

**To: BOARD OF SUPERVISORS**

**FROM:** Planning and Building Services

**MEETING DATE:** October 8, 2024

**DEPARTMENT CONTACT:** Shelby Miller  
**DEPARTMENT CONTACT:** Julia Krog

**PHONE:** 707-234-6650  
**PHONE:** 707-234-6650

**ITEM TYPE:** Consent Agenda

**TIME ALLOCATED FOR ITEM:** N/A

**AGENDA TITLE:**

Acceptance of Informational Report Regarding the Issuance of Emergency Coastal Development Permit EM\_2024-0003 (Balderston) to Install Drilled Piers, a Grade Beam Foundation System, and a Perimeter Foundation Drain, Located at 12700 N. Highway 1, Mendocino; APN: 118-320-05

**RECOMMENDED ACTION/MOTION:**

Accept the Informational Report regarding the issuance of Emergency Coastal Development Permit EM\_2024-0003 (Balderston) to install drilled piers, a grade beam foundation system, and a perimeter foundation drain, located at 12700 N. Highway 1, Mendocino; APN: 118-320-05

**PREVIOUS BOARD/BOARD COMMITTEE ACTIONS:**

In 1991 the Board adopted Division II of Title 20 of Mendocino County Code through Ordinance No. 3785. Included in Division II is Section 20.536.055 which allows Permits for Approval of Emergency Work. In cases of a verified emergency, temporary emergency authorization to proceed with remedial measures may be given by the Director or his or her designee until such time as a Coastal Development Permit application is filed. The Director shall report in writing to the Board of Supervisors at each meeting the emergency permits applied for or issued since the last report, with a description of the nature of the emergency and the work involved. The report of the Director shall be informational only. The decision to issue an emergency permit is solely at the discretion of the Director. Notice of emergency permits shall be provided by phone or letter to the California Coastal Commission within three (3) days, following issuance of the emergency permit.

**SUMMARY OF REQUEST:**

The single-family residence was built in 1941. Seasonal seepage is the primary cause of the Emergency Permit request. The structural concrete foundation and stem walls are cracked and distressed. The single-family residence is unable to be secured without repairing the foundation by installing drilled piers, a grade beam foundation system, and a perimeter foundation drain.

The emergency permit was issued on September 23, 2024, and becomes null and void at the end of sixty (60) days. Prior to expiration of this Emergency Permit, the applicant shall submit a standard Coastal Development Permit application for the work authorized by the permit.

**ALTERNATIVE ACTION/MOTION:**

None, informational Item.

**STRATEGIC PLAN PRIORITY DESIGNATION:** A Safe and Healthy County

**SUPERVISORIAL DISTRICT:** DISTRICT 5

**VOTE REQUIREMENT:** Majority

**SUPPLEMENTAL INFORMATION AVAILABLE ONLINE AT:** <https://www.mendocinocounty.gov/departments/planning-building-services/public-noticing>

**FISCAL DETAILS:**

SOURCE OF FUNDING: N/A  
CURRENT F/Y COST: N/A  
ANNUAL RECURRING COST: N/A  
BUDGETED IN CURRENT F/Y: N/A  
IF NO, PLEASE DESCRIBE:  
REVENUE AGREEMENT: N/A

AGREEMENT/RESOLUTION/ORDINANCE APPROVED BY COUNTY COUNSEL: N/A

CEO LIAISON: Steve Dunicliff, Deputy CEO

CEO REVIEW: Choose an item.

CEO COMMENTS:

**FOR COB USE ONLY**

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Executed By: Deputy Clerk  
Date: Date Executed

Final Status: Item Status  
Executed Item Type: item  
Number:



# COUNTY OF MENDOCINO

DEPARTMENT OF PLANNING AND BUILDING SERVICES  
860 NORTH BUSH STREET · UKIAH · CALIFORNIA · 95482  
120 WEST FIR STREET · FORT BRAGG · CALIFORNIA · 95437

JULIA KROG, DIRECTOR  
PHONE: 707-234-6650  
FAX: 707-463-5709  
FB PHONE: 707-964-5379  
FB FAX: 707-961-2427

[pbs@mendocinocounty.gov](mailto:pbs@mendocinocounty.gov)  
<http://www.mendocinocounty.gov/pbs>

September 23, 2024

Melissa Kraemer, District Manager  
North Coast District  
California Coastal Commission  
1385 Eighth Street, Suite 130  
Arcata, CA 95521

Subject: Issuance of Emergency Permit (EM\_2024-0003)

Dear Melissa Kraemer,

Please find enclosed a copy of Emergency Coastal Development Permit EM 2024-0003. The Permit is scheduled as an informational item during the Consent Agenda for the Board of Supervisors Hearing on October 8, 2024.

Should you have any questions, please feel free to contact this office.

Sincerely,

Shelby Miller  
Planner II

Encl: EM\_2024-0003 Permit

cc: Aum Construction  
P.O Box 1033  
Mendocino, CA 95460



**COUNTY OF MENDOCINO**  
**DEPARTMENT OF PLANNING AND BUILDING SERVICES**  
860 NORTH BUSH STREET · UKIAH · CALIFORNIA · 95482  
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JULIA KROG, DIRECTOR  
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[www.mendocinocounty.gov/pbs](http://www.mendocinocounty.gov/pbs)

September 23, 2024

**COASTAL DEVELOPMENT STANDARD PERMIT  
AUTHORIZATION FOR EMERGENCY WORK  
CASE FILE EM\_2024-0003**

**OWNER/ APPLICANT:** DANIEL BALDERSTON  
P.O BOX 296  
LOYALTON, CA 96118

**AGENT:** AUM CONSTRUCTION  
C/O SUNNY CHANCELLOR  
P.O BOX 1033  
MENDOCINO, CA 95460

**SITE ADDRESS/ APN:** 12700 N. HIGHWAY 1, MENDOCINO, CA (APN: 118-320-05)

**NATURE OF EMERGENCY:** The existing stem walls and structural concrete foundation of the single-family residence is cracking and distressed. The residence was built in 1941.

**CAUSE OF EMERGENCY:** The emergency is the result of seasonal seepage. A Geotechnical Investigation, prepared by Brunsing Associates, Inc. on January 10, 2024, recommends that a perimeter foundation drain be installed around the perimeter foundation elements. Prior to construction, Brunsing shall review the final grading and foundation plans, and geotechnical related specifications for conformance. During construction, Brunsing shall be retained to provide periodic observations, together with field and laboratory testing, during site preparation, placement, and compaction of fills, and foundation construction.

**REMEDIAL ACTION:** The action to be approved under this Emergency Permit is authorization of the installation of drilled piers, a grade beam foundation system, and a perimeter foundation drain prior to the approval and issuance of the Standard Coastal Development Permit (CDP\_2024-0032) request currently being processed by the Mendocino County Department of Planning and Building for review and entitlement from the Coastal Permit Administrator.

See the attached Emergency Permit application, site plan, and the Geotechnical Investigation prepared on January 10, 2024.

**CIRCUMSTANCES TO JUSTIFY EMERGENCY:** Failure to allow this emergency work may result in a risk to the property, residents, adjacent parcels and the environment.

**COMPLIANCE:** Permits for Approval of Emergency Work are subject to MCC Sec. 20.536.060 *et seq.*

This emergency permit is effective immediately and shall become null and void at the end of sixty (60) days. Prior to expiration of this Emergency Permit, the applicant shall submit a standard Coastal Development Permit application for the work authorized by this permit.

Prior to construction, Brunsing shall review the final grading and foundation plans, and geotechnical related specifications for conformance.

During construction, Brunsing shall be retained to provide periodic observations, together with field and laboratory testing, during site preparation, placement, and compaction of fills, and foundation construction.

**RECOMMENDED BY:**

  
\_\_\_\_\_  
PLANNER II

  
\_\_\_\_\_  
DATE

**APPROVED BY:**

  
\_\_\_\_\_  
COASTAL PERMIT ADMINISTRATOR

  
\_\_\_\_\_  
DATE

COUNTY OF MENDOCINO  
DEPT OF PLANNING & BUILDING SERVICES  
120 WEST FIR STREET  
FORT BRAGG, CA 95437  
Telephone: 707-964-5379

Case No(s) EM 2024-0003  
CDF No(s) \_\_\_\_\_  
Date Filed 8/16/24  
Fee \$ 2,203  
Receipt No. PR1063428  
Received by Sandy Arellano  
Office Use Only

### EMERGENCY PERMIT APPLICATION FORM

Name of Applicant <u>Daniel Balderston</u>	Name of Owner(s) <u>Daniel Balderston</u>	Name of Agent <u>AUM Construction Inc c/o Sunny Chancellor</u>
Mailing Address <u>PO Box 296 Loyalton, CA 96118</u>	Mailing Address <u>PO Box 296 Loyalton, CA 96118</u>	Mailing Address <u>PO Box 1033 Mendocino, CA 95460</u>
Telephone Number <u>412-889-0082</u>	Telephone Number <u>412-889-0082</u>	Telephone Number <u>707-937-3624</u>

Project Description:

~~Repair and Fortify Foundation. Add Generator -  
Propane Tank. Add Rolling  
Fence Blocking View of Gen~~

**EM\_2024-0003  
This application for  
SFR Foundation Repair/Stabilization  
ONLY**

**THIS EM only for foundation work.**

Driving Directions

The site is located on the E (N/S/E/W) side of Road 500 D (name road)  
approximately 100 ft (feet/miles) W (N/S/E/W) of its intersection with  
Hwy 1 (provide nearest major intersection).

Assessor's Parcel Number(s)

118-32-005

Parcel Size

.49

- Square Feet  
 Acres

Street Address of Project

12700 N Hwy 1, Mendocino, CA

**Please note:** Before submittal, please verify correct street address with the Planning Division in Ukiah.

# EMERGENCY PERMIT APPLICATION QUESTIONNAIRE

The purpose of this questionnaire is to relate information concerning your application to the Planning & Building Services Department and other agencies who will be reviewing your project proposal. The more detail that is provided, the easier it will be to promptly process your application. Please answer all questions. For questions which do not pertain to your project, please indicate "Not Applicable" or "N/A".

## 1. NATURE OF THE EMERGENCY NARRATIVE (use additional pages if necessary).

a) Describe the nature, cause and location of the emergency.

Cracking and Fracturing of Existing Structural Concrete Foundation.

b) Describe the remedial protective or preventive work required to deal with the emergency.

Structural Retrofit of Conc Foundation. Design of Retrofit work to be provided and stamped by Licenced Structural Engineer.

c) Describe the circumstances during the emergency that justify the course(s) of action taken, including the probable consequences of failing to take action.

If Existing concrete Foundation work not fixed, existing building subject to shifting and settling.

d) Describe any secondary improvements such as wells, septic systems, grading, vegetation removal, roads, etc. that are necessary to deal with the emergency.

n/a

2. Are there existing structures on the property?  Yes  No

If yes, describe below and identify the use of each structure on the plot plan.

1) Cabin / Library 2) Garage 3) Shop 4) Woodshed

3. Is any grading or road construction planned?  Yes  No

Estimate the amount of grading in cubic yards n/a c.y. If greater than 50 cubic yards or if greater than 2 feet of cut or 1 foot of fill will result, please provide a grading plan.

Describe the terrain to be traversed (e.g., steep, moderate slope, flat, etc.).

4. Will vegetation be removed on areas other than the building sites and roads?  Yes  No

If yes, explain:

5. Project Height. Maximum height of structure(s): 24' feet

6. Describe all exterior materials and colors of all proposed structures that are visible beyond the boundaries of the subject parcel.

no change to project colors of materials  
Existing building has unpainted horizontal wood siding

7. Are there any water courses, anadromous fish streams, ponds, lakes, sand dunes, rookeries, marine mammal haul-out areas, wetlands, riparian areas, pygmy vegetation, rare or endangered plants, animals or habitat which support rare and endangered species located on the project site or within 100 feet of the project site?

no



**SUBMIT ONLY ONE COPY**

**INDEMNIFICATION AND HOLD HARMLESS**

ORDINANCE NO. 3780, adopted by the Board of Supervisors on June 4, 1991, requires applicants for discretionary land use approvals, to sign the following Indemnification Agreement. Failure to sign this agreement will result in the application being considered incomplete and withheld from further processing.

**INDEMNIFICATION AGREEMENT**


As part of this application, applicant agrees to defend, indemnify, release and hold harmless the County of Mendocino, its agents, officers, attorneys, employees, boards and commissions, as more particularly set forth in Mendocino County Code Section 1.04.120, from any claim, action or proceeding brought against any of the foregoing individuals or entities, the purpose of which is to attack, set aside, void or annul the approval of this application or adoption of the environmental document which accompanies it. The indemnification shall include, but not be limited to, damages, costs, expenses, attorney fees or expert witness fees that may be asserted by any person or entity, including the applicant, arising out of or in connection with the approval of this application, whether or not there is concurrent, passive or active negligence on the part of the County, its agents, officers, attorneys, employees, boards and commissions.

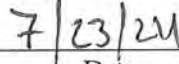
Date: 7/2/2024

Daniel Balderon  
Applicant

**CERTIFICATION AND SITE VIEW AUTHORIZATION**

- 1. I hereby certify that I have read this completed application and that, to the best of my knowledge, the information in this application, and all attached appendices and exhibits, is complete and correct. I understand that the failure to provide any requested information or any misstatements submitted in support of the application shall be grounds for either refusing to accept this application, for denying the permit, for suspending or revoking a permit issued on the basis of such misrepresentations, or for seeking of such further relief as may seem proper to the County.
  
- 2. I hereby grant permission for County Planning and Building Services staff and hearing bodies to enter upon and site view the premises for which this application is made in order to obtain information necessary for the preparation of required reports and render its decision.


  
 \_\_\_\_\_  
 Owner/Authorized Agent


  
 \_\_\_\_\_  
 Date

NOTE: IF SIGNED BY AGENT, OWNER MUST SIGN BELOW.

**AUTHORIZATION OF AGENT**

I hereby authorize Aum Construction Inc - Sunny Chancellor to act as my representative and to bind me in all matters concerning this application.

  
 \_\_\_\_\_  
 Owner

  
 \_\_\_\_\_  
 Date

**MAIL DIRECTION**

To facilitate proper handling of this application, please indicate the names and mailing addresses of individuals to whom you wish correspondence and/or staff reports mailed if different from those identified on Page One of the application form.

<b>Name</b>	<b>Name</b>	<b>Name</b>
<b>Mailing Address</b>	<b>Mailing Address</b>	<b>Mailing Address</b>



ACKNOWLEDGMENT OF DEPOSIT/HOURLY FEE

By signing below, the applicant acknowledges that the staff at Planning and Building Services has discussed the potential for collection of a deposit fee for the projects listed below (as adopted by the Board of Supervisors in Resolution No.'s 11-072, 16-150, 18-122 and 19-170):

1. Division of Land Project
2. General Plan Project
3. Coastal Project
4. Zoning Project
5. Administrative Project
6. Cannabis Project
7. Private Road Naming

Once an application has been submitted and the processing costs approach 80% of the application fee, additional staff processing time will be billed at \$90.00/hour. Staff will notify the applicant/owner that a deposit equal to 50% of the initial filing fee is required for further processing, and more than one deposit may be required depending on the complexity of the project and the staff time necessary to complete application processing.

*I acknowledge that I was advised of the deposit fee for continued processing after the initial application fee has been expended*

*Daniel Balderston*

*7/2/2024*

Applicant Signature

Date

**OFFICE USE ONLY:**

*EM 2024-0003 Balderston*

Project or Permit Number

**RECORDING REQUESTED BY:**  
Redwood Empire Title Company of Mendocino  
County

2023-06914

Recorded at the request of:  
REDWOOD EMPIRE TITLE  
08/29/2023 02:37 PM  
Fee: \$22.00 Pgs: 1 of 4

OFFICIAL RECORDS  
Katrina Bartolomie - Clerk-Recorder  
Mendocino County, CA

**Mail Tax Statements and  
When Recorded Mail Document To:**

Daniel E. Balderston  
PO Box 296  
Loyalton, CA 96118



**Escrow No.:** 20230853MN

SPACE ABOVE THIS LINE FOR RECORDER'S USE

### GRANT DEED

	\$20.00
	PAID
X	PCO
	FILED
	Exempt

**The undersigned grantor(s) declare(s) Documentary Transfer Tax stamps in the sum of \$1,595.00**

- computed on full value of property conveyed, or
- computed on full value less value of liens or encumbrances remaining at time of sale,
- Unincorporated area of Mendocino

**FOR A VALUABLE CONSIDERATION, receipt of which is hereby acknowledged,**

Robyn Prizmich and Tracey Hathaway, formerly known as Tracey Bernardini, and Brook J. Hathaway and Linda L. Hathaway, Trustees of The Hathaway Family Trust, dated July 30, 2019

**hereby GRANT(S) to**

Daniel E. Balderston, an unmarried man

**the following described real property:**

A certain lot or parcel of land, situated North of the Town of Mendocino and North of Jack Peters Gulch Bridge, and which point of beginning is the Southeast corner of the Christensen Ranch, formerly the Gray Ranch, and which point is the Southeast corner of what was known as the Lachlin Johnson Lot, and lying in the East and West center line of Section 19, Township 17 North, Range 17 West, Mount Diablo Meridian, and where the same is cut by the West line of the Old Coast Road; thence from said point of beginning North 6° West, 142.75 feet; thence North 15° 45' West, 75 feet; thence South 68° 34' West, 347 feet to the East line of California Highway No. 1; thence along said East line South 53° 35' East 147.33 feet to center line of Section 19; thence East on such line 239 feet, more or less, to the point of beginning.

EXCEPTING THEREFROM: That portion conveyed in the Deed executed by John E. Anderson and Alma F. Anderson, husband and wife, to State of California, dated July 19, 1962, recorded September 20, 1962 in Volume 607, Official Records, Page 73, Mendocino County Records.

APN: 118-320-05

\*\*\*This document is being executed in counterparts which together shall constitute one original.\*\*\*

Dated: August 23, 2023

Robyn Prizmich  
Robyn Prizmich

\_\_\_\_\_  
Tracey Bernardini

Brook J. Hathaway and Linda L. Hathaway, Trustees of The Hathaway Family Trust, dated July 30, 2019

\_\_\_\_\_  
Brook J. Hathaway, Trustee

\_\_\_\_\_  
Linda L. Hathaway, Trustee

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.

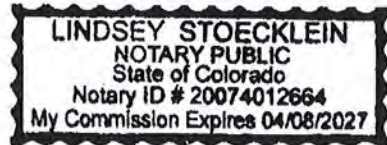
State of ~~California~~ <sup>CO</sup> Colorado  
County of Elbert  
On August 24, 2023 before me,  
Lindsey Stoecklein, Notary Public,  
personally appeared Robyn Prizmich  
X X X X X X X X

\_\_\_\_\_ who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) 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.

Witness my hand and official seal.

Signature Lindsey Stoecklein (Seal)  
exp: 04/08/2027



Dated: August 23, 2023

\_\_\_\_\_  
Robyn Prizmich

*Tracey Hathaway*  
\_\_\_\_\_  
Tracey Hathaway, fk a Tracey Bernardini

Brook J. Hathaway and Linda L. Hathaway, Trustees of The Hathaway Family Trust, dated July 30, 2019

\_\_\_\_\_  
Brook J. Hathaway, Trustee

\_\_\_\_\_  
Linda L. Hathaway, Trustee

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.

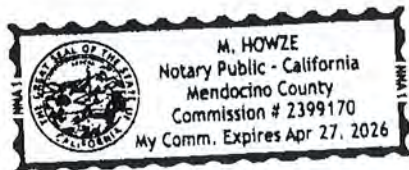
State of California  
County of Mendocino  
On August 25, 2023 before me,  
M. Howze Notary Public,  
personally appeared Tracey Hathaway

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) 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.

Witness my hand and official seal.

Signature *M. Howze* (Seal)  
M. Howze



Dated: August 23, 2023

\_\_\_\_\_  
Robyn Prizmich

\_\_\_\_\_  
Tracey Bernardini

Brook J. Hathaway and Linda L. Hathaway, Trustees of The Hathaway Family Trust, dated July 30, 2019

Brook J. Hathaway  
Brook J. Hathaway, Trustee

Linda L. Hathaway  
Linda L. Hathaway, Trustee

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 Placer

On August 23, 2023 before me,

Gina Gonzalez Notary Public,  
personally appeared Brook J. Hathaway and

Linda L. Hathaway who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) 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.

Witness my hand and official seal.

Signature \_\_\_\_\_

Gina Gonzalez

(Seal)

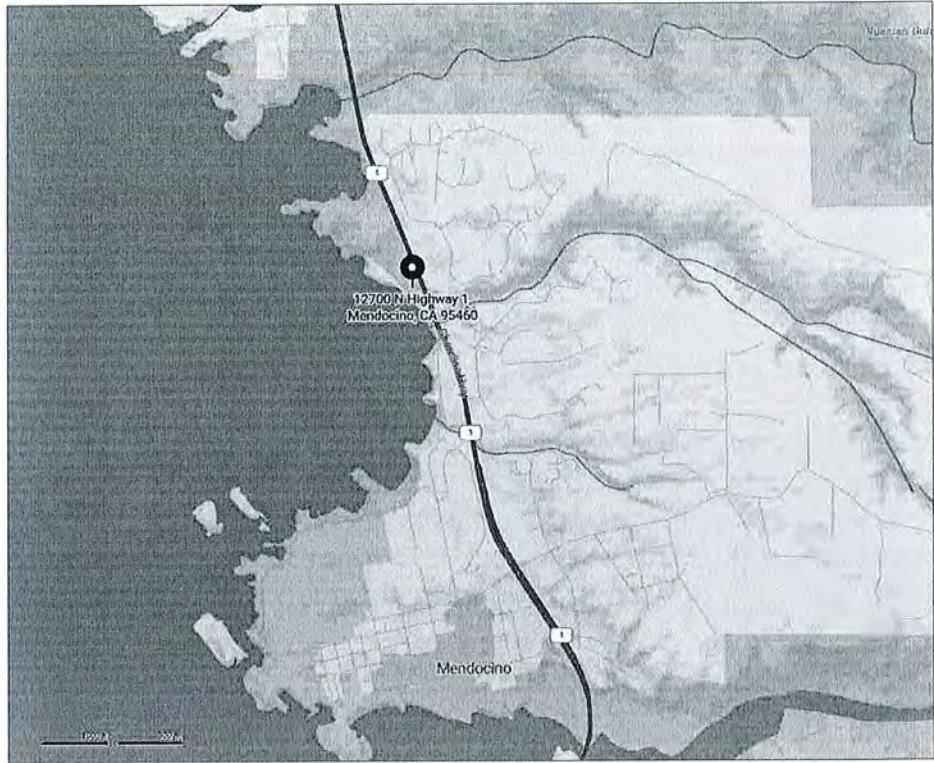




**AUM CONSTRUCTION INC.**

General Contractor Lic # 817115  
www.aumconstruction.com

**Location**



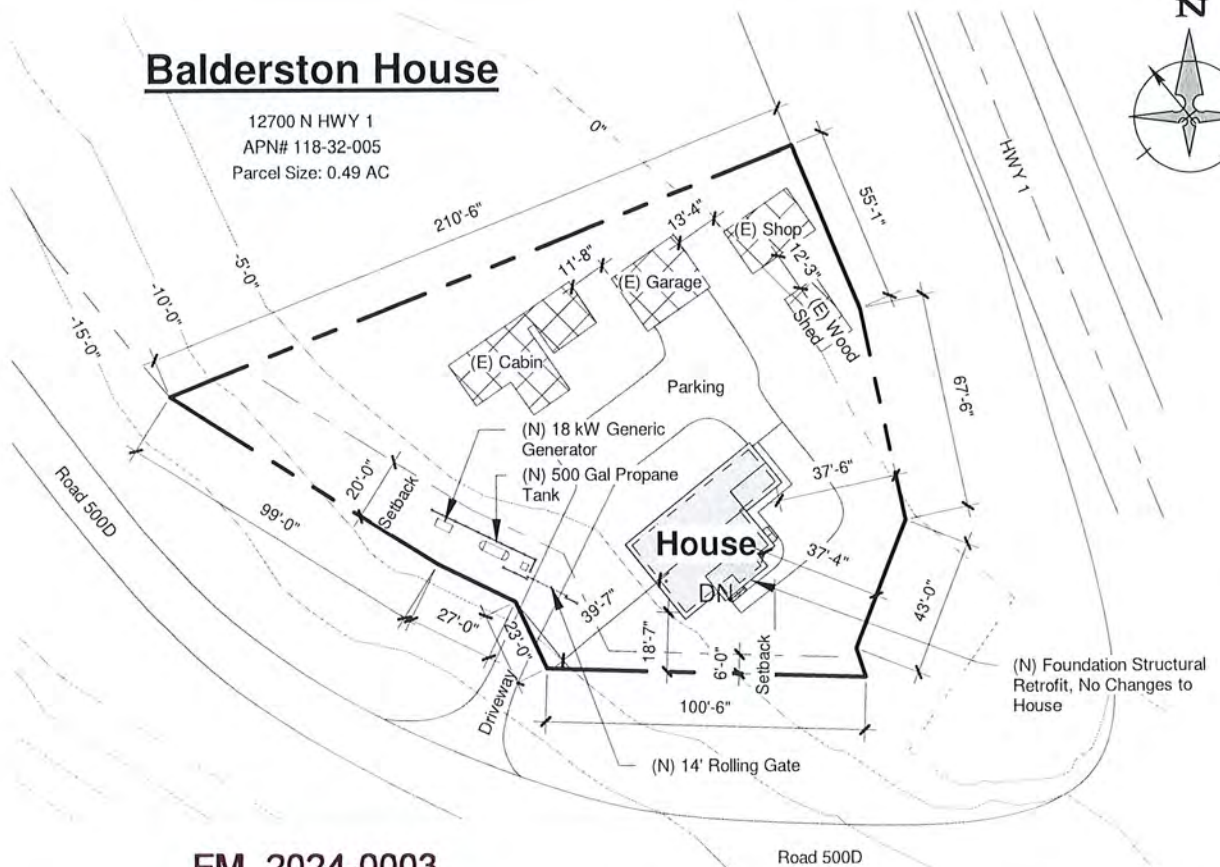
**Balderston, Daniel**

**Structural Retrofit / Entry Gate**

12700 N Hwy 1, Mendocino, CA 95460

**Balderston House**

12700 N HWY 1  
APN# 118-32-005  
Parcel Size: 0.49 AC



**EM\_2024-0003**  
This application for  
**SFR Foundation Repair/Stabilization**  
**ONLY**

1 Site - Letter  
1" = 60'-0"

APN # : 118-32-005  
DATE : 06/27/2024

SCALE : 1" = 60'-0"

SHEET # : CDP-100

SHEET TITLE :

Site/Location





# Mendocino County

---

## Planning and Building Services

860 North Bush Street  
Ukiah, CA 95482  
(707) 234-6650

120 West Fir Street  
Fort Bragg, CA 95437  
(707) 964-5379

**Paid By: AUM CONSTRUCTION INC**  
P. O. BOX 1033

**EM\_2024-0003**

MENDOCINO

CA 95460

**Receipt: PRJ\_063428**

**Date: 8/16/2024**

**Project Number: EM\_2024-0003**

**Pay Method: CHECK 14849**

**Project Description: SFR FOUNDATION REPAIR AND FORTIFICATIO**

**Received By: SANDY ARELLANO**

**Site Address: 12700 NO HWY 1**

<u>Fee Description</u>	<u>Account Number</u>	<u>Qty</u>	<u>Fee Amount</u>
BASE FEES	1100-2851-822609		\$1,916.00
EM BASE			\$1,916.00
GENERAL PLAN	1100-2851-826188		\$200.00
			\$200.00
RECORDS MANAGEMENT	1222-2852-826260		\$147.00
			\$147.00

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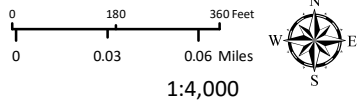
**Total Fees Paid: \$2,263.00**



Source: Esri, Maxar, Earthstar Geographics, IGN, and the GIS User Community

**CASE: EM 2024-0003**  
**OWNER: BALDERSTON, Daniel**  
**APN: 118-320-05**  
**APLCT: Daniel Balderston**  
**AGENT: AUM Construction**  
**ADDRESS: 12700 N Hwy 1, Mendocino**

- Highways (2017)
- = = Public Roads
- - - Private Roads



1:4,000

AERIAL IMAGERY

**THIS MAP AND DATA ARE PROVIDED WITHOUT WARRANTY OF ANY KIND.**  
 DO NOT USE THIS MAP TO DETERMINE LEGAL PROPERTY BOUNDARIES



# **Brunsing Associates, Inc.**

GEOTECHNICAL INVESTIGATION

BALDERSTON FOUNDATION IMPROVEMENTS  
12700 NORTH HIGHWAY 1  
MENDOCINO, CALIFORNIA

Project Number 13646.02

January 10, 2024

**Engineers and Geologists**

GEOTECHNICAL INVESTIGATION  
BALDERSTON FOUNDATION IMPROVEMENTS  
12700 NORTH HIGHWAY 1  
MENDOCINO, CALIFORNIA

Project Number 13646.02

prepared for

Daniel Balderson

prepared by

Brunsing Associates, Inc.

5468 Skylane Blvd. Suite 201  
Santa Rosa, CA 95403  
(707) 528-6108

January 10, 2024



*Keith A. Colorado*

Keith A. Colorado  
Geotechnical Engineer - 2894  
[kcolorado@brunsing.com](mailto:kcolorado@brunsing.com)



*Joshua N. Kilgore*

Joshua N. Kilgore  
Engineering Geologist - 2667  
[jkilgore@brunsing.com](mailto:jkilgore@brunsing.com)



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## **1.0 INTRODUCTION**

This report presents the results of the geotechnical investigation that Brunsing Associates, Inc. (BAI) has performed for the proposed foundation improvements at the Balderston residence located at 12700 North Highway 1, Mendocino, California. The site is shown on the Vicinity Map, Plate 1.

The purpose of our investigation was to evaluate the site soil, bedrock, and geologic conditions to provide conclusions and recommendations for the improvement of the existing foundation, and associated construction considerations. Our approach to providing the geotechnical guidelines for the design of the project utilized our knowledge of the soil, bedrock and geologic conditions in the site vicinity, and experience with similar projects in the area. Field exploration for this investigation was directed toward confirming anticipated geologic conditions to provide the basis for our conclusions and recommendations.

As outlined in our Change Order No. 1, dated September 5, 2023, our scope of services for the geotechnical investigation included, subsurface exploration, and engineering and geologic analyses, to provide conclusions and recommendations for support of the existing residence.

## **2.0 INVESTIGATION AND LABORATORY TESTING**

### **2.1 Research**

As part of our investigation, we reviewed published geotechnical literature, including geologic, fault and seismic hazard maps for the site and vicinity. A list of selected published references reviewed for this investigation is presented in Appendix A.

### **2.2 Field Reconnaissance**

BAI's senior engineering geologist performed an initial reconnaissance of the property and provided the results in a letter dated August 14, 2023. He observed access conditions and constraints and observed areas of the residence. He also observed the surrounding area and photographed the site.

### **2.3 Field Exploration**

Our subsurface exploration on September 19, 2023, consisted of drilling, logging, and sampling three auger test borings, B-1 through B-3. The test borings were approximately 12 to 20.4 feet in depth. The borings were drilled and sampled with a track mounted drill rig using 4.5-inch solid stem flight augers.

Our senior engineering geologist logged the borings and obtained relatively undisturbed soil and bedrock samples using a 3.0-inch (CA) outside diameter, modified California split-barrel samplers, along with a 2-inch outside diameter Standard Penetration Test (SPT) split-barrel sampler. The inside of the sampler barrels contained liners for retaining the soil and bedrock samples. The samplers were driven by a 140-pound drop hammer falling 30 inches per blow. Blows required to



drive the CA sampler were converted to Standard Penetration Test (SPT) blow counts for correlation with empirical test data. The conversion factor of 0.64 was used for the CA sampler. SPT blow counts provide a relative measure of soil and bedrock consistency and strength and are utilized in our engineering analyses. Blow counts are presented on the boring logs alongside the sample locations.

The test boring locations are shown on the Site Map, Plate 2. The logs of the test borings showing the various soil and bedrock materials encountered and the depths at which samples were obtained are presented on Plates 3 through 5. The soils are classified in accordance with the Unified Soil Classification System outlined on Plate 6. The soil and bedrock descriptive properties are presented on Plates 7 and 8, respectively.

## **2.4 Laboratory Testing**

Soil and bedrock samples obtained during our subsurface exploration were transported to our laboratory and examined to confirm field classifications. Laboratory tests were performed on selected samples to estimate their pertinent geotechnical engineering characteristics. Laboratory testing consisted of moisture content, dry density, grain size, expansion index and unconsolidated-undrained triaxial compression tests.

The laboratory test results are presented opposite the samples tested on the test pit logs. A key to test data is provided on Plate 7. Expansion index test results are presented on Plate 9 and triaxial compression test results are presented on Plate 10.

## **3.0 SITE CONDITIONS**

The subject property is located due north of Jack Peters Gulch, on the north and northeast sides of Mendocino County Road 5000 (Former Coast Highway). The site is developed with two residential structures and 3 outbuildings, as shown on Plate 2. The two residences consist of a main house on an open slope and a guest house to the northwest at the edge of a forest. This report addresses the main house located within the southern extent of the property. The property is bounded by California Highway 1 to the east, Mendocino County Road 5000 (RD 5000) and an existing residence to the south, RD 5000 and an undeveloped property to the west and undeveloped wooded terrain to the north. Based on information provided by you, it is our understanding that the southernmost residence was originally located to the north within the CA Highway 1 alignment but was moved to its present location during the re-routing of Highway 1.

The subject property consists of an irregularly shaped parcel which is generally grass covered with mature trees along the perimeter of the property. The residences are located near the center of the property and are accessed by a gravel driveway which extends north and east from RD 5000. The driveway has several “repaired areas” that may have been a result of seasonal seepage. Three outbuildings consisting of wooden sheds are located northeast of the residences.

The property consists of gently west sloping terrain with approximate gradients of 10H:1V (horizontal to vertical) to 15H:1V. Based on Google earth imagery, the northernmost residence is





located approximately 150 feet to the east of the ocean bluff, the southernmost residence is located approximately 130 feet to the east of the bluff.

The coastal bluffs located southwest of the subject property appear to be nearly vertical, and approximately 70 vertical feet in height. The lower 50 to 60 feet of bluffs appeared to consist of resistant bedrock capped by approximately 10 feet or more of Pleistocene terrace deposits. Mature vegetation was observed along the bluff edge. The base of the bluff consists of a rocky beach and areas of resistant bedrock and boulder. During our initial site reconnaissance, we made visual observations of the bluff top. A review of Coastal Records Project imagery of these bluffs shows little changes between 1972 and 2019.

In general, the observed structures appear to have been constructed at grade, however some evidence of previous site grading was observed in the vicinity of the southernmost residence. Surficial observations of the residential foundations indicate that the houses are supported on a perimeter foundation. The exposed portions of the foundations of the northernmost structure appeared in good condition. Observations of the southernmost structure noted areas of distressed and cracked foundations and stem walls along the northwest and southwest perimeter of the structure. In addition, cracking of interior walls was observed within the eastern extent of the structure. The cracking of the foundations consisted of cracks with separation of up to ½ inch.

An excavation adjacent to the southwest corner of the foundation was advanced to determine the existing foundation depth in this area. The foundation was found to extend approximately 2 feet below grade and appeared to be supported on fill material placed at some time prior to the foundation construction.

No standing water was observed at the site during our surface and subsurface field explorations. Groundwater was not encountered in our test borings at the site. Temporarily perched groundwater may occur within one to two feet of the surface during (and just following) wet weather periods.

#### **4.0 SITE GEOLOGY AND SOILS**

The site is underlain by Pleistocene Epoch terrace deposits overlying Cretaceous-Tertiary Period coastal belt Franciscan Complex bedrock consisting of shale and sandstone. The bedrock was encountered at about eight to 15 feet within our borings. The bedrock with borings B-1 and B-3 is gray shale, and within boring B-3 is gray-brown sandstone. The bedrock is crushed to intensely fractured, friable to low hardness, and deeply to moderately weathered.

The property is situated on an elevated marine terrace that was formed during the Pleistocene Epoch, when glaciation caused sea level fluctuations, which created a series of steps, or terraces, cut into the coastal bedrock by wave erosion. Shallow marine sediments (Pleistocene terrace deposits) were deposited on the wave-cut, bedrock platforms while they were submerged beneath the ocean. Some of these marine deposits have been locally eroded as the terrace began to emerge from the ocean approximately 12,000 years ago. Present sea levels were achieved about 5,000 to 7,000 years ago.



Approximately eight to 15 feet of fill and terrace deposits were encountered in our test borings. The fill material was encountered to a depth of about 3.5 to 8.0 feet. The fill consists of brown to dark brown loose to medium dense clayey sand to silty sand and stiff, sandy clay. Under the fill is mottled gray-brown to orange-brown clayey sand to sandy clay and silty sand to a depth of about eight to 15 feet.

No evidence of landsliding was found at the property. No evidence of active faulting was observed at the site and none of the published references that we reviewed for this study show active faults on, or trending towards, the property.

Mendocino County is within a zone of potentially high seismic activity related to the San Andreas Fault system located offshore, approximately 5 miles southwest of the site. Future damaging earthquakes could occur on the San Andreas Fault during the lifetime of the existing structure. In general, the intensity of ground shaking at the site will depend on the distance to the causative earthquake epicenter, the magnitude of the shock, and the response characteristics of the underlying earth materials.

## **5.0 DISCUSSIONS AND CONCLUSIONS**

### **5.1 General**

Based upon the results of our investigation, it appears that the residence is supported on undocumented fill which was placed by unknown methods at some time prior to the construction of the residence. In addition, the underlying terrace deposits are variable in composition and are subject to downslope creep during periods of seasonal moisture variation. To adequately stabilize the residential foundation, we judge that foundation support should be obtained from the supporting soils and underlying bedrock which were encountered at depths between 8 and 10 feet below the surface. It is our opinion that foundation support can be most adequately achieved by supporting the structure on a drilled pier and grade beam foundation system. A structural engineer should evaluate the existing foundations for design of the connections from the new piers to the existing footings. We anticipate that the piers will be subject to creep forces within the upper eight feet of embedment. Foundation support should be designed to resist these creep forces. The main geotechnical considerations affecting the design and construction of the project are undocumented fill, settlement, creep forces, and strong seismic shaking. These constraints are discussed in the following subsections.

### **5.2 Settlement**

Assuming the foundation improvements are designed and constructed in accordance with our recommendations, we estimate that the post-construction settlement due to foundation loads will be less than  $\frac{3}{4}$  inch. We estimate the post-construction differential settlement will be less than  $\frac{1}{2}$  inch.



### **5.3 Undocumented Fill**

Planned foundations improvements supported directly on the undocumented fills would undergo erratic and excessive settlement. This fill extended to between 3.5 and 8.0 feet below the existing surface and may be subject to collapse when loaded in a saturated condition.

### **5.4 Soil Creep**

The upper portions of foundations improvements should be designed to resist soil creep forces related to downslope movement of plastic and fill soils. We anticipate these creep forces will act on the upper eight feet of the foundation elements.

### **5.5 Seismicity and Faulting**

As is typical of the Mendocino County area, the site will be subject to strong ground shaking during future, nearby, large magnitude earthquakes. The intensity of ground shaking at the site will depend on the distance to the causative earthquake epicenter, the magnitude of the shock, and the response characteristics of the underlying earth materials. Generally, structures founded in supporting materials and designed in accordance with current building codes are well suited to resist the effects of ground shaking.

No evidence of faulting was observed by BAI or shown in the site vicinity on the published geologic maps that we reviewed for this investigation. Therefore, the potential for fault rupture at the site is considered low.

## **6.0 RECOMMENDATIONS**

### **6.1 Foundation Underpinning / Drilled Pier and Grade Beam**

Support for the residence can be provided by a system of drilled cast in place concrete piers interconnected by a grade beam. Drilled piers should be at least 12 inches in diameter and gain support from the underlying bedrock beyond the zone of anticipated creep forces. The piers should extend a minimum of 5 feet into bedrock which was encountered at depths between 8.0 to 15 feet below the existing surface. Minimum pier depths of 13 to 20 feet below existing grade should be anticipated. Pier depth and diameter should be determined by a structural engineer based on our recommendations.

Pier spacing should be no closer than 3 pier diameters, center to center. The drilled piers should be designed to gain support from skin friction. A skin friction value of 400 pounds per square foot (psf) of shaft area may be used in the supporting soils, for dead loads plus live loads. A skin friction value of 700 psf of shaft area may be used in the supporting bedrock, for dead loads plus live loads. For total downward loads due to wind or seismic forces, the pier capacity can be increased by one third. Uplift frictional capacity for piers should be limited to 2/3 of the allowable downward capacity. When final pier depths have been achieved, as determined by BAI, the bottoms of the pier holes should be cleaned of loose materials. BAI should observe the drilling and final clean out of the pier holes, prior to the placement of reinforcing steel and/or concrete.



Resistance to lateral loads can be obtained using passive earth pressure against the face of the foundations. An allowable passive pressure of 250 psf (rectangular distribution) can be used within the supporting soils. An allowable passive pressure of 450 psf (rectangular distribution) can be used within the supporting bedrock. In addition to the structure loads, the piers should be designed to resist creep forces equal to 75 psf (rectangular distribution) over a depth of eight feet below ground surface. Passive pressure should be neglected within the upper eight feet. Passive pressure can be projected over two pier diameters.

If groundwater is encountered during construction, the pier holes should be dewatered prior to placement of reinforcing steel and concrete. Alternatively, if more than six inches of groundwater has entered the pier hole, concrete can be tremied into place with an adequate head to displace water or slurry. Concrete should not be placed by freefall in such a manner as to hit the sidewalls of the excavation.

## 6.2 Seismic Design Criteria

The structures should be designed and/or constructed to resist the effects of strong ground shaking (in the order of Modified Mercalli Intensity IX) in accordance with current building codes. The California Building Code (CBC) 2022 edition indicates that the site classification for the property is Site Class C. CBC indicates that the following seismic design parameters are appropriate for the site:

**Table 2: Seismic Design Parameters**

Site Class	=	C
Mapped Spectral Response Acceleration at 0.2 sec	$S_s =$	1.901g
Mapped Spectral Response Acceleration at 1.0 sec	$S_1 =$	0.781g
Modified Spectral Response Acceleration at 0.2 sec	$S_{MS} =$	2.282g
Modified Spectral Response Acceleration at 1.0 sec	$S_{M1} =$	1.093g
Design Spectral Response Acceleration at 0.2 sec	$S_{DS} =$	1.521g
Design Spectral Response Acceleration at 1.0 sec	$S_{D1} =$	0.729g
Site Coefficient	$F_a =$	1.2
Site Coefficient	$F_v =$	1.4
Long Period Transition Period	$T_L =$	12
Seismic Design Category	=	E

## 6.3 Site Drainage

Because surface and/or subsurface water is often the cause of foundation or interior moisture problems, care should be taken to intercept and divert concentrated surface flows and subsurface seepage away from the building foundations. Drainage across the lot should be by sheet-flow. Surface grades should maintain a recommended five percent gradient away from building foundations. To minimize the chance for moisture inundation of the near surface soils, we recommend that a perimeter foundation drain be installed around the perimeter foundation elements, as shown on Plate 11



## **7.0 ADDITIONAL SERVICES**

Prior to construction, BAI should review the final grading and foundation plans, and geotechnical related specifications for conformance with our recommendations.

During construction, BAI should be retained to provide periodic observations, together with field and laboratory testing, during site preparation, placement, and compaction of fills, if required, and foundation construction. Foundation excavations should be reviewed by BAI while the excavation operations are being performed. Our reviews and tests would allow us to verify conformance of the work to project guidelines, determine that soil conditions are as anticipated, and to modify our recommendations, if necessary.

## **8.0 LIMITATIONS**

This geotechnical investigation was performed in accordance with the usual and current standards of the profession, as they relate to this and similar localities. No other warranty, expressed or implied, is provided as to the conclusions and professional advice presented in this report. Our conclusions are based upon reasonable geological and engineering interpretation of available data.

The samples taken and tested, and the observations made, are representative of the site; however, soil and geologic conditions may vary significantly between borings and across the site. As in most projects, conditions revealed during construction excavation may be at variance with preliminary findings. If this occurs, the changed conditions must be evaluated by BAI, and revised recommendations be provided as required.

This report is issued with the understanding that it is the responsibility of the Owner, or his/her representative, to ensure that the information and recommendations contained herein are brought to the attention of all other design professionals for the project, and incorporated into the plans, and that the Contractor and Subcontractors implement such recommendations in the field. The safety of others is the responsibility of the Contractor. The Contractor should notify the owner and BAI if he/she considers any of the recommended actions presented herein to be unsafe or otherwise impractical.

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

The recommendations contained in this report are based on certain specific project information regarding type of construction and current structure locations, which have been made available to us. If conceptual changes are undertaken during final project design, we should be allowed to review them in light of this report to determine if our recommendations are still applicable.



# PLATES



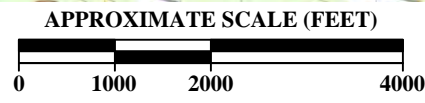



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1/10/2024 12:47:14 PM save date  
1/10/2024 12:47:23 PM plot date


**REFERENCE:**  
Mendocino Quadrangle  
7.5-Minute Series, USGS, 2018

Latitude: 39.321311  
Longitude: -123.801640



	<p><b>Brusing Associates, Inc.</b> 5468 Skylane Blvd., Suite 201 Santa Rosa, California 95403 Tel: (707) 528-6108</p>	<p>Job No.: 13646.02 Appr.: <i>KAC</i> Date: 01/10/24</p>	<p><b>VICINITY MAP</b> BALDERSTON FOUNDATION IMPROVEMENTS 12700 North Highway 1 Mendocino, California</p>	<p><b>PLATE</b> <b>1</b></p>
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**LEGEND**

 B-2 Borings location and number

B-1

B-2

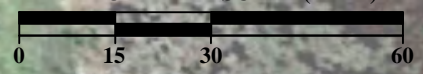
B-3

Highway 1

Woodstock Drive



APPROXIMATE SCALE (FEET)



**REFERENCE:**  
Google Earth Imagery dated 6/2021



**Brunsing Associates, Inc.**  
5468 Skylane Blvd., Suite 201  
Santa Rosa, California 95403  
Tel: (707) 528-6108

Job No.: 13646.02  
Appr.: *KAC*  
Date: 01/10/24

**SITE MAP**  
BALDERSTON FOUNDATION IMPROVEMENTS  
12700 North Highway 1  
Mendocino, California

**PLATE**  
**2**

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1/10/2024 12:49:00 PM save date  
1/10/2024 11:49:00 AM plot date



# Log of Boring B-1

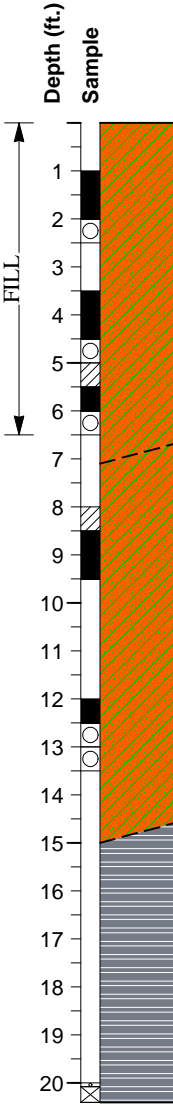
Equipment: McMillen X975W; 4.5-inch solid-stem flight auger

Date: 9/19/23 Logged By: JNK

Elevation: 94 feet \*\*\* Latitude: 39.321205 Longitude: -123.80153

**Laboratory Tests**

	Sampler Type*	Moisture Content (%)	Dry Density (pcf)	Blows/foot
Tx 1978 (720)	CA	27.6	80	10 **
	CA		14 **	
	CA		13 **	
Tx 2583 (1080) 48% Passing #200	CA	23.1	99	12 **
Tx 2698 (1440)	CA	20.9	107	17 **
	CA SPT		26/1" ** 75/4"	



DARK BROWN CLAYEY SAND (SC)  
loose to medium stiff, dry to moist,  
porous to 2.5 feet

MOTTLED GRAY-BROWN TO ORANGE CLAYEY SAND (SC)  
medium dense, moist



GRAY SHALE  
crushed to intensely fractured, friable to low hardness, deeply to moderately weathered

- Notes:
1. No free water encountered
  2. No caving
  3. Practical drilling refusal at 20.4 feet

BORING LOG 1 PER PAGE, 13646.01 GINT.GPJ, 1/10/24

Latitude/Longitude estimated from Google Earth.  
 \* See Soil Classification Chart & Key to Test Data  
 \*\* Equivalent "Standard Penetration" Blow Counts.  
 \*\*\* Elevations interpolated from USGS LiDAR - FEMA 2016.

Scale: 1" = 4'

	<b>Brunsing Associates, Inc.</b> 5468 Skylane Blvd., Suite 201 Santa Rosa, California 95403 Tel: (707) 528-6108	Job No.: 13646.02  Appr.:   Date: 01/10/24	<b>LOG OF BORING B-1</b> BALDERSTON FOUNDATION IMPROVEMENTS 12700 North Highway 1 Mendocino, California	<b>PLATE</b>  <span style="font-size: 2em; font-weight: bold;">3</span>  SHEET 1 of 1
	Scale: 1" = 4'			

# Log of Boring B-2

Equipment: McMillen X975W; 4.5-inch solid-stem flight auger

Date: 9/19/23 Logged By: JNK

Elevation: 94 feet \*\*\* Latitude: 39.321131 Longitude: -123.801454

**Laboratory Tests**

Sampler Type\*  
Moisture Content (%)  
Dry Density (pcf)  
Blows/foot

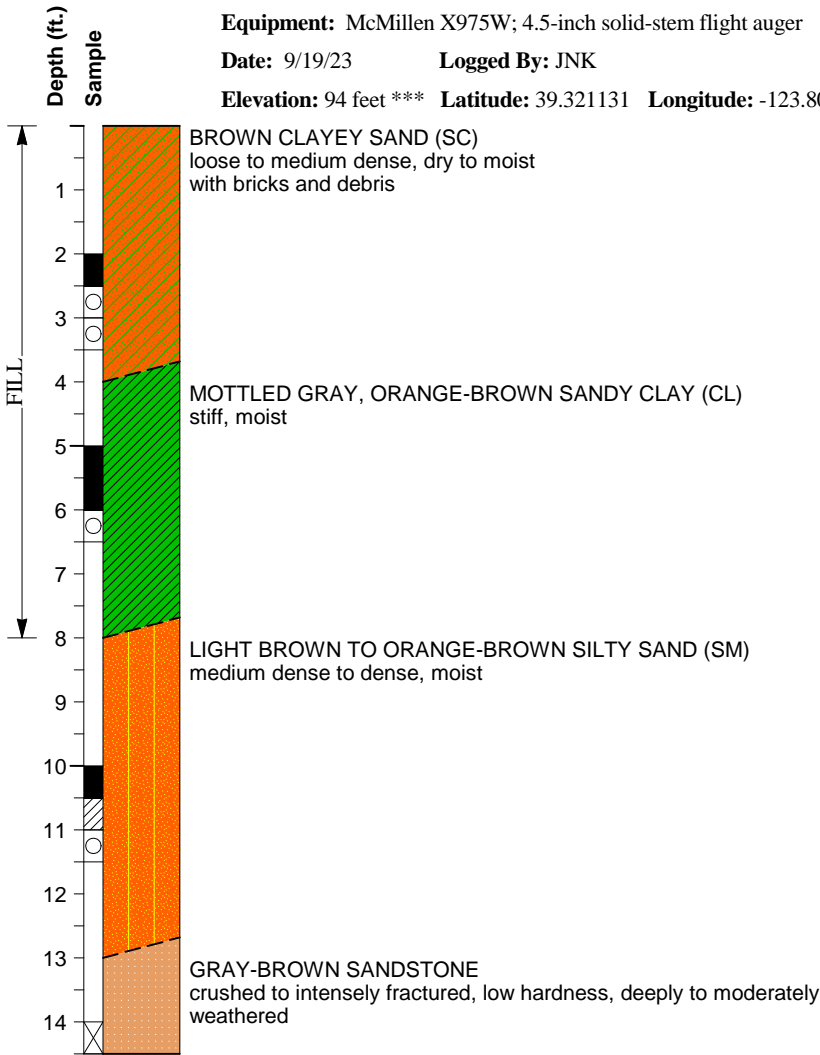
Tx 3591 (1008)

CA 22.2 87 17 \*\*

CA 27.1 93 15 \*\*

CA 16.6 108 44 \*\*

SPT 50/6"





- Notes:
1. No free water encountered
  2. No caving
  3. Practical drilling refusal at 14.5 feet

BORING LOG 1 PER PAGE, 13646.01 GINT.GPJ, 1/10/24

Latitude/Longitude estimated from Google Earth.  
 \* See Soil Classification Chart & Key to Test Data  
 \*\* Equivalent "Standard Penetration" Blow Counts.  
 \*\*\* Elevations interpolated from USGS LiDAR - FEMA 2016.

Scale: 1" = 3'

 <p><b>Brunsing Associates, Inc.</b>                  5468 Skylane Blvd., Suite 201                  Santa Rosa, California 95403                  Tel: (707) 528-6108</p>	Job No.: 13646.02	<p><b>LOG OF BORING B-2</b></p> <p>BALDERSTON FOUNDATION IMPROVEMENTS</p> <p>12700 North Highway 1                  Mendocino, California</p>	<p><b>PLATE</b></p> <p><b>4</b></p> <p>SHEET 1 of 1</p>
	Appr.: 		
	Date: 01/10/24		

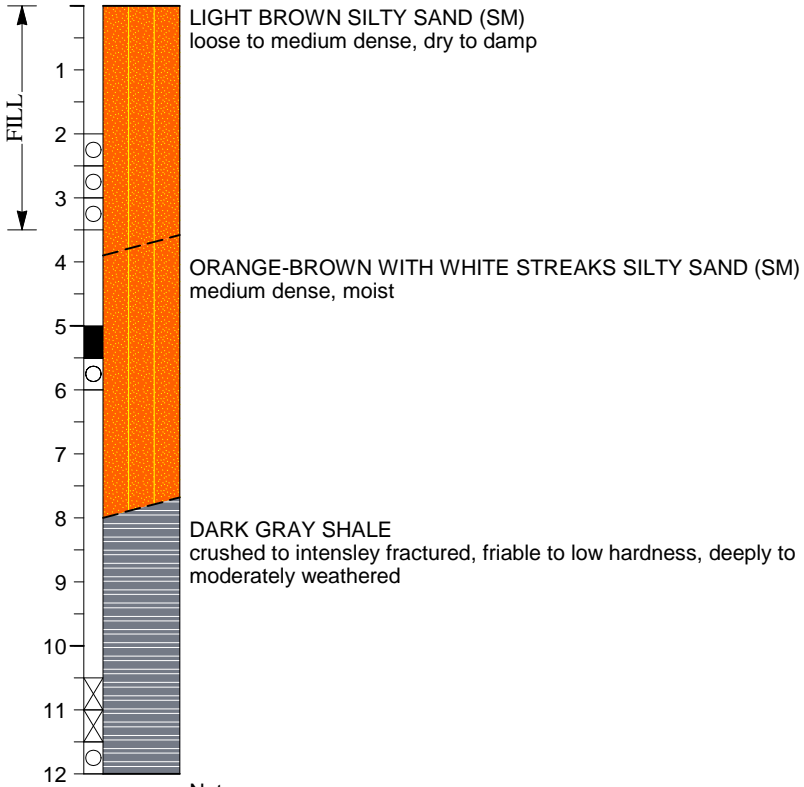
# Log of Boring B-3

Equipment: McMillen X975W; 4.5-inch solid-stem flight auger

Date: 9/19/23      Logged By: JNK

Elevation: 96 feet \*\*\*    Latitude: 39.321283    Longitude: -123.801362

Sampler Type*	Moisture Content (%)	Dry Density (pcf)	Blows/foot
CA			15 **
CA	20.5	95	16 **
SPT			44




- Notes:
1. No free water encountered
  2. No caving
  3. Practical drilling refusal at 20.4 feet

BORING LOG 1 PER PAGE, 13646.01 GINT.GPJ, 1/10/24

Latitude/Longitude estimated from Google Earth.  
 \* See Soil Classification Chart & Key to Test Data  
 \*\* Equivalent "Standard Penetration" Blow Counts.  
 \*\*\* Elevations interpolated from USGS LiDAR - FEMA 2016.

Scale: 1" = 3'



	<b>Brunsing Associates, Inc.</b> 5468 Skylane Blvd., Suite 201 Santa Rosa, California 95403 Tel: (707) 528-6108	Job No.: 13646.02  Appr.: <i>KAC</i>  Date: 01/10/24	<b>LOG OF BORING B-3</b> BALDERSTON FOUNDATION IMPROVEMENTS 12700 North Highway 1 Mendocino, California	<b>PLATE</b> <span style="font-size: 2em; font-weight: bold;">5</span> SHEET 1 of 1
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UNIFIED SOIL CLASSIFICATION SYSTEM (USCS)			SYMBOLS		TYPICAL DESCRIPTIONS					
			GRAPHIC	LETTER						
COARSE-GRAINED SOILS	GRAVELS AND GRAVELLY SOILS	CLEAN GRAVELS (Less than 5% fines)		<b>GW</b>	WELL-GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES					
				<b>GP</b>	POORLY-GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES					
		GRAVELS WITH FINES (Greater than 12% fines)		<b>GM</b>	SILTY GRAVELS, GRAVEL-SAND-SILT MIXTURES					
				<b>GC</b>	CLAYEY GRAVELS, GRAVEL-SAND-CLAY MIXTURES					
	SAND AND SANDY SOILS	CLEAN SANDS (Less than 5% fines)		<b>SW</b>	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES					
				<b>SP</b>	POORLY-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES					
		SANDS WITH FINES (Greater than 12% fines)		<b>SM</b>	SILTY SANDS, SAND-SILT MIXTURES					
				<b>SC</b>	CLAYEY SANDS, SAND-CLAY MIXTURES					
				FINE-GRAINED SOILS		SILTS AND CLAYS	LIQUID LIMIT LESS THAN 50		<b>ML</b>	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
								<b>CL</b>	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS	
FINE-GRAINED SOILS		SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50		<b>OL</b>	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY				
				<b>MH</b>	INORGANIC SILT, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS					
FINE-GRAINED SOILS		SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50		<b>CH</b>	INORGANIC CLAYS OF HIGH PLASTICITY				
				<b>OH</b>	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS					
HIGHLY ORGANIC SOILS				<b>PT</b>	PEAT, HUMOUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS					

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS

### KEY TO TEST DATA

LL - Liquid Limit	Consol - Consolidation	<b>Shear Strength, psf</b>	<b>Confining Pressure, psf</b>
PI - Plasticity Index	EI - Expansion Index	Tx 1564 (1440) - Unconsolidated Undrained Triaxial	
■ Sample Retained	SA - Sieve Analysis	TxCU 1564 (1440) - Consolidated Undrained Triaxial	
▨ Sample Recovered, Not Retained		DS 2020 (1440) - Consolidated Drained Direct Shear	
⊠ Bulk Sample		FVS 520 - Field Vane Shear	
⊡ Sample Not Recovered		UC 1500 - Unconfined Compression	
CA - California Modified Split Barrel Sampler 3.0-inch O.D.		PP 1500 - Field Pocket Penetrometer	
CM - California Modified Split Barrel Sampler 2.5-inch O.D.		Sat - Sample saturated prior to test	
SPT - California Split Barrel Sampler 2.0-inch O.D.			
SH - Shelby Tube		▽ Initial Groundwater Level Reading	
RC - Rock Coring		▼ Second Groundwater Level Reading	
Recovery - Percent Core Recovered			
RQD - Rock Quality Designation (length of core pieces >= 4-inches / core length)			

 <p><b>Brunsing Associates, Inc.</b> 5468 Skylane Blvd., Suite 201 Santa Rosa, California 95403 Tel: (707) 528-6108</p>	Job No.: 13646.02 Appr.:  Date: 01/10/24	<p><b>SOIL CLASSIFICATION CHART &amp; KEY TO TEST DATA</b></p> <p><b>BALDERSTON FOUNDATION IMPROVEMENTS</b></p> <p>12700 North Highway 1 Mendocino, California</p>	<p><b>PLATE</b></p> <p><b>6</b></p>
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## RELATIVE DENSITY OF COARSE-GRAINED SOILS

Relative Density	Standard Penetration Test Blow Count (blows per foot)
Very loose	4 or less
Loose	5 to 10
Medium dense	11 to 30
Dense	31 to 50
Very dense	More than 50

## CONSISTENCY OF FINE-GRAINED SOILS

Consistency	Identification Procedure	Approximate Shear Strength (psf)
Very soft	Easily penetrated several inches with fist	Less than 250
Soft	Easily penetrated several inches with thumb	250 to 500
Medium stiff	Penetrated several inches by thumb with moderate effort	500 to 1000
Stiff	Readily indented by thumb, but penetrated only with great effort	1000 to 2000
Very stiff	Readily indented by thumb nail	2000 to 4000
Hard	Indented with difficulty by thumb nail	More than 4000



## NATURAL MOISTURE CONTENT

<b>Dry</b>	<b>No noticeable moisture content. Requires considerable moisture to obtain optimum moisture content* for compaction.</b>
<b>Damp</b>	<b>Contains some moisture, but is on the dry side of optimum.</b>
<b>Moist</b>	<b>Near optimum moisture content for compaction.</b>
<b>Wet</b>	<b>Requires drying to obtain optimum moisture content for compaction.</b>
<b>Saturated</b>	<b>Near or below the water table, from capillarity, or from perched or ponded water. All void spaces filled with water.</b>



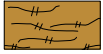




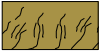


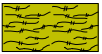

\* Optimum moisture content as determined in accordance with ASTM Test Method D1557, latest edition.

Where laboratory test data are not available, the above field classifications provide a general indication of material properties; the classifications may require modification based upon laboratory tests.

2-SOIL-DESCRIPTIVE PROPERTIES, 13646.01 GINT.GPJ, 1/10/24

	<b>Brunsing Associates, Inc.</b> 5468 Skylane Blvd., Suite 201 Santa Rosa, California 95403 Tel: (707) 528-6108	Job No.: 13646.02  Appr.:   Date: 01/10/24	<b>SOIL DESCRIPTIVE PROPERTIES</b> <b>BALDERSTON FOUNDATION IMPROVEMENTS</b> 12700 North Highway 1 Mendocino, California	<b>PLATE</b>  <span style="font-size: 2em;"><b>7</b></span>
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# Generalized Graphic Bedrock Symbols

	Claystone		Siltstone		Tuff (Volcanic Ash)
	Shale		Chert		Andesite
	Sandstone		Serpentine		Basalt
	Conglomerate		Greenstone		Schist

## Stratification

### Bedding of Sedimentary Rocks

Massive  
 Very thick bedded  
 Thick bedded  
 Thin bedded  
 Very thin bedded  
 Laminated  
 Thinly laminated

### Thickness of Beds

No apparent bedding  
 Greater than 4 feet  
 2 feet to 4 feet  
 2 inches to 2 feet  
 0.5 inches to 2 inches  
 0.125 inches to 0.5 inches  
 less than 0.125 inches

## Fracturing

### Fracturing Intensity

Little  
 Occasional  
 Moderate  
 Close  
 Intense  
 Crushed

### Fracture Spacing

Greater than 4 feet  
 1 foot to 4 feet  
 6 inches to 1 foot  
 1 inch to 6 inches  
 0.5 inches to 1 inch  
 less than 0.5 inches



## Strength

Soft	Plastic or very low strength.
Friable	Crumbles by hand.
Low hardness	Crumbles under light hammer blows.
Moderate hardness	Crumbles under a few heavy hammer blows.
Hard	Breaks into large pieces under heavy, ringing hammer blows.
Very hard	Resists heavy, ringing hammer blows and will yield with difficulty only dust and small flying fragments.

## Weathering


Deep	Moderate to complete mineral decomposition, extensive disintegration, deep and thorough discoloration, many extensively coated fractures.
Moderate	Slight decomposition of minerals, little disintegration, moderate discoloration, moderately coated fractures.
Little	No megascopic decomposition of minerals, slight to no effect on cementation, slight and intermittent, or localized discoloration, few stains on fracture surfaces.
Fresh	Unaffected by weathering agents, no disintegration or discoloration, fractures usually less numerous than joints.

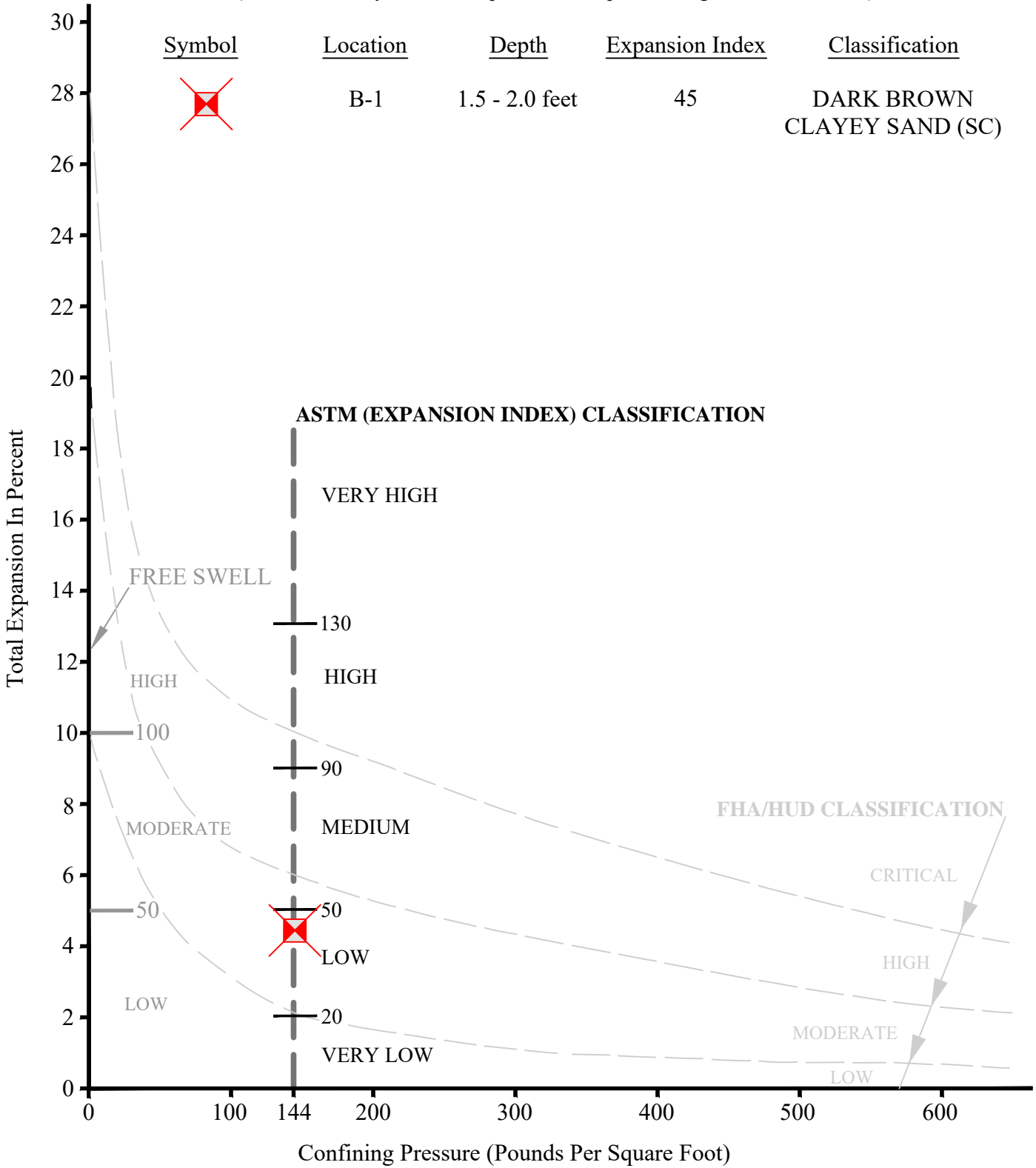
3 ROCK DESCRIPTIVE PROPERTIES COLOR, 13846.01.GINT.GPJ, 1/10/24

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## EXPANSION INDEX TEST (ASTM D 4829)

(4-in. diameter by 1-in. thick specimen, 144 psf surcharge; 24-hr. saturation)


Symbol	Location	Depth	Expansion Index	Classification
	B-1	1.5 - 2.0 feet	45	DARK BROWN CLAYEY SAND (SC)



\*Free Swell test procedure per United States Bureau of Reclamation.  
 Results interpreted per "Pavements on Expansive Clays", 1969, by Kassif, Livneh, and Wiseman.

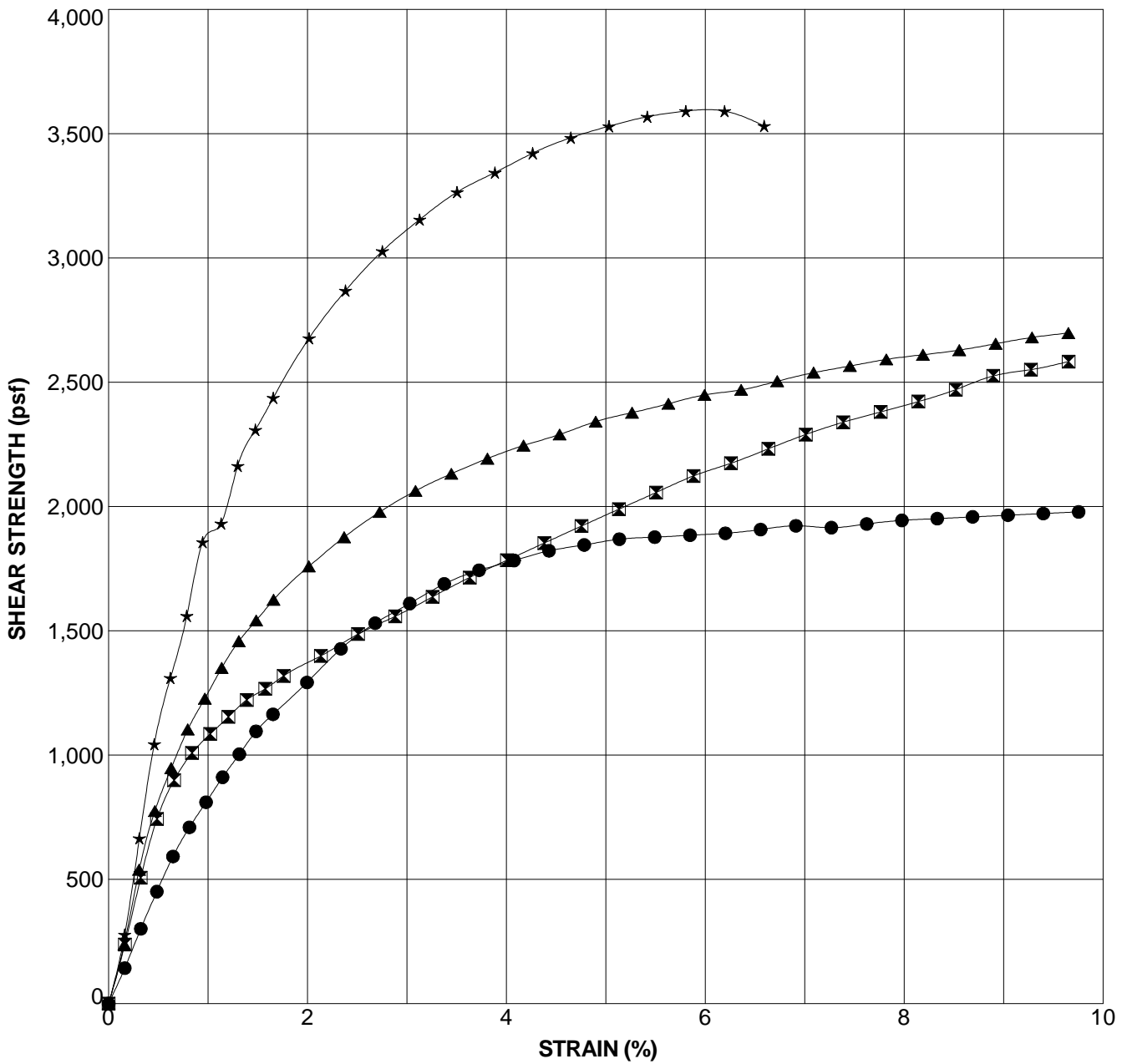


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Job No.: 13656.02  
 Appr.:   
 Date: 01/10/24


**EXPANSION INDEX TEST RESULTS**  
 BALDERSTON FOUNDATION IMPROVEMENTS  
 12700 North Highway 1  
 Mendocino, California

**PLATE**  
9

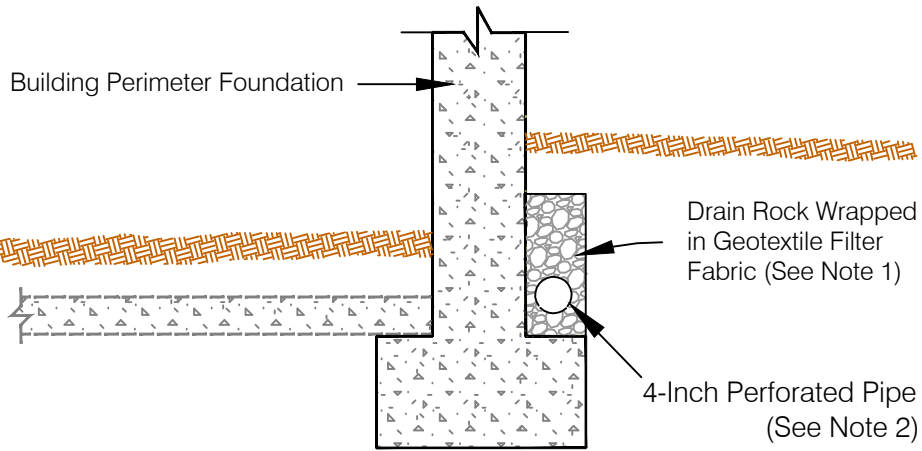


Sample Source	Classification	Confining Pressure (psf)	Ultimate Strength (psf)	Strain (%)	Dry Density (pcf)	Moisture Content (%)
● B-1 at 2 ft	DARK BROWN CLAYEY SAND (SC)	720	1978	9.8	80	27.6
☒ B-1 at 9 ft	MOTTLED GRAY-BROWN TO ORANGE CLAYEY SAND (SC)	1080	2583	9.7	99	23.1
▲ B-1 at 13 ft	MOTTLED GRAY-BROWN TO ORANGE CLAYEY SAND (SC)	1440	2698	9.7	107	20.9
★ B-2 at 6 ft	MOTTLED GRAY, ORANGE-BROWN SANDY CLAY (CL)	1008	3591	6.2	93	27.1

UNCONSOLIDATED TRIAXIAL (ULTIMATE), 13646.01 GINT.GPJ, 1/10/24

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				<b>PLATE</b> <span style="font-size: 2em; font-weight: bold;">10</span>





PERIMETER FOUNDATION DRAINAGE DETAIL  
(Not to Scale)

**NOTES:**

1. Drain rock should be clean, free-draining 3/4 inch crushed rock. Perimeter foundation drain rock should be wrapped in a non-woven geotextile filter fabric (Mirafi 140N or equivalent) or Class 2 permeable material, without filter fabric, per Caltrans standard specifications, latest edition.
2. Pipe should be SDR 35 or equivalent, placed with perforations down, sloped at least 1 percent to gravity outlet or sump with automatic pump.
3. A clean-out pipe with cap should be installed at the up-slope end of the pipe, pipe elbows should be 45 degrees or less (for "snake" access).

L:\Geotech Projects\13646.02 Balderston, Mendocino\INVESTIGATION\PLATES\13646.02\_11 PERIMETER DRAINAGE.dwg

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Job No.: 13646.02

Appr.: *KAC*

Date: 01/10/24

**PERIMETER FOUNDATION DRAINAGE DETAILS**

BALDERSTON FOUNDATION IMPROVEMENTS

12700 North Highway 1  
Mendocino, California

**PLATE**

**11**

## APPENDIX A

### References

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