption. State type and section number: \_\_\_\_\_
- ☐ Statutory Exemptions. State code number: CEQA Guidelines Section 15315 Minor Land Division

Reasons why project is exempt:

The project was reviewed for eligibility for exemption from California Environmental Quality Act, CEQA Guidelines Section 15315. Class 15 Categorical Exemption consists of the division of property in urbanized areas zoned for residential, commercial, or industrial use into four or fewer parcels when the division is in conformance with the General Plan and zoning, no variances or exceptions are required, all services and access to the proposed parcels to local standards are available, the parcel was not involved in a division of a larger parcel within the previous 2 years, and the parcel does not have an average slope greater than 20 percent. The Class 15 guideline for Minor Land Divisions is correct for the proposed two-lot subdivision at 104 Dana Street. The proposed project would create two parcels on less than one acre of land within the City limits of Fort Bragg. Water and sewer access is available for two new connections. As analyzed, the project complies with the ILUDC and conforms to the General Plan. No variances or exceptions are required. The parcel has not been divided within the last two years and is not on a slope greater than 20 percent. It is recommended that the project be found exempt from CEQA under CEQA Guidelines Section 15315.

Lead Agency

Contact Person: Sarah Peters Area Code/Telephone/Extension: 707-961-2823 x114

**If filed by applicant:**

1. Attach certified document of exemption finding.
2. Has a Notice of Exemption been filed by the public agency approving the project? Yes No

Signature: \_\_\_\_\_

■ Signed by Lead Agency      Signed by Applicant

Authority cited: Sections 21083 and 21110, Public Resources Code.  
Reference: Sections 21108, 21152, and 21152.1, Public Resources Code.

Date Received for filing at OPR: \_\_\_\_\_





**CITY OF FORT BRAGG**  
*Incorporated August 5, 1889*  
416 N. Franklin Street, Fort Bragg, CA 95437  
Phone: (707) 961-2827  
[www.FortBragg.com](http://www.FortBragg.com)

### **NOTICE OF PUBLIC HEARING**

**NOTICE IS HEREBY GIVEN** that the Fort Bragg Planning Commission will conduct a public hearing at a special meeting on Wednesday, April 16, 2025 at 6:00 PM or as soon thereafter as the matter may be heard at Town Hall, at the corner of Main and Laurel Streets (363 North Main Street), Fort Bragg, California. The public hearing will concern the following item:

**APPLICATION.:** Minor Subdivision 1-24 (DIV 1-24)  
**FILING DATE:** December 23, 2024  
**APPLICANT:** Shannon Underhill and Linda Jo Stern  
**PROJECT:** Adopt a Resolution of the Fort Bragg Planning Commission approving a Tentative Map proposing a Minor Subdivision (DIV 1-24) of a 12,000 SF parcel into two parcels of 6,000 SF each in the Low Density Residential (RL) zone located at 104 Dana Street. The property is currently undeveloped.  
**LOCATION:** 104 Dana Street  
**APN:** 020-490-53  
**LOT SIZE:** 12,000 SF  
**ZONING:** Low Density Residential (RL) Inland  
**ENVIRONMENTAL DETERMINATION:** CEQA Categorical Exemption 15315 Minor Land Division

Public Comment regarding this Public Hearing may be made in any of the following ways: (1) Emailed to the Community Development Department, at [cdd@fortbragg.com](mailto:cdd@fortbragg.com) (2) Written comments delivered to City Hall, 416 N. Franklin Street before 2:00 PM on the day of the meeting; or (3) Verbal comments made during the meeting, either in person at Town Hall or virtually using Zoom if a Zoom link is provided at the time of agenda publication.

Staff reports and other documents that will be considered by Planning Commissioners will be made available for review at least 24 hours prior to the Planning Commission meeting, on the City's website: <https://cityfortbragg.legistar.com/Calendar.aspx>, and during normal office hours at Fort Bragg City Hall. To obtain application materials or for more information, please contact Community Development Department staff via email at [cdd@fortbragg.com](mailto:cdd@fortbragg.com). At the conclusion of the public hearing, the Planning Commission will consider a decision on the above matter.

Appeal process and fee schedule: Decisions of the Planning Commission shall be final unless appealed to the City Council in writing within ten (10) days thereafter with a filing fee of \$1,000 to be filed with the City Clerk. If you challenge the above case in court, you may be limited to raising only those issues you or someone else raised at the public hearing described in this notice or in written correspondence delivered to the Community Development Department at, or prior to, the public hearing.

Signed by:

*Sarah Peters*

B0C6BAEA79CB4BD

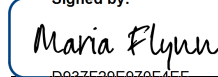
Sarah Peters, Assistant Planner

POSTING/MAILING ON OR BEFORE: April 1, 2025

PUBLICATION DATE: April 1, 2025

STATE OF CALIFORNIA     )  
  ) ss  
COUNTY OF MENDOCINO )

I declare, under penalty of perjury, that I am employed by the City of Fort Bragg in the Community Development Department; and that I caused this notice to be posted in the City Hall Notice case on or before April 1, 2025.

Signed by:  
  
D037F20E070F4EF...  
\_\_\_\_\_  
Maria Flynn, Administrative Assistant

cc: Planning Commission  
Owner/Applicant/Agent  
Property owners within 300' radius  
'Notify Me' Subscriber Lists



**CIUDAD DE FORT BRAGG**

*Incorporada el 5 de agosto de 1889*

416 N. Franklin Street, Fort Bragg, CA 95437

Teléfono: (707) 961-2827

[www.FortBragg.com](http://www.FortBragg.com)

**AVISO DE AUDIENCIA PÚBLICA**

**SE NOTIFICA** que la Comisión de Planificación de Fort Bragg celebrará una audiencia pública en una reunión extraordinaria el miércoles 16 de abril de 2025 a las 18:00 h o tan pronto como se trate el asunto en el Ayuntamiento, en la esquina de las calles Main y Laurel (363 North Main Street), Fort Bragg, California. La audiencia pública tratará el siguiente tema:

**SOLICITUD.:** Subdivisión Menor 1-24 (DIV 1-24)  
**FECHA DE PRESENTACIÓN:** 23 de diciembre de 2024  
**SOLICITANTE:** Shannon Underhill y Linda Jo Stern  
**PROYECTO:** Adoptar una Resolución de la Comisión de Planificación de Fort Bragg que aprueba un Mapa Tentativo que propone una Subdivisión Menor (DIV 1-24) de una parcela de 12,000 pies cuadrados en dos parcelas de 6,000 pies cuadrados cada una en la zona Residencial de Baja Densidad (RL) ubicada en 104 Dana Street. La propiedad se encuentra actualmente sin desarrollar.  
**UBICACIÓN:** 104 Dana Street  
**APN:** 020-490-53  
**TAMAÑO DEL LOTE:** 12,000 pies cuadrados  
**ZONIFICACIÓN:** Residencial de baja densidad (RL) Interior  
**AMBIENTAL**  
**DETERMINACIÓN:** Exención categórica de la CEQA 15315 División de tierras menores

Los comentarios públicos sobre esta Audiencia Pública se pueden realizar de cualquiera de las siguientes maneras: (1) Enviar por correo electrónico al Departamento de Desarrollo Comunitario, a [cdd@fortbragg.com](mailto:cdd@fortbragg.com) (2) Los comentarios escritos se entregan en el Ayuntamiento, 416 N. Franklin Street antes de las 2:00 p. m. del día de la reunión; o (3) Los comentarios verbales se realizan durante la reunión, ya sea en persona en el Ayuntamiento o virtualmente usando Zoom si se proporciona un enlace de Zoom en el momento de la publicación de la agenda.

Los informes del personal y demás documentos que serán considerados por los Comisionados de Planificación estarán disponibles para su revisión al menos 24 horas antes de la reunión de la Comisión de Planificación, en el sitio web de la Ciudad: <https://cityfortbragg.legistar.com/Calendar.aspx>, y durante el horario de oficina habitual del Ayuntamiento de Fort Bragg. Para obtener los materiales de solicitud o más información, comuníquese con el personal del Departamento de Desarrollo Comunitario por correo electrónico a [cdd@fortbragg.com](mailto:cdd@fortbragg.com). Al finalizar la audiencia pública, la Comisión de Planificación tomará una decisión sobre el asunto mencionado.

Proceso de apelación y tarifa: Las decisiones de la Comisión de Planificación serán definitivas a menos que se apele por escrito ante el Ayuntamiento dentro de los diez (10) días siguientes, con una tarifa de \$1,000 que deberá pagarse ante el Secretario Municipal.



Si impugna el caso mencionado ante el tribunal, podrá limitarse a plantear únicamente las cuestiones que usted u otra persona hayan planteado en la audiencia pública descrita en este aviso o en la correspondencia escrita entregada al Departamento de Desarrollo Comunitario durante la audiencia pública o antes de ella.

— Signed by:

*Sarah Peters*

**Sarah Peters**, asistente de planificación

PUBLICACIÓN/ENVÍO POR CORREO EL 1 DE ABRIL DE 2025 O ANTES  
FECHA DE PUBLICACIÓN: 1 de abril de 2025

ESTADO DE CALIFORNIA )  
 ) ss  
CONDADO DE MENDOCINO )

Declaro, bajo pena de perjurio, que soy empleado de la Ciudad de Fort Bragg en el Departamento de Desarrollo Comunitario; y que hice que este aviso se publicara en la caja de Avisos del Ayuntamiento el 1 de abril de 2025 o antes.

Signed by:

Maria Flynn

**Maria Flynn, Assistente Administrativa**

cc: Comisión de Planificación  
Propietario/Solicitante/Agente  
Propietarios de propiedades en un radio de 300'  
Listas de suscriptores de 'Notificarme'



City of Fort Bragg  
Received

APR 01 2025

**CITY OF FORT BRAGG**

**Code Enforcement**

**416 N. Franklin St.**

**Fort Bragg, CA 95437**

**(707) 961-2827**

<https://www.city.fortbragg.com>

**CODE ENFORCEMENT COMPLAINT FORM**

**Issues NOT addressed by Code Enforcement:**

- Disturbing the Peace
- Enforcement of CC&R's
- Property Line Disputes
- Violations Outside of City Limits
- Barking Dogs/Animal Control
- Fence Repair Disputes
- Mobile Home Park Violations
- Landlord/Tenant Disputes
- Development in School Districts
- Encroachment on State Highways

**LOCATION (ADDRESS) OF VIOLATION** 104 E. DANA ST. (# 100 DANA)

**The property is:** ☐ Occupied ☒ Vacant ☐ Unknown Is  
the violation visible from the public street? ☒ Yes ☐ No

**Type of Violation -- Please Select:**

- ☐ Abandoned/Inoperable Vehicle
- ☐ Abandoned Building
- ☐ Trash, Junk, Outdoor Storage
- ☐ Parking on Front Yard
- ☒ Unpermitted Construction
- ☐ Overgrown Vegetation/Weeds
- ☐ Lack of Heat or Water
- ☐ Hazardous Pool/Spa
- ☐ Illegal Yard Sales
- ☐ Prohibited Animals
- ☐ Illegal Business
- ☒ Other: Explain below
- ☐ Graffiti
- ☐ Substandard Housing Conditions

**DESCRIPTION OF COMPLAINT (include location on property if applicable)**

IN PREPARATION FOR THIS SUBDIVISION, PROPERTY OWNERS HAD EXTENSIVE  
UNPERMITTED GRADING + FILL WORK DONE ON 104 DANA THAT FILLED IN  
A SEASONAL WETLAND + ADDED ON-SITE DRAINAGE TO 100 DANA AT SAME  
TIME. THIS WETLAND WAS/IS PROTECTED, POSSIBLY BY RECORDED INST. # 2011-08548  
FILED W/ COUNTY CLERK ON 6/22/2011 FROM PRIOR SUBDIVISION.

All information below is required. Your identity will not be disclosed unless court ordered by a judge.  
**ANONYMOUS COMPLAINTS WILL NOT BE PROCESSED.**

**Below are some of the most common code violations enforced by the City.**

**6.12.040 NUISANCE CONDITIONS.**

It is declared a public nuisance for any Responsible Party owning, leasing, occupying, or having charge of any premises in this City to maintain the premises in the manner that any one (1) or more of the following conditions or activities are found to exist:

- E. Overgrown vegetation:
  - 1. Likely to harbor rats, vermin, and other nuisances;
  - 2. Causing detriment to neighboring properties; or
  - 3. Causing fire hazard.
- F. Dead, decayed, diseased, or hazardous trees, weeds, and other vegetation located in the curb, gutter, and sidewalk areas:
  - 1. Constituting a danger to public safety and welfare; or
  - 2. Detrimental to nearby property.
- H. Broken or discarded furniture and household equipment on the premises for periods in excess of 90 days, visible from the street or nearby property which constitutes visual blight or is detrimental to nearby property or property values;
- I. Packing boxes, trash, dirt, and other debris deposited for periods in excess of 90 days either inside or outside buildings, visible from the street or nearby property which constitutes visual blight or is offensive to the senses or is detrimental to nearby property values;
- K. Neglect of premises:
  - 1. To influence zone changes; or
  - 2. To cause detrimental effect upon nearby property or property values.
- L. Maintenance of premises in the condition as to be detrimental to the public health, safety, or general welfare;
- M. Property maintained in the condition as to create an unsafe condition;
- R. A violation of any provision of the Municipal Code;
- T. Any condition recognized in law or in equity as constituting a public nuisance, including without limitation, any condition described in Cal. Civil Code § 3479.
- U. Continual complaints of violations of Local, State or Federal laws that require the Police Department to respond to the property resulting in the issuance of citations or the making of arrests.
- V. Commercial buildings, which are closed, vacant, or inoperative for a period exceeding 90 days shall be declared a public nuisance, unless maintained to the following standards:
  - 1. Windows must be kept clean, unobstructed by stored items or temporary coverings, and in a move-in ready condition equivalent to and consistent with occupied buildings in close proximity, except that temporary coverings are allowed during the period of time that an active building permit has been issued and tenant improvements are actually under construction;
  - 2. Local contact information for the property owner or property manager must be posted and clearly displayed on the front door;
  - 3. The interior and exterior of the structure must be maintained clear of trash, debris and stored items, except for those commercial fixtures directly associated with a prior or proposed legal use of the building;
  - 4. The exterior surfaces and paint, millwork and trim shall be kept clean and maintained in good condition equivalent to and consistent with occupied buildings in close proximity, to achieve a uniform appearance with the surrounding area and present a move-in ready condition for future tenants or business operators; and
  - 5. All nuisance conditions listed in this section are applicable to vacant buildings and in cases of immediate danger to health and safety or emergency may be caused to be abated prior to the 90-day period first stated above.

**CIVIL CODE – CIV 3479.**

Anything which is injurious to health, including, but not limited to, the illegal sale of controlled substances, or is indecent or offensive to the senses, or an obstruction to the free use of property, so as to interfere with the comfortable enjoyment of life or property, or unlawfully obstructs the free passage or use, in the customary manner, of any navigable lake, or river, bay, stream, canal, or basin, or any public park, square, street, or highway, is a nuisance.



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**Public Comment -- Minor Subdivision 1-24 (DIV 1-24)**

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**From** Jacob Patterson <jacob.patterson.esq@gmail.com>

**Date** Tue 4/1/2025 4:25 PM

**To** cdd <cdd@fortbragg.com>

Community Development Department,

I write to comment on the proposed minor subdivision at 104 Dana Street. At first blush, this application seems relatively innocuous and inconsequential, however, this subdivision and the unpermitted grading and fill work that was performed on the property prior to applying for the subdivision presents major concerns that likely prevent the City from approving this application as currently presented.

This parcel and the adjoining parcels had a seasonal wetland on the property that was filled in prior to this application without any permits or local review. Such grading requires permits and environmental review (because of the preexisting wetland) pursuant to ILUDC §§ 18.60.030 -- Grading Permit Requirements, and 18.60.040 -- Grading Permit Application Filing and Processing, subdivision (B). These permits and environmental review did not occur. In fact, County Building Official Richard Angley noted the prior unpermitted work in an email about this proposed subdivision to CDD dated February 19, 2025 at 8:44 AM, where he asked the City to require a soil structural evaluation from a licensed engineer to ensure the unpermitted work was done in a manner that could support future construction on the parcels. Mr. Angley did not specifically mention the wetland that was filled in as part of that unpermitted work but it provides serious issues for this proposed subdivision due to the improper piecemealing of this project by first doing grading work that wouldn't have been permitted to destroy a protected wetland that would have prevented the City from approving this subdivision pursuant to ILUDC § 18.81.070 -- Tentative Map Approval or Disapproval, subdivision (C), Findings Requiring Denial, because the necessary grading is in direct conflict with both applicable ILUDC provisions and Inland General Plan policies that are intended to protect wetlands.

Relevant Inland General Plan policies that are in direct conflict with proposed Minor Subdivision 1-24:

OS-1.1, Preserve areas with important natural resources, which includes waterways and wetlands among the explicitly protected resources.

OS-1.3, Biological Report Required, again because of the existing wetlands

OS-5.2, Riparian Habitat, which requires development to prevent the destruction of wetlands providing riparian habitat to the greatest extent feasible.

OS-5.3, No Net Loss of Wetlands, which requires no net loss of wetlands, meaning that the prior wetlands that were filled to facilitate this subdivision and future physical construction on the site should have been prevented or mitigated by the restoration of wetlands off the property.

Not only were the wetlands improperly filled in in preparation for this application, the standards applicable to that grading and fill work were violated and no environmental review was conducted even though the wholesale destruction of the on-site wetlands created a significant unmitigated

environmental impact under CEQA. In the past, the greater property that has been and is proposed to be subdivided was advertised for sale as a "mitigation property" because of the wetlands that effectively prevented the physical development of this and the adjacent parcels because of the wetland as well as the applicable 100 foot setbacks around the wetland ESHA. As such, this property was specifically marketed for another project that impacted wetlands and would have needed to secure the retention and or restoration of other wetlands as mitigation for the impacts to the other wetlands as well as Inland General Plan Policy OS-5.3, which requires no "net loss" of wetlands. In fact, the prior work might have been done without permits because the property owners or potential developers knew that the grading and fill permits could not have been approved and that would, in turn, prevent the subdivision as well had the entire project been proposed at once including both the grading and fill work and the subdivision the fill work could have facilitated.

The greater parcel that was subdivided in the past to create this and the adjacent parcels included a recorded covenant of the protected area on the site. This recorded instrument is listed in the (outdated) title report from 2016 that was provided by the applicant as part of this application. The title report cites the recorded protections but that very relevant instrument was improperly omitted from the application materials. The recorded instrument was filed with the County Clerk's Office on June 22, 2011 as Instrument No. 2011-08548 M.C.N. Upon review of the application materials and title report, CDD should have deemed the application incomplete without Instrument No. 2011-08548 showing the protected area in order to calculate the necessary ESHA buffers and conditions of the protections. As such, this application should be denied until these issues have been resolved. The earlier Pryor Minor Subdivision required a related use permit due to the Wetland Management and Mitigation Plan and that file should have been reviewed for this application.

Moreover, the applicant should also be required to correct any site conditions due to the unpermitted (and likely impermissible without off-site mitigation) grading and fill work recently performed on this parcel and the adjacent parcels. This may actually require restoration of the now-destroyed wetlands or appropriate mitigation for the loss on another "mitigation property". The instrument was associated with the 2011 subdivision of the larger parcel that created this parcel (AKA "Pryor Minor Subdivision") and it involved a Mitigated Negative Declaration and Wetland Management and Mitigation Plan that applies to this property and all future development, including the unpermitted grading and fill work and this minor subdivision (SCH No. 2011022070). That document should have been included in the application materials or CDD should have been located and included as part of this review. (Please see <https://ceganet.opr.ca.gov/2011022070> for information about the prior project's environmental review.)

A recent real estate listing for this property (updated October 3, 2024, available at [https://www.zillow.com/homedetails/104-Dana-St-Fort-Bragg-CA-95437/211816403\\_zpid/](https://www.zillow.com/homedetails/104-Dana-St-Fort-Bragg-CA-95437/211816403_zpid/)) described the conditions as follows: "This double lot is located on a street with no through traffic and bordered on two sides by a wetland preserve. No one can build east or to the north of parcel. The sewer main and lateral are stubbed in on the north end of the property and ready for your home plans. A grading permit was approved and grading has been completed. This parcel is ready to build. This sunny location with southern and western exposure is a great location to build your home. Minutes to town, schools and shopping. Sellers are willing to contribute \$6,500 for completion of sidewalk requirement." However, based on the County Building Official's email as well as a search for grading permits by CDD staff, no such grading permit was acquired, which makes sense because the site conditions shouldn't have allowed for the work to be permitted at all.

In short, I believe that the City should not approve this minor subdivision without first addressing these serious issues and recommend that the Planning Commission and City Council not approve anything until such issues have been resolved, including a review of the Use Permit, MND, and Wetland Management and Mitigation Plan from the 2011 Pryor Minor Subdivision to determine the extent that this project and the prior unpermitted grading work are subject to the plan and recorded resource protections.

(Please note that some of my comment is based on the reasonable assumption that there was not a grading permit when the wetland was filled but it is always possible that CDD staff couldn't find it when I asked about the work. Mr. Angley also might not have been aware of a permit issued by the City.)

Regards,

--Jacob



Fort Bragg Planning Commission Meeting  
Minor Subdivision 1-24 (DIV 1-24)

In response to the Notice of Public Hearing regarding the proposed subdivision at 104 Dana, I ask that you consider my following concerns:

When I purchased my lot at 100 Dana there were many restrictions defined by the city regarding the development of the lot due to the fact it was a marshland. The marsh was to be preserved by allowing all waters to percolate back into the earth. Changes in the topography of the land require a civil engineer as defined by the city running up the cost of the lot preparation another 10K. My architect was told that the adjacent lot would be under the same requirements as it had a good size pond in the center of it.

This short block on Dana dead ends into a nature walk and I was inspired by the natural beauty of the marshlands to create a manzanita art fence that highlights the natural beauty of the marsh. The openness of the views of dense marsh growth gives the residents a much needed relief from the built environment. Countless neighbors and visitors have stopped to express their appreciation to me.

When the city suddenly allowed the pond to be filled causing waters to back up onto my lot I did not complain but felt this was generally unfair and deceptive. I love this little neighborhood and am invested in its enhancement. So I speak on behalf of the welfare of my neighbors as well as myself when I ask for this subdivision to be denied. The spaciousness of the lot at 104 Dana is part of the beauty as you approach the nature walk and I ask that it be given special consideration due to its close proximity to the existing recreational area.

Respectfully submitted,



Marilyn Zwak Artist

Owner of adjacent lot 100 Dana

RECEIVED

APR 07 2025

City of Fort Bragg  
City Clerk

**From:** Jacob Patterson <jacob.patterson.esq@gmail.com>  
**Sent:** Thursday, April 10, 2025 12:05 PM  
**To:** cdd <cdd@fortbragg.com>  
**Subject:** Re: Public Comment -- Minor Subdivision 1-24 (DIV 1-24)

Community Development Department,

Now that I have had a chance to review more project information, I would like to amend my prior comments. Despite the City's records indicating otherwise, the recent grading work was actually permitted by the City in 2023 as BP23-080. As a result, we can't fault the applicant for relying on their permit to perform work approved by the City, even if it arguably shouldn't have been. I say that it shouldn't have been approved because the details of the permit were not consistent with the prior subdivision requirements even though the existence of such requirements was referenced in PW's communications with the applicant's agent. (It appears that the documents were mentioned but not actually reviewed by staff in detail, instead relying on the applicant to review the documents and apply them to their project; a better approach would be for staff to have identified the specific applicable requirements and ensure that the proposed details of the grading plans followed them.)

There are numerous special conditions from the prior permits that apply to all four of the parcels created in the prior subdivision of the formerly larger parcel that explicitly apply to this parcel (described as "Parcel 1" on the Pryor Subdivision). There are also applicable mitigation measures from the related MND that should have been applied to and enforced on subsequent projects, including the recent grading and fill work as well as the currently-proposed subdivision. Unfortunately, City staff appear to have either been unaware of the specific special conditions and mitigation measures due to not fully researching the prior permit history and instead relying on the applicant to ensure compliance. IMO, this is an example of a serious process breakdown in both CDD and the Public Works Department. CDD should have done a planning review of the grading permit application and identified and applied the prior permit conditions and mitigation measures to that permit rather than relying on PW Engineering staff to do everything. Instead, the grading was done in a manner that appears to conflict with the explicit requirements from the Pryor Subdivision. These conditions and requirements were also not followed for related work on the adjacent parcel at 100 N Dana Street (Parcel 2 in the Pryor Subdivision) when the sidewalks were installed because there isn't a "cross-drain" at the corner that was explicitly required, which demonstrates that the City shouldn't assume that an applicant will actually review any referenced requirements. It isn't the applicant's job to ensure that an application includes all specific requirements, it is the City's job to do that through the entitlement review process.

For this review, you need to make sure that all applicable requirements from the Pryor Subdivision are followed. This involves special conditions applied to the earlier permits that relate to future work, mitigation measures from the MND, and requirements of the Wetland Management and Mitigation Plan (WMMP) created as part of the Pryor Subdivision. Staff should include the relevant analysis in their staff report for the current proposed subdivision and likely impose relevant special conditions to the current project as a result. Moreover, the fact that an existing MND applies to this property due to the earlier Pryor Subdivision (which explicitly applies to all future projects on any of the four parcels, not just this one) means that the cited categorical exemption may not apply and a subsequent review of the governing MND is necessary for this project. Because the public hearing notice does not indicate any such review has occurred, I have to assume that the staff report will fail to address this significant CEQA issue. As a result, I must object to the City erroneously relying on the cited categorical exemption and suggest that either an amendment to the MBSD or a supplemental CEQA review of this project be applied. (The same should have happened related to the grading permit since that project was even more directly related to the prior MND than the simple subdivision.). The application of an exemption to this subsequent related subdivision is improper unless a

thorough analysis of the existing MND and its required mitigation measures are applied to the current proposed subdivision to demonstrate that the details of this subdivision are not in conflict with the requirements set out in the MND. There is no indication in the public hearing notice that has been done.

In summary, be sure that all special conditions, mitigation measures from the MND, and requirements of the WMMP have been reviewed and are being applied to this subdivision (to the extent they are relevant) before you approve anything related to the current application. If you do not, then your approval would be improper and amount to an abuse of discretion.

In case staff don't include the permits, MND, and WMMP for the Pryor Subdivision in the record for this currently proposed subdivision, I include them by reference in this comment. CDD has the hard copy file of all of these documents in its possession, which I reviewed in person on Tuesday so that same file box should be provided for the Planning Commission's review of this project.

Regards,

--Jacob



**From:** Jacob Patterson <jacob.patterson.esq@gmail.com>  
**Sent:** Thursday, April 10, 2025 3:47 PM  
**To:** cdd <cdd@fortbragg.com>  
**Subject:** Re: Public Comment -- Minor Subdivision 1-24 (DIV 1-24)

Community Development Department,

I'd like to amend my comment incorporating by reference the entire project file contents of the bankers box about the Pryor Minor Subdivision (DIV-1-10, LLA 1-10, and USP 2-10). First, there was a sheet attached to the box that identified a Z-drive location where, I assume, electronic versions of the files reside. The electronic records are easier to use rather than their physical counterparts so that is both fine and preferred. I also want to narrow the scope to only include the four relevant documents rather than the entire physical project file:

1. The Mitigated Negative Declaration (MND) for the Pryor Subdivision
2. The Wetland Management and Mitigation Plan (WMMP) for the Pryor Subdivision
3. The staff report (including attachments like the draft approval resolution) for the entitlement review for the Pryor Subdivision
4. The actual approved permits for the Pryor Subdivision, which list the special conditions that are explained in more detail in the staff report

These four individual documents from within the full file for the Pryor Subdivision outline all of the requirements that apply to the future projects on all four lots created by that subdivision, including the 2023 grading permit and this proposed subdivision of Parcel 1 from the Pryor Subdivision. I would normally attach the electronic versions of these documents myself but I don't have access to them because they are in the custody and control of CDD and there isn't time to fully process a PRA request prior to the scheduled hearing.

Thanks,

--Jacob

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**104 N Dana -- Minor Subdivision 1-24 (DIV 1-24)**

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**From** Jacob Patterson <jacob.patterson.esq@gmail.com>

**Date** Fri 4/11/2025 1:07 PM

**To** cdd <cdd@fortbragg.com>

**Cc** Whippy, Isaac <iwhippy@fortbragg.com>

Community Development Department,

Although this relates to the permit conditions associated with the earlier subdivision, when I visited the project site I noted that the required boundary fence that is supposed to be in place to protect the wetland/drainage area to the north of the parcel proposed to be further subdivided is missing the western-most segment of the fence. It has actually been down for quite some time but as it around the north and east boundaries of the project site, the City needs to require the restoration (and continued maintenance) of the entire boundary fence.

One of the other requirements is that both this parcel (104) and the northern parcel (i.e., where the protected wetlands are) still need to have the sidewalk improvements installed along Dana Street. That is not technically required until a primary residence is built on the subdivided parcel at 104 and the southern parcel at 100 N Dana. I mention that because now that 104 is proposed to be further subdivided into two separate parcels, the original permit condition will need to be adjusted to require the sidewalks be installed when a primary residence is built on 100 N Dana and when a residence is built on either of the two parcels that will be formed out of 104 otherwise the condition will be undermined. Since the other permit conditions from the Pryor Subdivision have not consistently been enforced (including in the very recent sidewalk work that was done at 100 N Dana that lacks the explicitly-required cross drain which was determined to be essential to control the overall drainage on the larger former parcel into the retained wetlands along in the northern parcel), we must ensure that all applicable conditions are enforced now as part of this project. Moreover, we need to have that parcel alter the corner ramp area to include the improperly-omitted cross drain since the City staff reviewing those associated permits failed to perform adequate due diligence reviewing the prior projects that created those conditions.

Regards,

--Jacob

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**Comment for Minor Subdivision 1-24 (DIV 1-24) about CEQA, Mitigation Measures, and Permit Conditions**

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**From** Jacob Patterson <jacob.patterson.esq@gmail.com>

**Date** Mon 4/14/2025 12:54 PM

**To** cdd <cdd@fortbragg.com>

**Cc** Whippy, Isaac <iwhippy@fortbragg.com>

 4 attachments (14 MB)

unnamed (1).jpg; unnamed.jpg; 1000000974.jpg; 1000000972.jpg;

Planning Commission,

Now that the staff report for this subdivision is available for review, I have some specific comments in response to what can only be described as inadequate and misleading content in the staff report. These issues need to be addressed and the approval resolution amended accordingly or you should not approve this subdivision--you should approve it eventually but not until corrected, which will probably require a continuance to facilitate the revisions.

First, I reiterate that the categorical exemption that is asserted doesn't apply to this project. While I agree that it would normally apply to a minor subdivision like this because the earlier subdivision was more than two years ago (and for the reasoning in the attached draft NOE and staff report), that is only the case when the earlier subdivision did not have an associated MND that explicitly applies to future projects within the earlier subdivision, including this subsequent subdivision. The language in the staff report that is incorrect, IMO, is "The parcel was created through a subdivision permitted on April 26, 2011, for which a deed restricted wetland mitigation project was created on an adjoining parcel that fully mitigated the removal of all wetlands from this parcel. Therefore, DIV 1-24 is eligible for a categorical exemption from CEQA under Section 15315 of the CEQA Guidelines for Minor Land Divisions." There is no explanation or justification of the "therefore", quite the contrary. The existence of an MND that evaluated and mitigated these particular wetland-related impacts is why this project isn't exempt, rather it is covered by an existing MND. This may seem like a distinction without a difference (other than semantics) because I am not suggesting that additional environmental review is necessary, rather the environmental review was already performed because the additional subdivision of this parcel was evaluated at the time.

The importance of an accurate CEQA determination is that it reminds us to now review, in detail, the mitigation measures and requirements of the related earlier subdivision to ensure that this project (and future projects) are consistent with them. This project (and any other development, including the future construction of homes on the site) would normally be exempt as well and that would defeat the purpose of the earlier CEQA analysis and review because, if the projects are not reviewed for that consistency and built accordingly, then the planning and mitigation measures fail. The staff report includes such analysis, albeit based on the false assumption/assertion that all mitigation measures have been implemented already. The neighbors and any interested member of the community who



cares about protecting our groundwater and the preserved wetland, could challenge this project and seek enforcement of the mitigation measures, etc.. Why would we try to take a CEQA shortcut or run-around, when all we have to do is acknowledge the applicable MND and ensure that its requirements are being met by this project? No one needs to do a new CEQA evaluation or circulate anything for public review periods, all of that work already happened the first time so a proper CEQA determination this time won't even delay this project or increase the costs through a new IS/MND.

Despite the false assertion in the staff report to the contrary, all the mitigation measures have not been completed from the MND that applies to this project from the earlier Pryor Subdivision. Did CDD not visit the site? If they had they would clearly see several mitigation measures and permit conditions that have not been implemented. These include the requirement to install and maintain a boundary fence around the protected wetland. As you can see below, that fence is partially up but has not been completed. There are missing boards in the middle and an entire section along the edge that is missing. As I think back, I don't think the fence was ever completed. The point of the boundary fence is to protect the wetland from human activity and incursions. Of course, that can be addressed by requiring its completion (and future maintenance) now through an additional special condition since the fence is along the boundary of the parcel proposed to be further subdivided and the subdivision itself increases the risk of damage to the wetlands through additional human incursion from two rather than one parcels.

In addition (although not on this parcel), the cross-drain at the corner was not installed (per attached photos) and the grading both on this parcel and the adjacent parcel at 100 N Dana have not been done in accordance with the mitigation measures and special conditions of the Pryor Subdivision. Not only is the cross-drain omitted but the drainage is directed in conflict with the express provisions of how future grading was supposed to be done. For 100, all the drainage on the western, street-side drainage area is collected in a drain at the north west corner of that parcel and run through a pipe to the wetland area to the north. However, most drainage is supposed to be directed to the protected wetland with the exception of the drainage in the west front setback areas, which are supposed to be directed to Dana Street (the difference is because front setback areas, particularly vehicle access and parking which has a greater likelihood of environmentally- damaging chemicals, so the WMMP directed such areas to be drained so they wouldn't enter the protected wetlands. These requirements are discussed in the staff report but neither grading or drainage-related permits for 100 or 104 complied with these directives.

The best way to try to address that is to add special conditions now to require the further grading of the property to actually follow the requirements. That isn't "legally unwinding" the recent grading permit, it is either requiring it to be corrected because the work didn't meet the specific requirements of the approved permit or requiring an additional grading permit to correct the defective and non-compliant work that somehow slipped through the cracks during the City's PW review. Those special conditions might only require such corrective action at the time of the residential construction since the two distinct drainage areas will be fully defined at that time rather than what is likely to be the case based on where structures can be built. Regardless, some sort of special condition needs to be added to ensure that the future build-out activities actually meet the requirements. If we don't, it is likely that this will be overlooked again as it was for the recent grading permits and sidewalk improvements on 100 and 104 N. Dana.

As mentioned, the staff report makes the false assertion that the grading work on 104 N Dana is vested. However, that would only be true if the grading work was implemented in a manner consistent with the permit requirements and the actual grading work was not. The recent grading permit

explicitly required the grading work to be consistent with the applicable requirements of the WMMP from the Pryor Subdivision, which includes the majority of the parcel being sloped to direct surface water toward the protected wetland. Instead, the water is being directed to the south and onto the adjacent parcel. it actually floods the neighboring parcel (as described in her public comment and as I have personally verified with my own in-person observations of the parcels during our recent rains), making it more difficult and expensive for her construction. That is both inconsistent with the grading permit and also likely creates a legal cause of action for that property owner because under state law you cannot grade property to artificially alter water flows and flood neighboring property. Had the grading of 104 been done properly per the explicit requirements of its permit, the majority of the water would flow north rather than south. This needs to be corrected or it is manifestly unfair to the neighboring property owner who has invested significant sums to improve her property only to have the City's negligent permit administration harm her property interests. The entire community is harmed because the poor work also damages the protected wetlands, which are a part of our natural drainage system and stormwater management. All of these issues need to be properly resolved before you approve this subdivision. Contrary to the staff report suggesting that everything is done and satisfied, this project is anything but as currently proposed.

Please direct staff to make the necessary revisions to draft approval resolution (and associated documents) to add necessary special conditions to address these concerns as well as those raised in other public comments, only then should you approve this proposed minor subdivision.

Best regards,

--Jacob

















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**Comment for Minor Subdivision 1-24 (DIV 1-24)**

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**From** Jacob Patterson <jacob.patterson.esq@gmail.com>

**Date** Mon 4/14/2025 1:11 PM

**To** cdd <cdd@fortbragg.com>

I should have noted that the draft special conditions in the resolution are close to addressing the drainage concerns, they only need to be adjusted to make corrective grading more explicit to redirect the drainage patterns that are currently inconsistent with the WMMP that I discussed. Simply collecting water from the areas and "directing" them in the prescribed directed won't work since the current lot slopes after the recent grading of 104 direct surface waters in the wrong directions and in one case, explicitly gather the surface waters into a drain that dumps into the protected wetland rather than out onto Dana Street and the City's storm drain system. The property owner at 100 N Dana actually had to pay for an expensive drainage system that directly conflicts with the WMMP.

The only other additional special condition I suggest is to address the omitted boundary fence.



**CITY OF FORT BRAGG**  
*Incorporated August 5, 1889*  
416 N. Franklin Street, Fort Bragg, CA 95437  
Phone: (707) 961-2827  
[www.FortBragg.com](http://www.FortBragg.com)

### **NOTICE OF PUBLIC HEARING**

**NOTICE IS HEREBY GIVEN** that the Fort Bragg Planning Commission will conduct a public hearing at a special meeting on Wednesday, April 16, 2025 at 6:00 PM or as soon thereafter as the matter may be heard at Town Hall, at the corner of Main and Laurel Streets (363 North Main Street), Fort Bragg, California. The public hearing will concern the following item:

**APPLICATION.:** Minor Subdivision 1-24 (DIV 1-24)  
**FILING DATE:** December 23, 2024  
**APPLICANT:** Shannon Underhill and Linda Jo Stern  
**PROJECT:** Adopt a Resolution of the Fort Bragg Planning Commission approving a Tentative Map proposing a Minor Subdivision (DIV 1-24) of a 12,000 SF parcel into two parcels of 6,000 SF each in the Low Density Residential (RL) zone located at 104 Dana Street. The property is currently undeveloped.  
**LOCATION:** 104 Dana Street  
**APN:** 020-490-53  
**LOT SIZE:** 12,000 SF  
**ZONING:** Low Density Residential (RL) Inland  
**ENVIRONMENTAL DETERMINATION:** CEQA Categorical Exemption 15315 Minor Land Division

Public Comment regarding this Public Hearing may be made in any of the following ways: (1) Emailed to the Community Development Department, at [cdd@fortbragg.com](mailto:cdd@fortbragg.com) (2) Written comments delivered to City Hall, 416 N. Franklin Street before 2:00 PM on the day of the meeting; or (3) Verbal comments made during the meeting, either in person at Town Hall or virtually using Zoom if a Zoom link is provided at the time of agenda publication.

Staff reports and other documents that will be considered by Planning Commissioners will be made available for review at least 24 hours prior to the Planning Commission meeting, on the City's website: <https://cityfortbragg.legistar.com/Calendar.aspx>, and during normal office hours at Fort Bragg City Hall. To obtain application materials or for more information, please contact Community Development Department staff via email at [cdd@fortbragg.com](mailto:cdd@fortbragg.com). At the conclusion of the public hearing, the Planning Commission will consider a decision on the above matter.

Appeal process and fee schedule: Decisions of the Planning Commission shall be final unless appealed to the City Council in writing within ten (10) days thereafter with a filing fee of \$1,000 to be filed with the City Clerk. If you challenge the above case in court, you may be limited to raising only those issues you or someone else raised at the public hearing described in this notice or in written correspondence delivered to the Community Development Department at, or prior to, the public hearing.

Signed by:

*Sarah Peters*

B0C6BAEA79CB4BD

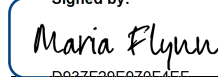
Sarah Peters, Assistant Planner

POSTING/MAILING ON OR BEFORE: April 1, 2025

PUBLICATION DATE: April 1, 2025

STATE OF CALIFORNIA     )  
  ) ss  
COUNTY OF MENDOCINO )

I declare, under penalty of perjury, that I am employed by the City of Fort Bragg in the Community Development Department; and that I caused this notice to be posted in the City Hall Notice case on or before April 1, 2025.

Signed by:  
  
D037F20E070F4EF...  
\_\_\_\_\_  
Maria Flynn, Administrative Assistant

cc: Planning Commission  
Owner/Applicant/Agent  
Property owners within 300' radius  
'Notify Me' Subscriber Lists





**CIUDAD DE FORT BRAGG**

*Incorporada el 5 de agosto de 1889*

416 N. Franklin Street, Fort Bragg, CA 95437

Teléfono: (707) 961-2827

[www.FortBragg.com](http://www.FortBragg.com)

**AVISO DE AUDIENCIA PÚBLICA**

**SE NOTIFICA** que la Comisión de Planificación de Fort Bragg celebrará una audiencia pública en una reunión extraordinaria el miércoles 16 de abril de 2025 a las 18:00 h o tan pronto como se trate el asunto en el Ayuntamiento, en la esquina de las calles Main y Laurel (363 North Main Street), Fort Bragg, California. La audiencia pública tratará el siguiente tema:

**SOLICITUD.:** Subdivisión Menor 1-24 (DIV 1-24)  
**FECHA DE PRESENTACIÓN:** 23 de diciembre de 2024  
**SOLICITANTE:** Shannon Underhill y Linda Jo Stern  
**PROYECTO:** Adoptar una Resolución de la Comisión de Planificación de Fort Bragg que aprueba un Mapa Tentativo que propone una Subdivisión Menor (DIV 1-24) de una parcela de 12,000 pies cuadrados en dos parcelas de 6,000 pies cuadrados cada una en la zona Residencial de Baja Densidad (RL) ubicada en 104 Dana Street. La propiedad se encuentra actualmente sin desarrollar.  
**UBICACIÓN:** 104 Dana Street  
**APN:** 020-490-53  
**TAMAÑO DEL LOTE:** 12,000 pies cuadrados  
**ZONIFICACIÓN:** Residencial de baja densidad (RL) Interior  
**AMBIENTAL**  
**DETERMINACIÓN:** Exención categórica de la CEQA 15315 División de tierras menores

Los comentarios públicos sobre esta Audiencia Pública se pueden realizar de cualquiera de las siguientes maneras: (1) Enviar por correo electrónico al Departamento de Desarrollo Comunitario, a [cdd@fortbragg.com](mailto:cdd@fortbragg.com) (2) Los comentarios escritos se entregan en el Ayuntamiento, 416 N. Franklin Street antes de las 2:00 p. m. del día de la reunión; o (3) Los comentarios verbales se realizan durante la reunión, ya sea en persona en el Ayuntamiento o virtualmente usando Zoom si se proporciona un enlace de Zoom en el momento de la publicación de la agenda.

Los informes del personal y demás documentos que serán considerados por los Comisionados de Planificación estarán disponibles para su revisión al menos 24 horas antes de la reunión de la Comisión de Planificación, en el sitio web de la Ciudad: <https://cityfortbragg.legistar.com/Calendar.aspx>, y durante el horario de oficina habitual del Ayuntamiento de Fort Bragg. Para obtener los materiales de solicitud o más información, comuníquese con el personal del Departamento de Desarrollo Comunitario por correo electrónico a [cdd@fortbragg.com](mailto:cdd@fortbragg.com). Al finalizar la audiencia pública, la Comisión de Planificación tomará una decisión sobre el asunto mencionado.

Proceso de apelación y tarifa: Las decisiones de la Comisión de Planificación serán definitivas a menos que se apele por escrito ante el Ayuntamiento dentro de los diez (10) días siguientes, con una tarifa de \$1,000 que deberá pagarse ante el Secretario Municipal.

Si impugna el caso mencionado ante el tribunal, podrá limitarse a plantear únicamente las cuestiones que usted u otra persona hayan planteado en la audiencia pública descrita en este aviso o en la correspondencia escrita entregada al Departamento de Desarrollo Comunitario durante la audiencia pública o antes de ella.

— Signed by:

*Sarah Peters*

Sarah Peters, asistente de planificación

PUBLICACIÓN/ENVÍO POR CORREO EL 1 DE ABRIL DE 2025 O ANTES  
FECHA DE PUBLICACIÓN: 1 de abril de 2025

ESTADO DE CALIFORNIA )  
 ) ss  
CONDADO DE MENDOCINO )

Declaro, bajo pena de perjurio, que soy empleado de la Ciudad de Fort Bragg en el Departamento de Desarrollo Comunitario; y que hice que este aviso se publicara en la caja de Avisos del Ayuntamiento el 1 de abril de 2025 o antes.

Signed by:

Maria Flynn

**Maria Flynn, Assistente Administrativa**

cc: Comisión de Planificación  
Propietario/Solicitante/Agente  
Propietarios de propiedades en un radio de 300'  
Listas de suscriptores de 'Notificarme'